EAA 27

The Fenland Project, Number 1: THE LOWER WELLAND VALLEY, Volume 1

East Anglian Archaeology 27
Cambridgeshire Archaeological Committee, 1985

EAST ANGLIAN ARCHAEOLOGY

To the late Mark Gregson from his friends in the Welland Valley Project

The Fenland Project, No. 1:

Archaeology and Environment in the Lower Welland Valley Volume 1

by Francis Pryor, Charles French,

David Crowther, David Gurney, Gavin Simpson and Maisie Taylor

with major contributions from
Francis Green, Paul Halstead and
Jeffrey May

and contributions from
B.K.W.Booth, A.Challands, H.Cleere,
S.Cogbill, C.J.Collins, J.Cooper,
P.Craddock, P.Crowther, Nina Crummy,
A.David, G.W.Dimbleby, D.Hall,
K.F.Hartley, P.Lane, R.Reece,
J.Shepherd, Ann Stirland and
Felicity Wild

and principal illustrations by
David Crowther, Charles French,
David Gurney and Francis Pryor

East Anglian Archaeology
Report No.27, Volume 1, 1985

The Fenland Project Committee
Cambridgeshire Archaeological Committee

EAST ANGLIAN ARCHAEOLOGY
REPORT No. 27, VOLUME 1

Published by
Cambridgeshire Archaeological Committee
Department of Archaeology
University of Cambridge
Downing Street
Cambridge

in conjunction with
The Fenland Project Committee and
The Scole Archaeological Committee Ltd

Editor: Ian Longworth
Assistant Editor: Julie Gardiner

Typeset in Plantin by Spire Origination
Printed by Witley Press, Hunstanton, Norfolk

ISSN 0307 2460

For details of *East Anglian Archaeology*, see last page

This volume is published with the aid of a grant from
the Historic Buildings and Monuments Commission for England

Cover Illustration Aerial photograph of cropmarks at Maxey, looking NW along the cursus with the henge complex in the foreground
Photo: British Crown Copyright Reserved.

Bibliographical reference The recommended citation for this volume is:
Pryor, F.M.M. and French, C.A.I. 'Archaeology and Environment in the Lower Welland Valley' Volume 1, *E. Anglian Archaeol.* 27, 1985.

Contents

Volume 1

Volume 2

Chapter 3: Excavations at Maxey, Bardyke Field, 1962-63, by W.G.Simpson

Chapter 4: Excavations Between Barnack and Bainton, 1981

Chapter 5: Discussion, by F.M.M.Pryor

List of Plates

List of Figures in Volume 1

List of Figures in Volume 2

List of Tables in Volume 1

List of Tables in Volume 2

Microfiche Contents

List of Microfiche Tables*

*denoted by the prefix M in the text

Welland Valley Project staff (August 1979 to April 1982)

Benjamin Booth (to April 1980)

Bob Bourne (to August 1981)

David Crowther

Anne Dodd (winter 1980/81)

Charles French

David Gurney

Paul Lane (to April 1980)

Francis Pryor

Maisie Taylor

Bridget Todd (to August 1981)

Contributors

Benjamin Booth, MA, MIFA
Information Project Group, National Maritime Museum, Greenwich, London SE10 9NF.

Adrian Challands, FGF, AIFA
Nene Valley Research Committee, Ham Lane House, Orton Waterville, Peterborough PE2 0UU

Henry Cleere, BA, PhD, FSA, MIFA
Council for British Archaeology, 112 Kennington Road, London SE11 6RE.

Stephen Cogbill, BA, MA
40 Harold Road, London SE19 3PL

C.J. Collins, BSc
Dept. Earth Sciences, Leics. Museums, Art Galleries and Records Service, 96 New Walk, Leicester LE1 6TD

John Cooper
Department of Palaeontology, The British Museum (Natural History), Cromwell Road, London SE7 5BD

Paul Craddock, BSc, PhD, FSA
The Research Laboratory, The British Museum, London WC1B 3DG.

David Crowther, BA
Town Docks Museum, Queen Victoria Square, Kingston-upon-Hull, HU1 3DX

Peter Crowther, MA, PhD, AMA
Dept. Earth Sciences, Leics. Museums, Art Galleries and Records Services, 96 New Walk, Leicester LE1 6TD

Nina Crummy, BA
Colchester Archaeological Trust, 12 Lexden Road, Colchester CO3 3NF.

Andrew David, BSc
Ancient Monuments Laboratory, Fortress House, 23 Saville Row, London W1X 2HE.

Prof. G.W. Dimbleby, BSc, MA, DPhil, FSA
C/o Institute of Archaeology, 31-34 Gordon Square, London WC1H 0PY.

Charles French, BA, MA, PhD, MIFA
Fenland Archaeological Associates, The Old School, Helpston, Peterborough PE2 7DG.

Francis Green, BA, MPhil, MIFA
Test Valley Archaeological Committee, Orchard House, Station Road, Romsey S05 8DG.

David Gurney BA, MIFA
Norfolk Archaeological Unit, Union House, Gressenhall, Dereham, Norfolk NR20 4DR

David Hall, MA, FSA, MIFA
The Fenland Survey, c/o Department of Archaeology, The University, Downing Street, Cambridge.

Paul Halstead, BA, MA
King's College, Cambridge.

K.F.Hartley, BA, FSA
Flat A, 22 Shire Oak Road, Leeds LS6 2DE.

Paul Lane, MA
Department of Archaeology, The University, Downing St., Cambridge.

Jeffrey May, MA, FSA
Department of Classical and Archaeological Studies, The University, Nottingham NG7 2RD.

Francis Pryor, MA, FSA, MIFA
Fenland Archaeological Associates, The Old School, Helpston, Peterborough PE2 7DG.

Richard Reece, BSc, DPhil, FSA
Institute of Archaeology, 31-4 Gordon Square, London WC1H 0PY.

John Shepherd, BA
Institute of Archaeology, 31-4 Gordon Square, London WC1H 0PY.

Gavin Simpson, MA
C/o Department of Classical and Archaeological Studies, The University, Nottingham NG7 2RD.

Ann Stirland, BSC, CertEd
The Cottage, Lower Green, Woodend, Near Towcester NN12 8SB.

Maisie Taylor, BA, Dip Ed., MIFA
Fenland Archaeological Associates, The Old School, Helpston, Peterborough PE2 7DG.

Felicity Wild, MA
30 Princes Road, Heaton Moor, Stockport SK4 3NG.

(Contributors to this report can be contacted through The Cambridgeshire Archaeological Committee).

Acknowledgements

The history of archaeology in the Welland valley, whether carried out by the original Welland Valley Research Committee, or by the more recent Welland Valley Project, is a story of rescue excavation within a research context. The major rescue funds have been provided for both excavations at Maxey (1962-63 and 1979-81) by the Inspectorate of Ancient Monuments, the Department of the Environment (ex-Ministry of Works). The second major funding agency was the British Gas Corporation, with the Department of the Environment (Barnack/Bainton). Substantial additional excavation and research funds have been provided by the Pilgrim Trust (1962-64). The transect survey was funded by the Margary Trust and The Royal Ontario Museum. Day-to- day management of Welland Valley Project finance has been most ably arranged by Russel Larham, Department of Lands and Buildings, Cambridgeshire County Council and by George Dixon in Peterborough; on-site administration was by Maisie Taylor. Finally we must acknowledge the generosity of the public who provided extra research and post-excavation funds, both through appeals launched by the Welland Valley Research Committee and through the more recently organised Friends of the Welland Valley.

The list of acknowledgements will inevitably be long, but it would achieve unmanageable proportions if we repeated every instance where we received help or advice from the following: Richard Bradley, Dr David Coombs, Dr Paul Craddock, Tony Fleming, Dr Helen Keeley, Dr Ian Kinnes, David Hall, Dr Richard Macphail, Richard Reece, Dr Ken Thomas, Dr Geoffrey Wainwright and Dr J.P.Wild. Similarly, substantial drafts of this report have been read and re-read by John Barrett, Richard Bradley, Dr Ian Kinnes and Dr Ian Longworth. Special thanks are also due to Professor G.W.Dimbleby for giving us access to much unpublished material.

The illustrations in this volume are by:-
David Crowther (Figs. 3, 20-1, 27, 40, 46, 111-36, 179-81); Charles French (Figs. 4, 6-7, 12, 14, 19, 22, 41-3, 45, 47-53, 55, 57-68, 70-1, 73, 151, 163, 165-7, 198-203, 205); David Gurney (Figs. 9, 23-6, 69, 80-95, 97-106, 137-50, 189, 190-7, 204); Francis Pryor (Figs. 11, 54, 56, 74-7, 107-10, 164, 184-8); Maisie Taylor (Figs. 2-3, 8, 10, 15, 80-1); Gavin Simpson (Figs. 168-76): Robert Powell (Figs. 13, 15-16, 162); Bob Bourne (Fig. 1); Jeffrey May (Figs. 177-8); Catriona Turner (Figs. 78-9). The photographs are by J.K. St. Joseph (Pl. I-III); S.Upex (Pl.IV-VI); Francis Pryor (Pl.VII-XX, XXII-XXXIV); Gwil Owen (Pl.XXI).

The acknowledgements of individual authors have been assembled below in the interests of continuity in the main text. Each project will be considered in turn.

The transect survey

We are most grateful to Clive Orton who gave much useful advice on sampling problems, both general and particular. It surely must go without saying that the survey would not have been possible without the help and co-operation of the farmers concerned. We are therefore particularly keen to thank the following: B.W.Aldwincle (Barnack), P.F. and H.C.Brassey (Barnack), M.Bratley (Bainton), the Darby family (Borough Fen), A.J.Frisby (Maxey), the Garford family (Maxey), C.P. and D.T.Godfrey (Newborough), F.Harris, J.Harris, N.Harris, S.Harris (Borough Fen and Milking Nook), the Hinch family (Tinwell and Little Casterton), M.Jackson (Ashton), the Knight family (Great Casterton), G.E.Lamb (Stamford), J.Odam (Eye), J.Perkins (Nunton), the Vergette family (Etton and Glinton), J.Whitsed (Newborough) and the Whitton family (Glinton). We are particularly grateful for the assistance provided by Messrs Scott and Wooley of Burghley Estates Office.

We also wish to acknowledge the special help we received from Brian and Sheila Knight, Mrs Margaret Gillespie and Mrs Jean Hooper.

Maxey Excavations, 1979-81

The Hoveringham Gravel Co. (now Tarmac Roadstone (Eastern) Ltd.) gave permission for us to excavate and loaned earthmoving equipment free of charge. They also provided sites (including electricity) for huts, sieves etc. Our work was made infinitely easier thanks to the ready co-operation of Mr Bruce Sully and Mr Alan Baker who kept us informed, well in advance, of the Company's future plans. Day-to-day running of the excavation was facilitated by Mr Dennis Doran and the workforce at the quarry.

On-site supervision was provided by staff members of the Welland Valley Project and the late Mark Gregson. We also gratefully acknowledge the help we received in the field from staff and students of the Department of Archaeology, Cambridge University (April 1980) and the Department of Archaeology, Manchester University (August 1980 and 1981). Photographic and other technical assistance was kindly provided by Gwil Owen (Cambridge) and Keith Maud (Manchester); students were under the overall supervision of Ian Hodder, with Mark Gregson (Cambridge), and David Coombs (Manchester). We must also acknowledge the help we received from the Royal Engineers when the excavations became the object of Exercise Clean Pick (12th-19th May 1980), mounted by 3 Troop, 48 Field Squadron, RE. The success of this exercise was in large part due to the officer in charge, Capt. N.V.R.Oak-Rhind RE.

Andrew David (Geophysical survey) acknowledges A. Bartlett for his assistance. Paul Lane (recovery methods comparison) thanks the late Mark Gregson for his enthusiastic help during the formulation of the research design; Steve Cogbill read and commented on an earlier draft. David Gurney (Romano-British features and coarse pottery) thanks Rob Perrin and D.F.Mackreth for their constant advice and encouragement; advice was also provided by Anne Anderson, John Cooper, Chris Going, Tony Gregory, K.F.Hartley, Martin Howe, Valery Rigby and Felicity Wild. Samian illustrations are by Catriona Turner. Dr Warwick Rodwell and Mr Owen Bedwin helped with the discussion of Romano-Celtic temples. Mr John Cooper (identification of shells in pottery) thanks Mr C.P.Palmer for the identification of the Maleaginella and

Mr D.J.Ward for the determination of the hybodont denticle.

Paul Halstead (animal bones) thanks Glynis Jones and Vasso Rondiri who assisted substantially during sorting, identifying and recording the material; advice was provided by Geoff Bailey, Marsha Levine and Sebastian Payne. Charles French (soils) acknowledges the help he has received from Drs R.Evans and G.M.Brown; the British Geological Survey and the Soil Survey of England and Wales kindly gave permission to use the maps; special thanks are also due to the Nene Valley Research Committee for the use of their laboratory facilities.

Maxey excavations, 1962-63

W.G.Simpson is indebted to the Chairman (M.W.Barley) and members of the Welland Valley Research Committee of the Council for British Archaeology for their help and advice in the course of the excavations; tc Mr A.Crowson of Peterborough Quarries for permission to excavate; to John Alexander for making the results of his work available and for his advice during the course of the excavations; to the Geography Department of Stamford School for making a contour survey of the site; to the Stamford Borough Council and the Barnack R.D.C. for providing working accommodation and finally to all the people working 'on site' — to Peter Spring who supervised the work; to Richard Haw and M.N.Lister, assistant supervisors and to the many voluntary helpers.

Thanks are also due to those who assisted in the preparation of this report: to Dr Henry Cleere for his report on the metallurgical samples; to Dr Bill Cummins for identifying the geological origin of the stone finds; to Dr J.Pilcher for identifying the pollen samples; to Dr G.W.Dimbleby and Sir George Taylor for identification of the charcoal specimens; to Jeffrey May for reporting on the pottery and small finds and to Mrs Ruth Robinson for typing the manuscript.

Barnack/Bainton excavations, 1981

Our main thanks are to Mr B.W.Aldwincle who gave us access to land outside the area threatend by the pipeline, and who was most co-operative in many other respects. Mr P.D.Catherall of the British Gas Corporation, Chief Archaeologist, was particularly helpful and supportive. Charles French (soils) acknowledges the help he received from Drs J.A.Catt and R.M.Bateson of the Soils and Plant Nutrition Department, Rothamsted; Drs J.G.Evans, P.Bullock and D.Russell are also thanked for their assistance. Francis Pryor wishes to thank Rog Palmer for his generous help preparing the computer-rectified air photo maps.

Abstract

This report presents the results of archaeological and environmental investigations by members of the Welland Valley Project and others. This work was mainly confined to the gravel soils of the lower Welland, east of Stamford, to the Fen-edge. The report begins with an introductory discussion of regional geology and soils, including much unpublished information. The introductory chapter concludes with an account of previous archaeological work in the area, together with a report on the valley-wide field survey which was undertaken to provide a context for the excavations; it also considers post-depositional effects in some detail.

Chapter 2 is a report on recent excavations at Maxey by the Welland Valley Project. It includes a full account of pre-excavation procedures and an assessment of their potential. The excavations investigated the south-eastern part of a major Neolithic henge monument, together with lengths of cursus ditch and a small oval barrow. Later features include two probable square-ditched barrows, of possible Early Iron Age date, and somewhat later, Iron Age, ditched enclosures and settlement features. The report also includes details of a three-phased 'native' Romano-British farmstead. The account of recent work at Maxey (Chapter 3) is followed by W.G.Simpson's report on earlier plans appear together in Fig. 40 . This report includes discussion of the cursus, the henge monument and two circles of pits enclosed within it; it also includes a discussion of four small square-ditched enclosures, reminiscent of the possible square barrows investigated recently. The report concludes with a discussion of ditches and non-linear features of 1st millennium BC dates, and later.

The investigation of a pipeline site slightly upstream of Maxey in the cropmark-rich land between Barnack and Bainton is reported in Chapter 4. This report shows an interesting divergence between surface finds and subsoil features and includes an analysis of colluvial deposits to the west of Barneck.

The volume concludes (Chapter 5) with a synthesis of results in which special attention is paid to the use of Neolithic ceremonial sites and the role of field survey in lowland landscapes.

A note on the layout and use of this report

The report is large and is probably best approached by way of Chapter 5 (the general discussion), where references are made to the principal sections of the preceding chapters. Each of these chapters closes with a general discussion where, again, references are made to the preceding sections. Finally, the various reports are arranged in the same manner, with detailed description appearing before concluding synthesis.

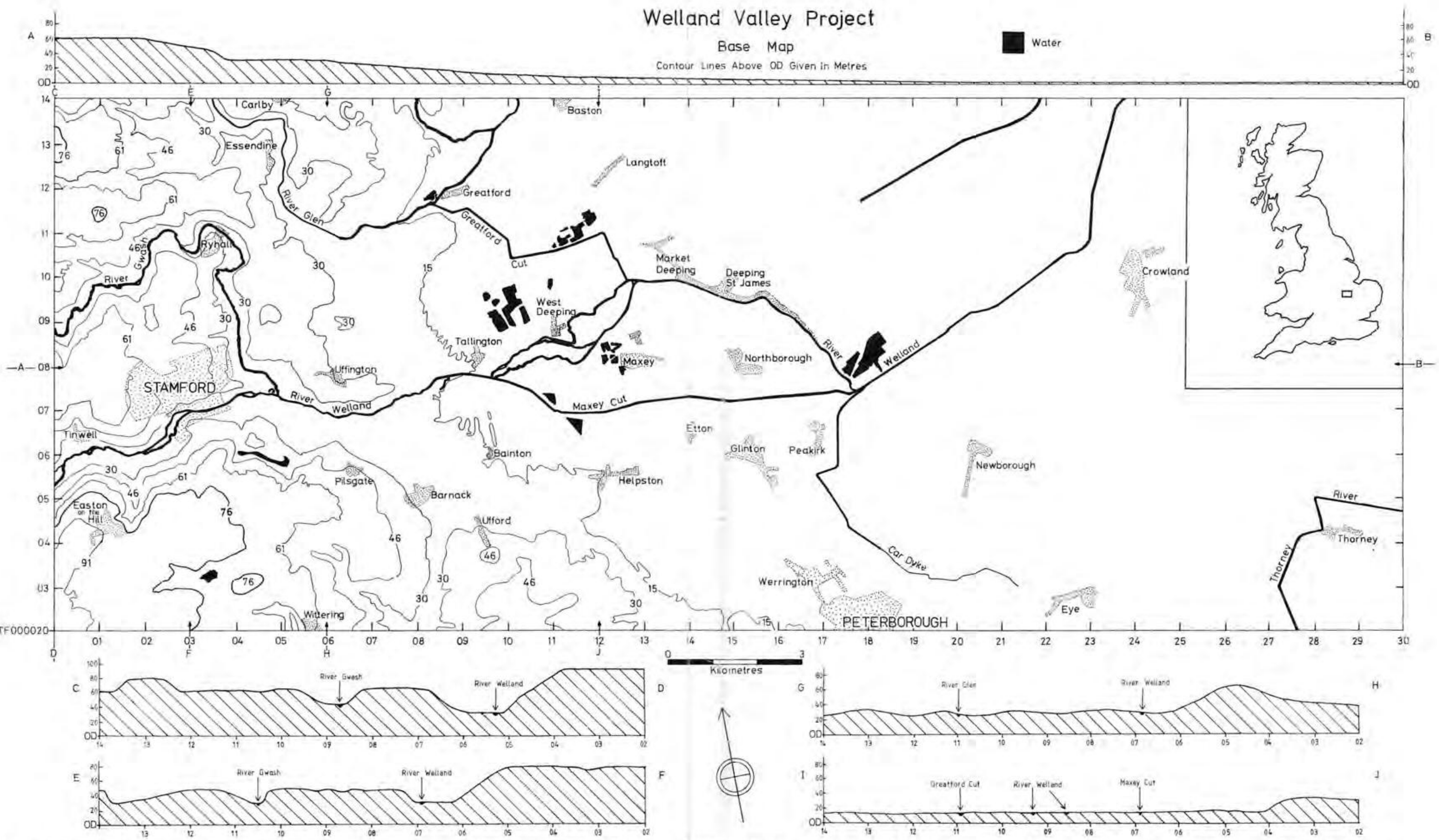


Fig. 1 Map of the lower Welland valley study area. *Based upon Ordnance Survey 1:2500 map (1972) with the permission of the controller of Her Majesty's Stationery Office, Crown Copyright reserved.* Scale 1:10,000.

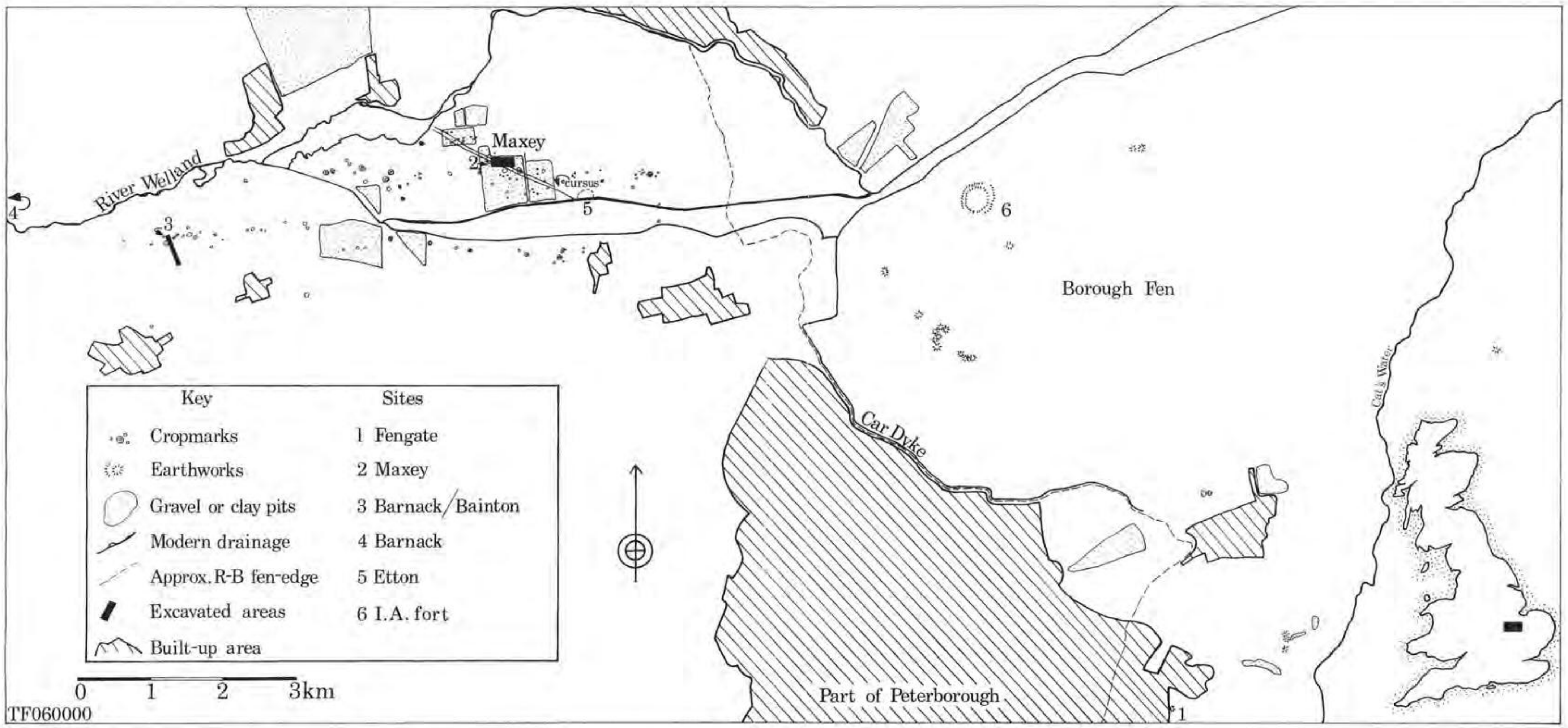


Fig.2 Map of the area north of Peterborough, showing principal sites mentioned in the text (Nos.1-6) and pre-Iron Age cropmark and earthwork sites. Scale 1:7500.

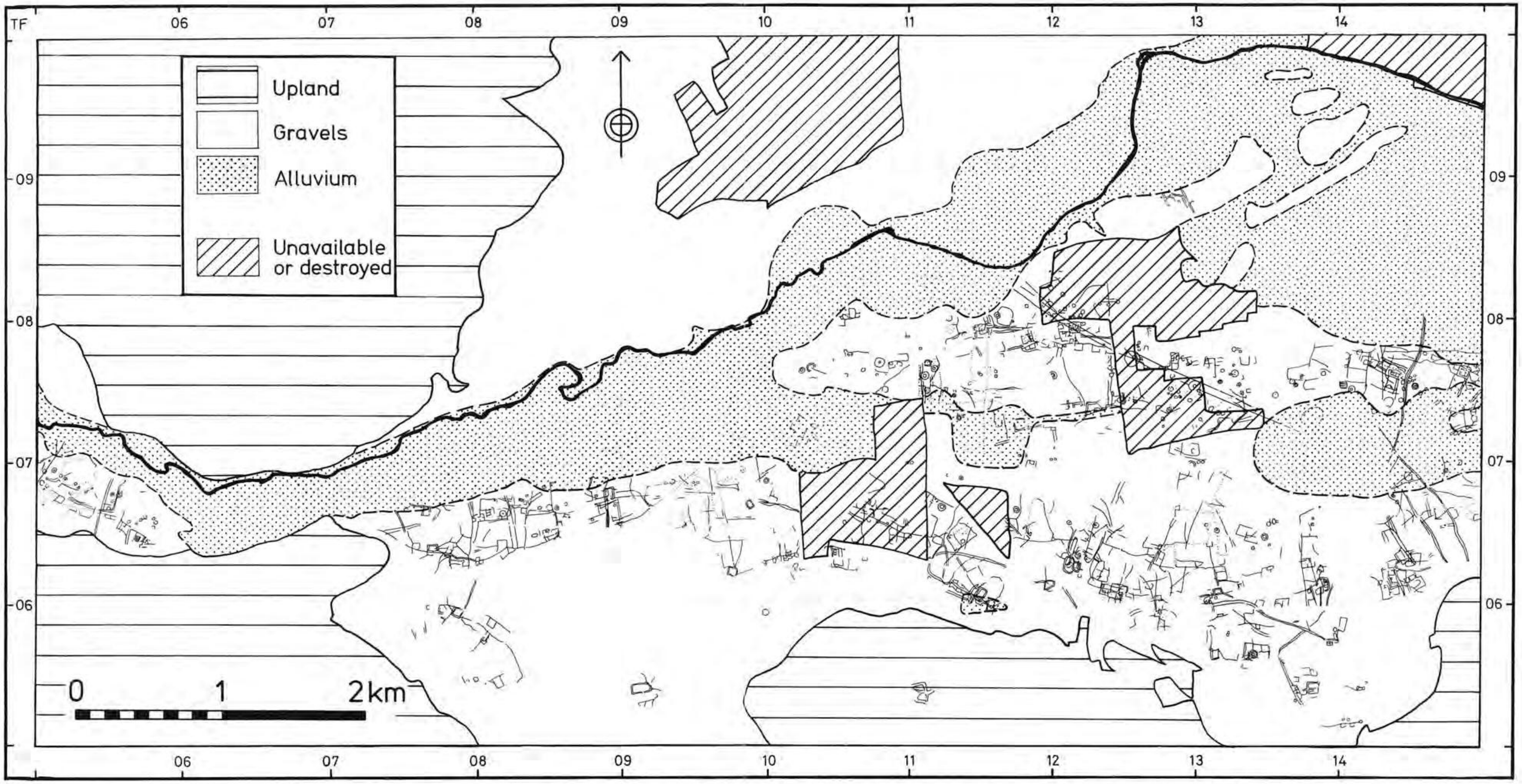


Fig.3 Map of the Maxey area showing the distribution of cropmarks south of the Welland, and surface geology. Scale 1:3000.

1 Introduction to the Welland Valley Project

Introduction

This chapter is intended to set the scene for the detailed reports which follow (Chapters 2 to 4); the overall arrangement of the volume is outlined in the Abstract, above. The present chapter is in four parts, the first of which is a brief account of the origin, aims and methods of the Welland Valley Project. This is followed by an account of the region's modern environment, geology and soils which concludes with a discussion of previous palaeonvironmental research in the region. Part III is an account of previous archaeological research in the region and it includes short summaries of the various published and unpublished reports; it closes with short contributions by Adrian Challands (salvage excavations at Maxey, 1971) and David Hall (medieval settlement and land-use in the lower Welland). The chapter concludes (part IV) with Maisie Taylor's account of the Welland valley transect survey.

I. The Project

by Francis Pryor

The Welland Valley Project arose out of the Fengate Project which investigated sites to the east of Peterborough between 1971 and 1978. The principal drawback of Fengate was that its immediate hinterland lay buried beneath the urban development of Greater Peterborough. This meant that the excavations could not be placed in their regional contexts with any assurance. Fengate also lacked, most probably for similar post-depositional reasons, major ceremonial or funerary monuments. It was decided that these two 'missing' aspects of archaeology could best be investigated outside the lower Nene valley.

Fengate revealed a wealth of information on settlement patterns and land-management measures. At the time (e.g. Pryor 1976b) it was thought that the rectilinear, ditch-enclosed landscape of the 2nd millennium bc extended over large areas of the Fen-edge, but there was still no certain proof of this; indeed there were growing indications that quite different types of land boundary might be found locally (e.g. Chowne 1980). It was decided that efforts should be made to investigate the homogeneity (or otherwise) of settlement and land-use patterns in the region. The most suitable area to examine these problems was the lower Welland valley:

> This area is less than ten miles north of Fengate, has the same range of physiographic types and archaeological features, and is small enough to survey intensively. The area contains important, known, multi-period sites, such as Maxey and Tallington which are threatened by gravel extraction and which will therefore require excavation . . . Put simply, the underlying objective of the Welland study will be to test, albeit on a small scale, the general assumption that 'certain basic types of culture may develop in similar ways under similar conditions' (Steward 1955, 4). Special attention will be paid to variations in Fen-edge and river valley communities over time, since settlement patterns and local economic activity are closely tied to changes in the environment of the wetlands. (Pryor 1976b, 487-8)

The reader must judge for himself (Chapter 5) to what extent we have achieved these, our principal research aims. Our task was made more straightforward by the fact that Dr French was carrying out a detailed archaeological environmental study of the Nene/Welland region (French 1983a). Happily for all concerned, French's research formed an integral part of the Welland Valley Project from the outset. Previous work in the lower Nene had shown that alluvium and other post-depositional effects would seriously distort the interpretation of the available data, and we were at special pains to study not only the effects themselves, but their extent and distribution over the valley. Moreover, being familiar with the sometimes near-continuous spreads of cropmarks that characterise the gravel soils of the region, we were concerned with the question of site-definition. This concern with the definition of sites led to an interest in off-site archaeology (see Crowther, Chapter 2, part I). Finally, we were determined to carry out intensive pre- excavation surveys in order to examine the correlation of surface artefact distributions and subsoil features, as this had not been possible at Fengate. These intensive surveys were to take place at threatened rescue sites (Maxey East and West Fields, Barnack/Bainton), but they also required regional contexts that were qualitatively comparable. These, then, were the four principal reasons for the establishment of the Welland valley transect survey, which is discussed by Maisie Taylor in part IV, below.

The area chosen for study (Fig. 1) is defined by the OS eastings TF 000 and TF 300, and by the northings TF 020 and 140. It thus measures 12km (north to south) by 30km (east to west). To the west the valley slopes are clearly defined (Fig. 1, C-D and E-F), but it rapidly falls away eastwards, to form a near-flat plain that gradually merges into the Fen, very approximately due east of the Car Dyke (Fig. 1). The area of the river valley/Fen-edge interface (Fig. 2) is of particular interest, since here the cropmark sites of the gravel soils are partially buried by blanketing Fen deposits. Thus the emerging barrow-field(s) of Borough Fen may be seen as a continuation of the larger Welland valley landscape. The distribution of superficial, Fen and alluvial, deposits continues westwards up the river floodplains, as gradually narrowing bands, where cropmarks are almost entirely obscured. Figure 3 (which may be located precisely by the OS grid co-ordinates in the margin) shows the extent of these alluvial spreads between the villages of Uffington, to the west, and Northborough, to the east. Cropmarks are clearly confined to the non-alluviated gravel soils alone (cropmark plots north of the Welland were not available at the time of writing); the Maxey cursus is particularly prominent, traversing Maxey 'island' from north-west to south-east.

Storage of finds and the archive
Finds and archive from Maxey (both Simpson's and the recent excavation), Barnack/Bainton and the Welland transect survey are housed in Peterborough Museum and Art Gallery, Priestgate, Peterborough, Cambs.

II Geology, Soils and Environment

by Charles French

Introduction

This section is in four parts, starting with a brief review of the region's modern climate and countryside; this is followed by discussions of geology and soil, and finally by a discussion of previous palaeoenvironmental investigations in the lower Welland valley. The lower Nene valley, immediately to the south, is briefly reviewed by Pryor (1983a, chapter 8), but is more comprehensively discussed by French (1983a, 161-94, with refs.).

Present-day Climate and Countryside (Fig. 1)

The lower Welland valley lies near the western margin of East Anglia, where the sub-oceanic British climate is becoming more continental. Annual and diurnal temperature ranges tend to be greater and annual precipitation less (with a summer convectional maximum), than the average for Britain. Climatic figures for 1955 to 1974 have been obtained from R.A.F. Wittering, in the south-west of the study area. The mean temperature range has a low of 3.5°C in January and a high of 15.9°C in July. There are air frosts during the months of November to February inclusive; ground frosts above grass in the months of November to April, inclusive (Burton 1981).

In comparison with the rest of Britain, the mean annual rainfall for the area is low, 577mm for Wittering and 563mm for Abbeyfields, Peterborough. Six months of the year (June to August, November to January) have an average in excess of 50mm rainfall. February to April are the driest months, with 20.9% of the annual average. The daily mean duration of sunshine varies from 1.63 hours in December to 6.9 hours in June; the sunniest months are May and June (Burton 1981).

Potential transpiration is greater than rainfall between April and September and crops therefore require irrigation to avoid low yields. In the Badsey series of fine loams (Fig. 6), for example, moisture is generally unavailable between July and September, although field capacity will usually be re-attained by December (Burton 1981).

The lower Welland is dominated by arable land, mainly of Grades 2 and 3. In the Fens, the landscape is flat and dominated by large arable fields, delimited by drainage dykes. Trees, such as willow and poplar, tend only to be found around farm buildings and along road- or dyke-sides. Hedges are now generally absent. The valley floor has a similar aspect although a few hedges and clumps of hardwood trees still survive. In contrast, the limestone uplands, although still predominantly arable land, are partially forested with clumps of mature woodland, mainly composed of lime and oak, although there are occasional plantations of conifers. The large estates, formerly of the Earl Fitzwilliam (Milton Hall, Peterborough) and the Marquis of Exeter (Burghley House, Stamford) have substantial acreages of parkland, dominated by scattered elm (now mostly dead) and oak trees.

Geology (Figs. 1, 3-5)

The area is divided into upland, lowland terrace and Fen-edge/Fenland basin, which exhibit three main geological phenomena (Figs. 1, 3-5). First, there are the river gravels and alluvium on either side of the present River Welland. Second, to the north and south of the gravels and alluvium on the lowland terrace the ground rises (between the 30m and 75m contours) onto a variety of Upper Jurassic rocks. Third, the lowland terrace merges with the 'skirtlands' along the Fen-edge in the Northborough area.

The river terrace gravels are the most extensive drift deposit in the area (Figs. 3-5). They consist of varying thicknesses of current-bedded sand and gravel made up of limestone and flint with Bunter pebbles and ironstone (Booth 1981; Burton 1981). The terraces, designated 1 and 2, form a narrow strip either side of the river in the Stamford area as it leaves the upland. They then widen out into a broad fan east of Uffington and Barnack. To the east the river gravels merge with the fen margin gravels forming an extensive flat around the Fenland basin. This could have formed as alluvial fan deposits of second terrace age (Burton 1981). The gravels overlie either Oxford Clay, Kellaways Sand or Clay, or Blisworth Limestone.

The discovery of an Ipswichian interglacial stream deposit at Maxey (French 1982, 593-598) sandwiched between gravels gives an approximate *ante quem* date for the deposition of the uppermost river terrace gravels. It also indicates the existence of a once braided and meandering river system across the valley floor. Certainly in historic times the River Welland has had several meandering courses between Uffington and Market Deeping. The area has now been stabilized by the Maxey Cut which diverts some river water along the course of a former meandering channel system between Maxey and Etton.

Where the River Welland crosses the gravel terraces with diminished gradient, alluvium has been deposited in former channels or on shelves cut into the gravels (Figs. 3,4; Burton 1981). This alluvium is up to *c.*1.5m thick, and consists of brown or grey non-calcareous clay and silty clay.

To the north of the lowland terraces is an upland area with an array of Oxford Clay, Kellaways Sand and Cornbrash. To the south there is an upland area which

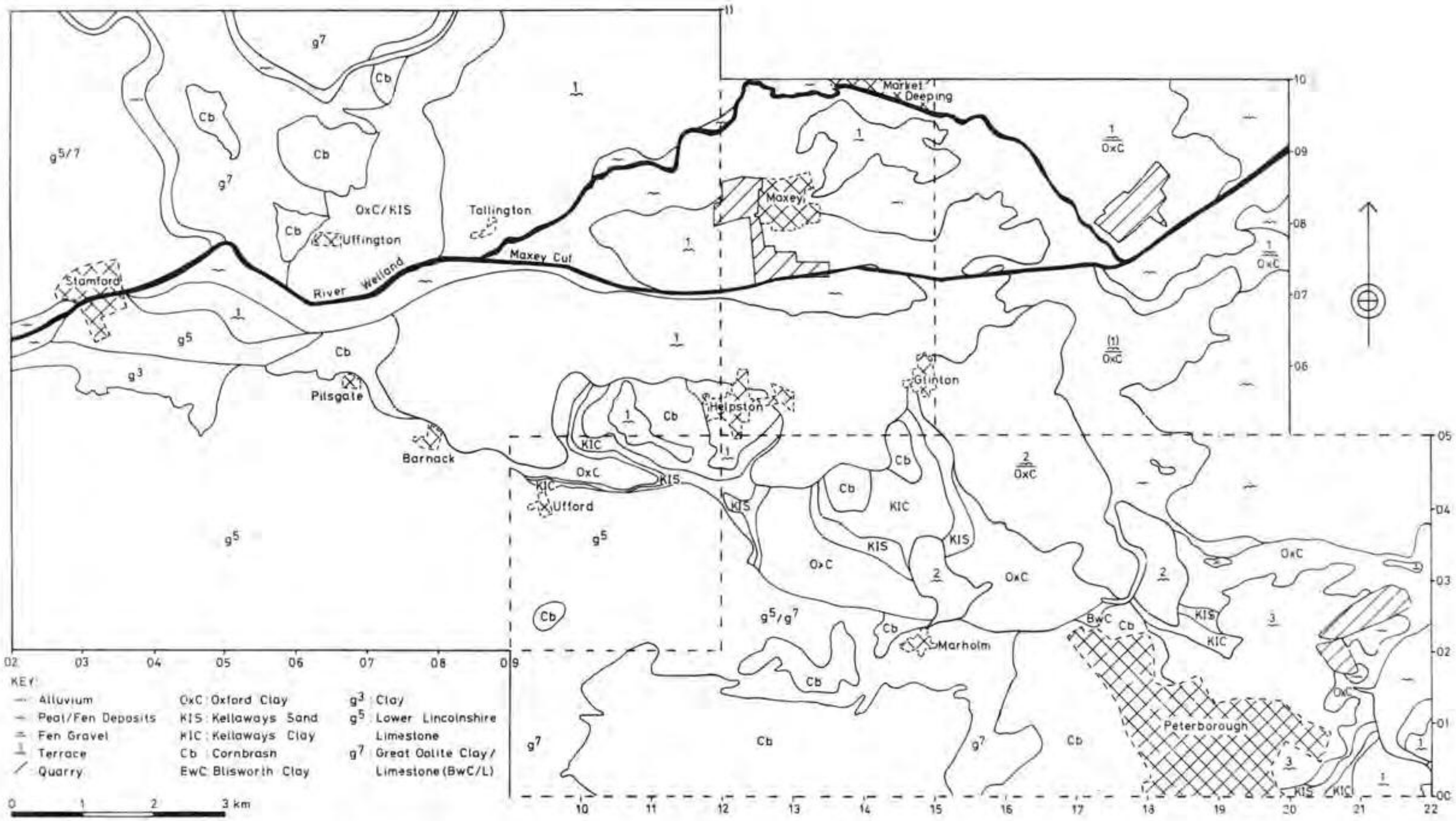


Fig.4 Geology of the lower Welland valley and the Fen margin (parts of Sheet 157) *(By permission of the Director, British Geological Survey, Crown copyright reserved).* Scale 1:10,000.

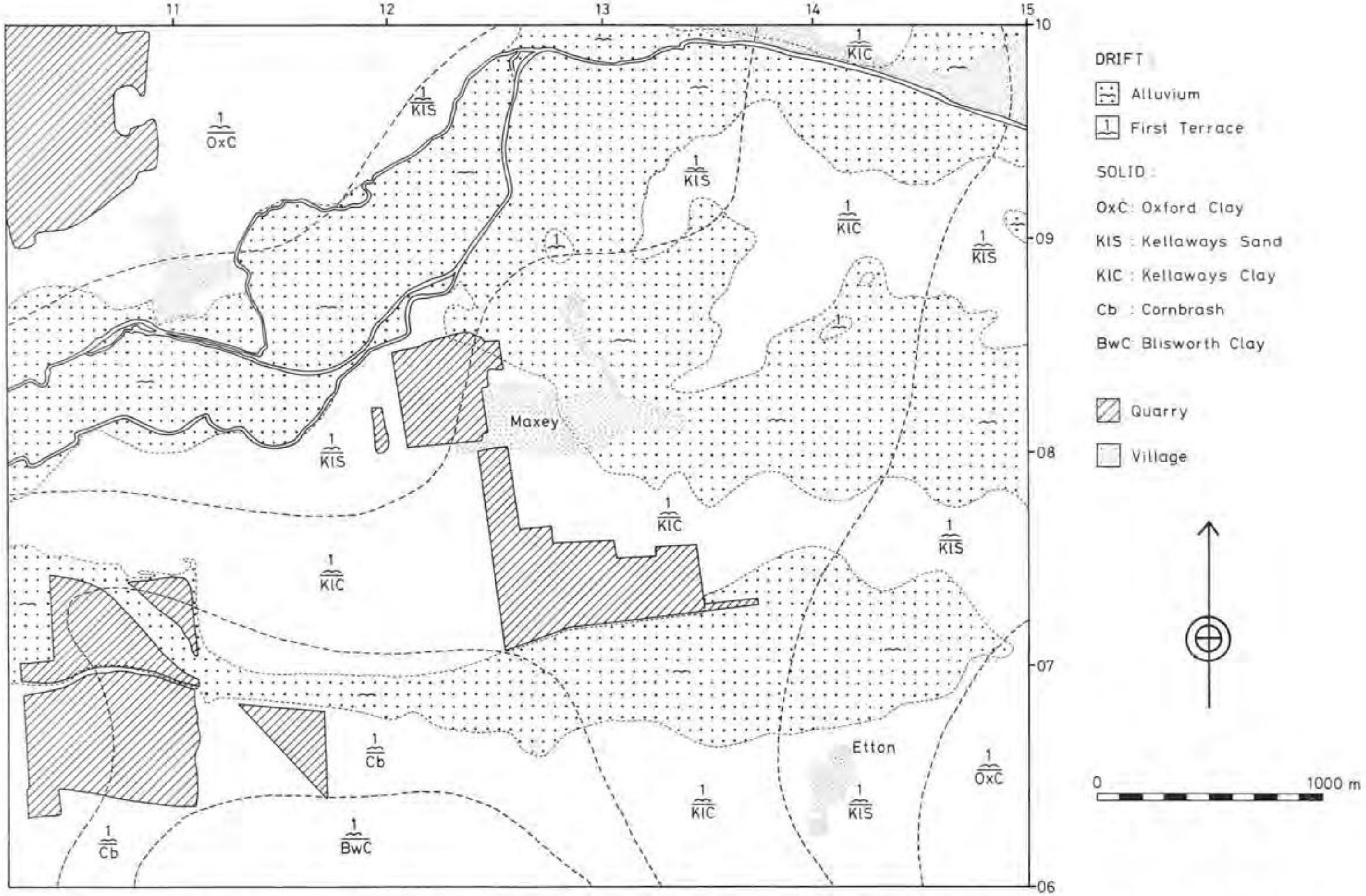


Fig.5 Soil and drift geology of Maxey parish *(by permission of the Director, British Geological Survey, Crown copyright reserved).* Scale 1:7500.

also represents part of a broad outcrop of rocks of Jurassic age. Lower Lincolnshire Limestone is the predominant substrate, although between Ufford, Marholm and across the north side of Peterborough a mixture of Oxford Clay, Kellaways Sand and Clay and Cornbrash appears. These Jurassic rocks are covered by relatively thin deposits of drift, laid down during the Pleistocene and more recent times. These include isolated remnants of chalky boulder clay laid down by the ice of the Wolstonian glaciation; glacial sand and gravel probably laid down as an outwash from the ice of the same glaciation; and head or undifferentiated locally-derived, solifluced material deposited in a cold climate. There are also some Holocene drift deposits of peat, tufa and alluvium in the small upland valleys (Burton 1981).

To the east along the Fen margin are the 'skirtlands'. They are mineral soils of any type which were previously covered by peat and/or alluvial deposits (R.Evans, pers. comm.). The upper edge of the 'skirtland' probably represents the medieval Fen-edge (Hall 1981).

At the beginning of the post-glacial period, the Fen basin was dry land comprised of Jurassic deposits, mainly Oxford Clay, and Cretaceous formations in the south, mainly chalk and sand, with glacial clays and gravels overlying these in many places. The surface geology and soils probably differed little from the adjacent uplands, although the basin contained a number of low knolls which are now the fen 'islands' and the rivers probably had narrower floodplains than at present (Perrin and Hodge in Steers 1965, 68-84). In some of these deep river valleys peat may have been forming from the late Devensian onwards, as both Mesolithic and Neolithic artefacts have been found in peat below the Fen Clay at Shippea Hill (Clark and Godwin 1962, 10-23).

Prior to the relatively recent drainage of the Fens, the Fen basin has been subject to a succession of events including the growth of peat, the incursion of marine deposits and the deposition of alluvium (see Godwin 1975; Hall 1981). Major causes of these events include the gradual rise in the post-glacial sea level and the consequent ponding-back of freshwater borne by the rivers of the area. Peat shrinkage and wastage since the 17th century AD drainage operations are now revealing mineral soils over wide areas of former fen, as well as the now infilled former watercourses which are left up-standing as 'rodhams' or banks of raised silt and fine sand (Chatwin 1961; Hall 1981).

Soils (Fig. 6)

The soils of the lower Welland valley fall into two major groups—those of the river terraces (Figs. 3,6) and those of the upland. River and Fen-edge gravels and alluvium have accumulated on an irregular clay surface by the glacial and post-glacial predecessor of the modern Welland river, flowing into a sea which is now occupied by fen peats and clay deposits. These sand and gravel deposits are masked by from *c.*30cm to 100cm of non- or slightly calcareous, coarse or fine loamy drift which gives the main characteristics of the soils. Soils of the Badsey, Deeping and Sutton series are the most common on the river terraces of the valley. Also, the changing course of the Welland river has deposited different thicknesses of silty and clayey alluvium in channels and shelves eroded into the gravels. Soils of the Fladbury thick and thin phases are found on the alluvium (Burton 1981).

The upland soils, or those above *c.*30m OD are developed directly on the weathered mantle of the solid Jurassic rocks, in drift derived from them or in glacial deposits. Soils in drift in the upland area are confined to valleys and on boulder clay and glacial gravels. The upland is dominated by the Sherbourne series, with areas of the Denchworth/Evesham/Long Load/Ragdale series and the Lawford/Papworth/Rowsham series. Patches of the Banbury clayey variant, Frilford and Langley series also occur (see Ordnance Survey soil map of Barnack, or parts of sheet TF 00/01) (Burton 1981).

Pelo-alluvial gley soils of the Fladbury series occur on the alluvium in the Welland valley. The Neolithic causewayed enclosure near Etton is situated on river terrace deposits covered by alluvium. The soil developed in the alluvium consists of stoneless, dark greyish-brown silty clay or clay which has a moderately developed sub-angular blocky to prismatic structure. It is gleyed as a result of slow permeability and a high winter/spring groundwater-table. It is non-calcareous throughout (Burton 1981, 112-115).

Typical brown calcareous earths of the Badsey series cover the greater part of the terrace gravels. The large cropmark sites at Maxey and Barnack/Bainton are situated on these loamy soils although the Barnack/Bainton site has a slightly less permeable variant. They may be fine or coarse loamy, which may or may not be decalcified. Their composition varies from clay loam to sandy clay loam, sandy loam and silt loam. In structure they are becoming weakly developed with depth and display a medium sub-angular blocky structure. Gleying is absent, and these soils are permeable and well-drained (Burton 1981, 105-110).

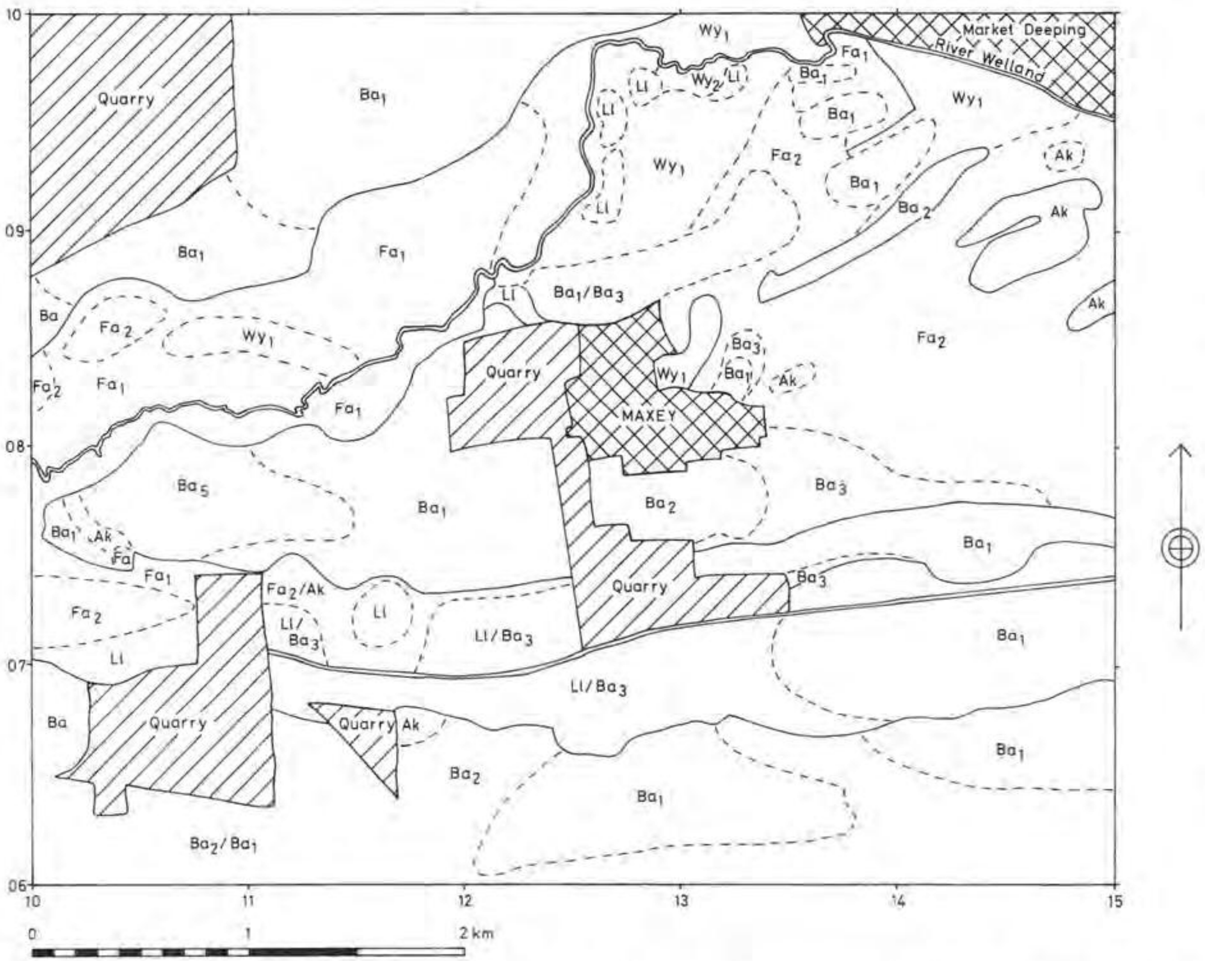
On the limestone upland to the north and south of the terrace gravels brown rendzina soils of the Sherbourne series predominate. They are generally dark brown clay loams or sandy clay loams, which display a moderately to strongly developed medium sub-angular blocky structure. These soils tend to be shallow and well-drained (Burton 1981, 58-64).

There are also considerable areas of stagnogley soils of several series including the Denchworth, Ragdale, Papworth and Langley series. These soils are dark greyish-brown, high clay content soils with a sub-angular blocky structure which exhibit gleying. They are found on Jurassic clays, especially Kellaways Clay, Blisworth Clay and Oxford Clay. There are also smaller areas of ferritic brown earths of the Banbury clayey variant and brown sands of the Frilford series.

The soils of both the river gravel terraces and Jurassic upland are principally used for arable cultivation today. They offer only minor to moderate limitations that reduce the choice of crops, interfere with cultivation, or demand special land management. Once onto the peats of the Fen basin, there are few limitations to land-use.

Previous environmental research (Fig. 7)

Unfortunately the intensity of purely archaeological research in the region has not been matched by integrated environmental study. Rather, the emphasis has been on Fen environments, succession and sea level changes to the east (Skertchly 1877; Skertchly and Miller 1878; Clark 1933; Godwin and Clifford 1935; Godwin 1940; Darby 1940; Willis 1961; Clark and Godwin 1962; Jelgersma 1966; Bromwich 1970; Churchill 1970;



Key to the Soils of Maxey Parish

	Soil Survey	Sub Group	Lithology	Soil Series	Phases
Wy	Brown Alluvial Soils	Gleyic brown Alluvial soils	Clayey - smectitic riverine alluvium	WYRE	
Ll		Typical brown alluvial soils	Clayey over loamy riverine alluvium over drift [river terrace deposits]	LOLHAM	Thin
Ba_1 Ba_2 Ba_3 Ba_5	Brown Calcareous Earths	Typical brown calcareous earths	Loamy over sandy skeletal drift [glaciofluvial or river terrace] with limestone gravel	BADSEY	Ba_1, coarse, loamy; Ba_2, fine, loamy; Ba_3, decalcified, coarse, loamy; Ba_5, alluvial
Fa_1 Fa_2	Alluvial Gley Soils	Pelo-alluvial gley soils	Clayey - smectitic riverine alluvium	FLADBURY	Fa_1, thick; Fa_2, thin
Ak	Gley Soils	Gley soils with clay substrate	Loamy drift with Gault, or Jurassic clays	ALDRETH	

Fig.6 Soils of the river terraces in the parish of Maxey *(by permission of the Soil Survey of England and Wales, Crown copyright reserved).* Scale 1:3000.

Phillips 1970; Piggott 1972; Godwin and Vishnu-Mittre 1975; Godwin 1975, 1978; Gallois 1979). Principal among these works are the studies of Godwin and Clark on Fenland succession associated with prehistoric settlement at sites such as Shippea Hill (Clark 1933, Clark and Godwin 1962) and Whittlesey and Trundle Meres (Godwin and Vishnu-Mittre 1975) (which is discussed below), and the study of Roman settlement in the Fens by the original Fenland Research Committee (Phillips 1970).

Although the general sequence of succession in the Fen basin has been discussed in great detail elsewhere (see Godwin 1975), the sequence of deposits and events at Holme Fen, Trundle and Whittlesey Meres (Godwin and Vishnu-Mittre, 1975) requires a closer inspection. This is the only available pollen/stratigraphical study of wider relevance to the Fen-edge study area to the north-west. The general stratigraphic sequence consists of a basal wood peat, followed by a eutrophic *Phragmites-Cladium* dominated fen, which later became an oligotrophic raised bog dominated by *Sphagnum, Calluna* and *Eriophorum*. At Holme Fen the first temporary forest clearance occurred *c.*3000 bc. It was marked by the first decreases in elm and lime pollen, and the earliest indications of agricultural activity. Shortly thereafter, the Fen Clay was deposited in Whittlesey Mere (*c.*2500 bc); it was prevented from spreading into Holme Fen and Trundle Mere by the raised bog growing in these areas.

A more pronounced, but brief, episode of clearance occurred in the Middle Bronze Age, *c.*1450 bc. There were three peaks of the pollen of cereals, *Centaurea*, Chenopodiaceae, Compositae and Urticaceae. It has been suggested that pasture tended to succeed arable land during this clearance episode. Furthermore, this episode was marked by two thin layers of clay bracketing the clearance horizon. They represent freshwater flooding containing material that probably resulted from soil erosion as a result of clearance on the upland to the north- west. These episodes appear to have been short-lived, and the forest soon healed over. A similar Middle Bronze Age clearance horizon was detected at nearby Trundle Mere, although the pollen in this case may have originated from more distant sources. It also indicated a greater element of pasture.

The Late Bronze Age witnessed the most extensive scale of clearance and agriculture around 1000 bc. The fall in hazel, the large increase in bracken, more than 10% cereals and *Plantago* over 60% suggest mixed agricultural practices with secondary tree growth being prevented. A similar extensive clearance episode occurred at Trundle Mere slightly later, around 800 bc. In Whittlesey Mere, the pollen sequence in the upper peats was similar to the other two sites, with both Bronze Age clearances detected. About this time, Whittlesey Mere was subjected to a marine transgression that caused the shell marls to form, which may have begun as early as *c.*1000 bc.

Turning to the Fen-edge, the prehistoric and Roman period sites at Fengate on Nene First Terrace gravels have produced both faunal and palaeobotanical evidence. It is suggested that the 2nd millennium bc field system probably represents an economy based on the keeping and rearing of cattle which involved the seasonal rotation of pasture in the fens and on the Fen margin (Biddick in Pryor 1980a, 217-232: Pryor 1980b). Palaeobotanical analysis has suggested that cultivation may have been relatively more important in the earlier Bronze Age than for the remainder of the period, but pasture and meadow predominate. Certainly, the overall paucity of cereals and only minor indications of on-site processing suggest that Fengate's corn supplies were brought in ready-threshed from farms further inland. Also, at four or possibly five stages during the Bronze Age, there may have been a strong localised development of woods and hedges, which may possibly be linked with variations in the use of the droveways and the upkeep of hedges flanking them (Wilson 1980; 1983).

The molluscan evidence from the ditches of the Bronze Age field system suggested the presence of generally open ground in the immediate vicinity. But conditions were becoming damper and possibly weed covered when the ditches were abandoned; a process which may have culminated with the localised freshwater flooding horizon on the Fourth Drove subsite around 1000 bc (French in Pryor 1980a, 210-212).

At the Cat's Water subsite, Fengate, the Middle-Late Iron Age saw the establishment of a small nucleated site, which had two further brief periods of occupation on either side of the mid-3rd century AD (Pryor 1983a). The economy again seems to have been dominated by cattle (Biddick in Pryor 1983a). Although the evidence for the predominance of grassland continues in the palaeobotanical record, there are more seed taxa and species of arable land and wasteground. Weeds were probably more abundant from the Late Iron Age onwards and cultivated plants became more important in the Late Iron Age and Roman periods (Wilson 1980; 1983). The molluscs indicate freshwater slum conditions in the ditches. The site may have become increasingly damper as the Late Iron Age progressed, and there was an early/mid 3rd century deposition of alluvium over most of the site, which was probably due to freshwater back-up (French in Pryor 1983a).

For other evidence in the Nene valley, one must turn a considerable distance inland to the upper Nene in Northamptonshire. In particular, there are four molluscan analyses from four Iron Age sites in upland settings and on relatively poorly draining subsoils. The molluscs in the buried occupation surface on the inside edge of the enclosure bank at Brigstock (Jackson 1979) represents an impoverished shade-loving fauna dominated by *Discus rotundatus*. The virtual absence of open-country species (4%) indicates that there may have been woodland in the vicinity of the site. As there was no occupation of the site thereafter, wooded conditions may have returned to the site after abandonment (French forthcoming).

The evidence at Hardwick Park and Blackthorn is of a different nature. At Hardwick Park five-banded forms of *Cepaea nemoralis* dominated the main enclosure ditch fill, thereby indicating an environment of open grassland with no period of shading during the infilling of the ditch (Evans in Eveson 1976, 97-98). At the slightly later site at Blackthorn, the banded morphs of *C.nemoralis* also predominate (80%). This again indicates an open grassland environment, and the virtual absence of scrub and woodland for at least *c.*100m around the ditch (Evans in Williams 1974, 63). An open-country fauna was also found in the Iron Age ditch at Rainsborough (Evans 1967, 300). Considered together the evidence from these sites suggests a considerable opening-up of upland,

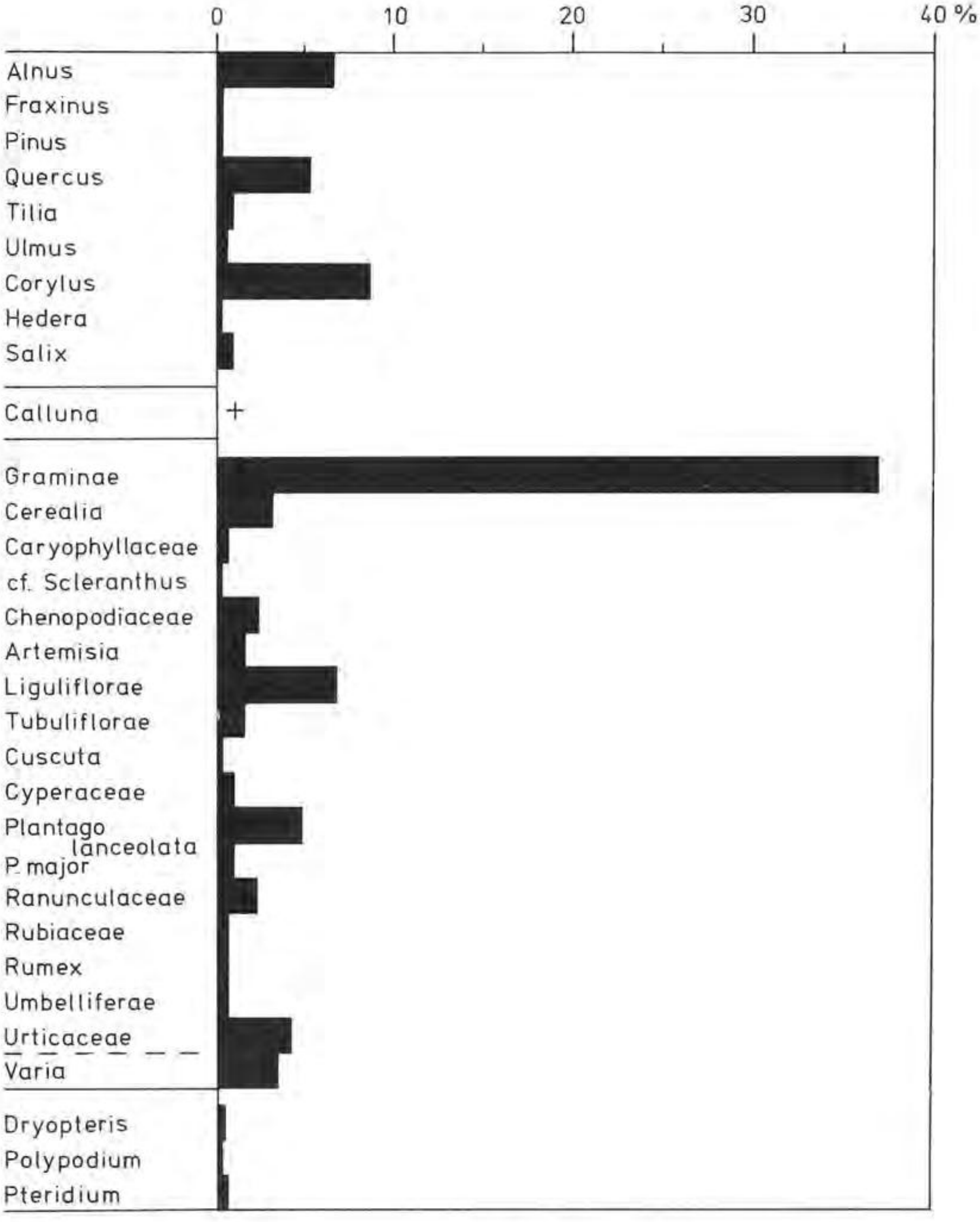


Fig.7 Pollen histogram (relative percentages) for a Late Bronze Age pit at Tallington, Lincs. (G.W.Dimbleby, unpublished).

poorly-drained subsoil areas, at least on a localised scale, although not necessarily permanently, in the Middle/Late Iron Age.

Turning to the adjacent lower Welland valley there has been even less environmental work, and what little there is comes from the Maxey area. A previously unpublished pollen analysis by G.W.Dimbleby of material from a Late Bronze Age pit excavated by Peacock (1962) at Tallington, and the published pollen analysis of material from a pit at Tallington (West Deeping) Site 51 (Dimbleby in Simpson 1966) provide some corroborative evidence. It is now thought that the latter site may well be of late Roman date, rather than the Iron Age/early Roman date originally suggested. The results are presented in tabular form, both absolute counts and relative percentages of each taxa or species (Table 1), and as a relative histogram (Fig. 7). The pollen analysis of a Neolithic pit at Maxey by Dr J.R.Pilcher is described in Chapter 3 (below) by W.G.Simpson.

The pollen analysis from Tallington (Fig. 7), *c.* 1km north-west of Maxey, indicated a relatively open environment, although there is still a slight background of some woodland. Tree pollen comprises 23.2%, with hazel (8.7%), alder (5.8%) and oak (5.2%) as the most

Taxa/Species	Count	%	APF
Alnus	18	5.8	840
Fraxinus	1	0.3	47
Pinus	1	0.3	47
Quercus	16	5.2	747
Tilia	3	1.0	140
Ulmus	2	0.6	93
Corylus	27	8.7	1260
Hedera	1	0.3	47
Salix	3	1.0	140
Calluna	+	+	+
Gramineae	115	37.1	5367
Cereal	10	3.2	467
Caryophyllaceae	2	0.6	93
cf. Scleranthus	1	0.3	47
Chenopodiaceae	7	2.3	327
Comositae:			
Artemisia	5	1.6	233
Liguliflorae	21	6.8	980
Tubuliflorae	5	1.6	233
Cuscuta	1	0.3	47
Cyperaceae	3	1.0	140
Plantago lanceolata	15	4.8	700
P. major	3	1.0	140
Ranunculaceae	7	2.3	327
Rubiaceae	2	0.6	93
Rumex	2	0.6	93
Umbelliferae	2	0.6	93
Urticaceae	13	4.2	607
Varia	11	3.6	513
Dryopteris	4	1.3	187
Polypodium	1	0.3	47
Pteridium	8	2.6	373
Total	310		14,467
Soil weight (g)	2.0		

Table 1: Pollen count and relative percentages for Tallington Pit II (G.W.Dimbleby).

common species. By this period pine, ash, elm and lime are almost unrepresented. Grasses predominate (37.1%), although the cereal pollen (3.2%) is relatively high. Herbs constitute 26.3%, with *Plantago lanceolata* (4.8%) and *P.major* (1.0%) present as minor elements. The former species is an indicator of grassland on neutral and basic soils, whereas the latter species is rarely found in grassy places and much prefers farmyards or cultivated ground (Clapham *et al.* 1962).

In contrast, at the later site at Tallington (West Deeping), *c.*1km to the north of Maxey, the tree pollen count has decreased to a mere 7%. Willow, oak, hazel, ash and birch are represented in very low numbers. The grass pollen count has increased to 46.8%, as has the proportion of herbs to 32.4% and *plantago* (undifferentiated) to 7.7%. Again, the cereal pollen count is relatively high (3%) (Dimbleby in Simpson 1966).

Both pollen analyses suggest several tentative conclusions. Although the area was largely open by the Late Bronze Age, by the Roman period the area was significantly open territory. Moreover, the composition of the tree cover has changed with a decrease in oak and hazel, no alder at all, and a slight increase in willow. Both pollen counts reflect the importance of pasture and therefore livestock in the valley. They also suggest that some cultivation was probably occurring in the vicinity, either upstream and/or on higher ground to the west and south-west (Dimbleby in Simpson 1966).

Lastly, Evans (1972, 346-349) examined a 1st/2nd century AD Roman enclosure ditch for molluscs at Maxey site OS 124 (R.C.H.M. 1960). The primary fill was devoid of shells, as was the overlying black organic mud. The fauna of the gleyed upper secondary ditch fill was dominated by freshwater slum species, indicating that the ditch was sufficiently waterlogged to allow at least temporary standing water in the ditch, and sufficiently undisturbed to permit the growth of reeds and rushes above the water. The land species present are generally indicative of open habitats, and probably suggest a lack of dense growth of trees and shrubs along the sides of the ditch.

III Previous Archaeological Research

by Maisie Taylor

Introduction

One of the principal pleasures of carrying out the valley transect survey, discussed in the next part of this chapter, was meeting local residents and discussing archaeology with them. These casual meetings led to the formation of an active *Friends of the Welland Valley* group. Many of our *Friends* first discovered the extraordinary ancient history of their area through the activities of the original Welland Valley Research Committee, but had lost touch with the subject in the interim. The last ten or fifteen years have also seen the publication of a large number of final, interim and smaller reports that are directly relevant to many of our *Friends*' personal interests—in some cases because they either own, farm or have recently acquired the sites in question. We have frequently been asked to include a brief history of the archaeology of the region in the final report, with an annotated guide to the literature. This then is our response to those requests.

A brief history of previous archaeological research (Fig. 8; Table 2)

The story of the beginnings of recent archaeological work in the region may be gleaned from the minutes and bulletins of the (now defunct) Welland Valley Research Committee. This recent work appears to have begun with a one-day conference held in Stamford on March 23rd 1957, to consider 'Archaeological Sites in the Welland Valley'. It was at this conference that Mr H.C.Bowen reported that the Royal Commission on Historical Monuments had begun a detailed survey of the gravel-bearing lands of the Welland Valley (R.C.H.M. 1960). The main task of the Commission was to map, and to attempt a classification of the sites, as revealed by cropmarks (for a straightforward introduction to aerial photography see Riley 1983). It was unanimously agreed at this conference that a recommendation should be made to the Council for British Archaeology to form a Standing Committee, whose task would be to co-ordinate a programme of rescue excavation, as well as longer term investigations; it would also ensure the publication of results. It was recommended that Mr (now Professor) M.W.Barley should be Chairman, with Mr K.R.Fennell as Secretary. However, as there was no organised body of local people who were archaeologically active on a scale that was adequate to meet the threat posed by the gravel pits, it was decided to approach the Extra-Mural Department of Nottingham University for assistance.

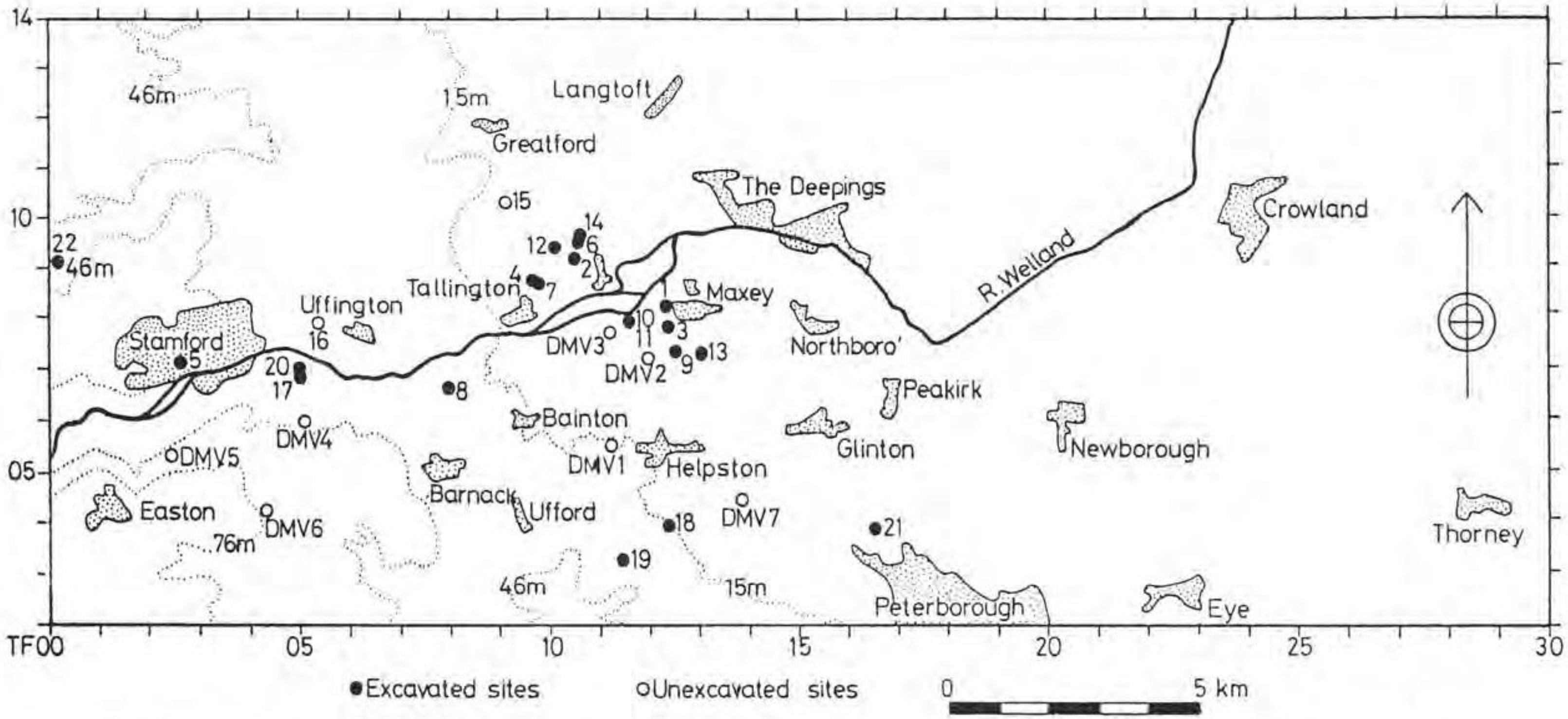


Fig.8 Map of the lower Welland showing location of archaeological sites mentioned in the text (listed in Table 2). Scale 1:160,000.

After the initial conference, Dr R.M.Butler of the Commission drew up a 'Suggested Programme of Research in the Welland Valley'. This was a pioneering and important document that anticipated the relatively recent trend towards stated and published 'research designs', by at least a decade. In it, the overall aim of the research was suggested as being 'to discover the date and purpose of an example of each class of crop marks'. Those sites which were unique or most likely to be destroyed should be examined as a high priority. The classes of cropmarks were defined and set out (a scheme that was used in the larger, published work by Bowen and Butler (R.C.H.M. 1960); these classes included: 'parallel ditches' (cursus), 'unbroken circles' (usually ploughed-out Bronze Age round barrows), 'enclosures' (usually Iron Age or Roman farmyards or paddocks), 'lines of pits' (pit alignments, an unusual form of land boundary, often Iron Age), 'double ditches' (droveways) and 'ridges' (plough headlands). It was also recommended in this paper that professional archaeologists should be used to examine any further expansion of gravel working at Maxey, while amateurs should concentrate on examining the cursus at intervals along its length; amateurs, too should undertake field-walking surveys.

Site	*OSGR*	*Reference*	*Notes*
1	TF 124 081	Addyman and Fennell 1964	Saxon settlement
2	TF 105 091	Jones and Jones 1961	Pit alignments
3	TF 124 077	Alexander 1962	Main henge complex
4	TF 097 087	Fennell 1961	Two ring-ditches etc.
5	TF 033 074	Mahany, Burchard and Simpson 1982	Two Medieval kilns
6	TF 104 094	W.G.Simpson 1966	R-B enclosure
7	TF 097 087	W.G.Simpson 1976	Barrow cemetery
8	TF 080 067	W.G.Simpson 1966	Barnack villa
9	TF 125 074	W.G.Simpson 1967; 1981	Small henge(s)
10	TF 115 079	W.V.R.C. 1964-65	Iron Age site
11	TF 115 079	W.V.R.C. 1964-65	Roman site
12	TF 100 093	W.V.R.C. 1964-65	Late Neolithic site
13	TF 128 073	Powell 1977	Triple ring-ditch
14	TF 107 097	Peacock 1962	Roman settlement
15	TF 091 103	Palmer 1976	Causewayed enclosure
16	TF 054 079	Palmer 1976	Causewayed enclosure
17	TF 049 069	Pryor 1974b; 1981	Bronze Age burials
18	TF 124 040	Challands 1975	Roman villa
19	TF 116 033	Challands 1976	Roman lime kiln
20	TF 050 069	Donaldson 1977	Beaker burials etc.
21	TF 166 039	Mackreth and O'Neill 1980	I.A. and R-B site
DMV 1	TF 111 054	Alison, Beresford and Hurst 1966	Torpel
DMV 2	TF 120 073	*ibid.*	Nunton
DMV 3	TF 111 078	*ibid.*	Lolham
DMV 4	TF 049 061	*ibid.*	Burghley
DMV 5	TF 025 053	*ibid.*	Wothorpe
DMV 6	TF 080 042	*ibid.*	Walcot
DMV 7	TF 138 045	*ibid.*	Woodcroft

Table 2: Key to sites shown in Figure 8.

The C.B.A. formed the Standing Committee—the Welland Valley Research Committee—which initially met about twice a year to report on progress of the fieldwork. This early research was almost entirely carried out by amateurs with the co-operation of the quarry owners. At that time gravel extraction was undertaken by a number of individuals and small firms, and extensive de-watering (the invariable modern practice) was not always carried out. Today large companies own the pits and the rate of extraction is enormous. By 1959, however, Mr Fennell had organised an extra-mural class at Stamford and with this group began the daunting programme of investigations, as outlined by Butler.

In January 1959 it was announced at a W.V.R.C. meeting that the Cambridge University Archaeological Society was to undertake a full-scale excavation in 1960, and that the University had promised assistance of a then rather mysterious kind: 'Professor Grahame Clark had secured an undertaking from Dr Belshé of the Cavendish Laboratory to carry out pre-excavation surveys by new scientific techniques, one of which had not been used before and it was confidently expected that these would reveal features which might elude the spade'. Sad to say that this confidence was misplaced and when the time eventually came, the Minutes of the relevant meeting report that the 'new scientific techniques' could not cope with the thick clay layer which overlay the site. It is gratifying to report, however, that the march of scientific progress is such that the recent project was able to penetrate the overburden with the scientific techniques available to the Ancient Monuments Laboratory (see report by Andrew David, Chapter 2, part I).

It was at this W.V.R.C. meeting that Mr Eric Standen, a long-standing and stalwart amateur archaeologist, was able to tell the Committee that the Gravel Survey had been brought up to date and would be published in March of that year. The publication was the momentous and highly influential volume 'A Matter of Time' (R.C.H.M. 1960) which drew attention to the enormous potential of, and serious threat to, the gravel lands of Britain. It was a work which subsequently led to a renewed interest in lowland archaeology, when hitherto the main thrust of archaeological attention had been towards the less seriously plough-damaged, and usually still upstanding, sites and monuments of the chalklands and other, similar, landscapes. Those of us who lived and worked in the 'lowland zone' realised that we, too, had our equivalents of the great ceremonial sites, such as Stonehenge or Avebury, of the south-west. This led to the view that the two areas could be directly compared: that, for example, the Maxey henges or the cursus, were closely comparable in rôle and function with the better- known sites of Wessex. However the present report, among others, demonstrates that this is not so; our lowland monuments have their own rôle and character.

However, by the meeting of September 1961 it is apparent that the pace is beginning to quicken. The Pilgrim Trust had made a grant of £1,000 *per annum,* for two years and the then Ministry of Works had also provided a substantial donation. This meant that the Committee now had an assured income for two years, and it was decided to appoint a full-time archaeologist to begin systematic investigations of the Welland valley. The Committee decided to look for a research worker working in the area, and engaged in research towards a higher degree; this was to be done either through the University at Nottingham, or the Institute of Archaeology in London. Cambridge was approached, but they felt that they were not in a position to help at that time. However, despite the distance from the region, Professor Grimes offered the facilities of the Institute of Archaeology, and thereby began a close association which continues to this day. It was decided to advertise for a research worker to begin early the following year. Various appeals for funds were launched, some of which have a very contemporary ring to them, 'No member of the Research Committee felt very optimistic about the success of any appeal, particularly having regard to the present economic climate.' The Committee also heard at this meeting that Mr and Mrs Jones had carried out emergency excavations at Tallington (Fig. 8, site 2), for the Ministry of Works, and that the preliminary report had been received (Jones and Jones 1961).

Early in 1962 applicants were interviewed for the post of Research Assistant for the Welland Valley and on 3rd July it was reported that Mr W.G.Simpson had been appointed. By this time over £1,000 had been raised from the public appeal suggesting, perhaps, that the public in the area was able to see beyond the immediate 'economic climate'; further grants were also made by the Pilgrim Trust. Negotiations were also under way with Birmingham Museum who were subsequently to make donations in return for archaeological finds (discussed further below).

A full-time foreman was appointed to assist Mr Simpson, at a rate of £10.00 per week and temporary assistance was to be sought from amongst graduates and undergraduates, also at a rate of £10.00 per week. Volunteers would also be employed when they were needed at a rate that was not to exceed 10/- a day, with up to £2.00 towards the cost of travelling to the site. It is apparent from this that, even by today's standards, the operation was on a large scale. Once the practical arrangements had been sorted out it was decided to make an immediate start at Maxey, on the henge complex discussed in this report (Chapters 2 and 3). At another meeting later that year Dr John Alexander was able to present his report of the work already carried out on this complex (Fig. 8, site 3; Alexander 1962, also discussed by Simpson, below, Chapter 3). Efforts were to continue to concentrate on Maxey until sites became available at Tallington. Meanwhile a dragline was hired to strip the site at Maxey. As the bitterly cold winter of 1962/3 began, work had started on three sites: the henge complex at Maxey; a small ring-ditch at Tallington and a 13th century pottery kiln in Stamford (Fig. 8, sites 3,4 and 5, respectively). The work at Stamford came about because the extremely cold weather restricted the planned fieldwork. Work had also begun planning and examining various features, mostly Romano-British, which were appearing in the Tallington pit (Fig. 8, site 6). At this point the reader should refer to the Introduction of Gavin Simpson's report (Chapter 3, below) for the subsequent history of excavation at Maxey.

In January 1963 the W.V.R.C. heard that Birmingham Museum had made a donation of £150 to the excavations. In return, the Committee would give the finds from one site to the Museum, although they could not guarantee that they would be of displayable quality. Later that year the Committee was showing signs of concern that rescue excavation was taking preference over the research priorities (a problem familiar to anyone who has actually to witness the destruction of sites). For this reason it was decided that excavation should begin on a supposed henge at Tallington (Fig. 8, site 7). Thus the summer programme of excavation in 1963 consisted of three main projects: Mr Peter Spring was to supervise the work on the central ring-ditch of the henge complex at Maxey; Mr Don Benson was to supervise the complete stripping of a Roman enclosure in DowMac's pit at Tallington (Fig. 8, site 6) and the Tallington 'henge' site, just mentioned, would also be investigated. This site, however, would not be available again until 1965 and it was therefore determined that the relationship of the 'henge' and the small barrow which adjoined it should be examined (for a full report see Simpson 1976). It also proved possible to look at a section of the cursus at its western end, when a pipeline was laid at West Deeping.

The W.V.R.C. report for 1963/4 mentions yet another site, this time at Barnack. The site in question is the villa (Fig. 179 bottom right; Fig. 8, site 8), where a barn is reported as having been completely excavated, among other features (see also Simpson 1966). The report for 1963/4 ends by outlining future plans of the Committee, which include a full season of excavation until the end of 1965. The Committee stresses that although Mr Simpson will be finishing fieldwork and beginning post-excavation research, the extraction of gravel will continue. The rate of extraction, moreover, was expected to increase and it was stressed that the next twenty years would see rapid destruction of huge areas of the gravel terrace cropmark sites. In view of this, it is sad indeed that no large-scale or co-ordinated work took place at the gravel pit sites until the inception of the Welland Valley Project, in 1979. The intervening fifteen years saw the rapid expansion of gravel extraction and the consistent, wholesale extraction of aggregates necessitated by the expansion of Greater Peterborough and the motorway and civil engineering 'boom' of the 1970s.

The final season of excavation under the auspices of the old Committee, was on a larger scale than hitherto. The final W.V.R.C. Report, for 1964-5 outlines the work. By far the best-known site is the small group of henges to the south of the large henge complex discussed in the present report (Fig. 15, No. 69; Fig. 8, site 9). This remarkable site produced carved and painted bone and antler objects, now in Peterborough Museum and has been fully reported by Simpson (1967; 1981). Main efforts, however, were concentrated on an Early Bronze Age ring-ditch site at Tallington (Fig. 8, site 7), while at Maxey two other sites were investigated: and Iron Age settlement (Fig. 8, site 10) and a Roman farmstead (Fig. 8, site 11). North of the Welland, in Lincolnshire, a Late Neolithic site was excavated at Barholm (Fig. 8, site 12; Pryor 1978, 95).

A guide to the archaeological literature

This guide will pay particular attention to reports that are still in manuscript form, or to those that were produced on a small scale for local use. These are invariably the most difficult to obtain. We will mention more readily available publications in brief. The guide is arranged, chronologically, in order of publication or production. The literature discussed refers to rural sites alone; for urban sites and references the reader should consult Mahany, et al. (1982).

1960 *A Matter of Time* (*ref.*: R.C.H.M. 1960)

The original nation-wide survey of gravel sites, discussed above. The basis on which all recent work in the region is founded.

1962 *Excavations at Maxey Dec. '57-Jan. '58* (*ref.*: Alexander 1962) (Fig. 8, site 3). This report is mentioned above, and by Simpson, Chapter 3, below. Trenches were dug across the two rings of the large henge (*Fig. 15,* No. 59) subsequently excavated by Simpson and the Welland Valley Project. Dr Alexander's trenches cut the south cursus ditch in three places, but the north ditch could not be located (it was very faint on aerial photographs at this point). The south ditch was 10ft wide, with rounded profile not more than 2ft deep, and cut into the gravel. There was no trace of a bank. A second section through the south cursus ditch between the two rings was closely similar to the first, but was cut deeper into the gravel and had more gravel in its upper fill. A third section close to the point where the south cursus ditch intersected the outer henge ditch, was again similar, but less deeply cut. No finds were recovered fom the cursus trenches. Four trenches were cut through the outer henge ditch which proved to be wide (about 8ft) and shallow (about 2ft), and was cut into the gravel. No evidence for a bank was recovered and there were no finds from primary contexts. At one point the ring-ditch cut the cursus (Fig. 169, top) which was probably 'considerably earlier', as the cursus ditch was completely filled-up. The inner ring-ditch was 10ft wide, but more irregular in profile than the outer. Two or three feet from the inner edge of this ditch there was the beginnings of a mound of black, clayey loam which Dr Alexander (correctly, it would now appear) thought might represent the edge of a turf bank. There were a few finds from the inner ditch: part of a red deer antler, a plain sherd and a heavily patinated flint blade.

1961 *Excavations at OS 38, Tallington* (*ref.*:Fennell 1961) (Fig. 8, site 4)
Excavations under difficult circumstances of two ring-ditches, probably Bronze Age, Iron Age pits and a pit-alignment accompanying a ditch; the pit-alignment was thought to be Iron Age in date, and back-filled shortly after excavation (for a discussion of local pit-alignments see Jackson 1974).

1961 *Interim Report on Tallington* (*ref.*: Jones and Jones 1961) Fig. 8, site 2)
The site was revealed by earthmoving prior to gravel extraction and did not show-up on aerial photographs. The excavations lasted one month and were fraught with difficulties: the site had lain open for two months prior to excavation and features were barely visible. The main component of the site was a double pit-alignment, but a large pit (containing Romano-British material) and a plough headland were also examined. The pottery from the pit alignment was of probable Iron Age date.

1961 *A Roman Site at Tallington* (*ref.*: Peacock 1962) (Fig. 8, site 14)
The site consisted of a post-built round house within ditched enclosures or yards. Large gravel quarry pits, probably associated with the building and yards were still waterlogged and contained pottery (3rd and 4th century), a bricklayer's trowel, fragments of shoes, an altar, a pewter plate and fragments of a rotary quern. Other pits produced a bronze bowl and fragments of fine basketry.

1964 *Dark Age Settlement at Maxey* (*ref.*:Addyman and Fennell 1964) (Fig. 8, site 1)
This site, excavated in 1960 and published in 1964 lies immediately north of Maxey High St.

1966 *Deserted Medieval Villages of Northants.* (*ref.*: Allison, Beresford and Hurst 1966) (Fig. 8, DMV 1-7)
The Welland forms the county boundary today between Lincs. and Cambs.; before reorganisation it separated Lincs. from Northants. (formerly the Soke of Peterborough in our area). This book discusses many sites in the region, including the village of Torpel, near Bainton (Fig. 8, DMV 1) which seems to have been abandoned in the 16th century, after a period of prosperity in the 13th. Nunton (DMV 2), near Maxey, had eleven taxpayers in 1524, but only four in the 18th century. Lolham (DMV 3), near Maxey was originally taxed with Nunton and Maxey, and survived until the 17th century. Present-day Maxey church is located at the juncture of the three parishes (D.N.Hall, pers. comm.). The village of Burghley (DMV 4) had eleven families in 1086, but by 1674 there was just one house (it did, however, contain seventy hearths). The village of Wothorpe (DMV 5) was also destroyed in the contruction of Burghley Park and dower house (also called Wothorpe). The present site of Walcot Hall, just outside Barnack, is also the site of a DMV (6). Woodcroft (DMV 7) was taxed with Etton and was thriving in the 14th century, but had disappeared by the 17th.

1966 *Romano-British Settlement on the Welland Gravels* (*ref.*: Simpson 1966)
This paper reviews Romano-British and later Iron Age sites revealed by aerial photography and mapped in *A Matter of Time.* Three types of monument are mainly represented: ditched droveways, rectilinear enclosures and boundary works. It is essential reading for anyone interested in these later periods in the area.

1967 *Three Painted Objects from Maxey* (*ref.*: Simpson 1967) (Fig. 8, site 9)
The first announcement of the objects from the small Maxey henges (final report, Simpson 1981; location Fig. 15, no. 69).

1970 *Gazeteer of Prehistoric and Roman sites and finds* (*ref.*: Brown 1970)
This paper publishes survey work in the upper Welland valley in Northants. and provides a useful account of the archaeology of the region's upland.

1970 *Air Reconnaissance: recent results 20* (*ref.*: St. Joseph 1970) (Fig. 8, site 16)
The discovery of the Uffington causewayed enclosure (OS grid ref. TF 091 103) (see also Palmer 1976).

1974 *Two Bronze Burials at Pilsgate* (*ref.*: Pryor 1974b) (Fig. 8, site 17)
Two early Bronze Age burials, now dated by radiocarbon (Pryor 1981). Unusually, the two burials are not under a barrow.

1975 *The Roman villa at Helpston* (*ref.*: Challands 1975) (Fig. 8, site 18)
This paper brings together the uncoordinated work on this villa from 1828 until the late 1960s. The paper includes a plan of the building.

1976 *A Roman Lime Kiln at Helpston* (*ref.*: Challands 1976) (Fig. 8, site 19)
A well-preserved Roman kiln near Helpston (height nearly 2.50m).

1976 *The Manor and Deer Park at Torpel* (*ref.*: F.Crowther 1976) (Fig. 8, DMV 1)
One of the DMVs mentioned in Allison, *et al.* (1966), and discussed briefly above. The paper includes plans of the manor earthworks and the Medieval deer park.

1976 *A Multiple round barrow at Barnack* (*ref.*: Donaldson 1976) (Fig. 8, site 20)
Interim report on site published in final form (Donaldson *et al.* 1977).

1976 *Barnack Grave Group* (*ref.*: Kinnes 1976) (Fig. 8, site 20)
Interim report on the grave goods, published in final form (Kinnes in Donaldson *et al.* 1977).

1976 *Anglo-Saxon Cemetery at Baston* (*ref.*: Mayes and Dean 1976)
A small pagan Saxon inhumation/cremation cemetery of 5th/6th century AD date, just outside our study area. The report is comprehensive and illustrates the range of material well.

1976 *Interrupted Ditch Enclosures* (*ref.*: Palmer 1976) (Fig. 8, sites 15 and 16)
This paper includes small plans of the causewayed enclosures at Barholm and Uffington. Etton was discovered after this paper was written.

1977 *Excavation of a multiple round barrow at Barnack* (*ref.*: Donaldson *et al.* 1977) (Fig. 8, site 20)
A highly important Beaker (earliest Bronze Age) burial site, with seventeen inhumations. The primary burial was richly accompanied by grave-goods; burial and finds on display in the British Museum: replicas of finds on show at Burghley House.

1977 *Triple ring-ditch at Maxey* (*ref.*: Powell 1977) (Fig. 8, site 13)
A much-damaged site, excavated at the ballast level (see Crowther, Appendix 4, below). No finds, but three ditches clearly visible. Grid reference in the report is wrong. Site is most probably No. 85 (Fig. 15). For correct grid see Table 2.

1977 *Recent Aerial Photography* (*ref.*: Upex 1977)
The drought of 1976 produced the clearest cropmarks of recent history. Upex, flier to the Nene Valley Research Committee here shows recent discoveries around Etton and Northborough.

1978 *Three Medieval Sites from the Air* (*ref.*: Upex 1978)
An interesting study, but just outside our study area. Illustrates well what can be achieved by aerial archaeologists.

1979 *Barnack 1978-9* (*ref.*: Mackreth and O'Neill 1979)
This site was immediately adjacent to (Fig. 8), site 20, in the same quarry. Features included a pit alignment (probably Iron Age) and near oval ditch with entranceway, possibly Neolithic or Bronze Age. The site was in poor condition and finds were rare.

1980 *Werrington, Iron Age and Roman Site* (*ref.*: Mackreth and O'Neill 1980) (Fig. 8, site 21)
Small settlement of late Iron Age and 'native' Romano-British community, with round buildings within a deep and wide ditched enclosure. The ditch was still waterlogged and produced molluscs which were studied by Dr French (1980). These suggest that the ground water fluctuated in Iron Age times, but that conditions became drier by the 3rd and 4th centuries AD (see also discussion of previous environmental work in the region, above).

1981 *Excavations in field OS 124, Maxey* (*ref.*: Simpson 1981) (Fig. 8, site 9)
The final report on the small henge-like sites south of that described at length in this report; these features produced the well-known bone and antler objects (now in Peterborough Museum). The site also includes Bronze and Iron Age material (Fig. 15, No 69).

This discussion of previous work in the region concludes with two papers that all have a bearing on past research. Challands gives an account of 'ballast level' salvage excavation and recording, and Hall presents some interim conclusions based on recent fieldwork and documentary research in the region.

Excavations at Maxey, 1971 (Fig. 15, Nos. 78, 79, 81-84)
by Adrian Challands

Emergency recording with minimal excavation was undertaken on a group of ring-ditches, centred on TF 1290 0748. The group was located about 500m south of the East Field, of this report, close to the alignment of the cursus south ditch (which was not visible on aerial photographs at this point). The site was reported by Mr K.Morvey, then manager of the Hoveringham Co.'s Maxey pit, after he had noticed dark rings on the freshly scraped light yellow sand and gravel ('ballast') deposits.

Unfortunately the topsoil, B horizon and at least 10cm of the C horizon (or more probably twice to three times that amount—see Appendix IV), had been removed before recording and excavation took place. Consequently the ring-ditches and what other features remained, were very shallow. A little over a week was allowed for recording the features, in an area of 83,000 ft^2 while gravel extraction still continued along the southern edge of the site. In order to hasten planning, Marius Cook, of Leicester University, kindly agreed to record the site by photogrammetry. Of the seven ring-ditches recorded, ranging in *internal* diameters from 12ft 5in to 97ft, only one had what may be taken as a primary cremation burial at the centre of the ring-ditch. Another ring-ditch had two secondary cremation burials, one of which was inserted into the silted ring-ditch. A further three cremations were situated outside the ring-ditch, but apparently respecting it. A double ring-ditch was recorded, although it contained no trace of burial, and may represent a two-phase monument. The largest ring-ditch (No. 76?) had four irregularly placed causeways around the circumference and contained only animal bones. The three other ring-ditches recorded had no burial surviving.

Aspects of Saxon and Medieval land division
by David Hall

Saxon settlement in the Welland valley was widespread. Fieldwork has shown that there are many small early sites on the gravels, and it is probable that many of the existing villages also overlie Saxon sites. The early pattern of settlement was dispersed, like that of the

Roman and Iron Age periods before. There seems, moreover, to be some 'influence' by Roman sites on the location of those of the Saxon period; several Roman sites, for example, include substantial Saxon material remains, as at Lolham, Maxey church and Deeping Gate (Hall and Martin 1980).

A major reorganisation of settlement site location and land division occurred during the Middle Saxon period (Hall 1981). Many smaller settlements were deserted to form the present nucleated villages and the land associated with each township was divided into strips. The later form of these dispersed strips developed into the familiar ridge-and-furrow of Medieval and later centuries. An example survives on the south-east side of Etton village; it is characteristic of the strip system on the Welland gravels, in that each ridge is about 14m wide, which is almost twice the normal width of ridge-and-furrow in the Midlands. The average length at Etton was about 180m.

Recent studies have shown that the chequer-board pattern of Medieval field systems was not an initial feature of the layout, nor was it achieved by piecemeal intake of land by an increasing village population. In many cases the original layout of long strips stretched from settlement to parish boundary, with lands up to 1000m in length (Hall 1981; 1982). In the Midlands these long strips were later modified by division into shorter lengths, blocks of which were turned through ninety degrees to satisfy local drainage requirements. The end result is that each block of strips has furrows draining across the contours.

Two pieces of evidence from the Welland valley show that chequer-board field systems were once much simpler. An aerial photograph in the Cambridge University Collection of several furlongs (the name given to a block of strips) near Nunton, and which showed several cropmark furrows, also revealed that two furlongs separated by several hundred metres, had lands in exact alignment. The furlongs in between had strips running at right-angles to the main axis. The suggestion here is that the intermediate furlongs were later, and sub-divided an earlier, long strip system.

The other evidence comes from the excavations described in Chapter 2. In this case furrows were revealed as north to south 'ditches' cut into the gravel subsoil, and they might be expected to end relatively abruptly at the medieval headland. These boundaries survive in the Welland valley as large banks of soil which had accumulated over centuries as the result of plough-action (they are shown in R.C.H.M. 1960, fig. 6, as 'ridges'). Presumably the accumulation of soil resulted from the lifting and turning of the plough at the end of the strips. The recent excavations included one such headland along the northern portion of the West Field (clearly shown by the contour plan, Fig. 20). When the soil of the headland had been removed, furrows were seen to continue beneath it without a break, at a depth well below the reach of any Medieval plough (Figs. 44; 167, Phase 10). The soil bank of the headland was thus shown to be secondary to the furrows, even though it is known to be of considerable antiquity.

The size of these headlands is shown by studies of a survey of the Maxey strip system (made in 1715), and Medieval charters which identify the headland immediately to the south of that discussed here, as supporting a road called the Stamford Way, in the 14th century.

All the Welland valley parishes had well-developed strip fields that occupied all the cultivable land. Only meadows liable to flood and small areas of woodland (e.g. Hilly Wood in Ufford), and heath (Helpston and Barnack) were left unploughed. These 'waste' areas were still subject to subdivided ownership until hay was gathered from the strips, when they became common grazing pasture. Barnack and St. Martins Without (Stamford) have 18th century large-scale estate plans that show the strips. For other parishes the strip systems have been reconstructed from archaeological fieldwork, of which Etton has been published as an example (Hall, 1982 fig. 26). Only St. Martins has a Medieval written-survey of its lands (1408), but most of the remaining parishes have detailed accounts made in the 17th century (held at the Northamptonshire Record Office in the muniment collections of the Cecil and Fitzwilliam families). Analysis of these surveys using the reconstructed maps is currently in progress and it is hoped to throw light on the tenurial structure and spatial disposition of the open fields.

Nearly all the parishes remained open fields until the 18th and 19th centuries, the exception being Marholm, which was enclosed by the 17th century. Many of the Fitzwilliam parishes (Helpston, Etton etc.) were enclosed together in 1820, completing the formation of the modern landscape.

IV. The Transect Survey

by Maisie Taylor

Introduction

The general aims of the valley-wide transect survey have been discussed in part I, above. In summary they were fourfold: to provide truly comparable regional contexts for the site-specific surveys; to investigate post-depositional effects; to compare artefact distributions on different types of land and, finally, to examine the archaeological nature of the distributions. This research could not be tied directly to any of the existing DoE-funded projects, so that funds had to be sought from outside. We are particularly endebted therefore to The Margary Trust and The Royal Ontario Museum for substantial grants and to our Friends organisation for practical help, encouragement and finance.

It must be clearly stated from the outset that the survey reported here is very much a pilot project and that consequently we are not yet in a position to make many useful statements on the archaeological nature of the distributions or their intra-regional disposition. We were, however, aware of this from the outset and designed the survey with a long-term future in mind, provided, of course, that the pilot survey produced useful results in a reasonably cost-effective manner.

This report first reviews reasons for selecting the study area and the survey methods used; this is followed by a consideration of some results and by a discussion of finds. The section concludes with a brief general discussion.

The field survey

Aims, methods and constraints

The project was conceived, after discussion with our principal advisor, C.R.Orton, as a pilot survey, to examine the feasibility of a longer-term transect survey. Our results suggest that such a long-term survey would be well worthwhile, but only provided that detailed site-specific survey and excavation continue to take place in non-alluviated parts of the region.

The limits of the survey area were set on the basis of geological and other criteria. Most important of these 'other' criteria is the fact that the modern county boundary follows the river Welland, and British archaeology is still organised on county lines. The geology and topography of the Welland valley is, however, bipartite and it proved possible to examine the main classes of landscape, upland, valley slope and floor/floodplain, in Cambridgeshire. Cross-valley studies must be reserved for a future time. The three types of landscape are discussed by Charles French above (part II; Figs.3-5), but all are subject to major natural agencies of erosion or deposition which have a direct effect on surface distributions (French and Pryor, Chapter 5, part I, with refs.).

It will be apparent from the map of previous archaeological work in the area (Fig. 8) that excavation has been almost entirely confined to the gravel lands. This serious distributional bias is further complicated by the fact that coverage of the gravels themselves has been uneven: the distribution of excavated sites generally relates to the major quarries. Thus fourteen of the twenty-one excavated sites are grouped in three quarries, with a major concentration in the centre of the region on either side of the river, at Maxey and Tallington. This distribution of excavated sites cannot possibly reflect the distribution of ancient settlement or land-use in the area.

Having accepted that the distribution of excavations was a modern artefact, it then became necessary to devise a means of mapping changing patterns of archaeological settlement and land-use. The most straightforward approach was a rapid surface survey in which surface scatters, or 'sites' were simply plotted and dated (by artefact typology). It was felt, however, that given the time and money available this approach would merely produce yet another plan of flint or pottery scatters whose significance or context would still remain illusive. This approach would also require the collection and removal of flint assemblages from the surface, as even relative dating required the taking of measurements and the examination of cleaned material. Given the rapidity of such a survey it would prove difficult to plan precisely where the material had been collected and this could seriously bias any intensive, site-specific studies in the future (we were made acutely aware of this problem at both Maxey and Barnack/Bainton).

These practical objections were reinforced by an appreciation of some of the post-depositional distortions that low-lying regions are prone to. Previous experience had also suggested that cleared, or farmed land in the 2nd millennium bc (in the Nene/Welland region, if nowhere else) was characterised by a diffuse 'background' scatter of flints which required mapping if its significance was to be fully appreciated; rapid survey techniques would not be suited to this task. Moreover members of the project unanimously agreed that we still did not understand the nature of our data: did, for example, flint scatters necessarily represent settlement? Was there a correlation between surface material and subsoil features? If 'sites' were to be mapped, then how were they to be defined and their limits plotted? Fundamental questions had to be answered before any specific method of site-location survey could be put forward. Without an initial survey of this sort there was a danger (a) that we might plot the wrong types of information and (b) that we would misinterpret the data we did manage to gather.

It was decided that the framework of the pilot survey would be a series of north to south transects, which would be distributed from the limestone uplands west of Stamford, down the valley sides and eastwards, into the Fens as far as Thorney (Fig.1). It was felt that transects would allow the different land categories to be compared more readily, especially at interfaces. Changes in lowland landscapes, such as the gradual accumulation of alluvium, rarely happen rapidly, over short distances, and it was felt (correctly as it happened) that we stood a better chance of understanding the landscape being surveyed, if we were able to walk through it over long distances. Being aligned on the Ordnance Survey grid, location in the field was relatively straightforward, and non- productive travelling time could be kept to a minimum. It was also felt that scattered quadrats might present difficulties when it came to the arranging of access with farmers and landowners.

The transects were aligned north to south in order to obtain transverse 'sections' across the valley, which is aligned approximately east to west. Recent research (Cherry, Gamble and Shennan 1978) had shown the importance of building a random element into survey design in order to avoid recurrent regularities in the data. It was felt that although evenly spaced transects would not be advisable, the survey should be valley-wide and should not favour any one area more than others. We therefore decided to position a transect at random within every easting kilometer of the survey area. Tables of random numbers were consulted to generate thirty random numbers which, when added to the easting number, located the transect. Thus the first random number generated was thirty-one which was to be located in the kilometer strip defined by TF 00, easting. The first transect was therefore centred on the easting line TF 0031. The other transects were as follows (Fig.9):

TF (easting):	00	01	02	03	04	05	06	07	08	09	10
Random no.:	31	28	80	99	02	72	80	42	93	86	49
TF (easting):	11	12	13	14	15	16	17	18	19	20	21
Random no.:	93	35	66	77	47	57	82	87	15	26	01
TF (easting):	22	23	24	25	26	27	28	29			
Random no.:	34	10	62	48	18	42	69	88			

The width of the transect (20m) was wide enough for two people to cover in two passes each, thus surveying the area in four parallel strips 5m wide. The transects were each 12km in length, covering an area of 24ha; if all transects of the survey could be walked, the land covered would be 720ha in area.

The first few weeks of the survey were spent inspecting the area to be covered, noting where the land was unsuitable, and negotiating with landowners for access. This initial work was required in order to record a major source of bias, namely, land availability. For the purposes of this review we will consider transects 00 to 09 as upland, 10 to 19 as gravel terrace, and 20 to 29 as Fenland. Each of these zones is represented by ten transects, one third of the total, or 240ha (the percentage figures below refer to the land unavailable in each zone).

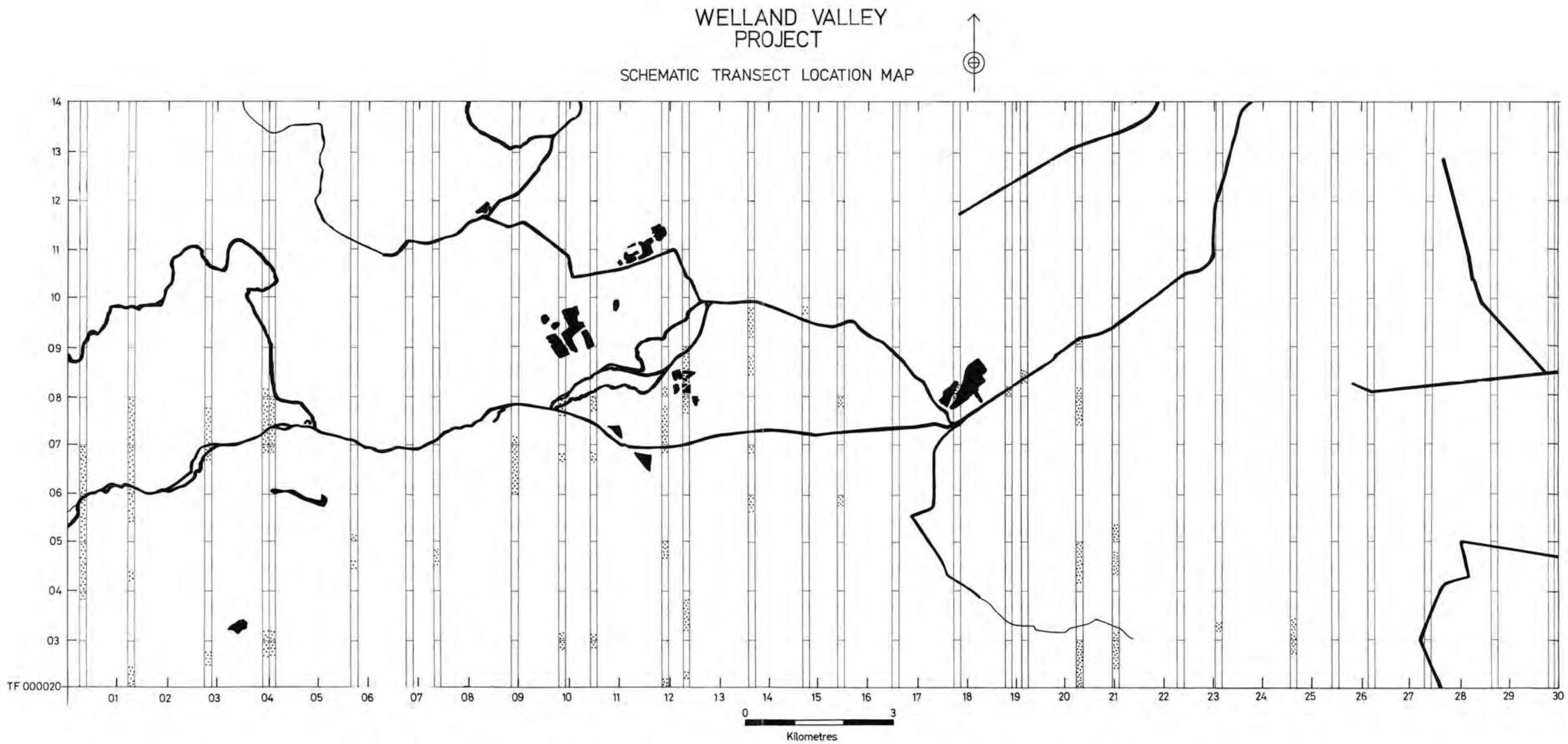


Fig.9 Map showing location of field survey transects and areas walked (stippled). Scale approximately 1:10,000.

The following land was inaccessible under pasture:

Upland: 21.8ha (9.08%)

Terrace: 8.8ha (3.66%)

Fenland: 7.2ha (3.00%)

The high figure for the upland reflects the parkland around Burghley House and other substantial country houses; watermeadows are also a feature of the narrow river valley as it passes through the limestone. Grassland in the other two blocks is mainly confined to the 'washes' (areas of controlled flooding) of the main rivers and drains. One or two farmers still retail pasture on the gravel land, but this is very rare in the Fen.

Woodland made the following land inaccessible:

Upland: 12.4ha (5.16%)

Terrace: 5.8ha (2.41%)

Fenland: 1.4ha (0.58%)

The high figure for the upland again reflects the presence of the large country houses; terrace woodland is generally maintained shooting cover, but in smaller blocks than in the upland. The woodland in the Fen is in even smaller blocks, maintained by one or two unusual farmers.

The following land was inaccessible through quarrying:

Upland: 2.8ha (1.16%)

Terrace: 8.0ha (3.33%)

Fenland: 1.8ha (0.75%)

About half the upland figure is represented by long-abandoned limestone quarries (e.g. the well-known medieval 'Hills and Holes' ragstone quarries at Barnack), and one sand quarry. The eight hectares on the gravel terraces speak for themselves. The Fenland figure will probably increase as the peats erode, exposing the gravels beneath.

Ministry of Defence sites only affected one area:

Upland: 6.6ha (2.75%)

This is entirely accounted for by R.A.F. Wittering which is sited on the flat top of the limestone upland.

Housing and industrial development has made the following land inaccessible:

Upland: 13.2ha (5.50%)

Terrace: 21.8ha (9.08%)

Fenland: 9.4ha (3.91%)

Development in the first zone is almost entirely accounted for by Stamford. Peterborough's northern, industrial suburbs account for the unexpectedly high total for the terrace. The Fenland figure is low, as modern settlement is of low-density and dispersed.

Roads and their verges accounted for the following:

Upland: 1.2ha (0.50%)

Terrace: 0.8ha (0.33%)

Fenland: 1.4ha (0.58%)

These figures are explained by the different characters of the landscapes involved; the limestone upland is criss-crossed by numerous winding lanes and has the A1 passing across it from north to south. Roads tend to be straighter and fewer on the terrace. Similarly, they are even straighter and more rarely encountered on the Fen, but here they are often on banks which necessarily take up more land.

Road-less banks and dykes do not affect the upland:

Terrace: 3.2ha (1.33%)

Fenland: 4.0ha (1.66%)

The complex system of drains and dykes only really begins when the river Welland reaches the terrace. Terrace lands are characterised by high banks and catchwater drains, as the greater velocity of water leaving the upland often leads to flooding. This accounts for the unexpectedly similar figures for the two areas.

Finally, land made inaccessible by railways is as follows:

Upland: 2.0ha (0.83%)

Terrace: 0.8ha (0.33%)

Fenland: 0.8ha (0.33%)

This illustrates the drawbacks of an aligned survey, as two of the upland transects (TR 03 and 04) unerringly follow the East Coast main line.

The final (total) figures for inaccessible land are as follows:

Upland: 53.4ha (22.25%)

Terrace: 49.2ha (20.50%)

Fenland: 26.0ha (10.83%)

The different attitudes of landowners provide the final factor affecting access, but this is a temporary and changing phenomenon and has not therefore been included in the foregoing discussion. Almost without exception we met with courteous and business-like assistance from everyone, but the few exceptions were significant. Land made inaccessible because of difficulties in obtaining permission:

Upland: 36.4ha (15.17%)

Terrace: 6.0ha (2.50%)

By far the greatest problem was the outright refusal of the largest controller of land in the valley to even discuss the possibility of ever having access to land owned or managed by him. This amounted to tens of thousands of acres on the upland. Two medium-sized landowners on the terrace were also uncooperative, but the area where farming is most intensive, and where we had expected to encounter the worst problems — the Fenland — proved the most accessible. The Fen east of the Welland valley is farmed by a relatively closely-knit community, many of whom are related to one another. When we first entered the area we noted that our greeting was not entirely enthusiastic and it eventually transpired that several farmers had memories of 'archaeologists from Cambridge' digging trenches and departing without back-filling them. This seems to have happened at some time after the last War, and we have been unable to discover the culprit(s), but record the incident to show what potential harm can be done to archaeological research (let alone to farmers, their families and livestock) if rural sites are not scrupulously made good after excavation or survey. In fairness to Cambridge it should be mentioned that 'from Cambridge' often seems to be a way of denoting an outsider in this area. It is also worth noting that some of the farmers and others who had actively cooperated with archaeologists in the past had not received reports, thanks, or indeed any other communication subsequently.

The final figures for land availability are interesting. Taking all factors together 171ha were not available, out of 720 — nearly a quarter (23.75%) of the total. If we then add post-depositional and other causes of archaeological 'invisibility', the chances of ever building-up a reasonably comprehensive picture of prehistoric settlement and land-use patterns in the region are slight indeed.

The practicalities of carrying out the survey were relatively straightforward. We soon found that tapes were too cumbersome to be managed by a single person, especially in the wind. Transects could be accurately judged by pacing along field edges which were almost invariably straight. Canes and knotted line were used to delimit the 20m strips. Finds were recorded on pre-printed sheets which covered 200m lengths of transect; these were sub-divided into 20m squares (the basic recording unit). In practice, the thin 'background' spread of flints was point-recorded with reasonable accuracy (at least to within the correct 5m square).

Preliminary results (Figs. 9, 10, 12)
The course of the pilot survey was largely shaped by the immediate availability of land; thus introductions were made by one friendly farmer to others in the locality, and so on. This proved the most effective means of covering the land, rather than a scheme dictated by sampling criteria (such as random selection) alone. If, however, access to land was to be in blocks, we were advised that it was important that we should cover the three main types of landscape in equal amounts. The three blocks chosen for concentrated effort were transects 00 to 04 (limestone uplands), 10 to 14 (terrace gravel) and 20 to 24 (Fenland). In addition, transect 08 was surveyed to provide a comparison for the Barnack/Bainton site-specific survey (Chapter 4, part I); it will not be discussed further here.

The land available for study in each block, although not identical, is at least comparable:

Transects 00 to 04:- land available 82.0ha, land surveyed 7.2ha (8.78%).
Transects 10 to 14:- land available 94.0ha, land surveyed 7.8ha (8.34%).
Transects 20 to 24:- land available 99.2ha, land surveyed 7.8ha (7.90%).

The illustration (Fig.10) shows parts of seven transects with inaccessible land (gravel pits etc.) compressed, and with transverse scale twice the longitudinal. We will examine these transects in more detail below.

Transect 00 This is the only upland (limestone) transect illustrated, but it is typical of the group as a whole. The five flints found here are unusual, as the whole of the area walked only produced six. One is tempted to wonder whether, given the scarcity of material in the area, small concentrations such as this indicate 'sites', albeit displaced and on their way down the hillside? Flint was not locally available and its presence therefore gains added significance, as it had to be transported some distance. There are no finds around the top of the hill (around the 400m mark on the plan, Fig.10), but this may be explained by the almost complete absence of soil; crops seem to be grown on a near-hydroponic system where seeds germinate and grow in a matrix of shattered bedrock. Flints are generally found on valley slopes and hillsides, where there are greater depths of soil (presumably on its way down to the valley floor — see French, Chapter 4, part V).

Roman pottery is also unusual on the limestone, but this transect passes close to the town of Great Casterton. The Casterton finds distribution was not investigated properly, as the density of surface material is extra-ordinary within the defences. Little however seems to pass outside the defended area and the sharpness of this fall-off pattern might well repay future investigation.

Transect 10 This is the first gravel transect to be illustrated, but it is not altogether 'typical', as it is more than usually disturbed. The south end is obliterated by gravel pits (plus the railway line) and the north end lies beneath pasture. The distribution of flints over the land available is very distinct. It seems to form two discrete scatters the southernmost being located on the site of an earthwork barrow, and may most probably be secondary occupation of the mound, in the manner of Maxey Phase 3 (Chapter 2, part II). The northern scatter is over an area of dense linear cropmarks and is associated with Roman pottery. The apparently sharp northerly edge to this distribution is caused by the alluvium associated with the small stream to the north. The space between the two concentrations of flint is probably 'real', but the similarity of the flints of both scatters, and the absence of the otherwise ubiquitous 'background' scatter is suspicious. The sharp fall-off rate between the sites does suggest the presence of a post-depositional effect. We were intending to return to this site to investigate this phenomenon, but the southern scatter has recently been taken into a gravel pit (the railway now passes through gravel pits on either side).

Transect 12 This transect contrasts markedly with that just described. Its southern part crosses three cropmark barrows and the Maxey cursus. The transect passes close to the Maxey henge discussed at length in this volume. Despite these buried features, the surface produced just two flint flakes (the rest of this field was also rapidly walked to see whether the transect had been located through areas rich in flint, but this search produced nothing). The area south of the houses and gardens produced one or two sherds of abraded Saxon pottery (the land in question is part of the site of the Saxon village of Maxey). The gravel pits north of the houses mark the site of Addyman's excavations (Addyman and Fennell 1964); beyond, the land is heavily alluviated, up to and across the river.

Transect 13 This was illustrated as an example of an undisturbed transect. It runs across one of the better-drained gravel terraces, to the river. Alluvium is quite scarce as the land is rising towards Maxey 'island'. Cropmarks are few. The walked length of transect is north of the Etton causewayed enclosure, which lies beneath alluvium associated with a southern arm of the relict dendritic river system. The flints found illustrate the diffuse 'background' scatter well.

Transect 20 This transect crosses the gravel Fen-edge via a major road junction and then passes into the peaty alluvium of the Fen proper. The few flints at *c.*800m are on top of a low undulation of the underlying solid ground (gravel). It is not altogether clear whether this undulation is natural or man-made (i.e. a barrow). This undulation apart, the area is effectively masked by later Fen deposits (probably post-Roman).

Transect 21 The Fen-edge shows up clearly in this transect. The solid ground at the edge is gravel, although the quarry immediately to the south is for the brick-making Oxford Clay, beneath the thin superficial gravel coating. The gravel of the Fen-edge (at, and just north of, 400m) is covered by the familiar 'background' scatter which appears to stop as it dips beneath the later Fen. The transect then passes into the distributional 'void' of Borough Fen.

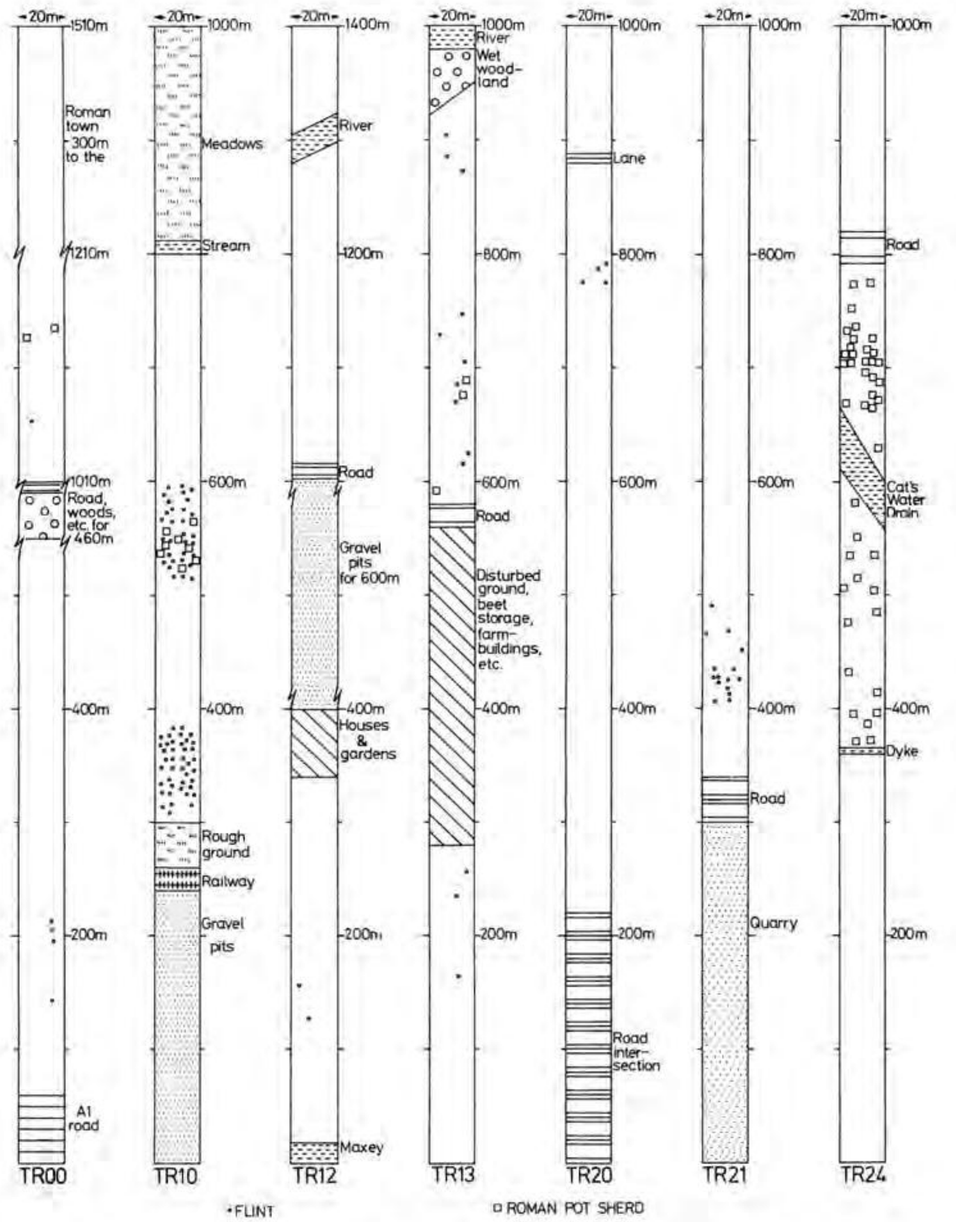


Fig. 10 Schematic plan of selected transects. Note transverse scale is twice the longitudinal.

Transect 24 The Fen/'island' effect is clearly shown in this transect which traverses a 'bay' of Fen, rises over an outlying arm of Eye 'island', and passes down into Fen again. The Cat's Water drain crosses the segment of 'island' surveyed here. Aerial photographs show numerous linear ditches of probable later Iron Age and Roman date. These cropmarks form part of the Fengate/Newark/Oxney/Eye continuum of Fen-edge farmsteads, of which the Cat's Water subsite, Fengate, is an excavated example (Pryor 1983a). Pottery from the surface was fresh and unabraded and included samian. The condition of the pottery is no doubt the result of its recent history, as the site consisted of grass-covered earthworks until about fifteen years ago, when it was bulldozed and put down to arable.

The finds

(with Francis Pryor)

Catalogue of illustrated flints

Fig. 11, No. 1 Tanged arrowhead. Bifacial retouch. Weight 1g TR08 (Flint 34).

No. 2 Piercer, single point. Unifacial retouch. Utilised. Weight 13g TR08 (Flint 9).

No. 3 Piercer, single point, unifacial retouch on two edges. Utilised. Weight 5g TR10 (Flint 85).

No. 4 Piercer, at least two points, unifacial retouch on one edge. Utilised. Weight 29g TR20 (Flint 141).

No. 5 Piercer, up to four points, bifacial retouch intermittently all the way round. Some edges (possible points) very heavily worn. Weight 12g TR08 (Flint 35).

No. 6 Denticulated tool, two points, unifacial retouch. Utilised. Weight 5g TR11 (Flint 113).

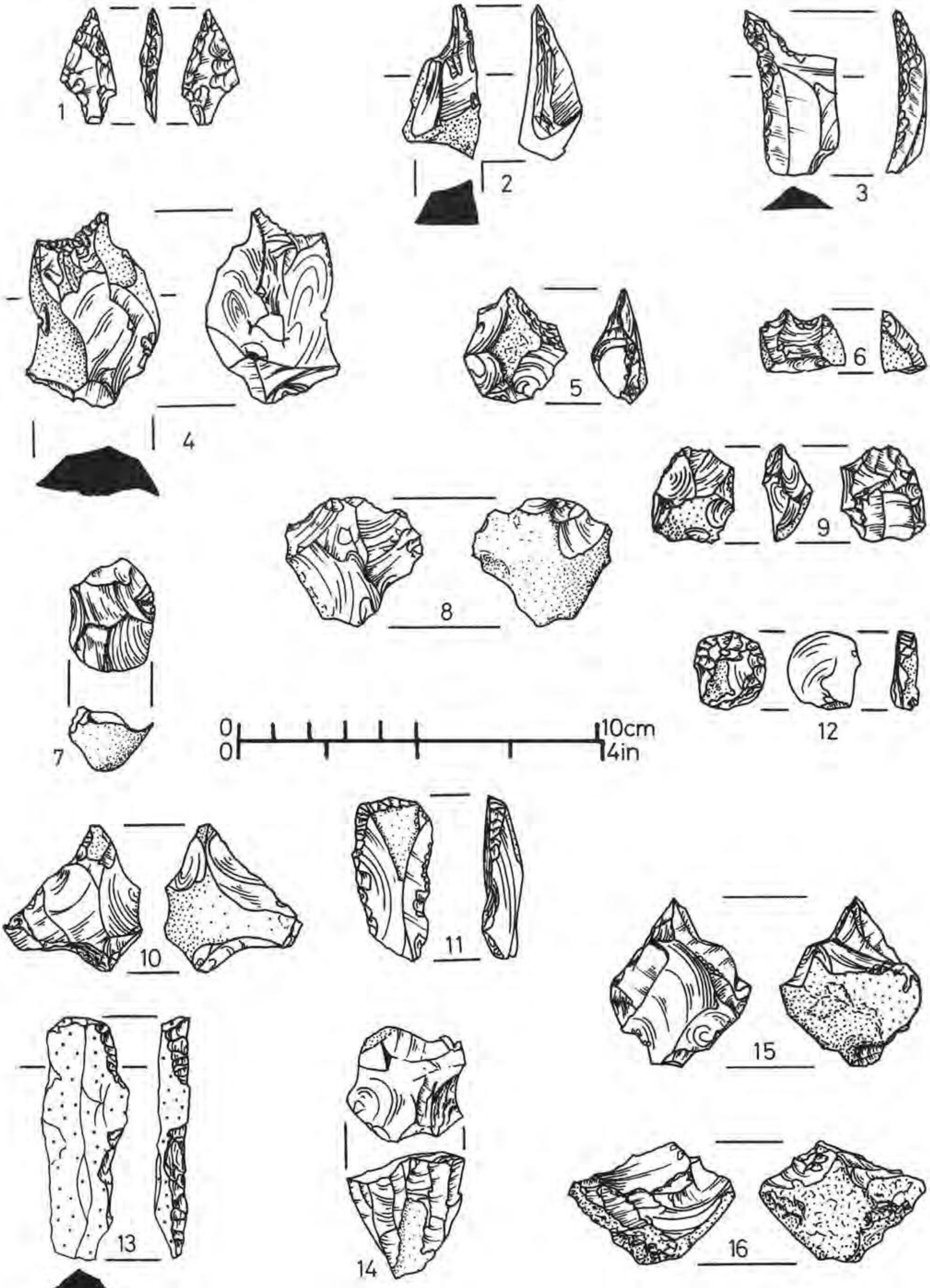


Fig.11 A selection of flints from the transect survey. Scale 2:3.

No. 7 Denticulated tool, at least three points. Bifacial retouch. Weight 15g TR10 (Flint 46).
No. 8 Denticulated tool, at least four points. Bifacial retouch. Weight 24g TR08 (Flint 25).
No. 9 Denticulated tool, at least four points, bifacial retouch. Heavily utilised. Weight 9g TR11 (Flint 119).
No.10 Denticulated tool, at least four points. Bifacial retouch. Weight 29g TR21 (Flint 147).
No.11 Long-end scraper on flake. Retouch angle variable. Heavily utilised. Weight 10g TR21 (Flint 146).
No.12 Short-end scraper on flake. Retouch angle c.85°. Utilised. Weight 4g TR10 (Flint 94).
No.13 Tool modified at two periods. Originally long, end scraper. Retouch angle 80°. Heavily utilised. Later modified with scraper retouch. Weight 21g TR00 (Flint 1).
No.14 Core, single platform with flakes removed all the way round. Striking platform retouched and damaged in one place. Weight 27g TR13 (Flint 127).
No.15 Core, with two platforms at right angles. Striking platforms damaged. Weight 29g TR10 (Flint 86).
No.16 Core, crude, bashed pebble. Platforms hard to define because of damage. Weight 14g TR20 (Flint 140).

Discussion of the finds (Table 3)

The transect survey flints almost entirely derive from the gravel terraces (Fig.12) and comprise the following types:

Implements (63.75% of total):

Utilised flake	59	(57.84%)
Retouched flake	22	(21.57%)
Long-end scraper	2	(1.96%)
Short-end scraper	1	(0.98%)
Hollow scraper	1	(0.98%)
Piercer	4	(3.92%)
Denticulated tool	12	(11.76%)
Tanged arrowhead	1	(0.98%)
Total	102	

By-products (29.38% of total):

Waste flakes	17	(36.17%)
Irregular workshop waste	19	(40.43%)
Core, one platform, flakes removed all way round	1	(2.13%)
Core, one platform, flakes removed part way round	1	(2.13%)
Core, two parallel platforms	1	(2.13%)
Core, two platforms at right angles	3	(6.38%)
Core, platforms hard to define	2	(4.26%)
Core, crude bashed pebble	3	(6.38%)
Total	47	

Implements modified at two periods	5
Flints lost	6

The first question that must be raised in any discussion of material derived from topsoil in arable areas, is plough-damage. Clearly this has been a significant factor in modifying this collection, but it is not the only factor that needs be considered: waste flakes can still be distinguished and where implements of known form are encountered (e.g. the tanged arrowhead (Fig.11, No.1), the 'thumbnail' scraper (No.12), or the core (No.14)), then superficial damage is by no means always apparent (although microwear analysis would clearly be impossible). The question is further discussed in part III of Chapter 4.

Typologically this collection closely resembles the other two flint groups discussed at length in this report (Maxey and Barnack/Bainton). These groups are considered to be of Bronze Age date, on the basis of excavated comparisons with Fengate, of which the principal assemblage was from Newark Road (Pryor 1980a, 106-125; note also *erratum* in Pryor 1983a). Detailed comparisons are perhaps unnecessary, given the nature of the transect material and its probably plough-damaged state, but certain parallels are apparent. The tanged arrowhead, for example is a late form with a good parallel from Fengate (Pryor 1980a, fig.62, no.5); similarly, the various piercers and denticulates (Fig.11, Nos.2-10), and crude cores (Nos. 15 and 16) find many parallels in the excavated assemblage (Pryor 1980a, figs.63-65). Plainly a surface collection will produce a few earlier forms, but these are rare, the best examples being the re-fashioned long-end scraper (Fig.11, No.13), and the single platform core, (No.14). Tools, such as the long-end scraper, modified in two periods are characteristic of these 'late' flint industries (for further discussion see Pryor 1982, also Chapter 2, part III, below).

The breadth:length ratios of the waste and utilised flakes (Table 3) show a preference for shorter, squat flakes; the figures show a slight bimodal tendency, but the numbers involved are too small for any further comment. Certainly flakes, whether whole or broken, with a well-defined arris on the dorsal surface were extremely rare.

The ratio of implements to by-products shows a heavy bias in favour of the former; these figures compare closely with Barnack/Bainton topsoil results, but are the reverse of Newark Road, Fengate. This can doubtless be attributed in great part to plough-damage, but the few Barnack/Bainton subsoil flints showed a similar pattern. Plough-damage aside, it would be reasonable to assume that this difference is archaeologically significant. Newark Road contained at least one known contemporary settlement where flints were most probably being worked, thus creating by-products; on the other hand, the transects do not seem, on this admittedly slender evidence, to have passed by any substantial settlement areas. Striking platform angles and mean dimensions (Table 3) are broadly comparable with Maxey and Barnack/Bainton (Tables 21, 45, 46). The bulk of this collection probably post-dates the core-based industries of the earliest Bronze Age, and a date centering on the mid-2nd millennium bc is probably indicated.

General discussion

It remains now to consider whether the pilot scheme has provided answers to the questions that were outlined in the Introduction, above. First, it has shown that it can provide useful comparative data for a site-specific survey. Post-depositional effects, too, may readily be studied in this type of survey. Moreover, the discipline imposed by the transect format requires that off-site distributions be studied as closely as more conventional 'site' distributions. We have shown that there is no simple correlation between surface material and subsoil features; that material in the ploughsoil does not necessarily denote the existence of a plough-damaged 'site' beneath. Much may also be learned about the nature of a 'site' by study of its edges and the fall-off

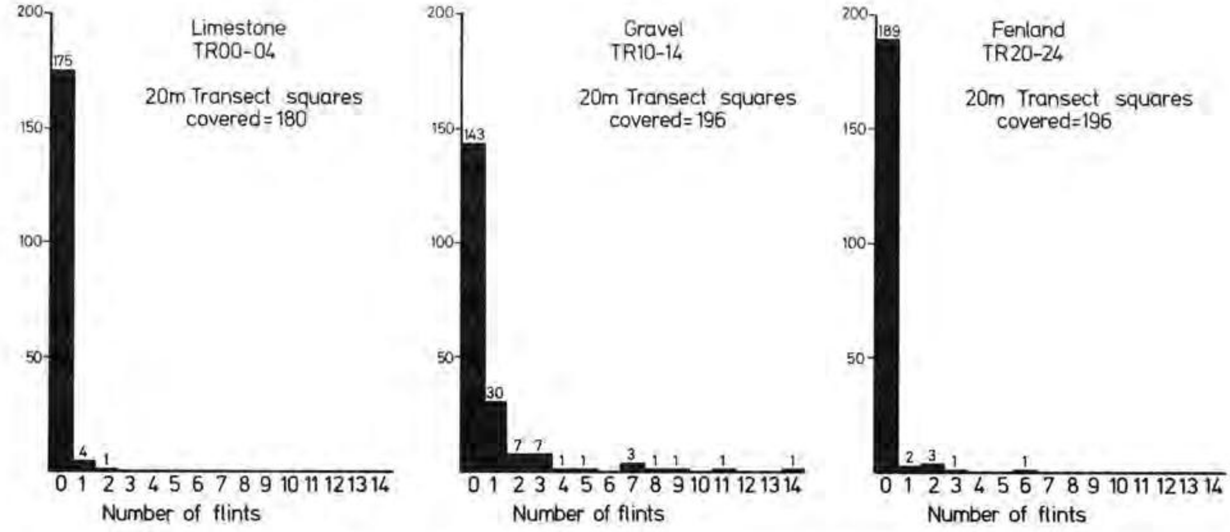


Fig.12 Transect survey: histograms showing occurrence of flints per 20m square.

1. Flakes, utilised and waste (n=48), unbroken:

Lengths (mm)

0-10	*10-20*	*20-30*	*30-40*	*40-50*
—	21	16	10	1

Breadths (mm)

0-5	*5-10*	*10-15*	*15-20*	*20-25*	*25-30*	*30-35*	*35-40*
—	—	13	13	18	4	—	—

Breadth/Length ratio

	0:5-1:5	*1:5-2:5*	*2:5-3:5*	*3:5-4:5*	*4:5-5:5*	*5:5-6:5*	*6:5+*
Waste	—	—	4	6	1	—	1
Util.	—	2	12	11	5	2	4
Total	—	2	16	17	6	2	5
%	—	4.17	33.33	35.42	12.50	4.17	10.42

2. Flakes, utilised and waste (n=36), with visible platforms, internal (ventral) angles (to nearest 5°):

<80°	80-85°	85-90°	90-95°	95-100°	100-105°	105-110°	110-115°
2	3	—	1	2	7	1	5

115-120°	*120-125°*	*125-130°*	*130-135°*	*135-140°*
3	8	2	2	—

3. Mean values, unbroken waste flakes (n=12):

	Length	*Breadth*	*Thickness*	*Weight*
Total	267mm	209mm	64mm	45g
Mean	22.25	17.41	5.33	3.75

Table 3: The Transect survey flints, metrical data

pattern they exhibit. Similarly, comparative analysis of the material found in flint scatters is essential to a proper understanding of its origin, but this type of study can only be carried out on an unbiased (i.e. methodically collected) assemblage. These considerations lead to the conclusions that any future transect survey should adopt a stratified sampling approach in which, for example, 'edge-effects' are examined in even greater detail. Small-scale excavations could also be usefully incorporated within any longer- term project.

The archaeological nature of the distributions has already been touched-on, but in the past insufficient attention has been paid to areas where flint does not occur naturally. Clay lands and limestone uplands are generally seen as barren, simply because flints are not found there. Close inspection, however, reveals that they do occur, but very infrequently, and as often as not outside their original contexts. It is essential that these areas be studied more closely, as the few finds that do appear will probably be significant. Our pilot survey has shown, however, that the different classes of land must all be surveyed using closely comparable recovery methods.

This is not the place to discuss the effects of alluviation and colluviation, which are discussed extensively by Dr French, and others, below (for a summary see Chapter 5, part I). The survey has shown, however, that the range and variety of effects is large and that many almost certainly still await discovery. Surveys of this sort can also provide ideas for future research; it would, for example, be possible to review the extent of settlement and land-use on the now destroyed upland and valley slopes by carrying out extensive analyses of the colluvial deposits that fringe the valley floor. These analyses, however, would have to be carried out with great circumspection and care, using appropriate techniques (Kwaad and Mücher 1977; 1979; French, pers. comm.).

Finally, it should be noted that some of the most useful information was obtained without detailed fieldwalking, by examination of aerial photographs and by driving around the area, transect map in hand. The transect system provided the basis for other studies, at first glance not immediately connected with the archaeological survey, which later were seen to have a very direct bearing on it. For example, we concluded that almost a quarter of the land was not available for study. If we then also take away land that has been rendered unsuitable by natural and other agencies (alluviation, hillwash, plough-damage etc.), it then becomes very doubtful whether it will ever prove possible to reconstruct a comprehensive prehistoric (or indeed Roman) settlement pattern in the region. We suspect that it will prove possible to make a quantitative comparative assessment of pre-Roman settlement on the different types of land available; but a study of that nature is quite different from the comprehensive picture that is still the principal aim of most field surveys in the lowlands.

2 Excavations at Maxey, 1979-81

Introduction
by Francis Pryor

The general aims of the Welland Valley Project are discussed in Chapter 5, and have been more fully considered in a recent publication (Pryor 1980b). These more general aims have played an important part in the planning and execution of the Maxey project. Great stress has been laid on the spatial organisation of artefacts and ecofacts, both in excavated features and within the topsoil. Special efforts have been made to provide additional data whereby these distribution patterns may be seen in a wider context: detailed soil studies, combined with geophysical and geochemical surveys, have been the means to this end. The report begins with various accounts of pre-excavation survey (part I); these are followed (part II) by an account of the excavations and the finds (part III). The two themes of spatial analysis and post-depositional 'distortion' are considered at greater length in the principal specialists' reports (parts IV to VIII). The chapter concludes with a general discussion (part IX). It should also be noted here that the two main Maxey projects, discussed here and in Chapter 3, are considered together in Chapter 5; detailed matters, for example of phasing and feature alignment, are considered in passing.

Publication

The publication of Maxey 1979-81 follows the guidelines set out in the Frere Report (DoE 1975). This chapter presents the Level IV description and synthesis. The Level III data are given in the microfiche and on computer-generated lists housed with the finds in Peterborough Museum. Thus the shortened list of features given in Appendix V provides enough information to enable the reader to phase and locate features discussed in this report. This list also provides enough information (Grid references) to give access to the Level III Site Atlas (via Figs.206 and 207). The fuller information provided by the microfiche feature list (pages M74-M292), supplements that of Appendix V, and is intended to facilitate access to the remainder of the Level III archive (finds' lists, by individual find) and the Level II archive (site forms, plans, notes etc.), housed with the finds and samples (the level I record) in Peterborough Museum.

Site location and grid (Figs.13,14)

The site is located within the quarry of Tarmac Roadstone (Eastern) Ltd., immediately south of Maxey village, and centred on OSGR TF 1280 0770. The subsoil is free-draining sandy gravel of the Welland first terrace gravels. The area under threat and available for study is located immediately south of the tree-planted 'acoustic bank' which screens the quarry and its machinery from the village. The land south of the bank comprises two fields, separated by a made-up trackway, running north to south. The two fields are known in this report as the East and West Fields.

The site grid is aligned on that of the Ordnance Survey, to an accuracy of *c.* ± 1%. Site grid references (hereafter abbreviated to 'Grid') are given in metres easting and northing, but with the prefix letters (TF) and first figures (i.e. the 10km square reference) in each direction omitted. Thus the site Grid 2704/7702 would be the Ordnance Survey equivalent of TF 12704 07702.

Methods, techniques and sampling (Figs.15,16; Pls.VII,VIII)

It was apparent from aerial photographs that both fields contained a variety of cropmark features. The West Field abutted Gavin Simpson's previous excavations and it was thereby possible to deduce that the large penannular ditch was that of a hengiform monument; similarly the two faintly discernible diagonal ditches were part of the Maxey cursus (R.C.H.M. 1960). Simpson, moreover, had already demonstrated that the outer henge ditch and the concentric ring-ditch within it were probably contemporary (see his report for 1962-63 to the Welland Valley Research Committee). These then were 'ritual' or ceremonial monuments that were quite distinct in both time and role from the ditched yards and round buildings whose cropmarks clearly covered most of the East Field. A cursory inspection of the surface indicated that the latter features were of probable Roman date. Excavation methods had to be devised that would be appropriate to these apparently quite different types of archaeological feature for it would be impossible to compare and contrast our results if the basic recovery procedures were fundamentally incompatible. The detailed surface survey was a first step in this direction.

It was decided from the outset that special attention would be paid to the spatial location of material in the topsoil and in the infilling of subsoil features; data from the one would be compared with the other. Accordingly the topsoil survey was carried out on a one-metre grid, to allow ready comparison with the excavations. David Crowther outlines the topsoil survey procedures in part I, below. It was decided that the whole of the available area would be field-walked and it was essential that the excavations should be carried out in a way that could provide useful comparative information. Experience had suggested that a basic (i.e. non-reducible) sample of 20% excavation might provide significant and representative information. This sample size, moreover, was manageable, in terms of finance and logistics. For convenience, the sample unit chosen was a 10m square: within this area 20% of all structural, linear and non-linear features (the terms are defined in part II, below) were excavated, using techniques described in the Second Fengate Report (Pryor 1978, appendix 1). The selection of non-linear features was straightforward enough, as there were too few pits and post-holes to require sampling at all (our sample was therefore 100%, assuming, that is, that apparently natural features were not rejected in error). Linear features were more problematical. Only undisturbed lengths of ditch were

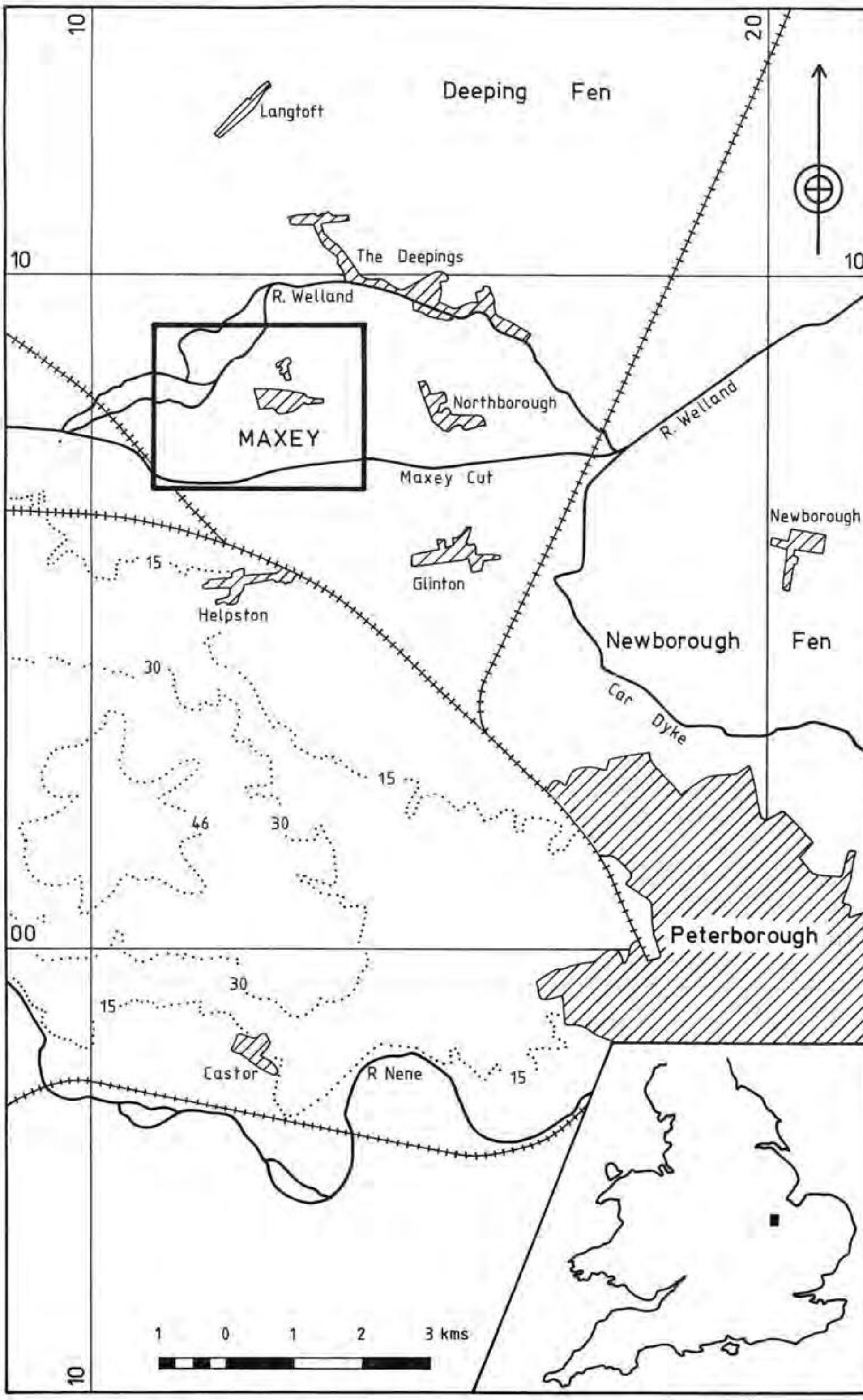


Fig.13 Map showing location of Maxey and Fig.14 (heavy outline). Scale 1:100,000.

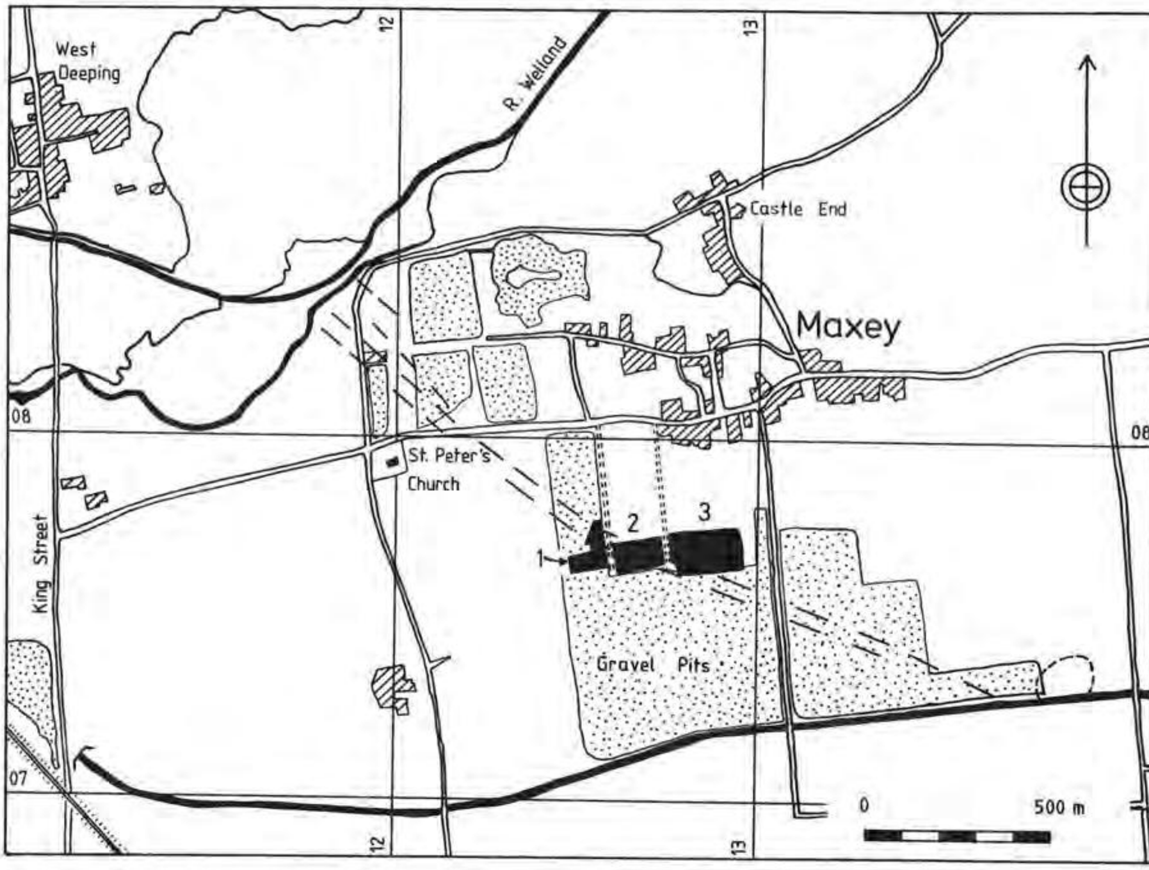


Fig.14 Map showing location of excavations at Maxey, 1962-63 and 1979-81. 1, Bardyke Field (1962-63); 2, West Field and 3, East Field (1979-81). The cursus and the Etton causewayed enclosure are indicated by broken lines. For location see Fig.13. Scale 1:20,000.

sampled, as near to the centre of each Grid square as possible. Each sample excavation was 2m wide and was placed transversely across each ditch; these trenches were excavated to the natural subsoil; sections were photographed and drawn in the normal manner (based on Pryor 1983a, appendix 1). Structural features were excavated more completely, although a basic minimum (*c.*40%) was always adhered to: penannular gullies of round buildings were excavated on either side of the entranceway and at the back of the building, directly opposite the entranceway (it was hoped that this would provide a contrast with the entranceway finds density). In the event, 80% excavation of structural linear features was more usual.

In addition to the hand excavation techniques outlined above, we also employed two types of sieve. The water sieve was designed by Francis Green and built by a firm of engineers in Peterborough. It is based on a wheel-mounted chassis which is oscillated across a bath of water. The chassis holds the sieve, which may have a mesh of 2mm or 4mm (circular perforations through plate steel). The sieve is illustrated and described in detail by Green in part VIII, below. Every layer encountered in each excavated section was sampled for the water sieve, where the following procedure was adopted. The sample size was 40,000cm^3 of soil, in four level-full buckets. The soil in the buckets was transferred to twelve hand-basins, where it was soaked, stirred-up gently (by hand) and allowed to stand. Fortunately the soil at Maxey froths naturally, so no foaming agents were required. The foam was passed through a fine sieve (0.5mm) and the flot retained. Subsequently it was dried and sent to Francis Green for analysis.

The wet soil from three hand-basins (approximately 10,000cm^3, or 10 litres) was processed through the 2mm mesh. If, as invariably proved the case, no fish bones, small mammal bones, minute waste flakes etc. were found, then the remainder of the sample was passed through the larger (4mm) mesh.

The dry shaker sieve has been illustrated elsewhere (Pryor 1978, pl.14). The mesh is ¼in, and square. This sieve was used less often than the water sieve, and mainly in instances, such as grave fillings, where large quantities of soil had to be processed at one time.

Once the topsoil had been thoroughly surveyed and fieldwalked, small, hand-dug trenches were cut at various points in the two fields to determine the varying depth of topsoil that had to be removed by machine. A full 30m square was hand-cleared in the area of the Phase 8 structures 6 and 11. Following this, it was decided that key areas should be cleared using a 360° hydraulic excavator (Hy-Mac 580C with 2m toothless bucket). The remainder of the site was cleared using the gravel company's D8 tractor and 40yd^3 towed box scraper. A detailed study of the machining process was undertaken and the results are published as Appendix IV.

The various recovery techniques used at Maxey were the subject of an on-site comparison, undertaken by Paul

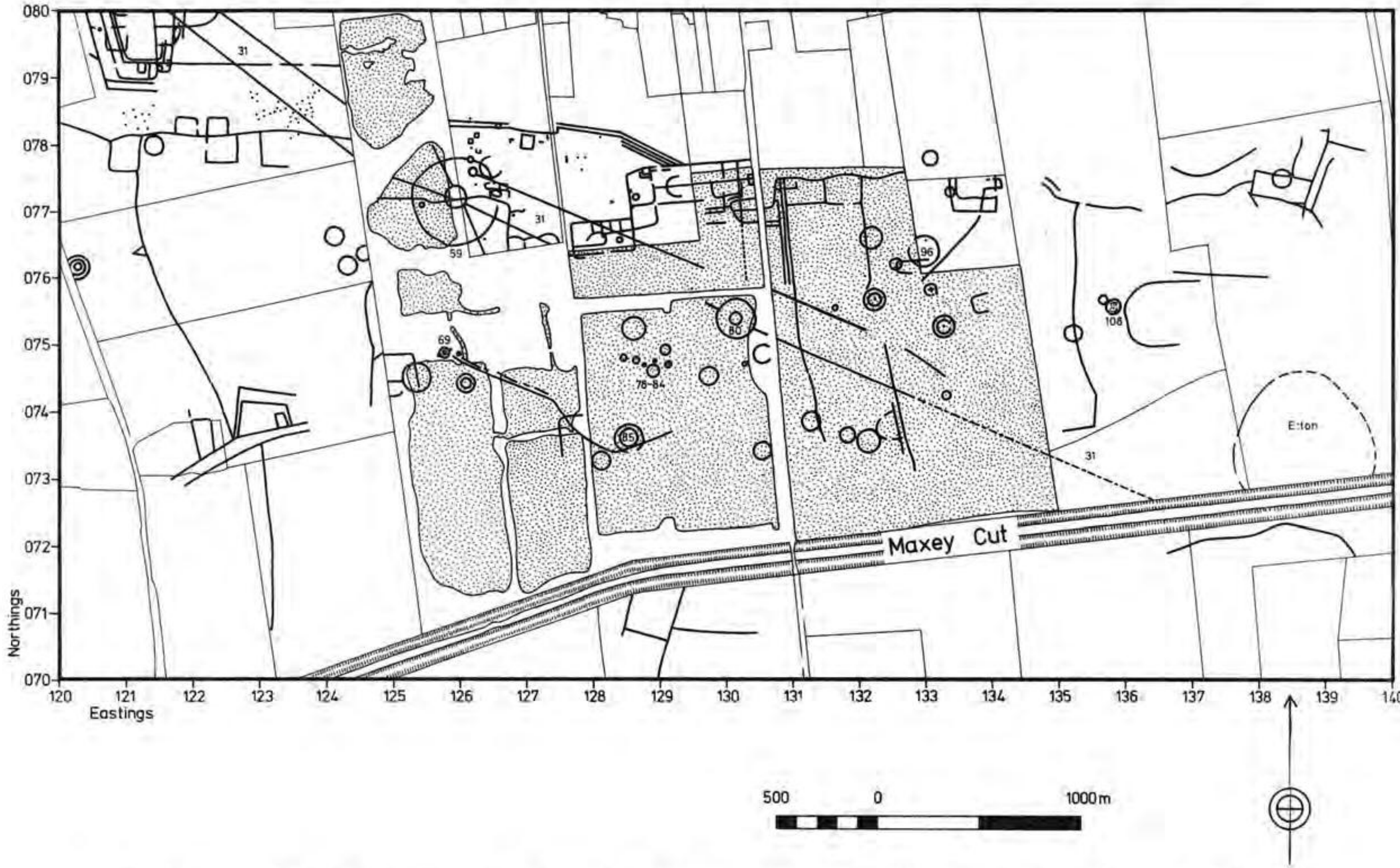


Fig.15 General plan of Maxey cropmarks, after R.C.H.M. (1960) with additions. Site numbers follow R.C.H.M. (1960, fig.6). Scale 1:10,000.

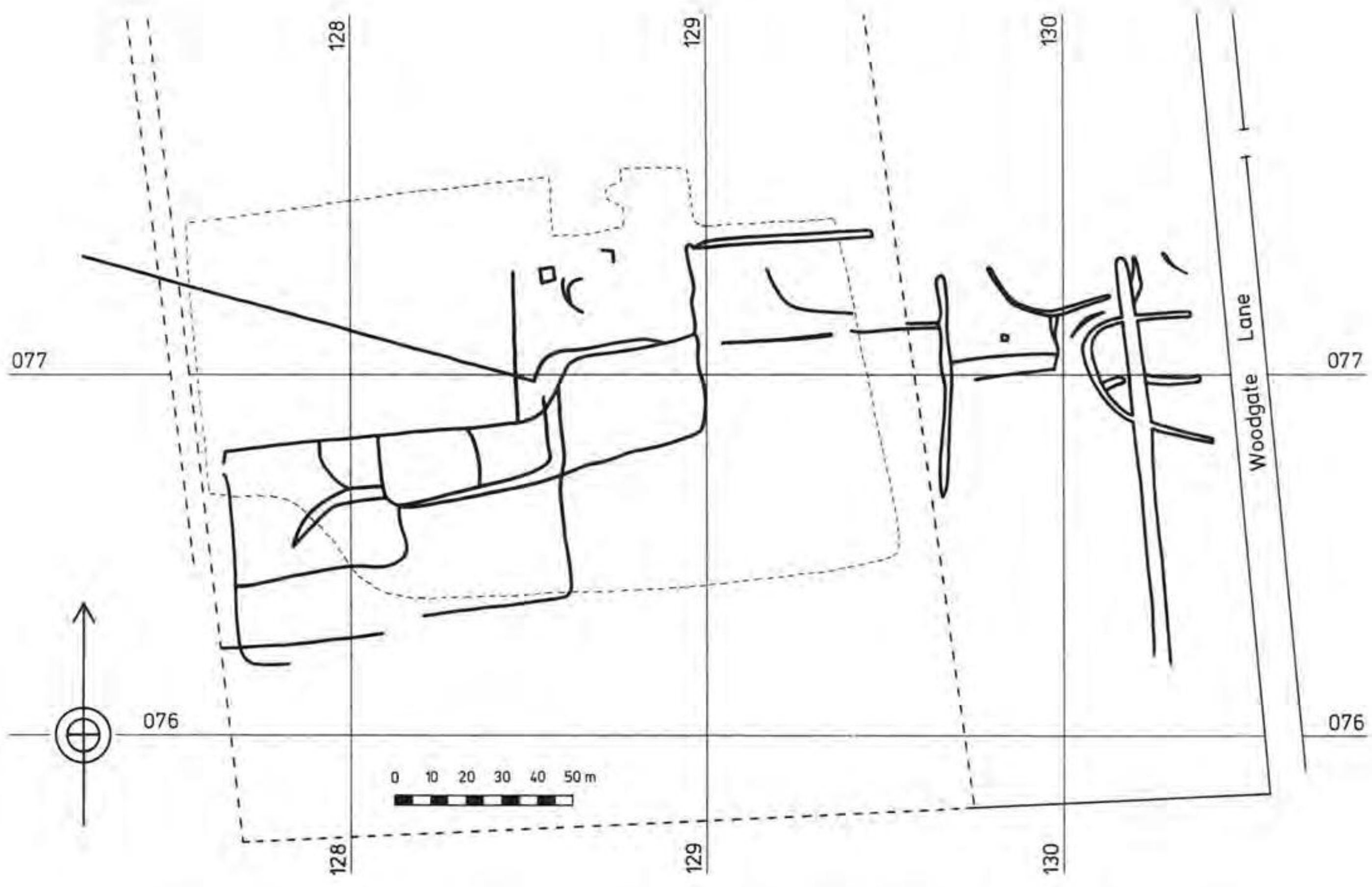


Fig.16 Maxey: computer-rectified plan of cropmarks in the East Field (broken line) area. Scale 1:2000.

Lane, during his excavation of the crescentic gully, F.198, that comprised Phase 8 structure 5. Lane's report follows that by Booth, at the conclusion of this section.

Finally, it is necessary to say a few words on the recording system used. The Fengate post-excavation project required the use of an Apple II micro-computer. This project demonstrated the convenience and rapidity of a machine-based recording system and it was decided to prepare an up-dated and revised set of record cards that were designed from the outset as an integral part of a computerised data-base. The original Fengate cards were themselves designed with machine data manipulation in mind, so the modifications required were relatively slight (Pryor 1983a, appendix 1). The modification of the existing recording system and the preparation of the software was the responsibility of Benjamin Booth, with initial technical assistance from Richard Brough.

The recording system devised by Booth worked well: a corrected data-base of all finds, samples and features was produced within two working months of the completion of the excavation. Each member of the post-excavation team was issued with a working copy of the various abbreviated print-outs, and subsequent modifications were added weekly. The finds' register was recorded on twenty-three disks, the bones on sixteen and the features on three; the disks involved are single-sided 5.25in, soft-sectored, and each holds 100k bytes of data. Manipulating a data-base of this size stored on small floppy disks, is slow and time-consuming, however, and could be done more quickly and efficiently using a hard-disk system. Despite this drawback, we estimate that the process of preparing a report in four separate locations simultaneously (we were without a permanent field centre at the time), itself a near-impossible task without quadruplicate working data-bases, was made at least 25% more efficient (i.e. the computer was worth one person engaged full-time doing filing and other basic clerical work).

The Maxey recording system (Figs.17,18)
by Benjamin Booth

Introduction This section describes the recording system used in the field at Maxey. Computerisation is briefly mentioned, and is described in detail in a further paper (Booth et al.1984). Procedures for recording the pre-excavation surveys are documented in the appropriate section below, as the integrated system described here was not available at the start of the project.

The system owes much to that developed at Fengate (Pryor 1983a, appendix 1). At Fengate the recording system, developed over eight years, was based on two A4 sized recording cards, for Layers, and Finds. Animal bones were initially recorded by feature and layer, and latterly mandibles and maxillae were recorded in three dimensions, as were all artefacts. Plans were drawn at a scale of 1:20. At Maxey it was decided to use the best features of the Fengate system, and to develop new procedures where shortcomings had been identified. In particular plans were to be drawn at a scale of 1:50 rather than at 1:20, animal bone from structures should be recorded in more detail and the recording of samples should be more rigorous.

The recording techniques for textual data at Maxey were designed with the use of a computer as an integral part of the system. An Apple II microcomputer, with a program package developed at the Project was used to store all data on finds and individually plotted animal bones, and a summary of the information on features.

General remarks

Elements of the system

Data recorded in the field may be described as either textual or graphic. Types of data are:

Textual	*Graphic*
Stratigraphy (features and layers)	Sections
Finds	Finds plans
Bones	Plans
Samples	Photographs

Three dimensional recording

Locations on site in two dimensions are recorded as Eastings and Northings according to the Site Grid, which was located on the Ordnance Survey Grid. Depths are from the stripped surface, and are in metres; they may be converted to metres above OD by reference to the contour plan for the stripped surface (Fig.21).

Components of the system

Recording stratigraphic relationships

Stratigraphy was for the most part relatively simple, and a system of Features and Layers was felt to be more appropriate than the more fashionable system of Contexts numbered in a single sequence. Sections across features were numbered, and features are sub-divided by reference to these sections, and to the layers within the features (e.g. Feature 173, Layer 3, Sections 1-2). Features are numbered in a single sequence for the whole Maxey project. Linear features are generally broken up by baulks, and the section lines of these baulks are numbered in a separate sequence for each feature. Zones within a feature may be referred to by the numbers of these sections. The major record for each feature is the 1:50 plan (see Atlas below) and the computer summary.

Layers are numbered with a separate sequence for each feature, and are sub-divided by reference to the section numbers. Information about layers is recorded on the layer sheet (Fig.17, obverse) which is printed on yellow paper, and sections are drawn on the section sheet (Fig.17, reverse). This latter form was initially on the back of the layer sheet. Conventions are used in drawing sections - there is a key to these on the bottom of the section sheet.

Recording finds

Finds are individually numbered in a single series. In the field they are individually bagged, and recorded on the Finds sheet (Fig.18). This A4 form has on the obverse space for a sketch showing the find location, and spaces for the Number, Layer, Grid coordinates, depth, type, method of excavation and storage location for each find. On the reverse the Feature, Layer and section numbers for all the finds on that sheet are recorded, as well as the recorder's name, and the date recorded. There is also space for a note. The reverse is printed upside down, so that details may be entered by turning up the bottom of the sheet, rather than by unclipping it from the clipboard. The form is white. Finds bags are indelibly marked with the finds number.

Recording bones

Bones from designated areas (usually structures) are numbered individually in a single sequence, and are treated similarly to finds. They are bagged individually, and recorded on the Bones sheet which is similar to the finds sheet, and is coloured pink. Bones from other provenances are bagged by layer for each zone of feature.

Recording samples

Samples are numbered in a single series, which has been divided into blocks of 10,000 samples, according to the type of sample. These blocks are:

1 -10,000	Phosphates
10,001-20,000	Magnetic susceptibility
20,001-30,000	Plant remains
30,001-40,000	Sediments
40,001-50,000	Molluscs
50,001-60,000	Pollen
60,001-	Bulk samples

Information about each sample is recorded on the sample sheet, which is coloured blue (not illus.). This includes the type of sample, provenance, date collected and collector, sample size and a note on collection. The larger portion of the sheet is reserved for recording the identification/analysis which has been undertaken.

Welland Valley Project Layer Sheet (25/6/80) revised 19/1/81

Computer		Section drawn?		Page	of

	Features	Layers
Same as		
Below		
Above		
Cuts		
Cut by		

Notes: (brief description ; associated features ; etc.)

(Continue overleaf)

Site Code :
Structure :
Feature :
Sections : [ ] to [ ]
Layer :
Grid Ref.: /
Plan No. :

Linear ? Non-Linear ? | Certain Probable Possible Doubtful

Meso / Neo / Beaker / Bronze / Br IA / EIA / MIA / Belgic IA / RB / Sax / Med / P'Med

Layer Composition :

BASIC MATRIX
- Clay
- Silty Clay
- Silty Clay Loam
- Clay Loam
- Loam
- Silt Loam
- Silt
- Sandy Clay
- Sandy Clay Loam
- Sandy Loam
- Loamy Sand
- Sand
- Gravel

MIXED WITH (one or more of these)
- Scattered Gravel Pebbles
- Even Gravel Mix
- Gravel Lenses
- Sand Lenses
- Iron Pan
- Clay Lenses
- Organic Matter (describe):

GENERAL OBSERVATIONS
- Even homogenous natural filling
- Natural bedding or sinkage lines
- Back filled by man
- Tip lines
- Weathered natural
- Weathering at bottom of layer
- Weathering at top of layer
- Disturbed by

Is charcoal absent ☐ very rare ☐ rare ☐ common ☐ dense ☐
very dense ☐ ? (if common use notes)

Sample	Nos.
PO4	
Mag Sus	
Plant Rems.	
Sediments	
Mollusc	
Pollen	
Charcoal	
Bulk	
Wet sieve	4 bkts?

Any artifacts ?	
Animal bones ?	
Human bones ?	
Burnt stones ?	
Burnt bones ?	
Burnt artifacts ?	
Burnt matrix ?	
Burnt natural ?	

Other Finds :

Munsell :
Dug by :
Date :
Checked :

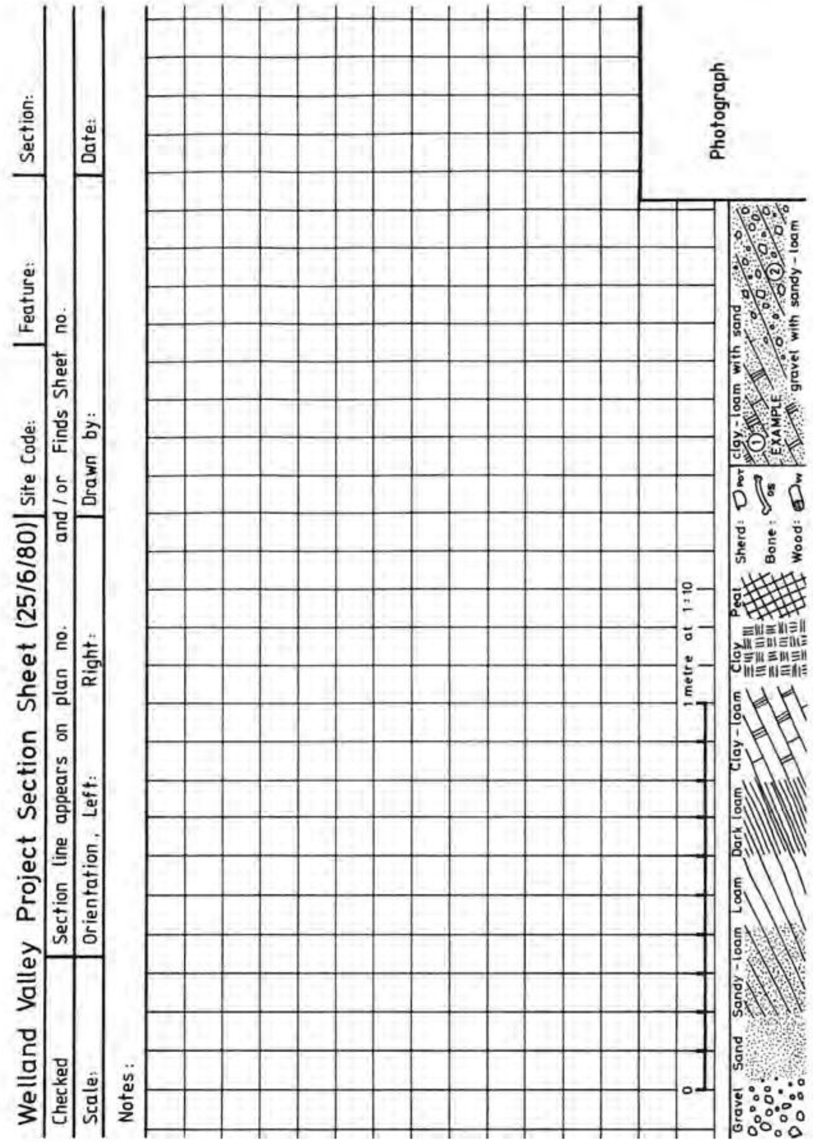
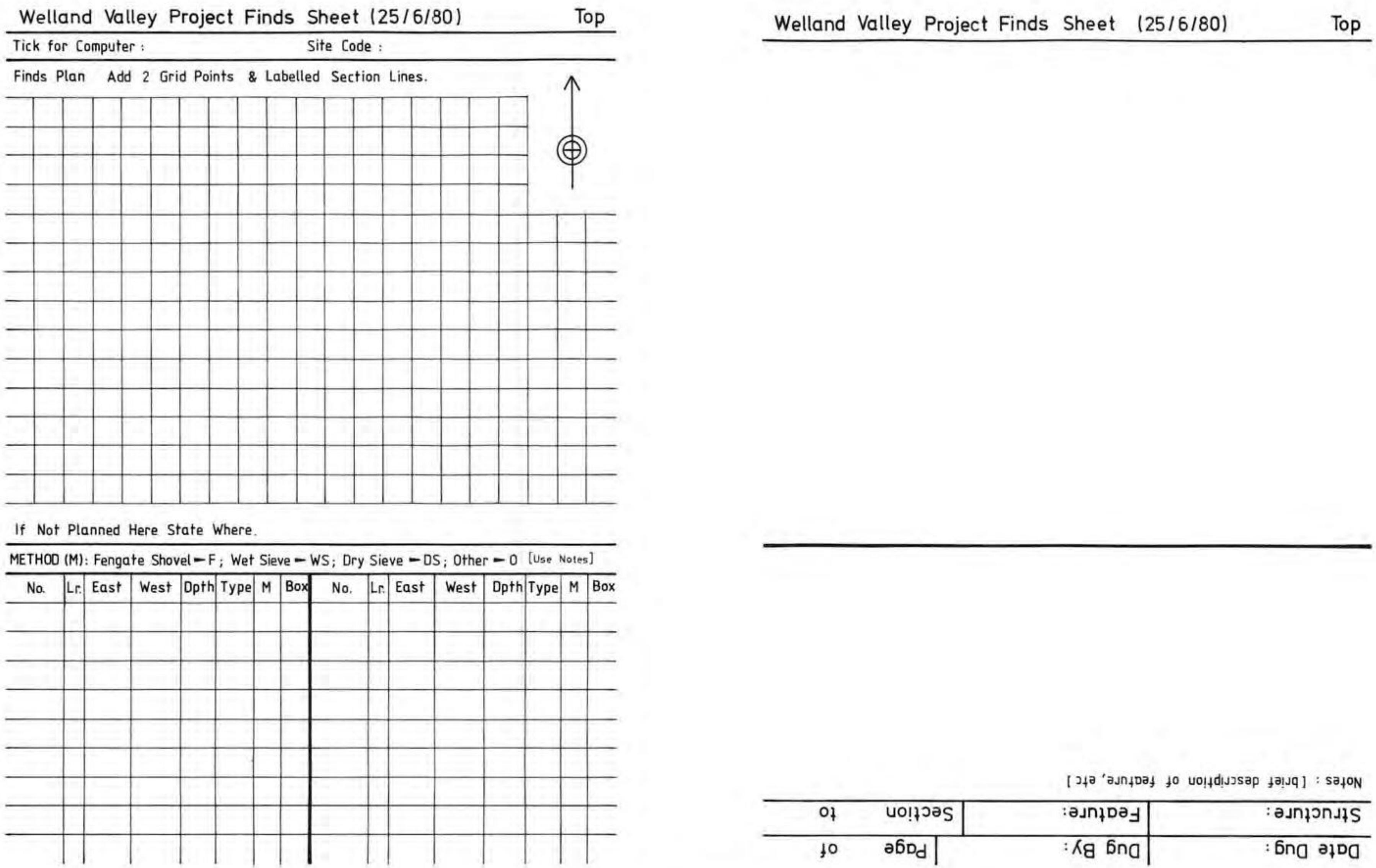


Fig.17 The Welland Valley Project-Layer sheet (both sides).


Welland Valley Project Finds Sheet (25/6/80) Top

Tick for Computer : Site Code :

Finds Plan Add 2 Grid Points & Labelled Section Lines.

If Not Planned Here State Where.

METHOD (M): Fengate Shovel — F ; Wet Sieve — WS; Dry Sieve — DS; Other — O [Use Notes]

No.	Lr.	East	West	Dpth	Type	M	Box	No.	Lr.	East	West	Dpth	Type	M	Box

Welland Valley Project Finds Sheet (25/6/80) Top

Notes : [brief description of feature, etc]

Structure :	Feature:	Section to
Date Dug :	Dug By :	Page of

Fig.18 The Welland Valley Project-Finds sheet (both sides).

A Note on the comparability of different soil searching techniques (Fig.19; Tables 4-7)

by Paul Lane

This brief note summarises the results of an attempt to assess the retrieval levels of different soil searching techniques used during the excavation of features at Maxey, East Field. The conclusions are preliminary since it was not possible to follow up the results and modify the strategies used. However, the points raised should be borne in mind during any future attempts to design excavation strategies.

The basic premise of the research was that the soil searching techniques used might recover samples which were not directly comparable with each other, or even with the total population of artefacts within any particular feature or excavated section of a feature. At an early stage of planning the excavation strategy it was decided that a standardised sample of fill would be wet sieved through 2mm and 4mm mesh sizes, for each excavated feature or section of feature. The bulk of the remaining fill would be removed using forks and shovels, the soil being carefully searched as it was shovelled into a wheel barrow (hereafter called 'barrow searching'). The wet sieve sample was envisaged as a kind of 'control', representing, as near as possible, total retrieval of artefacts. In certain circumstances, such as during the excavation of semi-circular and circular ditches, gullies and post-holes, the fill was passed through a shaker dry-sieve after a wet sieve sample had been taken (dry sieving). It was acknowledged that where large quantities of soil were being searched in this manner a percentage of the total population of artefacts would be missed.

Although the use of shaker sieves is a very energy efficient means of soil searching, and had been used with a high degree of success at Fengate, their relative efficiency in retrieval *vis à vis* barrow searching, had not been assessed. The decision to use dry sieves for some smaller features was taken on *a priori* grounds, which were partially determined by an assessment of the likely structure such features represented, and the activities associated with such a feature. Another contributing factor was the current research interest into identifying primary and secondary refuse zones of the kind presented by Bradley *et al.* (1980) and Halstead *et al.* (1978).

Methodology

A semi-circular gully (F.198, structure 5) of Phase 8 was chosen as a test-case to measure the retrieval efficiency of the various soil searching techniques used (Figs.57, bottom, right; 64, centre, left). The feature was divided longitudinally and transversely, producing twenty-four sample quadrants. The first phase was to excavate alternate quadrants so as to produce one longitudinal and several transverse sections. A control baulk 1m wide was left at the centre of the feature. A two bucket wet-sieve sample was taken from each excavated quadrant and the remaining fill was then dry sieved. After the sections had been drawn, the remaining quadrants were excavated, and once again a two bucket wet sieve sample was extracted. The fill of each of these quadrants was initially barrow searched and then dry sieved, the finds recovered by the different techniques being kept separate. The final phase involved the excavation of the 'control' baulk. A four bucket wet sieve sample was removed and the remainder of the baulk was excavated in 10cm spits. The fill from each of these spits was then wet sieved. Mesh sizes used for both dry and wet sieves were 4mm; although a portion of the wet sieve sample was passed through a 2mm mesh to check for fish bones.

Results (Fig.19)

Given that sieving can alter the retrieval of faunal and artefactual assemblages, both qualitatively and quantitatively (Classon and Prummel 1977; Payne 1972), the structure of the sample of finds recovered using different techniques should reflect this variation. A total of 426 pieces of pot, 219 fragments of 'fired clay' and 1593 pieces of bone were retrieved from Layer 1 of the feature. Given the uneven nature of Layer 2 it has been excluded from the analysis (Fig.64). In view of the many problems associated with the analysis of faunal remains, the following analysis and discussion of results will be restricted to the artefactual remains.

The distribution of finds throughout the length of the feature was variable, the densest concentration lying slightly east of the centre. Moreover, a greater proportion of the finds were on the northern side of the gulley, and as shown in Table 4 these were concentrated in the upper 10cm of fill. Comparison of the number of pieces recovered by dry sieving and barrow searching is not affected by this, given the excavation methodology of alternate quadrants, which were of equal length (one metre) although of different depths and therefore capacity. The figures for the number of pieces of pot recovered by barrow searching, compared with the number retrieved after this 'searched' fill had been dry sieved suggest that barrow searching, as might be expected, is a fairly selective technique (Table 5). What Table 5 demonstrates is that whereas 64.3% of the total number of sherds were missed during barrow searching, this only represented 27.1% of the total weight of pot recovered, although the levels of recovery were rather variable from quadrant to quadrant. The mean weight of sherds recovered by barrow searching was 13.2g and that from dry sieving was 2.7g, suggesting that the bias is size-related.

When the structure of the sample is reviewed by sherd weight, as recovered by the three different methods (Table 6), this size-related bias can more clearly be defined. As the figures demonstrate, approximately 23% of the sherds recovered by barrow searching were over 15g, whereas only 12% of the finds recovered by dry sieving were of this weight or over. Comparison between the three methods indicates that the structure of the samples recovered by dry sieving is closely comparable to that recovered by wet sieving, and the barrow search sample stands out as markedly different. On the basis of these findings then, it is possible to conclude that barrow searching, as might be expected, predicates against the recovery of smaller finds.

In view of this, it was clearly possible that barrow search samples might be qualitatively different from dry sieve ones, where sherds of different fabrics break down to different mean sizes. Only two sherd fabrics, shell-gritted (SG) and sand-tempered (ST) were present in this feature. Overall they occur at a ratio of 14:3. In the barrow search sample the mean weight of shell gritted wares was 14.37g and, 7.63g for

	Depth (cm)	*no.*	%	*wt.* (g)	%*wt.*
Pot					
	0-10	37	61.66	181.39	69.35
	10-20	18	30.00	53.94	20.63
	20-30	5	8.34	26.09	9.98
Fired Clay					
	0-10	70	89.74	98.14	93.03
	10-20	7	8.97	6.67	6.32
	20-30	1	1.28	0.68	0.64

Table 4: Vertical distribution of finds through the 'Control Baulk' (Quadrants 11 and 12), F.198.

	Barrow Search				Dry Sieve			
Quadrant	*no.*	%	*wt.(g)*	%*wt.*	*no.*	%	*wt.(g)*	%*wt.*
2	1	33.3	3.22	66.8	2	66.6	1.60	33.2
3	4	15.3	124.57	74.8	22	84.6	42.01	25.2
6	2	16.6	44.99	67.2	10	83.3	21.96	32.8
7	7	31.8	111.86	79.2	15	68.1	29.41	20.8
10	6	26.1	24.83	34.7	17	73.9	46.61	65.3
14	7	33.3	78.92	62.5	14	66.6	47.21	38.5
15	16	69.5	120.48	73.6	7	30.5	43.15	26.6
18	5	55.5	65.46	85.4	4	44.5	11.18	14.6
19	4	66.6	112.55	91.0	2	33.3	11.12	9.0
22	0	—	0.0	—	0	—	0.0	—
23	0	0.0	0.0	0.0	1	100.0	1.13	100.0

Table 5: Differential recovery of potsherds by barrow searching and dry sieving, F.198.

wt.	*Wet Sieve*		*Barrow Search*		*Dry Sieve*	
	no.	%	no.	%	no.	%
<5g:	25	75.75	18	34.61	133	73.08
<10g:	4	12.12	16	30.76	21	11.54
<15g:	1	3.03	6	11.53	6	3.20
>15g:	3	9.09	12	23.07	22	12.09

Table 6: Sherd weight as a factor affecting recovery, F.198.

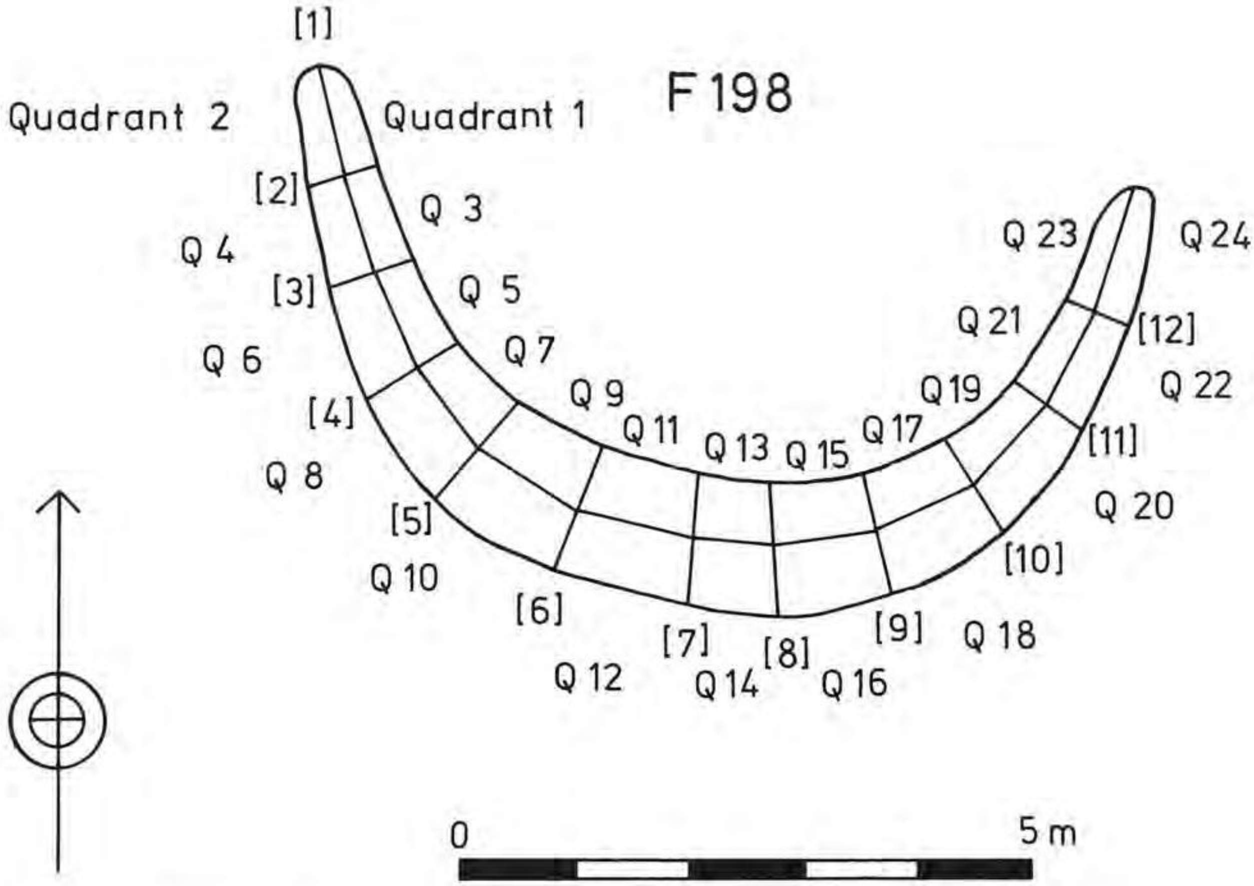


Fig.19 Maxey: finds recovery experiment; plan of Feature 198, showing 'quadrants'. Scale 1:75.

sand-tempered sherds. The mean sherd weights from the wet sieve samples were 7.28g (SG) and 2.72g (ST). However, when the dry sieve and barrow search samples are combined the mean sherd weights are closely similar to those of the wet sieve sample (Table 7). What these figures suggest is that although these sherds have different optimal minimum sizes, these are sufficiently large for both fabrics to be represented in the same proportions, in samples recovered by different methods. In other words, where there was a significant change in the ratios of these sherd types, it would be possible to argue that this pattern arose from a real distribution, rather than from sampling bias.

	Wet Sieve	*Barrow Search*	*Dry Sieve & Barrow Serch*
(Fabric)		(Mean Weight)	
SG	7.28	14.37	7.19
ST	2.72	7.63	3.58

Table 7: Comparison of mean weight (g) of different pottery fabrics (SG=Shell-Gritted; ST=Sand-Tempered) in samples recovered by wet sieving, barrow searching and dry sieving, F.198.

Conclusions

The conclusions which can be drawn from this single test case are of a preliminary nature and must be further substantiated by future research. However, as they stand, the results are a vindication of the use of dry sieves as a method of searching the fill from non-linear features. The technique can be carried out quickly and easily on site, and with only a minimal loss in efficiency compared with wet sieving. This has important implications where, for example, the interpretation of refuse contexts and types and discard behaviour in general is based on the size and condition of sherds, as at Aldermaston Wharf (Bradley *et al.* 1980), or according to the within-site distributions of different artefactual and ecofactual associations, as at Wendens Ambo (Halstead *et al.* 1978). This would be particularly so where different fabrics reduce to different minimal sizes (see Kirkby and Kirkby 1976), as appears to be the case with sand-tempered and shell-gritted wares. It therefore needs to be demonstrated that differences in the proportions of one type of fabric to another do not arise from retrieval biases.

On the basis of the evidence presented above it is possible to state the likely nature of bias in barrow search samples. However, the experiment has not resolved the problem of comparability of samples from contexts requiring different recovery techniques. In order to make comparisons between different contexts, regardless of the method of retrieval, a more comprehensive research programme is required. This necessitates a programme of dry sieving entire fills from a sample of all contexts, on the grounds that dry sieving is nearly as effective as wet sieving and a far less time consuming process. Using such results it would be possible to compare samples from different contexts and so achieve a greater level of certainty with respect to intra-site patterning.

I. Pre-Excavation Survey

Introduction

by David Crowther and Francis Pryor

Detailed surface survey was an important part of the Maxey project, and involved the expenditure of much time and effort. We believe, however, that the results have more than justified the costs and have decided to present them in full. The reports that follow include a wide variety of topics associated with topsoil survey. Each report is self-contained and presents its own conclusions: more general considerations, however, are touched-on in the final section of this chapter (part IX) and in Chapter 5, part III.

General aims and methods

The most obvious tangible threat to an open archaeological site in the Welland valley is its total destruction for gravel extraction. This type of threat has long been recognised as a cause for national concern (R.C.H.M. 1960), and by virtue of its being within the *aegis* of local planning authorities, it presents a threat which modern archaeological agencies can anticipate, and at times respond to.

Less catastrophic in its immediacy, yet no less real for that, is the threat presented by ploughing; this too has long been accepted as a problem, but until recently has been little studied (for recent work see Hinchliffe and Schadla-Hall 1980). Recent attention has been paid to the assessment of cultivation damage either on a predominantly fieldwork-derived basis (Drewett 1980; 1982), or by documentary research (Bonney 1980). Attempts have also been made to monitor the rates of destruction of specific monuments through time, although the data to achieve these aims are rare (Canham, Richards and Schadla-Hall 1980).

The extent of this damage is, of course, determined by land-use which is itself a function of social and environmental factors. The soils around Maxey (see French, Chapter 1) are mainly coarse loams overlying free-draining calcareous gravels; the local farming economy is very largely based on arable, particularly cereals, root crops and rape. The majority of the land is classified as Grade 2, but the alluvial spreads are designated Grade 3 (Burton 1981). The modern settlement pattern, and its consequent land exploitation, has remained largely stable since perhaps Late Saxon times (see Hall, Chapter 1). It may therefore be safely assumed that the drier, non-alluviated soils have been under the plough for at least a millennium, and may consequently be termed 'permanent arable' (Bonney 1980, 41). The extent to which this process irrevocably distorts or destroys archaeological and environmental evidence is a matter, therefore, of considerable speculation; it is, however, a central theme of the topsoil studies at Maxey.

Approaches to the survey

The East and West fields at Maxey provide a study area of some 3.75ha, the limits of which are determined by modern field boundaries, the 'acoustic bank' etc. It represents no more than an arbitrary fragment of a far wider archaeological landscape, the readily visible (and partially destroyed by the plough) parts of which cover some 50km^2 of valley-floor. This landscape manifests itself as a series of disconnected cropmark complexes, separated by tongues of alluvial overburden which mask a near-pristine prehistoric landscape (Pryor and Kinnes 1982). These cropmark complexes, which are particularly spectacular on gravel subsoils, contain settlement, burial and landscape-management elements spanning at least six millennia, from Neolithic to medieval times. The cropmarks under study at Maxey must therefore be seen as part of a far larger continuum; concepts such as 'site', as a discrete entity, are probably not altogether applicable, or, indeed, useful. The term will, however, be retained here to refer to the study area under review.

The site comprises a number of at least partially identifiable monuments, including part of a cursus, a henge (quadrant), an oval barrow, two Iron Age square barrows and a ditched enclosure system and settlement of Late Iron Age and Roman date.

A recent discussion of sampling approaches for later prehistoric rural sites (Haselgrove 1978) has suggested a classification for sites in terms of the degree of survival from post-depositional transforms. Maxey falls into Haselgrove's 'Class II' category, and is thus a potential victim of the fallacious strategy known as 'total excavation' (Haselgrove 1978, 169), which often involves the wholesale removal of the unstudied topsoil to obtain large-area coverage of features, and to recover artefact and ecofact evidence from reliable contexts.

The value of ploughsoil as a rich data resource has been a demonstrable fact for many years, both in terms of finds (Binford *et al.* 1970; Gingell and Schadla-Hall 1980; D.R.Crowther 1981) and in other, perhaps more subtle ways (e.g. A.J.Clark 1983). Heavy emphasis must be placed on the detailed study of the topsoil of a 'ploughed-out' site, in part as a study in its own right, but also as a means of limiting the intensity of subsequent excavation; although it is, perhaps, a fallacy to suppose that excavation could be ruled-out altogether.

The approaches adopted at Maxey, collectively termed 'survey excavation' (Pryor 1983c), were developed to maximise topsoil data recovery, with the long-term intention of determining to what extent excavated subsoil features could be characterised, in advance, by detailed surface survey. As will be apparent, the realisation of these seemingly straightforward aims, must entail a very thorough understanding of many, complex, processes. Indeed, the definition of some of these processes has been as rewarding as the (perhaps unattainable?) original research goals. Our approach to the topsoil involved seven lines of enquiry:

1. Cropmark recording and rectification.
2. Detailed contour survey (see also Appendix IV).
3. Sedimentological studies.
4. Phosphate and magnetic susceptibility survey.
5. Botanical survey.
6. Geophysical survey (fluxgate gradiometer).
7. Artefact recovery by fieldwalking.

Some of these approaches are familiar and do not require explanation or historical discussion (the fluxgate gradiometer survey, for example). Others need to be set in their broader research contexts and have therefore been treated more extensively, with comparisons drawn outside the Welland region.

Cropmark recording and rectification (Fig.16; Pls.II,III)
by Francis Pryor

Experience elsewhere in the Welland valley had demonstrated the necessity of having an accurate, computer-rectified map of cropmarks (Pryor and Palmer 1980). It was felt that the cropmarks on the West Field were too indistinct, due to the presence of the east to west headland, to merit computerised rectification; furthermore, we also had Simpson's previous plans at our disposal which enabled us to locate and position the principal visible cropmarks with some accuracy. The central ring-ditch mound (structure 14) was, moreover, still visible as an earthwork.

The cropmarks of the East Field were far less readily located on the ground: many of the field boundaries had been moved, and the 'acoustic bank' effectively removed the site from landmarks in the village of Maxey. Similarly, deep gravel workings isolated the survey area from Woodgate Lane, the only other readily accessible reference point. For these reasons it was decided to prepare an accurate plot of the East Field cropmarks, which is reproduced here as Figure 30. The plot was prepared from originals in the Cambridge University collection, by kind permission of Professor St. Joseph. Digitising was carried out in the University Department of Geology, by the author and a print was produced at a scale of 1:2500, using the computer program written by Rog Palmer, who supervised all aspects of the work. The map thus produced was especially useful when later, tactical, decisions were made: the combined cropmark, finds and gradiometer plans were used to decide (a) where hand-dug trial trenches were to be located and (b) where the hydraulic excavator was to strip.

The Survey

The contour surveys (Figs.20 and 21; Appendix IV)
by Francis Pryor

The contour survey was initially intended to be a means for detecting near-flat earthwork features. Accordingly it was carried out with some care and was based on a 5m grid; the surface consisted of weathered, but rough soil (two months elapsed between disc-harrowing and survey), and it was not possible to attempt contours of finer intervals than those illustrated. Our original intention was to draw three contour plans: the surface, the 'B' horizon surface and the 'C' horizon surface. In the event these plans had to be modified; the surface survey was successfully concluded, but the 'B' horizon was absent over much of the site and the contour survey was therefore carried out on the exposed, archaeological surface. The latter survey, like that of the topsoil surface, was carried out with care, on a 5m grid. The final survey was not of the 'C' horizon surface, as originally planned, but instead was confined to the 'ballast' surface, as prepared by the gravel company, immediately prior to quarrying work. The 'ballast' surface is a level at which the clays and silts of anthropogenic, pedogenic and Pleistocene origin have been removed (these fine-particled deposits block the gravel-washing equipment). It was felt that this last survey, although carried out on a 10m grid with some haste, due to operational problems (the quarry was working in daylight hours), was necessary to provide an indication of what archaeological information might be lost, on a typical quarry 'watching brief'. The vestigial data recovered on exercises of this sort (e.g. Powell 1977) are, we feel, explained by the results of the 'ballast' level survey which are given below (Appendix IV).

Some of the finer details of the surface survey are discussed in passing in part II, but some general conclusions may be drawn here. First, the original intentions of the survey were insufficiently far-reaching, for it is now realised that a detailed contour survey of this sort provides valuable information on erosion and plough-damage, especially on naturally flat areas, such as river gravel terraces. The lowest-lying parts of both fields were areas where subsoil features were visibly truncated; this is most evident around the south henge ditch (Phase 2) and in the region of the Phase 5 structures 22 and 23 (indeed the whole southern part of the West Field was seriously damaged). The contour plan of the surface (Fig.20) also clearly shows the medieval plough headland running east to west across the upper part of the West Field and the upper, North West, part of the East Field; the thickness of the headland is clearly shown in Fig.21 (note vertical exaggeration x 20). Archaeological features include the central henge mound (structure 14), at 10.20m OD the highest point of the site; hints at an outer henge bank are provided by the 9.80m contour (at top centre of the West Field) which curves at an angle coincident with the henge ditch beneath, and slightly to the west of it. The East Field is less protected than the West, as is perhaps demonstrated by the widespread occurrence of material on the surface, however the slight rise indicated by the 9.00m contour immediately east of the headland (the edge of which is represented by the 9.10m contour) coincides precisely with the main Phase 8 occupation area, as indicated by phosphates, finds and subsoil features, and may possibly represent the remains of largely ploughed-out rubbish heaps or collapsed cob-built structures. It is also notable that the area of the possible Romano-Celtic 'temple' (structure 12) is very severely eroded.

The contour plan of the stripped surface (Fig.21) shows the approximate outline of the central ring-ditch mound, including secondary deposits, but excluding headland soil; the oval barrow mound's outline does not represent its original shape, as the buried soil was not recognised when first encountered by the machine. Its maximum height is, however, probably representative.

The detailed contour surveys were neither time-consuming nor labour-intensive and have provided much valuable information, not just of direct archaeological significance, but of indirect, interpretational value.

Analyses of the ploughsoil sediments (Figs.22,40,151)
by Charles French

The analyses that follow form part of a wider investigation into soils and their formation processes in the Welland and Nene valleys, fringing the Fen (French 1983a). These wider perspectives are reviewed in Chapter 1; more detailed analyses of excavated features appear in part V, below.

The Analyses

Two series of samples were taken at two locations across the largely Medieval ridge-and-furrow; samples were also taken from the ploughsoil above known and unsuspected archaeological features.

The determination of pH and the alkali-soluble humus content, and particle size analysis were the methods used (Appendix I). Using these techniques it was hoped to investigate the potential of feature detection in the ploughsoil and B soil horizon, and to detect ploughsoil dispersal. The analyses would also examine the effect of ploughsoil dispersion on the distribution of archaeological artefacts.

Sample series 1 consisted of two complementary rows of samples taken from the ploughsoil or Ap horizon at *c.*50cm intervals at depths of *c.*20cm to 30cm and *c.*30cm to 40cm over a distance of *c.* 11m from ridge to ridge across a furrow (Fig.22). B horizon material was indistinguishable from the ploughsoil over the furrow.

The ploughsoil in this series of samples exhibits remarkable textural uniformity (Table M1). It consists of a sandy loam (10 YR 3/3), essentially a coarse loam, with a varying admixture of gravel and small stones. It has a friable, medium blocky ped structure, and is freely drained. The mean size of the ploughsoil varies between 3.2ϕ and 4.3ϕ, or between the fine sand and coarse silt size grades (Table M7). Gravel and flint pebbles, medium sand and medium silt size grades predominate. The cumulative frequency curves are generally bimodal with one strong peak in the sand fraction and one weak peak in the silt fraction. The micromorphological analyses (see below) suggest a possible loessic component. The coarse fraction comprises *c.*9-29% of each sample. It consists of gravel and small stones of rounded, angular and tabular form, which vary from 2mm to 20mm in size. The relatively even distribution of the coarse fraction in the ploughsoil is probably a result of mixing by ploughing.

Due to the presence of some unanalysed fines in most samples, it was not possible to perform the four statistical measures for all three fractions together. Consequently, the four statistical measures were calculated separately for the sand (Table M2) and silt (Table M3) fractions.

The sand fraction is dominated by medium sand. It is very well sorted, with a generally positive skewness and leptokurtic or peaked kurtosis (Table M2). As the ploughsoil is not strongly skewed, there has probably been little mixing of sand from various environments. The slight positive skewness indicates the presence of a 'tail' of fine sand. The leptokurtic distribution curve is a result of the dominance of one grain size, the medium sand.

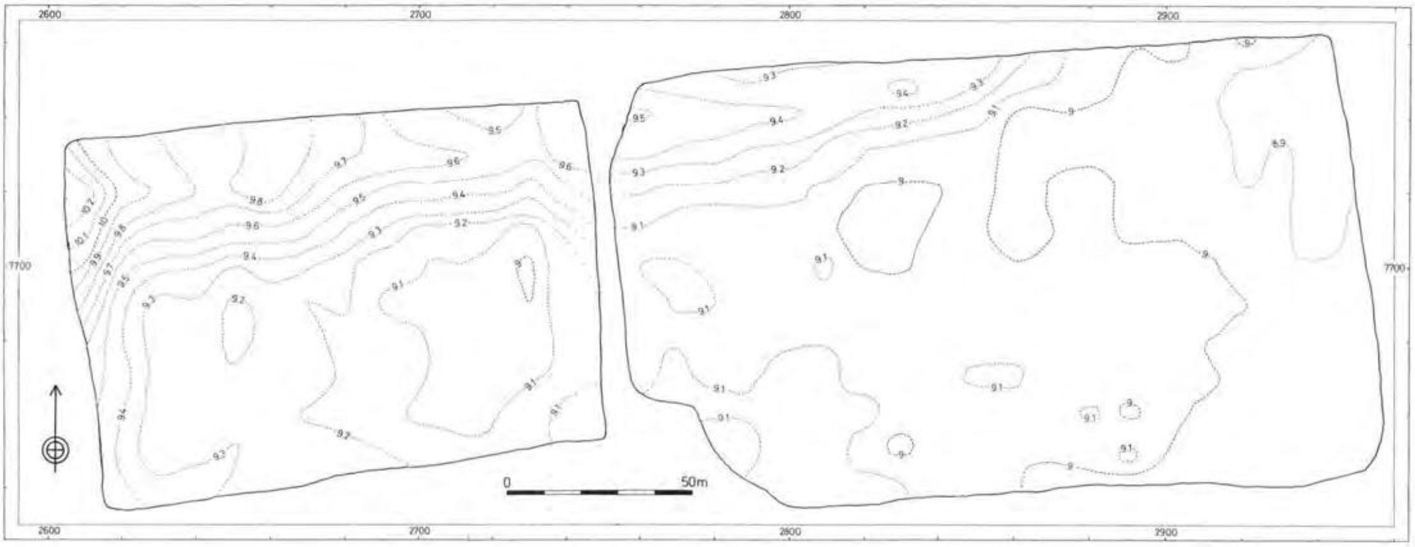


Fig.20 Maxey East and West Fields: surface contours. Scale 1:1500.

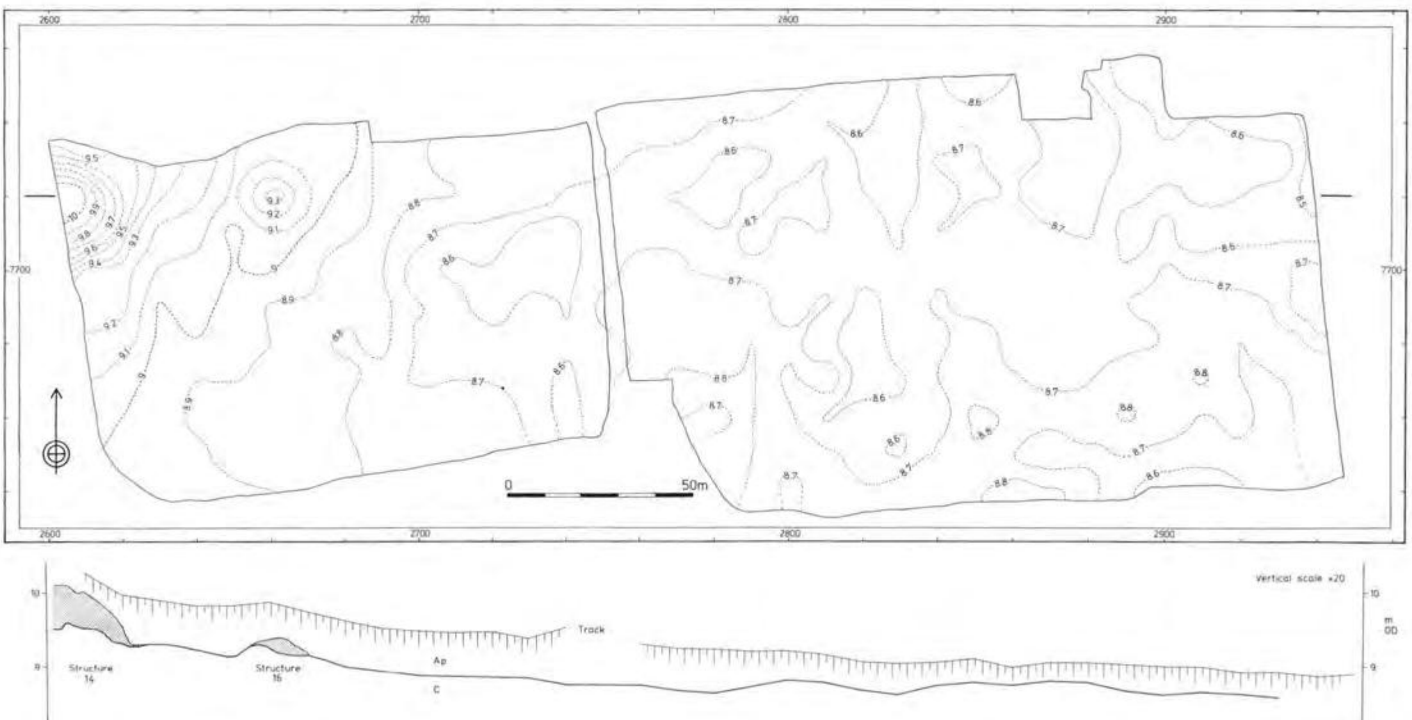


Fig.21 Maxey East and West Fields: excavated surface contours. Scale 1:1500.

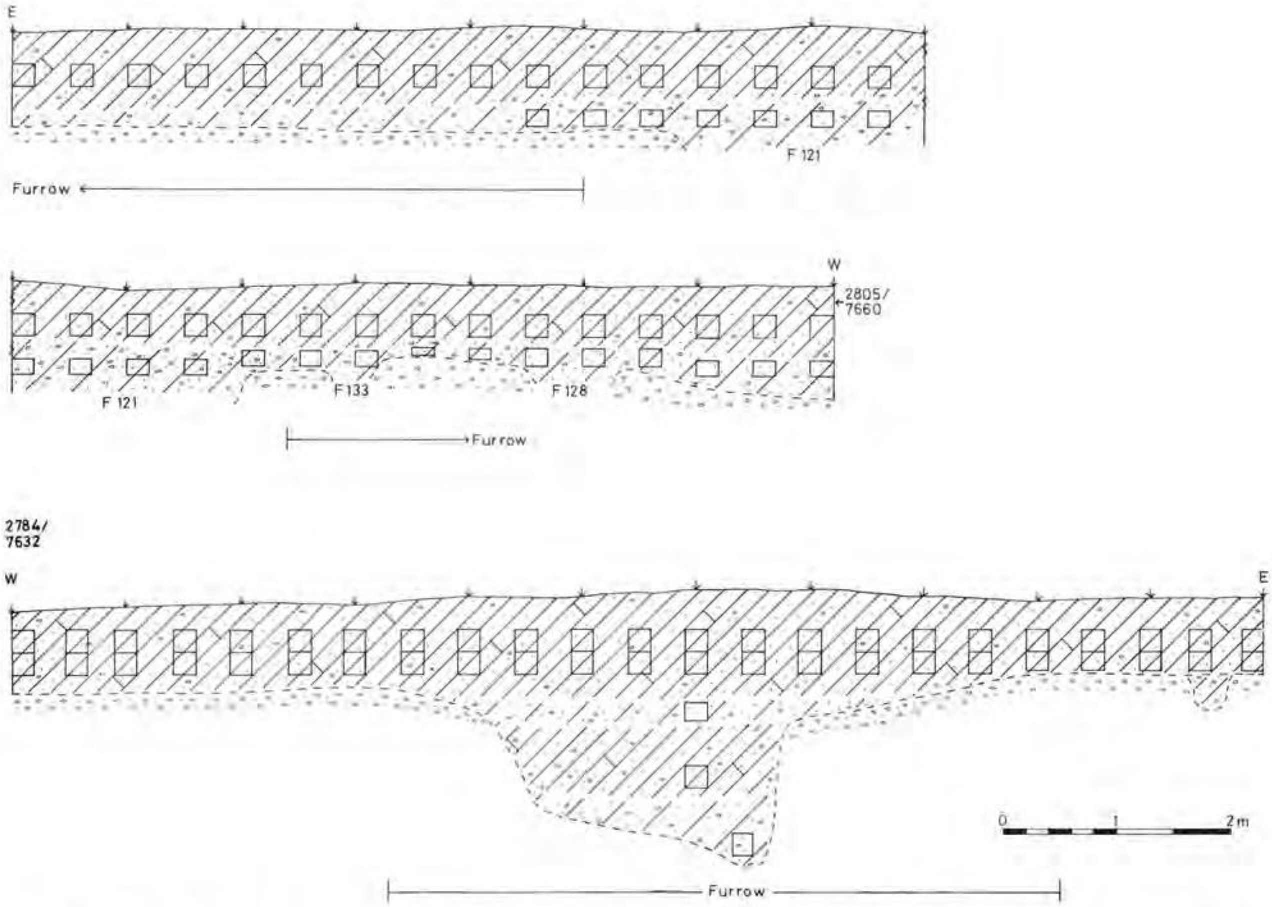


Fig.22 Maxey East Field: sections of ridge-and-furrow sample series 1 (below) and 2 (above). Locations of soil samples are indicated by open squares. Scale 1:30.

The silt fraction exhibits much more internal variation than the sand fraction. Its distribution is generally bimodal with a sub-equal mix of two populations, but may be an even mix, uni- or trimodal in size distribution. It is generally poorly sorted, exhibits mainly negative skewness, which is near symmetrical or slightly coarse-tailed, and platykurtic or mesokurtic kurtosis (Table M3). The mixture of grain sizes accounts for the poor sorting within the silt fraction.

The clay fraction varies from *c.*5% to 15% in the ploughsoil. But on average there is more clay in the lower than the upper series of samples. This suggests that there may be some illuviation or downward movement of clay, although no clay coatings were evident in the field. But micromorphological analysis of the ploughsoil above the mortuary structure suggests that it is indeed subject to illuviation and the deposition of clay minerals, iron/aluminium oxides and hydroxides.

Sample series 2 consisted of two complementary rows of samples taken from the ploughsoil (Ap) at a depth of *c.*20cm to 30cm and the B_t horizon at *c.*40cm to 50cm at 50cm intervals (Grid:2820/7660 to 2805/7660) (Fig.22). Both series of samples passed over three north to south Romano-British period ditches, F.128,F.133, and F.121 from west to east respectively.

The ploughsoil displays remarkable textural uniformity to the first sample series (Table M4). It is also a friable, medium blocky ped structure sandy loam with a varying admixture of gravel and small stones.

The B_t, horizon, although still a sandy loam, contains less clay on average, more sand and much greater amount of gravel then the Ap horizon (Table M4). The greater coarse content is probably due to the proximity of the subsoil and the possibility of deep ploughing bringing subsoil material up into the B horizon.

The statistical measures are similar to those exhibited in sample series 1. The sand fraction of the Ap horizon is very well sorted, with a near symmetrical to fine-skewed skewness, and a very leptokurtic kurtosis (Table M5). On the other hand, the silt fraction is poorly sorted, with platykurtic/mesokurtic kurtosis, and positive skewness (Table M6).

These generally similar statistical measures for the two sample series suggest the following comments about the sources and nature of the present-day soil profile at Maxey. The leptokurtic kurtosis values emphasise the predominance of one population within the sand fraction, the medium sand. Moreover, the sand is close to its source, the subsoil. Some fraction of the sand in the subsoil probably underwent previous sorting, possibly in a high energy freshwater environment. The sand fraction has experienced some mixing in the ploughsoil, but little effective sorting. The near symmetrical skewness values also suggest that the topsoil environment is one of less effective sorting energy. These characteristics emphasise the detrimental mixing effect of ploughing and its hindrance of soil forming processes.

The low kurtosis values for the silt fraction confirm the varying mixture of populations within the silt fraction. As there are few strong skewness values for the silt fraction, it has undergone little environmental mixing. Thus the relative homogeneity of the A and B horizons may be a result of a combination of prolonged ploughing, crop roots and worm action. The sand/gravel subsoil plays a major determinative rôle in the composition of the overlying soil. The B horizon tends to survive best on the edges of the plough ridges. Ploughing has probably been the major hindering or disruptive factor in the development of a textural B horizon.

As an experiment, the alkali-soluble humus content was determined from the same samples taken for the particle size analysis. It was hoped that relatively higher values in the A and/or B horizons might reflect, and be coincident with, archaeological features in the subsoil.

For the first ridge-and-furrow sample series, relatively higher humus content values were exhibited on either side of the furrow and pit (sample A_1:6-20) (Table M7). In some cases in the second ridge-and-furrow sample series, relatively higher humus content values were exhibited above and on either side of the three ditches (samples A:21-31; B:16, 25-27) (Table M8). In particular, higher readings were found in the A and B horizon samples associated with ditches F.128 and F.133. This may result from a combination of the presence of underlying features and ploughing dispersing soil containing more organic material laterally to either side of the feature as well as vertically.

But it is difficult to assess the importance of these results. The variation in results may only reflect the method of sampling. The sampling interval of 50cm may have been too wide to reflect accurately the humus content variation. Or, the regular ploughing-in of crop stubble may have biased the results, although the average background humus content is quite consistent at *c.*three parts per million. Moreover, it does not necessarily follow that higher humus contents in the features will be reflected in the soil above. Thus the possibility may only be put forward that a higher humus content in the ploughsoil reflects underlying features. But the higher humus values on either side and above some features (especially the furrow), does suggest the possibility of some vertical and lateral dispersal of the soil due to plough action.

Certainly T.P.Taylor's work (1979, 93-100) at Chilbolton and Micheldever Wood in Hampshire illustrated that the continued presence of archaeological features was not essential for the preservation of soil marks. At Chilbolton, ditch material was being displaced although it was maintaining its identity. But the displaced ploughsoil may be losing its individuality, that is, mixing laterally with other material. At Micheldever Wood, the ploughsoil over the ditch was found to be significantly different from the natural soil in terms of the fine/coarse ratio and clay content. It was maintaining its individuality despite ploughing. At the former site there was a decrease in organic matter in the displaced ditch ploughsoil, while at the latter site no important humus variation was observed.

By contrast, the results at Maxey were not nearly so conclusive. It would appear that the ploughsoil over the ditches does not differ significantly from the surrounding ploughsoil. The Ap horizon is slightly finer than the B_1 horizon and feature infilling material. But is was not possible to isolate the presence of features by the textural individuality of the ploughsoil over archaeological features. It may only be suggested that there has been vertical and lateral dispersal to account for the relative homogeneity of the Ap and B_1 horizons. The higher humus content to either side of archaeological features suggests that there is some vertical and lateral displacement of soil and organic matter. This displacement is probably no greater than the sample interval of 50cm, and therefore would have had little effect on the results of the intensive field-walking survey.

It would therefore appear that there has been some soil dispersal due to ploughing at Maxey. It is impossible to define the time scale over which this occurred, but the area has certainly been intensively ploughed since medieval times.

In conclusion, crop and soil marks on the river gravel terraces at Maxey must be mainly due to the better moisture retention capacity of the feature fills relative to the well drained subsoil. It was not possible to detect the presence of archaeological features in the ploughsoil.

Phosphate and magnetic susceptibility surveys of the topsoil by David Gurney

Introduction

This report should be read in conjunction with the discussion of similar analyses of subsoil features, given in part IV, below. Methods of sampling and analysis are outlined in Appendix III.

The results of the surveys do not reflect in any way the pattern of the medieval furrows, the position of the plough headland, the distribution of medieval or post-medieval surface finds, or the position of modern field boundaries. There was, however, close correlation between phosphate and magnetic susceptibility enhancement and surface finds of Roman pottery. It is therefore assumed that the enhancement of phosphate and magnetic susceptibility in the ploughsoil are of archaeological significance, and do not result from medieval or modern agricultural activities.

The phosphate survey

The basic aims of the Maxey phosphate survey were firstly, the determination of the horizontal distribution of phosphate in the ploughsoil across the whole site, and the relationship of this to the magnetic susceptibility survey, finds density distributions, and surviving subsoil features; and secondly the detailed examination of ploughsoil above structures and isolated features identified and located from aerial photographs.

The survey was carried out on a 5m grid across the whole site. It was important for the survey to cover areas that were relatively free of cropmarks, so that the background phosphate levels could be determined. Results were initially displayed as contour plans, but have been redrawn as dot-density diagrams (Figs.23 and 24); in each field the lowest contour plotted was the mean value of all samples (East Field = 133mg P/100g; West Field = 107mg P/100g). The contours (dot densities) are set at intervals of half the standard deviation (the interval for the East Field is 35mg P/100g, and for the West Field 22mg P/100g).

The West Field (Fig.23)

Three main areas of enhancement were encountered: the area to the east of the main Phase 5.2 drainage ditch F.506, the south-east corner of the field, and the area between the central mound and the outer henge ditch, in the north-west corner. In the first of these, the unpatterned distribution of phosphates and the absence of settlement features suggests that this area may have been used for livestock, and that F.506 constituted a major field boundary of Phase 5. The second area of enhancement appears to relate to the Iron Age settlement comprising structures 22,23 and 25, with their associated enclosures, also of Phases 5 and 6. The third area is between the outer, henge, ditch and the inner ring-ditch and mound, where there are several areas of enhancement, but few surviving subsoil features. In the western half of the henge complex Simpson (Chapter 3) excavated circles of pits containing calcined human bone, but none were found in the area of the present excavations. Such features were not present in the east half of the henge, but the intervening seventeen years of ploughing may have destroyed many internal features. Ploughed-out cremations might be expected to leave phosphate traces in the ploughsoil, especially if the plough-damage was relatively recent, and it is tentatively suggested that some at least of the phosphate concentrations in the wide 'berm' between the two henge ditches might be explained in this way.

The area (Fig.44) of the oval barrow (Phase 2, structure 16) and the possible Iron Age square-ditched barrows (Phase 4, structures 17 and 18) has very low phosphate levels, both in the ploughsoil and in the subsoil features themselves (see part IV); the absence of finds and evidence for domestic occupation confirms the funerary, non-settlement, nature of this part of the site.

The East Field (Fig.24)

In the East Field, the phosphate enhancement above and south of the main Phase 8 settlement correlates with both surface finds (Fig.30) and magnetic susceptibility enhancement (Fig.26); it also correlates closely with the known concentration of cropmarks (Fig.16). The rest of the field has relatively low phosphate values, and in the archaeologically 'blank' area to the south-east and north-west, values do not rise above the mean. Structures in the south-west corner and the nearby area of small rectangular enclosures or yards are not enhanced, and this, combined with the enhancement of magnetic values (discussed below), confirms that the area was probably not used to corral or house livestock. Finally, ploughsoil phosphate values from detailed surveys over Phase 8 structures 3 and 4 are discussed with the relevant subsoil feature analyses in part IV, below.

The magnetic susceptibility survey

Samples were taken on the same 5m grid as the phosphate survey, and at the same time, across the whole site. The results, which are therefore directly comparable, are expressed (Figs.25 and 26) in the same manner, with contours from the mean (78 $SI/kg \times 10^{-8}$) with increments of half the standard deviation (interval = 13), above the mean.

The West Field (Fig.25)

The first area of enhancement is in both fields, immediately on either side of the modern trackway which separates the two sites. We were later able to remove this track and found it to be largely made-up from cinders and rubble; the cinders tended to spread sideways, thus accounting for the high topsoil magnetic enhancement. The second principal area of enhancement was above and along the main Phase 5.2 north to south ditch, F.506. Although there are other grounds to suppose that this was an important feature, the absence of burnt material or domestic debris from its filling when excavated suggests that the magnetic enhancement may be the result of the 'fermentation process' (Tite and Mullins 1971). The pattern of enhancement elsewhere in the West Field indicates little evidence for occupation or other industrial activity to the east of this main ditch; this is consistent with the phosphate survey which suggests that this area may have been used for livestock. Enhancement of samples along the southern edge of the field probably reflects later Iron Age activity, although contamination from the adjacent quarry workshop and plant repair area cannot be ruled out.

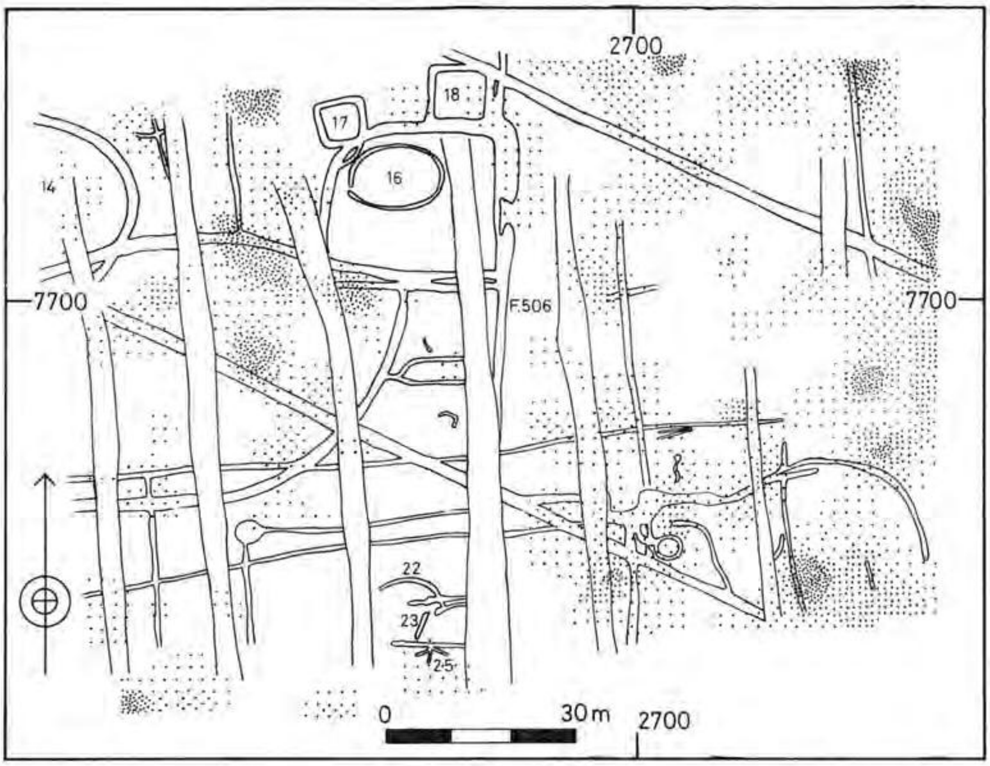


Fig.23 Maxey West Field: topsoil 5m phosphate survey. The four dot densities are in steps of half the standard deviation above the mean. Scale 1:1200.

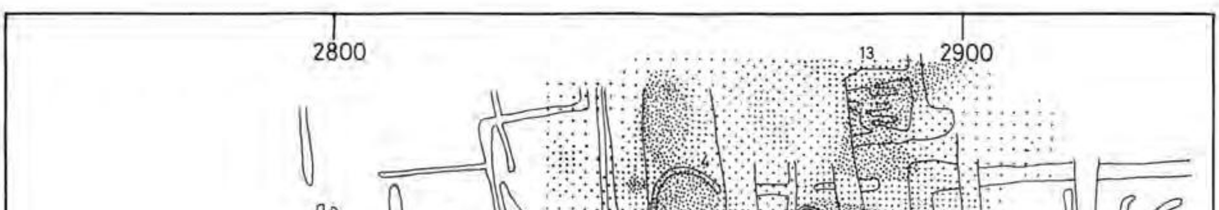


Fig.24 Maxey East Field: topsoil 5m phosphate survey. The four dot densities are in steps of half the standard deviation above the mean. Scale 1:1200.

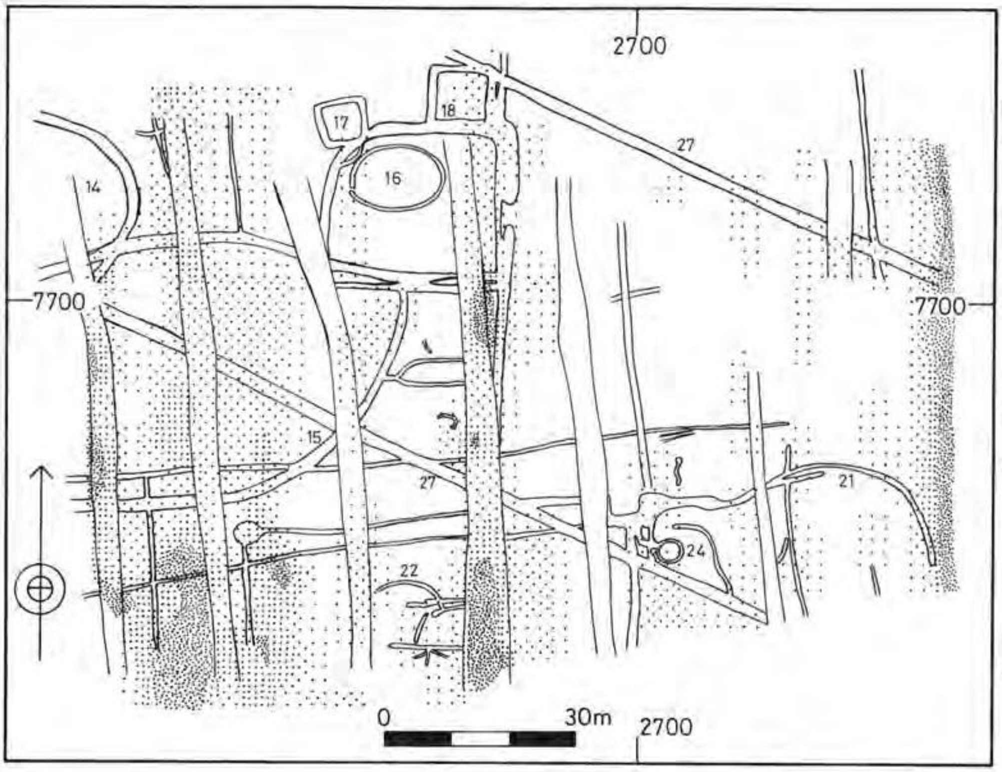


Fig.25 Maxey West Field: topsoil 5m magnetic susceptibility survey. The four dot densities are in steps of half the standard deviation above the mean. Scale 1:1200.

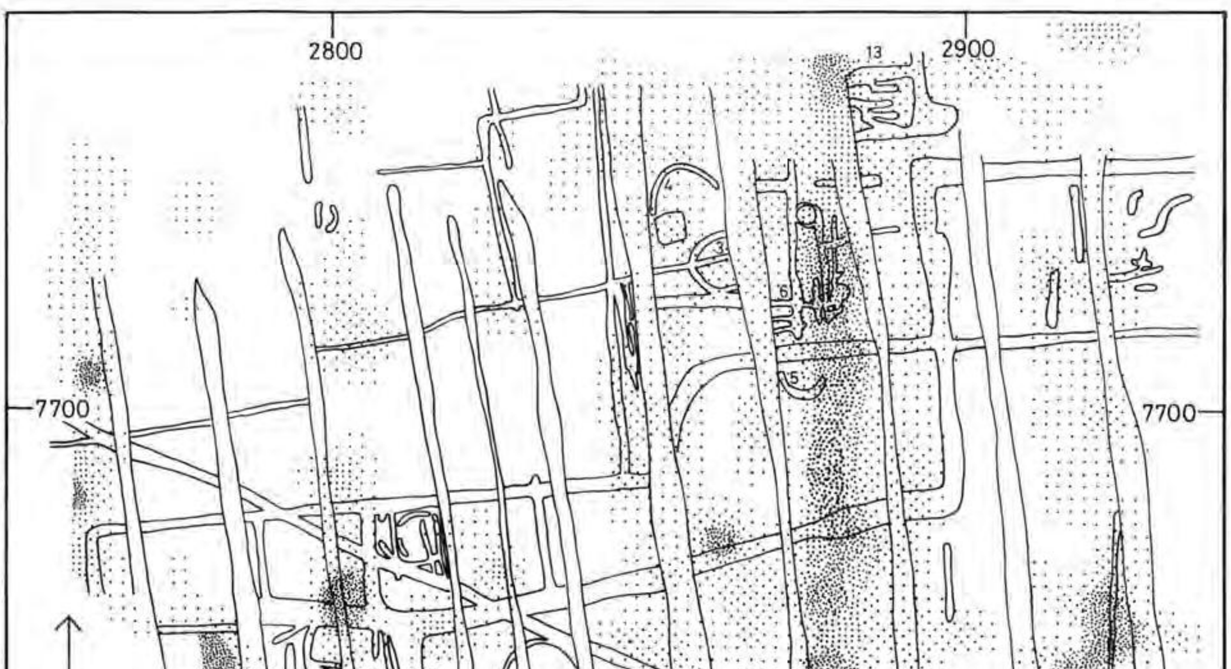


Fig.26 Maxey East Field: topsoil 5m magnetic susceptibility survey. The four dot densities are in steps of half the standard deviation above the mean. Scale 1:1200.

The East Field (Fig.26)

The main magnetic enhancement on the East Field is coincident with the distribution of Roman finds on the surface (Fig.30), and with phosphate enhancement (Fig.24). The topsoil magnetic enhancement is therefore probably caused by the main Phase 8 settlement beneath. Both magnetic and phosphate enhancements tend to 'drift' southwards in a manner that does not reflect the distribution of subsoil features. Displacement of soil by ploughing may be discounted, but a feint negative soilmark on an old aerial photograph (St.Joseph photo.V191, 1/7/1957) runs north to south, along the area of enhancement; it is possible, therefore that the surface surveys may indicate the presence of a feature, such as a track, for which no evidence has survived at the excavated level.

The rest of the East Field has relatively low values, but the slight magnetic enhancement within the area of the small rectangular Phase 8 enclosures in the south-west corner of the field, combined with the absence of phosphates already noted, suggests that the area was not used to house livestock. It should be added here that the phosphate and magnetic susceptibility surveys in this area have prevented a misleading interpretation of these small ditched yards, which might well have been interpreted as stockyards.

Plant remains in the modern soil and contamination from the surface

by F.J.Green

The methods of recovery used are discussed in part VIII below. Soil samples for botanical analysis were removed from the 'A' horizon at every 20m grid point across the East and West Fields. The general results are summarised in Table 8. Clearly the density of carbonised plant remains recovered from this horizon reflects various modern agricultural activities; these include the specific and often localised conditions encountered in the burning of stubble, the direction of wind, the original density of plant remains resulting from mechanical harvesting, and, finally, differences in heat levels in the various areas burned. Moreover, the condition of seeds and cereal grains, the moisture content and their position in relation to the mass of burnt material could potentially affect the observable end-product. Thus changes in the density of carbonised or charred seeds recovered from the ploughsoil were to be expected.

Taxa	*Quantity per 10 litre sample* *Maximum*	*Minimum*	*Mean*
CHENOPODIACAEA			
Chenopodium sp.	1	(1 sample only)	
ROSACEAE			
Prunus sp.	1	(1 sample only)	
POLYGONACAEA			
Polygonum sp.	2	(1 sample only)	
Rumex sp.	1	1	(1 sample only)
PLANTAGINACEAE			
Plantago major	7	1	1.22
RUBIACEAE			
Galium sp.	1	(1 sample only)	
COMPOSITAE			
Sonchus sp.	2	(1 sample only)	
Lapsana communis	1	(1 sample only)	
CYPERACAEA sp.	1	(1 sample only)	
GRAMINEAE			
Triticum aestivum (Caryopses)	34	1	3.72
T. aestivum (Rachis nodes)	27	2	9.45
T. aestivo-compactum (Caryopses)	1	1	0.017
T. spelta (Caryopsis)	1	(1 sample only)	
Triticum sp. (Caryopses)	3	1	0.135
Triticum sp. (Glume base)	1	(1 sample only)	
Triticum sp. (Glume apex)	1	(1 sample only)	
Hordeum vulgare (Caryopses)	3	1	0.28
H. vulgare (Rachis nodes)	3	1	0.24
Avena sp. (Caryopses)	2	1	0.05
Cereal sp. (Caryopses)	6	2	2.32
Cereal sp. (Culm nodes)	1	1	0.135
Cereal sp. (Culm internode)	1	(1 sample only)	
Fragments not identified	1	(1 sample only)	

Table 8: Taxa present from the surface collection of the 'A' horizon, Maxey East and West Fields.

Table 8 also indicates the range of wild and cultivated species encountered. *Triticum aestivum* caryopses and *Triticum aestivum* rachis nodes accounted for the bulk of the evidence. However, small quantities of barley (*Hordeum* sp.), both caryopses and rachis nodes, were also recorded. Oats (*Avena sativa)* and cereal grains that could not be further identified were also found. Culm nodes and culm internode fragments were surprisingly under-represented. This is especially surprising for the denser culm node fragments which are quite often recovered from archaeological deposits. The absence of this material must reflect a difference in burning conditions. Some species were recorded abundantly in charred form from archaeological deposits, but were rarely found in the topsoil uncharred: for example, *Galium* sp., *Rumex* sp. and *Chenopodium* sp. On the other hand, a species such as *Plantago major* was not found charred in any archaeological deposit and was only recorded as a modern charred weed contaminant of the field surface.

The average content of charred botanical material from the ploughsoil samples was 19.03 components. One bucket (approximately 10,000ml) was the sample size used. The maximum recovery rate from a single sample was forty-six charred components, and the minimum quantity recovered was five. Incidentally, both minimum and maximum figures were found in samples along the line 7740, east to west. This line also had the highest average density of 29.4 components. The grid line 7640 east to west had the lowest average density. Three anomalies were also noted along this line and included the recovery of spelt wheat *(Triticum spelta)*, oats *(Avena* sp.) and *Sonchus* sp. These unique finds may indicate contamination of the topsoil by archaeological material. Examination of the species diversity of the modern plant remains (charred) suggests a consistent range, with a maximum of eight taxa in one sample from Grid point 7720/2800.

The topsoil collection study was principally concerned with charred plant remains and contamination in an attempt to provide additional data to Keepax (1972, 221-229). Consequently the modern, uncharred, plant remains from the topsoil were not recorded in detail, but the range of these plant remains is shown in Table 9. All these species were ubiquitous and encountered in considerable numbers. Observation of the plants growing on the modern field surface and in the adjacent field boundaries indicated that these were the major weed species present on the site. It is significant that of the modern uncharred species recorded, some were never found in a charred state in archaeological contexts or on the field surface. For example, Fool's Parsley (*Aethusa cynapium*) grew prolifically on the modern surface and was often recorded in large numbers up to 600mm into the topsoil.

The above evidence suggests that modern charred plant remains may have contributed to the archaeological assemblages. However, twenty-four species out of a total of fifty-one weed species recovered from archaeological contexts were specifically contained in archaeological deposits alone; they were not recorded from the topsoil. A further thirteen species were recorded in charred form from both archaeological deposits and the modern topsoil. The latter species are most commonly associated with anthropogenic environments of all periods in north-western Europe. Finally, only six species were found exclusively in the topsoil. These results suggest that there is relatively little relationship (and with it, the possibility of contamination) between modern and ancient charred plant material. The nature of the charred material itself was, however, of greater interest.

All charred plant remains from the topsoil were fragmented, but the cereals were especially so. Only part of each cereal caryopsis was charred; the remaining, uncharred, parts of the grain had decayed, thus leaving only the charred portion. This could account for the large number of fragmented grains found. The charred fragments from the topsoil exhibit a characteristic puffed, or bloated, appearance. Material preserved in this way is characteristic of wet fragments burnt at a high temperature. This type of burning was not located in the archaeological deposits. The grain from archaeological contexts consisted of dense or compact carbon, indicating that charring had taken place under completely different firing conditions. It should be pointed out that a few of the grains recovered from archaeological deposits showed puffed characteristics, but this was not to the same degree as those from the topsoil samples. It was also noted that rachis nodes, which were so common in the topsoil and were readily identifiable as *Triticum aestivum*, were not recorded in the archaeological deposits. Moreover the grains of *Triticum aestivum* from the topsoil did not compare (as regards dimensions) with any archaeological material; furthermore, grain that was morphologically *Triticum aestivum (sensu stricto)* was not recorded from any archaeological deposit. Thus modern charred grain does not contribute to the archaeological assemblages from this site.

It is not possible, however, to be so precise for other species. For example, small quantities of barley, oats and a single grain of wheat with 'spelt-like' characteristics were recovered from the ploughsoil. These grains consisted of charred fragments that had been burnt whilst

Presence/Absence	*'A'*	*'B'*	*Furrow*	*1*	*2*	*4*	*5*	*6*	*7*	*8*	*9*	*12*
FUMARIACEAE												
Fumaria officinalis L.	X	X	X	—	—	—	—	—	—	—	—	—
CARYOPHYLLACEAE												
Silene sp.	X	X	X	—	—	—	Xw	—	—	X	—	—
Stellaria sp.	X	X	X	—	—	—	—	—	—	Xc	Xc	Xc
CHENOPODIACEAE												
Chenopodium album L.	X	X	X	—	—	—	—	—	—	Xc	Xc	—
PAPILIONACEAE												
Medicago sp.	—	—	—	—	—	—	Xc	—	—	—	Xc	—
Vicia sp.	X	O	X	—	Xc	—	Xc	X	X	X	Xc	—
ROSACEAE												
Rubus sp.	X	O	X	—	—	—	—	—	—	—	—	—
UMBELLIFERAE												
Aethusa cynapium L.	X	X	X	—	—	—	—	—	—	—	—	—
EUPHORBIACEAE												
Euphorbia helioscopia L.	X	X	X	—	—	—	—	—	—	—	—	—
POLYGONACAEA												
Polygonum sp.	X	X	X	—	—	—	Xc	—	—	Xc	Xc	—
Rumex sp.	X	X	X	—	—	—	—	Xc	—	Xc	Xc	Xc
LABIATAE												
LABIATAE sp.	X	X	X	—	—	—	—	—	—	—	—	—
PLANTAGINACEAE												
Plantago major L.	X	O	O	O	O	O	O	O	O	O	O	—
RUBIACEAE												
Galium cf. aparine L.	X	X	X	—	Xc	Xc	Xc	—	Xc	Xc	Xc	Xc
CAPRIFOLIACEAE												
Sambucus nigra L.	X	X	X	—	—	—	Xw	—	—	—	—	—
COMPOSITAE												
Sonchus asper (L.) Hill	X	X	X	—	—	—	—	—	—	Xc	—	—
JUNCACEAE												
Juncus sp.	—	—	—	—	—	—	Xc	Xc	—	Xc	Xc	/
GRAMINEAE												
GRAMINEAE sp.	X	X	X	—	Xc	—	—	Xc	/	Xc	Xc	—

Table 9: Plants recorded as modern contaminants, both carbonised and non-carbonised, from archaeological contexts, Maxey East and West Fields; X, presence; O, absence; c, carbonised; w, waterlogged.

dry and showed none of the puffing characteristic of the charred remains from the ploughsoil. In these cases it is possible that plant remains from archaeological deposits might be contributing to the plant material in the topsoil, particularly in areas where deep ploughing had taken place; but examination of the locations where such evidence was recovered revealed no known or observable archaeological features. Nevertheless, it is possible that ploughing and other agricultural activities had disturbed or destroyed archaeological deposits, thus bringing material to the surface.

It is possible that charred seeds, like pollen (Dimbleby and Evans 1974, 119), might accumulate over a period of time, and that older material might be found in deeper horizons both within archaeological deposits and the natural soil. A detailed examination of the 'B' horizon and buried features, mainly medieval furrows, was therefore undertaken. The results of the furrow samples will be considered first (Table 10).

The bulk of charred plant remains from furrows consisted of cereal species that could not be identified precisely (52%); 35% consisted of *Triticum compactum* and *Triticum aestivo-compactum*, which is characterised by well-rounded grains, easily separable from the *Triticum aestivum* of the ploughsoil. Not a single fragment comparable with the grain from the ploughsoil was recovered from the furrows. Barley accounted for *c.*13% of the evidence. The quantity of unidentifiable cereal grains is much higher than in the 'A' horizon, and the quantity of barley is also much higher (Table 10); the proportion of wheat is accordingly lower. However, the absence of oats and spelt wheat from the furrow samples must be significant. It should be noted that the absence of these species from archaeological deposits may be due to the location of the furrows sampled, as these were not always in the vicinity of archaeological features. Further, only one sample, taken from a furrow at a depth of between 300-600mm produced a single charred cereal grain. All plant remains in furrows were contained within the top 300mm. Even if a furrow disturbed and displaced soil from earlier archaeological periods, few cereal grains were incorporated at a greater depth. Moreover, species commonly found in adjacent archaeological features were absent.

The range of species recovered from the furrows is quite consistent with post-Roman and medieval evidence and might best be viewed as the product of manuring in these periods. The lack of carbonised weed seeds in the furrows argues against medieval crop-burning or stubble-firing, especially since there were no puffed grains. The very small quantities of material from furrows are within the levels accepted as 'background noise' for all other phases. However, the persistent presence of *Triticum compactum* in similar quantities from Phase 2 Neolithic deposits is hard to explain. If this was contamination from the medieval furrows, then one must explain why the Neolithic deposits contained no other plant remains at all. It is perhaps possible that material from the furrow samples might originate from a much earlier period altogether, and that this provided the source for the contamination of *all* subsequent deposits. The composition of this hypothetical early contaminant might perhaps account for the consistently observed, but low level, of free-threshing wheats from deposits of all phases.

	'A' Horizon	*Furrows*
Triticum spelta L.	<1	0
T. aestivum L.	56	0
T. aestivo-compactum	0	13
T. compactum Host	0	22
Hordeum vulgare L.	0	13
Hordeum sp.	<4	0
Avena sp.	1	0
Cereal sp.	38	52
Population:	390	23

Table 10: The percentage composition of cereals from the 'A' horizon and the furrow samples from the East and West Fields, Maxey.

Some fifty-two samples were removed from the 'B' horizon along transects between Grids 2930/7750 and 2930/7730, and from the same 20m grid points that were sampled originally, as part of the 'A' horizon (ploughsoil) survey. Analysis of this material showed that not one of these samples contained any carbonised plant remains. The only indication of possible contamination, either from archaeological sources or from the ploughsoil, consisted of a small 'slag' fragment and a small cereal grain.

In conclusion, the evidence from these surveys suggests that there is a slight possibility that ancient material may have become mixed with that of more recent origin. There was, however, no evidence that modern charred material from recent stubble-burning was contributing to the archaeological assemblages in any way. This, however, is not to say that this might not happen in the future, but that such practices are of such recent introduction that they cannot yet be seen to affect the archaeological record.

The geophysical survey (Fig.27)
by Andrew David

The two fields involved (Fig.27: a (West Field) and b (East Field)) are adjacent, but separated by an access track to the gravel workings. The most convenient way of sampling both areas in the time available was to survey a strip of ground 30m wide, aligned east to west across the centre of both areas, with a gap (26m) to allow for the track. The area thus covered included ground where archaeology, as indicated by surface finds and aerial photographs, was both intense in places and apparently absent elsewhere. It also coincided with areas sampled for phosphate concentration, magnetic susceptibility, and surveyed by metal-detectors and field-walking. It thus serves for a number of comparative purposes.

The sample strip was surveyed with a fluxgate gradiometer, the signal from which was plotted on a field recorder as a series of graphical traces. The ground was covered by 30m traverses repeated at one metre intervals. The resultant traces are reproduced here on Figure 27. This plan shows anomalies of probable archaeological significance compared with the actual distribution of excavated subsoil features (A.M. Laboratory report 2992 Geophysics No. G24/79).

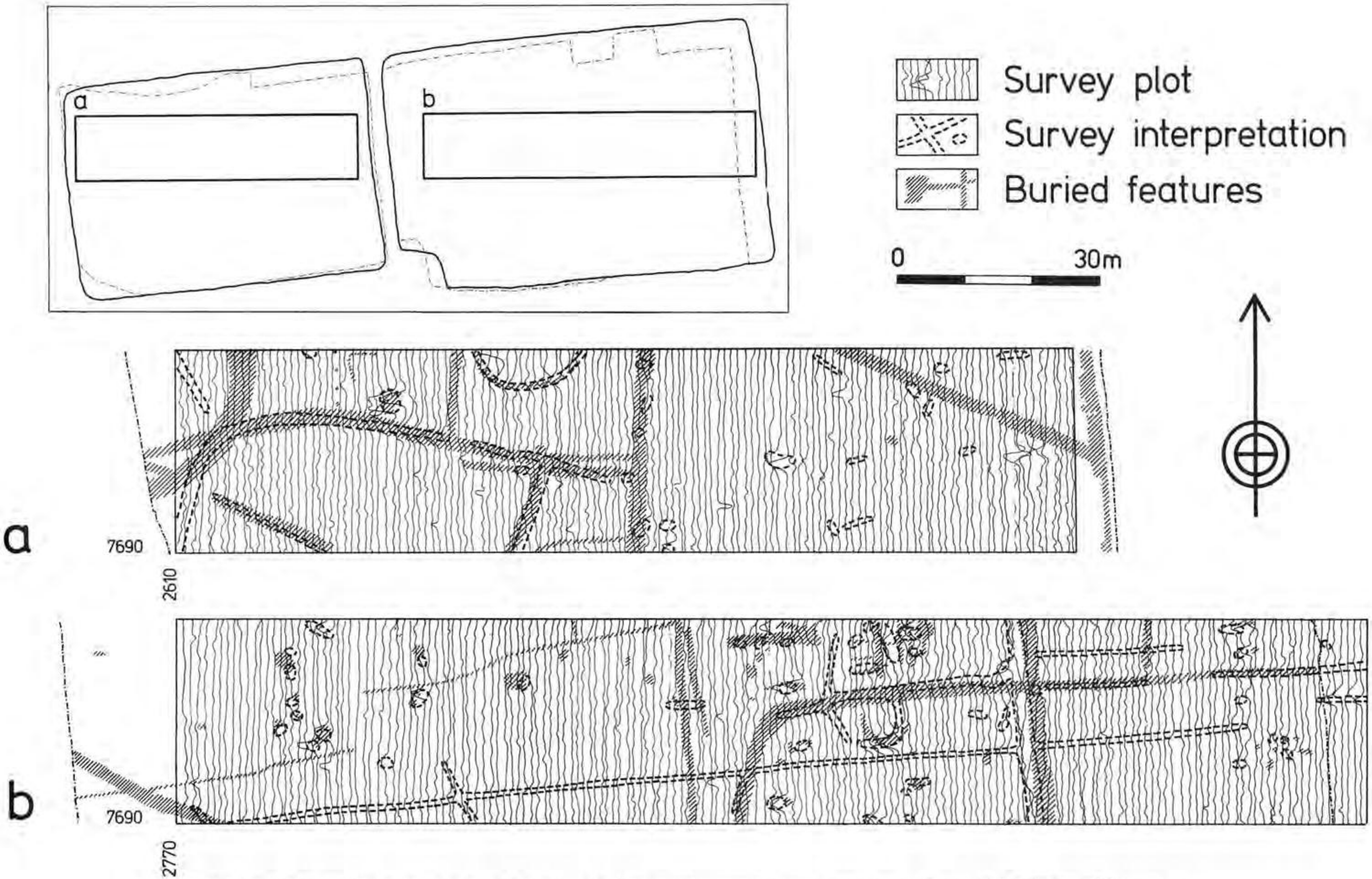


Fig.27 Maxey East and West Fields: plan of the results of the magnetometer survey superimposed on a (shaded) plan of features as excavated (after A.M.Lab). Scale 1:800.

West Field (Fig.27,a)
Features here are of variable magnetic strength, but portions of ditch and some pits are clearly detectable. In parts these are weak and indeterminate where the anomaly barely exceeds the background soil noise. Magnetic features seem to be most clearly pronounced in the west, where the east to west ditch (Phase 5.2, F.533) shows good correspondence with the excavated plan. Half of the oval barrow timber slot (Phase 2, F.542) was detected with considerable accuracy.

The strong anomaly immediately north of the main east to west ditch, midway between the oval barrow and the henge complex inner ring-ditch, although at about 40 gamma (nT) near the bottom of the range of magnetic strengths expected for such a structure, is in other respects characteristic of a possible kiln. Excavation proved this suggestion correct: the anomaly had located the Phase 5 collapsed oven, F.572.

The eastern half of the West Field, with the exception of a single well-marked pit proved comparatively unproductive. Features are present, but weak, and some may well be obscured by soil noise. The north cursus ditch was not detected, but this should not be surprising since such ditches may not contain soil magnetically enhanced by occupation activity (Editorial note: the survey did, however, locate the south cursus ditch at the extreme south-west corner of the survey area; subsequent excavation showed the north ditch to be particularly shallow in the area surveyed; the outer henge ditch was also successfully detected, despite its archaeologically proven lack of settlement debris).

East Field (Fig.27, b)
Archaeological activity here definitely appears to be concentrated in the eastern half of the field, where there are several ditches and a number of pits. With the exception of the broad north to south ditch (Phase 8, F.161) and the major east to west ditch that passes south of structures 3 and 6 (F.158 and F.255), there is somewhat less coincidence with excavated features, although the presence of the numerous features associated with the complex of structures at the centre of the Phase 8 occupation area (structures 3,5,6 and 11) is indicated with some precision. As in the West Field, magnetic strengths are variable and slight features may have been missed. Except for the three pits (structure 7), the westernmost areas show little sign of intense occupation activity.

Ridge-and-furrow crosses the survey parallel with the traverses in both fields and produces little, if any, displacement, due perhaps to gradual rather than abrupt changes in soil depth.

Conclusions
Experience has shown in the past that magnetic response from gravel sites can be highly variable, owing to natural as well as archaeological factors such as differences in the origin and magnetic susceptibility of the gravel or its matrix, and to natural structures within it. Igneous pebbles, buried stream channels and periglacial structures can in some cases produce misleading anomalies, and where these are absent and physical contrasts are poor, there may be no response at all.

Luckily at Maxey there appear to be no misleading anomalies, ancient or modern, and magnetic susceptibility measurements on topsoil and subsoil (63 and 9×10^{-8} SI Units/kg, respectively) are very favourable for clear magnetic definition. The iron oxide content of soils derived from the Jurassic limestone typically provide excellent conditions for magnetic enhancement and must be partly responsible for the promising situation here.

With a strong contrast between topsoil and subsoil it seems unlikely that major features would remain undetected, as indeed the subsequent excavations proved. Blank areas in the survey are therefore likely to represent a genuine absence of archaeology (or its severe destruction), although exceptions such as the slight cursus ditch should be kept in mind. More surprisingly, an unsuccessful attempt was made to detect a large Phase 8 ditch by scanning at the point where it was exposed in the section around the edge of the excavation, outside the main survey area. These minor problems aside, the survey successfully revealed the majority of archaeological features subsequently exposed by excavation and has provided a valuable means of supplementing the basic cropmark plot. Its role in confirming 'negative' areas is particularly important for the interpretation of artefact distributions.

The surface (field-walking) survey
by David Crowther and Francis Pryor

Aims and methods
The broad aims of the survey have already been outlined in the Introduction, above. At the more specific level, the survey was undertaken to determine to what extent surface finds could be spatially correlated with underlying features. It was also hoped that surface finds distributions could throw light on the function(s) of various buildings, linear features, enclosures and fields, through discard patterns, manuring spreads and the like. The recovery procedure was dictated by the size of the smallest archaeological unit we might realistically hope to encounter: in the present case this was a round building. The size of round buildings in the area was approximately known from sites such as Fengate, where most examples would fit inside a 10m square. Accordingly it was felt that a basic unit of a 5m square might offer some chance of observing within-building artefact patterning, although in the event this did not prove feasible. The 5m quadrat size was also used by the Central Excavation Unit at their closely comparable surface survey at Ardleigh, Essex (John Hinchliffe, pers comm.; A.J.Clark 1983, fig.90).

Printed record sheets were prepared for each 5m square and were sub-divided in such a way as to allow the location of each find to a square quarter metre. In effect we were able to produce an accurate plan of spot locations. This degree of accuracy provided a data-base of spot locations that could be satisfactorily manipulated by the Cambridge University computer; this work was undertaken by Stephen Cogbill and Paul Lane, whose report follows below. It should perhaps be mentioned here, however, that Cogbill and Lane also ran tests of resolution at different sizes of quadrat and found that a 5m quadrat was the smallest at which patterning could be seen with any degree of confidence; below that scale extraneous noise became too obtrusive, above it patterns tended to merge. These tests confirmed our largely intuitive assessments prior to the survey.

The record sheets also gave information on the (personal) condition of those doing the fieldwalking, the condition of the ground (good — indifferent — bad, in each case); light (metered) readings were also taken at the beginnings and end of each row searched.

The survey was aligned on the site grid and was undertaken using two rigid 5m frames, constructed of angle-iron, with elasticated internal metre-square divisions. Finds were bagged individually and recorded on the printed forms. The problem of collection bias was minimised by selecting different three or four person teams, at random, each day. The East Field was surveyed along east to west transects; the West Field was surveyed at right-angles to this. The exercise took a total of 500 man-hours, the average recovery rate being 2.8 finds per 5m square. The finds were washed and identified at the project's field centre, and material from the East Field was measured and weighed for more detailed analysis by Paul Lane.

The land was prepared in two stages. First it was ploughed with a shallow-set plough (maximum penetration six to nine inches), then disc-harrowed in two directions. It was allowed to weather for at least eight weeks before fieldwalking began.

Finally, the survey was undertaken by full-time members of the project alone, all of whom have wide archaeological experience. This clearly does not remove any personal biases, but omissions due to straightforward ignorance may be discounted. All artefacts seen were recovered, with the exception of asbestos fragments, broken roofing slates and building rubble. Material recently derived from the gravel quarry (in the region of the mess hut) was also left undisturbed. These omissions aside, the collection was as complete as we could achieve, given our own limitations.

Results (Figs.28-30; 35-36)
A grand total of over 4000 items was recovered during the survey (Table 11). These have been grouped on a broad period basis, with flint treated as a pre-Iron Age phenomenon, for which there is much supporting data in the region (summarised in Pryor forthcoming); certainly the present excavations produced no contemporary flintworking debris from Iron Age contexts, apart, that is, from a handful of residual waste flakes. The discussion that follows considers the surface distribution of artefacts in the light of the subsequent excavations; consequently individual period plans (Figs.28-30; 35-36) show the spot locations of all surface finds against broadly contemporary subsoil features, as revealed by excavation. We will discuss the various periods in chronological order.

1. The flints (later Neolithic and Bronze Age) (Fig.28)
The distribution of topsoil flints is without any discernible pattern. It bears no relationship whatsoever to the broadly contemporary pre-Iron Age features beneath (the cursus — Phase 1 — and features of the henge complex — Phase 2). Good parallels for this thin background scatter of flints are provided by the transect survey (Figs.10,12) and the soils of the land between Barnack and Bainton, upstream of Maxey (Fig.180).

A total of 107 flints were recovered from the East and West Fields and they are considered in detail in part III of this Chapter, together with the closely comparable flints from the excavations. It should be

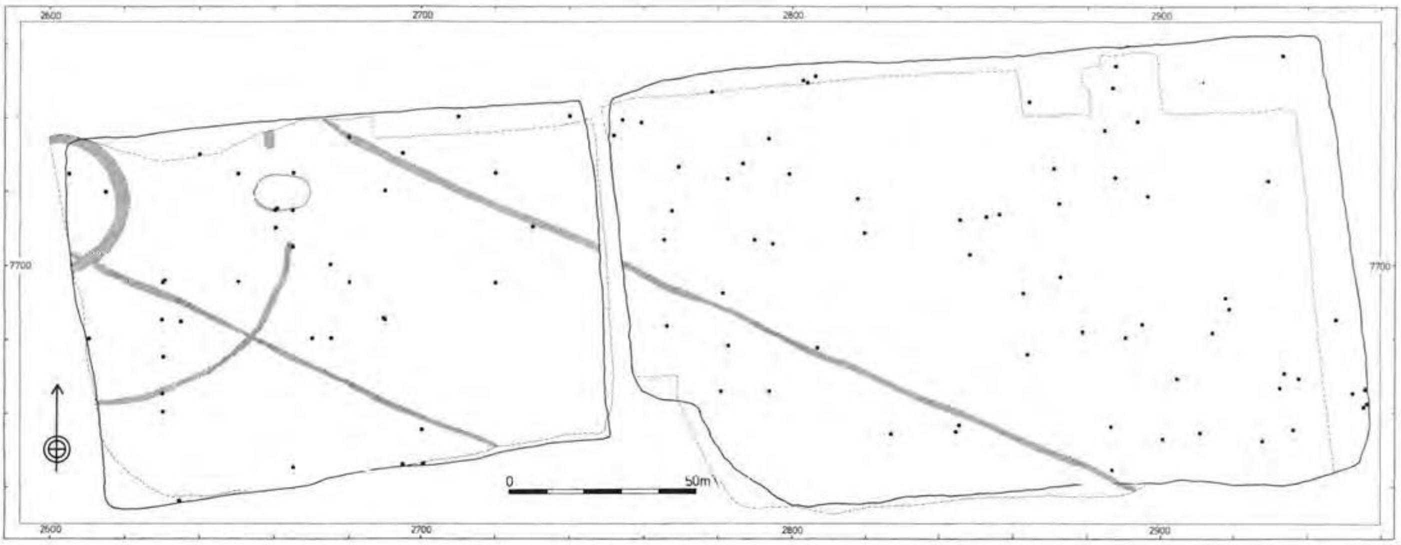


Fig.28 Maxey East and West Fields: flint distribution, plotted against approximately contemporary excavated features (shaded). Scale 1:1500.

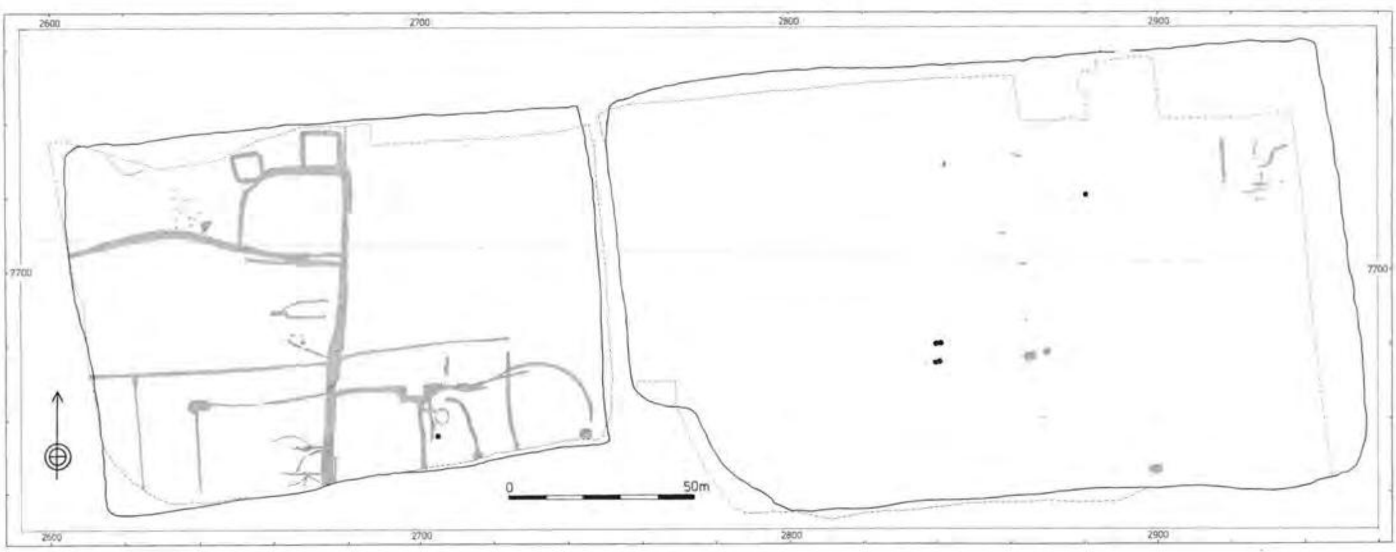


Fig.29 Maxey East and West Fields: Iron Age pottery distribution, plotted against approximately contemporary excavated features (shaded). Scale 1:1500.

	West Field	East Field	% of total
Flint	38	69	2.5
I.A. pot	1	4	0.1
R-B pot	9	374	9.2
Saxon pot	0	3	0.1
Med. pot	43	224	6.4
post-med pot	1686	1723	81.7
Totals	1777	2397	
	4174		

Table 11: The surface survey, general results.

noted here that the vast majority of the excavated flints were from later Iron Age and Roman contexts and must be considered residual. Pre-Iron Age features were nearly bereft of flintwork. Typologically the majority of the flints resemble those found in the 2nd millennium ditches at Fengate. Most of the obvious exceptions to this can be shown to derive from Neolithic contexts. In this regard it is also interesting to note the similarity between the topsoil flints and those from the Phase 3 contexts of the central ring-ditch mound (structure 14), secondary deposits, which must post-date the Neolithic. An Early/Middle Bronze Age date is indicated.

Possible origins for the scatter of flints are discussed in Chapter 5, but suffice it to say here that more than one process of discard or loss is probably responsible, and that manuring must have played an important role.

Despite the homogeneity of the surface distribution, we may draw a few positive conclusions. First there are no grounds to suppose that the plough-damaged upper levels of the pre-Iron Age features were any richer in flints than their truncated lower parts. Second, it seems most improbable that either field was the site of a now ploughed-out, pre-Iron Age permanent settlement. Third, the thin scatter of residual flints in Iron Age and later archaeological features suggests that the surface distribution has not been modified drastically by recent agricultural activity.

2. Iron Age pottery (Fig.29)

The Iron Age pottery from Maxey is almost invariably shell-tempered and consequently is prone to attack by humic and other acids in the topsoil. This almost certainly accounts for its poor showing in the surface survey (just six identifiable sherds). Although less commonly encountered in the excavations than Romano-British pottery, some 12kg of Iron Age pottery were recovered (Table 17), and from contexts and circumstances that did not favour preservation. Many of the principal Iron Age features of Phase 5, for example, were stripped of topsoil using the gravel company's D8 tractor and box scraper which effectively pulverised the naturally friable pottery; sherd counts are therefore largely meaningless, but about 500 to 900 were found during excavation.

A comparison of the ratio of buried:topsoil finds of this date is in the order of 150:1, which is in sharp contrast to the Roman figure. Clearly comment on so minute a sample is also meaningless, but one most important conclusion must be drawn: a site cannot be characterised by field survey alone. The relatively substantial settlement and enclosures of Phase 5 were not indicated by surface material; indeed, analysis of topsoil finds alone would suggest that the Maxey linear cropmarks were Romano-British and placed in a landscape with no Iron Age antecedents. Discussion of the excavations will show that such a statement would be positively misleading.

3. Roman pottery (Figs.30, 31-34, 39)

Subsoil features that are contemporary with this pottery date to Phases 7-9, with perhaps a degree of overlap with the ultimate Iron Age Phase, 6. It is a period for which there is considerable evidence for land management and settlement, but almost entirely confined within the East Field. Pottery of Roman and probable Roman date was recovered in quantity from the topsoil surface (*c*.400 sherds) and from excavated features (*c*.8000 sherds); this is in marked contrast with the paucity of material from the previous, Iron Age, period. The overall ratio of buried:topsoil Roman pottery is 20:1, a significantly lower figure than the Iron Age (150:1). The grand total, however, conceals a degree of variation, which may be distinguished by the principal ceramic types (Table 12). Harder wares, such as those produced in the Nene valley potteries present a lower B:T ratio than the far softer shell-gritted vessels. These figures strongly suggest that post-depositional processes are distorting the topsoil assemblage in favour of the harder, more durable (and incidentally more visible), fabric types. However, despite these important distortions it is possible to identify patterning within the topsoil material that throws light on the interpretation of the site as a whole. When plotted together (Fig.30), the relationship of topsoil finds to subsoil features suggests the following observations:

A. Dense cluster of sherds over Phase 8 structure 6 (centred on Grid 2875/7715).

B. Some increase in surface finds density over substantial linear features (e.g. north and east of structure 6; also enclosure ditches to the south-west, around Grid 2800/7650; also the main east to west boundary linking these two elements).

C. General scarcity of topsoil material over less substantial features, including many structures.

D. Diffuse scatter of topsoil finds in the East Field to the south-east of the ditched enclosure and settlement areas.

E. Rarity of material over all other feature-free areas (i.e. all the West Field and the East Field north-west of the ditched yards etc.).

Figure 31 examines the relationship of topsoil and buried material on the East Field in more detail. We have seen in the Introduction to this chapter that standard-sized (40,000 cm^3) wet sieve samples were taken from every layer of every section excavated. These act as a volumetric 'control' for the measurement of finds concentration variability across the site. Figure 31 compares the density of finds from each excavated wet sieve unit with that from the appropriate 5m square of the topsoil survey. Where two or more wet sieve samples were taken from below the same 5m square, the figures have been averaged. The wet sieve and topsoil values for each 5m square are expressed as percentages of the entire sample population, in pie diagrams, with wet sieve figures plotted clockwise from 'noon', and topsoil figures anticlockwise. These figures do not suggest that there is a necessarily simple relationship between surface and subsoil features; certain features, for example, produce many finds on excavation and have a corresponding dense spread in the topsoil above them; others, equally rich on excavation, generate no such topsoil distribution. The permutations of this complex relationship are many and varied. Some of the more straightforward observations are presented in Table 13; it must always be borne in mind, however, that these observations may be severely distorted by the post-depositional effects discussed above. Stephen Cogbill and Paul Lane carried out a computer-based study of the spatial behaviour of five Roman pottery types: samian, Nene Valley Colour Coat (NVCC), Nene Valley Grey Ware (NVGW), shell-gritted coarse ware and Other Romano-British wares. In the discussion that follows samian has been ignored because of its small sample population. The principal results of the Cogbill/Lane project are discussed here, in the light of the subsequent excavations. Cogbill and Lane present a joint report, on methodological and other aspects of the study not considered here, at the conclusion of the first part of this chapter.

	% B finds	% T finds	B:T ratio
Samian	2	5	13:1
NV Colour-Coated	7	12	17:1
NV Grey Ware	39	54	22:1
Shell-gritted	52	28	57:1

Table 12: Buried (B) and Topsoil (T) Roman pottery, frequency of sherd occurrence

If we examine the isometric frequency surfaces of Figure 39, comparison of (a) and (b) allows a consideration of sherd size to be made; discrepancies between the two indicate where there is a tendency for large or small sherds to proliferate; (c) indicates where there is a tendency for large or small sherds to proliferate; (c) indicates where there is a tendency for one ware-type to occupy areas outside the distribution of others; (d) allows one to consider the extent to which a given ware type is concentrated on certain (10m) squares. More importantly perhaps, it allows direct comparisons to be drawn between different ware-types, regardless of the population sizes in question.

BURIED FINDS		TOPSOIL FINDS: Dense (+2%)	TOPSOIL FINDS: Sparse (−2%)	TOPSOIL FINDS: Absent (0%)
BURIED FINDS	Dense (+2%)	struct. 6	struct. 3 struct. 10	parts of strs. 3 & 12 (under furrows)
BURIED FINDS	Sparse (−2%)	—	parts of struct. 2; major ditches	struct. 9 struct. 12 struct. 2 (parts)
BURIED FINDS	Absent (0%)	—	parts of major ditches	strs. 1 & 4 parts of major ditches all minor ditches

Note
Topsoil finds are grouped by 5m square.
Buried finds based on wet sieved samples.
All percentages expressed as fractions of sample total.

Table 13: Comparison of topsoil and buried Roman finds, East Field.

Using these plots produced by Cogbill and Lane on the Cambridge University computer (Fig.39), it is apparent that all the types of Romano-British pottery defined above occur in considerable numbers over the Phase 8 structure 6, be they hard sandy or soft shelly wares. Both NVCC and shell-gritted wares follow the broad pattern of substantial subsoil features: NVCC over structure 6 and ditches to the east; shell-gritted also over structure 6 and the ditches and enclosures to the south-west. In contrast to this relatively straightforward feature:finds relationship, 'Other R-B' and NVGW, though both heavily represented in these feature-rich areas, maintain a significant presence over the feature-less area to the south-east. The extent to which these fabrics fall outside the distribution of other types is perhaps best illustrated in 2c and 6c of Figure 39. Before turning to this diffuse scatter of material, it is necessary to examine the distribution of sherds over and within structure 6 in more detail.

The cluster of material on the surface above structure 6 is limited to that complex of features alone, despite the presence nearby of structures that also produced a wealth of artefacts on excavation: the round building, structure 3, for example, was particularly rich in finds. The reconstructed soil profile of Figure 21, shows that machine- or plough-damage can be discounted as an agent of distortion. Similarly, we have noted that finds which were plentiful from top to bottom of the ring-gully of structure 3, did not occur on the topsoil above it. This surely suggests that topsoil material in this area does not originate from plough-damage of subsoil features. The cluster of material over the gullies of structure 6 must best be explained in terms of an originally upstanding deposit. Whether or not this deposit in its original form would have been a mound or an ill-defined dumping area, is impossible to say, but an examination of the surface contour plan (Fig.20) shows the 9.0m contour to turn sharply to circumvent the area in question, suggesting a very slight, flattened rise.

Excavated evidence suggests that the features of this structure can be divided into two phases (Fig.32):Phase 8 comprises a round house (structure 3), with an associated small enclosure or yard bounded by ditches and gullies. The round building is then abandoned and fresh ditches are cut, perhaps a century or so later (Phase 9). However the basic land division of the yard seems to remain intact, as witnessed by the presence of a north to south ditch a few metres inside the eastern limit of the old enclosure. Ditches springing off this feature to east and west recut Phase 8 features, or were aligned closely on them. Figure 32 plots the finds recovered by wet sieve from the top of the features from each of these two phases. Bearing in mind that the figures are from small samples, it is notable that features from both phases carry a high finds population; in the case of the later phase it is probable that a high proportion are residual. Unfortunately it is hard to be certain, without major re-analysis, what proportion of the topsoil finds above structure 16 are of Phases 8 or 9; this is due in part to the fact that the pottery was not distinguished by form; even if this had been done, most of the pottery, being NVGW or shell-gritted bodysherds, is typologically undiagnostic. However, the presence of a known Phase 8 habitation and the absence of any such structure in Phase 9, must suggest the former as the origin of most surface material. A marked contrast is evident between the round building (structure 3) and its associated yard gullies (structure 6), both in terms of sherd population and mean size (Fig.32, top and middle). There is also a clear decline in the proportion of finer, non-shell-gritted, wares, in the features of the round building (Fig.32, bottom; 33, top).

The smaller mean sherd size in the yard gullies, when compared with the round building eaves-drip gully (Fig.32, top) coincides with an increase in the proportion of harder fabrics in these yard gullies (Fig.33, top). Phosphate values in the yard gullies show considerable variation, with values as high as 386mg, or as low as 120mg P per 100g (Gurney part IV, below). It may be suggested that the material in this corner of the enclosure is derived from house floor clearance; if the ceramics represent a small, non-degradable fraction within the general floor make-up of straw, food-preparation and consumption debris - such material, cleared regularly, in bulk, could form the basis of a midden heap for use on fields and gardens. This heap contains debris derived from the house floor, which might account for its small size. The

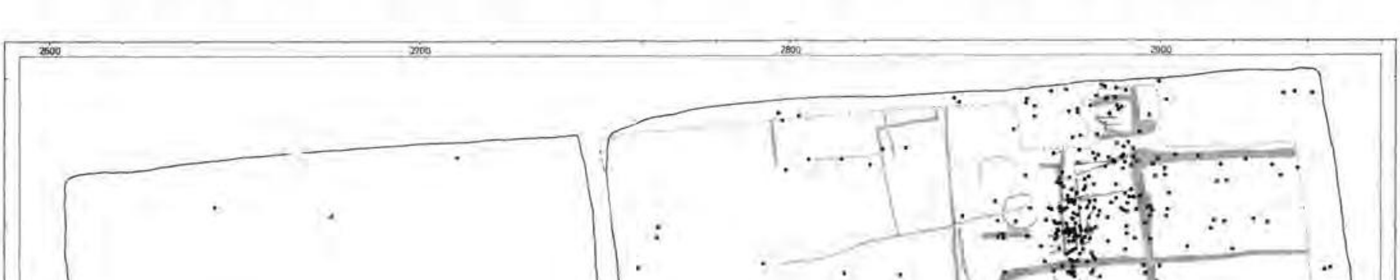


Fig.30 Maxey East and West Fields: Roman pottery, plotted against approximately contemporary excavated features (shaded). Scale 1:1500.

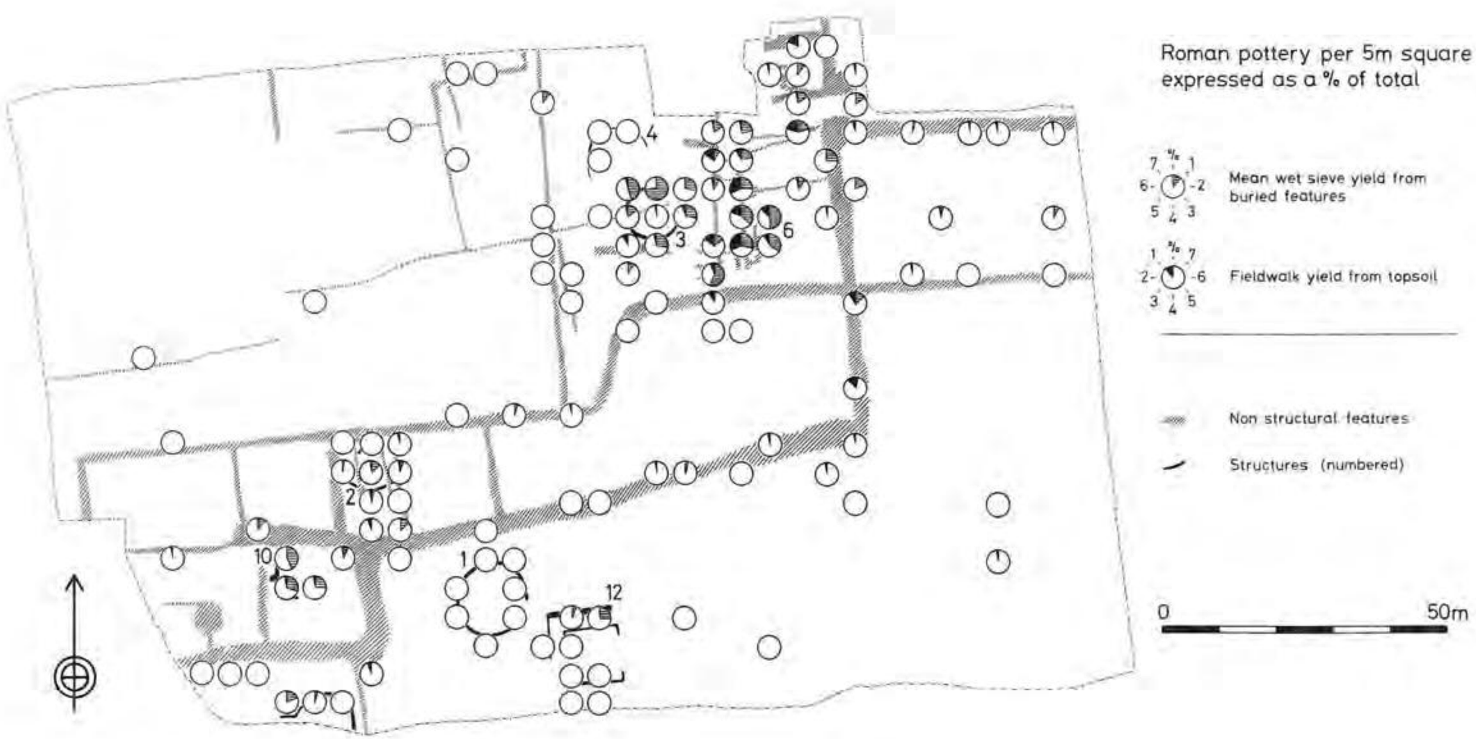


Fig.31 Maxey East Field: distribution of Roman pottery per 5m square (fieldwalked), plotted against mean wet sieve yields from buried features. Scale 1:1200.

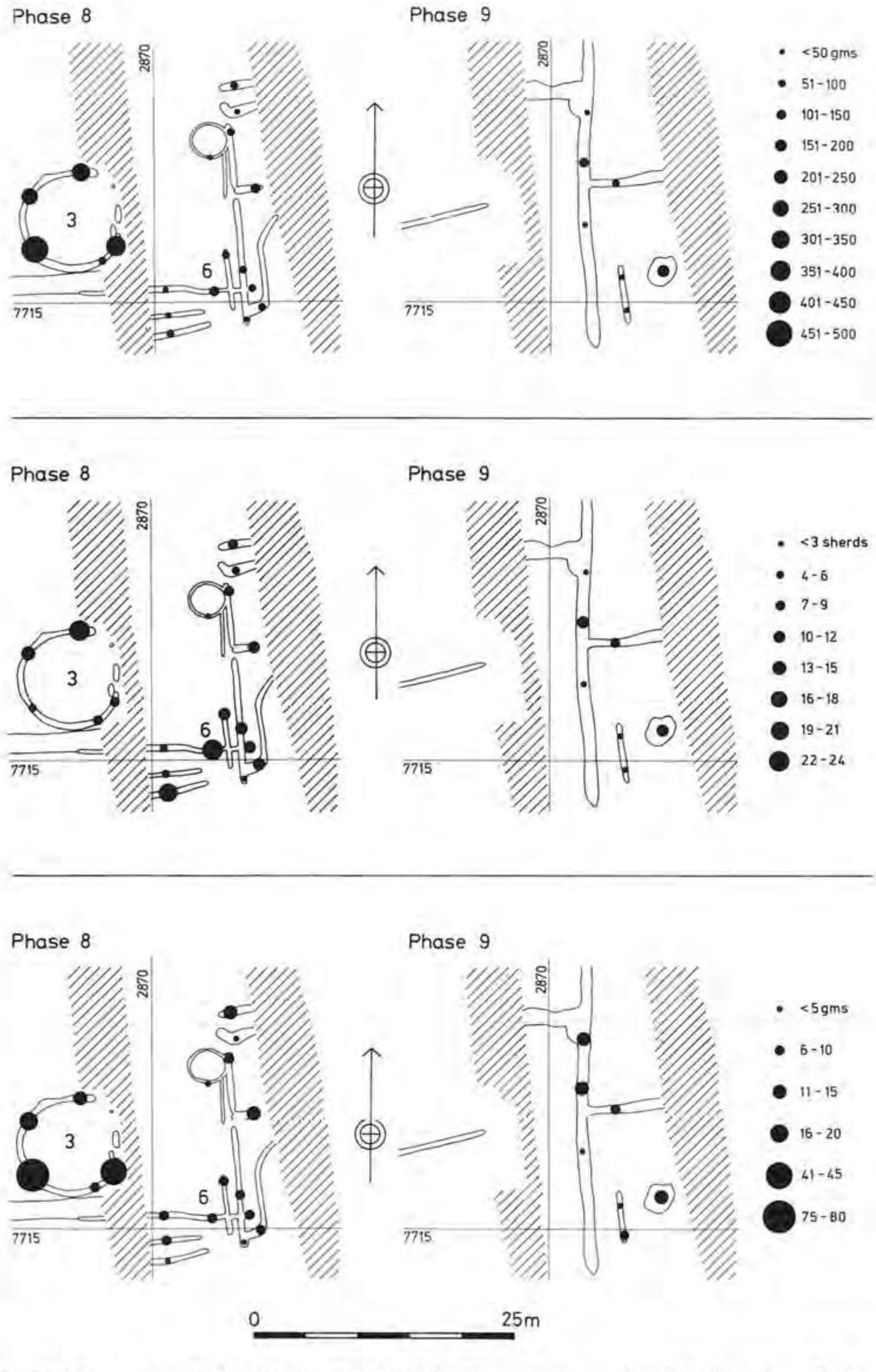


Fig.32 Maxey East Field: distribution of finds from structures 3 and 6. Wet sieve finds plotted by weight (top), by sherd numbers (centre) and distribution of shell-gritted wares expressed as a percentage of all excavated finds (bottom). Scale 1:600.

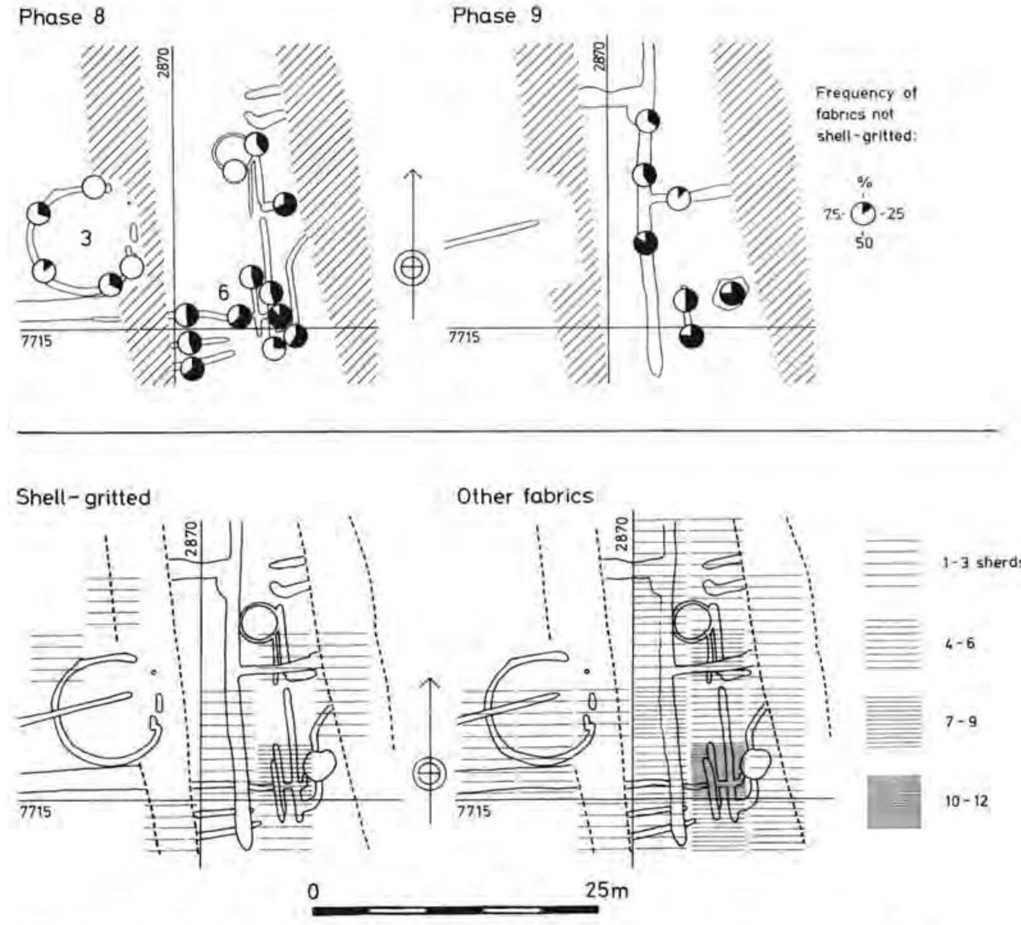


Fig.33 Maxey East Field: distribution of finds from structures 3 and 6 (continued). Top: frequency of non shell-gritted Roman wares, by phases. Bottom: surface distribution of Roman pottery by 5m squares. Scale 1:600.

contrast with the house eaves-drip gully might be explained by the latter's abandonment: the large sherds of shell-gritted ware having been placed, or weathered, into a feature that ought otherwise to be maintained open. A closely similar sequence of events was observed in Middle Iron Age contexts at Cat's Water, Fengate (Pryor 1983a, structure 54). This explanation of events depends to an extent on the proposition that house floor litter may be used in midden formation. We must now turn to the question of whether evidence exists for the use of such material.

Returning briefly to our original five propositions, we have now examined proposal A, in some detail. Proposal B (that there is some increase in surface finds over certain major linear features) might well be explained by plough action, especially across major disturbances. On the other hand an alternative hypothesis is also possible.

The thrust of the arguments advanced so far suggests that much of the ancient material in the modern ploughsoil has always been there; we suggest that it is not always necessary to invoke plough-damage to explain surface scatters. Figure 34 offers a model for artefact dynamics on a cultivated plot subject to middening, and bounded by a ditch which is subject to regular maintenance ('slubbing out' in Fen terms). The spoil from the ditch is bound to contain some artefact debris derived from weathering of ditch sides or from its accompanying bank. The cumulative effect of regular maintenance would be to concentrate artefacts and other objects of large size in the bank, while finer-grained sediments would wash back into the ditch. Even after the ditch ceases to be maintained, and fills up for the last time, a significant spread of artefacts should have accumulated along its brinks. It is suggested here that the bulk of the topsoil finds above the large linear features derive from this source.

We have noted above that proposal C suggests that topsoil finds are scarce over slight features, including some structures; this is less readily explained and must be due to a number of causes, best considered on a case by case basis. We have already examined the case of structure 3, but other examples need not be so complex: structures 1 and 12, for example, produced very few finds on excavation (Figs.99 and 69), and the features concerned were probably maintained open and clean throughout their useful life; abandonment deposits are not, after all, a *sine qua non*. Finally proposals D (diffuse scatter over the south-east part of the East Field) and E (rarity of finds over the West Field and the north-west part of the East Field) provide us with positive and negative evidence for the spreading of manure containing household debris, including potsherds.

The dispersed, random distribution of material over the south-east part of the site occurs in an area of few subsoil features (Fig.30). It seems to be confined, in the areas available for study, within the land bounded to north and west by the substantial ditches of the main Phase 8 enclosure system. Moreover a comparison of sherd numbers (Fig.39, plot 6a) and sherd weights (Fig.39, plot 6b) suggests a smaller mean sherd size in this area than elsewhere. This, together with the relative rarity of the softer wares (Fig.39), strongly suggests that the material has been subject to a high degree of attrition.

It is of course possible that these finds are derived from shallow features that have been ploughed-out, but on the whole this seems improbable, given the survival of features as slight as structures 1, 9 and 12 nearby. The most reasonable explanation is that the diffuse scatter of pottery represents the residue of manuring, a practice, moreover, for which there is good evidence in the Roman world (for references see D.R.Crowther 1983, 40); the archaeological evidence is also well-attested (e.g. Applebaum 1972, 212ff; Wilkinson 1982). Perhaps the best archaeological evidence is provided by Maxey itself, where the widespread distribution of medieval and post-medieval material in the topsoil (Figs.35 and 36) is ample testimony to the sheer quantity of material that can build up off-site on an arable field through such practices; we will see in Chaper 5 that manuring need not be confined to arable alone.

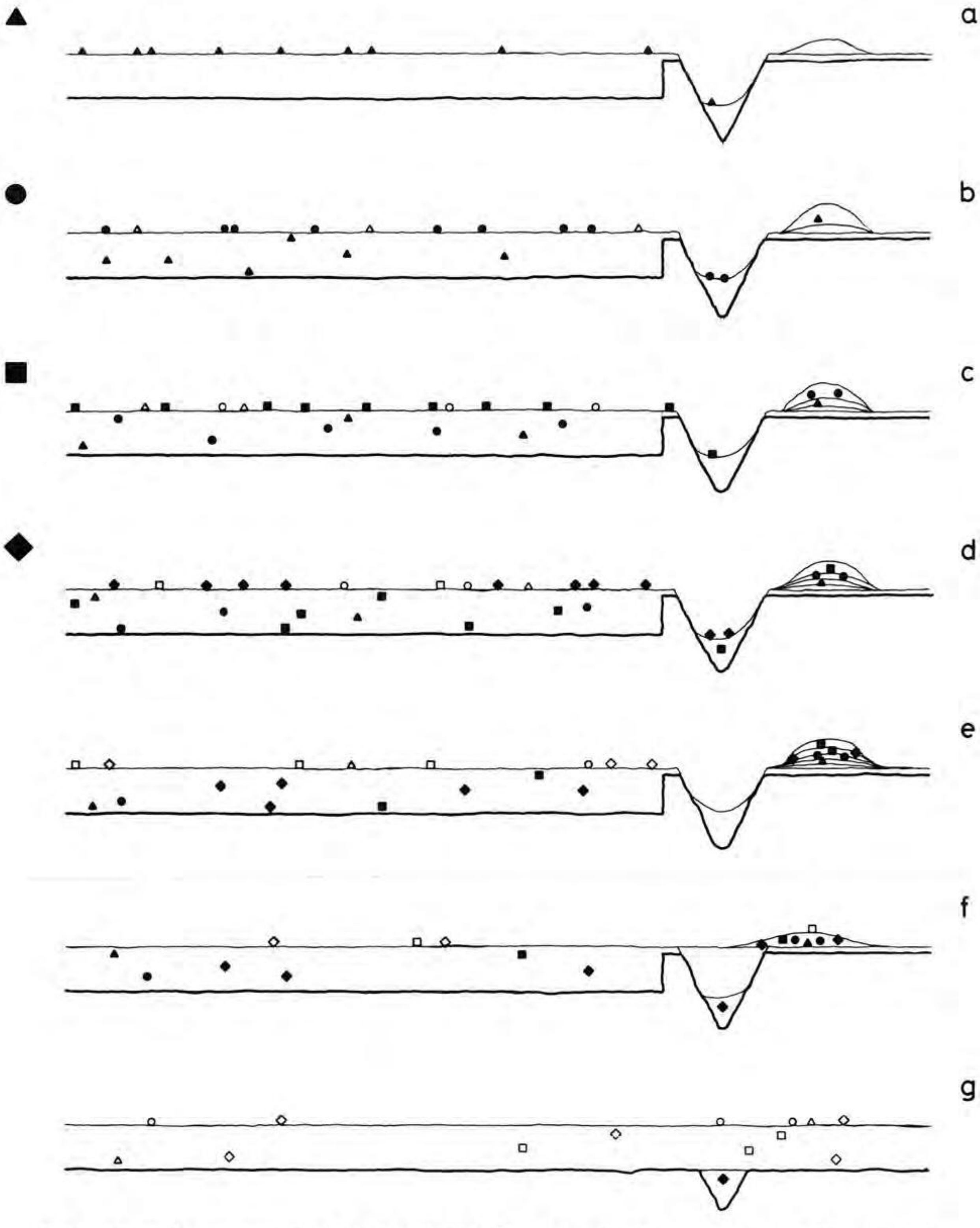


Fig.34 Schematic representation of the behaviour of finds in the ploughsoil over a buried ditch and bank.

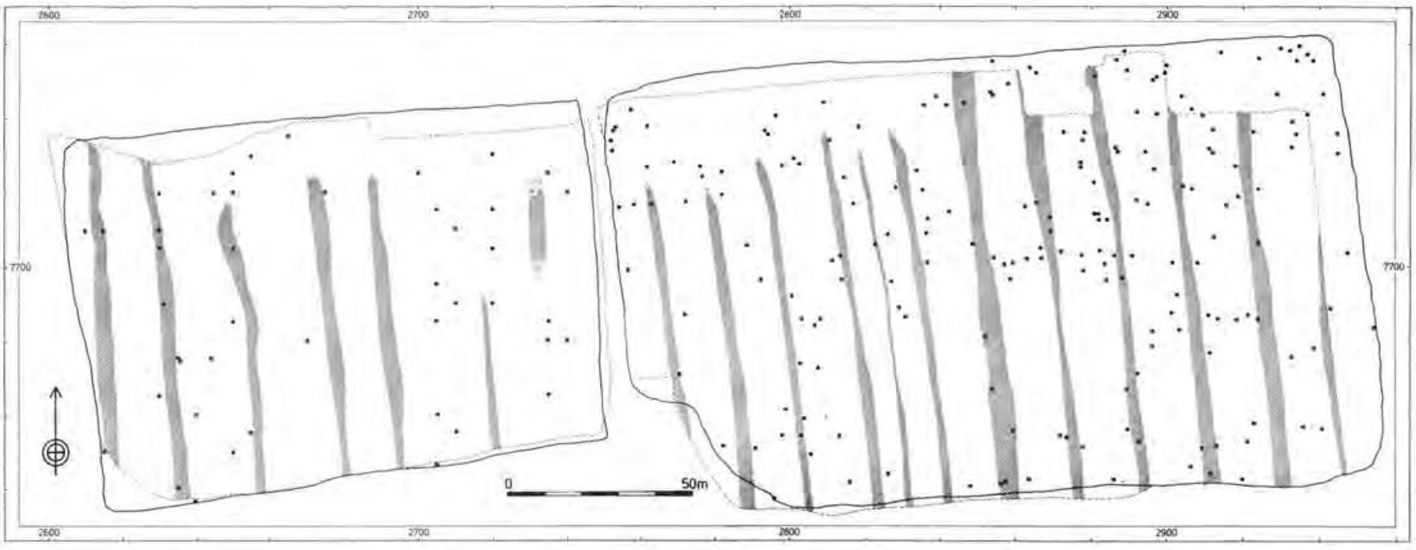


Fig.35 Maxey East and West Fields: medieval pottery, plotted against approximately contemporary excavated features (shaded). Scale 1:1200.

Fig.36 Maxey East and West Fields: post-medieval finds, plotted against approximately contemporary excavated features (shaded). Scale 1:1200.

At this point we must wonder why the West Field and the East Field north-west of the ditched yard system is largely devoid of the diffuse scatter of material we have just considered. One might suggest that this area was grazed and not ploughed, but this would suppose that grazing was not manured; one might even suggest that a species of 'in-field/out-field' farming was being practised. These speculations, however, are fundamentally flawed: manuring does not have to be archaeologically visible to have taken place. It is quite possible that the areas that are less populated with sherds could have been manured with animal dung taken directly from animal byres where human debris was absent.

4 and 5. Medieval and post-medieval material (Figs.35-38)
Over 3600 sherds of pottery, glass and fragments of metal were recovered from the site, the distribution of which is clearly random. It is assumed that all this material has been deposited as a result of manuring. One potential matter for concern is the apparent tendency visible in the East Field post-medieval finds distribution (Fig.36) for bands of high density to run in an east to west direction — the direction, it will be recalled, of search. There is a possibility, therefore that certain traverses were better searched than others, despite elaborate efforts to avoid this. A matrix of finds densities per 5m square was drawn up for that area of the East Field that was not subject to edge effects (Fig.37). The population of each traverse (east to west) and band (north to south) were expressed as plots about the mean, together with their (single) standard deviation. The distribution is slightly variable in both the east to west and north to south directions, and though two peaks in particular, on the 7705 and 7715 northings are at considerable variance with their neighbours, there are similar contrasts in a north to south direction. The variability, therefore, is not limited to the direction of search and the patterning can best be judged in terms of an aggregated, random, distribution. This is a distribution such as one would expect for material deposited in this manner, and there can be little doubt that the recovery of artefacts across the site is reasonably faithful to the 'real' distribution.

A few additional points require explanation; first, the distribution of medieval pottery does not seem to respect the layout of the essentially medieval furrow system (Fig.35). Second a very detailed metal-detector survey was undertaken (fully reported in D.R.Crowther 1981). This survey involved the testing of a number of different machines in a twenty metre-wide strip aligned east to west across the East Field (Fig.38). Apart from a single Roman coin, a worn token and a few pieces of probably modern scrap, the vast majority of finds (over 99%) were of rusty iron nails. These nails almost certainly derive from scrap wood which was burnt and spread on the fields to provide potash (information from Mr A.J.Frisby, a farmer in Maxey). Again, 'manuring' is indicated by a diffuse, random scatter of artefacts.

Spatial analysis of Roman pottery from the East Field ploughsoil (Fig.39; Tables 14-16)
by Stephen Cogbill and Paul Lane

Introduction
In a period of growing financial stringency, changing theoretical frameworks and an increasing awareness of the threats to archaeological remains, British archaeologists remain heavily 'excavation' orientated in their approach to the retrieval of information. Our concern here is to demonstrate the nature and value of field survey evidence with reference to the survey of Maxey East Field.

Field survey is generally used as a means of discovering new sites and, less frequently, to enhance the existing knowledge of a site. The information collected by this method is sometimes treated as being of fairly minimal value and is otherwise often used either to determine excavation strategies, or as an approximate guide to the overall regional distribution of sites of different type and/or date. Remarkably little attention has been given to determining the nature of the context of topsoil surface finds, or to the processes involved in their formation. It is essential to understand these processes if the patterns detected amongst surface finds are to have any meaning.

Conventionally, surface collections have been considered to be of limited value as interpretative tools given the so-called 'disturbed' nature of their context. Clearly there could be occasions when surface finds are not in a disturbed context. A more important point to note is that finds from the ploughsoil can provide data beyond that of an approximate date for a site and its extent. In many instances ploughsoil finds are the only remaining traces of prehistoric activity (Miles 1976). Indeed, the recent recognition that agricultural activity represents a major threat to British archaeological sites (Hinchliffe and Schadla-Hall 1980) would suggest that topsoil is, in terms of volume, the single most important context.

Post-depositional Bias
The physical destruction and displacement of artefacts and deposits subsequent to their initial deposition results from a multiplicity of different processes (e.g. Baker 1978; T.P.Taylor 1979 and Foley 1981), the complexity of which is only just being recognised (for an overview see Lewarch and O'Brien 1981). That the end results of the interaction of some or all of these processes might be complex and irregular when compared with the underlying deposits should hardly be a surprise, and was adequately demonstrated by the results from Hatchery West as early as 1962 (Binford *et al.* 1970). The studies published since then document some of the wide variety of conditions likely to be encountered on individual sites, ranging from Redman and Watson's (1970) identification of a close correspondence between surface and buried artefact distributions at Cayönü and Girik-i-Haciyan to Reid *et al.*'s (1975) contrary findings at the Joint Site. Despite this complexity there often appears, amongst British fieldworkers, a tacit assumption that surface collections are a more or less direct reflection of what is waiting to be discovered. Clearly this can lead to the results of field survey being used unwisely during the formation of regional archaeological policy, especially for periods for which we have few standing monuments.

The East Field site has been ploughed systematically over an indefinite period, certainly during the medieval period as evidenced by the ridge-and-furrow. It is impossible to assess how continuous this action may have been since that time. In recent years a standard mouldboard plough has been used, the action of which turns the furrow slices through *c.* 140° moving the soil 'laterally through 25cm to 35cm and slightly forwards in the direction of plough travel' (Nicholson 1980, 22). Since the direction of plough travel is normally reversed after each ploughing operation, any artefacts in the topsoil tend to oscillate back and forth over their original position on a level surface (Lambrick 1980). Where even a slight slope occurs, movement can be unidirectional although this could be more due to soil creep and hillwash than the action of cultivation.

Surface collection techniques and strategies are discussed by Crowther and Pryor, above, and need not be repeated here. We will, however, discuss the relevance of 'point data' *versus* 'quadrat count' collection in our Conclusions, below.

The inventory (Table 14)
The inventory, which is in tabulated form, comprises the following: a unique reference number; grid co-ordinates in X, Y order (given to the appropriate metre square); a category number; an on-site index number (given to each sherd sequentially to denote its order of discovery within a 10m square); the maximum dimension of the sherd (mm); its thickness (mm); and its weight (g). The category number corresponds to that first given to the ceramics. Subsequent re-examination of the fabrics resulted in the coalescing of several of the groups into those outlined below.

Group	*Description*	*Categories*	*No. of sherds*
1	Medieval	02	206
2	'Other'	03	144
3	Nene Valley Grey Ware	04	122
4	Nene Valley Colour-Coated	05	27
5	Samian Ware	06	12
6	Shell-gritted, prob R-B	07,15,16,17	63
7	Mortaria	08	9
8	Flagon	09	2

Table 14: List of artefact categories, East Field surface collection

Analysis and discussion (Fig.39; Tables 15 and 16)
It is the purpose of this section to present the information recorded in the Inventory in a form that highlights possible spatial patterning in the size, density and composition of finds. Once such patterns have been isolated, we must turn to the depositional model for the development of the site as a whole, for an understanding of the processes that underly them. In order to prevent the collection of redundant information it is desirable to have a good idea of the questions likely to be posed and the types of analysis suitable at an early stage in the process. In the event, the surface inventory had been compiled before one of the authors (S.C.) had become involved in the project. For this reason, not all of the information has been incorporated in the analysis, and a number of directions for future work are suggested towards the end of this section.

It was decided to present much of the information graphically, partly because relatively complex patterns can be assimilated rapidly in visual form, and also because the already-computerised inventory was readily processed by routines in the University of Cambridge

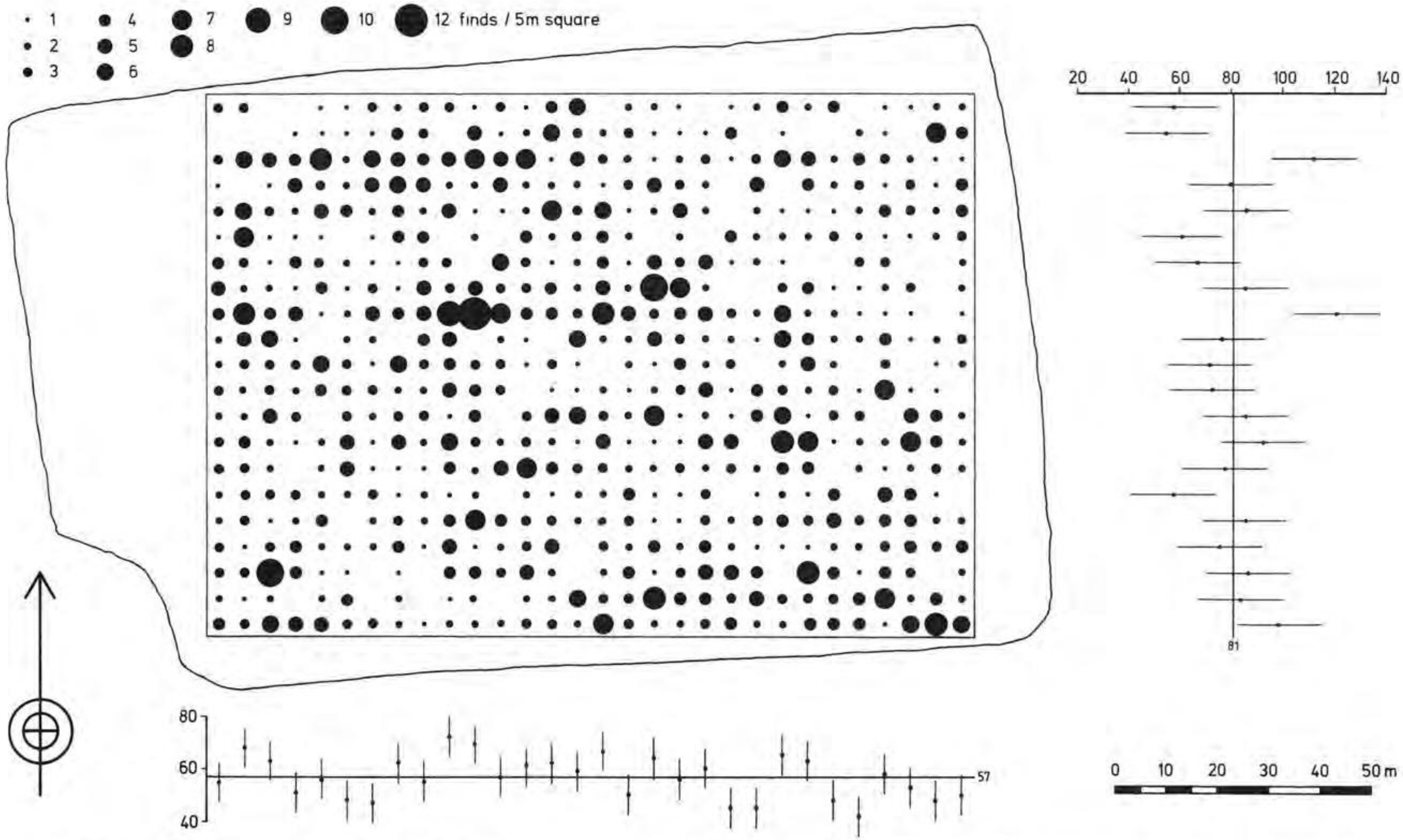


Fig.37 Maxey East Field: distribution of post-medieval pottery per 5m square, with the spread of values around the mean easting (below) and northing (right). Scale 1:1250.

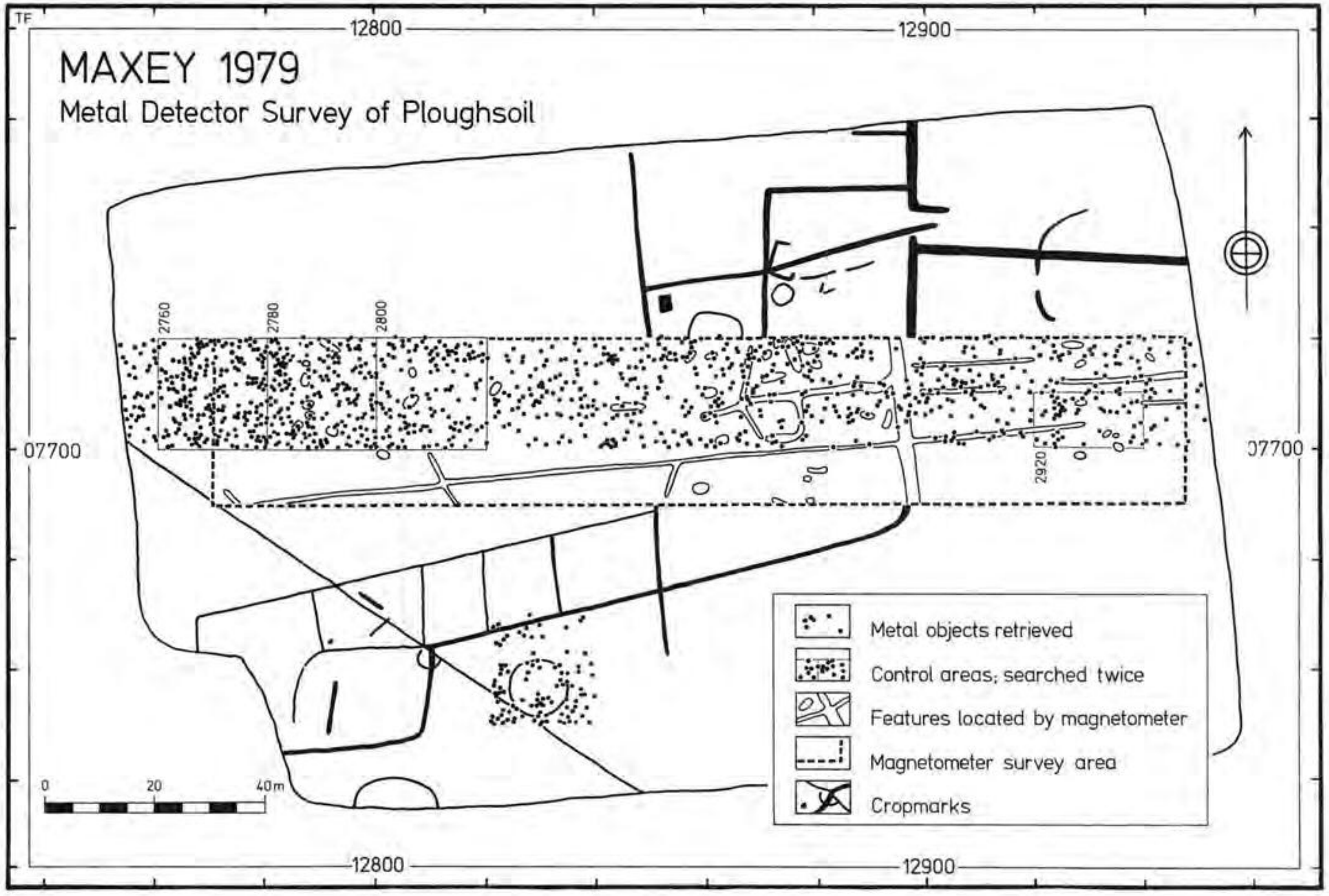


Fig.38 Maxey East Field: topsoil metal-detector survey. Scale 1:1350.

Computer Service's graphics library. A selection of the resulting output is presented in Figure 39 of the eight Groups listed in Table 14, Group 1 (medieval) has been omitted because of its generally uninformative, homogeneous distribution; Groups 5, 7 and 8 (samian, mortaria and flagons respectively) are omitted, because of their small numbers, although they are mentioned in passing in the text. The illustration should be consulted in conjunction with the explanatory notes below, and in the general discussion by Crowther and Pryor, above.

The diagram presents the following information for Groups 2, 3, 4 and 6:

a. the absolute frequency of sherds in each group per 10 × 10m square;
b. the absolute weight of sherds in each group per 10 × 10m square;
c. the number of sherds of each group per square as a proportion of the total of all groups in that square;
d. the number of sherds of each group per square as a proportion of the total number of sherds of that group across the whole site.

The 10 × 10 square size was arrived at following a consideration of the density of artefacts. Smaller units, whilst making more use of the available accuracy of the collection, tended to produce a less coherent frequency surface, too sensitive to the location of individual sherds. In view of the ability of contouring procedures to further complicate the information, as a result of the type of grid generalisation used, it was decided to present the data as a simple frequency surface with no data smoothing. Each intersection on the diagram, therefore, represents a frequency or data-value at the centre of a 10 × 10m box, independent of the value of its neighbours. All the surfaces are in isometric perspective looking north-east across the site. Since (a), (b), (c) and (d) are of different scalar types (frequency, weight, length, etc.), vertical scales are not uniform across the four types of diagram, but the scale has been kept constant between groups.

Group	1	2	3	4	6
1	*	not calculated	0.065(−)	0.030( )	0.023( )
2		*	0.089( )	0.026( )	0.060( )
3			*	0.034( )	0.052( )
4				*	0.028( )
6					*

(−) denotes negatively associated at the >95% level.

Table 15: Analysis of sherd density using Lotwick's test statistic (defined in Note 1).

a. Sherd density per 10 × 10m square

This series of diagrams show the density of sherds, irrespective of their size. It is of most use when wishing to get an impression of the absolute quantity of each category.

Medieval: fairly uniform distribution with some indication of east/west crests. There are two peaks at 2885/7755 and 2935/7755 (not illustrated).

'Other' Romano-British: general concentration in the eastern area; three peaks — 2875/7725, 2885/7755 and 2895/7725. In addition there is a low E-W ridge 20-30m wide running across the south of the site.

Nene Valley Grey Ware (NVGW): Peaks at 2875/7715, 2875/7725 and 2885/7735. Appears similar to the R-B distribution in terms of the size and relative location of peaks with respect to surrounding quadrat counts. There is a suggestion of a more diffuse ridge.

Nene Valley Colour Coated (NVCC): distribution is quite dispersed (only twenty-seven sherds, however) with peak around 2875/7715.

Samian: no peaks, but vague concentration in NE — too few to be very specific (not illustrated).

Shell-gritted Ware: one very marked peak at 2875/7715, also an abrupt right-angular concentration along 2895 and 7735 to the SE of the peak.

b. Total weight of pottery per 10 × 10m square

These diagrams are naturally very similar to the above, but discrepancies between the two mark the tendency for there to be a small number of large sherds or a large number of small sherds. It is therefore useful to examine the differences between these and the density plots to get an impression of the mean weight while retaining a measure in absolute terms.

Medieval: the total weight distribution displays more emphatic peaks (tendency for larger sherds) around 2885/7755 less strongly at

Grp.	no.	max dim. (mm)	max thick. (mm)	wt. (g)
1	206			
Min		8.0	1.0	1.0
Max		61.0	21.0	45.0
Mean		29.2	6.1	6.4
S.D.		9.69	2.34	6.53
2	144			
Min		5.0	2.0	1.0
Max		72.0	44.0	61.0
Mean		33.2	6.7	7.7
S.D.		11.29	3.96	8.92
3	122			
Min		5.0	3.0	1.0
Max		96.0	15.0	58.0
Mean		35.0	5.6	8.1
S.D.		14.04	1.85	8.58
4	27			
Min		15.0	3.0	1.0
Max		87.0	17.0	58.0
Mean		37.9	6.5	11.7
S.D.		18.59	2.99	15.11
5	12			
Min		10.0	2.0	1.0
Max		54.0	6.0	12.0
Mean		26.3	4.0	2.7
S.D.		14.00	1.75	3.38
6	63			
Min		4.0	1.0	1.0
Max		68.0	18.0	83.0
Mean		30.9	9.0	12.4
S.D.		11.92	3.24	15.39

Table 16: Sherd size statistics by fabric

2875/7735, with outliers at 2935/7675 and 2755/7705. The remainder are lower suggesting correspondingly smaller sherds (not illustrated).

'Other' Romano-British: peaks exist at 2895/7725 and 2875/7725 corresponding to ones on Fig. 39a with a new peak at 2855/7715.

NVGW: there is a scatter of points outside the peaks described in (a), indicating the presence of smaller sherds.

NVCC: these display a similar accentuation of peaks and residuals.

Samian: A few very small sherds are easily spotted on this diagram (see size analysis below). This category appears misleadingly numerous in absolute terms relative to weight, suggesting a possible collection bias (not illustrated).

Shell-gritted: there are high counts in the right-angular concentration noted above, representing large sherds.

There is a possible relation between buried features and larger sherds. These *do not* appear to be related to major concentrations but are too diffuse to define internal variation on these diagrams. This does not exclude attempts to isolated likely features, but rather limits their accuracy, see note below on the appropriateness of the collection scale.

c. Density of each category as a percentage of the total density for each 10 × 10m square.

These plots are primarily of use as a way of indicating the tendency of each particular category to occupy squares outside the distribution of other categories. Thus medieval finds, the most uniformly distributed category, has a high number of large percentages, especially outside the NE of the site.

d. Density in each 10 × 10m square as a percentage of the total of that category.

These are very similar to the absolute density diagrams, but emphasise major concentrations, without the biasing effect of other categories as in (c) above. Since those categories with fewer sherds are not under represented, it is possible to compare the height of peaks of different categories as a measure of the degree of concentration on certain squares.

Spatial Association

In the absence of any tight chronological control (the contrast between Groups 1 and 2-8 being the only really distinct difference) it is inappropriate to consider any of the stochastic processes that take advantage of the time dimension (Diggle *et al.*, 1976; Ripley 1977). It is appropriate to ask the question 'Are the distributions associated?'.

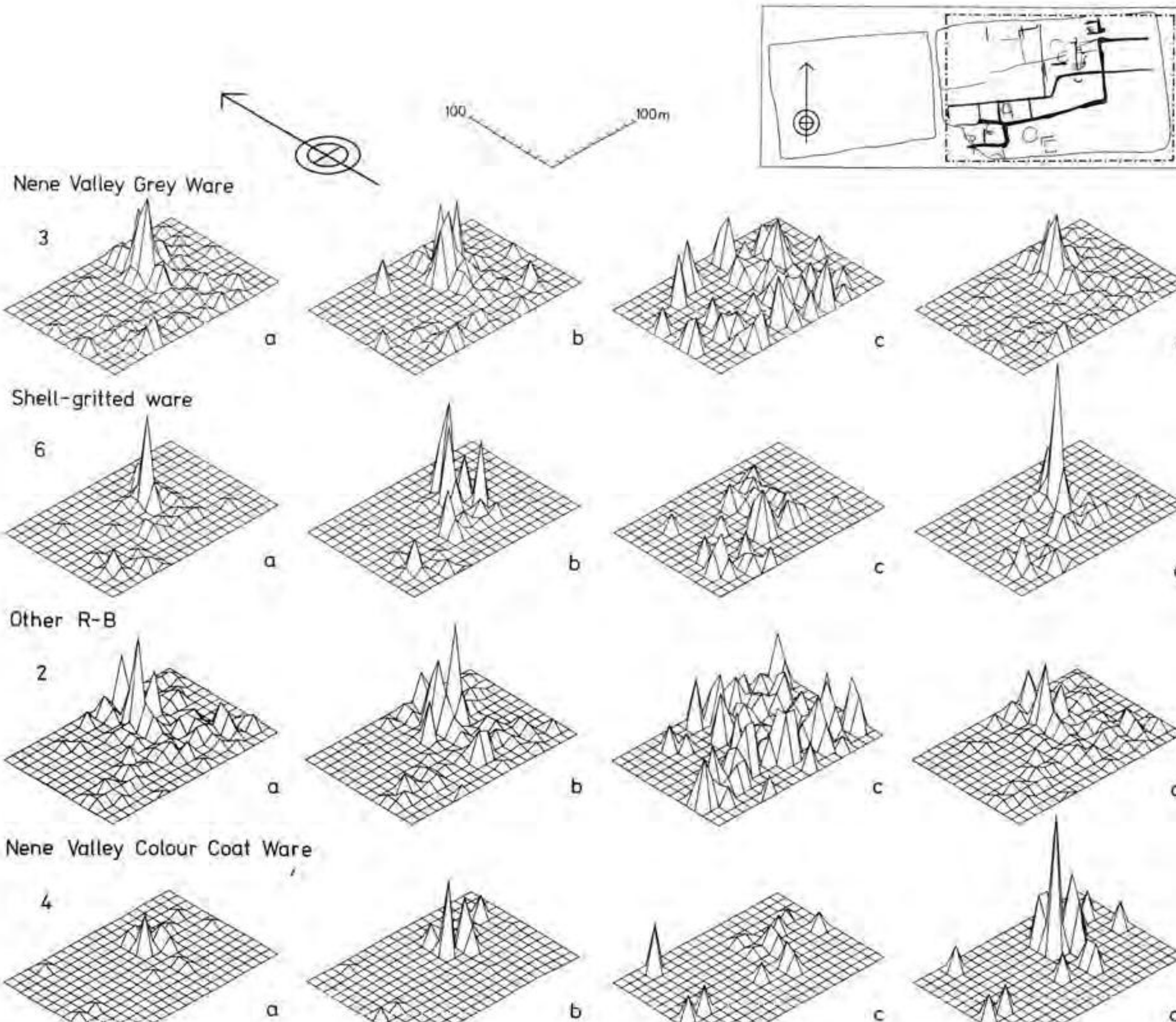


Fig.39 Maxey East Field: isometric frequency surfaces of Roman topsoil finds, looking north-east across the site (D.R.Crowther, after Cogbill and Lane). *a.* Frequency of sherds per 10m square. *b.* Weight of sherds per 10m square. *c.* Number of sherds of each ware-type per 10m square, expressed as a proportion of the total of all wares in that square. *d.* Number of sherds of each ware type per 10m square, expressed as a proportion of the total number of sherds in that ware-type across the whole site.

Regularities in the relationship between some or all of the groups may reflect something of the underlying pattern of features or variations in the post-depositional process. It is desirable, therefore, to have some statistical measure of the degree of association between distributions. This would appear a standard archaeological question requiring a standard solution. Unfortunately, the statistical basis of many tests used by archaeologists is contentious. Orton (1982), in a much needed review of recent developments in spatial techniques, has criticised the tendency to use tests of non-randomness as a prerequisite to identifying association (Dacey 1973; Whallon 1974) and the frequent use of Pearson's 'r' coefficient to measure that association (Freeman 1978). Objections to the use of correlation methods are detailed by Speth and Johnson (1976).

It is visually obvious that in the case of all groups, with the possible exception of Group 1, the null hypothesis of each representing a Poisson point distribution can be rejected. Some multivariate (more than one variable) technique is needed that does not involve any assumptions of randomness in its null hypothesis. It is helpful here to make a distinction between point processes (generating 'events' at points in the plane); lattice processes (giving values at specified loci); and surface processes (having values at all points in the plane) following Orton's terminology (1982,1). The technique adopted here is based upon the 'empty square' statistic, suggested by Lotwick (unpub.) and described in greater detail in Note 1. This technique makes use of a lattice process in which the spatial relationship of loci (here findspots) is given. This has the advantage that the null hypothesis, for each 10×10m square, are independent *making no assumptions as to their randomness.*

The technique uses a permutation test, similar to that used by Berry *et al.* (1980), but based upon quadrat counts as opposed to average distance between artefacts. It is difficult to compare tests belonging to different families, but the method chosen has the advantage that it is tolerant to squares with no data, is not sensitive to 'edge effects' and permits relatively inexpensive large simulations. (For a consideration of the major disadvantages of quadrat techniques see Diggle 1979; Ripley 1979).

Lotwick's test statistic is log an/AC as defined in Note 1. The procedure used here involves calculating this statistic, holding all the data points constant and the number of points of type A relative to type B, and then randomly re-allocating the type A and B artefacts to the data points. By repeating this re-allocation and calculating the statistic each time, a simulated population is generated, against which to test the observed statistic. The test was applied to those groups with more than twenty-five finds. The results are given in Table 15.

While these confirm the visually obvious distinctions between the medieval and earlier finds, the possible relationship of Groups 2 and 3, referred to above, is *not* supported. This result, in fact, demonstrates some of the dangers of applying a technique to the data that is not 'distribution free'. The demonstration of little association *between* patterns does not exclude the possibility of internal variation. This possibility will be examined below.

Sherd Size

Three basic measurements: maximum dimension, maximum thickness and weight, were recorded for each sherd, except post-medieval material; the relevant statistics for the different wares are presented in Table 16. In view of such small quantities of both mortaria and flagons, these have been excluded from the analysis. From a consideration of these it is clear that at least two size groups can be identified. Only one fabric type falls into the smaller size range, defined as a factor of weight, thickness and maximum dimension; samian (Group 5). Fabric groups 1 (medieval), 2 (undiagnostic Romano-British), 3 (Nene Valley Grey Ware) and possibly 4 (Nene Valley Colour Coat) fall within another grouping, and are generally larger and substantially heavier than samian sherds. Shell-gritted sherds exhibit slightly different characteristics from both of these groups.

Sherd size is a factor of several variables, and need not be directly proportional to the degree of attrition. Bulkier and more robust pots, such as mortaria and shell-gritted and 'undiagnostic' domestic wares may be more durable during their use-life, and fragment into larger, heavier sherds than finer wares. Conversely, finer fabrics, such as samian and colour-coat, are usually much harder than many domestic wares and can consequently better withstand attritional forces, such as trampling and weathering. Moreover, once fabrics have reached a particular size it is possible that they are further reduced in size at a far slower rate. At the moment there is insufficient material to test these general points (see however Kirkby and Kirkby 1976). Examination of variations in sherd size between fabrics and within fabrics from buried contexts should give some indication of how sherds break down according to depositional environment and fabric type.

Conclusions

Since an interpretation of the patterns identified here has appeared above and in a recent paper (Crowther 1983), we shall restrict our remarks to the problems this study has raised. These fall under three related headings: collection bias, scale of recording and the appropriateness of sherd size as an indication of 'discard behaviour'.

In the discussion on sherd size we identified certain size groupings which appeared to be fabric-related. However, it is possible that some of these groupings can be attributed to collection bias. The distinctive colouring of samian, and its 'evaluation' in the subconscious of many fieldworkers, is likely to favour the selective recognition of such sherds. It is possible, given the distinctive white fabric and the irridescent nature of the colour coating, that Nene Valley Colour Coated sherds were also more noticeable than some of the duller wares. Comparison between the relative frequencies of different fabrics in buried and topsoil contexts indicates that both of these wares were over represented in the topsoil sample. It is possible, however, that this was also related to the hardness of these fabrics, and shell-gritted wares (the only 'soft' fabric) were under-represented in the topsoil. Since the collection bias towards more 'noticeable' sherds is likely to have operated during the normal excavation of features as well, a series of wet or dry sieving programmes (see Lane, this volume Chapter 2, Introduction) to establish vertical and horizontal variations in the relative densities of fabrics is needed to resolve this question. Such data could also be used to examine the actual sherd size ranges of different fabrics.

The procedure of recording finds to within ±20cm on prepared sheets, and bagging each object separately, was clearly too detailed for the requirements of this study. As mentioned above, the broader trends were obscured by the noise of localised concentrations when the scale of analysis was below that of $10m^2$. It has recently been suggested that errors in measuring 'point data' can have an effect similar to the 'averaging' which occurs when data are collected by quadrats. Thus 'the amounts of variance obscured by quadrat and point data are roughly equivalent when the standard deviation of measurement error is about three-tenths of one quadrat diameter' (Rogers 1982, 254). The collection of 'point data' at Maxey, therefore, may have been unnecessary for two related reasons. Firstly, the appropriate scale of analysis, where broad trends are to be identified, is in the region of 10×10m squares. Secondly, due to the amount of variance caused by 'errors of measurement', the data would have been as analytically useful if they had been collected by 1m squares.

These points should not however be taken as a direct critique of the technique used, for 'point data' can at least be amalgamated into 'quadrat counts', whereas 'quadrat counts' can never be broken down into individual points. Thus, where localised concentrations of different fabrics, or differently sized sherds of the same fabric, are to be examined 'point data' will be more sensitive to this scale of analysis. Rogers (1982) details one method of calculating the optimal quadrat size for accuracy of measurement once the appropriate scale of distance and acceptable degree of attenuated variance has been set by research aims. We would suggest that where external constraints, such as time and money, preclude detailed recording, surface material could be collected by 5×5m squares without a substantial loss of information.

The recent attention given to the size of sherds, in buried assemblages, as an indicator of depositional context and the management of refuse, is a useful development in interpretative theory. The approach, as Crowther (1983) has demonstrated, can also be used to explain the differential nature of surface scatters. However, as was suggested in the previous section, other variables, operating in the 'systemic' context, which can act selectively on certain fabric types, also need to be isolated, as must collection biases. For the most part these questions could be answered with reference to the buried assemblages, and so permit a retrospective assessment of the surface artefact distributions. We wish to make a plea, therefore, that greater attention is given to the collection of surface material as an integral part of excavation procedures. Only when a larger sample of sites, from both similar and different ecological zones, durations of occupation and date, have been analysed in this manner that the full potential, and interpretative possibilities, of surface collections will be realised.

There are several cogent reasons why excavators should adopt such a policy, and while these are largely economic, the ethical issues must also be addressed. As we stated in our introduction, the scope and limitations of surface collections must be critically examined and realistically assessed before such assemblages are dismissed as 'disturbed' and, by implication, 'valueless'. The calls for improved and systematic collection procedures are to be welcomed, but the data so gathered will become merely redundant if it cannot be incorporated into a powerful interpretative framework.

Note 1: Test statistic for association. The following note results from a discussion with P.Altham of the Statistical Laboratory, University of Cambridge.

Given n = total no. of quadrats

a = no. of these which do not contain any X-type points, AND do not contain any Y-type points.

A = no. of squares free of X.

C = no. of squares free of Y.

Lotwick (unpublished Ph.D, University of Bath), suggests the use of test statistic:

$$\text{Log e } \frac{a/n}{A/n \times C/n} = \text{log e } \frac{an}{AC}$$

since, if the two processes are independent $a/n \simeq Ac/n^2$, that is $a \simeq AC/n$. As Lotwick states the difficulty is in finding the variance of

$$\log \frac{a/n}{AC/n^2}$$

under the null hypothesis of independence. This can be achieved by simulation, in this case using 1000 runs. For each run the proportion of A and C is held constant, but the observed number of X and Y type points is allocated to the fixed data points on a random basis. Given N simulations:

$$\text{the sample mean of T} = 1/N \sum_{1}^{N} T_i = \bar{T}$$

$$\text{and the sample variance} = \frac{1}{N-1} \sum_{1}^{N} (T_i - \bar{T})^2 = S^2$$

If the *observed* test statistic is denoted as T_0, then

1. if $T_0 > \bar{T} + 1.96s$ X and Y are positively associated;

2. if $T_0 < \bar{T} + 1.96s$ X and Y are negatively associated.

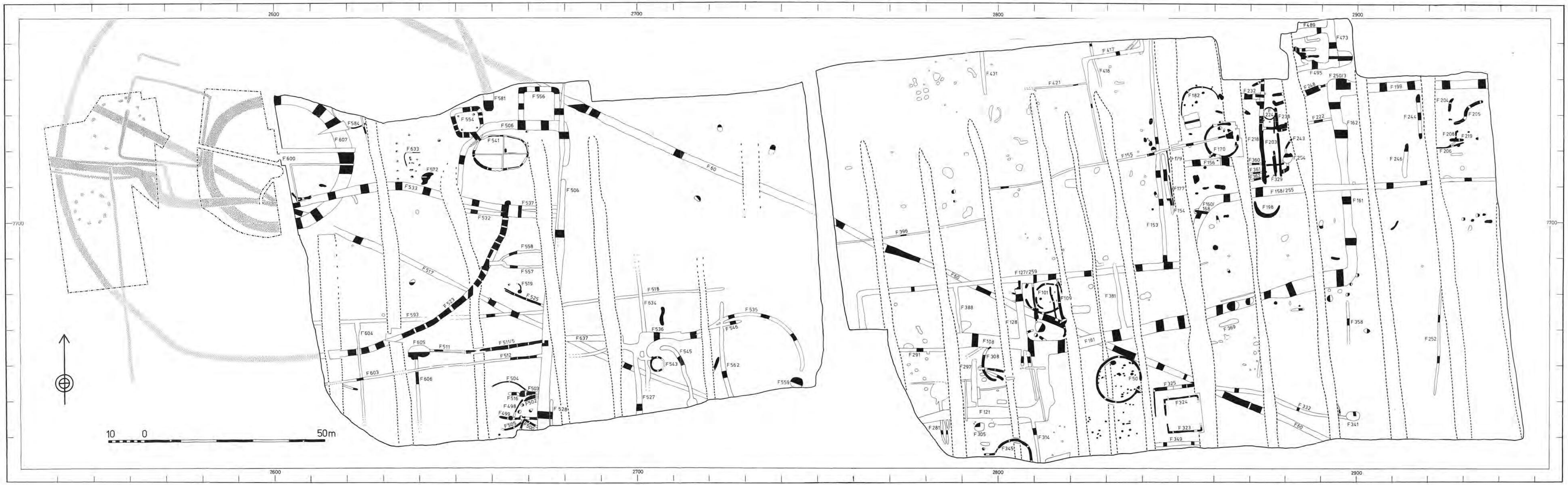


Fig.40 Maxey East and West Fields: general plan of excavated features. Simpson's (Chapter 3) excavations are shown, left. Principal features are numbered; for structure numbers see Figs. 165-167. Scale 1:600.

II. The Excavations

Introduction (Fig.40)

In the following report features are classified in three ways: linear features include all ditches, gullies, foundation slots etc., where the length surpasses the breadth by at least two times; non-linear features comprise post or stake-holes, wells, pits, hollows etc., and if irregular in shape, have maximum dimensions that are not markedly dissimilar. Linear and non-linear features are considered to be structural — the third classification — if they formed, or are thought to have formed, part of an ancient structure (for example, a house, animal byre, barrow or 'ritual' monument).

The site is large and linear features often differed considerably, both in form and filling, over their excavated length. Soil colour and texture was often very variable and it has not been possible to give details of all variations; consequently the descriptions that follow aim to provide a broadly typical impression, hopefully characteristic of the majority of the feature or filling concerned. Full details of all the features and layers encountered may be found on the layer cards housed with the site archive in Peterborough Museum. Features are described in chronological order, phase by phase. Section illustration conventions are given in Figure 41.

Prehistoric features

by Francis Pryor

Note Full details of sediment analyses will be found in part V, below. The brief matrix compositions given here are derived from Dr French's report and the site layer cards; slightly fuller descriptions are given for those features that were not subject to detailed soils analyses.

Phase 1: Neolithic (Figs. 42 and 43)

Structure 27 (the cursus): The two ditches of this structure represented the earliest archaeological activity on the site. They traversed the excavated area from NW to SE and were approximately 58m apart, measured from the inside edge of each ditch. Both ditches were of similar width (very approximately 2m) and profile (flat bottom, steep sides). The original depth was less readily assessed, as both ditches were severely truncated by the plough; however, the generally faint cropmark and the short length of cursus ditch preserved beneath the alluvium, just west of the Etton causewayed enclosure (Pryor and Kinnes 1982, *postcript*), demonstrates that neither ditch was every substantial (a point also confirmed by Simpson's previous work, Chapter 3). Neither ditch showed evidence for recutting, nor for a bank. One curious, but consistently observed phenomenon common to both ditches was a discontinuous layer of comminuted charcoal mixed with soil. This deposit usually occurred close to the ditch bottom, or near the angle, at either side. Its position within the filling suggested that it entered the ditch incorporated within topsoil sometime shortly after, or at a late stage in, the primary filling process. The charcoal was not burnt *in situ* within the ditch, since neither filling matrix nor ditch sides were burned; however its extensive occurrence in both cursus ditches might indicated land clearance, or scrub management by fire; a purely natural explanation is, of course, just as probable. Maisie Taylor reports that most of the charcoal was too finely divided for recognition, but one sample from the north ditch (F.60) at section 10 (Grid 2872/7648) contained oak.

Most sections of ditch contained one layer of loam, merging to sandy loam with some scattered gravel pebbles; there was generally more gravel towards the base of the profile.

The wide, shallow profile of the ditches suggests that they may well have been accompanied by banks and/or hedges, but there is no stratigraphic (i.e. redeposited) evidence for either. If the ditches were not accompanied by some vertical element, their unusual slight, flat profile must emphasise their uselessness, from a purely practical point of view; furthermore, they would swiftly vanish as soon as vegetation had re-established itself.

Both ditches were cut by all other features: the intersection of the south ditch (F.517) and the henge ditch (F.523) was badly obscured by a plough furrow, but the expected relationship could just be discerned. The central ring-ditch (F.607) clearly cut the cursus which was, in turn, sealed beneath secondary mound slump (i.e. F.600 layer 1).

Both ditches were extensively excavated; it should, however, be noted that the apparently long stretches of unexcavated cursus ditch on the West Field occur in areas where the features survived as a slight iron or manganese stain in the gravel subsoil. Sixteen standard ($4000cm^3$) soil samples were wet sieved ($64,000cm^3$) and approximately 72m of ditch were emptied by hand: despite this, no artefacts or bones were recovered. This suggests that the area around and between both the ditches was free from settlement both before, and for some time after the period when the cursus was actually in use.

Phase 2: Later Neolithic (Figs.44-53)

The henge monument complex: This group of features consisted of three main elements which may be related on spatial grounds. It should be noted, however, that plough damage has been uneven in this area and that survival was consequently somewhat uneven. The best preserved features were the oval barrow (structure 16, Fig.44) and the central ring-ditch (structure 14, Fig.47), both of which were protected by a medieval headland. The henge ditch to the south of its entranceway, and the land enclosed within it, were seriously truncated. The course of the headland has already been discussed in general terms (R.C.H.M. 1960, fig.6), but its bank may be seen more precisely in the ploughsoil surface contours (Fig.38). It will be noted that most of the plough furrows extend beneath the headland (Fig.40). This indicates that there were at least two, probably long-lived, episodes of ploughing in medieval times; the effects of the earlier (pre-headland) ploughing are hard to assess; but damage seems to have been confined to the furrows alone in the region of the henge central mound. Latterly, the furrows cut deeper, damaging the mound, and its secondary deposits. The headland passes through the henge entranceway, directly above the oval barrow, but veers south when it encounters the main, central henge mound (F.600). The extra build-up of headland soil ("B" horizon) immediately south of the mound gives the feature an artificially extended, oval, outline on the contour plan (Fig.21). It is quite apparent that the headland was actually aligned on the central mound, a practice that is well attested by aerial survey elsewhere in the Welland valley (S.J.Upex, pers. comm.).

Fig.41 Key to conventions used in the section drawings of Chapters 1,2 and 4.

The relationship of the henge complex features to the cursus is not clear: stratigraphically, the henge and central ring-ditch cut the south cursus ditch in at least four places (e.g. Fig.48, lower) (including Simpson's excavation). The curses ditch was not back-filled and seems to have accumulated its filling by natural means (part V. below). It would seem reasonable to suppose, therefore, that a number of years elapsed between the complete in-filling of the cursus and the subsequent construction of the henge and its associated features. Furthermore, the spatial arrangement of Phase 2 features did not respect the cursus: the oval barrow, for example, was neither aligned along, nor at right angles to, the cursus; it was, moreover, markedly off-centre to it. We will discuss the significance of this unusual relationship in part IX, below. Here it is sufficient to note that there was probably a substantial lapse of time between the 'Neolithic' features of Phase 1 and the 'later Neolithic' features of Phase 2.

Before we consider the relationship of the oval barrow and the henge ditch, we should first note that both were oval, were aligned approximately E to W, and shared the same centre point (Fig.40). It seems probable that they were laid out and constructed at precisely the same time. Alternative explanations can, however, be raised.

The rather meagre data does not suggest that the features of the henge complex were constructed in succession, but it might be argued that the placing of the oval barrow at the centre of the henge entranceway reflects the fact that it was placed there *after* the latter's construction, at a time when the exterior bank had weathered to a flatter profile. If the oval barrow had been erected contemporary with the henge, then access to the henge interior to north and south would have been very restricted indeed, especially if the henge banks were inturned, as seems to have been the case. Conversely, it might be argued that the henge post-dates the oval barrow and was constructed once the latter's soil mound had collapsed, thus presenting a much reduced blockage at the entranceway. Neither suggestion of non-contemporaneity withstands close scrutiny and it still remains difficult to account for the very precise alignment of oval barrow on henge and ring-ditch centre, unless all three structures were constructed as part of an integral monument. We shall see, moreover, that the three elements of the henge complex — exterior ditch, interior ditch and central mound — showed close similarity in the construction of their various banks and revetments and also revealed evidence for deliberate slighting, most probably in a series of contemporary events.

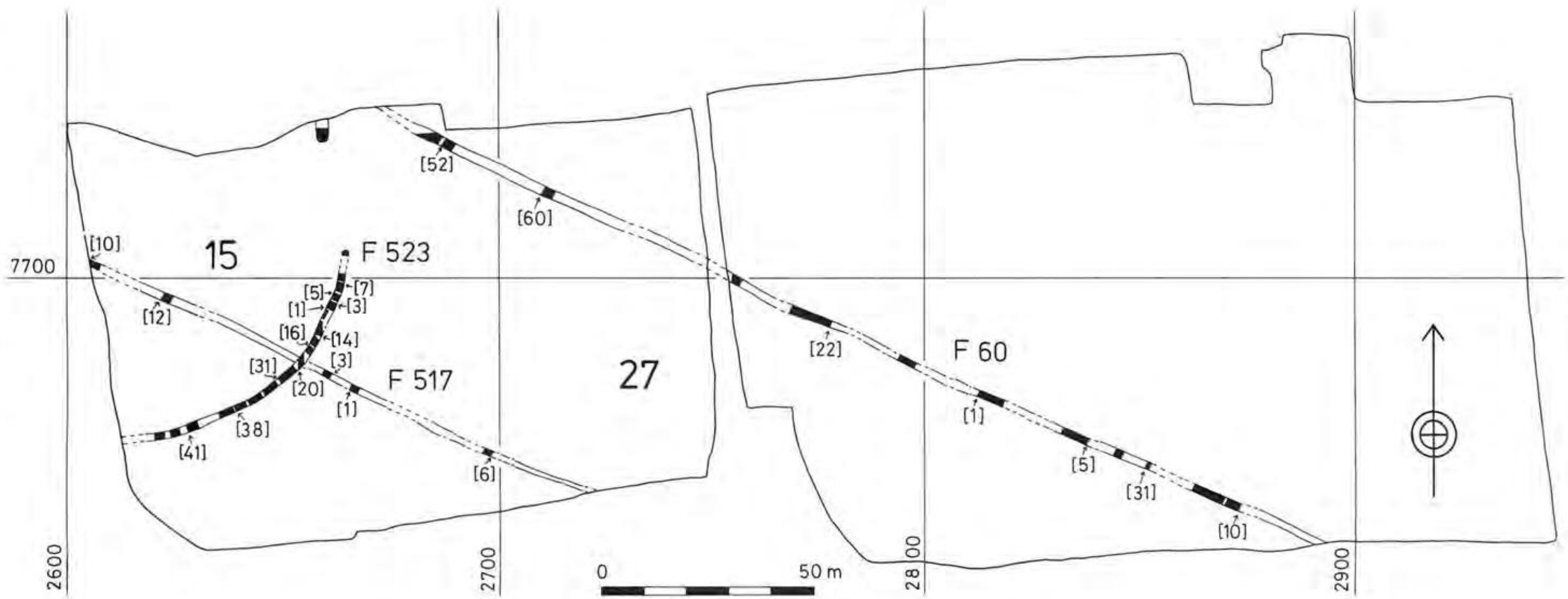


Fig.42 Maxey East and West Fields: location of excavated sections (in square brackets) of the cursus (structure 27) and the henge outer ditch (structure 15). Scale: 1:1500.

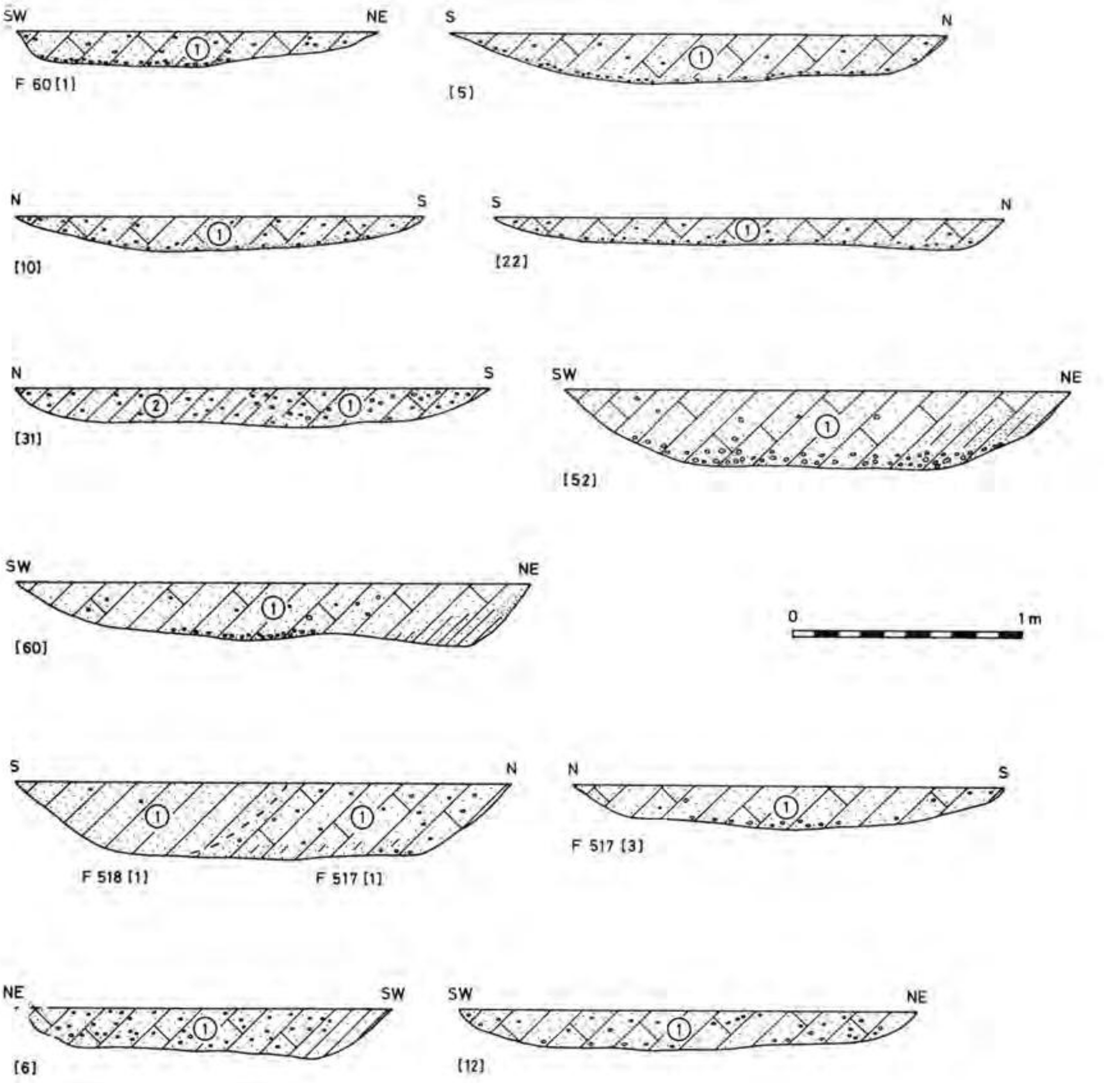


Fig.43 Maxey East and West Fields: sections through the cursus ditches Scale. 1:30.

Structure 16 (the oval barrow): (Figs.44, 45 and Pls. X-XIV) This structure was centred on Grid 2663/7720. Its principal feature was a steep-sided, sub- oval gully, F.542, aligned E to W. length 15.5m, breadth 10.5m (exterior dimensions). The gully was flat- bottomed and remarkable uniform in both profile and depth. Variations in depth were most probably caused by plough-damage, as sections in the north side, just clear of the headland, were shallower than those further south. The gully was broached to the ESE by a very narrow entranceway (width 0.30m) which was not paved and showed no obvious signs of trample, despite its width; furthermore, conditions of survival were good beneath the headland at this point. The gully itself is particularly notable for the structural evidence it contained. In plan the gully filling consisted of a very dark central band (layer 1) which ran continuously down the centre of the feature; occasionally, however, the regular dark strip became irregular and stepped in plan (Fig.44; Pl.XII). These stepped irregularities in plan could be followed in section, in the manner of a conventional post-pipe; this layer (1) may therefore best be interpreted as a continuous post- pipe — or contiguous series of post-pipes — that resulted from the gradual rotting *in situ* of a massive post-built wall or revetment. The stepped effect, so clearly visible in plan, was the result of using larger timbers. There can be little doubt that the post-pipes of layer 1 represent decayed timber: the matrix had a relatively high organic content (C.French, pers. comm.); the transition between post-pipe and (presumed) packing was generally sharp and vertical. It should be noted that there was little evidence for fire: charcoal was rare and neither packing nor gully sides were reddened nor fire-cracked. However, there is now quite convincing evidence to suggest that the timbers were burnt *in situ*, at least at one place.

The best evidence consists of charcoal from the very top of layer 1, immediately west of section 15, at Grid

2665/7715; at this point preservation beneath the headland was especially favourable. Some dozen fragments of oak charcoal were recovered; the wood was aligned vertically with the exterior (i.e. bark) of the tree towards the outside of the post-pipe; the charcoal was from mature trees of substantial girth and widely-spaced annual rings (*c.* 2mm); this timber is relatively fast-grown and is not likely to have originated from primeval forest (Maisie Taylor, pers. comm.). It was at this point too that the magnetic susceptibility enhancement analyses of David Gurney (below) suggested the possibility of a slow fire, such as one might expect towards the top of a post hole. The sections suggested that most timbers were about 25cm in width, and as they appeared continuous in plan, without the characteristic lobate outline of a roundwood palisade, one must suppose that the timber had been squared and set edge-to-edge in the trench. If a trunk dressed to 25cm square were used, its original diameter would have been greater than 30cm (M. Taylor 1981, fig. 22). It is estimated that the oval gully originally held about 156 posts.

The post-pipes and the buried "B" soil horizon within the oval gully were overlain by a turf barrow mound (F.541) which was, in turn, overlain by the thicker "B" soil of the medieval plough headland. The distinction between buried "B" and recent (medieval), topsoil "B" soil horizons was clear.

A crouched burial (Fig.46, F.555), in a shallow (*c.* 10cm) grave measuring 1.1 × 0.6m was centred on Grid 2664/7720, close to the centre of the oval barrow. The body was orientated with head to the north, face to the east. The grave filling was of silt loam with scattered gravel pebbles (10 YR 3/2). The body did not extend into the overlying mound material and the shallow grave

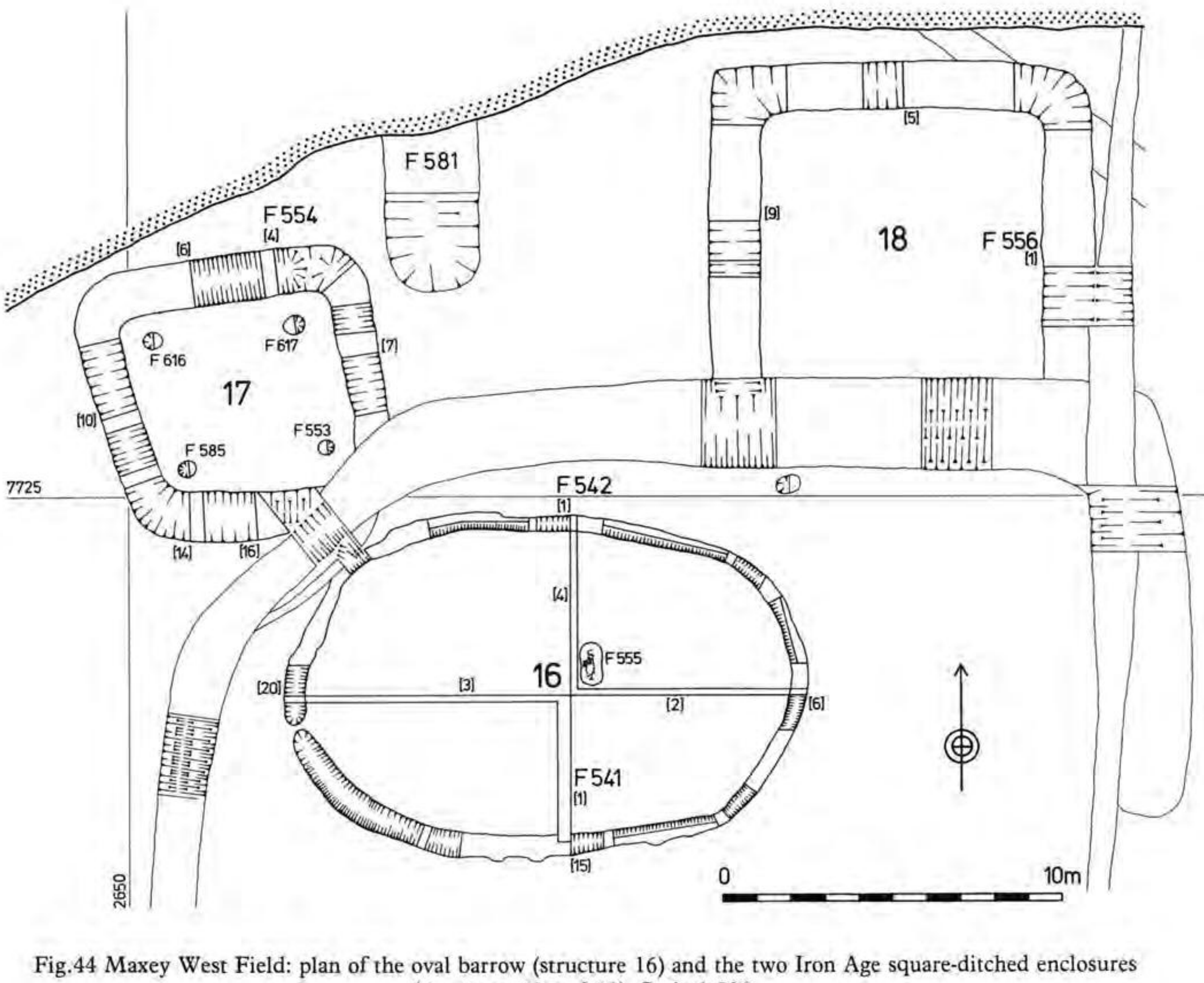


Fig.44 Maxey West Field: plan of the oval barrow (structure 16) and the two Iron Age square-ditched enclosures (structures 17 and 18). Scale 1:200.

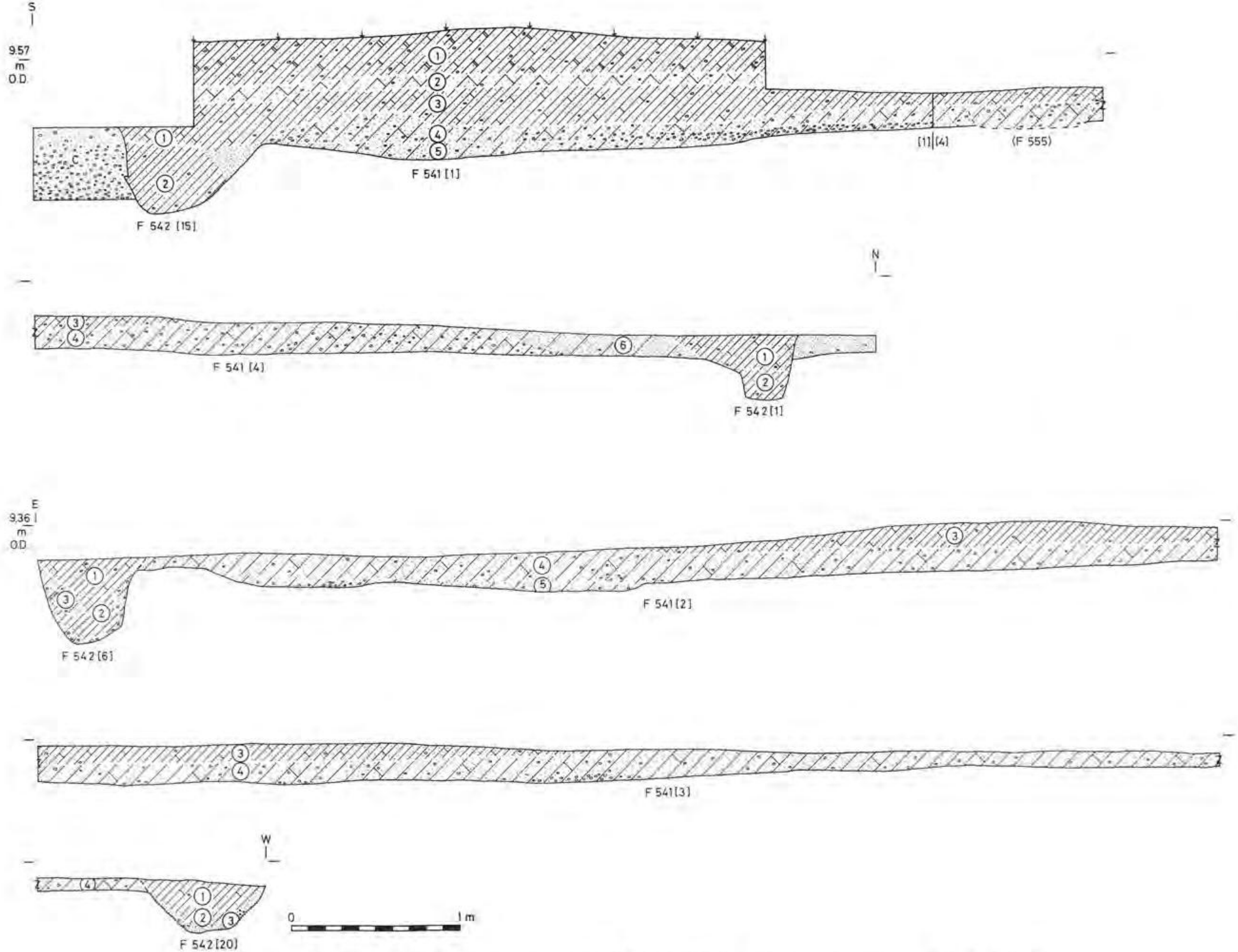
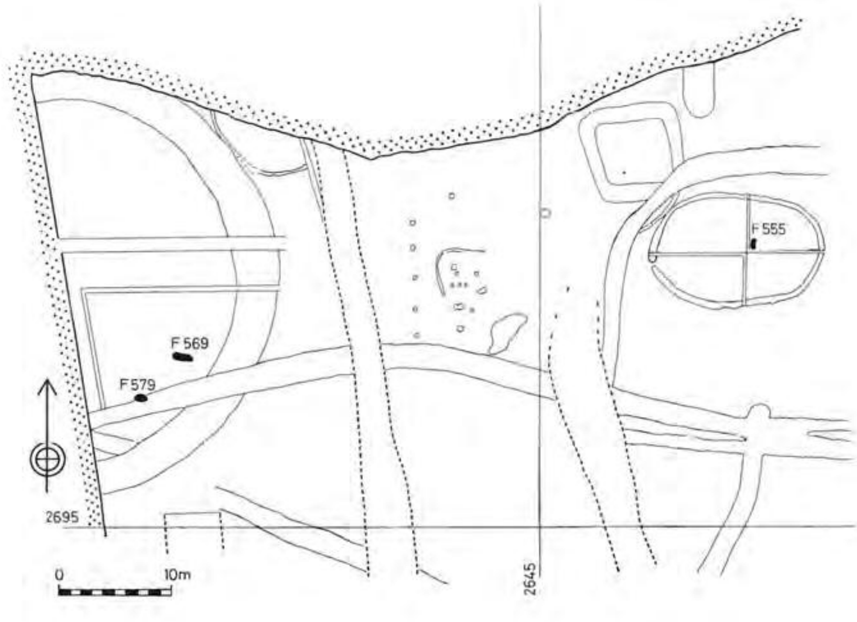


Fig.45 Maxey West Field: sections through features of the oval barrow (structure 16). Scale 1:30.



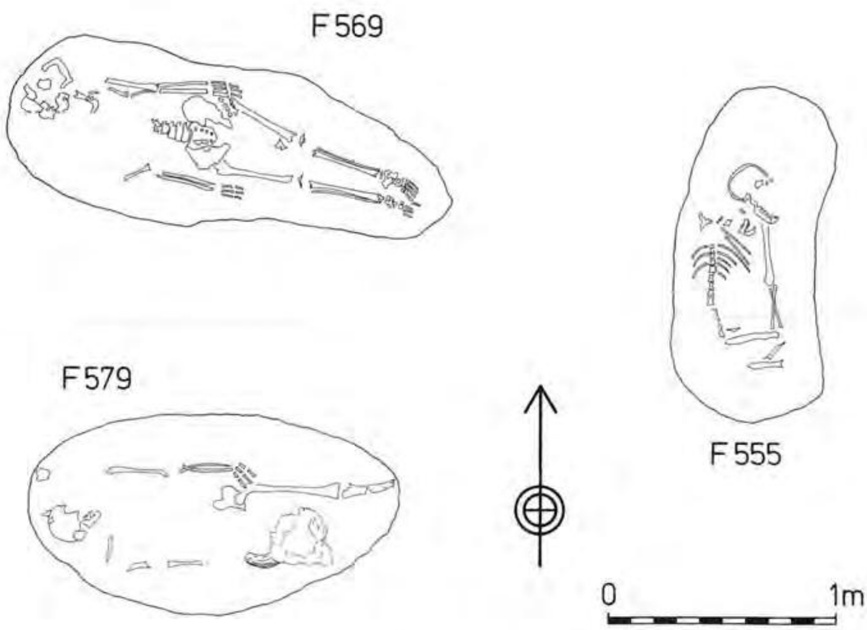


Fig.46 Maxey West Field: burials in the area of the henge monument complex. Burials F.569 and F.579 are Roman (Phase 9). Scale 1:30.

barely penetrated the "C" horizon subsoil; its survival is almost certainly due to the presence of the overlying plough headland. The bones were first distinguished after the removal of both barrow mound material *and* the buried "B" horizon, and there can be no doubt that the bones did not extend into the mound; there is, moreover, reason to suppose that they had been truncated at, or near the old land surface. Dr French has demonstrated (below) that many of the buried soils analysed at Maxey seem to have been truncated, perhaps by man; in the present case the bones' truncation could have taken place as part of this process. The condition of the bones was poor, however, and the apparent "truncation" of the burial could be caused by humic acids in both the buried "B" soil horizon and, perhaps more significantly, in the heaped soil of the oval mound. The burial was not accompanied by grave goods and the bones are considered by Ann Stirland, below (part VI).

The overlying, largely headland, soil consisted of sandy loam to sandy clay loam with a few scattered pebbles, whereas the make-up of the mound proper was composed of loam, with some gravel; below this lay the remnant of a former soil (perhaps a truncated "B" horizon), consisting of sandy loam or loamy sand; below this the subsoil, or "C" horizon consisted of sand and gravel. The total thickness of these deposits was about 65cm.

Generalising somewhat, the soil analyses suggest that the mound material within the oval gully was probably composed of topsoil derived from the area around it. The material infilling the gully, however, was dominated by well-sorted medium sand that was somewhat coarser than the mound material. There is evidence to suggest some previous sorting and mixing, but not as thoroughly as in the ploughsoil. The gully was dug, primarily for constructional purposes, in an area of subsoil mainly composed of unconsolidated sand, and the characteristics of this subsoil probably had a greater than normal effect on the ditch in-filling processes. Sand, moreover, was used to pack the posts, which then rotted *in situ* (below, that is, the level where the probable burning took place); as a result, certain natural in-filling processes (such as slip, sorting in suspension due to water run-off, or shallow frost action) were unable to take place.

Turning to its relations with other features, the oval gully (F.542) was cut by the unphased, but possibly Early Iron Age, gully F.547, which was in turn cut by the Phase 5 ditch, F.506 (Fig.44).

With the exception of a single, residual, scrap of Late Iron Age pottery, found at the top of F.542, no artefacts or bones were recovered from any feature of the oval barrow. This negative (in terms of quantity) result was in spite of very considerable efforts to obtain artefactual dating evidence: the entire grave filling was wet sieved through 2mm mesh. One bucket (10,000cm^3) samples were taken at metre intervals from both mound and buried soil along both major axes of the oval barrow; each sample was wet sieved to 2mm. Standard samples (40,000cm^3) were taken from both layers of the gully (F.542) at seventeen locations around its perimeter. In all, some 730,000cm^3 were wet sieved, excluding the central grave filling.

Structure 15 (the henge): (Figs.42,47,48; Pl.XV) Aerial photographs show the ditch to be penannular in plan with a single entranceway to the east (largely obscured beneath the plough headland), within which sits the oval barrow described above (Pl.I). The entire west half of the henge ditch was excavated by W.G.Simpson (Chapter 3, below) and the present discussion concerns the SW quadrant; an arc of ditch, forming most of the NW quadrant still remains, both at the extreme west end of the landscaped bank erected by the gravel company, and in the field beyond. The recently excavated quadrant revealed a more-or-less smoothly circular ditch (diameter *c.*126m), whereas aerial photographs of the other three quadrants (and Simpson's excavations immediately to the west), show that the ditch follows an irregular, but distinctly polygonal course. The contrast is shown in Fig.40. The henge ditch (F.523 and F.581) had an open U-shaped profile which had been truncated to varying degrees by the plough; plough- damage was most severe to the south. The excavated ditch was in two lengths, north and south of the entranceway (width 26m).

The northern component (F.581) was represented by a short (5m) length of ditch centred on Grid 2658/7734 (Fig.44). The alighment of the ditch was due N to S and did not match precisely that of its southern counterpart, F.523. This slight mis-alignment may also be seen on aerial photographs of the cropmarks. Feature 581 was slightly wider and more substantial than F.523, but this may reflect differential plough-damage; an indication that the plough has been less severe to the north is provided by the vestigial survival of the exterior henge ditch bank, which is quite clearly outlined by the 9.8m surface contour (Fig.20). This contour suggests that the bank may originally have been inturned at the entranceway, but at this point absolute certainty is impossible, owing to the presence of the headland. The evidence of the detailed contour survey was supported by stratigraphy which clearly showed a clean gravel spillage in the secondary filling of the ditch (F.581), along its outer edge (Fig.48). Finally, it is tempting to suggest that the clear space between F.581 and the Iron Age square ditched barrow to the east (structure 18) was filled by the henge bank; further, the course of the Phase 5 ditch, F.506, which passes so close to the oval barrow, might suggest that it, too, was avoiding the in-turn of the henge bank.

The south henge ditch (F.523) was excavated as extensively as time and money allowed. A length of some 75m was exposed and 60m were excavated. As expected, however, plough-damage was more severe to the south and east, but most of the better preserved sections, mainly numbers 1 to 19, showed clear evidence for a levelled or back-filled external bank (the matter is fully discussed by Dr French, part V, below).

The infilling of the henge ditch (F.523) was generally a sandy loam with gravel (Fig.48). The most obvious characteristic was that the ditch was asymmetrically filled, with a combination of gravel (varying from *c.*12-80%) and sandy loam; the gravel was mainly concentrated around the outer edge.

Relationships with other features are straightforward: the south henge ditch (F.523) cut the south cursus ditch (F.517), but was cut by all other features.

In common with all other features of the henge monument complex, the henge ditch itself produced very few finds, despite considerable efforts to locate them. None, moreover, are from primary contexts. We have already seen that a large proportion of the ditch was

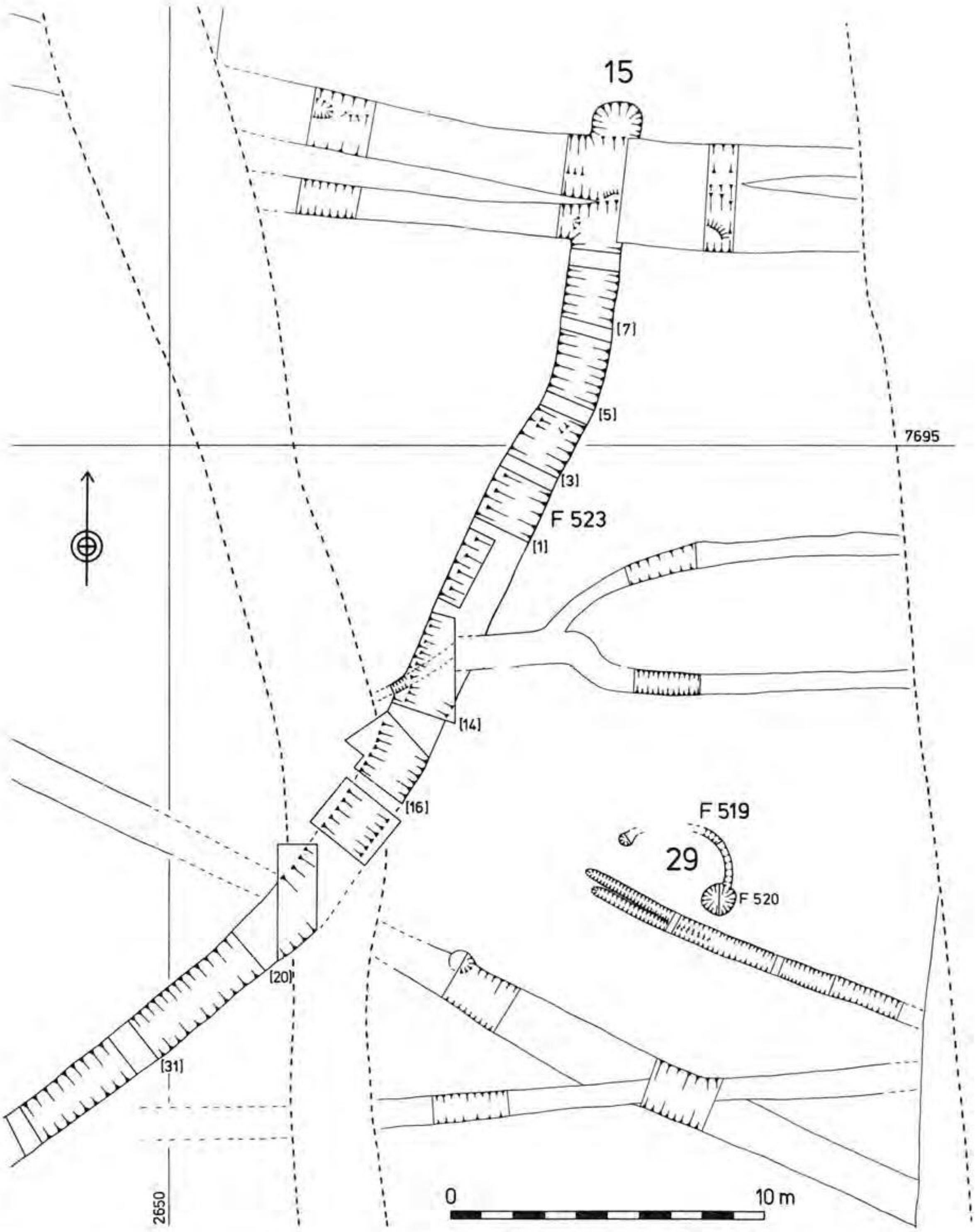


Fig.47 Maxey West Field: plan of the outer henge ditch, south of the entranceway (structure 15). Structure 29 is of probable Iron Age date. Scale 1:200.

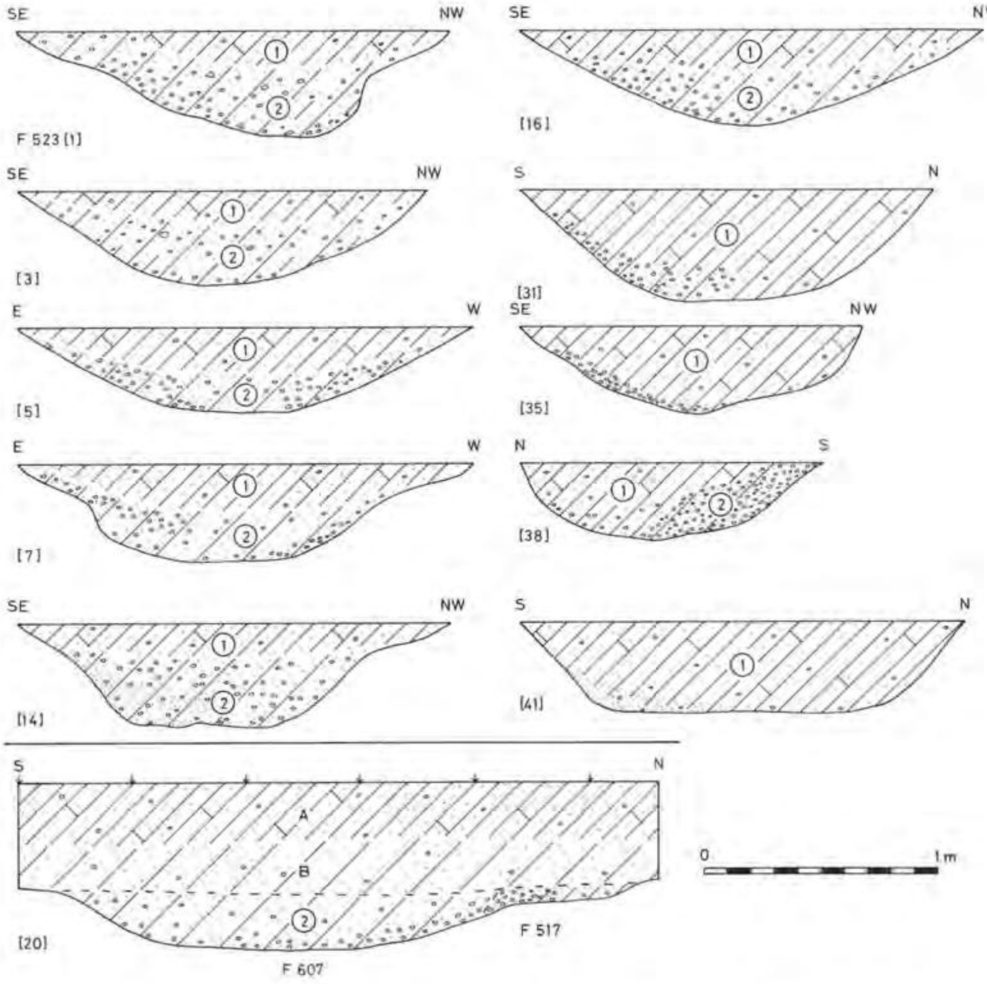


Fig.48 Maxey West Field: sections through the outer henge ditch (F.523) south of the entranceway: the bottom section shows the south cursus ditch (F.517) cut by the inner ring-ditch (F.607). Scale 1:30.

excavated (by hand); in all, nineteen sections were opened and standard (40,000cm^3) wet sieve samples were processed from each of the two layers (primary and secondary infilling — see Dr French, part V, below) encountered in every section. Apart from a handful of animal bone from secondary contexts, the ditch produced just two flint flakes (again from secondary contexts just 10cm below the stripped surface), and a small, very localised, concentration of Collared Urn pottery (Fig.74). The pottery was located at Grid 2650/7677, and all sherds came from layer 1, at a depth of 10cm; the sherds most probably come from the same vessel and may represent a cremation near the ditch inner edge which slipped into it during the latter years of secondary and tertiary erosion. It is certainly not a contemporary deposit.

Structure 14 (the central ring-ditch and mound): (Figs.49, 50-53; Pls.XVI-XVIII) The central ring-ditch (F.607), as its name implies, was located at the centre of the henge monument complex, centred on Grid 2602/7717. The central ring-ditch, like the outer henge ditch which enclosed it, was very slightly oval (perhaps gibbous is a happier term), its E to W axis being the longest; this axis was, in turn, aligned on the oval barrow. Both the present and Simpson's excavations showed clearly that the ring- ditch was never broached by an entranceway.

Surface contours (Fig.20) show a slight rise towards the NW corner of the West Field. This slight undulation is the plough-damaged remnant of a once substantial turf and topsoil mound (F.600) which was erected at the centre of the ring-ditch interior. The main N to S section (Figs.50 and 51) show clear evidence for a turf and topsoil mound, constructed in two parts. An inner bank of topsoil and gravel ran around at least part of the ring-ditch (Fig.49 clearly shows a crescent of gravel which protruded through slipped mound material to the base of the ploughsoil; the plan is drawn at this point). There is still some doubt whether this gravel crescent represents slip from a large central mound, now vanished, placed atop the original (first phase) topsoil mound discussed at length by Dr French below (part V). On the whole, the former hypothesis — that the gravel is the top of a bank which ran parallel to the inner edge of the ring-ditch — is preferred. The inner concentric bank explanation would also account for the clean gravel deposits that were dumped into the ditch from the inside edge, since natural erosion from a central mound would have taken place

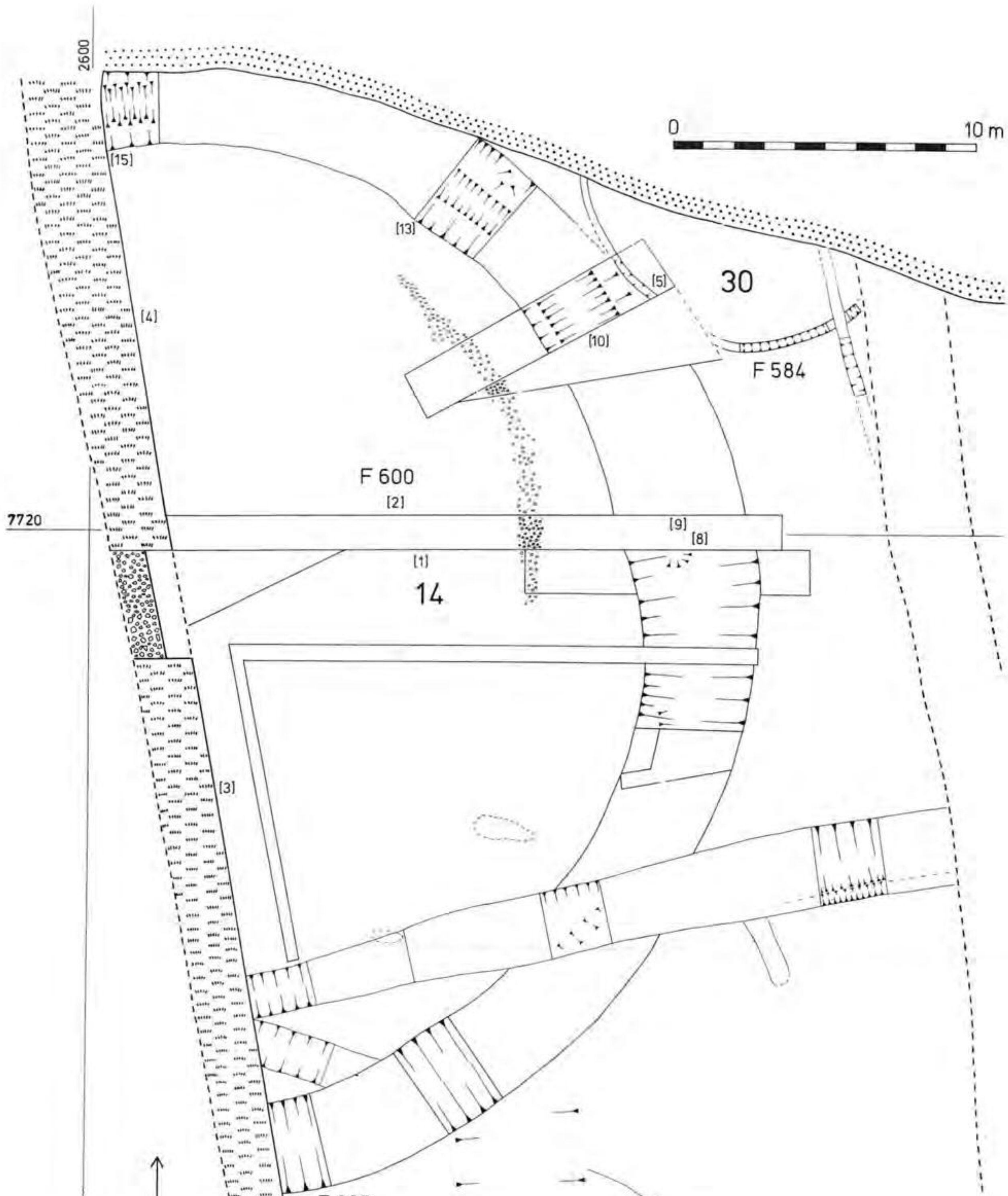


Fig.49 Maxey West Field: plan of the henge complex central area (structure 14). Structure 30 is Middle Iron Age. Scale 1:200.

later in the ditch silting process; such a naturally-derived deposit would also show more pronounced bedding planes and would be interleaved with lenses of soil. The presence of a concentric soil-built bank is not in doubt and this must inevitably have acted as a revetment, to delay the outward movement of any gravel ultimately derived from the central mound. Again, a deposit of 'mound' gravel so low in the ditch sequence is at odds with the presence, nearby, of a revetment bank.

Interpretation of the deposits which comprised the central ring-ditch complex of features was complicated by the effects of fluctuating water levels and periodic drying-out. These processes caused the removal of most soil colour differences. Turves, for example, could only be seen clearly by the naked eye in a single case. Soil analyses were used to determine the original composition of the various deposits concerned; the term "topsoil" is used in cases where turves could not be seen in the field.

There can be little doubt that the features of the central ring-ditch complex were of multi-period construction and thus accord well with local practice (e.g. Donaldson *et al.* 1977; Jackson 1976; Clay 1981 etc.); there is, however, no evidence to suggest that it was built to be used as a barrow or cenotaph, nor was it particularly long-lived. On the contrary, there are grounds to believe that it was short-lived, like the associated and probably contemporary, henge monument which surrounded it.

The soils of the central ring-ditch features are comprehensively discussed by Dr French below (part V) and the following brief account summarises some of his principal findings. The sedimentary sequence may be summarised thus:-

1. Removal of turf and topsoil,
2. Construction of a turf/topsoil mound (F.600 layers 3 and 5) of *c.*17.5m diameter, placed centrally within a ring-ditch accompanied by an internal bank of topsoil capped by gravel (F.600 layer 2). Bank and mound are probably separated by a narrow berm.
3. Deliberate levelling of the gravel-capped bank top into the ring-ditch, thereby creating a shallower ditch (Figs.50-52, F.600 layer 2; Fig.53, F.607 layer 4).
4. Construction of the enlarged mound using locally-derived topsoil (F.600 layer 4). This mound covered both levelled bank and central primary mound. The work was possibly carried out by gang labour.

The primary mound was composed of two distinct layers (Fig.51): the basal layer (5) was a clean, well oxidised sandy loam, and the upper layer (3) was a sandy loam to plain loam with little or no gravel. The secondary mound (layer 4) was primarily a sandy loam with a few scattered gravel pebbles; in places the sandy loam gave way to a sandy clay loam. The composition of the bank (Fig.52, F.600 layers 1 and 2, central section) was similar, but with an overlying (layer 1) gravel capping. The ring-ditch (F.607) *c.*1m deep and *c.*2.5-3.0m wide (Figs.50-53). It was composed of sandy loam with scattered gravel pebbles which became markedly dominated by gravel towards the base of the profile. Gravel tip lines are also evident in the ditch sections (Fig.53).

The ring-ditch cut the south cursus ditch (F.517), but was cut by the Middle Iron Age ditch F.533 (Fig. 50). The Phase 5 round building, structure 30 (F.584) was sealed beneath late (Roman) barrow slump which had slipped across the filled-in central ring-ditch. The eaves-drip gully (F.584) of structure 30 seemed to respect the central ring-ditch which it touched at a tangent (Fig.49); F.607 was probably still visible and would have provided a sump or soakaway for the later feature.

The occurrence and distribution of finds from structure 14 showed a clear-cut distinction between primary (Phase 2) and secondary (Phase 3 and later) deposits. Primary deposits (which include both episodes of mound building and enlargement) are described above and were sampled as follows: standard samples of 40,000cm^3 were wet sieved from each layer of the seven sections of ring-ditch investigated. In addition a standard sample was taken from the inner turf bank deposit, and single bucket samples (10,000cm^3) were taken at metre intervals along the main E to W baulk and across the entire monument, along the main N to S baulk (a total of 550,000cm^3). Supplementary samples were also processed from the body of the mound. Shortage of time and manpower only allowed the thorough hand excavation of mound make-up south of the main E to W baulk; north of this line mound material was very carefully removed by a long-reach hydraulic excavator (Hy-Mac 580C) fitted with a 2m toothless bucket. The soil was removed in approximately 5-10cm increments, under F.M.M.P.'s close supervision; the process took two days and was intended to locate satellite burials, secondary cremations and later intrusive inhumations; it was not intended to reveal portable artefacts such as small flints and their absence should not necessarily be seen as significant. The absence of such material in the machine-cleared area (for location see Fig.54), however, probably reflects the true picture, for despite extensive sieving and hand excavation, the primary deposits south of the E to W baulk provided very few finds, and no animal bone: three utilised and three waste flakes were found in layers 3 and 4 of F.600 (the mound); one sherd of Collared Urn was found high in layer 3 of F.600, in possibly contaminated, secondary, contexts (Fig.74). By contrast, by far the greatest number of finds derived from secondary contexts of ultimately post-Neolithic, Phase 3, date. This material is considered below.

Phase 3: Middle and Late Bronze Age

Strictly speaking, *features* of Phase 3 were absent. The phase is represented instead by a scatter of flints in the ploughsoil and by a dense spread of flints in the mound slump of structure 14 (discussed above). Most, if not all, finds of Phase 3 therefore derive from contexts in which they were, strictly speaking, intrusive or residual. These contextual difficulties need not detract from the significance of this material's distribution, provided that some attempt is made to understand (a) how the finds became deposited in the first place and (b) to what extent their final location has been affected by post-depositional factors. The latter is considered by David Crowther in part I, above; the former is discussed here, in part IX and Chapter 5, below (diffuse flint scatters are considered in Pryor 1982).

Structure 14 (secondary deposits): (Fig.54) Modern ploughsoil was removed by machine, but the finds distribution across the mound on the modern topsoil surface does not show any increased density (Figs.28-30); this may in part be due to the presence of a slight accumulation of soil along the northern edge of the main plough headland which passes close by the mound, to the

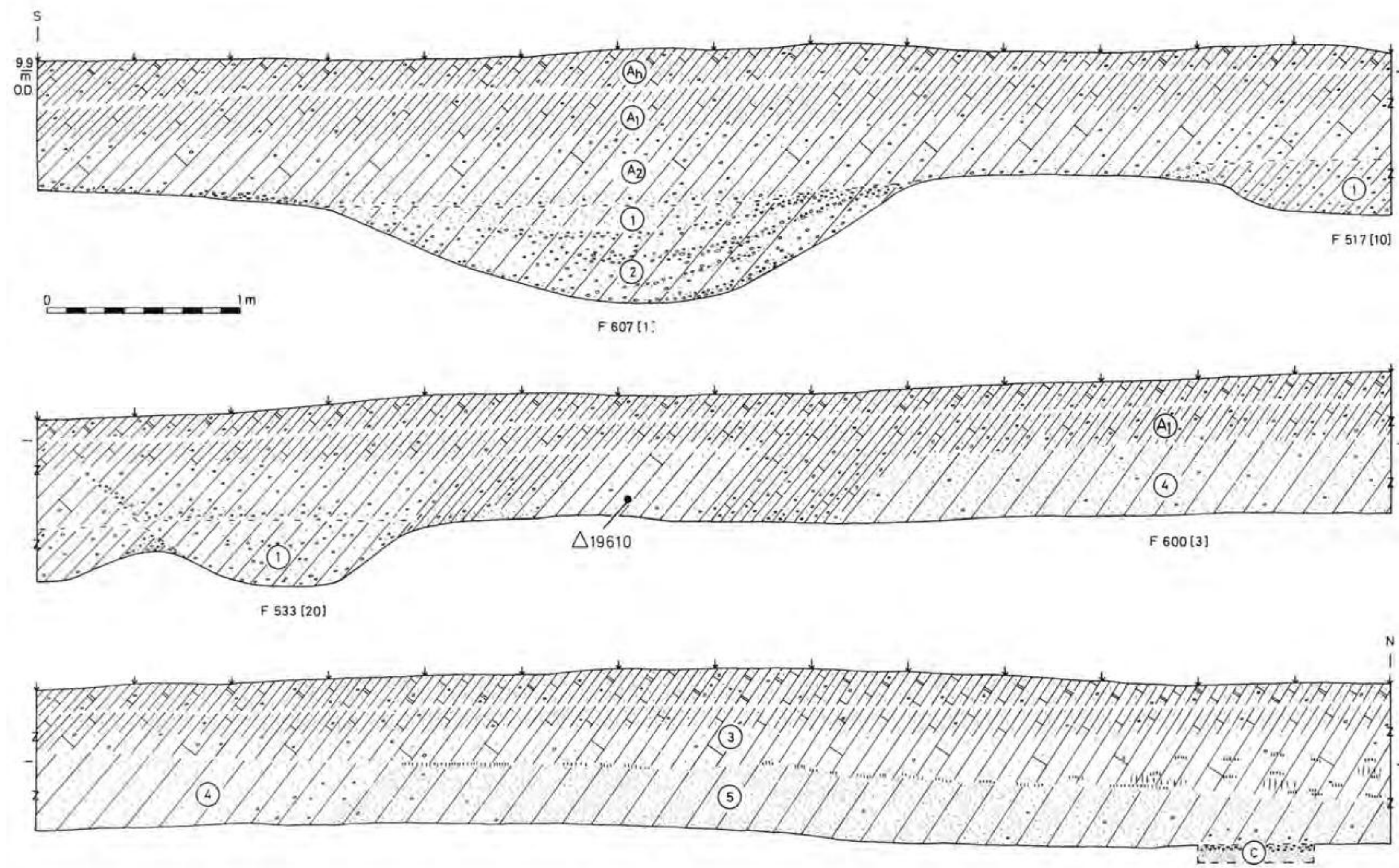


Fig.50 Maxey West Field: sections through the central mound and ring-ditch (structure 14). Main south to north section, southern half (Fig.49, section 3). Scale 1:30.

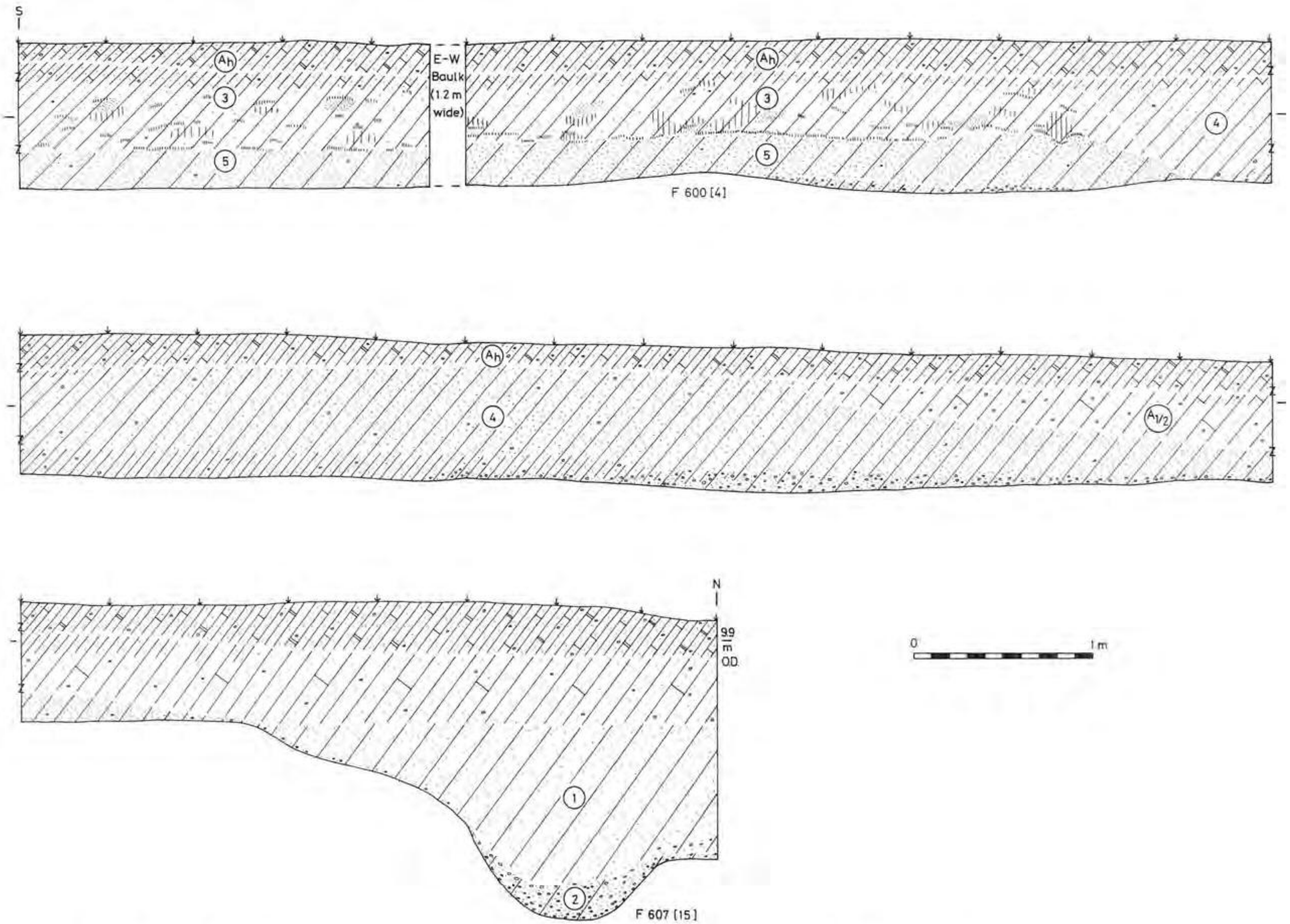


Fig.51 Maxey West Field: sections through the central mound and ring-ditch (structure 14). Main south to north section, northern half (Fig.49, section 4). Scale 1:30.

south. This buried pre-Enclosure soil was just sufficiently thick to prevent the modern plough from penetrating into the ancient levels. A few finds were recovered from modern "A" soil levels, but the vast majority came from layer 1 of features 600 and 607. The deposits concerned were uniform in texture and colour and it was not possible to determine any internal sequence, but the finds include a large collection of flint implements and by-products of probable Middle and Late Bronze Age type. Associated with these flints is a collection of pottery, dominated by shell-gritted wares (largely Iron Age or Romano-British) and a few Romano-British coarse wares (Nene Valley Grey Ware; "Castor" colour-coated wares). The two inhumations, F.569 and F.579 were cut into layer 1 of F.600 and are probably Roman in date (Fig.46). The burial in F.579 included the remains of a near complete *Bos* cranium.

The mixture of finds of various periods in the different secondary deposits probably results from the multi-phase use and re-use of the mound, but at a higher level. Burials aside, the debris that accumulated at the bottom of the mound consisted of normal settlement material; there are no indications that the monument had a continuous and long-lived role as a "ritual" focus, as has been tentatively isuggested elsewhere, in a broadly similar environment (Hodder 1983). The mound might have been chosen as a convenient, dry, haven in times of flooding (probably a frequent occurrence). This secondary occupation debris provides a useful archaeological "control" against which the earlier, primary, artefact-free deposits may be judged.

Phase 4: Earlier Iron Age (Fig.44)

This phase is represented by structures 17 and 18 which were located in the henge entranceway area NE and NW of structure 16, the oval barrow. Their discovery and excavation took place under difficult circumstances and the results are consequently rather unsatisfactory. Air photographs of the henge entranceway are obscured, as we have already noted, by the plough headland. The oval barrow, however, was revealed by the Ancient Monuments Laboratory geophysical survey and the region around it was excavated with great care. Loose earth from this area was heaped along the northern edge of the West Field, hard by the quarry boundary bank; the heap covered about a third of structure 17 and over half of structure 18; the northern continuation of the henge ditch, F.581, was totally buried and the western ditch of structure 18 (F.549) was mistakenly identified in its stead. The latter feature apparently showed signs of a collapsed external bank, which is now seen to have been slip from a central barrow (Pl.XIX). To make matters worse, the corner of structure 17 was so obscured by the Phase 5 ditch, F.507, that its true nature could not be appreciated. By the close of 1980 poor weather forced excavations to cease with the position unresolved. Our intention, the following season, was to remove the spoil heap with a hydraulic excavator, but financial constraints led instead to the use of the gravel company's D8 tractor and box scraper, which were kindly lent to us free of charge.

This equipment is cumbersome and very heavy, and not at all suited to the task we required of it, and there can be little doubt that it removed the mounds inside the two square-ditched barrows, together with any inhumations there might have been. The gravel subsoil at this point is soft and studded with areas of hard calcareous concretions that drag against the cutting edge of the box scraper, thus causing it to dig deeply; this accounts for the severe truncation of most features in the area (compare Fig.55, top right, with the two sections below it).

Dr French was only able to study sediments from the truncated ditches and was unable to obtain any good evidence for collapsed central barrows (part V, below). However, the gravel in the infilling of structure 18 (Fig.55, F.556 section 1, layer 1; F.556 section 9, layer 1) was not present in the contiguous Phase 5 ditch F.506 which passed through identically loose gravel and sand subsoil. Taken as a whole, there was good evidence, albeit circumstantial, for a mound, if not for a barrow, within the area enclosed by the square ditch of structure 18.

Morphologically, structure 17 is closer to the well-known examples from east Yorkshire (despite its four internal post-holes), but the evidence for a barrow is less clear-cut. Similar features are recorded in Bardyke field by Simpson (Fig.168), but these were not protected by a plough headland and their original function is still unclear. Structures 17 and 18 are described in greater detail below.

Structure 17: (Figs.44,55) Structure 17 was located immediately NW of the oval barrow, structure 16, just inside and to the north of the henge entranceway, centred on Grid 2653/7728. It consisted of a sub-square enclosure ditch (F.554) (av. width *c.*1.10m), marked at each corner by internal post-holes (F.553, F.585, F.616 and F.617).

The ditch filling was similar in many respects to that of structure 18. Deeper sections were dominated by gravel slip from both sides of the ditch and it is probable that this infilling occurred relatively quickly (perhaps within a year or two); it undoubtedly reflects the unconsolidated nature of the surrounding subsoil. The upper filling of both deeper and shallower ditch sections was dominated by naturally accumulated sandy loam with gravel. The ditch filling provides insufficient evidence to determine whether the ditches enclosed either mounds or banks (alternative views, not based on sedimentary evidence alone, are discussed in the preceeding paragraphs). Turning to relations with other features, the ditch (F.554) was cut, in all its layers, by the Phase 5 boundary ditch F.506.

Neither the ditch nor any of the four corner post holes produced finds or animal bones, despite the wet sieving of every post-hole and the processing of standard (40,000cm^3) samples from each layer of the twelve excavated sections. The lack of occupation debris must argue against the use of this structure in a domestic context.

Structure 18: (Figs.44,55) Structure 18 was located outside the henge entranceway, some 10m east of structure 17, centred at Grid 2672/7732. It consisted of a square ditch (F.549 and F.556), width *c.*1.5m, enclosing an area *c.*8m square. The ditch was more regular in profile than that around structure 17; it was also more open in shape. The two undisturbed corners, to NE and NW, were sharp and well-defined. To the south, the original ditch had been completely removed by the Phase 5 ditch F.505, which clearly made use of the earlier

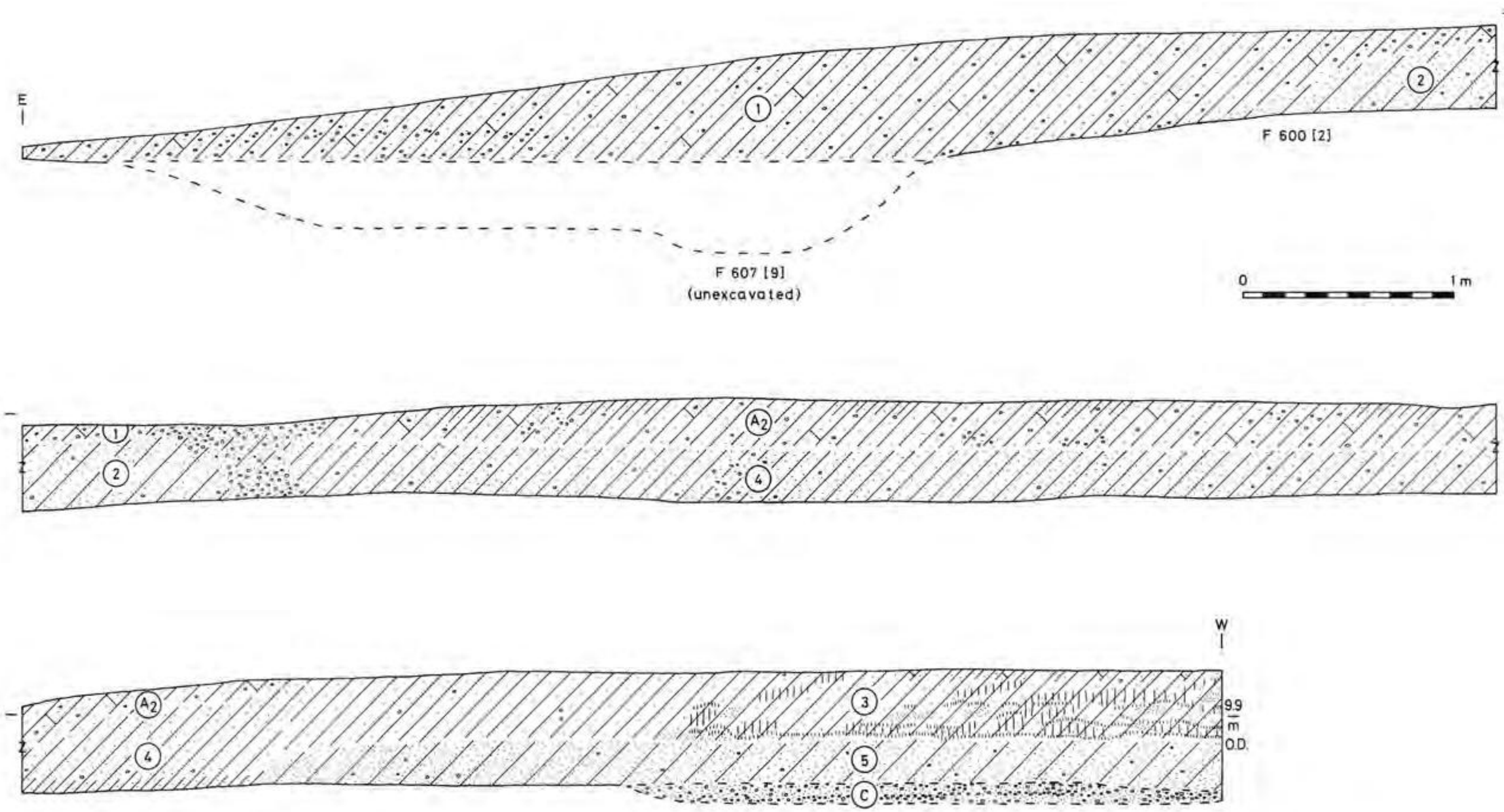


Fig.52 Maxey West Field: sections through the central mound and ring-ditch (structure 14). Main east to west section (Fig.49, section 2). Scale 1:30.

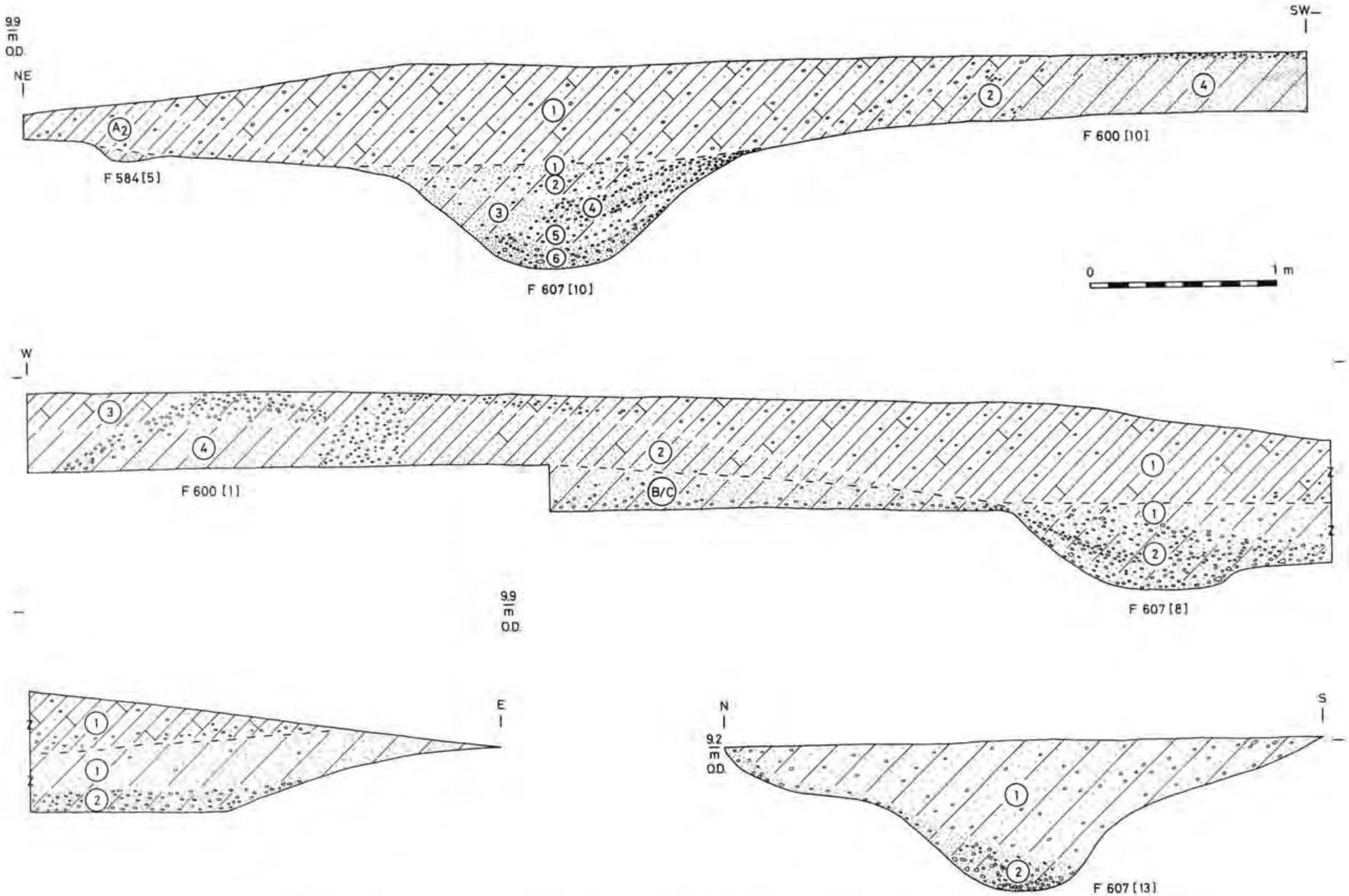


Fig.53 Maxey West Field: sections through the central mound and ring-ditch (structure 14). Sections through the inner ring-ditch and bank (section numbers located in Fig.49). Scale 1:30.

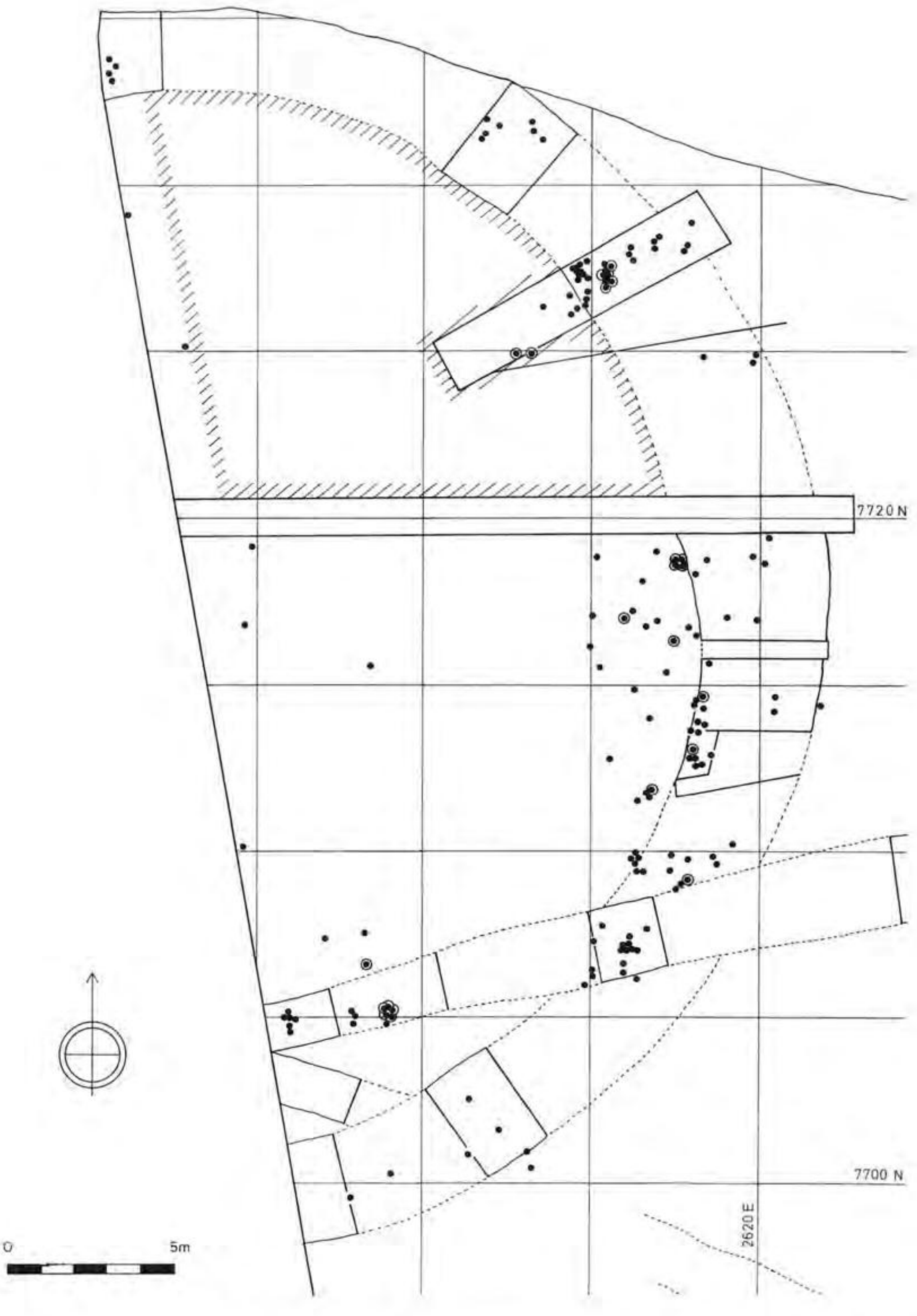


Fig.54 Maxey West Field: distribution of finds in the henge complex central area. Circled spots indicate Roman pottery. Scale 1:200.

feature. There were no surviving internal features, but there were some circumstantial evidence for the existence of an internal mound (discussed above).

The ditch (F.549/F.556) appeared to have been subject to two episodes of rapid infilling, in the primary and tertiary infillings respectively. These deposits were primarily composed of gravel (*c.*55%) and sandy loam; the upper gravel may represent delayed or deliberate levelling of an internal mound, but is more probably the result of natural weathering processes in an area with a very poorly consolidated subsoil. The lower gravel undoubtedly derives from ditch sides. These gravel lenses sandwiched a secondary filling of naturally accumulated sandy loam with an even gravel mix.

We have already noted that the southern part of the square ditch was removed by F.506, but F.506 was in turn, cut by the Phase 5 ditch, F.538 which cut structure 18 obliquely. Structure 18 cut the north cursus ditch (F.60).

Finally, although fewer sections were cut than in structure 17, each layer of the five sections was wet sieved, but no finds or bones were recovered. This dearth of material is of significance, especially given the relative abundance of pottery, bone and other settlement debris produced from all layers of the contiguous, but later, boundary ditch, F.506. Again, as with structure 17, a non-occupation function is indicated.

Phase 5: Middle Iron Age (Fig.56)
In common with Phases 1 to 4, features of this phase were almost solely confined within the West Field and included, for the first time, features of undoubted domestic and agricultural use. For convenience, the features are described by structure, linear and non-linear group, in numerical order. Two sub-phases (5.1 and 5.2) could be distinguished for the linear, and by spatial patterning, for certain non-linear features; the grounds for assigning various features to each sub-phase are discussed in the section devoted to linear features.

Structure 19: (Figs.57-59; Pl.XX) The "structure" of structure 19 consisted of the side wall and top vent of a beehive oven which had been dumped into a shallow, partially-filled pit, F.572/573, when still hot, for the pit infilling immediately beneath the oven wall was reddened and fire-cracked. The pit was located less than 1m north of the main E to W (Phase 5) ditch, F.533, with which it was contemporary. The pits were irregular in shape, being lobate in plan and undulating in section, and measured *c.*2.5m square; they are centred on Grid 2642/7712. It is interesting to note that the Ancient Monuments Laboratory magnetometer survey detected the oven which lay immediately north of a particularly well-defined (in geomagnetic terms) length of the ditch F.533. The clear geomagnetic definition results from the presence in the ditch infilling of fired clay and other debris. Pottery from around the oven is closely similar to that from the ditch, both in form and fabric and there seems little doubt that both features were open, and most probably in use, at precisely the same time.

Soil from the pit, F.572 layer 1 consisted of silt loam with scattered gravel pebbles and clear tip lines (10YR 4/3). The oven itself was block-lifted and is now stored in Peterborough Museum; it is described (below, part III) by David Crowther. Other finds include "scored ware" of a type commonly found in Middle Iron Age contexts in the region (Pryor 1983a). In addition, a few animal bones, burnt stones etc. indicate that the pit infilling was composed of occupation debris.

Structure 20: (Figs.57,59) This structure was located just NW of the oven described above and covers an area of some 10m square, centred on Grid 2636/7715. On spatial grounds it seems most probable that it was related (functionally?) to structure 19 and therefore to the ditch F.533, further south. Indeed, the ditch seems to have acted as some kind of boundary, for features of Phase 5 were absent in the region south of F.533; plough-damage might also cause this void, however.

The structure consisted of three elements: firstly a row of five evenly-spaced post-holes, *c.*3m apart were aligned N to S (F.614, F.620, F.615, F.574, F.575). An outlying post-hole, F.625, may also be part of this possible fence line (*note* F.620 and F.625 could not be shown on Fig.57). This fence bounded the structure to the west and was arranged at approximate right-angles to the E to W ditch, F.533. The second element was a shallow curved gully, F.624/633 which appeared to separate the western fence line from the third element: a group of eleven post-holes arranged irregularly along a N to S axis between the gully and structure 19, to the SE. This group of post-holes may, perhaps, have supported a roof or shelter associated with the oven; the shallow gully could have served as an eaves-drip to this structure.

The natural subsoil in this area is composed of very loose gravel and it proved difficult to obtain a consistent depth when machining. Modern plough scratches were evidence in places, especially to the north, beyond the protection afforded by the headland which passes slightly south of the E to W ditch, F.533. There can be no doubt that some features were severely truncated; this might help explain the surprising scarcity of charcoal and the uniformity of most feature infillings (where only the "rapid" gravel-rich sediment is preserved).

As noted above, all features had closely similar fillings: loamy sand with scattered gravel pebbles; this material results from natural weathering from the sides; 10YR 4/3 is a typical matrix colour.

Finds were rare, probably as a result of the truncation discussed above. Only one feature (F.630) revealed pottery: a small, soft sherd of Middle Iron Age "scored ware".

Structure 22: (Figs.60,61) Structure 22 was a round building defined by two arcs of eaves-drip gully (F.504 and F.505) which formed an incomplete circle, diameter *c.*14m, centred on Grid 2665/7648. Although the west part of the circle was largely removed by the upper levels of the illustrated furrow, the entranceway seemed to have been placed to the east. The ring-gully butt-ends on either side of the entranceway were obliterated by gullies of structure 23, but the gap between them was real enough and of suitable width to form an entrance. It coincided well with the two probably door post-holes, features 513 and 514. The door post-holes were slightly set back from the eaves-drip gully, in a manner reminiscent of, for example, Cat's Water, Fengate (Pryor 1983a, buildings 8, 16, 20 etc.). The entranceway was approximately 1m wide. The building seems, on the limited evidence available, to be located somewhere near the centre of the south enclosure of Phase 5.1, with which it was probably contemporary.

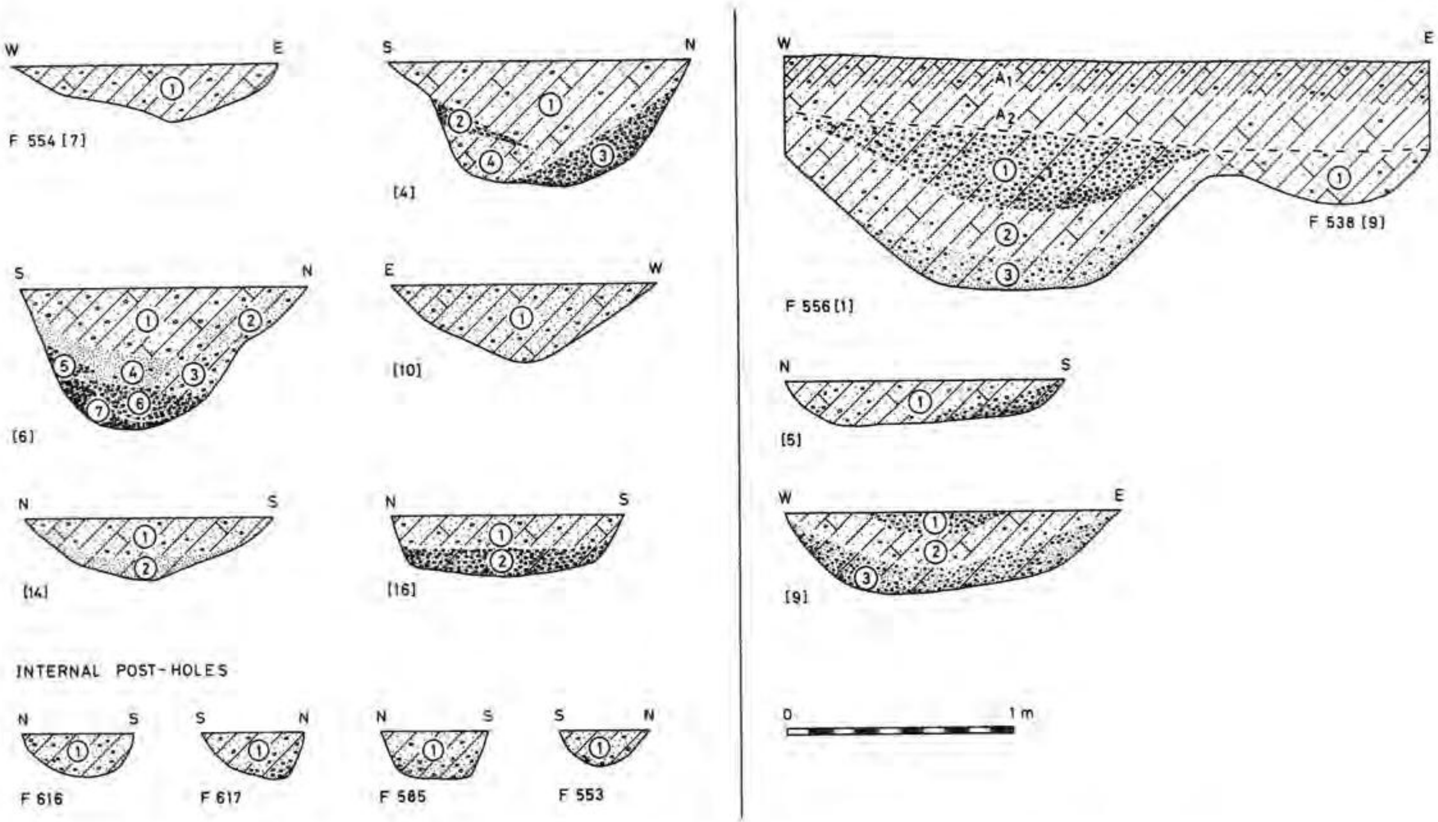


Fig.55 Maxey West Field: sections through features of Phase 4 structures 17 (left) and 18 (right). Scale 1:30.

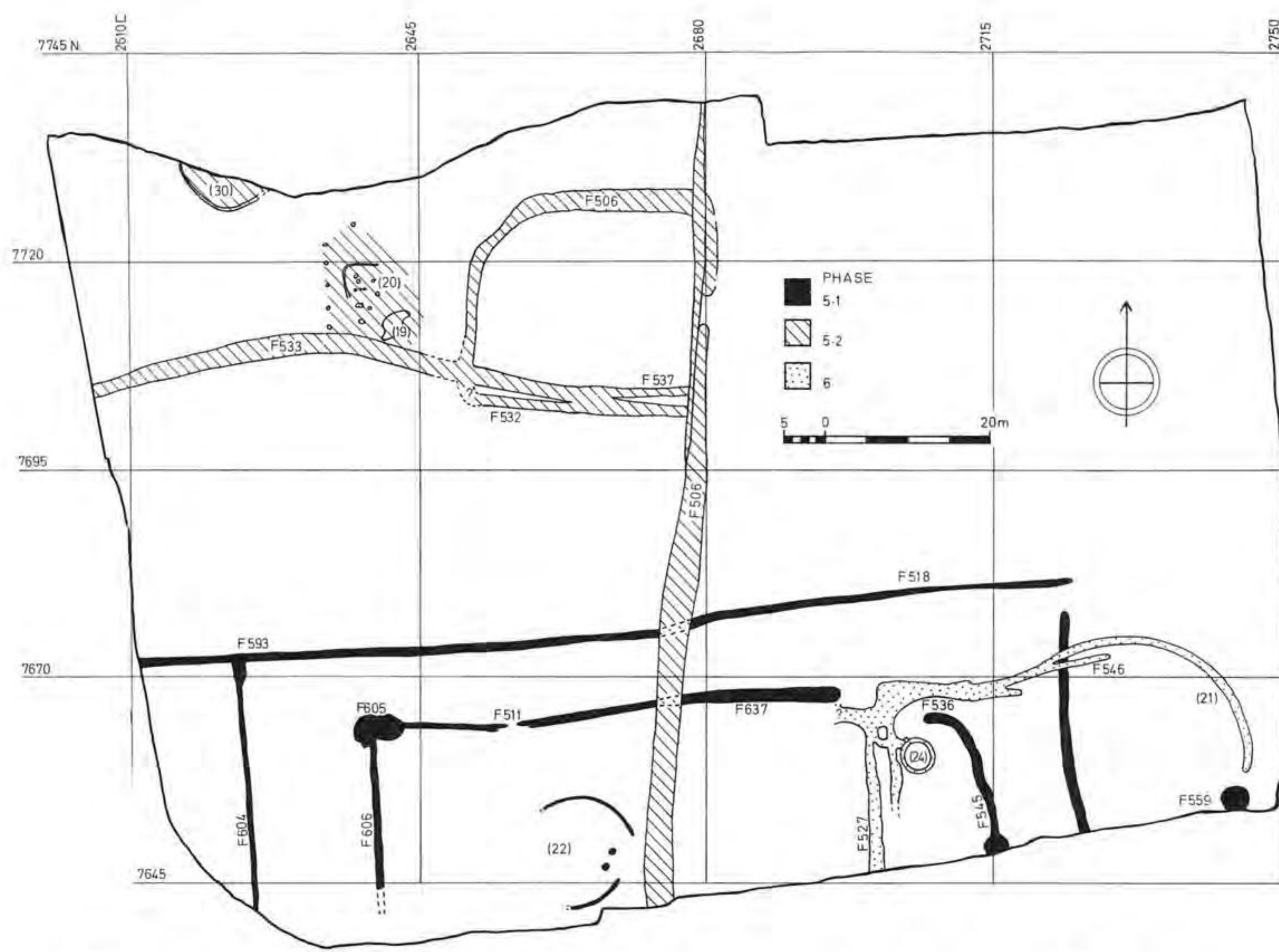


Fig.56 Maxey West Field: simplified phase plan of Iron Age features (with medieval furrows omitted). Scale 1:800.

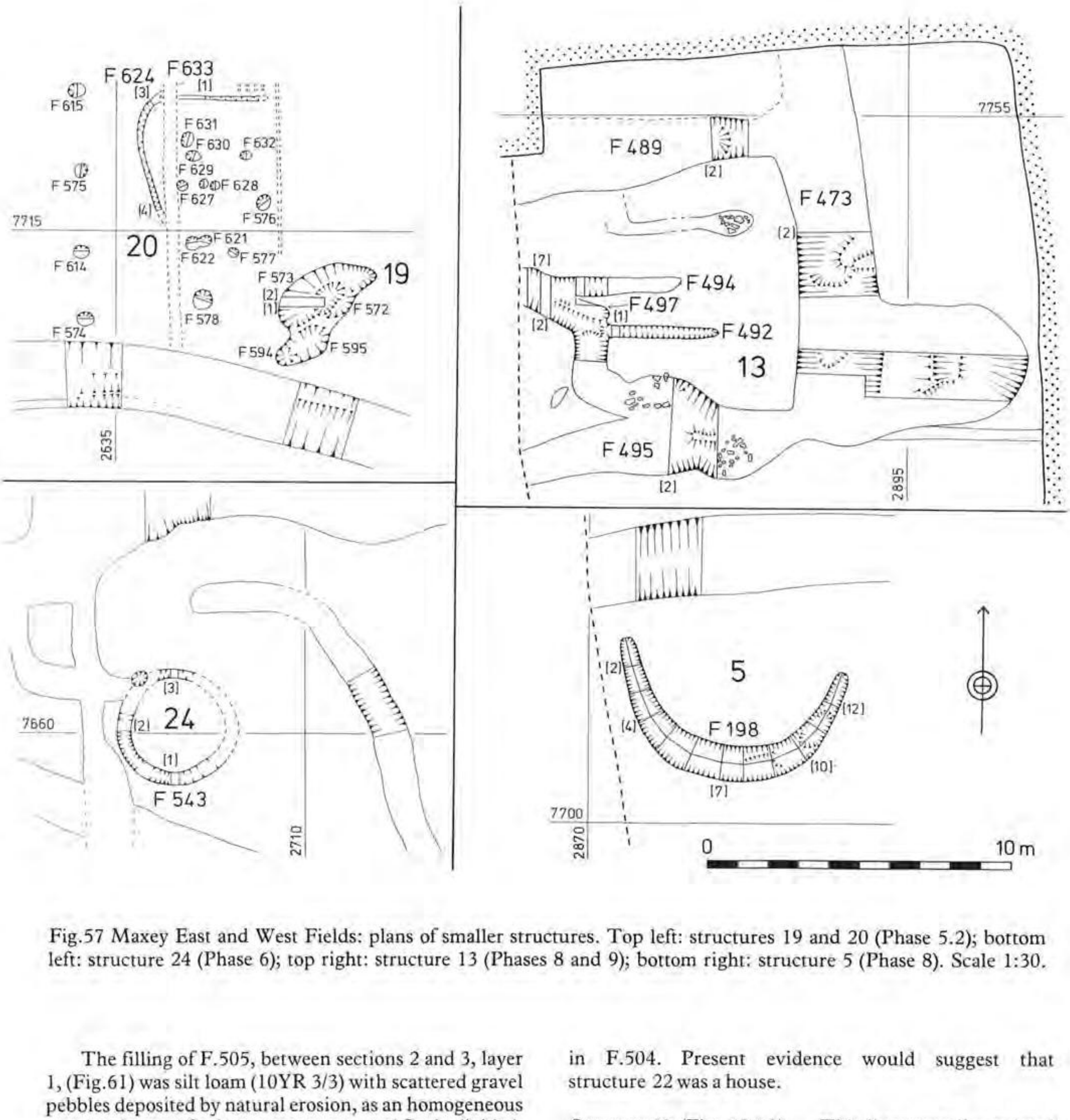


Fig.57 Maxey East and West Fields: plans of smaller structures. Top left: structures 19 and 20 (Phase 5.2); bottom left: structure 24 (Phase 6); top right: structure 13 (Phases 8 and 9); bottom right: structure 5 (Phase 8). Scale 1:30.

The filling of F.505, between sections 2 and 3, layer 1, (Fig.61) was silt loam (10YR 3/3) with scattered gravel pebbles deposited by natural erosion, as an homogeneous matrix; charcoal flecks were common, and finely divided. Feature 514, layer 1, was infilled by the same material (including charcoal), the colour being very slightly different (10YR 3/3).

The two lengths of gully were cut by the ditches and gullies of structures 23 (Phase 5) and 25 (Phase 6). It would seem probable that the large drainage ditch, F.506, was not open at the time the building was in use, as its location so close to the entranceway would have been inconvenient, or indeed dangerous.

Finds are typical of domestic refuse: animal bone and many shell-gritted sherds, including examples of Middle Iron Age "scored wares". The finds distribution within the ring-gully is uninformative and incomplete, owing to later disturbance, but there were possible indications of a slight concentration of material around the entranceway in F.504. Present evidence would suggest that structure 22 was a house.

Structure 23: (Figs.60,61) This "structure" consisted of three shallow gullies that probably all post-date structure 22, but pre-date structure 25 (Phase 6), immediately to the south. It is probable that structure 23 consisted of three separate buildings, or rebuildings of the same structure, but it is difficult to be more certain, as disturbance was extensive to the east. The gullies were centred on Grid 2670/7650 and were probably the truncated remains of eaves-drip gullies (for similar buildings, defined by very short lengths of eaves-drip gully, see Pryor (1983a), buildings 29, 30, 32, 33 and 56 etc.). Two more-or-less parallel E to W gullies (F.499 and F.503) might possibly represent the later rebuilding of the structure on an entirely new, rectilinear, plan, but this seems rather improbable, given the irregular plan of the features concerned. The slender evidence available indicated that structure 23 was a round building, defined by eaves-drip gullies F.502 and F.510 which could be interpreted as off-centre recuts of the same feature. The third gully, F.498, seems to continue the circumference, perhaps blocking-off a doorway in the process (a practice that was frequently noticed at Fengate). The fact that the ring-gullies did not appear east of the main drainage ditch F.506 can almost certainly be explained by post-depositional factors (mainly plough damage and recent hedge maintenance). The relationship, however, between the various ring gullies and other features of structure 23 and the main N to S ditch F. 506 was tested by excavation, and there can be no doubt that the ditch cut through the gullies. This relationship provides an important stratigraphic division between structure 22 (Phase 5.1) and the main N to S ditch, F.506 (Phase 5.2).

The filling of the gully F.510, layer 1 consisted of sandy loam with scattered gravel pebbles; the filling was homogeneous (10YR 3/3) and accumulated naturally; charcoal was rare. The gully F.498 was filled with silt loam (10YR 3/3) and scattered gravel pebbles; again, the infilling was natural, but charcoal was absent.

Pottery is copious, as are animal bones, but the area available for study was too small to discern pattern in the finds distribution. At first sight this material might suggest that the structure(s) was a house, but the location of the various gullies in the entranceway of the earlier structure (22) raises the strong possibility that much of the material was, in fact, residual.

Structure 29: (Fig.47) This structure was very fragmentary and only requires brief consideration. It comprised a very shallow (*c*.5cm) ring-gully (diameter *c*.4m), centred on Grid 2666/7680. The pit, F.520, may also have been related to it. The size of the ring-gully recalls structures 11 and 24 (below), which are here interpreted as stack-stands. The gully was too slight to illustrate in section, but it was infilled with silt loam and scattered gravel pebbles in an even, naturally derived matrix (10YR 3/4). Its location would suggest a date in Phase 5, and the few scraps of pottery found in the gully tend to support this dating.

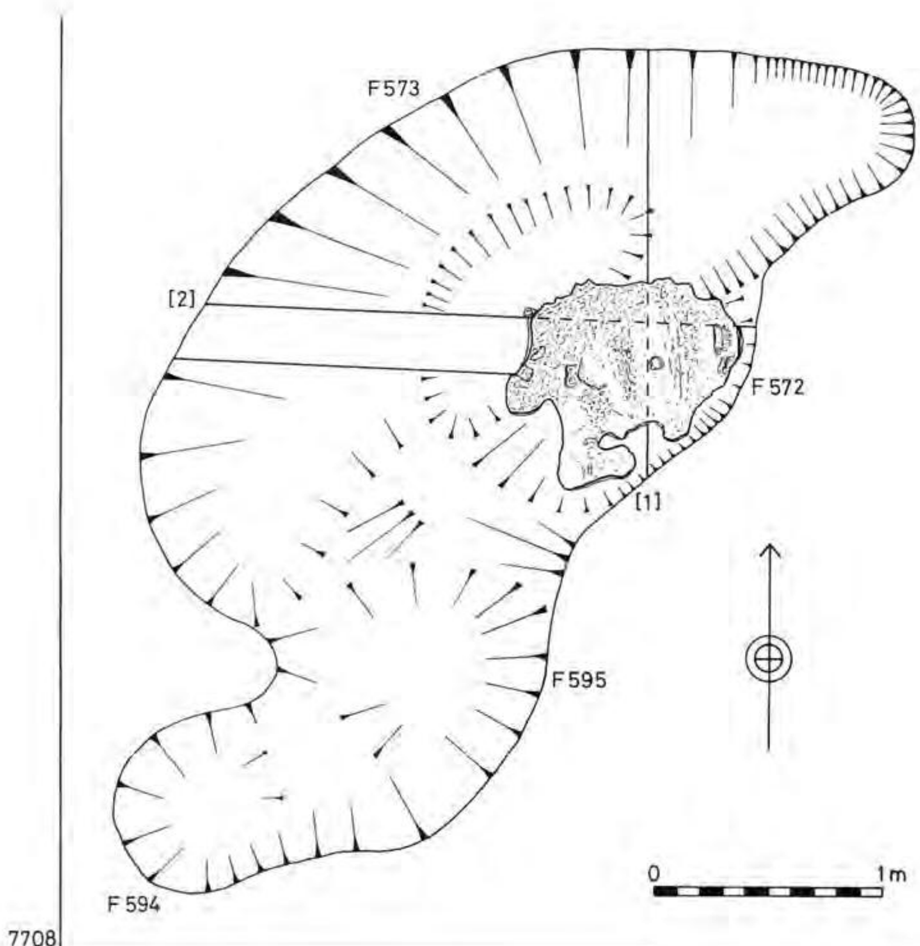


Fig.58 Maxey West Field: plan of the oven, structure 19 (Phase 5.2). Scale 1:30.

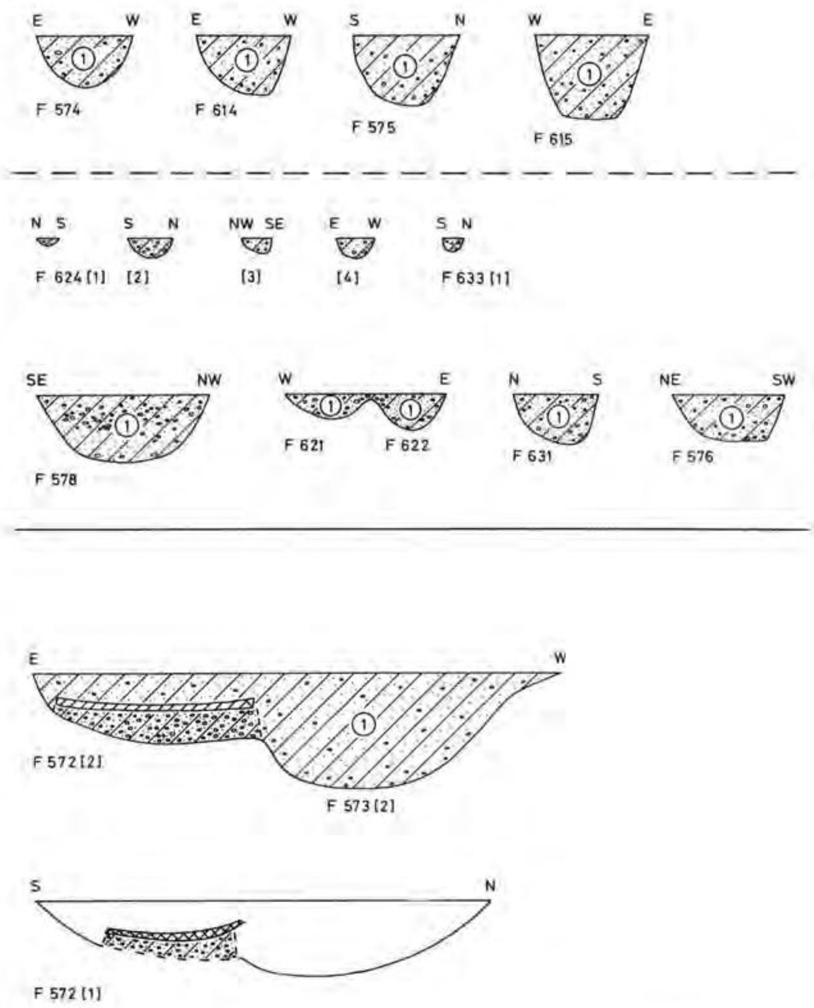


Fig.59 Maxey West Field: sections through features of Phase 5.2 structures 19 (bottom) and 20 (top). Scale 1:30.

Structure 30: (Fig.53,57) Structure 30 was an arc of ring-gully immediately NE of the central henge complex ring-ditch (structure 14), centred on Grid 2623/7730. Unfortunately, it was only possible to excavate a short length of this feature (F.584), which had an approximate diameter of 12m. The even, homogeneous, naturally-derived filling was composed of silt loam (10YR 4/4) with scattered gravel pebbles. The gully was cut by a N to S gully (F.583) of probable Iron Age date and was sealed below secondary mound deposits of structure 14; the latter deposits arrived in their final location by, and during, Roman times (see discussion of Phase 3, above).

Pottery is plentiful and of Middle Iron Age type ("scored ware").

Linear features: (Figs.56,71) Before we discuss the dating and relations of these features, it is necessary to say a few words on their function(s) and subsequent infilling. In contrast to the ditches of the ceremonial and funerary structures of Phases 1-4, the ditches of Phase 7, and all subsequent phases, were dug primarily as drains, or as an accompaniment to a hedge. When smaller ditches of the latter type filled-in, it was with topsoil and subsoil derived from the surface and the ditch sides; being shallow, pressure from above was slight and compaction was also slight; these features therefore rarely show evidence for post-depositional slumping. Deeper drainage ditches, on the other hand, contained large quantities of waterlogged or semi-waterlogged organic material; some indeed might have held "brush drains" to facilitate water flow (Pryor and Cranstone 1978, pl.iv); natural vegetation would have included grass, reeds etc., growing in profusion at the water's surface. Nowadays similar ditches in the area are recut ("slubbed out") about every five years, or more frequently; this illustrates how rapidly organic material will accumulate in a Fen-edge ditch, even in the present hedgeless, treeless and largely lifeless agricultural environment. Once the ditch ceases to be kept clear the organic material will become buried beneath secondary soil, largely derived from the ditch walls; the process of rotting, and with it compaction, will be slower during wet seasons when the ground water table is high. Secondary and even tertiary deposits may accumulate above largely organic primary layers (for example at Etton, Pryor and Kinnes 1982), where they may rest for decades, or longer. Under these circumstances compaction (slumping) will be a slow process that will have, however, a direct effect on archaeological deposits and their interpretation.

The main post-depositional distortion caused by compaction of this drawn-out type affects the apparent relationship of large, deep features (whether linear or non-linear) to other large features and to shallower features. In some cases the distortion is evident: where very long periods of time are involved prolonged compaction generally takes the form of a clearly defined post-tertiary deposit where worm-sorting has removed stones; in plan these deposits are distinguished by finely tapered edges with a characteristic feathered effect. Removal of this material will usually reveal the true relationship of the various features involved, providing, that is, the compaction has not passed below the lowest level of the shallowest feature. Most cases are, however, far less clear-cut; compaction may have taken years or decades, rather than centuries; in these cases the slumped deposits *are* the upper tertiary deposits and it is usually impossible to distinguish the two. Rapid compaction of this sort is hard to recognise and can lead to very misleading interpretations in the field, particularly when conditions are poor. The main distortion is to feature relationships when seen in plan *alone;* in regions where the ground water table is (or can be) high, any relationship that involves a feature cut below the winter water table must be checked in section; otherwise large features, particularly wells or major boundary ditches, will tend to appear 'young'. Finally, the process of ditch maintenance tends to produce an open U-shaped profile that will gradually conform to the subsoil's natural angle of repose. These more stable profiles are better able to support grass cover and pedogenesis. It is probable, therefore, that a long-lived (i.e. long maintained) ditch will take longer to become filled-in by natural processes alone than a short-lived, if deeper, ditch, dug for a purpose and then abandoned. As a general rule, therefore, it is probably unwise to attempt detailed sub-phasings of long-lived settlement or agrarian sites, in regions where subsoils are unstable and compaction poses problems. The following account should be treated with due caution.

The linear ditches of Phase 5 are thought (largely on the basis of the modern ground water level) to be too slight to have been subject to the distortions mentioned above. The main N to S drain, F.506, was an exception, however. It appeared to cut nearly all features when viewed in plan, but there can be little doubt that its upper layers were subject to considerable compaction. This feature was the principal link between the various linear and structural features of Phase 5, and is crucial to their interpretation; all relationships were tested by excavation and the two sub-phases suggested here are probably reasonably reliable.

The earliest sub-phase, 5.1 (Fig.56) was focussed on structures 22 and, perhaps 23. Linear features of this sub- phase could not be followed to the south, but they formed an approximately rectangular enclosure defined by F.606, F.511, F.637 and F.545. This enclosure was broached by two entranceways, one at Grid 2700/7665, in the north side and at the NE corner, respectively. The dating of F. 545, the east enclosure ditch, is slightly dubious, and it is possible that the Phase 6 ditch F.527 followed an earlier alignment, perhaps of Phase 5 date. Again, a corner entranceway was indicated. A well (F.605) was positioned at the NW corner of the enclosure. The upper layers of this feature were compacted, and it was not possible to test its relationship to the enclosure ditch, but there were spatial reasons to suppose that they are probably contemporary. The ditches of this inner enclosure were shallow (10-40cm) and severely truncated by the plough.

The inner enclosure was located within a larger, outer, enclosure composed of shallow, plough-damaged ditches. Again, it was not possible to investigate this enclosure further to the south, but its E to W ditch (F.593/519) clearly continued west, perhaps to form part of a larger system, discussed by Simpson in Chapter 3; Fig.40 shows our ditch F.593 continuing across the quarry trackway, to become the "southern side-ditch" which was cut by ditch V (just east of pit circle IIIb, Fig.168). The outer enclosure was defined by ditches F.604, F.593/518 and F. 562. It was broached by at least one entranceway (Grid 2725/7679) in the NE corner; unfortunately we were unable to remove the furrow deposits north of the other inner enclosure entranceway to see whether there was a corresponding gap in the outer enclosure ditch too. It is hard to decide whether the space between the two sets of enclosure ditches was used as a drove or whether it merely represents additional land enclosed, following the abandonment of the inner enclosure. On the whole, the precise alignment of the two sets of ditches and the location of the various entranceways tend to favour the former explanation.

Sub-phase 5.2 saw the abandonment of the southern rectilinear enclosures. They were replaced by a system involving larger ditches, better suited to drainage. The principal ditch, F.506, ran N to S and was broached at Grid 2680/7714 by an entranceway which was cut through by a later recut (F.538), also in Phase 5.2. A small sub-rectangular enclosure was constructed in the area of the henge entranceway; it measured *c.*26×21m and contained no obvious contemporary structures. It should, however, be noted that the ditches concerned were relatively rich in artefacts and bones; if a building had been placed in the enclosure, it might well have been placed atop the oval barrow in order to raise it above winter water levels. Had this small, apparently natural, platform been chosen, the shallow foundation and eaves-drip gullies of the building might readily have been lost during the formation of the later plough headland, for there is little doubt that the oval barrow was a much-truncated remnant of its original size. The (blocked) entranceway referred to above was placed at the centre of the enclosure's east side; this location would be entirely suitable for a house, but would not be very convenient for livestock where cattle tend to bunch and stray unless funnelled through a corner entranceway (Pryor 1978, 157). The enclosure's south side, comprising F.333, F.332 and F.337 appeared to have been recut a number of times. A substantial ditch, F.533 continued the system to the west where it passed south of the henge central mound (structure 14) to become ditch V of Simpson's system (Fig.168). Structures 19, 20 and 30 probably belong to this phase.

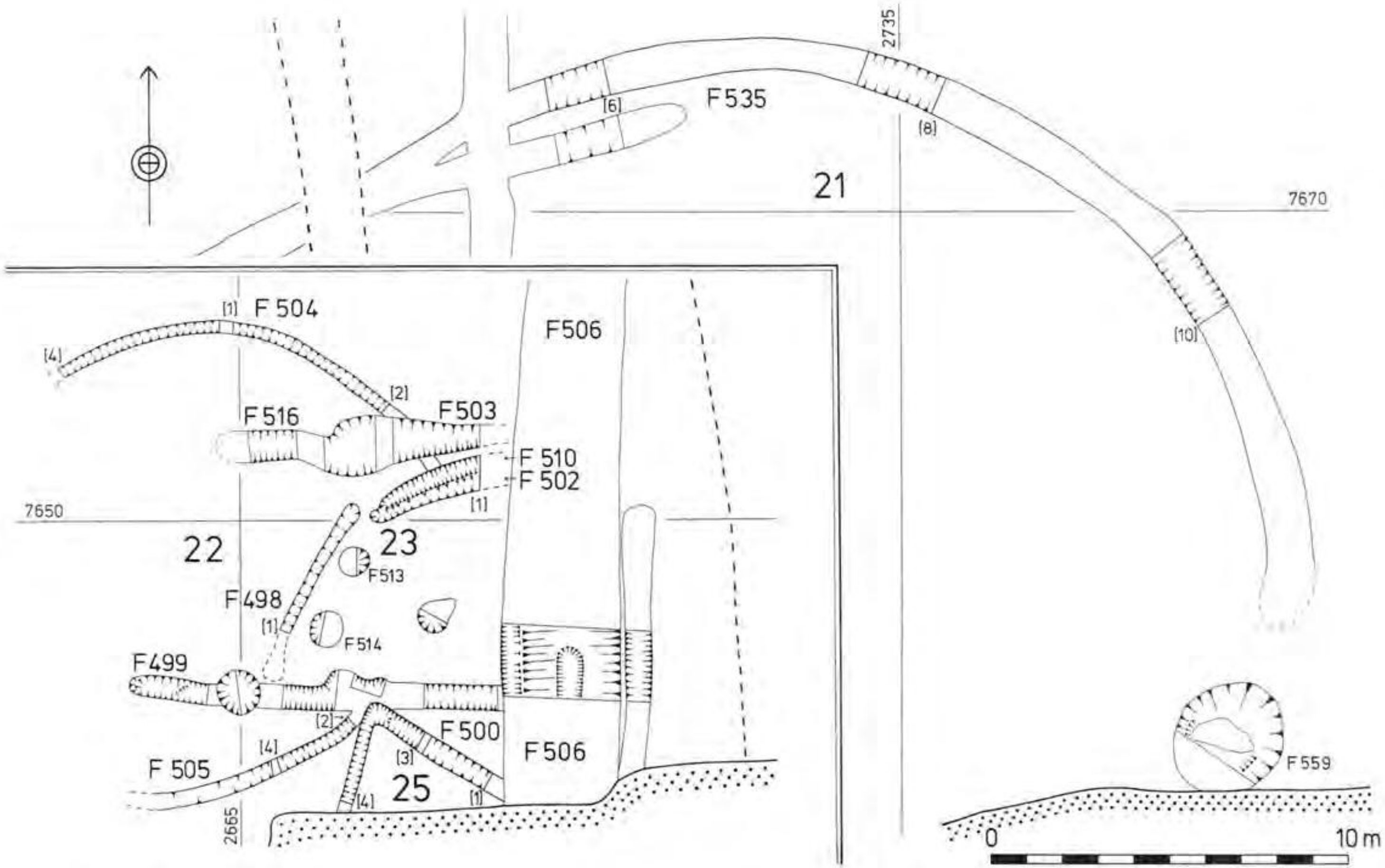


Fig.60 Maxey West Field: plan of structures 21 (Phase 6), 22 (Phase 5.1), 23 (?Phase 5.2) and 25 (Phase 6). Scale 1:200.

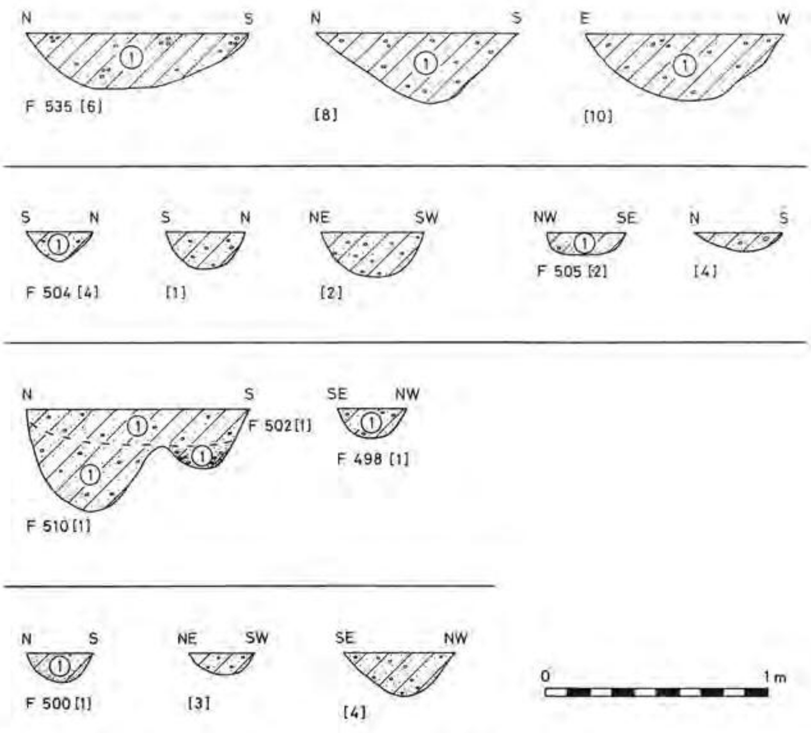


Fig.61 Maxey West Field: sections through features of structures 21 (top), 22 (centre top), 23 (centre bottom) and, 25 (bottom). Scale 1:30.

It must be emphasised that the two sub-phases described here are probably of local significance only and represent small-scale modification of a larger system of ditched fields or paddocks. Finds from such features are a poor means of dating, but the different alignment of the two systems and the different size of the ditches involved (small in 5.1; large and frequently recut in 5.2) suggest a hiatus between the two. Simpson is able to show (Chapter 3) that his northern and southern side ditches are stratigraphically earlier than his ditch V, which can be equated with our F.533, beyond any doubt. The size and alignment of the side ditches strongly suggests that they form part of our Phase 5.1 system. A Middle Iron Age date for Phase 5.1 seems in little doubt, but it is quite possible that the ditches of 5.2 stayed in use into Late Iron Age times (as witnessed by the discovery of a Colchester brooch in Simpson's ditch V). The available evidence does not indicate that the small ditches of Phase 5.1 were maintained in use for long: simple maintenance inevitably tends to enlarge ditches and frequently gives rise to an undulating or ridged bottom. None of the 5.1 ditches show stratigraphic evidence for recuts, nor do we find the small mis-alignments that are so characteristic of a long-lived system (compare, for example, Newark Road, Fengate-Pryor 1980a, fig. 32). Simpson's side ditches also show the same general characteristics indicative of a short use-life. One might venture to suggest that the system was used for one or two generations, probably no longer.

Moving from questions of dating to the sediments involved, we will briefly describe linear features in each of the three main areas considered above (Fig.71). Feature 511 (between sections 3 and 4), layer 1: silt loam with scattered gravel pebbles in a homogeneous mix (10YR 4/3) (not illustrated); F.506 layer 1: sandy clay loam with an even gravel mix and some gravel lenses; a naturally-derived deposit (10YR 3/3); F.506 layer 2: clay loam with scattered gravel pebbles in a homogeneous mix (10YR 3/3); F.533 layer 1: silt loam with an even gravel mix, a homogeneous naturally-derived filling (10YR 3/3). Charcoal was rare or absent in all these sections (except in F.533, near the oven).

Turning to more detailed relationships, it has already been noted that compaction can cause serious interpretational difficulties and we will consequently only consider features investigated by excavation; of these, the most important concern the two sub-phases. The south part of F.506 clearly cut the gullies of structure 23 but it was impossible to test the relationship between the gullies of structure 25 and the main drain. Feature 511, the E to W ditch of the inner south enclosure was cut by F.506, but the relationship between F.506 and the outer enclosure ditch was obscured by a furrow (Fig.40). Further north, Phase 5.2 shows evidence for even further subdivision in a multiplicity of recuts, as witnessed by the E to W ditches that formed the south edge of the enclosure around the (earlier) oval barrow. Unfortunately the principal point of intersection, where F.506 meets the various phases of F.533 was also removed by a medieval furrow; to the east the intersection was obscured by F.538, an off-centre recut of F.506, which clearly cut all the recuts of F.533.

Finds are less frequently encountered in the linear features of both sub-phases, than in their associated structural features. The only exception being F.533, the large E to W ditch, in the vicinity of the oven (structure 19). This has been discussed above. The southern part of F.506 contains much residual material from nearby structures 22 and 23.

Non-linear features: (Figs.56,62) Only two non-linear features require discussion; both are shallow wells and both contain evidence for onetime intact waterlogged deposits which were in an advanced (but regrettably recent) state of decay when excavated. Features 559 and 605 (Grids 2744/7655 and 2640/7662 respectively) contained soft, humified wood remains in their lower levels and there can be little doubt that they were originally dug as wells, and were probably originally lined with wattle, in the manner of broadly contemporary "sock wells" at Fengate (e.g. Pryor 1974a, figs. 18 and 19). Feature 599 had been filled-in to a depth of at least 1m, i.e. all the primary levels. It contained a quantity of animal bone, pottery (mainly "scored wares") and much decayed wood and other organic matter. Feature 605 contained few artefacts, but was similarly rich in animal bone and decayed organic material. Estimates of decay rates must be subjective, but the recent decay was probably under way some 5-10 years ago; the same could probably be said of the deeper ditch deposits.

Feature 605 was located at the NW corner of the inner south enclosure of Phase 5.1, whereas F.559 was located outside the Phase 5.1 enclosure and seemed to be respected by the Phase 6 linear ditch F.535. Present evidence suggests that the latter well was filled-in during Phase 6, but with material exclusively derived from Phase 5 contexts; alternatively, the Phase 6 linear ditch might follow an earlier, Phase 5, course. The former explanation seems most reasonable, given the wealth of Phase 5 material nearby, and the peculiar curving alignment of most Phase 6 features which bears little resemblance to the rectilinear layout of the previous phase.

The filling of F.559 layer 1 consisted of silt loam in a homogeneous naturally-derived deposit (10YR 3/2); this lay above layer 2, a silty clay loam with an even gravel mix and organic matter (10YR 4/3); there are indications that at least part of this layer was back-filled (*note* the section through F.559 is located off-centre).

The filling of F.605 was more varied and appeared to originate from a variety of sources:

layer 1	Silt loam with scattered gravel pebbles; naturally derived slow tertiary deposit (10YR 3/3).
layer 2	Silt loam with an even gravel mix; a naturally-derived deposit, but with more gravel than layer 1 (10YR 3/3).
layer 3	As layer 1 in composition.
layer 4	Silty clay with iron-pan (10YR 2/2).
layer 5	Clay loam with an even gravel mix and iron-pan (10YR 3/3).
layer 6	Gravel with sand lenses and iron-pan; a "rapid" deposit (10YR 3/3).
layer 7	Loamy sand with an even gravel mix; a natural deposit (10YR 3/3).
layer 8	Clay loam with an even gravel mix, sand lenses and iron-pan; a "rapid" deposit, subject to fluctuating water levels (10YR 3/2 to 10YR 6/6).

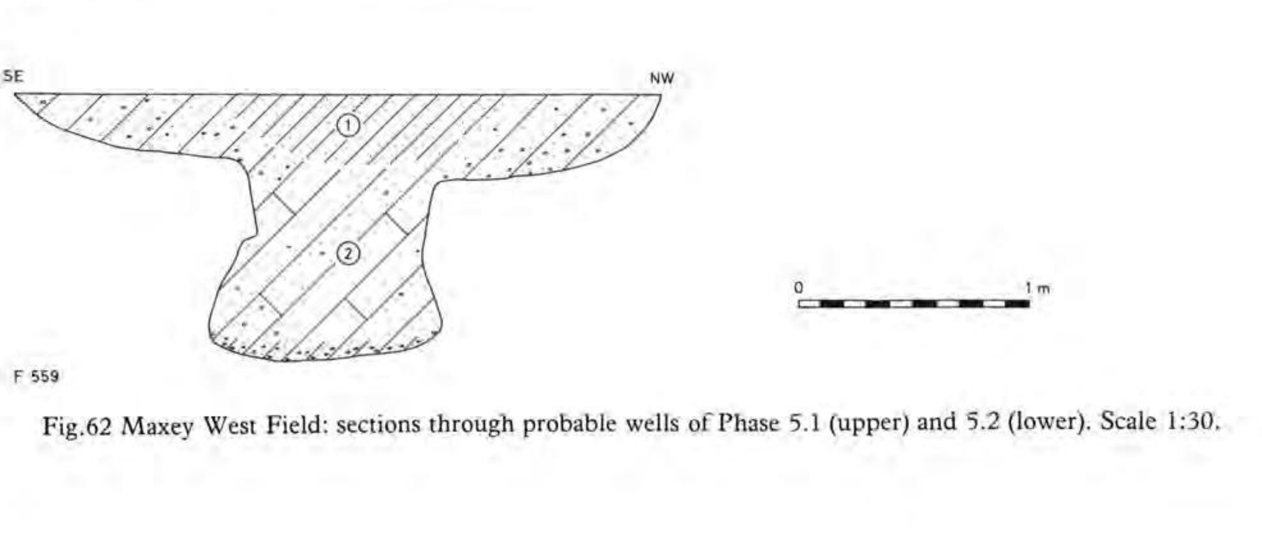


Fig.62 Maxey West Field: sections through probable wells of Phase 5.1 (upper) and 5.2 (lower). Scale 1:30.

Layers 3-5 (inclusive) are probably naturally-derived. The definition of the various layers in this feature is not straightforward, as the sides were partly formed (or rather dug around) a hard natural calcareous concretion ("calcrete") which formed before the feature was dug. The presence of this material affects the way in which the feature filled-in and may well account for the multiplicity of layers, that might otherwise suggest anthropogenic influence. Not all the layers described here appear in the illustrated section (Fig.62).

Feature 559 sat in stratigraphic isolation outside the Phase 5.1 southern enclosure, in an area of presumed open grazing served by the NE corner entranceway of the southern enclosure. It was probably first dug in Phase 5.1, but may have continued in use into Phase 6 (the problem is discussed in the previous section). Feature 605 was located at the NW corner of the inner southern enclosure at the junction of the E to W (F.511) and N to S (F.606) ditches. Both ditches were shallow and the well was deep and showed much evidence for compaction (layer 1). The relationship was carefully investigated by excavation and it was decided that the upper layers of F.605 effectively masked any relationship: none of the lower levels of the linear ditches extended beyond the well's pronounced weathering cone and a stratigraphic relationship could not, therefore, be tested. Careful removal of the slumped upper layers showed no evidence that the ditch cut the well, however; the available evidence suggested that the ditches and the well were probably broadly contemporary.

The lower levels of both features contained domestic refuse, including Iron Age pottery, of which that from F.605 is of undoubted Middle Iron Age date. The pottery from F.559 is probably somewhat later: Middle/Late Iron Age.

Phase 6: Late Iron Age

The use of the term Late Iron Age often poses problems in areas of rural settlement. Dating tends to depend on pottery alone, since coins etc. are usually absent and diagnostic imported items are invariably lacking. In these circumstances it is hard to decide whether such "late" material is pre- or post-Conquest, and in general the distinction may be irrelevant (Reece in Pryor 1983a). At Fengate, for example, the Cat's Water "Iron Age" community continued, largely unchanged (as regards material culture), into the third quarter of the 1st century AD; it would appear that the position at Maxey is somewhat similar: features of the earliest Romano-British phase (Phase 7) may well overlap chronologically with those of Phase 6. This distinction is unsatisfactory if viewed from a strictly ceramic viewpoint, since pottery of Phases 6 and 7 is in the native tradition and closely similar. The distinction between features of the two phases rests largely on spatial criteria: the linear ditches of Phase 6 are located on the West Field and have links with Iron Age features to the west, as discussed by Simpson, below (Chapter 3); the ditches of Phase 7, on the other hand, are confined to the east and form part of a system which seems, on present evidence, to have its origins in the Late Iron Age. The western system has clear Middle Iron Age progenitors; indeed the presence of square ditched barrows in the vicinity might imply even earlier origins. The distinction may be fine, but it is thought to be valid.

The stratigraphic relationship between linear features of Phases 5 and 6 was obscured by a plough furrow (Fig.40); it should also be noted that this area of the site was damaged not only by the plough, but also by earthmoving operations. For various reasons we had to use the gravel company's D8 tractor and box scraper which was unable to obtain a satisfactory surface (from our point of view) at the base of the modern ploughsoil. Problems were caused by the loose gravel, combined with calcrete, which formed the "C" horizon in this area, and to the north across almost the entire West Field. The loose substrate allowed upper material to slide forward as large "rafts" comprising all the modern soil horizons. This process accounts for the removal of the medieval plough furrows east of structure 24; strenuous efforts were made to observe the machine as it worked and it is not thought that any major structural or linear feature has been removed, although isolated small pits and post-holes will undoubtedly have been lost. The area is also shown to be largely devoid of archaeological features by the Ancient Monuments Laboratory survey (part I, above); the surface field survey also shows the area to be largely sterile (Fig.29).

The features of Phase 6, although much truncated by earthmoving and the plough, seem to have been arranged without regard to those of Phase 5.1. It is probable that, because of its large size, the main N to S ditch of Phase 5.2 (F.506) was still open at this (Phase 6) time and the short E to W ditch, F.637 might provide a link between the two. It is most probable that the bulk of the Phase 6 settlement lay further south, in the areas recently discussed by Gavin Simpson (1981, fig.2). Simpson frequently mentions the problems posed by the subsoil, particularly the calcareous conglomerate, and this may account for the recognition of larger pits (often with organic lower levels), but few insubstantial structures, gullies, etc. (sites "J" and "K").

Structure 21: (Figs.60,61) This "structure" is decidedly doubtful, it must be admitted, but the possibility of its existence must be recorded. It consisted of an arc of ditch (F.525) centred around Grid 2735/7660; its clearly defined semicircular path seemed deliberate and might be taken to imply the presence of a round building. Late Iron Age contexts at Fengate provided examples of linear features which skirted round buildings, especially in wet areas where the building might have been raised on a small house platform or "terp" (Pryor 1983b). In cases of this sort, the ditch would remove run-off from the house platform and its diameter would be a reflection of the mound, and not the house placed upon the mound. This would explain the size (diameter 25m+) of the Maxey ditch. The south-east end of the ditch was not particularly pronounced and it might originally have continued a few metres further to the well, F.559, which could have been used as a soakaway or waterhole (compare, for example, the deep pits around buildings 3 and 42 at Fengate (Pryor 1983a)). The structure was located at the lowest point of the West Field (Fig.20).

Structure 24: (Fig.57) Structure 24 was a small ring-gully, diameter 4m, depth 15cm located towards the NW corner of the somewhat irregularly-shaped "enclosure" of Phase 6, at Grid 2706/7660. The gully (F.543) is interpreted as a stack-stand and was severely plough-damaged. It generally showed up as a brown stain in the gravel, but the original infilling survived in a few patches: sandy loam and scattered gravel pebbles (10YR 4/3).

Structure 25: (Figs.60,61) This structure consisted of a shallow fragment of a nearly right-angled gully (F.500) at Grid 2670/7642, at the south edge of the excavated area. The gully was regular in both plan and profile and may originally have served as a sleeper-beam trench for a rectilinear building, screen or fence. Only one corner (the NW) was exposed, and air photographs do not show its shape further south, no doubt owing to the presence of the modern hedgeline. It cut the gullies of structures 22 and 23, but its relationship to the main N to S ditch, F.506, was affected by modern disturbance. The gully contained large quantities of domestic rubbish, including sherds of wheel-made pottery; this material is fresh and unabraded. The filling consisted of silt loam with scattered gravel pebbles in a homogenous, probably naturally-derived deposit (10YR 3/4).

Linear features: (Fig.56) We have already noted that the area to the east of structure 24 was seriously disturbed and this no doubt accounts for the incomplete appearance of the Phase 6 ditch system. Although slight, the ditches of Phase 6 appeared in plan to have been recut several times; this was particularly true of the area immediately NW of structure 24, where the recuts were confused and hard to untangle (sections were very shallow and uninformative). The N to S ditch F. 527 possibly followed the line of an earlier (Phase 5.1) ditch; the E to W ditch, F.637 was of probable Late Iron Age date, on the basis of some weathered wheel-thrown pottery, but its relationship to other Iron Age features was obscured by two medieval furrows.

Romano-British features
by David Gurney

Phase 7: mid-1st century AD (Fig.166)

Introduction: The problems of isolating the earliest Roman features from those of the ultimate Iron Age have been discussed above (Phase 6). Where distinctive, easily datable pottery groups are absent, and stratigraphic relationships do not divide features into settlements which make sense in spatial terms, any division of features into phases must, to a certain extent, be subjective and liable to a number of interpretations. Indeed, where features are obviously contemporary or nearly so, it may well prove a fruitless exercise to attempt a multitude of sub-phases. With this in mind, the division between Phases 6 and 7 is not a crucial one, and may involve a chronological overlap or near-contemporaneity. The pottery evidence suggests that the two phases, 6 on the West Field and 7 on the East, should be close in date, although the differences between the features assigned to each phase imply that there is a chronological and/or functional distinction. The area where the features assigned to Phases 6 and 7 might have linked up, or where a stratigraphic relationship might have been observed has unfortunately been destroyed by earlier quarrying operations. It is, however, certain that there was settlement on the East Field preceding the main settlement Phase (8) of the second half of the 1st century AD. This included at least three structures, and a ditch system which may have had its origins in the Middle Iron Age (Phase 5) or the beginning of Phase 6 (Late Iron Age). This is clearly demonstrated by one length of the main drainage ditch F.161, which had totally filled up by the Late Iron Age, when two pits assigned to Phase 6 (F.257, F.258) were dug into the upper fill. This ditch system does not appear to continue into the West Field, and feature alignments and aerial photographs do not suggest that the features of Phase 7 on the East Field and those of Phase 6 on the West Field are related, but as previously noted, this may reflect a functional rather than a chronological distinction.

The pottery from features of Phase 7 is almost totally in calcite-gritted fabrics, but lacking any of the characteristic decorative elements of local Iron Age pottery. One or two possible "imports" suggest a date sometime during the first half of the 1st century AD, but a period in which Romanised forms or fabrics do not appear to be among the domestic, locally-produced pottery assemblage. The general characteristics of the calcite-gritted fabrics from Phase 7 are very similar to those from Phase 6.

Structure 1: (Figs.63,64,99) Structure 1 was located just south of the point where the main drainage ditch F.161 cut the northern cursus ditch F.60 (structure 27), centred on Grid 2835/7655. It consisted of a circular eaves-drip gully F.50, with a diameter of *c.*12m. The original entrance appears to have been *c.*1.5m wide, and this was later enlarged to *c.*4.7m when the eaves-drip gully was modified. The evidence for this was immediately north of section 4, where the southern butt of the later, enlarged entrance could be clearly seen cutting the fill of the earlier gully, between that section and the southern butt of the original entrance.

The western half of the gully was cut by a medieval furrow, but the feature was sufficiently deep for it to survive below the furrow between sections 2-3 and 1-11. This furrow was forked over, allowed to weather, then fieldwalked for surface finds, as it was thought that the furrow might contain the disturbed remains of any floor deposit within the structure. The low density of finds within the structure itself was reflected by the results of this exercise.

The eaves-drip gully itself varied between 0.35m and 0.60m in width, and 0.13m and 0.38m in depth, with the deepest and best-preserved sections on the northern side. The interior lacked any convincing features which might reasonably have been interpreted as structural post-holes. Many possible internal features were investigated, being sectioned and planned, but with the exceptions of pits F.51 and F.61, and post-hole F.62, these appear to be little more than natural solution holes in the gravel, showing up following the careful cleaning of the interior of the structure.

It should be noted that the northern side of the ring-gully (sections 9-10) cuts the fill of the northern cursus ditch (F.60, structure 27). A similar situation occurred with the outer ring-gully of F.101 (structure 2, sections 6-7, see below). This can only be interpreted as coincidental, as the cursus ditch had clearly silted up or been filled in by Phase 7, and no later finds occurred in its fill, even when this was immediately adjacent to later features. It does however indicate that had the cursus ditch been accompanied by an internal bank, this no

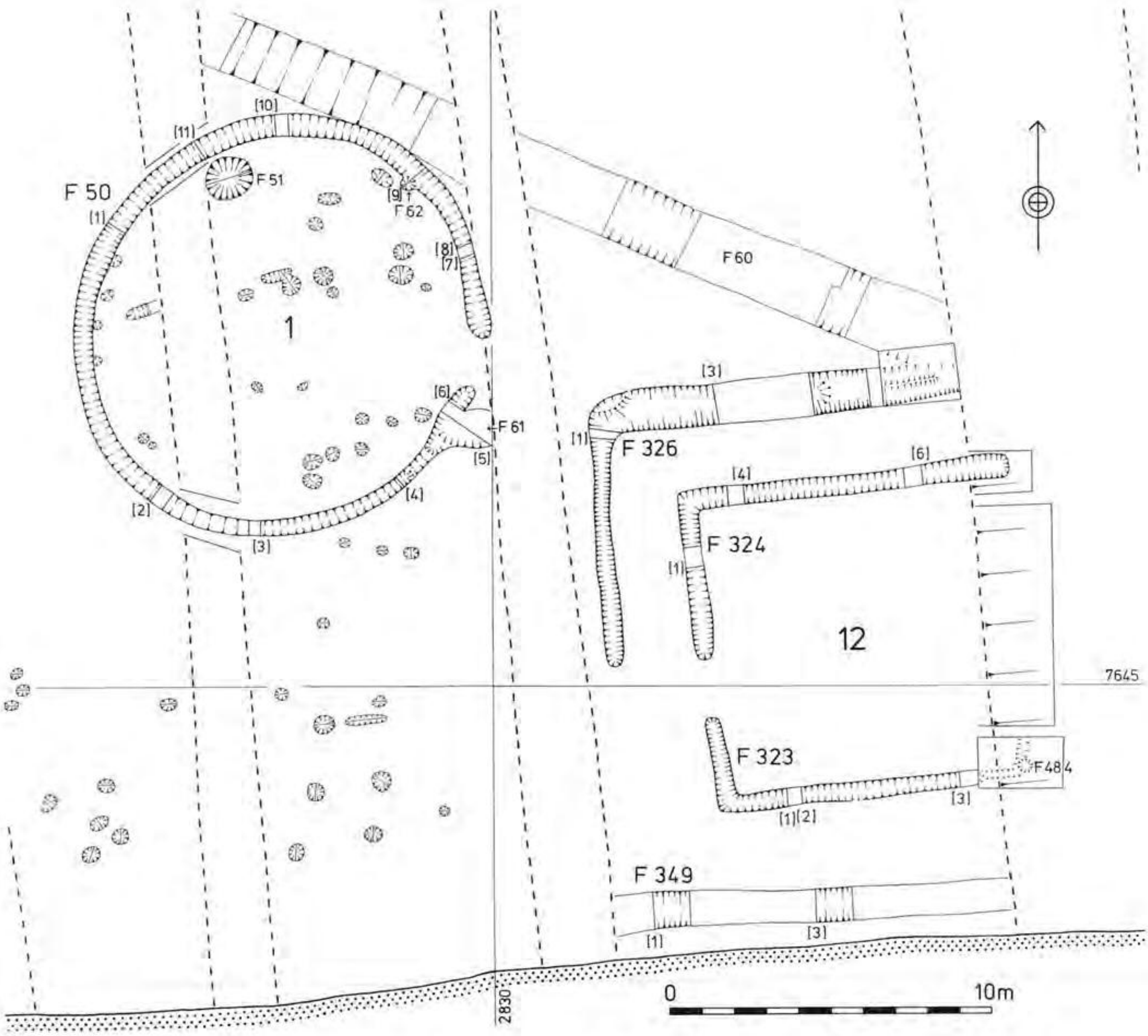


Fig.63 Maxey East Field: plan of structures 1 (Phase 7) and 12 (Phase 8). Scale 1:200.

longer survived as an earthwork by Phase 7, as features 50 and 101 respectively cut the southern and northern edges of the northern cursus ditch.

The filling of F.50 comprised homogeneous sandy loam with scattered gravel pebbles and an even gravel mix (10YR 4/3); it cut F.60 (the northern cursus ditch) and four natural solution holes (features 52, 53, 54 and 55). F.50 was cut by a pit F.61, post-hole F.62 and two medieval furrows. One internal feature, pit F.51 may be contemporary with the structure.

Finds from the eaves-drip gully are scarce, in spite of the fact that, with the exception of narrow reference sections, the gully was totally excavated. Finds consist of three flints, one piece of fired clay and seven sherds of pottery (Fig.99).

Structure 2: (Figs.64,65,99) Structure 2, centred on Grid 2815/7679, was located to the NW of structure 1, and was to the north of the main drainage ditch F.161. It consisted of an outer circular gully (F.132) 0.22-0.35m deep, 0.60-0.70m wide, and with a diameter of *c.*10m and an inner gully (F.101), which was more irregular in plan than the outer gully, but was roughly circular with a diameter of *c.*8m. The inner gully was 0.40-0.65m wide, and 0.12-0.19m deep. The two gullies were not concentric, and the eastern side of the inner gully, if a complete circle, would have combined with, or at least been very close to, the eastern side of the outer gully. The plan is however incomplete, as the inner gully was shallow and faded out on the southern side, while the eastern half of the structure was disturbed by later features and a medieval furrow.

No evidence was observed of either timber or post impressions in the inner gully, but it must nevertheless be interpreted as the bedding trench for the wall of a timber structure, standing within, but at the rear of, the small enclosure defined by the outer gully. Both gullies had an entrance on the western side, and these lined up, suggesting, perhaps, that while the two gullies were by no means concentric, they did form part of a single structure. The entrance to the inner gully was 1.80m wide, and that in the outer gully 3.0m wide. The distance between the entrances was *c.*2.50m, and the off-centre position of the inner gully left a narrow strip between the house and the enclosure on the northern and southern sides, gradually widening to a maximum at the entrance. This suggests that the outer gully, while assisting with drainage, was not specifically laid out to collect rain water running off the roof of the structure, for which a more concentric plan would have been necessary. On the other hand this eccentric arrangement of the two penannular gullies is unusual were both to belong to the same structure, and an alternative hypothesis — that two separate structures are involved — is always possible.

The filling of F.101 and F.132 comprised homogeneous sandy loam with an even gravel mix (10YR 4/3 to 4/4).

F.101 cut F.60 (northern cursus ditch), and was cut by a number of Phase 8 features — nos. 127/259, 118, 122, 102 and 109. The main drainage ditch F.127/259 cut the northern side of the outer gully in Phase 8, and another Phase 8 feature (F.218) passed less than 1m to the west of the outer entrance to structure 2. This suggests that structure 2 did not survive in use beyond Phase 7, and that by Phase 8, when the area was laid out as a series of rectangular enclosures, no vestiges of this earlier structure remained. One feature within the inner gully (F.105) may be a small pit or post-hole contemporary with the structure.

F.132 produced three sherds of calcite-gritted ware, but the remaining sections of the outer gully had no finds. The inner gully F.101 produced four calcite-gritted sherds from the southern butt of the inner entrance — these appear to represent a single vessel (Fig.99).

Structure 7: (Figs.66,67) Structure 7 was located at the NE corner of the East Field, centred on Grid 2928/7732. It consisted of two features, F.204 and F.205, which were possibly also related to post-holes F.207 and F.210, ditch F.244, and also to the features of structure 8 considered below. This area of Phase 7 features appears to be respected by, or to respect, the main drainage ditch F.161/199, and as F.161 was clearly of early date (possibly Phase 5?), it seems probable that structures 7 and 8 were placed in the corner of a pre-existing ditch system, which then appears to have been in use until as late as the early 4th century AD (Phase 9). Alternatively, F.199 might be an extension of the earlier ditch system, respecting the site (and dilapidated structures?) of the earlier settlement. F.204 was a segment of curved ditch, 4.0m long, 0.70-0.80m wide, and 0.20-0.35m deep. It curved in the same direction, and parallel to F.205 to which it was obviously related, and its southern butt formed the northern side of a possible entrance, with the southern side of the entrance being the southern butt of the "S" shaped ditch of F.205. This hypothetical entrance was *c.*3.30m wide, with two possible post-holes F.207 and F.210, although these were not placed centrally within the entrance. Feature 205 was an "S" shaped ditch, *c.*11m long, *c.*0.85m wide, and 0.25-0.45m deep. The northern end was slightly obscured by a furrow, but the butt of the ditch did survive below the furrow disturbance. Taken together, features 204 and 205 appear to represent perhaps the entrance to a settlement or enclosure of Phase 7 date, rather than the remains of a house. How the main drainage ditch F.199 relates to this is unclear, as the ditch passes only 2.8m north of F.204 and 3.7m north of F.205. The limits of the Phase 7 settlement in this part of the site could not be ascertained, as the area to the east had been stripped to the ballast level, and the edge of the area available for excavation was only *c.*2m to the east of the eastern butt of F.205.

Feature 204 was filled with silt loam and scattered gravel pebbles; sand lenses occurred at the base of the profile, but the matrix was otherwise homogeneous (10YR 3/2). Feature 205 was composed of silt loam with scattered gravel pebbles, some sandy lenses and weathering towards the bottom of the feature; otherwise the matrix was homogeneous (10YR 3/2).

Feature 205 was cut by a medieval furrow. Features 204 and 205 were possibly contemporary with post-holes F.207 and F.210, and possibly also with the features of structure 8.

Both features contained quantities of calcite-gritted sherds and pieces of fired clay, including two possible loomweight fragments from F.205.

Structure 8: (Figs.66,67) Structure 8 was located *c.*8m to the south of structure 7, and was centred on Grid 2926/7724. It consisted of three features, F.208, a curving gully, F.206 an E to W gully which possibly recut part of F.208, and F.219, a short length of ditch almost parallel to, and possibly contemporary with F.206. There are therefore at least two stratigraphic phases represented by the features assigned to this structure.

F.208 was an arc of a curving gully, 0.4m wide, 0.13m deep, and with an estimated diameter of *c.*9m. An 8m length of this gully was excavated, while to the west, it had been destroyed by a medieval furrow. It is possible that the surviving length of gully formed the eastern half of a roughly circular eaves-drip gully, the western half of which had been destroyed by the furrow. With a diameter of *c.*9m, no trace of the gully would appear on the far side of the furrow, and if the entrance was *c.*6m in width or more, the northern butt of the gully would also have been in the furrow. This hypothesis would also help to explain the function of the features of structure 7, which could therefore be seen as leading to the entrance of structure 8 as "hornworks".

F.206 was an E to W gully which appeared to recut one part of the possible ring-gully F.208. Its visible length was *c.*7.5m, with a width of 0.40m and a depth of 0.15-0.20m. The western half of this feature appeared to follow exactly the earlier line of F.208, and had been destroyed by the furrow.

F.219 was a ditch, 4m in length, 0.80m wide, and 0.65m deep with two layers. Its eastern butt was exactly opposite that of F.206, and as it was of a similar orientation, it may be contemporary.

The filling of F.208 was homogeneous sandy loam with an even gravel mix (10YR 3/3); F.206 was similar,

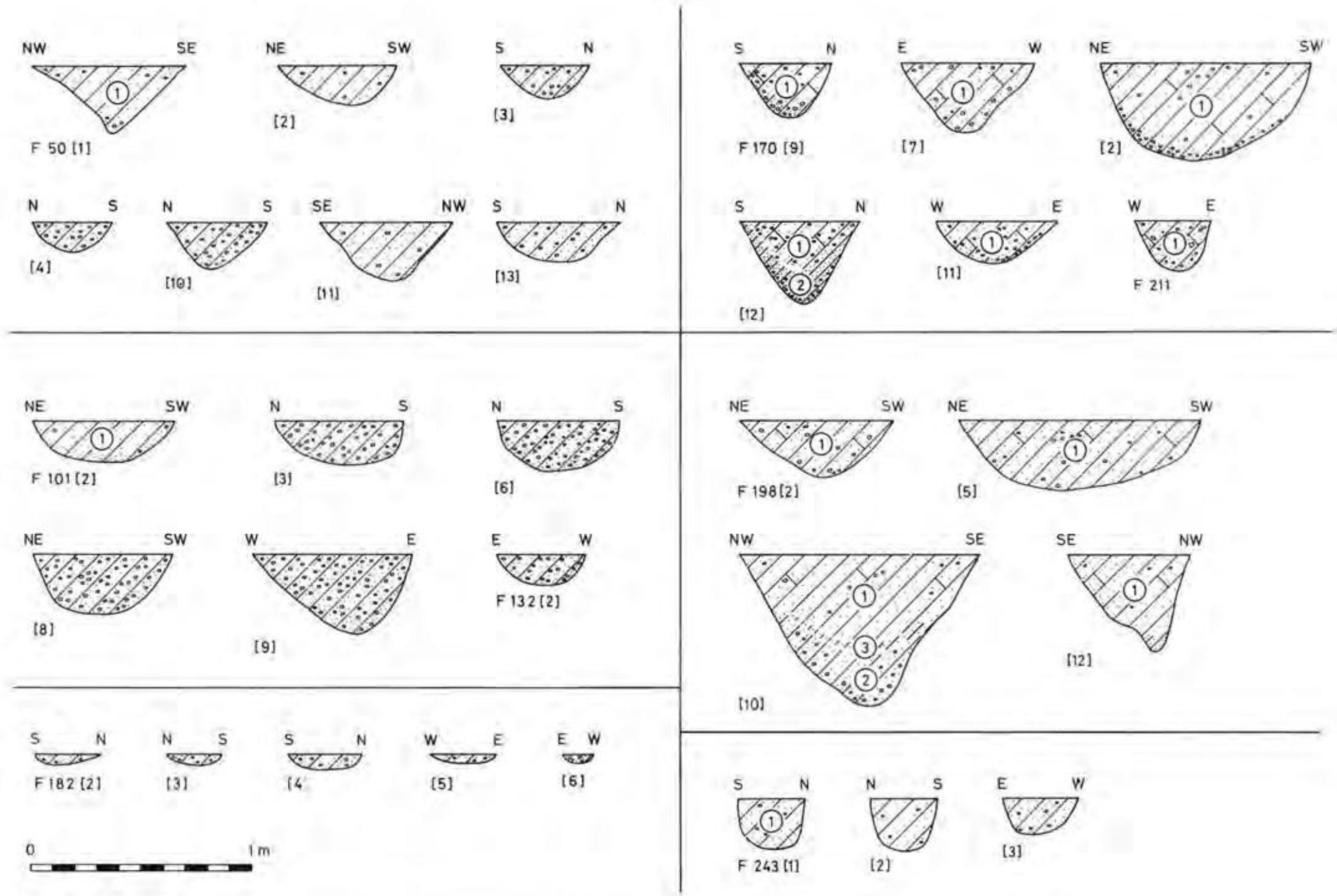


Fig.64 Maxey East Field: sections through features of structures 1 (top left), 2 (centre left), 4 (bottom left), 3 (top right), 5 (centre right) and 26 (bottom right). Scale 1:30.

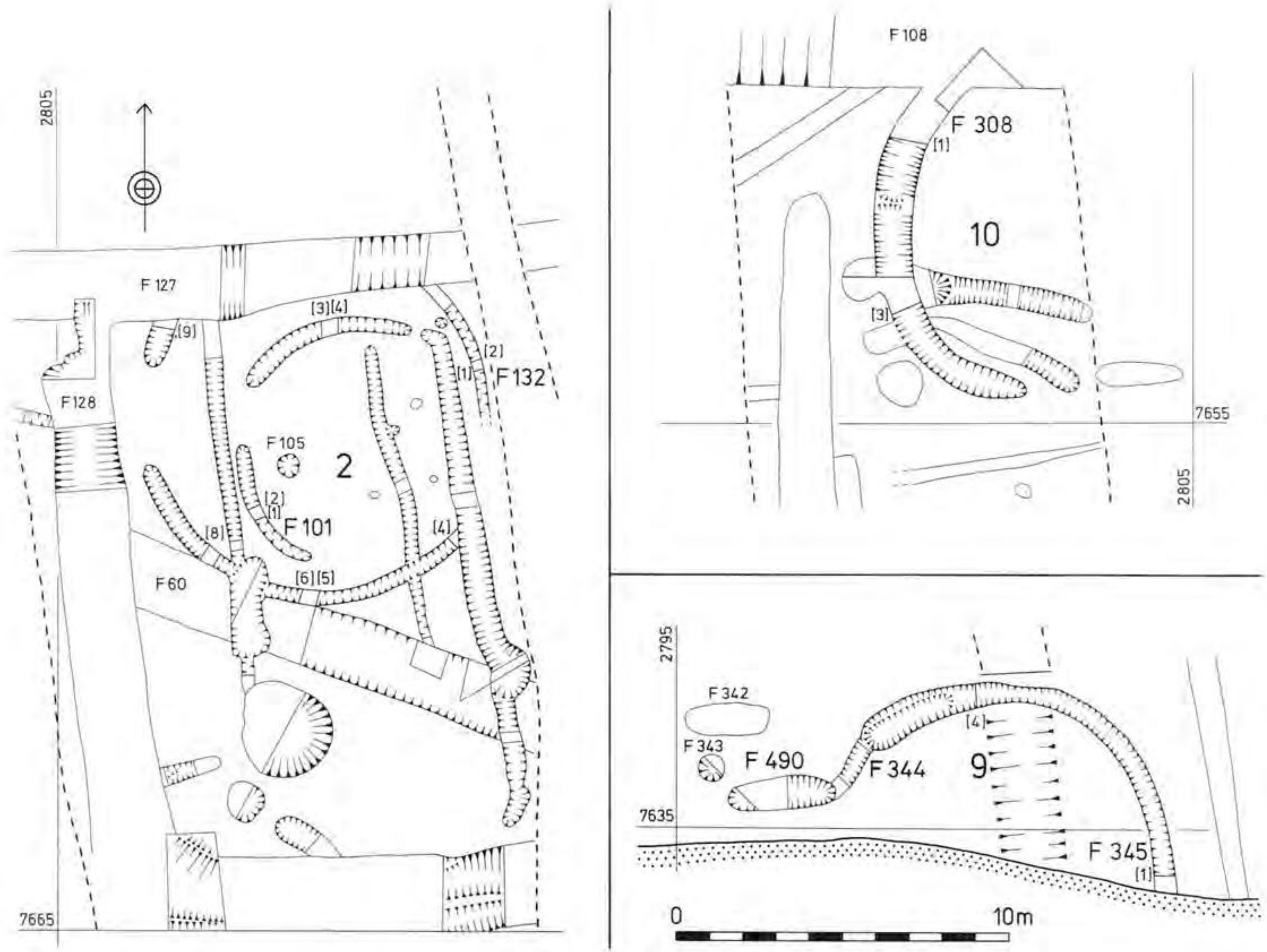


Fig.65 Maxey East Field: plan of structures 2 (Phase 7), 9 (Phase 7) and 10 (Phase 8). Scale 1:200.

but with slightly less gravel. Feature 219, layer 1, consisted of homogeneous sandy loam with scattered gravel pebbles and much charcoal (10YR 3/3); layer 2 was similar but with sand lenses and no charcoal (10YR 4/4). Feature 208 was cut by F.206 and F.219; F.208 cut F.220; F.206 cut F.208 and F.209; finally, F.219 cut F.208.

Feature 208 yielded no finds; F.206, however, contained one piece of fired clay and eleven sherds of calcite- gritted ware. Feature 219 included *c.*40 fragments of fired clay, fragments of a quern and loomweight and eighty sherds of calcite-gritted ware; a Nauheim derivative brooch of 1st century AD date is particularly noteworthy.

Structure 9: (Figs.65,67,99) Structure 9 was located in the SW corner of the East Field, to the SW of structures 1 and 2, and centred on Grid 2805/7635. It consisted of three features, F.344, F.345 and F.490, which all probably belonged to the eaves-drip gully of a round- house of which no trace remained. F.344 was a short length (*c.*1.60m) of ring-gully, 0.40m wide and 0.18m deep. It appears to be the earliest feature relating to the house of structure 9. Feature 345 was a more substantial ring-gully, and this appears to be a recut of the earlier ring-gully F.344, but a recut which led to a modification of the gully, and possibly a wider entrance or an alteration to the entrance to the west. These modifications are very similar to those noted in structure 1. It is however clear that the later features F.345 and F.490 followed closely the arrangement of the first ring-gully, as F.345 appeared to follow the exact line of the earlier ring-gully, and F.490 was also a recut of an early feature. This could be detected in plan, at the southern end of F.344, where the early ring-gully was just beginning to turn west.

Feature 345, the recut of the ring gully, was 0.7-0.9m wide, and 0.20-0.25m deep, with two layers, except for sections 0-4 where the gully was somewhat deeper (*c.*0.40m) and there were three layers. It is clear that when the gully was recut, it was widened and made considerably deeper. The reason for the modification of the entrance cannot be ascertained. The original gully F.344 appears to have been a continuous ditch, with the ditch turning west at the entrance for a length of no more than 3m. The later recuts F.345 and F.490 terminated the ring-gully at a point *c.*2m north of the original corner, and the E to W ditch was recut leaving a short section of the original ring-gully undisturbed. This left a gap of *c.*1.5m between the butt of the ring-gully and the eastern butt of F.490. The recut of the E to W ditch, F.490 was 3.1m long, 1.10m wide, and 0.3m deep. It had one layer.

The filling of F.344 was clay loam with scattered gravel pebbles (10YR 3/3); the three layers of F.345 were of sandy loam, with scattered gravel pebbles more dense in layer 1 (layer 1: 10YR 3/2; layer 2: 10YR 3/6; layer 3: 10YR 3/2); F.490 was filled with clay loam and scattered gravel pebbles (10YR 3/3).

F.344 was cut by F.345 and F.490. Finds were absent in the short length excavated of F.344; however the distribution of finds within F.345 was as illustrated (Fig.99). Feature 490 contained twenty-two sherds of calcite-gritted pottery, two pieces of fired clay and one piece of possible slag.

Linear features: (Figs.40,97; Atlas pages 101-103, 107, 113) The excavation of the two Late Iron Age pits F.257 and F.258 (Phase 6) which cut the uppermost fill of the main E to W drain F.161 on the East Field demonstrated that the origins of this ditch system lie in the Late Iron Age if not earlier, and that on the East Field we are seeing the remnants of fields laid out from the early settlement on the West Field.

Some of the (unexcavated) features in the SW corner may relate to Phase 5 on the West Field — the corner of the enclosure ditches F.289 and F.281 with the large well F.285 resembled closely the NW corner of the Phase 5 enclosure defined by features 511 and 606 and well 605.

The enclosure ditch F.289/F.281 remained open for a considerable length of time, and finds from the ring-gully F.308 (Phase 8, structure 10) were being deposited in the earlier ditch F.281. The enclosure has been assigned to Phase 7, although an earlier date cannot be discounted.

The main drainage ditch which crossed the East Field comprised features 107, 108, 119, 121, 161, 162, 199 and 250. The distribution by weight of the main fabric types in the excavated sections of this ditch is shown in Figure 97. The highest sherd weights occurred in sections 11-15 in Figure 97, and most of this material probably derived from the Phase 8 settlement in that area (see below). In the SW corner of the East Field, the highest sherd weight occurred at the junction of N to S/E to W ditches (section 2), with lesser weights in sections 1 and 3. The presence of substantial quantities of Fabric 1 (Nene Valley Grey Ware) in these sections, and the low density of finds in features open only during Phase 7 suggest that the majority of these finds are derived from the Phase 8 settlement (structure 10) in the area.

The phase in which this ditch had its origins cannot be established with certainty. It is clear that the stretch of F.161 between sections 19 and 21 had totally filled up by the Late Iron Age when F.257 and F.258 were cut into the upper fill, and this suggests that at least the southern part of this ditch system had its origins in Phases 5 or 6. Generally speaking, direct evidence of numerous recuts of this ditch was lacking, although where the ditch passed between structures 1 and 2 (Grid 2818/7664), three phases could be recognised. The relevant sections are F.108 (1-2), F.107 (1-2) and F.119 (1-2). Excavation established that the earliest phase of this ditch was F.119, followed by the recut F.108 slightly to the north, and recut F.107 slightly to the south. The earliest ditch F.119 produced pottery consistent with a Phase 7 date, which presumably derived from occupation debris from structures 1 and 2 falling into an open ditch of an earlier date. This ditch was subsequently recut on several occasions, and the later sections produced pottery of Phase 8 date. Other sections of this main ditch failed to reveal a similar pattern of recuts, and calcite-gritted wares of Phase 7 date could not be recognised amongst the calcite-gritted wares associated with later (Phase 8) pottery in other sections. The samian from F.108/161 includes one pre-Flavian sherd and south and Central Gaulish sherds. Nothing appears to be later than AD140/50.

To the west of the sections we have just examined, the main ditch continued west and entered a furrow at Grid 2790/7667. On the far side of this furrow, a much smaller ditch (F.291) was found, but this did not appear to be a continuation of the main ditch F.108, which

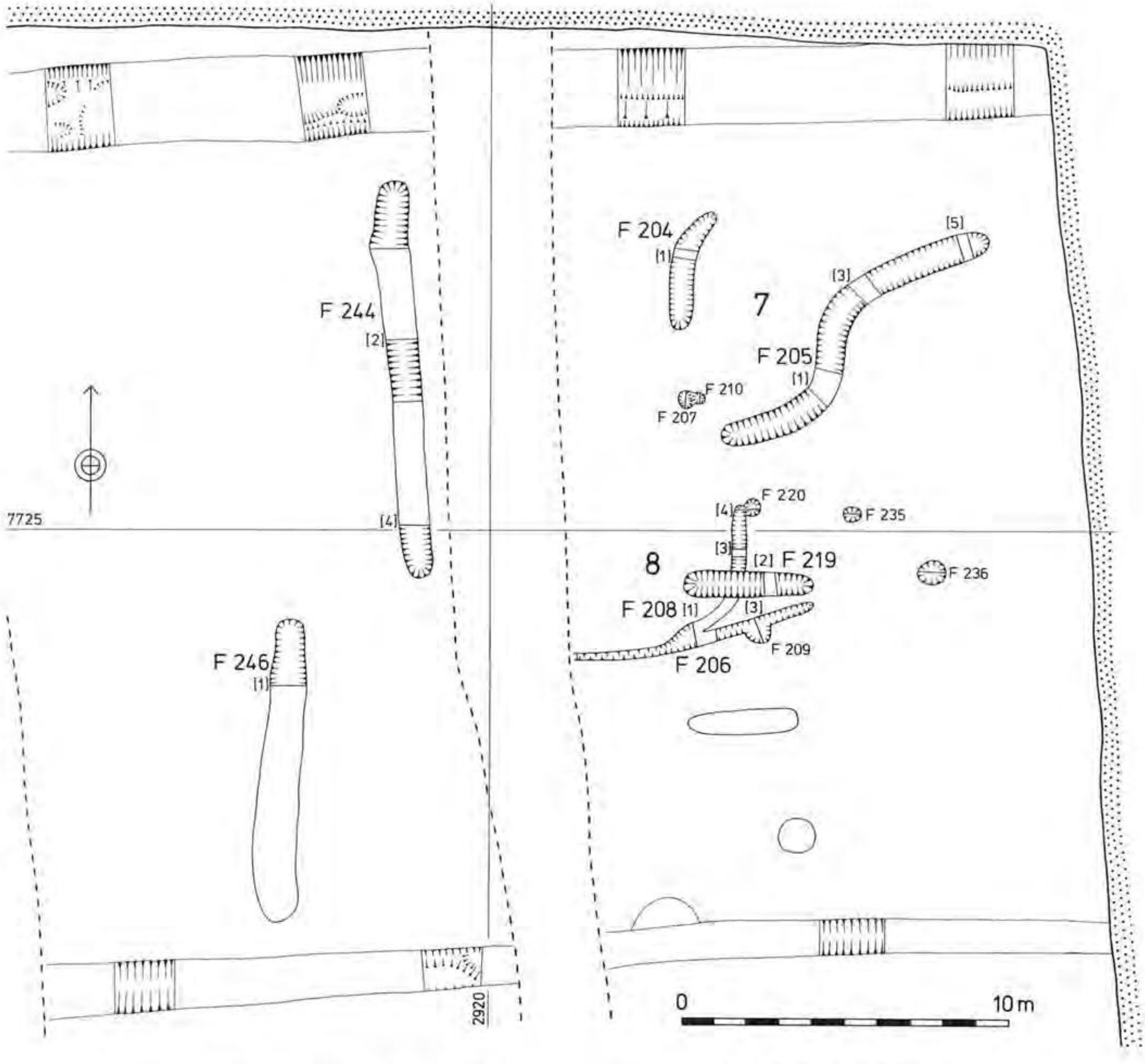


Fig.66 Maxey East Field: plan of structures 7 and 8 (Phase 7). Scale 1:200.

should therefore butt somewhere in the furrow. F.291 was probably one of the ditches of the series of rectangular enclosures laid out over this area in Phase 8, and associated with features 127/259, 388 and 128.

To the south, the main ditch F.108/107/119 appeared to join up with F.121, a large ditch which in plan appeared to have at least two phases. The earliest of these phases consisted of a ditch which ran south towards structure 9 then turned west for a distance of *c.*15m where it butted.

To the north and east of the East Field, the main ditch F.161 continued, turning north at Grid 2900/7685. The ditch again turned east at Grid 2895/7740 and this stretch of ditch was allocated feature numbers 199 and 250. No conclusive evidence of a Phase 7 date for these lengths of ditch was found, but the ditch F.199 did pass a few metres to the north of the Phase 7 structures 7 and 8, and no Phase 7 features were found which were cut by the ditch. It seems probable that the main drainage ditch, the early date of which has been established further south, did continue to the NE, and that the Phase 7 settlement represented by structures 7 and 8 was placed in a corner of an early ditched and probably hedged field system.

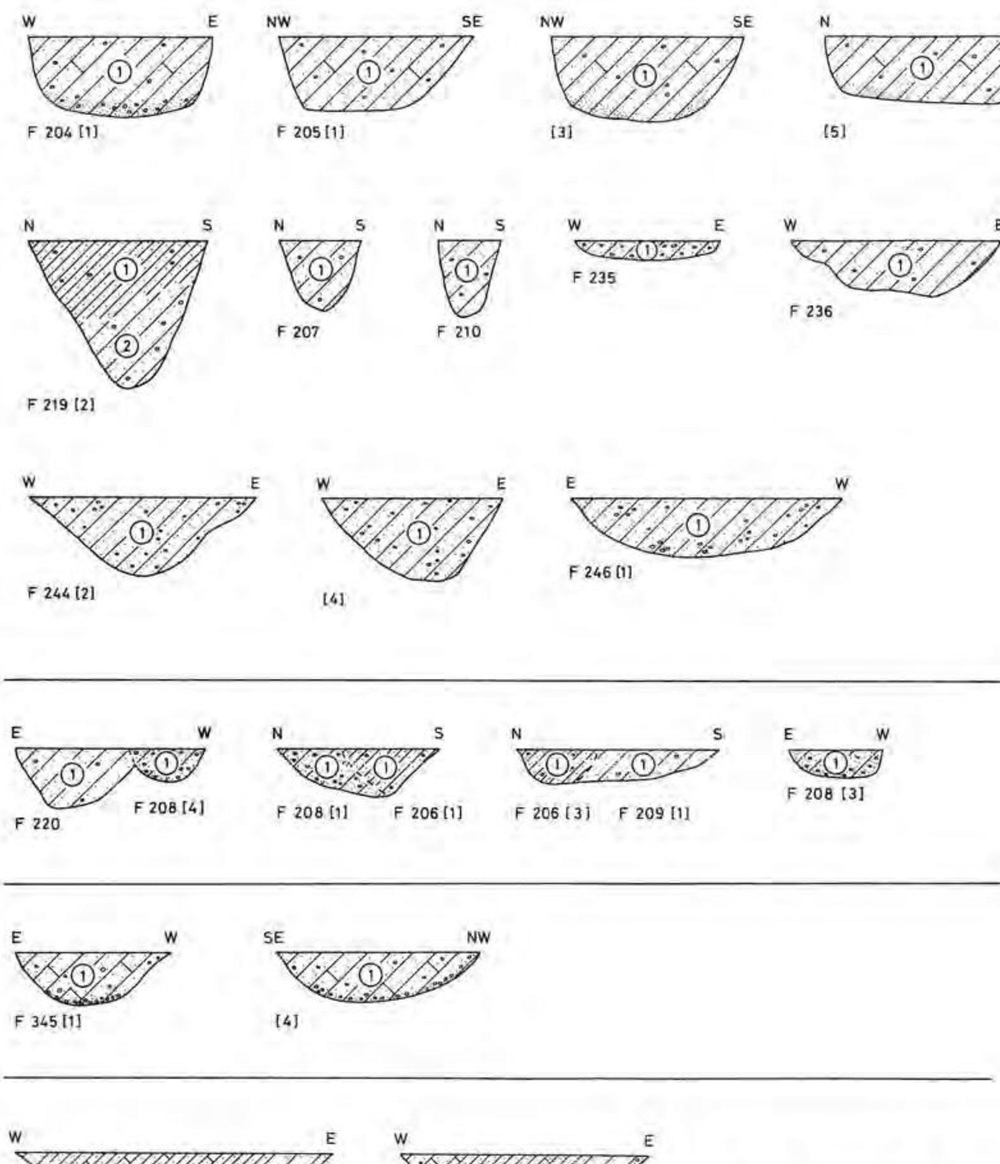


Fig.67 Maxey East Field: sections through features of structures 7 (top), 8 (top centre), 9 (bottom centre) and 10 (bottom). Scale 1:30.

Two further linear features assigned to Phase 7 remain to be considered. F.244 is a N to S ditch to the west of structures 7 and 8, 12.5m long, 0.80-1.0m wide, and *c.*0.35m deep. Finds consisted of flint, fired clay and calcite-gritted pottery. This short section of ditch passed behind the possible ring-gully and house of structure 8, F.208, and created a small yard between the house and the main ditch F.199, with the features associated with the entrance to this house (F.204 and F.205 structure 7) to the west. The ditch F.244 butted 1.5m short of the southern edge of F.199, and if this ditch was contemporary with the possible house and ditch F.244, then this raises the possibility that a bank formed of the ditch upcast and/or a hedge stood on the southern edge of this ditch. Further evidence of this might be seen in the entrance to the Phase 8 settlement (structures 3, 4, 5 and 11) which comprised Features 247 and 248 on the southern side, and Features 234 and 495 to the north, running into the main drainage ditches F.161/250/199, and just north of this at Grid 2893/7745 where F.473 continued the line of the N to S length of F.161. This Phase 8 entrance was *c.*3m wide, and any hedge on the northern side of F.199 would have severely limited this even further. Although firm evidence of hedge lines is lacking, the presence of recent or relict hedge-lines may often be suggested by otherwise unexplainable gaps between seemingly contemporary ditches, and once a hedge has been established, it is usually difficult and time-consuming to remove. The effect of a well-established hedge may influence the layout and organisation of later settlement phases, even when the original ditch which accompanied the hedge may have totally silted up.

Feature 375 was a narrow gully just to the north of F.161 at Grid 2870/7680. This section of F.161 was the earliest phase identified above, cut by the Late Iron Age pits F.257 and F.258. This section of the ditch was clearly never recut in Phase 7 or in later phases, and the subsequent widening of the ditch to either side left an entrance *c.*22m wide. The eastern butt of the entrance was somewhere between F.161 sections 12 and 21 and the western butt between F.161 sections 18 and 19, although the position of this is uncertain, as this area was disturbed by a medieval furrow *c.*5m wide. The gully F.375 had a minimum length of 10m, and could not be longer than 12m. The eastern butt of this feature was lost in a medieval furrow. Although not excavated, this gully is assigned to Phase 7, as it spanned an entrance across the main ditch F.161, most of which appears to have been recut during that phase. It reduces the original entrance of *c.*22m to a western entrance of *c.*8m and an eastern entrance of *c.*5m.

The filling of Features 107-119 was slightly less gravelly than F.121-199; F.107 contained sandy loam (10YR 4/4); F.108 had silt loam (layer 1: 10YR 4/2; layer 2: 10YR 3/2); F.119 contained sandy loam (10YR 4/4). Of the more gravelly features, F.121 contained sandy loam (10YR 3/3); F.161, silt loam with sand lenses and charcoal (layer 1: 10YR 4/4; layer 2: 10YR 4/3); F.199 contained silt loam (10YR 3/2).

Non-linear features

These features have been divided into four groups, relating to the structures with which they may be associated. Each group of non-linear features is illustrated on the relevant structure plan.

1. Features 51, 61 and 62 (structure 1) :(Fig.63) F.51 was a pit within the ring-gully of structure 1 (F.50). It lay on the northern edge of the interior at Grid 2832/7660, and was separated from the ring-gully by 0.15m of undisturbed gravel. Slightly oval in shape, with a maximum dimension of 1.45m it was 0.98m deep, with six layers. The lower fill consisted of a sandy loam, below a layer of dark silt loam (10YR 3/2) which may indicate a high organic content. This was sealed by a layer of clean redeposited gravel, and three layers of sandy loam or sandy clay loam with scattered gravel pebbles. The lowest of these produced one piece of fired clay and a possibly retouched flint flake. The uppermost fill contained animal bone. At first sight this pit may be interpreted as a rubbish pit contemporary with (and outside) structure 1, but then the house itself could not have had a diameter of more than 8m, which is improbable.

F.61 was a pit of irregular shape which cut the southern butt of the ring-gully F.50 at Grid 2838/7752. It was a shallow pit (0.30m deep) with two layers and finds of burnt stones and animal bone. Feature 62 was a small pit or post-hole, 0.35m across and 0.17m deep, which cut the inner edge of the ring-gully F.50 at Grid 2838/7661. The fill of a sandy loam (10YR 3/3) had dark smears, possibly resulting from organic matter.

2. Feature 105 (structure 2): (Fig.65) Feature 105 was a small pit or possible internal post-hole standing just inside the southern butt of the inner roughly circular gully which may be the bedding trench for the wall of a timber structure (see structure 2 above). It was 0.47m across and 0.31m deep with a fill of a sandy loam with even gravel mix. No trace of a post-impression was observed and there were no finds.

3. Features 207 and 210 (structure 7): (Fig.66) These features were two adjacent post-holes or small pits between the southern butts of features 204 and 205 at Grid 2925/7729. Feature 210 measured 0.28m across and 0.34m deep, and F.207 0.36m across and 0.31m deep. Both features had a fill of a sandy loam (10YR 4/3), with substantial quantities of charcoal. Feature 207 also contained burnt stones and animal bones, and the matrix also appeared burnt. They may have been related to either the ditches leading up to the possible ring-gully of structure 7, or be associated with the ring-gully (F.208) itself.

4. Features 209, 220, 235 and 236 (structure 8): (Fig.66) Feature 209 was a small pit or post-hole cut by F.206, *c.*0.60m across, 0.15m deep, and with a fill of a sandy loam (10YR 3/3); Grid 2927/7723. Feature 220 was a small pit or post-hole at the northern butt of F.206 (Grid 2928/7726) and cut by it. It was 0.60m across, 0.25m deep, with a fill of a sandy loam (10YR 3/2) with calcite-gritted pottery, fired clay, a residual flint, and with charcoal flecks in the fill.

Feature 235 was a very shallow pit at Grid 2930/7727, 0.65m across and 0.08m deep. The fill was a sandy loam (10YR 3/2) with an even gravel mix and contained two sherds of calcite-gritted pottery, one piece of fired clay and some charcoal.

Feature 236 was a small pit at Grid 2932/7725, 0.93m across and 0.24m deep, with a fill of sandy loam with scattered gravel pebbles (10YR 3/2). This feature contained eight sherds of calcite-gritted pottery, fired clay, burnt stones and animal bone.

Phase 8: late 1st to late 2nd century AD (Fig.167)

Introduction: Phase 8 saw the expansion of settlement on the East Field, and a change in the focus of the settlement, although many of the pre-existing ditch systems continued in use throughout this phase. Large quantities of Phase 8 occupation debris were recovered from contexts which were, or were associated with, the remains of at least four houses, and these suggest a starting date of sometime in the later 1st century AD for Phase 8. The earliest material assigned to this phase is that from structures 3 and 5, both probably of late Flavian date.

The later material in this phase includes the early products of the lower Nene valley kilns and these should have reached Maxey fairly soon after the start of production of local grey and colour-coated wares. The distribution of contexts in which colour-coated wares were found is shown in Figure 105. These wares were only present in Phases 8 and 9, and the distribution demonstrates the shift in focus of settlement to the NE corner of the East Field, with only three contexts in the area of Phase 7 settlement represented, and these were probably associated with the Phase 8 ring-gully of structure 10.

The samian evidence suggests that by the second quarter of the 2nd century, the Phase 8 settlement was sufficiently prosperous to have considerable quantities of this ware in use. By this period, it was no longer the luxury it must once have been. These, however, are matters that are more fully discussed in Part IX, below. The range of forms present at Maxey consists mostly of plain bowls, cups and dishes, although some of the more expensive decorated bowls are present. The paucity of 3rd century material would suggest that the Phase 8 settlement did not last long, if at all, into the 3rd century.

Attempts to subdivide Phase 8 into earlier and later components have not been successful, and while a few possible early and late Phase 8 features could be certainly identified, the majority of features could not be assigned to sub-phases. It has therefore been considered necessary to consider all the Phase 8 material and features together, while recognising that not all features are contemporary. Where early or late features can be recognised, on the basis of the finds or from stratigraphic or spatial evidence, this is discussed in the appropriate feature description.

Structure 3: (Figs.64,68) Structure 3 was located at Grid 2862/7725 (centre) and consisted of a circular eaves-drip gully (F.170), also a series of non-linear features which clustered in the wide entrance to the ring-gully (Features 211, 212, 213, 214, 223 and 241), and three features outside the ring-gully (Features 175, 217 and 229).

The circular eaves-drip gully F.170 had a diameter of *c.*9m, with a width varying from 0.42m to 0.95m, and a depth from 0.24m to 0.44m. On the eastern side there was a single entrance, 5.80m wide, and this was disturbed by a medieval furrow. The ring-gully was however sufficiently deep at this point to be traced below the furrow, and the gully clearly butted at the points indicated on the plan (Fig.68). Various other features were found between the butts of the ring-gully (see below) and these were also seriously disturbed by the furrow.

Layer 1 of F.170 consisted of homogeneous sandy loam or silt loam with scattered gravel pebbles (10YR 3/2...4/3). Charcoal was present in the south side of the feature, in layer 2 which comprised silt or sandy loam (10YR 2/1...4/4). Layer 3 was only present between sections 1 and 2; it was composed of sand (10YR 5/4).

Feature 170 cut F.175 (a post-hole) on its south side, and was cut by F.156, a Phase 8 ditch, immediately south of the ring-gully, and by F.155, a Phase 9 ditch, which ran E to W across the centre of F.170. The relationship between F.170 and F.229 was unclear. The features discovered below the furrow and between the butt-ends of F.170 (see below) may have been contemporary with the main ring-gully.

Feature 170 produced considerable quantities of calcite-gritted and early grey wares. The grey and colour-coated wares produced by the kilns of the lower Nene valley were totally absent. Early forms in Romanised fabrics (e.g. girth-beaker, Catalogue no.71) and the samian suggest a Flavian date for this structure.

The distribution of pottery finds within structure 3 is shown in Figure 104 which shows large numbers of sherds, predominantly in calcite-gritted fabrics, around the entrance and particularly in F.241. Each column on Figure 104 represents approximately a 1m length of excavated ditch. The pottery distribution by weight is shown in Figure 102.

Features in the vicinity of structure 3: (Fig.68, Atlas page 112)

1. Features 211, 212, 213, 214, 223 and 241: These features lay between the butts of the entrance to F.170 and had been disturbed and truncated by the medieval furrow. Most were revealed in box sections, and some were seen only in section. Feature 213 appears to be the earliest feature, an oval pit, and this was cut by F.212, another oval pit (and possibly a recut of F.213); F.214, a post-hole; and possibly also by F.223, a small oval feature seen only in section. To the south of this complex, just north of the southern butt of F.170, two small oval features were assigned one feature number, F.241. These features were very slight and badly disturbed. The northern butt of the northern feature was at a point adjacent to the northern butt of F.223, and these two features may be related. The southern part F.241 passed inside the southern butt of F.170 and butted 0.5m to the south of it. To the east of the complex, two other features, F.215 and F.216 were excavated, and appeared to be natural. F.211 was a post-hole equidistant from the northern butt of F.170, and the north butt of the northern part of F.241.

These features may have formed part of the entrance structure to the house encircled by the eaves-drip gully F.170, although no clear pattern of post-holes, pits or gullies was apparent. The two post-holes F.214 and F.211 may represent the north side of an entrance, and perhaps F.223 and F.241 the southern side. This means that the method of construction of this entrance was somewhat erratic, with F.211 being dug into previously undisturbed soil, F.214 being dug into an oval pit, and the southern side of the entrance consisting of post-holes dug into short lengths of gullies. No evidence of post-holes was seen in the disturbed, and slight, remains of these gullies. The arrangement of these possible post-holes is also somewhat erratic, and the distances between them are irregular. If the four features, F.211, F.214, F.241 and F.223 did not represent the post-holes of an entrance, then this would have been *c.*1.50m wide, and *c.*1.50m long, and if the inner post-holes mark the line of the house wall, and this was concentric with the eaves-drip gully F.170, the house itself would have had a diameter of *c.*6m. There were no traces of the wall line within the eaves-drip gully, and no certain internal post-holes.

The fillings of the features mentioned above mainly consisted of sand loam or silt loam in an homogeneous, naturally-derived deposit. Their principal points may be summarised thus:

F.211: post-hole, diameter 0.35m, depth 0.22m (10YR 4/3); no finds.

F.212: oval pit, l. 1.03m; depth 0.32 (10YR 4/3); 1 sherd.

F.213: oval pit, l. 0.82m; depth 0.31m (10YR 4/3); 1 quern fragment. Cut by F.214, F.213 and ?F.223.

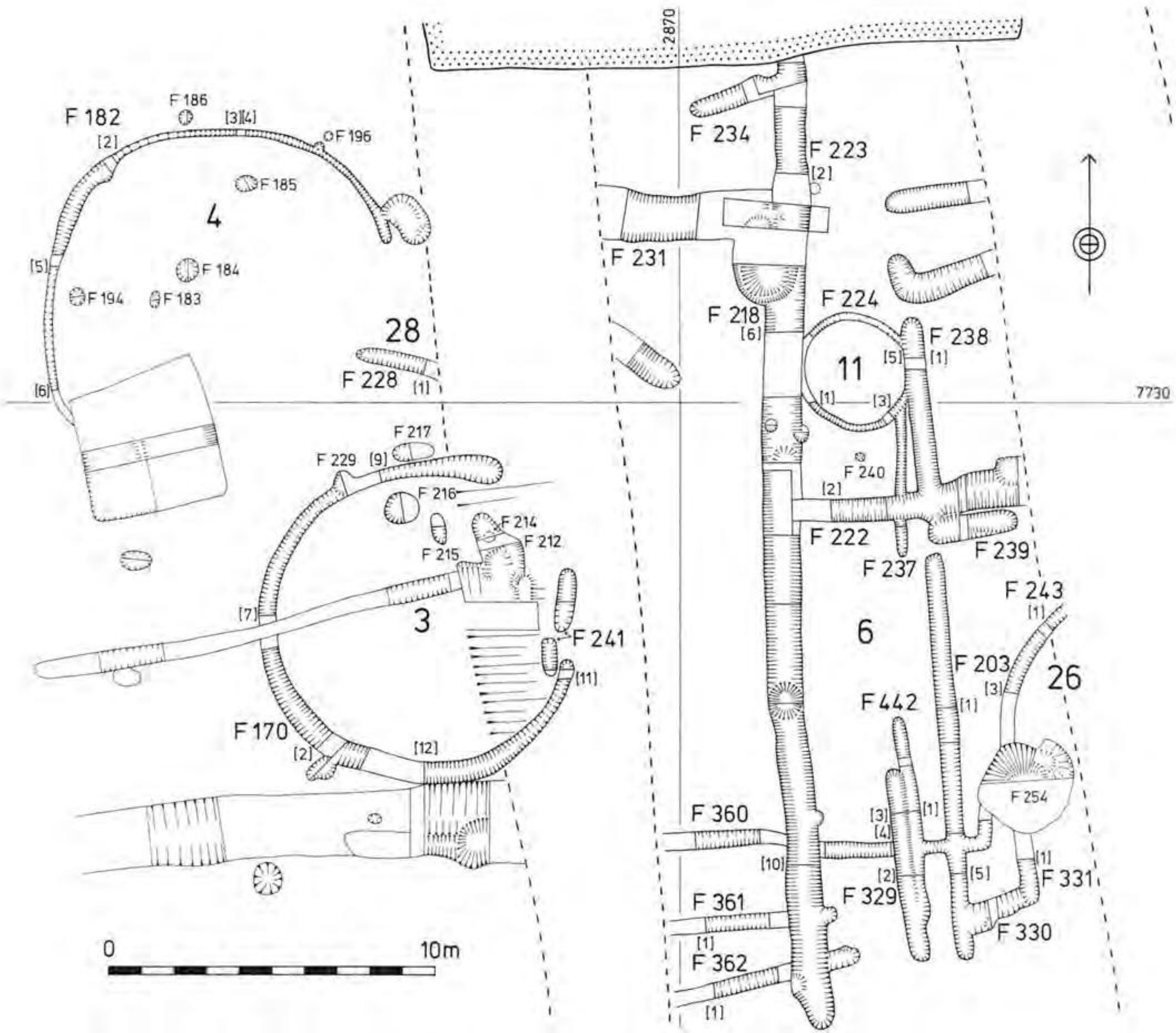


Fig.68 Maxey East Field: plan of structures 3, 4, 6, 11 and 26 (Phase 8). Scale 1:30.

F.214: post-hole, diameter 0.40m, depth 0.24m (10YR 3/1); 3 pieces fired clay, much charcoal. Cut F.213.
F.223: ?gully or post-hole; not recorded. 10 sherds, 3 pieces fired clay.
F.241: two gullies (see above); not fully recorded.

2. Features 175, 217 and 229: These features lay outside the entranceway area and may be briefly summarised:
F.175: pit, diameter *c.* 1m, depth 0.36m. Sandy clay loam (10YR 4/3). Pottery, fired clay, one iron nail. Cut by F.170.
F.217: oval pit, l. 0.70m, depth 0.14. Loam with scattered gravel pebbles (10YR 4/4). 1 fragment of bone.
F.229: small pit; not fully recorded. No finds.

Structure 4: (Figs.64,68) Structure 4 consisted of a semicircular gully (F.182), centred on Grid 2855/7734, and located just north-west of structure 3. There are a number of non-linear features (183, 184, 185, 186, 187, 188, 191, 194 and 196) which will also be considered here.

F.182, the eaves-drip gully of a probable round-house had a diameter of *c.* 10.60m, width: 0.14-0.34m, and depth: 0.03-0.07m. The feature survived as little more than a shadow in the gravel, and it had clearly been severely truncated by ploughing. It is probable that had the site been ploughed on only a few more occasions, no trace of this feature would have survived. The gully was only visible on its northern and western sides, and it was not clear whether or not the southern part had been lost, or if the original feature had been semicircular. The shallowest sections were those on the western side (5) and (6), so it does seem probable that the plough was responsible for the incomplete plan of this feature. To the south of section (6), the gully was cut by a large, square, post-medieval pit, and although this area was carefully examined, and hoed on several occasions, no trace of the gully to the east of this pit was observed. On the northern side, the gully butted at Grid 2861/7736, where the feature was at its deepest. This indicates an east entrance of uncertain width. If the south side of the gully is reconstructed, with a diameter of *c.* 10.60m, this would have left a gap of *c.* 0.8m between the south edge of the ring-gully of structure 4, and the north edge of the ring-gully of structure 3.

The gully was filled with sandy loam with an even gravel mix and some indication of weathering towards the base of the profile (10YR 4/2).

It is interesting to record that structure 4 produced no finds, in contrast with structure 3. If the two structures are contemporary, this may suggest a functional distinction, although the severe truncation of F.182 might account for the paucity of finds.

A number of non-linear features occurred in the area; these may, or more probably may not have been associated with the structure. All were filled with an homogeneous sandy loam (except F.191: silt loam). Colour of filling was either 10YR 4/2 or 4/3, and were post-holes or small pits.

F.183: diameter 0.30m, depth 0.23m.
F.184: diameter 0.60m, depth 0.17m.
F.185: diameter 0.43m, depth 0.26m.
F.186: diameter 0.35m, depth 0.28m.
F.187: diameter 0.30m, depth 0.03m.
F.188: diameter 0.30m, depth 0.12m.
F.191: l. 1.20m, depth 0.16m; burnt sand/gravel at base of profile; hearth?
F.194: diameter 0.38m, depth 0.15m.

Structure 5: (Figs.57,64) Structure 5 consisted of a single feature F.198, an arc of ring-gully centred on Grid 2875/7680. As this feature survived to a considerable depth (0.81m) and was one of the deepest features on the site, excluding large pits and the main drainage ditches, the feature as excavated is probably all that was originally dug. In its plan and profile, it contrasted strongly with other gullies surrounding round-houses, including the ring-gully F.170 of structure 3 which, on the pottery evidence, is closely contemporary.

The Phase 8 ditch F.158/255 which passed to the north of this feature would have cut any continuation of F.198 if the estimated diameter is projected, but the pottery in this ditch suggests that it belongs to a later date within Phase 8, and it would appear that there would have been access from F.198 to the north to structures 3 and 4 when these were built. The maximum diameter of any house within the arc of F.198 would have been *c.* 6m, and if a circle of this diameter is placed concentrically within the feature, allowing for a narrow gap between the house wall and the inner lip of the gully, any substantial features associated with an entrance to the north would have been destroyed when the ditch F.158/255 was dug. For a discussion and parallels for buildings with discontinuous ring-gullies see Pryor (1983a), chapter 4.

This feature was excavated employing more detailed and complex retrieval methods than those adopted for other features. This was suggested by the width and (hoped-for) depth of the feature when observed before excavation, and it was felt that a feature associated with a structure, apparently well-preserved and little truncated by the plough would be a suitable candidate for an analysis of the retrieval levels of different search techniques. This work was carried out by Paul Lane, and the late Mark Gregson (Lane's report is in the Introduction to this chapter.)

The three retrieval methods used in the excavation of this feature were:-

> *1. barrow search:* the *in situ* fill of the feature is loosened by forking, and then shovelled into a barrow using a small hand shovel adapted for archaeological use. This is known locally as the 'Fengate shovel', and affixed to a long wooden handle, this tool is ideal for the excavation of narrow or sharp-profiled features, and enables a thorough search of the loose feature fill. It is (intentionally) impossible to use the 'Fengate shovel' with any speed, as could occur with a normal spade or shovel, and the amount deposited in the barrow (shovel capacity = *c.* 1600cm^3, when moderately heaped) can be easily and thoroughly searched.
> *2. dry sieve:* all the excavated fill from some sections was passed through a ¼-inch square mesh dry-shaker screen.
> *3. wet sieve:* The design and use of this is discussed in the Introduction. Mesh sizes employed were 2mm and 4mm, circular.

The composition of each layer was sandy loam with scattered gravel pebbles (layer 1: 10YR 3/3; layer 2: 10YR 3/2; layer 3: 10YR 4/3). Charcoal, finely comminuted, occurred in layer 1 in considerable quantities.

Feature 198 produced over 450 sherds, most of which are calcite-gritted (83% of total by weight). The remaining sherds clearly indicate a date during the second half of the 1st century AD (Phase 8) for this feature. Other finds were more than 100 pieces of fired clay, and two pieces of slag. The pottery finds distribution of this and adjacent structures and features is shown in Figure 102.

Structure 10: (Figs.65,67) Structure 10 consisted of a single arc of a curving ?eaves-drip gully, F.308, at Grid 2798/7665. This possible house was located within one of the rectangular enclosures laid out over the SW corner of the East Field during Phase 8, and lay to the SW, west and north of structures 2, 1 and 9 respectively, of Phase 7 date. It was, however, clear that this structure was not of Phase 7 date, and that while there was a shift in the main area of occupation to the NE (structures 3,4 and 5), the area around the structures of the preceding phase continued to be used, although perhaps for a different purpose, and that this re-use led to the construction of at least one building.

The curving gully, F.308, had a diameter of *c.*10m, a width of 1.10-1.40m, and a depth of 0.25-0.30m. On the southern side, this gully butted at Grid 2800/7656, forming the possible west side of an entrance to the south, but no evidence for the eastern side of this entrance, or indeed the eastern side of the ring-gully (if it existed) was found. While the northern side of F.308 might have been destroyed by a later and wider recut of F.108, it is also possible that the ring-gully deliberately ran into an earlier phase of this adjacent ditch, thereby assisting in rapid drainage of the eaves-drip gully. The relationship between F.308 and F.108 was carefully examined in plan and section, but the precise relationship remained unclear.

The filling of F.308 consisted of clay loam with scattered gravel pebbles and some clay lenses (10YR 3/2...3/6); charcoal was common.

Feature 308 cut features 298,306,309 and 310.

Turning to finds, F.308 produced over 300 sherds, of which 66% by weight was calcite-gritted. The other sherds include grey wares and Hadrianic/Antonine samian. Other finds include fragments of brick/tile, fired clay, three quern fragments, bone needles and a dolphin brooch dated to the second half of the 1st century AD.

Two samian sherds from F.308 (a form 37 Central Gaulish bowl) are dated *c.*AD 100-125, and these are from the same vessel as four sherds from F.108, a ditch immediately adjacent to structure 10 (Fig.65). If these sherds were not deposited in the ditch during the period of use of structure 10, their presence in the ditch may result from the disturbance of the ring-gully fill by the later recutting and widening of F.108, which cut the northern side of the ring-gully. Nothing from F.308 is likely to be later than *c.*AD 150, and this may suggest that this structure is slightly later than the other structures (3 and 5) assigned to this phase. These appear to be no later than the late 1st/early 2nd century.

The distribution of pottery finds in this and adjacent structures and features is shown in Figure 103.

Structure 11: (Figs.68,73) Structure 11 consisted of a circular gully (F.224) without entrance, located at Grid 2875/7732, and *c.*9m to the NE of the entrance to structure 3 with which it was almost certainly associated. The diameter of F.224 is 3.10m, its width: 0.20-0.35m, and its depth: 0.07-0.18m. On its northern side, the gully was very slight, but the remnants of its lower fill and staining in the gravel subsoil indicated that the ring-gully was continuous between sections 5 and 6.

This feature is interpreted as a stack-stand, similar to two found on the West Field (F.519, structure 29, Phase 5, and F.543, structure 24, Phase 6) (Figs.47 and 57). It stood just south of the southern ditches (F.247 and F.248) of a possible entrance to the settlement (comprising structures 3,4 and 5) from the NE. Three other features of Phase 8 date, adjacent to this feature, are also considered here (F.237, F.238 and F.240, below).

Typical filling of the gully included silt loam with scattered gravel pebbles, with indications of weathering towards the bottom of the profile (10YR 3/2).

Feature 224 was cut on its west side by F.218, a Phase 9 N to S ditch and it cut F.237 and F.238 (Phase 8) on its east side; F.240 may be a contemporary post-hole.

Feature 224 contained three sherds of calcite-gritted pottery (Fig.102).

Features associated with structure 11:

F.237: A N to S ditch, 4.60m long, 0.32-0.42m wide, and 0.08-0.12m deep. Its fill was a silt loam with scattered gravel pebbles in an even homogeneous matrix (10YR 3/2, 4/3). Its north butt was cut by F.224, and it was also cut by F.222 (Phase 9) near its south butt. Finds were four sherds of calcite-gritted pottery and animal bone.

F.238: A N to S ditch running almost parallel and adjacent to F.237. It was 6.20m long, 0.48-0.74m wide, and 0.34-0.36m deep. Its north butt was 0.50m south of the corner of F.248. Feature 238 was cut by the eastern side of F.224, and by F.222 (Phase 9) at its south butt. F.239 and F.203 to the south may be contemporary (see linear features below). Its fill was a silt loam or silty clay loam with scattered gravel pebbles in an even homogeneous matrix (10YR 3/2). It contained 224 sherds of pottery, fired clay a bronze pin and animal bone (some burnt).

F.240: This was a post-hole 0.70m from the south edge of F.224; its central location suggests that it may be contemporary with the structure. Its fill was a sandy loam with even gravel mix in an even homogeneous matrix. The diameter was 0.22m and depth 0.13m. No finds.

Structure 12: (Figs.63,69,70) This structure was centred on Grid 2851/7647, and consisted of a square double-ditched enclosure, the purpose of which will be more fully discussed below. The inner square consisted of F.324 on the northern side, and F.323 on the southern. The possible butt of F.323 at Grid 2847/7644 was originally excavated as a post-hole (F.322), and the N to S section of F.323 appeared to butt at a point 1m to the south. During excavation, however, this area was hoed several times, and after it had been allowed to weather for several days, it became clear that the gully F.323

continued north, and appeared to butt at the supposed post-hole F.323. It is therefore possible that the post-hole, seen initially as a separate feature, was a post set in F.323, and that its darker fill made it more obvious during the first examination of this area. On the eastern side of the inner square, Features 323 and 324 both ran into a medieval furrow, and box sections were cut into the furrow to see if these features could be traced. At the SE corner of the inner square, a return northwards was excavated, with a possible post-hole F.484 in the corner. A further box section to the north, where F.324 ran into the furrow did not find evidence of any return, but the feature appeared to butt at a point 1.30m into the furrow. The evidence of these features therefore suggests that this inner square has an internal dimension of 8.70m E to W on its southern side, and that if the NE corner of F.324 did return south, and this had been destroyed by deepening of the furrow at this point, a similar dimension would be possible on the northern side. The N to S dimension of the inner square was 9.0m on the western side, measuring between the internal corners, and the E to W portions of the inner ditches were exactly parallel. The apparent entrance on the western side of the inner square was 1.80m wide, and the possible post-hole F.322 might have been part of this entrance. It was, however, noted that approaching the butts of F.323 and 324 on the western side, the gullies were becoming much shallower, and it is possible that the entrance here was no more than the point where ploughing had destroyed all trace of a shallow, but nevertheless continuous, feature.

The outer square consisted of Feature 326 and very possibly also F.349 (but see below). Feature 326 ran parallel to F.324 on the northern side, and for its whole length was concentric with the inner square, with a strip of undisturbed gravel *c.*2.0m wide between the two features. On the western side, F.326 appeared to butt at a point opposite the butt of F.324, and no trace of an outer ditch was found south of this point. To the NE, F.326 divided into two shallow and badly-defined gullies (section 6), but in sections 5 and 7 the fill appeared to be even and homogeneous. The feature then ran into the furrow to the east. To the south, F.349 ran E to W between the two furrows on either side of structure 12, and this feature was considerably wider and deeper than any of the other features discussed here. This ditch was not exactly parallel to the line of F.323, and it did not follow the concentric arrangement observed in the northern part of the structure. The distance between this feature and the inner square varied from 2.40m on the western side, to 3.0m on the east side. This feature ran only E to W, and there was no return northwards at the SW corner to match the N to S section of F.326. It would therefore appear that F.349 is not associated with the ditches of the double-square enclosure formed by Features 323, 324 and 326.

Features of this structure (together with F.349) are summarised below:

F.322: possible post-hole in butt of F.324; not recorded.

F.323: south section of inner square; 0.35-0.55m wide, 0.12-0.17m deep. Homogeneous sandy clay loam or silty clay loam with scattered gravel pebbles (10YR 3/3,3/4). Animal bone (some burnt) and charcoal; see also F.484.

F.324: north section of inner square; 0.52-0.60m wide, 0.19-0.25m deep. Homogeneous sandy clay loam with scattered gravel pebbles (10YR 3/3) with sand lenses, iron-pan and weathering at base of profile. Four sherds, animal bone and charcoal.

F.326: north section of outer square; 1.0-1.45m wide, 0.17-0.36m deep; forks at section 6. Layers 1 and 2: homogeneous silt loam with even gravel mix (10YR 4/2...4/4). Twenty-one sherds, including Antonine samian, two sherds of mortaria and animal bone.

F.349: ditch south of structure 12; 1.15-1.26m wide; 0.40-0.50m deep. Homogeneous silt loam with even gravel mix (10YR 3/3). One sherd, one flint and animal bone.

F.484: post-hole at SE corner of F.323; diameter 0.35m, depth 0.35m. Homogeneous sandy clay loam with scattered gravel pebbles (10YR 5/6). No finds.

Figure 103 shows the distribution of pottery within this structure and adjacent features of Phase 8.

Structure 12 is assigned to Phase 8 on the basis that the finds from linear features are of 2nd century date. These of course could derive from activities in the area, perhaps associated with structure 10 to the west, and structure 12 might, therefore, be of an earlier phase. However, unless structure 12 was an isolated structure of a much earlier date, it is unlikely to belong to the Phase 7 settlement in the SW corner of the East Field, as the NW corner of F.326 was only 3.50m from the entrance to the ring-gully of structure 1 (F.50). This would limit access to that structure, and the possible entrance on the western side of structure 12 would not suggest contemporaneity with structure 1. It would also presuppose that the ditches of structure 12 remained open for a long period of time, and certainly for longer than the features associated with the Phase 7 settlement — these features do not appear to have been open during Phase 8.

Although the plan of this structure is probably incomplete, its similarity to the concentric square plans of Romano-Celtic temples was noted, and temple parallels must be considered. Dr Warwick Rodwell has kindly commented and advised on the interpretation of this structure, and his comments have been incorporated into this discussion.

If structure 12 is to be interpreted as a temple or rural shrine, then it is clear that this was of timber construction, although no evidence of post-holes or timber impressions was found during excavation, which might confirm this. The only post-holes found were F.322 in the butt of F.323, and F.484 in the SE corner of the same feature. It is possible that these are the remains of a square palisade or portico of posts set in the inner trench, surrounding a timber shrine on sill-beams of which no trace would remain, and surrounded by a ditched enclosure (the outer square). The inner enclosure would therefore be roughly a 9m square, and religious enclosures of 9-10m square are known from other sites. A comparison of these enclosures with Maxey structure 12 is shown in Figure 69.

The closest parallel is the possible shrine at Heathrow, Middlesex (Fig.69, No.2) (Grimes 1961, fig.7) — a post-built structure with external dimensions of *c.*5.47×4.56m, inside a colonnade *c.*10.94×9.42m. While the construction of structure 12 would have been different, with the building on sill-beams within a square palisade or portico of posts set in a continuous trench, the size of the inner square is very close to that of the

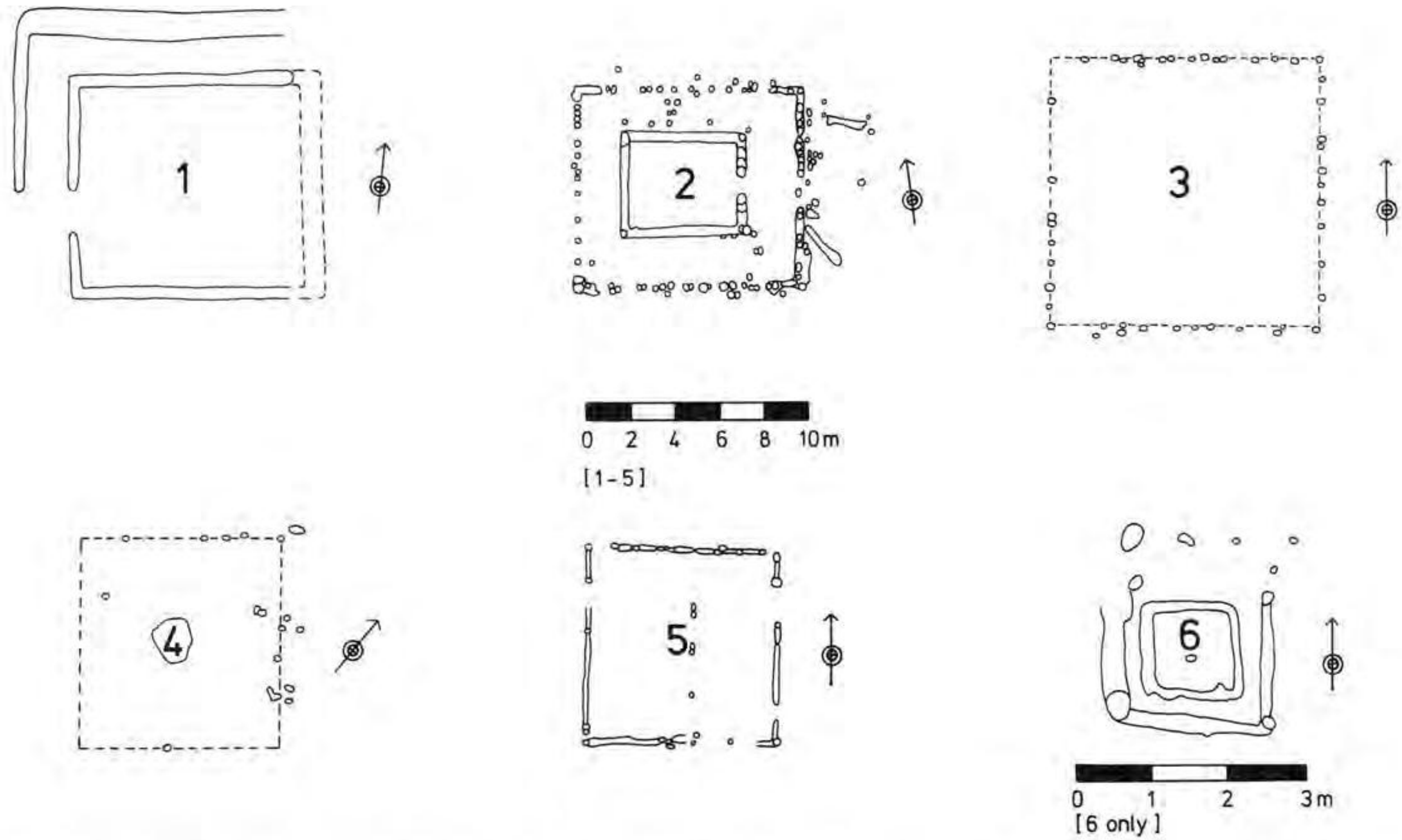


Fig.69 Comparative plans of Romano-British rural shrines or temples. *1.* Maxey structure 12. *2.* Heathrow (Rodwell 1980b, 3.2.9). *3.* Slonk Hill (Hartridge 1978, fig.7). *4.* Uley (Rodwell 1980b, 10.2.3). *5.* Danebury (Rodwell 1980b, 3.2.7). *6.* Lancing Down (Bedwin 1981, fig.3). Scale 1:300 (except No.6).

colonnade at Heathrow, and may well have enclosed a timber structure similar in size to the 'temple' excavated by Grimes.

Similar to both Maxey structure 12 and Heathrow in plan, but much smaller, is the Iron Age shrine at Lancing Down, Sussex (Fig.69, No.6), which exhibits the same 'square within a square' layout as the masonry Romano-Celtic temple which succeeded it (Bedwin 1981, fig.3). Other possible parallels are the structure at Slonk Hill, Sussex (Fig.69, No.3), slightly larger at 11.9×11.9m (Hartridge 1978, fig.7); Uley, Gloucestershire (Fig.69, No.4) - a square post-built structure 8.8×8.8m in size (Ellison 1980, fig.15.1 and Rodwell 1980b fig.10.2.3) - and Danebury, Hants structure 18 (Fig.69, No.5) (Cunliffe 1976, p205 and fig.10) — a 9m square building with upright timbers set in a continuous bedding trench.

On these grounds, the interpretation of structure 12 as some kind of timber religious enclosure or rural shrine does appear a possibility, and while artefacts of a religious or votive nature were not found on the site, the absence of these need not discount a religious function, as undoubted temples elsewhere have yielded little or nothing in the way of religious trappings (e.g. Lancing Down, Sussex).

One further point to be considered is that known temples do not have western entrances, these usually being to the east or SE. Some doubt has already been expressed about the authenticity of the butts of Features 323, 324 and 326, and the off-centre position of the apparent entrance is also suspicious in a structure which has clearly been laid out regularly and with a reasonable degree of accuracy. It is therefore feasible that no such entrance existed, and that the absence of a continuous gully between F.323 and F.324, and the absence of an outer ditch on the SW and west sides may be the result of plough damage, or the Caterpillar D8 tractor and box scraper used to strip the ploughsoil truncating or destroying altogether the shallower features in this area. In other areas, the use of a Hymac under close supervision enabled us to strip topsoil to a level where

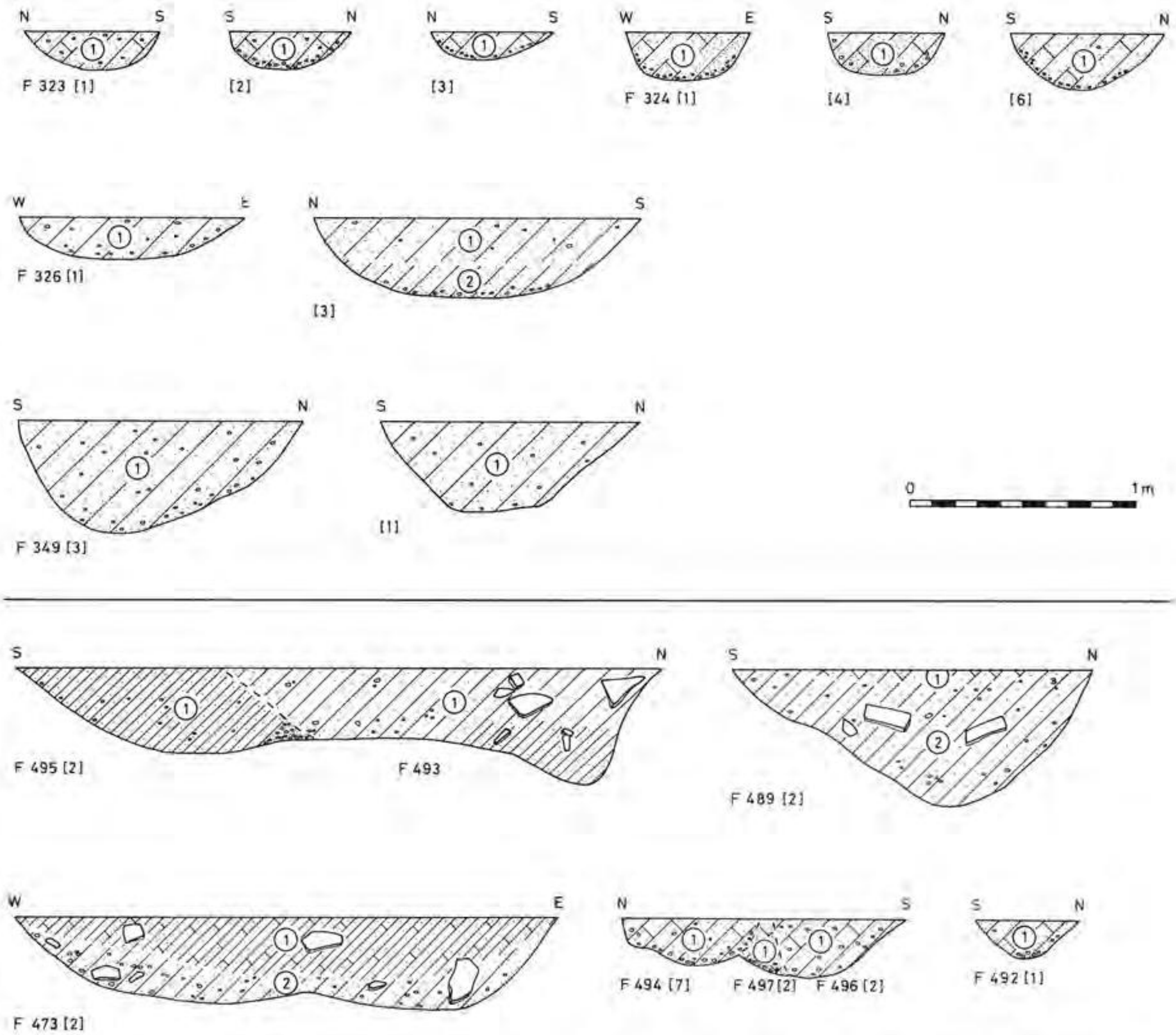


Fig.70 Maxey East Field: sections through features of structures 12 (Phase 8) and 13 (Phases 8 and 9). Scale 1:30.

any features in the subsoil would be preserved, but financial constraints meant that most areas were stripped using the D8 and box, and the potential loss of the shallower features must be recognised.

Structure 26: (Figs.64,68) Structure 26 consisted of two features, F.243 and F.331, which together formed part of a possible eaves-drip gully centred on Grid 2881/7720. This was located to the east of structure 3, within what appears to be a Phase 8 enclosure, defined by Features 203/238, 247/248, 161 and 158/255, although these may not all be precisely contemporary.

The feature was cut by a large Phase 9 pit, F.254; the section to the north of F.254 was assigned F.243, and that to the south F.331. In plan it seemed very probable that these two were originally a single feature. The southern section of ditch appeared to be fairly straight, for a length of *c.*5.0m, (including that part of the ditch cut by F.254), and the northern section curved to the east, and was cut by a medieval furrow. The arc of this part of the ditch had a diameter of *c.*9.0m.

Feature 243, the north part of this structure was a ditch or gully, width 0.30-0.35m, depth 0.16-0.24m. The filling was an homogeneous silty clay with scattered gravel pebbles (10YR 3/2, 4/2); charcoal was common. Finds included sixteen potsherds, animal bone (some burnt) and burnt stones. It was cut by F.254.

Feature 331, the south part of this structure was a ditch or gully, width 0.90m, depth 0.45m. The filling was an homogeneous silty loam with scattered gravel pebbles (10YR 3/2); charcoal was common. The finds were twenty-four potsherds, fired clay, residual flint and animal bone (some burnt). it was cut by F.254 and F.330. Finds distributions are plotted in Fig.102.

Structure 28: Fig.68 Structure 28 consisted of a very short arc of a possible ring-gully, F228, 2.0m north of structure 3, and centred on Grid 2862/7731. Only a 2.80m length of this feature was excavated, and the rest had been destroyed by a medieval furrow to the east. This feature did not appear to be part of structure 3 to the south, or structure 4 to the north, and while the ditch had been destroyed on its eastern side, it survived to a sufficient depth in the excavated section to suggest that had the feature emerged from the furrow either to the east or south, it would have been seen.

Feature 228 consisted of two layers: layer 1 was an homogeneous silt loam with scattered gravel pebbles (10YR 3/2); layer 2 was homogeneous loam with an even gravel mix (10YR 3/3).

Finds included calcite-gritted sherds, fired clay and loom-weight fragments (in both layers). The distribution is shown in Fig.102.

Linear Features:

1. Main drainage ditches (Features, 108, 121, 161, 162, 199, 250, 253 and 314): (Figs.40,71,97) These features suggest the continued use and extension of the main ditch system of Phase 7. These must have been cleaned out, and perhaps deepened and widened on many occasions, and it is clear that in the NE corner of the East Field, these ditches were open during Phase 9. Although pottery of Phase 9 date did not occur in the SW corner of the field, it can be assumed that the ditches there remained in use. During Phase 8, the only evidence of recutting is F.108 where a ditch containing a wide range of 2nd century pottery cut the earlier Phase 7 ditch sections (F.107, and F.119). The quantities of Phase 8 pottery from the excavated sections of F.108 to the west, and F.161 to the east, confirm that the whole length of ditch was open during Phase 8, although the entrance across this ditch (see Phase 7 above) must have remained in use, and this section of ditch (between F.161 sections 18 and 19) was not recut.

In the SW corner of the field, F.121 appears to have been recut during Phase 8, although the line of this was only seen in plan and was not excavated. A N to S ditch F.314 which appears to be contemporary with the recut of F.121 was excavated, and this produced evidence of Phase 8 date. The continuation of the main drainage ditch across the site towards the NE corner of the field produced mostly finds of Phase 9 date, and as a Phase 7 origin has been suggested for this ditch (comprising Features 161, 162, 199, 250 and 253), it seems probable that this ditch was open during Phase 8.

Feature 199 produced a mortarium sherd (*c.*AD 100-250), and F.250 two Mancetter-Hartshill sherds (AD 130-350±).

Three features illustrate the range of fillings and matrix compositions found. Both layers of F.108 were of silt loam with scattered gravel pebbles (layer 1: 10YR 4/2; layer 2; 10YR 3/2). Layer 2 had gravel lenses. Feature 108 cut Features 296, 133 and 136; it was cut by F.128 (?). Feature 161, layers 1 and 2, were composed of homogeneous silt loam with gravel pebbles (layer 1: 10YR 3/2; layer 2: 10YR 4/3). Feature 161 cut F.60 (structure 27) and was cut by Features 381, 257, 258 and 255. Finally, Feature 314 was filled with homogeneous sandy loam with scattered gravel pebbles (10YR 3/3).

Most sections of the main drains provided large quantities of late 1st and 2nd century pottery, the distribution of which is shown in Figure 97.

2. Main drainage ditch complex (Features 127, 153, 158, 160, 168, 255, 259 and 418): (Figs.40, 98) These features comprised a single E to W drainage ditch, which appears to be dated to the later part of Phase 8, a period in which the SE part of the field was laid out as a series of rectangular enclosures, incorporating the main ditches F.108 and F.161 on the southern side. The features here consisted of the northern side of this enclosure system, running parallel to the southern ditch, with a series of N to S ditches parcelling this strip of land into small yards. These are considered below. The distribution of pottery finds within this ditch is shown in Figure 98. The overall weight of pottery finds is much less than from the main drainage ditch to the south (Fig.97), but shows a clear concentration in section 8 to the south of structure 3, and to the west of structure 5. The presence of fabric 1 (Nene Valley Grey Ware) suggests that some of this pottery must either be late in Phase 8 and probably not contemporary with the period of occupation in the area, although if this is the case, the absence of finds from section 9 is puzzling.

The late Phase 8 date assigned to this ditch is suggested by the fact that where this ditch met the N to S section of F.161 at Grid 2896/7710, a very clear stratigraphic relationship was observed with F.255 cutting the fill of F.161. Although to the north of this intersection, F.161 was clearly open during Phase 9, it may be suggested that by the end of Phase 8, this section of

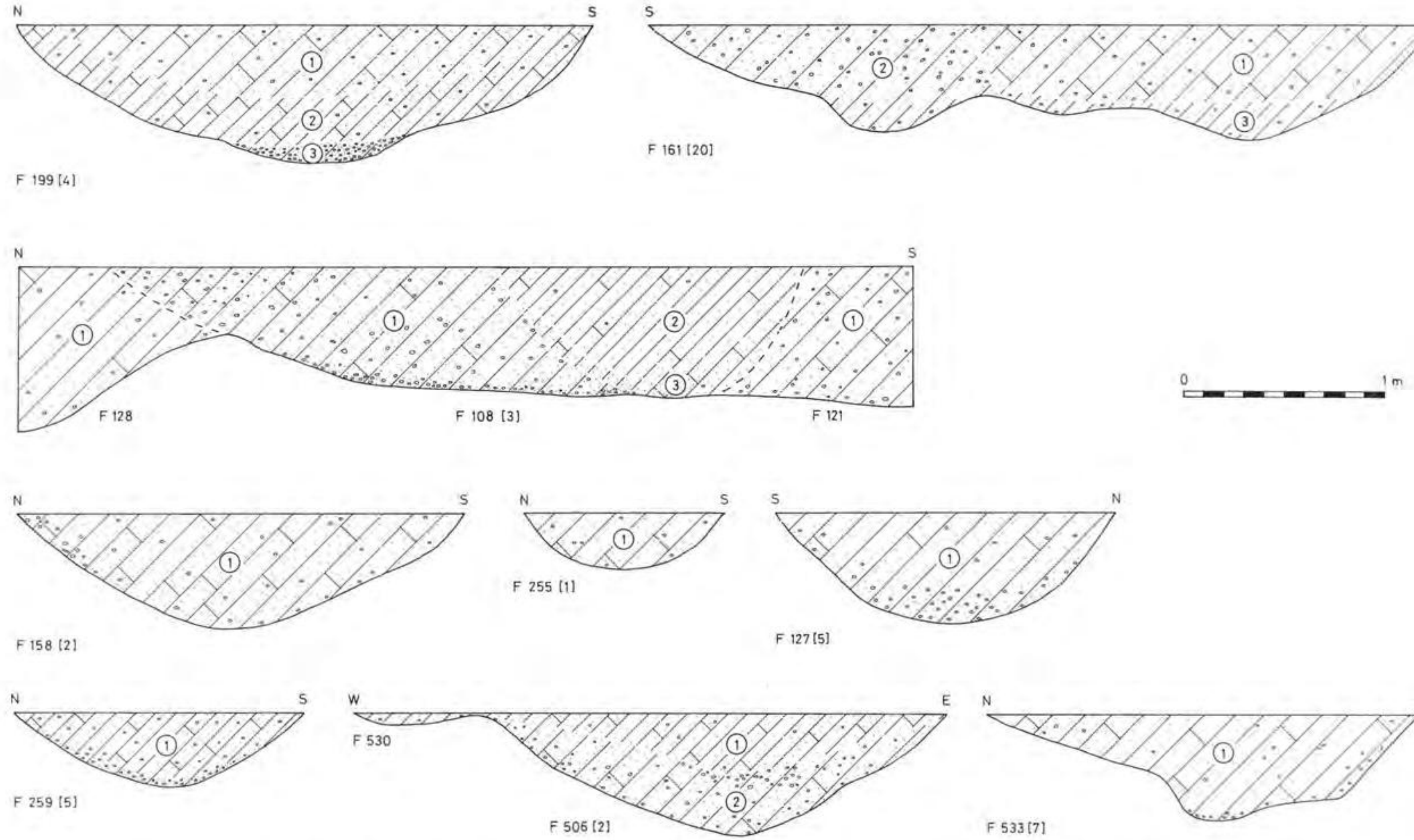


Fig.71 Maxey East and West Fields: selected sections through linear features (top left to bottom right): F.199 (Phases 7-9), F.161 (Phases 7-9), F.128 (Phase 8), F.108 (Phases 7 and 8), F.121 (Phases 7 and 8), F.158, F.255, F.127, F.259 (Phase 8), F.506 and F.533 (Phase 5).

F.161 (cut by F.255) was substantially filled in, and that after the excavation of F.255, F.161, to the south of this point, was not cleaned out. This is confirmed by the distribution of Phase 9 finds along this ditch. F.255 also passed just north of structure 5, and as we have seen above, would have cut the northern part of a structure within this arc of ditch. This implies that the ditch F.255 was dug after this possible house had gone out of use, and when a reorganisation of the landscape, which involved a major ditch cutting off part of the early Phase 8 settlement, would cause no concern.

It is also suggested that a hedge stood along the northern edge of this ditch, and that this is related to the distribution of late 3rd/early 4th century pottery in the N to S Features 158/255 and 161. A hedge would also account for the position of the southern butt of F.218 which stopped short of F.158. This is discussed in the Phase 9 feature section below.

Also included here are two N to S ditches, F.153 and F.418, which appeared to be contemporary with the main ditch. Feature 153 was a ditch 63m long, which passed 13m to the west of structure 3, and continued south to join F.259. The junction of these features was carefully examined, and they appeared to be contemporary. A shorter length of ditch (F.148) was found running N to S 15m to the west of F.153, and as this was cut by F.417, may well be contemporary with F.153 (Phase 9).

The features described above have complex inter-relations which can best be appreciated by reference to the site archive. For present purposes we will describe two sections of ditch; the descriptions are followed by a concordance list of feature relations which may be followed in detail on the microfiche site atlas (Figs.M29, M35 and M40).

F.127 (sections 5-6): width 2.50m, depth 0.60m. Layer 1: homogeneous silt loam with scattered gravel pebbles (10YR 4/4); layer 2: homogeneous (gleyed) silty clay loam (10YR 4/2).

F.259 (sections 3-4): width 2.00m, depth 0.46m. Layer 1: homogeneous clay loam with scattered gravel pebbles (10YR 3/3); layer 2: homogeneous sandy loam with an even gravel mix (10YR 4/3).

Feature concordance:

F.127: cut F.60, F.101. Contemporary with F.388, F.128.
F.158: same as F.255, F.160, F.168
F.160: same as F.158, F.259, F.168
F.168: same as F.158, F.259, F.160
F.255: cut F.161. Same as F.158
F.259: cut by F.381, cut F.101. Same as F.127, F.160, F.168, F.158, F.255. Contemporary with F.153.
F.153: cut by F.155. Contemporary with F.259.
F.418: cut by F.417

3. Rectangular enclosure ditches and associated features: (Features 102, 109, 118, 128, 134, 135, 136, 137, 291, 296, 315, 318 and 388): (Fig.40; Atlas pages 102-104) These features comprised the series of rectilinear enclosures and associated non-linear features, in the SW corner of the East Field, which succeeded the Phase 7 settlement of structure 2, and which (on the pottery evidence) was of Phase 8 date. These enclosures were formed by several N to S ditches, which ran between the main E to W drainage ditches F.107/108/119/121/161 to the south, and F.127/259 to the north. It seems probable that these enclosures were contemporary with the northern drain, discussed above, and that the southerly main drain was incorporated into this system, probably during the later part of Phase 8 (see discussion of Features 127 *et al.*, above). It is also noticeable that the northern ditch F.127/259 was almost perfectly straight for a length of 93.0m, while the southern ditch F.108/161 ran very roughly parallel to the northern ditch, exhibiting considerable variation in line, probably resulting from a less formal origin for this feature, and a number of subsequent recuts.

The western enclosure was defined by Features 127, 388 and 291. It was *c.*26 × 16m in size, although not a precise rectangle, as the southern side, F.291, was aligned on the southern edge of the earlier ditch F.108. This ditch (F.108) could only have butted somewhere in the furrow. There were four non-linear features within the enclosure (390, 391, 392, 393).

The middle enclosure was defined by Features 127/259, 388, 108 and 128. It was *c.*16 × 15m, in size, and would have been a square, were it not for the deviation in the line of F.108 to the south. There were three internal features, two short gullies F.134 and F.135, and a pit F.387.

The eastern enclosure was defined by Features 127/259, 128, 107/108/119/161, and 381. Feature 381 appeared to cut both the fills of F.259 and F.161 in plan, so this may be a later addition to the enclosures, perhaps only defined at that time by almost filled-up ditches, and/or by hedge-lines. The size of this possible enclosure was *c.*26 × 16m, almost identical in size to the western enclosure. Internal features consisted of three N to S ditches, F.102, F.109, and F.118, in the western part of the enclosure, two short lengths of gullies F.136 and F.137, and non-linear Features 126, 125, 122, 131, 384 and 385. Many of these features cut the filled-in eaves-drip gully F.101/132 of structure 2, and it can be assumed that when these enclosures were laid out, no trace of the earlier Phase 7 house survived.

The main E to W ditches bordering these enclosures have already been described. The following descriptions represent a selection of the remaining features.

F.102: width 0.36m, depth 0.12m. Homogeneous sandy loam with even gravel mix (10YR 4/3).

F.109: width 0.88m, depth 0.47m. As F.102, but silt loam (10YR 4/2).

F.118: width 0.60m, depth 0.45m. As F.102.

F.128: width 2.5m, depth 0.60m. Layer 1: as F.102; layer 2: homogeneous silty clay loam with scattered gravel pebbles (10YR 5/3).

F.291: width 1.03, depth 0.21m. As F.102.

4. Features near structures 3-5, 11, 28 and 29 (Features 234, 247, 248, 249, 251 and 495): (Atlas pages 106-8, 112-4) These features consituted what appeared to be a ditched entrance to the area of Phase 8 settlement represented by structures 3, 4, 5, 11, 28 and 29. The south side had two phases, but no stratigraphic relationship existed between Features 248 and 251. These ditches butted just east of structure 11. The northern side consisted of Features 234 and 495, and while these features were not proved to be the same, the line of F.495 suggested that it was curving slightly south to join up with F.234. Feature 234 was cut by the Phase 9 ditch F.233.

These features all appeared to run into the main drainage ditches, F.161/250/253/199 on the southern side, and F.473 to the north. The entrance to the Phase 8 settlement may have been a re-used and extension of an earlier entrance across the main drainage ditches, *c*.3.30m wide. At the eastern end of the Phase 8 entrance, the width between Features 248 and 234 was *c*.6m, and between Features 247 and 234, *c*.4.50m.

F.234: width 0.70m, depth 0.35. Layers 1 and 2: homogeneous sandy clay loam with scattered gravel pebbles (10YR 3/2); layer 2 had gravel lenses. Cut by F.233 (Phase 9).

F.247: width 0.70m, depth 0.45. Homogeneous silt loam with gravel pebbles, clay lenses and weathered natural base (10YR 3/1).

F.248: width 0.84m, depth 0.54. Homogeneous silt loam with scattered gravel pebbles (10YR 3/2).

5. Features north of the previous group (Features 473, 489, 491, 492, 493, 494, 496 and 497): (Atlas pages 105-6, 111-2) These ditches and gullies were located to the north of the Phase 8 entrance described above, and included part of the north side of the entrance, F.495. Feature 473 was a possible continuation of the main N to S ditch F.161, joining up with an E to W ditch F.489. Adjacent to the butt of F.473 was a large pit or well F.491. Within the area defined by Features 489, 473 and 495, and the furrow to the east were several ditches or gullies (Features 492, 493, 494, 496 and 497).

Most of these features contained substantial quantities of untooled limestone slabs or lumps of irregular shape and of various sizes, but these may derive from Phase 9, as similar deposits were found in Features 153 and 254 of Phase 9 date (see Phase 9 discussion below).

The following descriptions are representative of most of the features, although the group is more heterogeneous than others described so far.

F.498: width 1.60m, depth 0.60m. Homogeneous sandy loam with scattered gravel pebbles and limestone slabs (10YR 3/3).

F.491: width 2.45m, depth 0.55m. Layers 1 and 2: as F.498, but layer 2 had more gravel (layer 1: 10YR 3/2; layer 2: 10YR 4/3).

F.493: width 0.87m, depth 0.39. Layer 1: homogeneous sandy clay loam with scattered gravel pebbles and much charcoal (10YR 3/1); later 2: homogeneous sandy loam with scattered gravel pebbles (10YR 4/2).

The relationships of the various features may be listed:

F.473: cut F.491; F.493 cut F.492 and F.496; F.494 cut F.497;

F.496: cut F.497.

Samian from Features 473, 489 and 491 is all of 2nd to early 3rd century date.

6. Linear features south-east of structure 3 (Features 156, 173, 203, 239, 330, 360, 361, 363, 362, 389 and 442): (Atlas pages 106-8, 112-4) These linear features were to the south and east of structure 3, and with F.153 formed a yard enclosing structures 3,4, 11 and 28. Feature 156 passed immediately adjacent to the southern edge of F.170, the ring-gully of structure 3, and a later recut of this ditch consisting of Features 389, 173, and possibly also F.360, defined the southern side of this yard. Features 361 and 362 were parallel to F.360, but may have been related to Features 203 and 442. These features may have formed a two-phase entrance in the corner of this yard, leading to structure 5 (F.198), and crossing the line of the earlier ditch F.360, which was cut by Features 203 and 442.

The eastern side of the yard consisted of Features 203, 442, 237 and 238. The last two features have been considered above (see structure 11).

Some typical fillings of the main features are given below.

F.156: width 2.08m, depth 0.36m. Homogeneous sandy loam with scattered gravel pebbles (10YR 4/3).

F.203: width 0.60m; depth 0.32m. Silt loam with an even gravel mix and sand lenses (10YR 4/3).

F.360: width 0.65m, depth 0.30m. Sandy clay loam scattered gravel pebbles and weathering at the bottom of the profile (10YR 4/3).

F.362: width 0.70m, depth 0.18. As F.360 (10YR 3/2).

F.442: width 0.36m, depth 0.08m (much truncated). As F.360.

Feature Concordance:

F.156: cut by F.389, F.173 and F.197.
F.218 (Phase 9): cut F.360, F.361, F.362.
F.329 (Phase 9): cut F.360 and F.442.
F.360: cut by F.203 and F.442.
F.254 (Phase 9): cut F.360.
Note: Features 364 and 365 are possibly the same as Features 361 and 362.

7. Features around structure 12 (Features 332, 341 and 340) Feature 332 was a gently curving ditch east of structure 12, ending in a pit, F.341. Feature 340 was a short N to S gully just north of F.332. Feature 332 entered a medieval furrow from the east, almost opposite the point where F.325 (see structure 12, above) entered the furrow from the west. The alignment of these features would suggest that they are not (functionally) related.

The filling of Feature 332 (width 1.20m, depth 0.35m) was homogeneous silt loam with scattered gravel pebbles (10YR 3/3); F.341 was similar (10YR 4/2), as was F.340 (width 0.55m, depth 0.90m), except this feature had a weathered lower profile (10YR 3/4).

8. Ditches and gullies in the vicinity of structure 10 (Features 133, 297, 305, 309, 310 and 311): These features were found in the vicinity of structure 10: F.297 passed just west of F.308 and would suggest that access to the structure from the west was limited, although there was a small entrance between the butt of F.297 and the ditch F.108. This was at the rear of the structure. Features 309 and 310 were within the arc of the ring-gully F.308 and were not, therefore, contemporary with the structure. Feature 310 produced a Nauheim derivative brooch of the 1st century AD.

The filling of F.133 (width 0.60m, depth 0.15m) consisted of homogeneous sandy loam with an even mix of gravel (10YR 4/3); F.309 (width 0.80m, depth 0.30m) was filled with homogeneous clay loam with scattered gravel pebbles (10YR 3/2); Features 310 (width 0.85m, depth 0.33m) was possibly back-filled with clay loam and scattered gravel pebbles (10YR 3/2).

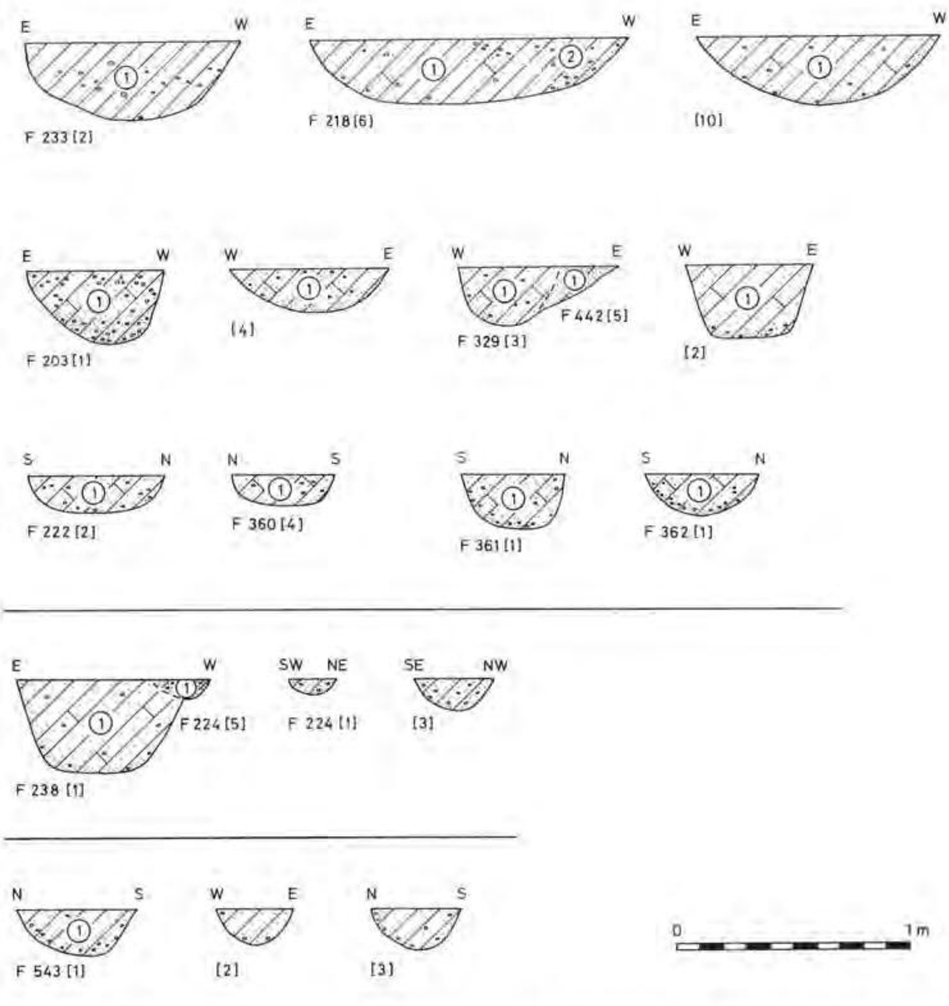


Fig.72 Maxey East and West Fields: sections through features of structures 6 (top), 11 (centre) and 24 (bottom). Scale 1:30.

Non-linear features: Fifty-one non-linear features have been assigned to Phase 8, some only on the basis of their spatial relationships with linear features assigned to this phase. The graves were the most important group of non- linear features, and these are described fully. Of the remaining features, a selection of those excavated is briefly considered.

1. Graves (Features 150, 151, 152, 157, 176 and 192): (Fig.73) This discussion is not concerned with the detailed analysis of the bones, for which the reader is referred to part VI, below; evidence for age and sex has, however, been incorporated into the present description.

The six graves assigned to Phase 8 all lay within an area to the south and west of F.170, structure 3. The furthest away from this structure was F.176, 17m to the west. Features 176 and 157 were due west of F.170, and 13m apart. The other four graves were to the SW of F.150, and clustered within an area of 5m². This seems to suggest that there was a clearly defined cemetery area, with perhaps 157 and 176 as outliers. This cemetery may originally have been far more extensive, and many graves may have been destroyed by the plough. Features 150 and 157 were severely truncated, and any graves shallower than these would have been lost. The six graves exhibit considerable variation in the method of burial, including crouched or flexed (150, 157), extended W to E (192), extended N to S, (176), and two extended S to N burials (151, 152) one of which was in a wooden coffin. The surviving graves show no attempt at a formal lay-out, although the location of graves 151 and 152 may have been marked by a post (F.159). The variation in burial method suggests that these burials may span perhaps a considerable period of time, with the crouched/flexed burials indicative of a native, late Iron Age tradition (Whimster 1981), and the extended burials, including the coffined burial, perhaps reflecting a Romanised burial rite.

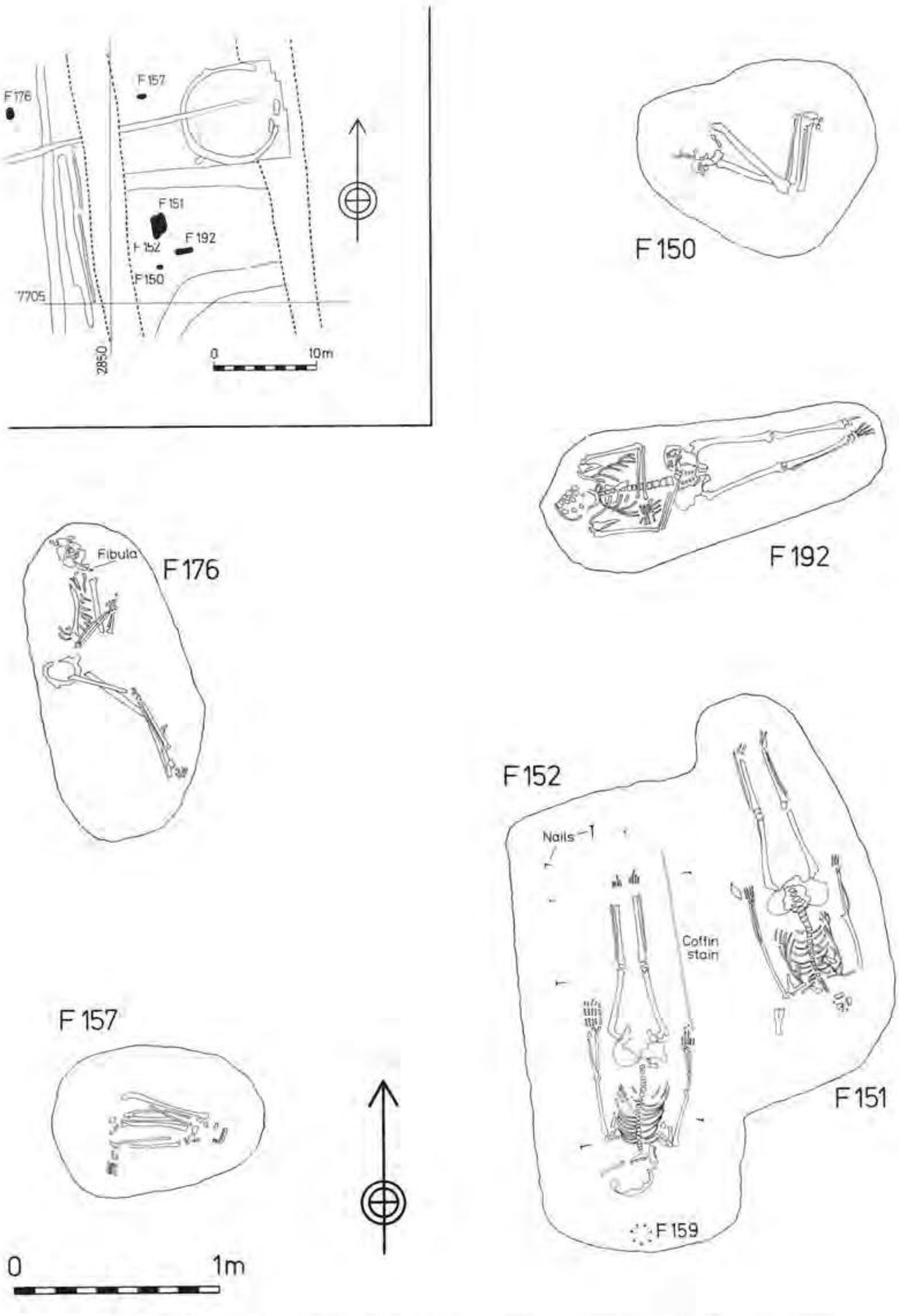


Fig.73 Maxey East Field: Phase 8 grave plans (locations inset). Scale 1:30.

During the pre-Roman Iron Age, a moderate crouch appears to be the most usual position, while very tightly crouched or bound interments are also found (see F.157). Although the number of burials dated to the pre-Roman Iron age is small, there is a possible bias towards interment on the left side, with the head orientated between north and east. There also appears to be an increasing trend towards interment *within* settlements in pits or graves (Wilson 1981).

F.150 (Grid 2855/7709): Male, age uncertain. Crouched inhumation in a very shallow grave (max. depth 0.06m). The upper half of the skeleton had been destroyed by ploughing, but enough of the lower skeleton survived to indicate a crouched position, with the head at the west end, and with the body lying on its right side, facing south. The grave fill was a sandy loam with scattered gravel pebbles (10YR 4/3). No finds.

F.151 (Grid 2856/7713): Female, age 18-19. Extended S to N inhumation. The skull was very fragmentary. Max. depth of grave at pelvis, 0.19m. The grave was immediately east of F.152, separated from the other grave by a thin tongue of gravel, in places only 1cm wide. Both graves cut F.159 (see below). At the southern end of the grave, near the head, was a mass of calcite-gritted pottery and animal bone. The grave fill was a sandy loam with scattered gravel pebbles (10YR 4/3).

F.152 (Grid 2855/7713): Female, age 18-24. Extended S to N coffined inhumation. The skull had collapsed. The grave was immediately west of F.151, and cut F.159. Along the eastern side of the grave, a very thin light grey clay stain indicated the presence of a wooden coffin, and eight iron nails were also found in the grave fill. These were all at a depth of *c.*5cm below the top of the surviving feature, and were all horizontal pointing inwards. They appear to represent the surviving nails joining the bottom of the coffin to its sides, and the position of these nails, and the absence of any in a vertical position may suggest that the base fitted *within* the sides of the coffin and was secured by horizontal nails passing through the sides into the edges of the base. The location of the nails also suggests that the coffin had a width of *c.*0.70m, and a length of at least 1.85m. The coffin stain was at a slightly higher level than the nails, and the line of the stain some 0.15m inside the line of the nails on that side suggests that this side of the coffin collapsed inwards.

Maisie Taylor has examined the coffin nails, and the iron-impregnated wood fragments attached to the nails suggest that the coffin was made of ring-porous wood, most likely elm. The nails have an approximate diameter (head) of 17mm; the shaft section is square and measures *c.*5mm below the head. A complete nail is 65mm long. Preservation of wood grain in the corrosion products suggests that the nails were driven into the wood at right-angles to the grain and there is no evidence that nails were driven into end grain. This tends to support the evidence from the field, discussed above. Only one nail had wood sufficiently well preserved to estimate plank thickness which is *c.*20mm.

The fill of the grave was a sandy loam with scattered gravel pebbles (10YR 4/3). Finds from the grave fill were one piece of animal bone, and four sherds of pottery (two calcite-gritted sherds, one sherd of a grey-brown gritty fabric).

F.157 (Grid 2854/7725): Male, middle aged. Crouched or ?bound inhumation in a shallow grave (max. depth 0.09m). The upper half of the skeleton was badly disturbed by the plough, but the surviving remains indicated that the skeleton was tightly crouched, with the head close to the knees. The extremely crouched position of the body may suggest that it had been bound. The grave fill was a sandy loam with scattered gravel pebbles (10YR 4/3). No finds.

F.176 (Grid 2843/7725): ?Male, age 36-53. Flexed N to S inhumation, the body lying on its left side. The skull was crushed, and the right femur missing. The depth of the feature was 0.15m. The fill was a sandy loam with even gravel mix (10YR 5/5). The only find was a Nauheim derivative brooch, resting on the left shoulder, with the spring pointing upwards and the catchplate end lowermost.

F.192 (Grid 2857/7716): Male, age 30-32. Extended W to E inhumation. Skull badly damaged. The fill at the western (head) end was a silt loam with scattered gravel pebbles (10YR 5/4), while that at the eastern (feet) end was a loamy sand with even gravel mix (10YR 5/6). This was redeposited subsoil, mixed with topsoil and thrown over the feet when the grave was filled-in. Finds included one sherd of calcite-gritted ware, animal bone and some foetal human bone, which did not appear to be part of the male burial and are probably residual from an earlier burial.

F.159 (? marker post-hole at Grid 2856/7713): This feature was cut by graves F.151 and F.152 and was located at their southern ends. It measured 0.66×0.50×0.12m, and may have been a post or marker around which the graves were positioned. The fill was a sandy loam with scattered gravel pebbles (10YR 4/4). No finds.

F.164 (Grid 2843/7704): This small pit contained the cremated remains of an adult, sex uncertain. No finds.

2. Other non-linear features: A large number of small pits, isolated post holes etc. could well date to this phase:

Features: 122, 125, 126, 130, 131, 165, 167, 169, 171, 172, 178, 190, 195, 197, 200, 225, 226, 230, 245, 250, 286, 287, 288, 290, 292, 293, 298, 299, 303, 304, 306, 307, 341, 342, 343, 356, 357, 364, 376, 387, 390, 465 and 468.

Only a few of these features have been selected for detailed description.

F.122 (Grid 2811/7675): An oval pit located in the eastern enclosure of the Phase 8 yard system described in section 3, above. An articulated dog skeleton was located at the pit bottom, at the north end, in layer 3.

Length 3.00m, width 1.20m, depth 0.44m.

layer 1: sandy loam with scattered gravel pebbles and some iron-pan (10YR 4/3).

layer 2: sandy loam with scattered gravel pebbles, tip lines and unidentified dark stains throughout the fill (10YR 4/1).

layer 3: sand with scattered gravel pebbles and weathering near the base of the profile (10YR 6/6).

Cut F.101 and F.60. Cut by F.118.

F.125 (Grid 3811/7671) A large pit located south of F.122.

Diameter 2.80m, depth 0.88m.

layer 1: homogeneous sandy loam with scattered gravel pebbles (10YR 3/3).

layer 2: silt loam with rare gravel and some iron-pan (10YR 4/4).

layer 3: silty clay loam with even gravel mix (10YR 5/3).

F.178 (Grid 2829/7743): An oval pit located 16m west of structure 3.

Length 2.00m, width 1.05m, depth 0.14.

layer 1: sandy loam with scattered gravel pebbles in an homogeneous mix, but weathered towards base of profile (10YR 5/4).

The fill contained quantities of calcite-gritted pottery and animal bone and a Nauheim derivative brooch (1st century AD).

F.190 (Grid 2862/7711): An oval pit located south of structure 3.
Length 3.00m, width 1.20m, depth 0.30m.
layer 1: homogeneous silt loam with scattered gravel pebbles (10YR 4/3).
layers 2 and 3: as layer 1, but 10YR 5/6.
layer 4: homogeneous sandy loam with even gravel mix (10YR 5/6).

F.195 (Grid 2865/7780): A rectangular pit located west of structure 5.
Length 1.70m, width 0.85m, depth 0.55.
layer 1: silt loam with scattered gravel pebbles and much charcoal (10YR 3/2). Possibly back-filled?

F.197 (Grid 2861/7717): A patch of charcoal and bone revealed on the stripped surface, diameter 0.30m, depth 0.03m, cut into the filling of F.156, immediately south of structure 3.
layer 1: sandy loam with dense charcoal and bone (10YR 4/3).

Phase 9: later 3rd to early 4th centuries AD (Fig.167)

Introduction: Large quantities of late 3rd and early 4th century pottery were deposited in the NE corner of the site, both into the main drainage ditches of earlier phases, and into a few features dug during that period. These, with the exception of pit F.254, were all linear features, and there was no evidence of any structural features. All of the pottery of this date occurred in features to the north of the main E to W drainage ditch F127/259/158/255, which appears to be of late Phase 8 date, and while on stratigraphic evidence, the features of Phase 9 date extended across the NW part of the site, pottery finds had a discrete distribution in the NE corner of the field. This suggests that any settlement from which these finds might derive was either within the confines of the present excavations, but has not survived, or else it was beyond the edge of the site, and we are seeing here domestic occupation debris dumped into ditches and pits beyond the immediate area of any Phase 9 houses or structures.

The north limit of the excavated area is defined by a so-called 'acoustic bank', *c.*30m wide and 4m high. This earthwork must effectively preserve a wide transect across the site for future investigation. The fields north of the bank are ploughed annually and the archaeological layers will continue to be truncated (see part I, above). Aerial photographs of the field to the north of the bank (north, that is, of the East Field) give little indication of the extent to which Phase 9 settlement extended into it. There are indications of linear features, but these might just as probably be of Phase 8 date; certainly there are no indications of negative cropmarks, that might result, for example, from the cast stone foundations of substantial buildings.

The pottery finds from Phase 9 are clearly of late 3rd and early 4th century date, although many Phase 9 features contained both recognised and unrecognised residual sherds from the substantial Phase 8 settlement which preceded the later settlement. While diagnostic Phase 9 colour-coated vessels were easily recognised, and additional confirmation of the date of these features was obtained from the coin evidence (see below F.254), many sherds of grey wares and particularly, calcite-gritted wares may well be residual. The pottery suggests that this phase did not last very long into the 4th century, as the later products of the Nene valley colour-coated industry, typified by overfired red, dark brown, dark grey or black colour-coats, and orange or grey fabrics and a 'metallic' lustre are largely absent. The latest finds, other than pottery, are the coins from F.254, (one is Hadrianic, the other is dated 260-268), a late 3rd or 4th century plate brooch from F.161, and a coin from the barrow mound in the West Field (F.600 layer 1) dated 351-353.

The distribution of pottery from Phase 9 features is shown in Figure 106. The samian from Features 155, 218, 222, 254 and 329 is all of Hadrianic or Antonine date.

We will consider Phase 9 features of the East Field in two groups, the first consists of ditches around a possible enclosure centred approximately on Grid 2875/7725 (i.e. an enlarged enclosure around the Phase 8 structure 3); the second is devoted to features nearer the north-westerly area of the East Field.

The enclosure (Features 161, 162, 199, 218, 222, 232, 250, 253, 254, 329, 473, 489 and 491): (Figs.40,68,71,72,167) The main drainage ditches, comprising Features 161, 162, 199, 250, 253, 473, 489 and 491 all probably had their origins in Phase 8, but were clearly open during Phase 9 and contained substantial quantities of late 3rd/early 4th century pottery. Features 473, 489 and 491 contained nine mortaria sherds, and these are all of 3rd or 4th century date (Catalogue Nos. M23-M31).

These features also contained many slabs of untooled limestone and irregular limestone lumps of various sizes, and these appeared to be associated with features of Phase 9 date, or with Phase 8 features which were either open or recut during Phase 9. Like the Phase 9 pottery, these also had a fairly discrete distribution in the NE corner of the site, and suggested the presence of a stone-built structure of some kind, but outside the excavated area.

Although none of the excavated limestone was tooled, one piece of architectural masonry was found by a quarry employee after this part of the site had been stripped to the ballast level. The location of this find was recorded, and it would appear to have come from one of the unexcavated sections of F.493. A plate brooch, dated to the late 3rd/4th century was found in F.161.

The features listed above formed the eastern and northern sides of what appears to be an enclosure of Phase 9 date. Finds dating to Phase 9 from F.161 were only present in sections of this ditch to the north of the intersection between F.161 and the Phase 8 E to W ditch F.158/255, and there is little evidence to suggest that the more southerly sections of F.161 were either open or receiving finds during Phase 9. It seems probable that a hedge running along the northern side of F.158/255, and probably also across the line of F.161 prevented finds from the Phase 9 settlement being deposited either in F.158/255 or in F.161 to the south, although a single sherd of a Nene valley mortarium, dated to the 3rd or 4th century may suggest that F.158 was still open during Phase 9 (Catalogue No. M5). Further evidence of the suggested hedge-line might be seen in the fact that F.218, a N to S Phase 9 ditch, butted at a point *c.*1m from the northern edge of F.158/255. To the SW, F.381 (which cut the uppermost fill of F.161 and F.158/255) might also have been of Phase 9 date, although this feature was not excavated, and this also butted just north of the northern edge of F.158/255.

The remaining features in this group formed the western side of the suggested Phase 9 enclosure, and consisted of a short length of ditch running west from F.218 (F.232), an E to W ditch running between F.218 and F.161 which divided the enclosure into two (F.222), and two features in the southern part of the enclosure (gully F.329 and pit F.254).

It is also possible that F.218 and F.489 continued north and west respectively to form the NW corner of the enclosure, but this area was not excavated. The entrance to the enclosure appeared to be on the east side, and was a re-use of the entrance across Features 161 and 473 which has been discussed in Phase 8.

Feature 218 contained three mortarium sherds dated AD 140-180 (Catalogue Nos.M18-M20) which are probably residual, and also half of a reeded hammerhead mortarium dated AD 250-350 (Catalogue Nos.M12-17); F.222 contained a mortarium sherd dated *c.*AD 230-400 (Catalogue No.M21).

Four features will provide examples of typical filling compositions.

F.218: a two phase ditch

layer 1:(2nd phase) width 0.60m, depth 0.30m. Homogeneous sandy loam with scattered gravel pebbles (10YR 3/2).

layer 2:(1st phase) width 0.60m, depth 0.22m. As layer 1.

F.222: width 0.60m, depth 0.21m. Homogeneous silt loam with scattered gravel pebbles (10YR 3/2).

F.254: diameter 3.00m, depth 1.05m. A circular pit.

*layer 1:*sandy clay loam with scattered gravel pebbles, charcoal common and two very large limestone slabs (10YR 3/2). Backfilled.

*layer 2:*sandy clay with scattered gravel pebbles; charcoal common (10YR 4/3).

Note: layer 1 of F.254, described above also produced two coins, one Hadrianic and the other dated to *c.*AD260-268, and a sherd of 4th century mortarium (Cat. No.M22).

North-westerly features (Features 154, 155, 177, 179, 369, 417, 421 and 431): (Fig.40) These features were a series of linear ditches over the NW quarter of the field. They are assigned to Phase 9 on the evidence of the stratigraphic relationship between F.155 and the ring-gully of structure 3 (F.170), and a few 3rd century sherds in the fill of this feature. The finds densities in these features were very low, but as previously noted, the finds of Phase 9 date formed a discrete distribution in the NW corner of the site. Most of these features were fairly shallow, and were traced with some difficulty. They appeared to form a series of slight field ditches, quite distinct from the large wide drains of earlier phases, and it is suggested that here we are seeing the outlying fields and enclosures of the Phase 9 settlement. The main ditch F.155 was traced for an E to W length of 68m. To the east, it entered the furrow on the eastern side of structure 3 (Phase 8), but did not emerge on the far side. It must have butted within the furrow, leaving an entrance between its butt and the N to S ditch F.218. The line of F.155 was continued by F.222 to the east of F.218, and this crossed the suggested Phase 9 enclosure and into the main ditch F.161. The western end of F.155 also entered a furrow, and did not emerge. It was not clear what happened further east, but there was either an entrance between this feature and F.396, or it turned south to meet F.396 (this section being destroyed by the furrow) which was part of the same ditch.

Features 179 and 417 were clearly contemporary with F.155, and constituted further subdivisions of this area in Phase 9; F.421 was contemporary with F.417, and the butt of F.431 opposite the western butt of F.421 suggested another entrance here. Feature 154 butted just south of F.155 and was probably also of Phase 9 date.

The features discussed here were marked by very similar fillings. Feature 154 was filled with homogeneous sandy loam with scattered gravel pebbles and pieces of limestone (10YR 4/3); other features (e.g. 155, 177, 179, 396, 417 and 421) were filled with homogeneous sandy loam with an even gravel mix (10YR 4/3). The E to W ditch, F.155 cut F.170 (the ring-gully of Phase 8 structure 3) and F.153 (Phase 8 ditch).

Roman features of the West Field, probably Phase 9 (Features 569 and 579): (Fig.46) The Phase 2 mound (F.600) included secondary deposits (see structure 14, Figs.50-53) of post-Neolithic date which included a scatter of Roman pottery. These finds came from deposits for which it was not possible to determine any internal sequence. The Roman pottery consists of calcite-gritted fabrics, Nene Valley Grey Ware and colour-coated wares. These finds were almost certainly deposited on the mound surface, and probably at a higher level than their finds locations. Subsequent erosion of the mound and ploughing has both mixed any possible secondary occupation layers, and caused considerable horizontal and vertical displacement of secondary finds from their original points of deposition. The distribution of diagnostically Roman pottery finds on the mound is shown on Figure 54. The barrow mound material, layer 1, also produced one Roman coin and this has been dated to AD 351-353.

This suggests that the settlement associated with the Phase 9 finds and features both on the mound and on the East Field may well have lasted as long as the mid 4th century, although the bulk of the Phase 9 finds might suggest that this occupation was predominantly in the late 3rd and early 4th century.

The absence of Roman pottery elsewhere on the West Field indicates that the settlements identified in the East Field (Phases 7 to 9) did not extend into this half of the site. The barrow must have survived as a substantial earthwork during the Roman period and was perhaps used as an island during winter flooding.

Two secondary burials (Features 569 and 579) were inserted into the mound, both W to E extended inhumations. These were almost certainly of Roman date, although the grave fills themselves did not contain dateable artefacts. It is possible that the finds in F.600, layer 1 may have included vessels deposited as grave goods, or they may even have been containers for cremations. Amongst the finds are a sherd of a Castor Box, and part of a colour-coated lid which fits the box (Catalogue Nos. 274 and 275). These sherds, and also a sherd of another colour-coated jar and a mortarium sherd (Catalogue No. M32) are of late 3rd/early 4th century date.

The practice of Roman barrow burial is relatively common in the east Midlands and SE England, and this custom appears to have been introduced from Belgium, where at least 350 barrows are known. Barrows of Roman date are usually smaller in size than prehistoric barrows, and they are generally conical with steep sides such as those at Daventry, Northants (Brown 1977) and the Bartlow Hills, Ashdon, Essex (Fox 1923). Insertions of Roman burials, usually cremations, into prehistoric barrows also appears to be a fairly common practice, and the large numbers of Roman finds in secondary contexts shows considerable activity on earlier mounds throughout East Anglia (see Fox 1923, 199-200, and papers by Lawson, Martin, Priddy and Taylor on barrows in Norfolk, Suffolk, Essex and Cambridgeshire respectively in Lawson *et al.* 1981).

The human bones from the two graves are considered by Ann Stirland in Part VI; here we list the other attributes of the two features concerned:

F.569 (Grid 2613/7719) (inhumation: male, age 36-39): W to E extended inhumation in a grave cut into the slumped mound material of structure 14; grave filling consisted of silt loam with scattered gravel pebbles (10YR 3/3). No finds.

F.579 (Grid 2610/7707) (inhumation: ? female, age 36-45): Badly damaged W to E extended inhumation in a grave cut into the slumped mound material of structure 14. This was also stratigraphically above the Phase 5.2 ditch, F.533. The grave filling consisted of silt loam with scattered gravel pebbles (10YR 3/3). Finds included burnt stones and an almost complete *bos* skull.

Finally, the tertiary fillings of three prehistoric features in the West Field produced isolated Roman finds; they are listed below:

F.527 (Phase 6 ditch): Three sherds in fabric 7 at Grid 2700/7653. (finds nos. M81.21806, 21809 and 21810).

F.559 (Phase 5.2 well): Single sherd in NVGW (fabric 1) from Grid 2744/7655 (finds no. M81.19413).

F.593 (Phase 5.1 ditch): Single sherd of Hadrianic or Antonine samian at Grid 2618/7627. (finds no. M81.21952).

III. The Finds

The Prehistoric pottery

by Francis Pryor

Introduction

The following account of pre-Roman pottery is based on sherd material; no vessels have been reconstructed, except where indicated. Diameters are taken at the external edge of the rim. Colours are given using the Munsell (see Appendix II) system, except in certain cases where the fabric is too dark to assess accurately; it should also be borne in mind that experience has shown that the surface colour of coarse, porous pottery is more a reflection of soil conditions after deposition, than the potter's original intention. Iron salts, manganese, fluctuating ground water rich in lime, together with humic and other acids of decay can radically affect the colour and condition of prehistoric pottery; dissolved crushed shell temper is easily mistaken, macrosopically, for chopped vegetable material; 'corky' surface texture is certainly a post-depositional effect (Pryor 1983a). These factors demand that the pottery descriptions given in the following Catalogues be treated with the greatest possible caution.

Hardness is described using the system employed at Fengate (based on the Moh scale) which is described in the Second Report (Pryor 1978, 69). 'The term "soft/hard" describes sherds that are just scratched by the fingernail, "soft" describes sherds that may readily be scratched by the fingernail, "very soft" sherds required consolidation.' The second Report (Pryor 1974a, 26) defines 'hard' as greater than fingernail and 'very hard' as greater than a copper coin; the term 'medium hard' refers to pottery intermediate between hard and very hard.

It is often difficult to decide whether sand has been added as a temper, or is merely present in the clay selected for use; but in either case the sand employed does not seem to have been graded into fine, medium or coarse grades; the following descriptions therefore use the term 'sandy' to describe a mix of all three grades.

The reader is reminded that Appendix V gives a complete list of all features, their phasing and Grid reference.

The Bronze Age pottery

Catalogue of illustrated sherds

Fig.74, No.1 Inturned rimsherd with flat int. bevel. Diameter c.300mm+. Found with twenty-four body sherds from (?) same vessel, total weight 87g. All sherds very weathered, surfaces lost or damaged. Traces of (?) punctate decoration on rim bevel. Soft, grog-tempered, slightly sandy; ext. lost, core dark, int.:7.5YR 4/2. Henge ditch, top of stripped surface, F.523 layer 1, Grid 2650/7709. M81.19525 (illustrated); also M81.21202-7.

No.2 Collar sherd. Diameter c.320mm at collar ext. Weathered, but harder than No.1. Grog-tempered, soft fabric, as No.1, but (?) undecorated. Ext.:7.5YR 6/4. Central ring-ditch mound, F.600 layer 4, Grid 2604/7708. M81.19610.

Discussion

The two sherds of Collared Urn are in the grog-filled soft fabric that is characteristic of the type, both locally and elsewhere. Both sherds were found in features of the henge complex, although not in primary contexts (see discussion of Phase 2 features in part 2, above); domestic refuse was absent and it may therefore be safely assumed that the sherds are genuine *urns*, most probably from secondary cremations. Although fragmentary, both vessels probably belong within Longworth's (1961) Secondary Series and find ready parallels at Fengate in both funerary (Pryor 1978, fig, 41 nos. 26a and 26b) and domestic contexts (Pryor 1980a, figs. 58 and 59); for other local parallels see Pryor (1974b) and Gibson (1979).

The Iron Age pottery

Note: Fabric descriptions used in the Catalogue are described in the discussion, below.

Catalogue of illustrated Iron Age pottery

Ploughsoil surface:

Fig.75, Nos.1-4 Bodysherds with scored decoration on ext. All sherds weathered; fabric IA, medium hard: int. dark, ext. 2.5YR 5/2. All from East Field surface at (Nos.1-4) Grids 2840/7680; 2840/7680; 2840/7675; 2840/7675 (to nearest 5m square; registration as Grid).

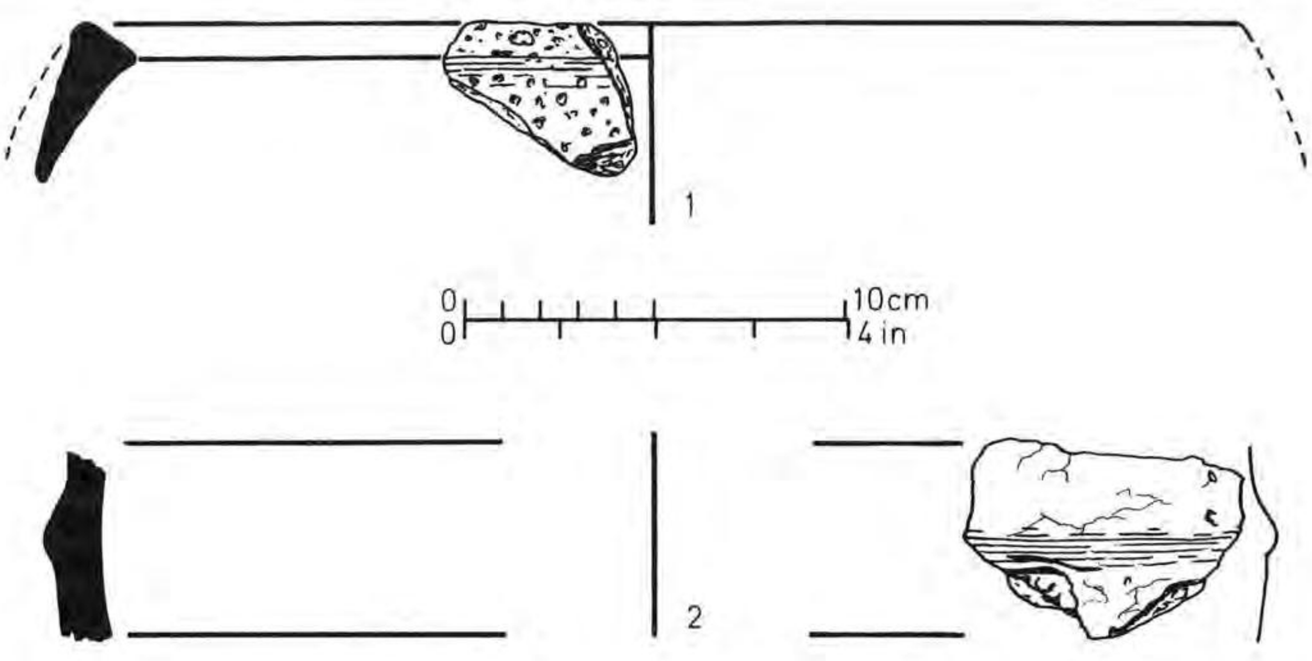


Fig.74 Maxey West Field: Collared Urn sherds from henge complex secondary levels. Scale 1:2.

No.5 Bodysherd with impressed punctate decoration and (?) compass-drawn arc. Fabric IB, medium hard; int., ext. and core dark. Closest parallels in Late Iron Age Lincolnshire (Elsdon 1975). From West Field surface at Grid 2705/7655.

No.6 Rimsherd of platter or shallow dish; wheel-made, but weathered. Diameter c.200mm. Faric II (?), very hard; int., ext. and core dark. From East Field surface at Grid 2880/7720.

F.257 (pit) Phase 6:

Fig.75, No.7 Rim and body sherds of high-shouldered globular jar with simple rim. Diameter 150mm. Fabric IA, hard; int. and core dark, ext. mottled dark to 10YR 5/3; firing cracks. Layer 1, Grid 2865/7677. M80.2873.

No.8 Rimsherd of (?) necked jar/bowl. Diameter 180mm. Fabric II, weathered, but with finely crushed shell; hard; core dark, ext. and int. 2.5YR 4/2; wheel-made. Layer 1, Grid 2865/7677. M80.2872.

F.258 (pit) Phase 6:

Fig.75, No.9 Rimsherd, rounded and slightly everted, from globular bowl/jar. Diameter c.180mm. Fabric II, very hard, with sub-angular grits; dark core, int. and ext. 5YR 5/3 (and mottled dark). Handmade, but possibly finished on turntable. Layer 1, Grid 2869/7678. M80.2891.

No.10 Rim and body sherds of globular jar; rim beaded. Diameter 130mm. Fabric IA, unweathered, hard; int. black, ext. and core 5YR 3/1. Handmade. Layer 1, Grid 2869/7678. M80.2892.

No.11 Nearly complete profile of bucket/tub-shaped jar (copy of wheel-made form?). Low cordon below rounded rim with slight int. facet. Diameter 150mm; ht 135mm; base diameter 150mm. Fabric IA, very hard; int. ext. and core black/dark grey mottled. Handmade. Very similar vessel found in F.559 (Fig.76, No.14). Layer 1, Grid 2869/7678. M80.2889.

No.12 Rimsherd of storage vessel. Fabric IA, but very shelly and coarser (2mm+) gravel inclusions; hard; int. 2.5YR 5/2; ext. 5YR 3/3. Layer 1, Grid 2869/7678. M80.2895.

F.365 (pit, East Field) possible Phase 5:

Fig.75, No.13 Bodysherd with very rough lattice scoring. Fabric IA, hard; dark core, int. 2.5YR 4/4, ext. 5YR 3/2. Layer 1, Grid 2885/7677. M80. 11003.

No.14 Rimsherd of rounded globular bowl; rim vertical, pinched-up with int. facet. Diameter c.200mm. Fabric IA, medium hard; int., ext. and core very dark grey/black. Layer 1, Grid 2885/7677. M80. 11001.

No.15 Bodysherd with haphazard, dense, scoring. Fabric IA, very hard; ext. and core 10YR 4/2; int. 5YR 4/3. Layer 1, Grid 2885/7677. M80.11002.

F.499 (gully; structure 23) Phase 5:

Fig.75, No.16 Rimsherd of large (? globular) jar. Flat top decorated with close-set fingertip impressions; groove on int. rim face bounded by pinched-up cordon. Diameter c.280mm. Fabric IA, medium hard, friable; int. and core dark, ext. c.2.5YR 4/4. Variant of common local Middle I.A. form (Pryor 1974a, fig. 21, no. 20 etc.). Layer 1, Grid 2664/7645. M80.21671.

F.502 (gully, structure 23) Phase 5:

Fig.75, No.17 Rimsherd of high-shouldered jar; rimtop roughly flattened, with fingertip impressions. Diameter c.200mm. Fabric IA, medium hard; int. and core dark; ext. 10YR 5/3. Handmade. Layer 1, Grid 2671/7650. M80.21042.

No.18 Rimsherd of small bowl/jar: simple vertical rim. Diameter c.100mm (or slightly larger?). Fabric IB (?), medium hard, smooth finish on int. and ext., core dark; int. and ext. c.5YR 4/4. The finish typical of E.I.A. wares locally, but globular shape is M.I.A. Layer 1, Grid 2671/7650. M80.21036.

No.19 Rimsherd of simple, high-sided bowl. Diameter c.120mm. Fabric IA, weathered, medium hard; int., ext. and core black. Layer 1, Grid 2671/7650. M80.21032.

F.503 (ditch/gully, structure 23) Phase 5:

Fig.75 No.20 Rim and bodysherds of concave-necked jar; rimtop flattened, with fingertip decoration; neck hollow carries fingertipping. Diameter c.230mm. Fabric IB, medium

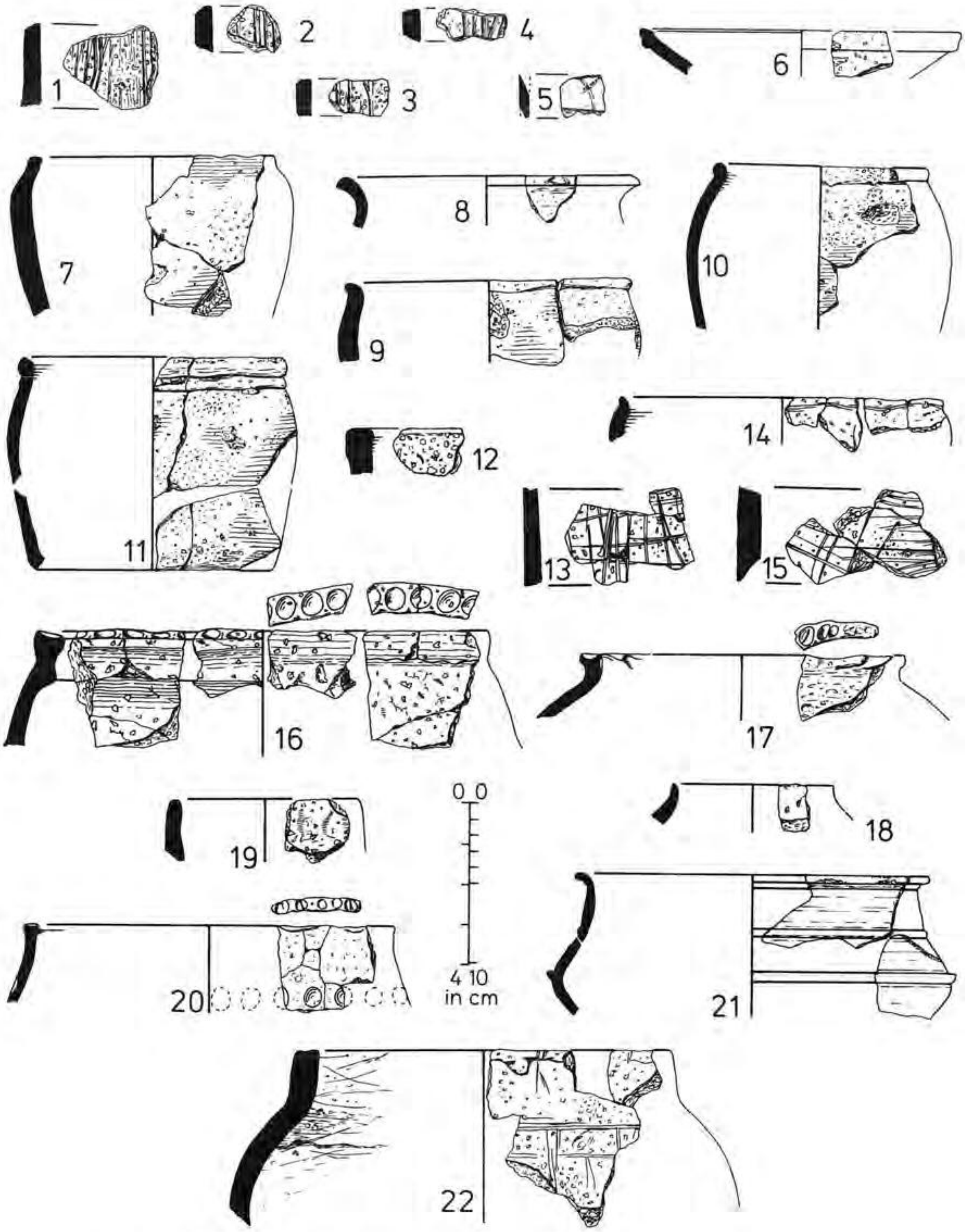


Fig.75 Maxey West Field: Iron Age pottery (Phases 5 and 6). Scale 1:4.

hard; int., ext. and core dark/5YR 3/3 mottled. An early (intrusive?) form; recalls Vicarage Farm, Fengate (Pryor 1974a, fig. 14, nos. 1, 22, 26 etc.). Layer 1, Grid 2668/7652. M80.21141.

F.527 (ditch) Phase 6:

Fig.75,No.21 Rim and bodysherds of necked jar with cordons on neck and shoulder. Diameter 220mm. Fabric II, but hard and with fine sand, a 'Romanised' local (Nene valley?) fabric; firing uneven on ext., black/55YR 4/3 mottled; core dark, int. 10YR 6/6. Layer 1, Grid 2700/7653. M80.21806.

F.532 (ditch) Phase 6:

Fig.75,No.22 Rimsherd of high-shouldered (globular?) vessel; roughly smoothed lattice decoration (scored); rim top finished with applied clay fillet. Diameter *c.*230mm. Fabric IA, medium hard; int., ext. and core dark/5YR 4/3 mottled. Layer 1, Grid 2654/7703. M80.21182.

F.533 (ditch) Phase 5.2:

Fig.76,No.1 Simple rimsherd of vertical-sided bowl with haphazard scoring. Diameter 130mm. Fabric IA, hard; int., ext. and core black. Layer 1, Grid 2667/7702. M80.20076.

No.2 Rim and bodysherds of globular vessel with short upright neck and lightly flattened simple rim. Diameter c.300mm. Fabric IA with large (10mm+) fossil/shell inclusions; medium hard, friable; dark core, int. 5YR 7/3; ext. very variable: black . . . 5YR 4/3 . . . 10YR 4/3. Vertical finger smoothing on lower body; coils in section. Layer 1, Grid 2634/7709. M81.19314.

No.3 Rimsherd of high-shouldered globular vessel, with simple everted rim: rimtop slashed diagonally; light scoring/smoothing on ext. Diameter c.150-200mm (warped). Fabric IC with grog and rounded quartzite; hard, int. black, ext. 5YR 3/2. Layer 1, Grid 2696/7709. M81.19521.

No.4 Neck/shoulder sherd with scoring below shoulder. Fabric IA, medium hard; int., ext. and core very dark. Layer 1, Grid 2696/7707. M81.19647.

No.5 Bodysherd with light scoring. Fabric IA, hard; core dark; int. and ext. 10YR 3/2. Layer 1, Grid 2616/7707. M81.19647.

No.6 Bodysherd of very large vessel with light, smoothed scoring. Fabric IB, hard; int. 5YR 7/3; ext. and core 5YR 5/1. Layer 1, Grid 2642/7709. M81.19510.

No.7 Rimsherd of high-shouldered vessel; rim simple, rounded; vertical neck; scoring on neck and shoulder. Diameter c.400mm. Fabric IA, medium hard; core and part int. dark; ext. 5YR 3/3. Layer 1, Grid 2616/7707. M81.19651.

F.559 (well) Phase 5:

Fig.76 No.8 Rimsherd of closed jar. Diameter 340mm. Fabric IA, hard; dark core, int. and ext. 10YR 5/3. Layer 2, Grid 2744/7655. M81.19408.

No.9 Near-complete jar, lightly flattened rim; ext. heat-cracked. Diameter 120mm; ht 135mm; base diameter 90mm. Fabric IA, medium hard; int. and core black; ext. black, mottled (c. 5YR 5/1). Layer 2, Grid 2744/7655. M81.19505.

No.10 Rim, body and base sherds of convex-sided jar. Rim angle uncertain; shoulderless (?). Diameter c.145mm; ht c.200mm; base diameter c.100mm. Fabric IA, medium hard with gravel inclusions; int. and core black; ext dark, 5YR 4/4, mottled. Layer 2, Grid 2744/7655. M81.19446 and 19506.

No.11 Rimsherd of storage vessel, concave neck, high, angular shoulder; rimtop flattened. Diameter c.340mm. Fabric IA, medium hard; int. and core 2.5YR 4/2; ext. 2.5YR 4/6. Layer 2, Grid 2744/7655. M81.19409.

No.12 Rimsherds of high, slack-shouldered jar; light scoring below shoulder. Diameter 140mm. Fabric IB with sub-angular grits; medium hard; black/dark grey int., ext. and core. Layer 2, Grid 2744/7655. M81.19445.

No.13 Rimsherds of vertical-sided bowl/jar; light fingernail on rim ext. Diameter 160mm. Fabric IA, medium hard; int. and core black, ext. 5YR 3/3 to black. Layer 2, Grid 2744/7655. M81.19444.

No.14 Rimsherds of convex-sided bowl/jar; imitation of wheel-made form?. Low cordon below rounded rim. Diameter 180mm. Fabric IA, hard; int., ext. and core very dark grey. Very similar to Fig.75 No.11. Layer 2, Grid 2744/7655. M81.19423.

No.15 Rimsherds of closed bowl/jar with flattened rim. Diameter 180mm. Fabric IA, hard; int., ext. and core very dark grey. Layer 2, Grid 2744/7655. M81.19416.

No.16 Basesherds of storage vessel with concave base. Base diameter 160mm. Fabric IA, hard; int. and core 5YR 4/3; ext. 2.5YR 5/4. Layer 2, Grid 2744/7655. M81.19407.

No.17 Base sherds of simple bowl/jar. Base diameter 100mm. Fabric IA, hard; int. and core very dark grey; ext. 5YR 6/4, mottled. Layer 2, Grid 2744/7655. M81.19478.

F.572 (structure 19) Phase 5:

Fig.77, No.1 Rimsherd of (?) closed vessel; deep fingertip impressions on rim top. Diameter c.220mm. Fabric IA, medium hard; int. and core very dark grey; ext. 5YR 6/2. Layer 1, Grid 2641/7712. M81.19552.

No.2 Rimsherd of slack-shouldered bowl/jar; flat rim. Diameter c.190mm. Fabric IA, hard; int. and core 5YR 4/3; ext. black. Layer 1, Grid 2641/7712. M81.19361.

No.3 Rimsherd of high-shouldered jar. Diameter c.240mm. Fabric IA, hard; dark core; int. 5YR 6/4; ext. 5YR 4/3. Layer 1, Grid 2641/7712. M81.19332.

No.4 Rimsherd of high, slack-shouldered bowl/jar; deep scoring. Diameter c.140mm. Fabric IA, hard; ext., int. and core black. Layer 1, Grid 2641/7712. M81.19333.

No.5 Rimsherd of high, slack-shouldered globular jar. Diameter c.100mm. Fabric IB, hard; int. and core dark; ext. very variable (Black . . . 5YR 5/2). Layer 1, Grid 2641/7712. M81.19551.

No.6 Rimsherd of high-shouldered jar. Two thumb impressions on neck; scoring on body. Diameter c.160mm. Fabric IA, medium hard; ext. and core very dark grey, int. 5YR 4/3. Layer 1, Grid 2641/7712. M81.19360.

Nos.7-10 Bodysherds with scoring. All sherds in fabric IA, hard to medium hard. Int. and core generally dark; ext. 10YR 4/3 . . . 10YR 5/3 (except No.10-black). M81.19394 (no.7); 19329 (No.8); 21943 (No.9); 19330 (No.10).

No.11 Basesherds of splay-sided vessel; base angle pinched-out; traces of scoring. Base diameter c.120mm. Fabric IA, hard; int. and core dark; ext. 2.5YR 5/2. Layer 1, Grid 2744/7655. M81.19387.

No.12 Broken basesherd of splay-sided vessel; ext. 'fluted' scoring (cf. Pryor 1983a, Group 2, Body Dec. 7). Base diameter c.120mm. Fabric IA, hard; int. and core black; ext. 10YR 5/3. Layer 1, Grid 2744/7655. M81.19331.

No.13 Basesherd, concave angle, roughly finger-impressed. Base diameter c.90mm. Fabric IA, medium hard; int. and core, black; ext. 10YR 5/4. Layer 1, Grid 2744/7655. M81.19338.

F.584 (structure 30) Phase 5:

Fig.77, No.14 Rim and bodysherds of convex-sided jar; lightly everted rim, ext. scored? Diameter 140mm. Fabric IB. weathered, medium hard; dark core; ext. and int. black . . . 10YR 5/4. Layer 1, Grid 2623/7728. M81.22105.

Discussion

Fabrics

Most of the Iron Age pottery from Maxey is tempered with crushed shell; the shell is fossil and the clay probably comes from the local Oxford Clay facies. The reader is referred to the report by Mr John Cooper, below. The pottery is closely comparable with that from Fengate which was analysed by Mr D.F.Williams (in Pryor 1980a 87-8; 1983a, 134-161). Quotations below are from Dr William's reports.

Maxey fabric IA: This fabric is closely similar to Fengate fabric 1A which is characterised by 'numerous large (up to 6mm across) fragments of shell normally scattered through the fabric.' Pottery of this type at Fengate is generally softer, owing to that site's slightly more acid soils, which tend to dissolve shell temper, leaving a 'corky' finish. Small, sub-angular gravel grits are also found in Maxey fabric IA.

Maxey fabric IB: This fabric resembles Fengate 1B which is 'similar to fabric 1A, except that the size of the shell is usually much smaller (average size 2mm across)'. Again, Maxey examples are better preserved and harder, although the sub-angular inclusions found in IA are less frequently encountered.

Maxey fabric IC: The equivalent of Fengate fabric 1C 'which contains lesser quantities of shell than the two groups above, and in addition have a fair amount of sub-angular quartz grains present, with a scatter of small sandstone. Hard fabric, light to dark grey and noticeably sandy.'

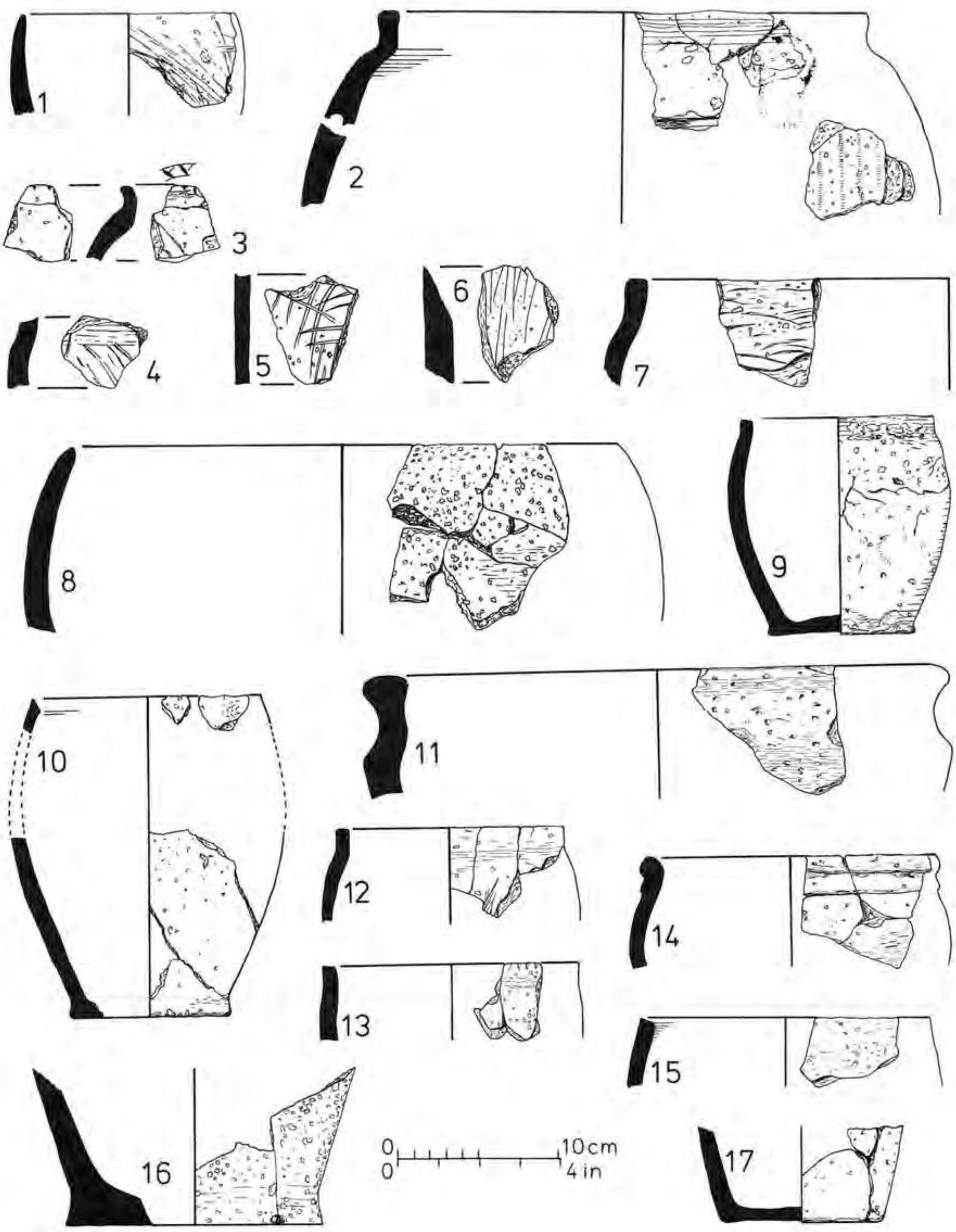


Fig.76 Maxey West Field: Iron Age Pottery (Phase 5). Scale 1:4.

Maxey fabric II: The equivalent of Fengate fabric 2, is 'heavily charged with quartz sand grains.' Only a few sherds, all wheel-made, like the vast majority of their Fengate counterparts, were found. Fengate fabric 3 was not encountered at Maxey, where only a very few sherds appear to have small grog inclusions.

Middle Iron Age wares

Pottery of Middle Iron Age type was found in features of Phases 5.1 and 5.2. The subdivision of Phase 5 was largely based on stratigraphy and spatial considerations, as the pottery generally shows no clear typological development. The only clear exception is the isolated well, F.559 which contains pottery of 'late' type.

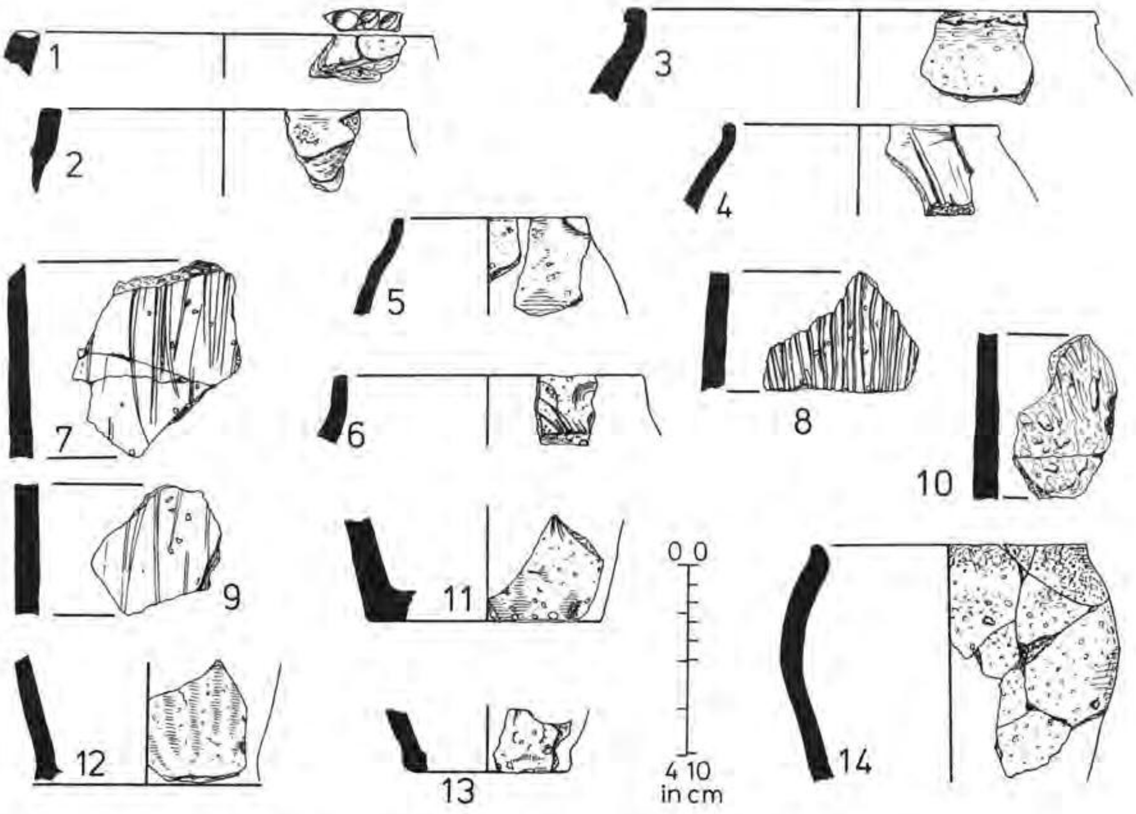


Fig.77 Maxey West Field: Iron Age Pottery (Phase 5). Scale 1:4).

Clearly the most important published parallels for this material are from Fengate (Padholme Road and Cat's Water subsites), where the range of forms and fabrics is closely similar. Most of the Maxey material is typologically later than the earliest Fengate Middle Iron Age group, that from pits of the Padholme Road subsite (Pryor 1974a, figs. 20-22). Pit groups from back-filled, sealed contexts were rare at both sites, and for the same reason : a high ground water level. Middle Iron Age pottery from both sites largely derives from drainage ditches which were cut and recut over many years, mixing together the material in them. Given the heterogeneous nature of the collection we will first discuss assemblages from the principal pottery-yielding contexts on a feature-by-feature basis.

The East Field yielded very few sherds of proven Middle Iron Age type. The topsoil survey revealed four diagnostic sherds (Fig.75, Nos.1-4) and one small back-filled pit, F.365, produced three diagnostic sherds (Fig.75, Nos.13-15). Scoring is generally indicative of a Middle Iron Age date, but it does survive into Late Iron Age times, although not in great quantities; combing seems to have been used as a Late Iron replacement. The fragmentary rimsherds of Fig.75 No.14 are from a handmade globular jar of late type (see, for example Wakerly, Phase II (Jackson and Ambrose 1978)). The remaining features are all located on the West Field.

F.499 (gully associated with Phase 5.1 structure 23): A closed group from a back-filled feature stratigraphically early in Phase 5.1. This feature produced little diagnostic pottery, except for the fingertip-impressed vessel of Fig.75, No.16. This vessel is typical of Middle Iron Age usage (e.g. Barley (Cra'ster 1961)); Fengate parallels are cited in the Catalogue, above.

F.502 (gully of Phase 5.1 structure 23): This shallow feature probably filled-in rapidly. The pottery is probably broadly contemporary with that from F.499, discussed above. Finger-tipping is again encountered (Fig.75, No.17, but on a high-shouldered vessel (*cf.* Pryor 1974a, fig. 21, no.17). One sherd of the group is of probable Early Iron Age type (perhaps 5th century?) (Fig.75, No.18); it is probably residual. The small, heavy-walled jar, although hardly diagnostic, is of probable Middle Iron Age type (Jackson 1975, fig. 24). A date in the earlier Middle Iron Age is indicated (perhaps 3rd century?).

F.503 (gully associated with Phase 5.1 structure 23): This gully, like the previous two features was probably open for a relatively short period. The pottery (Fig.75, No.20) has fingertip impressions along the rim top and within the slight neck concavity; these are generally accepted as early features (Harding in Jackson

1975, 70), although the practice of finger-tipping continues from Early into full Middle Iron Age times.

F.532 (linear ditch of Phase 5.2): The ditch complex of which this feature forms a part shows evidence for frequent recutting. Pottery is hard, well-fired and generally 'late' in appearance; many of the plain body-sherds are from globular vessels which are placed in phase II at Wakerly; this phase is dated to the early 1st century BC (Jackson and Ambrose 1978); closely similar globular handmade pottery has been recovered at Moulton Park, Northampton (Williams 1974, group 1). This material undoubtedly post-dates Padholme Road, Fengate, and an early 1st century BC date (following Wakerly) seems appropriate. The illustrated sherd (Fig.75, No.22) carries light, lattice scoring; this type of scored decoration tends to occur on later sites (e.g. Jackson and Ambrose 1978, fig. 38, no.78).

F.533 (linear ditch of Phase 5.2): This feature was subject to frequent recutting. no wheel-made forms were recovered, but the pottery is hard and well-fired, and includes 'late' globular forms, discussed above (Fig.76, Nos.2, 3 and (?) 7). Scored wares were especially common (Fig.76, Nos.1, 3-7); some of these may be residual.

F.559 (well, of Phase 5.2): It is always hard to determine whether the material from apparently primary contexts in wells accumulated slowly while the feature was open and in use, or whether it was dumped there on abandonment. In the present case nearly all the pottery was found at, or near, the bottom of the well and the near complete state of one vessel (Fig.76, No.9) suggests that it was thrown onto water, or soft mud, as part of a single event (i.e. not with a mass of secondary refuse). Most of the other pottery is very fresh and unweathered; this suggests that this apparently sealed pit group probably accumulated over a relatively long period of time, while the well was in use.

The assemblage is characterised by late forms in hard, well-fired fabrics. Scored ware is represented by one vessel only (Fig.76, No.12). The coarse barrel-shaped handmade jars (Fig.75, Nos.9,10,15-17) are associated with wheel-made forms at Wakerly (Ambrose and Jackson 1978); indeed, two vessels of more elaborate profile (Fig.75, No.11 and Fig.76, No.14) are probably copies of wheel-made forms (Pryor 1983a, group 2, body form 89). Taken as a group, the pottery would be equally at home within Phase 6, as in Phase 5.2; the assemblage probably accumulated (when the well went out of use?) in the late 1st century BC or early 1st century AD.

F.572 and F.573 (shallow pit or scoop associated with structure 19): This feature was filled-in deliberately, in a single episode. The pottery includes characteristic Middle Iron Age types, including a variety of scored wares (Fig.77, Nos.4, 6-10); the 'fluted' sherd (Fig.77, No.12) has many parallels at Fengate (Pryor 1983a, group 2, body decoration 7). There are no obviously later pieces: beaded rims are absent, as are barrel jars and high-shouldered globular jars. Scoring is deep and in a variety of 'designs'; the finger-tipping along the rim top of Fig.77, No.1 is an early feature (but see F.503, above). Taken as a whole, the group is distinctly better-made than Padholme Road Fengate, and finds its closest parallels among the hand-made (group 2) wares of Cat's Water; a date centering on the 2nd century BC is indicated.

F.584 (ring-gully of structure 30; probably Phase 5.2): In addition to the high-shouldered globular jar illustrated (Fig.77, No.14), the feature also produced a small sherd of scored ware (wt 8g). The pottery is fresh and the feature was probably short-lived. The high-shouldered vessel would probably best be placed in Phase 5.2.

Fabric No.	*Weight (g)*	*% of total weight*
Phase 5		
21	8410	75.24
22	2183	19.53
23	584	5.22
24	(absent)	
	Total 11177	
Phase 6		
21	472	78.92
22	94	15.72
23	8	1.34
24	24	4.01
	Total 598	

Table 17: Maxey, West Field pottery fabrics, Phases 5 (Middle Iron Age) and 6 (Late Iron Age)

General Considerations

Coarse shell-tempered fabrics predominat (Table 17) and it seems probable that these were made in the neighbourhood (see report by Mr John Cooper, below). So-called 'fine wares', usually in fabric II were not frequently encountered. Basically, although far smaller, the assemblage fabric composition recalls Fengate (Pryor 1983a, table M22).

The relative dating of the pottery generally supports the stratigraphic phasing discussed in part II: two groups could be readily distinguished, with a small, possibly intermediate, sub-division.

'Early' Group: This group comprises pottery from Features 499, 502 and 503. Broadly comparable material was also found, but in fragmentary form, in Features 498, 504, 505 and 510. All these features are located around the post-holes and gullies of structures 22 and 23 (Fig.60). These structures form the focus of Phase 5.1. Pottery is characterised by frequent finger-tipping, and tends to be softer and less throughly fired than other Middle Iron Age wares at Maxey. However, neither forms nor fabrics resemble in any way those which are generally seen to be characteristic of the Early Iron Age or Late Bronze Age in the region (e.g. Pryor 1983a, group 1; May in Simpson 1981, figs 8-9; the present author finds the Late Bronze Age attribution somewhat early in view of recent radiocarbon dates from Vicarage Farm and Cat's Water, Fengate and Washingborough Fen (Pryor 1983a, chapter 6)). The 'early' group is probably broadly contemporary with Padholme Road or the initial years of the main Cat's Water settlement—perhaps the 2nd or 3rd centuries BC.

'Middle' Group: This small group is largely defined by default. It comprises Features 572/3 and 584 (structures 19 and 30 respectively), dated stratigraphically to Phase 5.2. The few vessels involved are entirely typical of the Middle Iron Age and lack diagnostically 'late' forms. Only one 'early' form, itself a long-lived motif (finger-tipping along rim top) is present. On stratigraphic and typological grounds this group would seem to post- date the 'early' material, and a date centering on the 2nd century, or somewhat later might accord with the available evidence.

'Late' Group: This group derives from two main sources: the linear ditches of Phase 5.2 (especially F.532 and F.533), and the well, F.559. The ditches clearly cut features of Phase 5.1, and seem to have stayed open and in use for an extended period (see part II for a discussion of this). There can, moreover, be little doubt that they are contemporary with structures 19 and 20 which produced 'middle' period pottery, in fresh condition, and from deliberately back-filled deposits. Thus the ceramic evidence accords with the stratigraphic: there can be little doubt that the linear ditches of Phase 5.1 must have stayed open for some time after the abandonment of structures 19 and 20. Individual 'late' style vessels are discussed in the feature-by-feature finds' discussion above, but the diagnostic traits include; markedly harder, better-fired fabrics; rounded globular vessels and bucket, barrel or tub-shaped jars; some vessels seem to be imitating wheel-thrown forms. The second 'late' element is the well, F.559; the pottery from this feature's lower level seems to have been thrown-in, piece by piece when the well was still open; it would, perhaps, be reasonable to suppose that this mainly took place when the well had gone out of regular use. All the diagnostic 'late' forms mentioned above are present. Again a fairly long life is indicated, perhaps from Phase 5.1, until the end of 5.2, or even Phase 6.

Late Iron Age wares

We have already noted, in part II above, that the distinction between Phases 6 and 7 is based more on the spatial relationships of the various features involved than on pottery typology alone. Most of this small collection derives from the West Field, but a few features on the East Field could be shown, stratigraphically, to antedate the main Phase 7 developments, and these are included here. We will consider material from the two fields separately.

The East Field provides two features that clearly ante- date Phase 7: Features 257 and 258 which are cut by Phase 7 deposits of the main linear ditch, F.161. These pits, however, are in turn cut into the primary layer of F.161 at a point where an entranceway into the main Phase 8 yard, system prevented the earlier deposits from being completely removed by recuts. This chance discovery raises the possibility that an important element of the Romano-British yard system might have its origins in Phase 6 (or possibly even earlier). The matter is discussed by David Gurney in part II, above.

Fabric No.	*Weight (g)*	*% of total weight*
21	1813	71.49
22	510	20.11
23	201	7.92
24	12	0.47
Total	2536	

Table 18: Maxey, East Field: pottery fabrics of vessels from Phase 6 (Late Iron Age) pits F.257 and F.258

F.257 (pit within F.161 at Grid 2865/7677): This pit was probably back-filled, perhaps with primary rubbish, as the sherds are fresh and unbraded. Only two vessels are represented (Table 18) and both are illustrated (Fig.75, Nos.7 and 8); the coarse high-shouldered jar is a globular form that has its origins at the close of the Middle Iron Age; the necked bowl/jar is in a 'native' fabric, and an Iron Age date is perhaps indicated.

F.258 (pit within F.161 at Grid 2869/7678): This pit was back-filled, probably at the same time as F.257; the ceramic assemblage is larger, but otherwise closely comparable. A variety of types are represented (Fig.75, Nos.9-12) (Table 18), including varieties of high-shouldered globular jars and a storage vessel. The globular jar with beaded rim (No.10) is a very late form, and could be of post-Conquest date (similar vessels were found in ultimate Iron Age or early Roman contexts at Orton Longueville (Dallas 1975)). The close similarity of the distinctive globular jars form F.559 (Fig.76, No.14) and F.258 (Fig.75,No.11) should be noted.

Finally, one distinctive Late Iron Age sherd was found in the East Field topsoil (Fig.75, No.6). As might be expected, it is weathered; its fabric resembles fabric II, but is softer and coarser, and probably of local manufacture. Dishes or platters are unusual on native sites of the Late Iron Age or early Roman period in the region (Cat's Water Fengate produced a single example (Pryor 1983a, fig. M127, No.37)).

Turning to the West Field, we have noted above (part II) that features of Phase 6 are concentrated around the SE corner of the field, in an area where plough and machine damage was particularly severe. Most linear features are, therefore, truncated and finds are accordingly rare. Two weathered wheel-made sherds were recovered from the secondary filling of the Phase 6 ditch F.527, at a depth of 20cm; they are from the same cordoned necked jar, the form is 'Belgic', but the fabric is hard, 'Romanised' (Fig.75, No.21). These sherds provide a *terminus ante quem* for the linear ditches in this area. Pottery of probable Phase 6 type accumulated in the well, F.559, nearby. This material is considered with the 'late' Middle Iron Age wares in the previous section. The remainder of the Phase 6 collection consists of plain bodysherds from the linear ditches of the SE corner, together with the better preserved group from the fragment of gully (F.500) at the south end of F.506. This material is in a more fresh state than that from the linear ditches; it includes shell-tempered fabrics and fragments of hard-fired plain bowls; no diagnostic (i.e. wheel-made) sherds were recovered, but the hardness of the fabric and the general high quality of the finish suggest a post-Middle Iron Age date.

The Roman pottery

By David Gurney

Introduction

Maxey produced a substantial and varied assemblage of Roman pottery, almost all of it from the settlement areas of the East Field. The report is in three parts: the Introduction discusses the arrangement of the Roman pottery archive, briefly outlines the phasing used here (discussed in greater detail in part II, above), and concludes with a description of the various wares encountered; the latter includes a report on shell inclusions by Mr John Cooper of The British Museum (Natural History). The second part forms the bulk of the report and is given over to a detailed Catalogue: samian wares (Felicity Wild) and mortaria (K.F.Hartley) are followed by the Romano-British coarse wares; the Catalogue concludes with a short report on a Gallo-Belgic stamp (Dr Valery Rigby) and a discussion of calcite- gritted storage vessels. The report concludes with the third part, the Discussion.

The Roman pottery from Maxey comes from features allocated to Phases 7, 8 and 9 on the site, covering the period from the mid-1st century AD through to the 4th century. This occupation does not appear to have been continuous. Over 300 Roman sherds were recovered from the ploughsoil during the extensive pre-excavation survey. These are considered in part I and their distribution is shown in Figure 30.

Over 7500 sherds were recovered from features (Table 19). The position of each sherd was accurately recorded on the finds sheets, giving details of feature number, section numbers, layer, depth and site co-ordinates. A sketch plan of the distribution of finds within each excavated section was drawn on the reverse of the relevant sheet. Each sherd was allocated a unique finds number, and this remains the standard means of referring to any find. Although sherds are allocated Catalogue Numbers, this is only to facilitate the location of the relevant illustration, and when referring to a sherd, its finds number as given in the context information at the end of each catalogue entry should also be cited. This will enable any catalogued sherd to be located in the Level 3 Archive. The pottery is deposited in Peterborough Museum.

Fabric	*Number of sherds*	*Weight (grams)*	*% by number*	*% by weight*
1	1840	31011	23.6	20.0
2	126	2062	1.6	1.3
3	315	5145	4.0	3.3
4	373	4853	4.8	3.1
5	3470	82071	44.5	52.8
6	488	10604	6.2	6.8
7	402	7081	5.1	4.6
8	278	3328	3.6	2.1
9	279	4294	3.6	2.8
10	39	1052	0.5	0.7
11	9	44	0.1	0.02
12	162	2329	2.1	1.5
13	20	1466	0.3	0.9
Totals	7801	155340	100	99.92

Table 19: Roman pottery: sherd counts, total sherd weights and percentages by number and weight of the principal fabrics represented

The archive

All the context and analysis data for the Roman pottery (Phases 7, 8 and 9) have been put on the Project's Apple computer. This was done in two stages: firstly the context information of each finds number as recorded on the finds sheets used in the field (data categories 1-8 below), and secondly, the information on each sherd obtained from post-excavation analysis (data categories 9-17 below). Thus for each sherd the following categories of information are available:-

Field Record Data	*Analysis Data*
1. Finds number	*9.* Fabric number
2. Box number	*10.* Vessel part
3. Feature number	*11.* Rim diameter
4. Section numbers	*12.* Rim percentage
5. Grid Easting	*13.* Base diameter
6. Grid Northing	*14.* Height
7. Layer number	*15.* Form number
8. Depth	*16.* Weight
	17. Notes

For analysis categories 9, 10 and 15, the data was entered on the computer record level 4 archive as a numbered code. For a description and notes on the fabric types (category 9) see 'Classification and notes on wares' below. During the process of assembling the data it was found necessary to leave certain fields of information blank: thus fabric numbers 6, 7, 9, 11, 16 and 17 do not appear in the archive. These gaps have been closed in this report.

9. *Archive Fabric Numbers*
- *1.* Nene Valley Grey Ware
- *2.* Even fine grey ware
- *3.* Gritty grey ware
- *4.* Other grey wares
- *5.* Calcite-gritted wares
- *8.* Nene Valley Colour-Coated Ware (published as fabric 6)
- *10.* Gritty grey/brown/black wares (published as fabric 7)
- *12.* Reddish-yellow fabrics (published as fabric 8)
- *13.* White/pale yellow fabrics (published as fabric 9)
- *14.* "London"-type Ware (published as fabric 10)
- *15.* Hadham Wares (published as fabric 11)
- *18.* Samian (published as fabric 12)
- *19.* Mortaria (published as fabric 13)
- *20.* Other wares.

10. *Vessel Parts*
- *1.* Body Sherd
- *2.* Rim sherd
- *3.* Base sherd
- *4.* Handle
- *5.* Complete profile
- *6.* Other

15. *Form Numbers*
- *1.* Jar
- *2.* Bowl
- *3.* Flanged bowl
- *4.* Bowl imitating samian forms 30, 31, 37, 38 or 45.
- *5.* Dish
- *6.* Dish/platter imitating Gallo-Belgic types
- *7.* Dish imitating samian form 36
- *8.* Beaker
- *9.* Flagon
- *10.* Jug
- *11.* Lid
- *12.* 'Castor Box'
- *13.* Large storage vessel
- *14.* Strainer
- *15.* Cheese press
- *16.* Mortarium
- *17.* Other

Phasing

The Roman phases used in the archive and published report may be summarised thus:

Phase 7: Ultimate pre-conquest/conquest period; probable overlap with Phase 6.

Phase 8: second half of 1st century to mid 2nd century

Phase 9: late 3rd to early 4th century

Classification and notes on wares

1. Nene Valley Grey Ware (abbreviated to NVGW): Production of this ware, made from local Jurassic clays, is well established by the late 2nd century. The earliest deposits with NVGW are dated to the 2nd quarter of the 2nd century (Orton Hall Farm, Normangate Field, Monument 97, Chesterton). The fabric is generally hard and slightly granular, but with few visible inclusions. In firing, the ware has been reduced or part-reduced, giving an off-white to light grey core with a fumed grey or dark surface. For this ware see Howe, Perrin and Mackreth 1980, *Roman Pottery from the Nene Valley : A Guide* (abbreviated to RPNV).

2. Even fine grey ware: A smooth light grey ware with a satiny surface. Probably a non-local ware of 2nd century date, ending with the takeover of the market by NVGW in the late 2nd century.

3. Gritty grey ware: Hard, very gritty grey wares. These precede the grey ware industry of the lower Nene valley (NVGW), and probably originate from kilns in the middle and upper Nene valley. They occur most frequently in late 1st and early 2nd century deposits, and decline with the emergence of NVGW. By the late 2nd century, NVGW was so well established that these wares no longer appear to find their way on to sites in the area in any appreciable quantities, if at all.

4. Other grey wares: Includes all other types of grey wares not included in fabric types 1, 2 or 3 above.

5. Calcite-gritted wares: Produced locally, a wide range of jars for domestic and industrial storage occur in large quantities. One kiln firing calcite-gritted wares is known, a Trajanic kiln at Water Newton producing large storage jars. Little typological development is apparent, although a wider range of forms is produced in the 4th century with the decline of the NVGW industry. There appears to be a general trend towards harder and more evenly-fired calcite-gritted fabrics perhaps from the early 2nd century, but this cannot be used as a reliable indicator of date.

6. Nene Valley Colour-Coated Ware (abbreviated to NVCC): This ware has been referred to in the past as 'Castor Ware' and is made from the same Jurassic clays as NVGW. The earliest known kilns are of late 2nd/early 3rd century date, but the start of this industry is probably *c.*AD 130-140. Its occurrence at Maxey should start about the last quarter of the 2nd century.

A wide variety of fabric and colour-coat colours is encountered. The fabric colour is generally white or very pale brown. The colour description of colour-coats for illustrated sherds is given in the Catalogue.

A late variety of this fabric (probably 4th century) is more orange or grey in colour, and there is a tendancy to overfire, giving a 'metallic' lustre. For this ware see Howe, Perrin and Mackreth 1980 (RPNV).

7. Gritty grey/brown/black fabrics: This category includes a wide range of generally dark coloured gritty fabrics, and also fabrics which have been 'sandwich' fired, giving a dark core and oxidised orange or red surface, or oxidised core and dark outer core and surface. Non-local, probably up to mid-2nd century.

8. Reddish-yellow fabrics: Forms in this fabric appear to be mostly flagons and jars, and while there is some variation in colour, most sherds appear to fall within the reddish-yellow range (5YR 6/6, 6/8, 7/6, 7/8).

9. White/pale yellow fabrics: Forms in this fabric include jars, flagons and bowls. Mortaria are considered as a separate fabric number (13) below.

10. "London"-type Ware: In practice, it was often difficult to isolate this ware from many of the early grey ware and gritty fabrics found on the site. Only the more positive identifications have been assigned to this fabric category.

The usual fabric is hard, well-made and slightly sandy, with surface smoothed or burnished and grey, greyish-brown or dark grey to black in colour. The core may vary from red-brown through buff and grey to dark grey. Decoration is frequently incised lines and grooves, compass-drawn circles or part-circles, rouletting, and stabbed, dimpled or stamped decoration.

The period of manufacture of this ware in the Nene valley appears to have been the second quarter of the 2nd century. The most common forms are imitations of samian forms 30, 31 and 37. For a discussion of this ware see Perrin 1980.

11. Hadham Wares: . Nine sherds of this ware were found on the site, mostly in Phase 9 contexts. The fabrics vary from a very sandy grey body with dull orangy-red surfaces, to a finer bright orangy-red outer core and surface with a grey inner core and surface. The Hadham kilns are in NE Hertfordshire between Little Hadham and Much Hadham.

12. Samian: This category includes all samian found on this site, and the products of the South, Central and East Gaulish centres are not differentiated except in the notes. Full details of the samian are given by Felicity Wild, below.

13. Mortaria: A variety of light self-coloured fabrics with trituration grits. Full details of the mortaria are given by K.Hartley, below.

A report on the shell-gritted pottery and fired clay from Maxey

by John Cooper

Seventeen sherds of pottery, or pieces of fired clay, were examined, ranging in date from Middle Iron Age (Phase 5) to later Roman (Phase 9). The results of the analyses are given in Table 20.

With only two exceptions, all the sherds or fired clay fragments examined were made of the local shelly, bituminous Oxford Clay (Jurassic). The Callovian stage of the Oxford Clay was indicated by the presence of the bivalve mollusc *Meleagrinella braamburiensis* (Phillips) in Finds No.6485 (Phase 8), and by a tiny dermal denticle of a hybodont shark in Finds No.2938 (Phase 8).

In some cases the shell in the pottery seems to have been added deliberately, but as shell is already present in the local clays in varying amounts, this cannot be stated definitely. Therefore some pounded shell could have been added to the clay mix. All the shell is fossiliferous.

Two items proved to be of different origin to the rest of the sherds. These are Finds No.4036 (Phase 7), a loomweight, and Finds No.4623 (Phase 9), a tile/slab. These are not made from local clay, and may have been made further south, from a brickearth or tile clay (very fine grained matrix), possibly from Pleistocene deposits or Reading Beds clays (Palaeocene), with admixtures of sand, shell and chalk/lime.

Finds No.	*Phase*	*Feature*	*Fabric*	*Identification*
19506	5	559	IA	Bryozoa, 'oyster, sand grains. Only small proportion of shell.
20084	5	506	IA	As 19506.
21627	5	534	IB	Bryozoa, 'oyster', sand grains.
19314	5	533	IA	Bryozoa, 'oyster', prismatic shell, sand grains.
1572	5	572	Oven frag.	'Oyster/gryphaea', sand grains.
2889	6	258	IA	'Oyster'.
2891	6	258	IA	'Oyster', sand grains. Less shell than 2889.
14788	6	352	Perf. slab	Bryozoa 'oyster', other bivalve fragments.
4005	7	205	5	Bryozoa, 'oyster'.
4036	7	205	Loom-weight	No shell. Lumps of hard ?chalk/lime and much sand.
2257	8	170	5	Bryozoa, 'oyster'.
2938	8	170	5	Bryozoa, 'oyster', ?nuculoid bivalve, sand grains, prismatic shell, hybodont shark dermal denticle.
6485	7	198	5	Bryozoa, 'oyster', brachiopod, *Meleagrinella.*
4718	7	198	5	Bryozoa, 'oyster', other bivalve fragments.
8494	8	254	5	Bryozoa, 'oyster/gryphea'.
7625	8	254	5	Bryozoa, 'oyster', sand grains.
4623	8	218	Tile/slab	Shell fragments, sand grains, other mineral grains.

Table 20: Palaeontological examination of shell-gritted pottery from Maxey

Catalogue of Roman pottery

The samian

by Felicity Wild
with illustrations by Catriona Turner

Introductory Note

Ten sherds of decorated samian have been illustrated (Figs.78, 79), and these have been allocated numbers 1 to 10, prefixed by the letter S. The three stamps have been allocated the letters A,B and C. Figure 100 illustrates the distribution of samian produced in the periods pre-Flavian/Flavian, Trajanic, Hadrianic and Antonine. The report concludes with a list of plain and unstamped forms.

Note: I should like to thank Miss Brenda Dickinson of Leeds University for her advice, particularly on No.S10, and for providing the notes on the potters' stamps. The potter and die numbers are due to appear in her and Mr B.R.Hartley's forthcoming index of potters' stamps on samian ware: for this reason the stamps have not been illustrated. According to their notation, the letter 'a' after the name of a pottery denotes that the die in question has been recorded there, the letter 'b' that other dies of the same potter have been recorded there.

The samian sherds from the site come from approximately one hundred vessels. Their date range is fairly wide, although the greater proportion were made during the second and third quarters of the 2nd century AD. Structurally, they appear to have been associated with Phases 8 and 9, though some groups came from the major drainage ditches, which were open as early as Phase 7. There was no evidence, however, for samian occurring in features specifically dated to that phase.

Of the eighty-three vessels that can be identified by form, nineteen are South Gaulish and sixty-three Central Gaulish. Only one bowl of form 31 (B below) is certainly identifiable as East Gaulish. The forms are as follows:

Form	29	37	27	33	38	35	36	35 or 36	24/25	18	18/31	31	18/31 or 31	45
South Gaulish	2	2	4				1		1	9				
Central Gaulish		13	3	6	4	4	4	2		1	15	4	7	1
Total	2	15	7	6	4	4	5	2	1	10	15	4	7	1

The only sherds which must certainly be regarded as pre-Flavian are the fragment of form 24/25 from a Phase 8 ditch (F.173) and the two sherds of form 29 (S1 and S8). A number of other sherds may well be pre-Flavian, including three examples of form 18 and a flat-rimmed form 36, which has Claudio-Neronian parallels (Oswald and Pryce 1920, pl.LIII,1,20), but could be later. Of the Central Gaulish pieces, six are in the fabric of Les Martres-de-Veyre, including form 37 (two examples), 27, 18 and 18/31. The latest pieces are in the group from the Phase 8-9 ditch (F.489), and include form 45 and the stamped East Gaulish bowl dating from the late 2nd-early 3rd century AD.

The main question to arise from this material is less at what date occupation on the site started than when the occupants began to use samian. It is likely that this ware took some time to penetrate to rural communities and one would hardly expect to find the local farmers using it before the Flavian period at the earliest. This is borne out by the absence of finds from Phase 7 contexts. Any pieces which were acquired were, no doubt, treasured and stayed long in use. However, by the second quarter of the 2nd century AD, the local community had clearly grown sufficiently prosperous, and samian more readily available, that it was no longer the luxury it must once have been. The quantity of material of this date recovered suggests that it must have been in fairly common use, though it is noteworthy that the range of forms is limited, and only the most standard bowls, cups and dishes appear. The more expensive decorated bowls, however, are not lacking.

The groups are summarised below according to context for the dating evidence they provide, with the decorated sherds and stamps described in detail.

F.108 (main drainage ditch) Phase 7-8:

The group contains nothing later than *c.*AD140-150. There are four pieces of South Gaulish ware, the rest are Central Gaulish.

Fig.78, No.S1 Form 29, South Gaulish, showing festoon or scroll decoration in the lower zone, with a small bud hanging from a wavy line. There are no distinguishing features apart from the bud, which occurs on a form 29 from the fortress levels at Gloucester, probably dating to the early Flavian period. This piece is probably pre-Flavian. 9022.

No.S2 Form 37, Central Gaulish. Six fragments, four joining, from the drainage ditch F.108; two joining, from the house ring-gully F.308. The fabric is that of Les Martres-de-Veyre, and the style that described by Stanfield and Simpson as that of Medetus-Ranto, and by Rogers as X9. The ovolo, scroll, arrowheads and leaf (Rogers 1974, H96) are all common features of this style (Stanfield and Simpson 1958, pl.32, 382, 384 etc.) c.AD100-125. 1196-8, 1200, 11290.

No.S3 Form 37, Central Gaulish. One fragment showing ovolo and beaded border. Insufficient survives for a precise identification, but the date is likely to be Hadrianic or early Antonine. 833

F.161 (Main drainage ditch) Phase 7-8

Here, too, nothing is likely to be later than *c.*AD150.

A. *AVITVSF* Form 18/31, Central Gaulish, showing die 7d of Avitus iii of Lezoux[b]. Only one other example of this stamp is known, also on 18/31. Avitus iii's stamps on plain ware occur relatively frequently in Antonine Scotland, but his decorated ware is mostly Hadrianic (Stanfield and Simpson 1958, pls. 62-4). *c.*AD120-145. 3073.

F.250 (Pit) Phase 8:

Apart from two small scraps of South Gaulish ware, the group is Central Gaulish. The presence of forms 31 and 36 put the latest material into the second half of the 2nd century AD.

F.199 (ditch) Phase 8:

Apart from a form 18 of pre- or early-Flavian date, the material is Antonine.

F.489 (ditch) Phase 9:

A late 2nd to early 3rd century AD group, consisting of a mortarium with lion-headed spout, form 45, Central Gaulish, *c.*AD170-200, and

B. *SABIN.VS* Form 31, East Gaulish, showing die 3a of Sabinus ix of Rheinzabern[a]. The stamp has also been noted on form 32. Late 2nd or or early 3rd century AD. 10705.

Fig.78, No.S4 Form 37, Central Gaulish, showing panel decoration in the style of the potter Doeccus. Panels show the candelabrum (Rogers 1974, Q6) over a plinth (probably a smaller version of Q62), and a medallion with leaf (Rogers' H16). These motifs and the large astragalus (R2) were all used by Doeccus. *c.*AD160-190. 10701.

This material could have been deposited well into the third century A.D.

F.473 (main drainage ditch) Phase 9:

An Antonine group, all Central Gaulish, including form 33 (2), 38 (2), a bowl rim and 18/31 or 31 (3).

F.491 (main drainage ditch) Phase 8-9:

Another Central Gaulish, Antonine group, including forms 38 and 18/31 or 31.

F.495 (main drainage ditch) Phase 9:

Form 35, Central Gaulish, probably Antonine.

F.308 (ring-gully of house) Phase 8:

The group contains nothing that need be later than *c.*AD150 and includes two sherds from No. S2, above.

C. *CERIAL.M* Form 33, Central Gaulish, showing die 4a of Cerialis ii of Lezoux[b]. This stamp was used mainly on the Hadrianic-Antonine forms 18/31, 18/31R and 27, but there is one example on the later Antonine form Ludowici Tx. It occurs on a dish in a burial at Reimpst, Belgium, together with stamps of early-to mid-Antonine potters. It is also in the material from the Antonine fire at Verulamium. *c.*AD 140-165. 12089-12100.

Fig.79, No.S5 Form 37, Central Gaulish, showing an ovolo with two of the impressions overlapping, above festoon decoration. The festoons can be paralleled on the work of Sacer (Stanfield and Simpson 1958, pl.82). The ovolo is not completely clear, but is close in size to one of Sacer's ovolos (*ibid.*, pl.84, 14, 16). It also shows similarities to that used by X6 (*ibid.*, pl.75, 13, where it appears with a cruder form of festoon decoration, but with wavy-line borders in place of the bead row). A Hadrianic-early Antonine date seems certain, *c.*AD125-150.

F.310 Phase 8:

Fig.79, No.S6 Form 37, South Gaulish, showing an ovolo with triple-pronged tongue and the griffin (0.879), probably in a scroll. The griffin was used by Flavian potters such as M.Crestio and Cosius Rufinus. The scroll could be similar to that used by Cosius Rufinus (Knorr 1952, Taf. 16B), or M.Crestio (Karnitsch 1959, Taf.12,2). c.AD75-100. 14956.

F.314 Phase 8:

Form 18/31, Central Gaulish, Hadrianic or Antonine.

F.170 (structure 3) Phase 8:

A South Gaulish group, including form 18, pre- or early-Flavian, another scrap in similar fabric, and form 27, burnt, but probably Flavian.

F.203, 238, 239, 247, 248 (gullies to the east of house F.170) Phase 8:

The material from these features ranges in date from Flavian to Antonine, including the flat-rimmed version of form 36 of pre- or early-Flavian date. Altogether there were six South Gaulish sherds, including form 18 (4), and eleven from Central Gaul, including 37 (3), 18/31, 27, 33 and 35 (3). The latest material is likely to date from the middle of the 2nd century AD.

F.248 Phase 8:

Fig.79,No.S7 Form 37, Central Gaulish. Small fragment showing ovolo and part of saltire with rosette of seven dots (probably Rogers' C280). The ovolo is probably his B185. Both features were used by his potters X12 and X13. Work in this style, attributed by Stanfield and Simpson to Donnaucus, is found at Les Martres-de-Veyre during the Trajanic period, and subsequently at Lezoux. The fabric of this piece is probably that of Lezoux, suggesting a date c.AD120-130. 6763.

F.109 (near structure 2, F.101) Phase 8:

Fig.79,No.S8 Form 29, South Gaulish, showing lower zone with scroll decoration. The leaf is that used by Melus and Mommo. It occurs in a scroll with a similar binding on a bowl stamped OFMOMMO from Windisch (Knorr 1919, Taf. 59D). The bud was used by Neronian–early Flavian potters such as Felix, Passienus and Rufinus. The leaf occurs in scroll decoration on two bowls from the early Neronian group at La Nautique (Fiches *et al.* 1978, figs. 6,13; 7,15) and on a bowl of Neronian date from Gloucester (unpublished). Despite the connections with Mommo, there are no parallels to the scroll in the Pompeii hoard. c.AD50-65. 578.

F.173: (near structure 2, F.101) Phase 8:

Form 24/25, South Gaulish. Pre-Flavian.

F.118,125,136 (near structure 2, F.101) Phase 8:

Produced material dating from the Hadrianic – early Antonine period.

F.326 (near structure 2, F.101) Phase 8:

Form 18/31 or 31. Central Gaulish. Probably Antonine.

F.155 (gully) Phase 9:

Forms 27 and 18/31, both Central Gaulish and Hadrianic or early Antonine.

F.218 and 222 Phase 9:

The group is Central Gaulish and mainly Antonine, including forms 33, 38 and 31; also

F.218 (ditch) Phase 9:

Fig.79 No.S9 Form 37, Central Gaulish, showing the ovolo and characteristic small S motif of Cettus of Les Martres-de-Veyre (*cf.* Stanfield and Simpson 1958, pl.142, 29). c.AD135-160. 5006.

F.254 (Pit) Phase 9:

A scrap of Central Gaulish ware of Hadrianic-Antonine date, and

Fig.79,S10 Form 37, South Gaulish, in the Fabric and style of the late potters working at Montans. The ovolo occurs on bowls stamped by Chresimus (in the base) and Malcio (in the mould). The Chresimus bowl, from York, also has the bud-cluster in the top corner of the panel, and the warrior (Hermet 1934, pl.19, 59). The Malcio bowl is from Richborough (Bushe-Fox 1932, pl.XXIX,1). The fact that work in this style has been recorded from Antonine forts in Scotland without any 1st century occupation (Hartley 1972, 42) indicates that it was still current in the early Antonine period. 14273.

F.329 (ditch) Phase 9:

Two fragments, both Central Gaulish; one of form 35 or 36, Hadrianic or Antonine, the other in the fabric of Les Martres-de-Veyre, early Antonine at the latest.

List of undecorated and unstamped samian sherds:

Abbreviations:

CG = Central Gaulish

EG = East Gaulish

SG = South Gaulish

F.108: 18 SG, 18/31 CG, 18/31 CG, 18/31 ?CG, 27 SG, 27 SG, 37 CG, ? CG, ? CG

F.118: 18/31 CG

F.125: ? CG, ? SG

F.136: ? CG

F.155: 18/31 CG, 27CG

F.161: 27 CG, 31 CG, 31 or 18/31 CG, 37 CG, ? CG

F.170: 18 SG, 27 SG, ? SG

F.173: 24/25 SG

F.199: 18 SG, 36 CG, 37 CG, ? CG

F.203: 18 SG, 33 CG, 35 CG

F.218: 31 CG, 31 or 18/31 CG, 33 CG, 38 CG

F.222: 27 or 33 CG

F.227: ? CG, ? CG

F.328: ? SG, ? CG

F.239: 36 SG

F.247: 18/31 CG

F.248: 18 SG, 18 SG, 18 or 18/31 SG, 27 CG, 35 CG, 35 CG, ?36 SG, 37 CG, ? SG, ? CG

F.250: ?18 SG, 18/31 CG, 18 or 18/31 CG, 18 or 18/31 CG, 27 CG, 31 or 18/31 CG, 31 CG, 33 CG, 35 or 36 CG or EG, 36 CG or EG, ? CG, ? SG

F.254: ? CG

F.308: 18/31 CG, 18/31 CG, 37 CG, 37 CG, ? CG, ? SG

F.326: 18/31 or 31 CG

F.329: 35/36 CG, ? CG

F.331: ? 18/31 CG

F.473: 18/31 CG, 18/31 or 31 CG, 18/31 or 31 CG, 33 CG, 33 CG, 38 CG, 38 CG, ? CG.

F.489: 18/31 or 31 CG, 45 CG

F.491: 18/31 or 31 CG, 38 CG

F.495: 35 CG

F.593: ? CG

The mortaria (Fig.80)

by K.F. Hartley

The mortarium sherds from Maxey represents at least ten or eleven different mortaria, and these are from exactly the sources which one would expect to encounter on sites in the area. More than two-thirds of the vessels are from the lower Nene valley (seven vessels), with two mortaria from Mancetter-Hartshill, Warks, and one which is probably from the Verulamium region. None of the mortaria need be earlier than AD 135, and nothing is necessarily later than c.AD 350. The fabrics are described below, and the distribution of mortarium sherds is shown in Figure 101 (see also samian mortarium with lion-headed spout; form 45,F.473).

Five vessels, including one stamp have been illustrated (Fig.80). Sherds have been allocated numbers from 1 to 32, prefixed by the letter M, and are divided into ploughsoil finds, Phase 7, Phase 8 and Phase 9.

Ploughsoil Finds:

Nos.M1,2 Two sherds, joining a third sherd from the uppermost fill of that feature. From Grid square 2879/7717, immediately above F.254. (see below, Catalogue No. M22, Phase 9, Finds No. 14413). 73, 74.

No.M3 A small rim fragment with bead turned out over the flange to form the spout. Fabric 3. lower Nene valley, perhaps 3rd century rather than later. From Grid square 2875/7727. 31.

Phase 7:

No mortaria were found in contexts specifically assigned to Phase 7. Three sherds occured in features which appear to have been open during all three phases, but the contexts and dating of these sherds would suggest that they derive from Phase 8 occupation (Catalogue nos.M7, 8 and 9).

F.128 (ditch) Phase 8:

No.M4 A heavily burnt base fragment in a fabric generally similar to Fabric 1, but with trituration grits consisting of quartz, red-brown or black (both probably iron-rich). Attributable to the upper or lower Nene valley, probably within the period AD 140-250. 316.

F.158 (ditch) Phase 8:

No.M5. A body sherd in Fabric 1. Lower Nene valley. 3rd or 4th century. 1814.

F.170 (structure 3) Phase 8:

No.M6. A worn mortarium with incomplete rim section in Fabric 6. Probably made in the Mancetter-Hartshill potteries. 13152.

F.199 (ditch) Phase 8:

No.M7. A body sherd in Fabric 5, attributable either to the upper Nene valley or the Verulamium region. c.AD100-250. 8020.

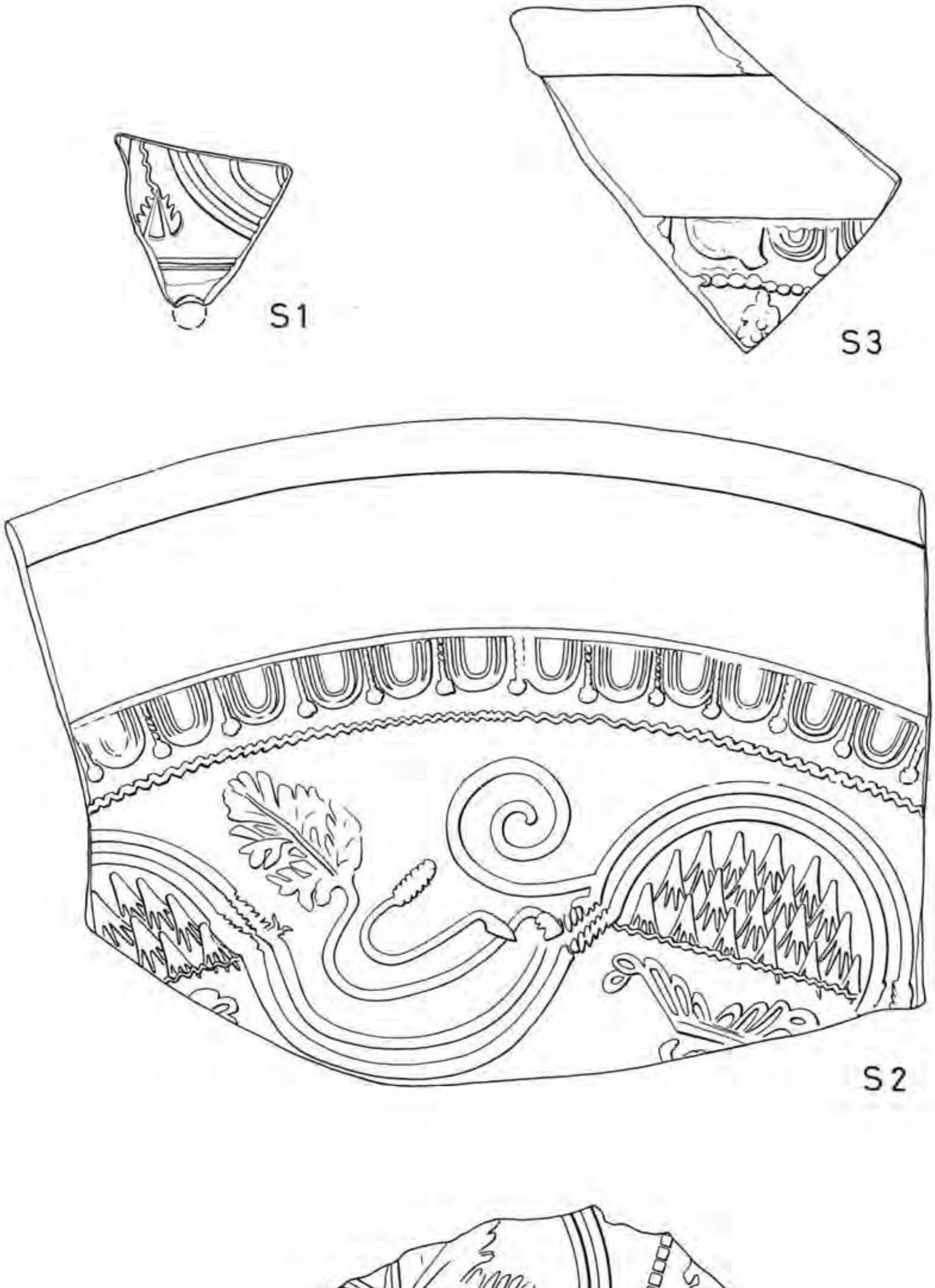


Fig.78 Maxey East Field: samian. Scale 1:1.

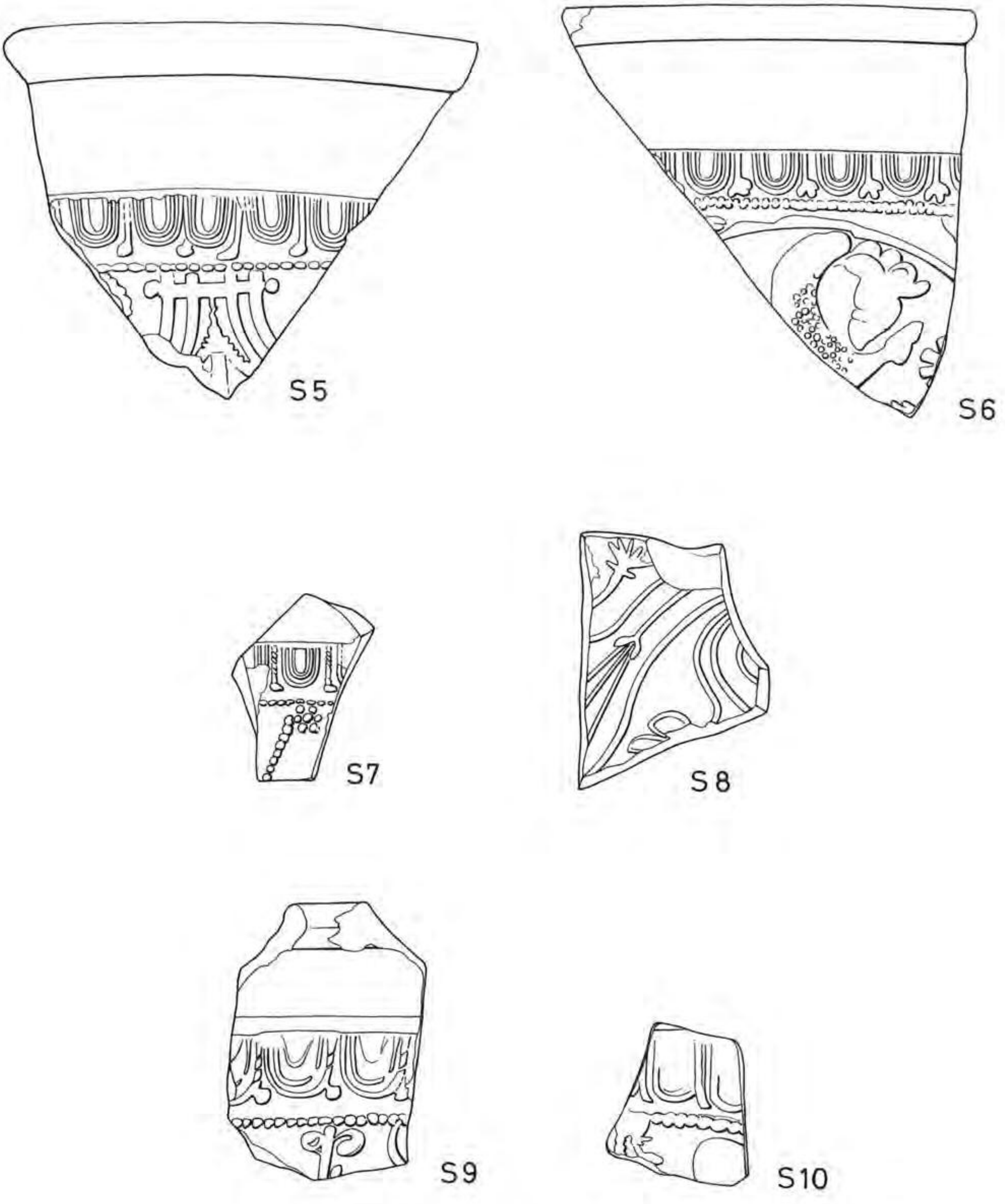


Fig.79 Maxey East Field: samian. Scale 1:1.

F.250 (pit) Phase 8:
Nos.M8,9. Two body sherds in Fabric 6, from mortaria made in the Mancetter-Hartshill potteries, AD 130-370+. 7198, 7390.

F.326 (structure 12) Phase 8:
No.M10. A body sherd in a fabric generally similar to Fabrics 4 and 7. Made in the Nene valley or the Mancetter-Hartshill potteries. 2nd-4th centuries. Could be part of Catalogue No.M11 below. 10655.

Fig.80, No.M11. A tiny, burnt or stained bead and flange fragment in Fabric 7. The corner of a potter's stamp survives, and this should probably be interpreted as the G and upper part of the R in the commonest stamp-type of GRATINUS. Forty-five of his mortaria are known from the following sites in England (excluding Mancetter and Hartshill): Castor, Corbridge (4), East Stoke (Notts), Grandford nr. March, High Cross (2), Ilkley, Kingscliffe (Northants), Leicester (6), Lincoln (4), March, Margidunum (2), Market Overton/Thistleton area, Maxey, Ribchester, Rossington Bridge nr Doncaster, Sibsey nr Boston, Stanground South (Cambs.), Templeborough, Teversham (Cambs.), Thistleton, Tripontium, Wall (2), Water Newton, Wilderspool (2), Wroxeter (3) and York (?3). Nine stamps are known from sites in Scotland, some of Antonine foundation: Balmuildy, Bearsden, Birrens (2), Cappuck, Kirkintilloch and Newstead (3).

At least one and perhaps two of the kilns excavated at Hartshill, Warks, 1960-61 were used by Gratinus, and it is probable that one of these was filled in the early Antonine period. Samian evidence suggests a break in occupation AD 120-160 at Ilkley (information from B.R.Hartley) and the mortarium there could be later than AD 160. Activity *c.*AD135-165 is indicated, and the rim profiles used support this date. The large number of his stamps in the east Midlands is noteworthy. 10654.

F.218 (ditch) Phase 9:
Fig.80, Nos.M12-17. Almost half of a reeded hammerhead mortarium in Fabric 1, with the spout made by spreading the innermost bead out over the flange with a thumb. Made in the Castor-Stibbington area of the lower Nene valley, probably within the period AD 250-350. 9640-9645.

Fig.80, Nos.M18-20. Two body sherds from a mortarium in Fabric 4, probably made in a local workshop in the lower Nene valley, *c.*AD140-180. Residual. 9680, 9682.
Rim in Fabric 4 from the same vessel as 9680 and 9682 above. 5013.

F.222 (ditch) Phase 9:
No.M21. A body sherd in Fabric 2, made in the lower Nene valley *c.*AD230-400. Heavily burnt. 5903.

F.254 (pit) Phase 9:
No.M22. A mortarium with incomplete rim section in Fabric 2, probably overfired. Made in the lower Nene valley in the 3rd or 4th century, probably later than AD 230. This sherd joins two ploughsoil sherds found immediately above this feature (Cat. Nos.M1-2 above). 14413.

F.473 (ditch) Phase 9:
Fig.80, No.M23. Burnt rim fragment in Fabric 1, probably made in the lower Nene valley in the 3rd century. 11591.

No.M24. Body sherd in Fabric 1. Lower Nene valley, 3rd or 4th century. 11588.

No.M25. Body sherd in Fabric 2. Lower Nene valley, AD 230-400. 11561.

Fig.80, Nos.M26-28. Two joining sherds from a weathered reeded hammerhead mortarium in Fabric 1. Probably made AD 250-400 in the Castor-Stibbington area of the lower Nene valley. 11476, 11495. One body sherd from the same (or virtually identical) mortarium as 11476 and 11495. 11552.

No.M29. Incomplete rim-section of a reeded hammerhead mortarium in Fabric 1 with a pink core. Lower Nene valley, *c.*AD250-400. 13616.

F.489 (ditch) Phase 9:
No.M30. Fragment from a wall-sided mortarium with incomplete rim-section in fabric 2. Probably made in the lower Nene valley in the late 3rd or 4th century. 10759.

F.491: (pit) Phase 9:
No.M31. A burnt body sherd in Fabric 6. Mancetter-Hartshill potteries, AD 130-370+. 13485.

F.600 (West Field, structure 14) Phase 9:
No.M32. A weathered body and bead fragment in Fabric 1. Lower Nene valley, 3rd or 4th century. 19637.

Mortarium Fabrics (examined at × 10 magnification)
by K.F.Hartley.

Fabric 1 Castor-Stibbington area of the lower Nene valley: A very slightly sandy, cream to off-white fabric, occasionally with a pink core. Barely visible quartz, and vari-sized red-brown inclusions. Grey-black ironstone trituration. A brownish-buff slip was frequently used. Catalogue Nos.M4 (abnormal), M5, M12-17, M23, M24, M26-28, M29, M32.

Fabric 2 Lower Nene valley: Hard fine-textured brownish-cream fabric, fired to pale orange-brown near the surfaces. Some barely visible quartz and red-brown inclusions and occasional larger red- brown ones. Trituration as Fabric 1. Catalogue Nos.M1-2, M21, M22, M25, M30.

Fabric 3 Castor-Stibbington area of the lower Nene valley. As Fabric 1 but brownish-cream in colour. Catalogue No.M3.

Fabric 4 Probably a small local workshop in the lower Nene valley: A slightly sandy, basically cream fabric streaked throughout with pink, perhaps indicating a poorly mixed clay probably with a darker slip. Quartz and red-brown inclusions and softish red-brown trituration. Catalogue Nos.M10 (?), M18-20.

Fabric 5 Verulamium region, including kilns at Bricket Wood, Brockley Hill, Radlett and Verulamium, *or* upper Nene valley. A granular, greyish-cream fabric sometimes with pink or blackish core and often with cream or buff slip. The texture is produced by adding a massive quantity of well-sorted quartz to the clay, perhaps with a little red-brown material and flint. The trituration for the Verulamium region consists of flint, red-brown material and a little quartz, and some of the upper Nene valley workshops may have used a similar type of trituration. Catalogue No.M7.

Fabric 6 Mancetter-Hartshill potteries, Warks. The pottery-making area extends into Leics. Usually a distinctive fine-textured creamy-white fabric, often fired to a very hard texture in the 3rd and 4th centuries. It is sometimes described as pipeclay, but usually has a little fine quartz and occasional red-brown or dark brown temper. The trituration grit after *c.*AD130/135 consists of abundant red-brown and/or blackish to dark brown grog. Catalogue Nos. M6, M8-9, M31.

Fabric 7 As Fabric 6, but with much more temper in the fabric. Catalogue Nos. M10 (?), M11.

Romano-British coarse wares (Figs.81-96)
by David Gurney

All sherds allocated a catalogue number have been illustrated. Colour descriptions are those of the Munsell Soil Color Charts, and should be used as a guide to colour, rather than an exact match.

Not all of the contexts which produced Roman pottery have been selected for inclusion in the Catalogue. Of those contexts which are included, only rim sherds, sherds with body decoration and sherds of particular interest for some other reason have been illustrated. The general nature of the pottery from each context is briefly described in the notes at the start of each section. A summary of the pottery finds from features or contexts which have not been selected for inclusion in the Catalogue is given in the Roman feature descriptions section.

The pottery is arranged by feature number, and within each feature by sections and layers where appropriate (the only exceptions to this are the calcite-gritted storage vessels which are grouped separately, following the coarse ware catalogue). Where nearby sections within the same feature are clearly contemporary, and the stratigraphy is the same, this subdivision is not made. More detailed feature descriptions, relationships and phasing evidence are given in the Roman feature description section (part II, above).

The context information in the Catalogue consists of feature number, section numbers, layer number, and individual finds numbers; for the sake of brevity information given in the relevant sub- heading is not repeated, unless more than one layer or set of sections is involved, in which case each sherd is assigned its individual context; similarly, the finds number year-code prefix (M.80) has been omitted. Where features have more than one layer, layer numbers were allocated from the top

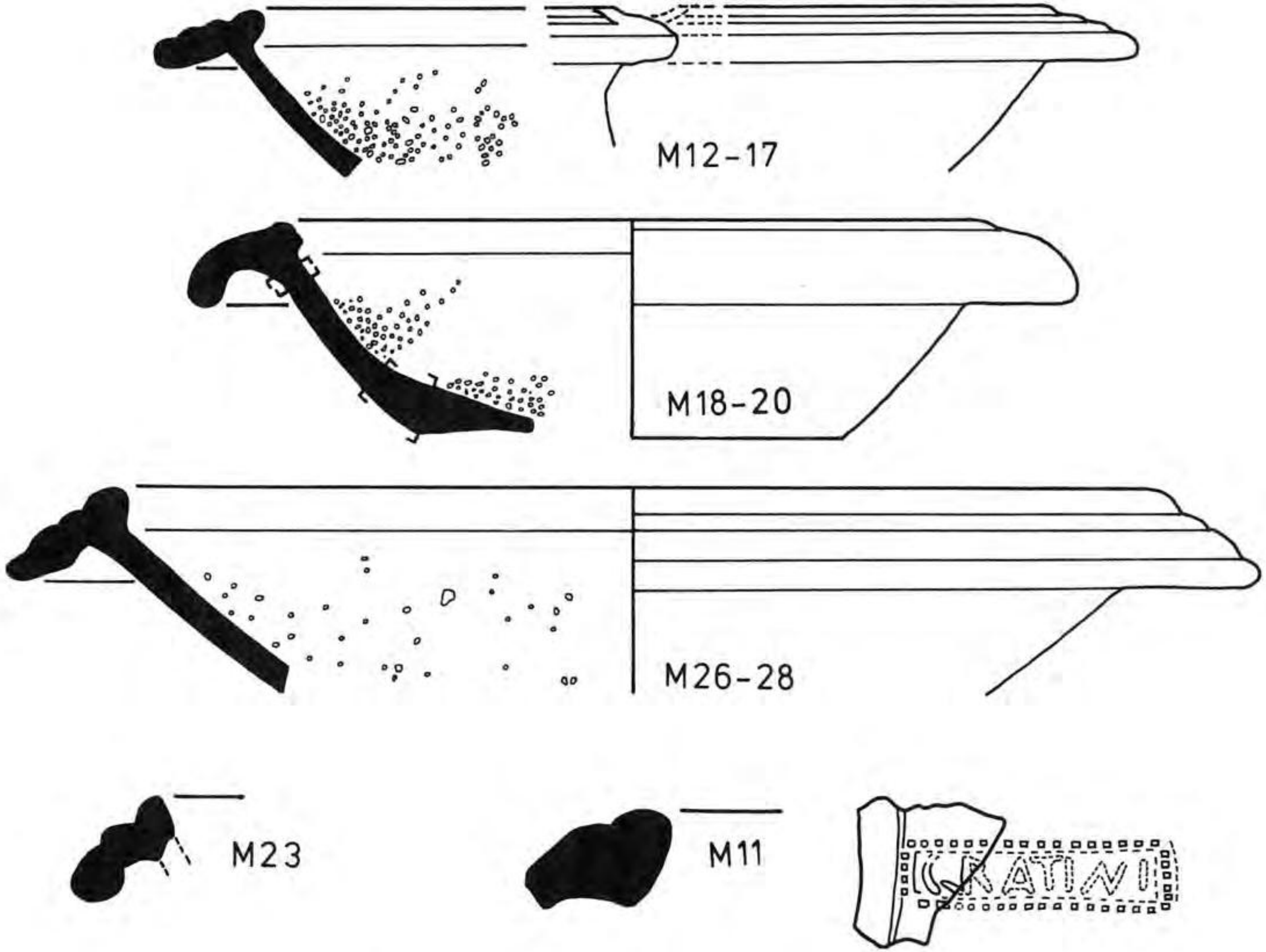


Fig.80 Maxey East Field: mortaria. Scale 1:2.

downwards. Thus in a feature with three layers, layer 1 would represent the uppermost fill and layer 3 the primary fill. Further context information such as depth, grid coordinates and method of retrieval can be obtained from the Finds Archive.

F.108 (Sections 1-2) Phase 8:

This section of ditch is the 3rd phase of the main drainage ditch F.107/108/119. The lower fill (layer 2) contains NVGW, calcite-gritted and some early grey and gritty fabrics.

Fig.81, No.1 Jar in gritty dark grey fabric (10YR 4/1). Layer 2. 497.
No.2 Narrow-mouthed jar in NVGW. Layer 1. 495
No.3 Lid in gritty dark brown fabric (10YR 3/3). Layer 1. 490.

F.108 (Sections 3-4, layer 1) Phase 8:

This layer contains Hadrianic/early Antonine samian, considerable quantities of NVGW and calcite-gritted fabrics, with some gritty fabrics. One body sherd of a corregated bowl (Finds No.208).

Fig.81, No.4 Bowl in NVGW. RPNV 18. 1279.
No.5 Jar in gritty light grey fabric (10YR 7/2). Two sherds: 1294, 1027.
No.6 Jar in gritty very pale brown fabric (10YR 7/3). 1284.
No.7 Jar in pink self-coloured fabric (5YR 7/3). Stubby lid-seated rim. 673.
No.8 Jar in NVGW. Two sherds: 1278, 1052.
No.9 Bowl in NVGW. 1172.
No.10 Dish in NVGW. Grooved rim. RPNV 20. 1171.
No.11 Jar in NVGW. 1282.

F.108 (Sections 3-4, layer 2) Phase 8:

This layer contains substantial quantities of NVGW and calcite-gritted fabrics, with some NVCC and gritty fabrics, and one sherd of Hadrianic/early Antonine samian.

Fig.81, No.12 Jar in hard red calcite-gritted fabric (2.5YR 5/6). Black external surface. Moderate inclusions up to 1mm. 1344.
No.13 Bowl in sandy grey fabric (2.5YR N6) with very pale brown surfaces (10YR 7/3). 1075.
No.14 Jar in hard reddish-yellow calcite-gritted fabric (5YR 6/6). Grey core. Moderate inclusions up to 2mm. 1059.
No.15 Jar in NVGW with slashed cordon decoration. RPNV 2. Early-mid 2nd century (compare Hadman and Upex 1975, 9). 1601.
No.16 Dish in NVGW. Small flange below the rim. 1022.
No.17 Beaker NVCC. Dark grey colour-coat (10YR 4/1). 906.
No.18 Jar in NVGW. 1086.

F.108 (Sections 5-6, layer 1) Phases 7 and 8:

Layer 1 contains Hadrianic samian, NVGW and gritty fabrics. This section of the ditch was clearly open from the mid-1st century to the mid-2nd century—layer 2 had Flavian/Trajanic samian and gritty fabrics, layer 3 has Flavian/Trajanic samian with gritty and calcite-gritted fabrics, and layer 4 has only calcite-gritted fabrics.

Fig.81, No.19 Jar in gritty light grey fabric (10YR 7/2). 8034.
No.20 Imitation Gallo-Belgic platter in sandy greyish-brown fabric (10YR 5/2). 9065.
No.21 Jar in sandy pale brown fabric (10YR 6/3). Dark grey core (10YR 4/1). 9069.
No.22 Jar in sandy light red fabric (2.5YR 6/8) with grey core. 9066.

F.109 (Sections 3-4, layer 1) Phase 8:

Gully producing calcite-gritted, gritty and NVGW fabrics. No NVCC. One sherd of Neronian/Flavian samian.

Fig.82, No.23 Jar in NVGW. (Compare Hadman and Upex 1975, 8). 389.
No.24 Flagon in gritty fabric. Core grey (10YR 5/1), core edges light yellowish-brown (10YR 6/4). Surfaces dark greyish-brown (10YR 4/2). 1st century. (Compare Friendship-Taylor 1979, Fig.39, No.125). 400.
No.25 Jar in hard light red calcite-gritted fabric (2.5YR 6/6). Greyish-brown core (10YR 5/2). Sparse inclusions up to 2mm. 385.
No.26 Jar in light grey gritty fabric (10YR 7/2) Internal surface very dark grey (10YR 3/1), external surface reddish yellow (5YR 6/6). 393.

F.128 Phase 8:

Ditch with calcite-gritted and gritty fabrics. No NVGW or NVCC. See also mortaria M4.

Fig.82, No.27 Dish in hard reddish-brown calcite-gritted fabric (2.5YR 5/4). Internal surface black. T-shaped, lid-seated rim. Moderate inclusions up to 2mm. Sections 3-4, layer 1. Four sherds: 783, 780, 782, 799.
No.28 Jar in hard black calcite-gritted fabric. Moderate inclusions up to 2mm. Sections 1-2, layer 1. 309.
No.29 Jar in gritty light brown fabric (7.5YR 6/4). Sections 1-2, layer 1. 308.
No.30 Jar in very pale brown fabric (10YR 7/4) with very dark grey surfaces (10YR 3/1). Sections 1-2, layer 1. 315.
No.31 Jar, dark grey fabric (10YR 4/1). Sections 3-4, layer 1. Two sherds: 771, 770.

F.151(layer 1)Phase 8:

Grave. Calcite-gritted sherds only.

Fig.82, No.32 Jar in hard red calcite-gritted fabric (2.5YR 5/6) with grey core. Moderate inclusions up to 2mm. Three sherds: 711, 1512, 1513.

F.155(sections 3-4, layer 1)Phase 9:

Ditch with NVGW, calcite-gritted fabrics, and NVCC (one base and three body sherds of undecorated folded beaker of possible mid-late 3rd century type) (RPNV 42). Two sherds of Hadrianic/early Antonine samian. Early sherds from this feature are probably residual from F.170. Coin dated *c.*AD307 (Finds No.2303).

Fig.82, No.33 Bowl in fine light grey fabric (7.5YR N7). Burnished lattice decoration. 2nd quarter of 2nd century. Three sherds: 2355, 2354, 2348.
No.34 Small jar in sandy dark grey fabric (10YR 4/1). Two sherds: 2308, 2366.
No.35 Jar in sandy red fabric (2.5YR 5/6). Two sherds: 2339, 1493.
No.36 Jar in hard black calcite-gritted fabric. Moderate inclusions up to 1mm. Pitted 'corky' surface. 2305.
No.37 Bowl in gritty light grey fabric (10YR 6/1). Two sherds: 1433, 2342.
No.38 Bowl in gritty pale brown fabric (10YR 6/3). Two sherds: 1450, 1484.
No.39 Jar in hard black calcite-gritted fabric. Moderate inclusions up to 1mm. Pitted 'corky' surface. 1424.
No.40 Jar in NVGW. 2347
No.41 Jar in NVGW. Two sherds: 2321, 2356.

F.161 (Sections 1-2, layer 1) Phases 8 and 9:

Both the upper and lower fills of this ditch section contain NVGW, calcite-gritted, NVCC and gritty fabrics, and samian of Hadrianic and Antonine date, with one sherd of Flavian/Trajanic (2525) in layer 1. All but one scrap of samian from F.161 comes from this section.

Fig.83, No.42 Bowl in NVGW. Grooved rim. 2543.
No.43 Bowl in NVGW. RPNV 17. 2544.
No.44 Bowl in NVGW. RPNV 19. 3001.

F.161 (Sections 3-4, layer 1) Phases 8 and 9:

The fill of this section contains large quantities of NVGW, NVCC and calcite-gritted fabrics, some self-coloured and gritty fabrics, and one sherd of pre-Antonine samian (3226), and a plate brooch of the late 3rd/early 4th century date (Finds No.342).

Fig.83, No.45 Bowl in NVGW. RPNV 17. 3249.
No.46 Bowl in NVGW. RPNV 17. 3255.
No.47 Bowl in NVGW. RPNV 17. 3146.
No.48 Bowl in NVGW. RPNV 17. 349.
No.49 Bowl in NVGW. Grooved rim. RPNV 20. 350.
No.50 Jar in NVGW. 3241.
No.51 Jar in NVGW. 3160.
No.52 Jar in NVGW. 3103.
No.53 Flagon with pinched neck in NVGW. RPNV 14. 3401.
No.54 Jar in gritty brown fabric 7.5YR 5/4). 3421.
No.55 Jar in fine light grey fabric (10YR 7/1). 3276.
No.56 Jar in fine light grey fabric (10YR 6/1). 3265.
No.57 Bowl in hard red calcite-gritted fabric (2.5YR 5/6) and black core. Moderate inclusions up to 2mm. 3145.
No.58 Jar in hard reddish-yellow calcite-gritted fabric (5YR 7/6). Sparse inclusions up to 2mm. Lid-seated rim. 3111.
No.59 Jar in hard red calcite-gritted fabric (2.5YR 5/6) with black core. Moderate inclusions up to 3mm. 330.
No.60 Bowl. NVCC. Reddish-grey colour-coat (5YR 5/2). Weathered. Late 3rd/early 4th century. 3182.
No.61 Plain dish. NVCC. Red colour-coat (2.5YR 5/6). Pink fabric (5YR 8/3). Late 3rd/early 4th century. (Wild 1974 fig. 8,G). RPNV 87. 1973.
No.62 Bowl. NVCC. Dark reddish-grey colour-coat (5YR 4/2). Grey core. Weathered. 3135.
No.63 Beaker. NVCC. Light reddish-brown colour-coat (5YR 6/3). 3162.
No.64 Beaker. NVCC. Brown colour-coat (7..5YR 5/2)). Pink fabric (7.5YR 7/4). Late 3rd/early 4th century. RPNV 54. 1974.

F.161 (Sections 7-8, layer 1) Phase 8:

This section contains primarily calcite-gritted fabrics, with single sherds of self-coloured and NVGW.

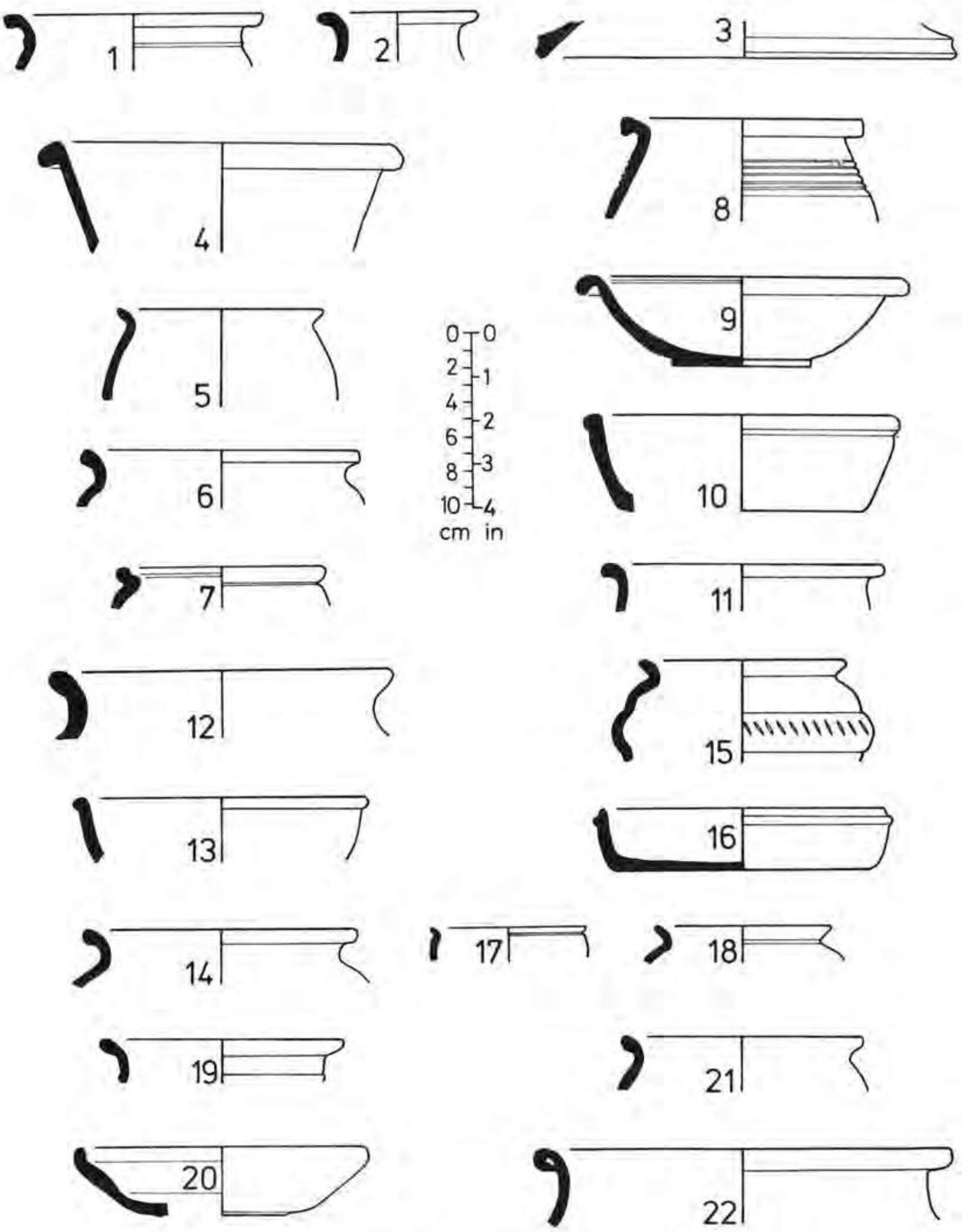


Fig.81 Maxey East Field: Romano-British coarse pottery. Scale 1:4.

Fig.83,No.65 Jar in hard calcite-gritted fabric. Interior dark brown (10YR 3/3), mottled exterior black or light reddish-brown (5YR 6/4). Abundant inclusions up to 2mm. 8305.

F.161 (Sections 9-10) Phases 8,9:

This section contains mostly calcite-gritted and gritty fabrics, with some NVCC, NVGW and London-type ware in the upper fill. Two sherds of a cordoned beaker (Finds Nos.8101 and 8111 in layer 2).

Fig.83,No.66 Jar in very dark greyish-brown calcite-gritted fabric (10YR 3/2). Moderate inclusions up to 1mm. Layer 2. 8145.

No.67 Jar. NVCC. Weak red colour-coat (2.5YR 5/2). Light reddish-brown fabric (2.5YR 6/4). Late 3rd/early 4th century. Layer 1. 7475.

No.68 Bowl in a very dark grey fabric (10YR 3/1). Layer 1. 7496.

No.69 Jar in hard calcite-gritted fabric. Exterior black, interior reddish-brown (5YR 5/4). Moderate inclusions up to 2mm. Layer 2. 8131.

No.70 Jar in slightly sandy dark brown fabric (10YR 4/3). Layer 2. 8144.

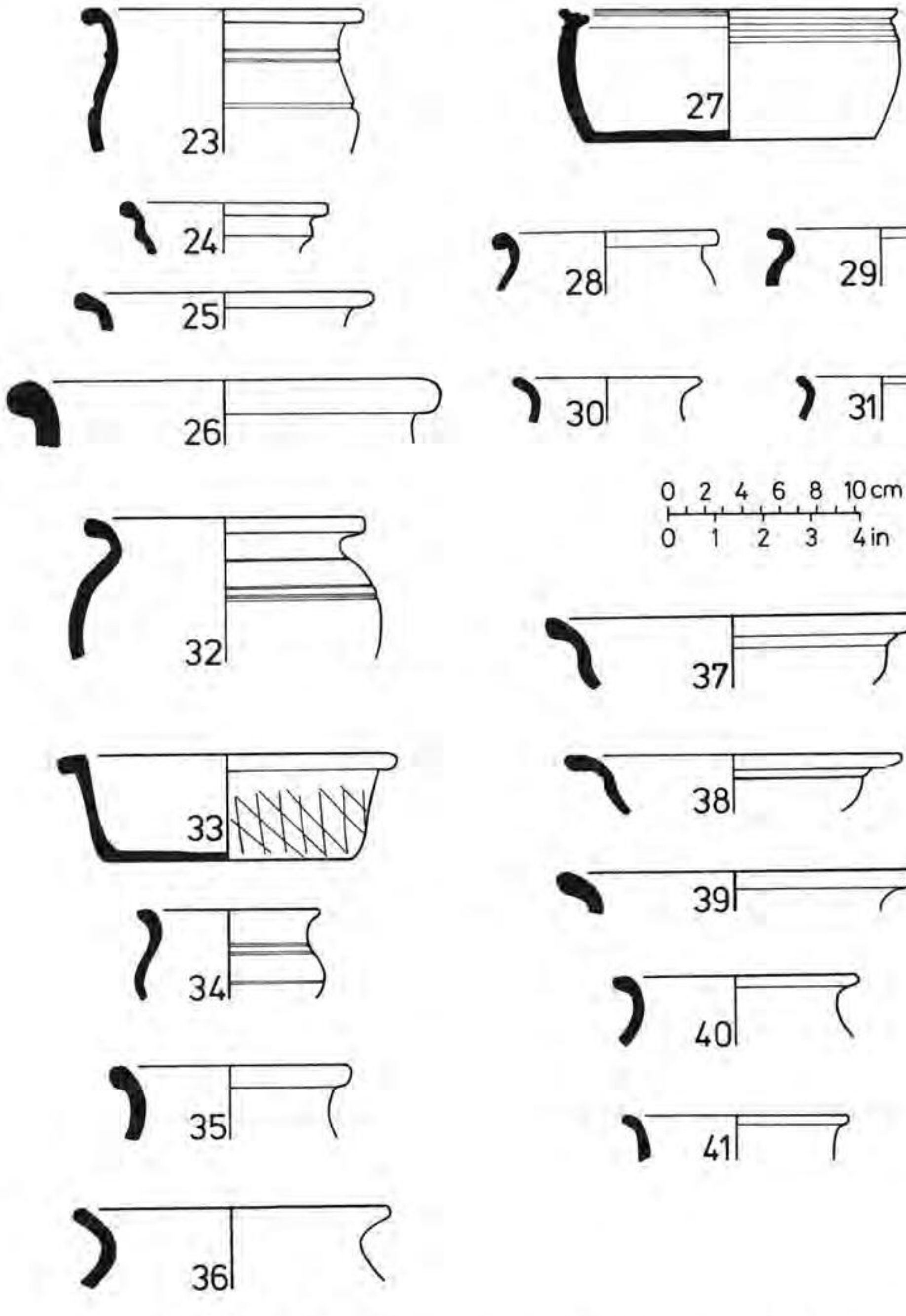


Fig.82 Maxey East Field: Romano-British coarse pottery. Scale 1:4.

F.170 Phase 8:
Ring-gully producing calcite-gritted, gritty and early grey fabrics. No NVGW or NVCC. Pre-Flavian or Flavian samian. This ring-gully is possibly of Flavian date. Also one body sherd (Finds No.2932) of a calcite-gritted storage vessel with incised chevron decoration, as Woods 1970, fig.32 no.233 (Flavian/Trajanic). See also mortaria M6.

Fig.84, No.71 Girth-beaker in a hard red calcite-gritted fabric (2.5YR 5/6) with a dark grey core (10YR 4/1). Sparse inclusions up to 1mm. Sections 0-11, layer 1. 3964.

No.72 Jar in gritty red fabric (2.5YR 5/6). Black external surface. Sections 7-8, layer 1. 2931.

No.73 Jar in a hard dark grey calcite-gritted fabric (10YR 4/1). Moderate inclusions up to 3mm. Sections 0-11, layer 1. Two sherds: 3913, 3918.

No.74 Jar in a hard black calcite-gritted fabric. Reddish-grey external surface (5YR 5/2). Abundant inclusions up to 2mm. Sections 0-11, layer 1. 3953.

No.75 Jar in hard calcite-gritted fabric, with four holes bored through the base after firing. Possibly used for cheesemaking?. Core and external surface grey (10YR 5/1), internal surface reddish-brown (2.5YR 5/4). Abundant inclusions up to 2mm. (Compare Field and Mynard 1979, nos.58 and 98). Sections 0-11, Layer 1. 3951.

No.76 Hemispherical cup in a gritty reddish-yellow fabric (5YR 6/6) with a grey core. 3651.

No.77 Imitation Gallo-Belgic platter in a gritty grey fabric (10YR 6/1). (Compare Friendship-Taylor 1979, no.156). 13150.

F.198 Phase 8:
Ring-gully producing calcite-gritted, early grey and gritty fabrics. No NVCC or NVGW. Possibly earlier than F.170. No obviously Romanised forms, and a strong native tradition. For a stamped sherd from an imitation Gallo-Belgic platter, see No.276 below.

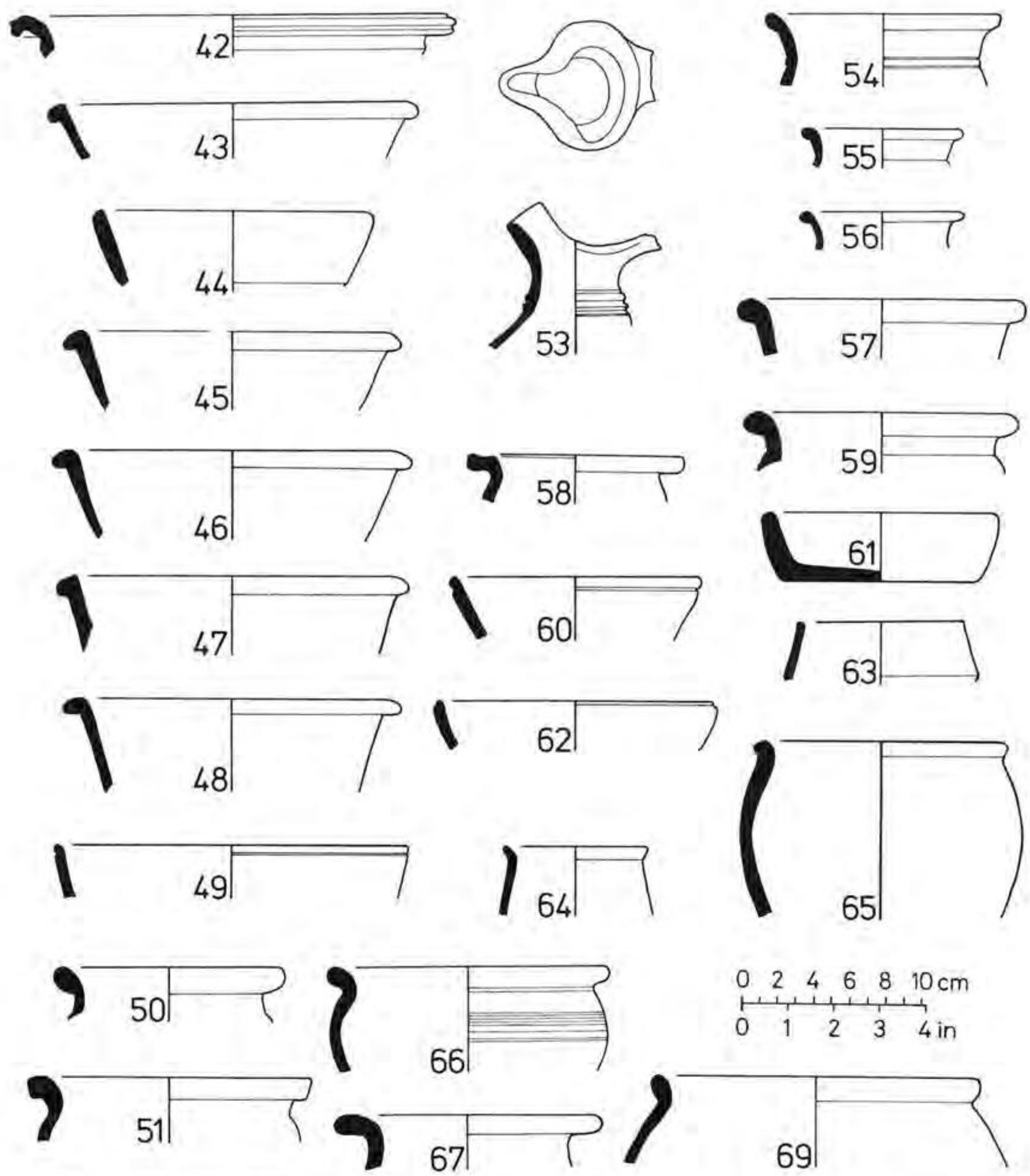


Fig.83 Maxey East Field: Romano-British coarse pottery. Scale 1:4.

This ring-gully also produced a body sherd of a beaker (4769) similar to Camulodunum (Hawkes and Hull 1947) form 85C. Note: the feature was excavated by opposed sections or 'quadrants', as part of a comparative study of recovery methods (see report by Paul Lane, part I, above).

Fig.84, No.78 Cordoned-beaker in light red fabric (2.5YR 6/6) and grey core. (Compare Hawkes and Hull 1947, form 216). Quadrant 13, layer 1. Five sherds:, 4254, 4258, 4259, 4260, 7744.

No.79 Jar in hard black calcite-gritted fabric. Sparse inclusions up to 1mm. Quadrant 15, layer 1. 4784.

No.80 Jar in hard light red calcite-gritted fabric (5YR 6/1). Black external surface. Abundant inclusions up to 3mm. Quadrant 13, layer 1. 4257.

No.81 Jar in hard reddish-brown calcite-gritted fabric (2.5YR 5/4). Moderate inclusions up to 2mm. Quadrant 5, layer 1. 3556.

F.199 Phases 7-9:

Ditch. Most sections produce NVGW, calcite-gritted and some NVCC. There are few early grey or gritty fabrics. Samian is mostly Antonine, with some 1st century fragments.

Fig.84 No.82 Jar in NVGW. Sections 1-2, layer 1. 2375.

No.83 Jar in NVGW. Weathered. Sections 3-4, layer 1. 3456.

No.84 Jar in fine light grey fabric (7.5YR N6). Sections 10-11, layer 1. 7436.

No.85 Bowl in NVGW. Sections 9-10, layer 1. 7995.

No.86 Jar in NVGW. Sections 9-10, layer 1. 8000.

No.87 Jar in NVGW. Sections 10-11, layer 1. 7437.

No.88 Bowl in NVGW. RPNV 17. Sections 9-10, layer 1. 7998.

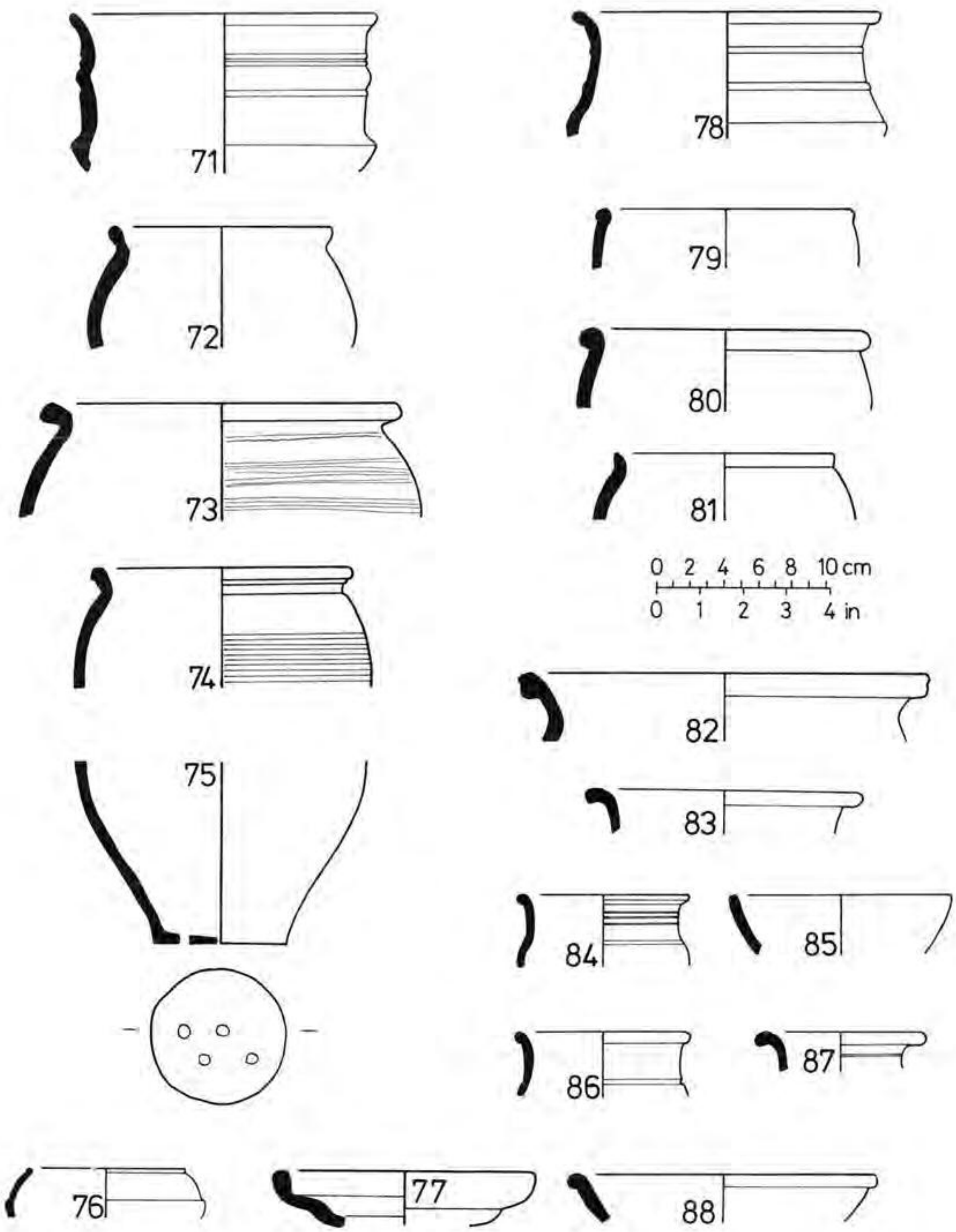


Fig.84 Maxey East Field: Romano-British coarse pottery. Scale 1:4.

F.203 Phase 8:
Ditch with NVGW and calcite-gritted fabrics, with Antonine samian and one sherd of residual pre-Flavian or Flavian (7146).

Fig.85, No.89 Dish in NVGW. Sections 0-1, layer 1. 2631.

No.90 Jar in hard calcite-gritted fabric. Reddish-brown (2.5YR 5/4) with very dark grey surfaces (10YR 3/1). Sparse inclusions up to 3mm. Sections 0-1, layer 1. 2644.

No.91 Jar in hard dark grey calcite-gritted fabric (10YR 4/1) with light grey surfaces (10YR 7/1). Sparse inclusions up to 2mm. Sections 0-5, layer 1. 9547.

No.92 Bowl in hard very dark grey calcite-gritted fabric (10YR 3/1). Sparse inclusions up to 2mm. Lid-seated rim. Patches of sooting on external surface. Sections 0-1, layer 1. 2606.

No.93 Lid in hard grey calcite-gritted fabric (10YR 6/1). Moderate inclusions up to 2mm. Sections 0-5, layer 1. 9540.

No.94 Bowl in hard very dark grey calcite-gritted fabric (10YR 3/1). Moderate inclusions up to 2mm. Sections 0-1, layer 1. 2635.

No.95 Jar in hard very dark grey calcite-gritted fabric (10YR 3/1). Moderate inclusions up to 2mm. Sections 2-3, layer 1. 7136.

F.222 Phase 9:
Ditch with NVGW and NVCC, but no gritty or early grey wares.

Fig.85, No.96 Jar in NVGW. Heavily weathered. Sections 6-7, layer 1. Three sherds: 7555, 7585, 7557.

No.97 Narrow-mouthed jar in NVGW. Grooved rim. Sections 0-7, layer 1. 10795.

No.98 Jar in NVGW. Sections 3-4, layer 1. 10396.

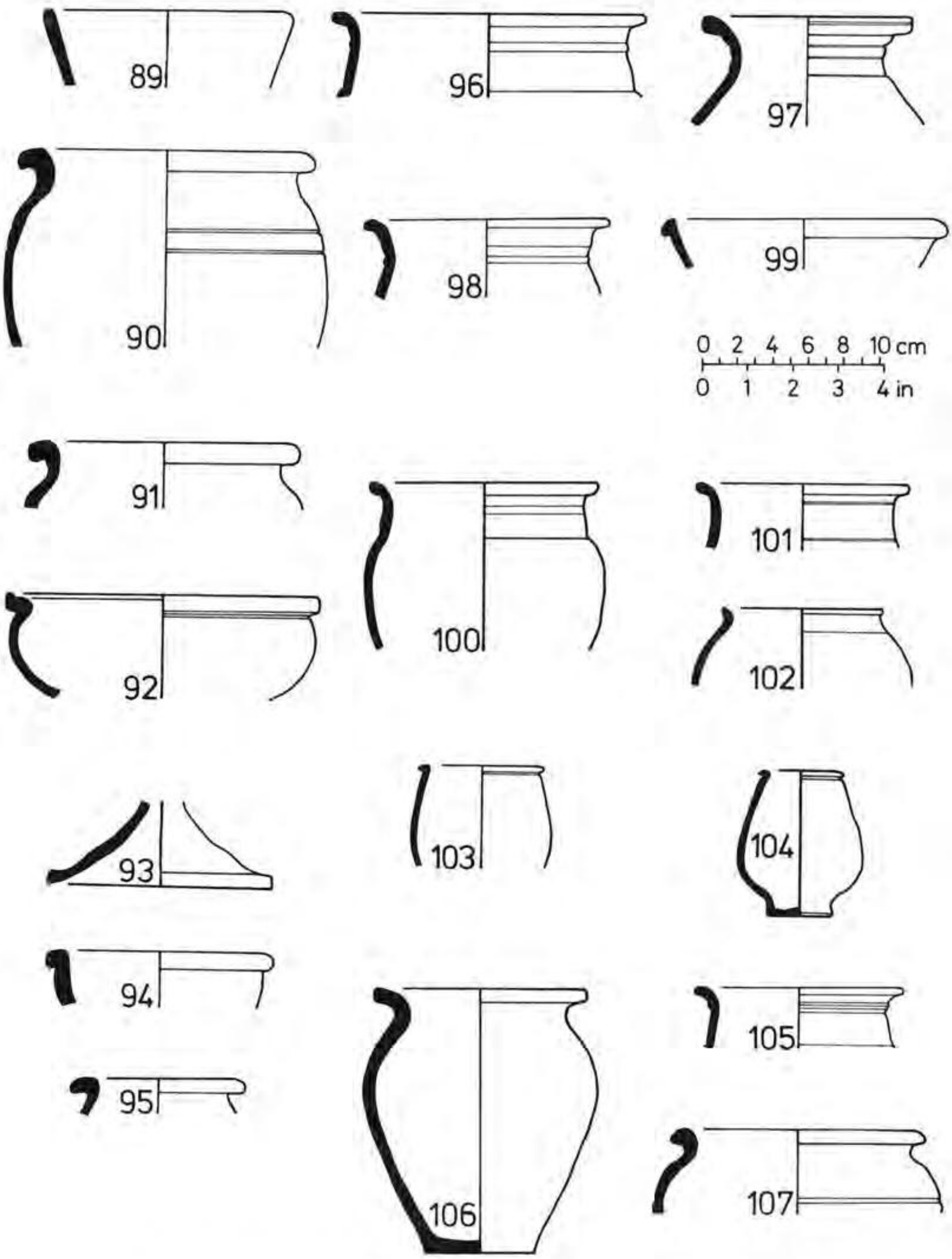


Fig.85 Maxey East Field: Romano-British coarse pottery. Scale 1:4.

No.99 Bowl in NVGW. RPNV 17. Sections 3-4, layer 1. 10386.

No.100 Jar in fine very dark grey fabric (2.4YR N3). Sections 6-7, layer 1. Four sherds: 7554, 7513, 7558, 7559.

No.101 Jar in gritty grey fabric (10YR 5/1). Sections 4-5, layer 1. 5871.

No.102 Beaker in fine fabric, internally light grey (10YR 7/1) and externally dark grey (10YR 4/1). Sections 6-7, layer 1. Three sherds: 7569, 7589, 7560.

No.103 Beaker. NVCC. Reddish-brown colour-coat (5YR 4/4). Sections 6-7, layer 1. Two sherds: 7580, 7537.

No.104 Beaker. NVCC. Weak red colour-coat (2.5YR 5/2). Sections 6-7, layer 1. Five sherds: 7063, 7579, 7066, 7582, 7574.

No.105 Jar. NVCC. Pale brown colour-coat (10YR 6/3). Sections 3-4, layer. 10387.

No.106 Jar in hard mottled black and reddish-yellow fabric (5YR 6/6). Sparse inclusions up to 3mm. Sections 4-5, layer 1. 8179.

No.107 Jar in hard black calcite-gritted fabric. Sparse inclusions up to 2mm. Sections 3-4, layer 1. 10403.

F.218 Phase 9:

Ditch. All sections from F.218 produce large quantities of NVGW, calcite-gritted wares and NVCC, with some gritty and self-coloured fabrics. All samian from this feature is Antonine. See also mortaria M12-17, M18-20.

Fig.86, No.108 Jar in NVGW. Sections 1-2, layer 1. 4312.

No.109 Jar in fine light grey fabric (10YR 6/1). Grooved rim. Sections 2-3, layer 2. 4575.

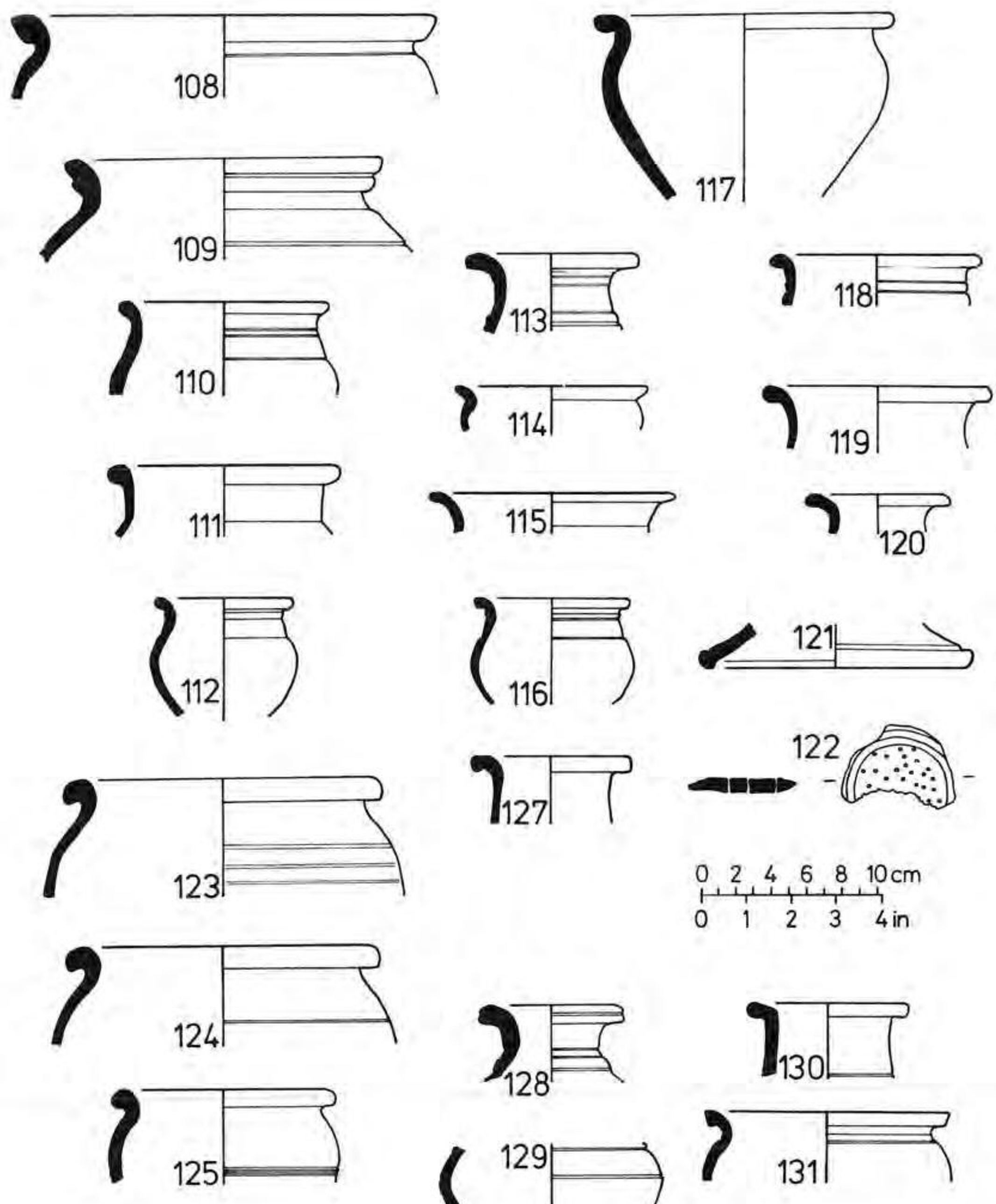


Fig.86 Maxey East Field: Romano-British coarse pottery. Scale 1:4.

No.110 Jar in NVGW. Sections 1-10, layer 1. 9720.
No.111 Jar in NVGW. Sections 1-2, layer 2. Two sherds: 4418, 4419.
No.112 Small jar in NVGW. RPNV 5. Sections 1-2, layer 1. 4565.
No.113 Narrow-mouthed jar in NVGW. Sections 4-5, layer 2. 4642.
No.114 Jar in fine light grey fabric (10YR 7/2). Sections 8-9, layer 1. 5330.
No.115 Jar in gritty dark grey fabric (10YR 4/1). Sections 1-10, layer 1. 9732.
No.116 Jar in NVGW. Sections 1-2, layer 1. 4566.
No.117 Jar in NVGW. Heavily weathered. Sections 1-2, layer 1. 4369.
No.118 Jar in NVGW. Sections 1-2, layer 1. 4332.
No.119 Jar in fine light grey fabric (10YR 6/1). Sections 6-7, layer 1. 5190.
No.120 Jar in NVGW. Sections 2-3, layer 2. 4595.
No.121 Lid in NVGW. Sections 1-10, layer 1. 9780.
No.122 Colander in NVGW. Holes were pierced through from the outside before firing. Internal surface missing and heavily weathered. (Compare Friendship-Taylor 1975 nos. 221 and 437). Sections 6-7, layer 2. 5105.
No.123 Jar in hard very dark grey calcite-gritted fabric (10YR

3/1). Sparse inclusions up to 2mm. Sections 1-10, layer 1. 9773.

No.124 Jar in hard grey calcite-gritted fabric (10YR 5/1) with greyish-brown external surface (10YR 5/2). Sparse inclusions up to 2mm. 'Corky' surface. Sections 0-10, layer 1. 9839.

No.125 Jar in hard black calcite-gritted fabric. Sparse inclusions up to 5mm. Sections 4-5, layer 1. 5009.

No.126 Lid in hard black calcite-gritted fabric. Sparse inclusions up to 2mm. Sections 4-5, layer 1. 5036.

No.127 Flagon or jug in white self-coloured fabric. Layer 4-5, layer 2. 4663.

No.128 Flagon or jug in pink self-coloured fabric (5YR 8/3). Grooved rim. Sections 1-10, layer 1. 9670.

No.129 Jar in gritty light reddish-brown fabric (5YR 6/4) with dark grey core. Sections 4-5, layer 2. Six sherds: 4653, 4687, 4673, 4656, 4684, 4679.

No.130 Flagon or jug in self-coloured white fabric with pink core (5YR 7/4). Sections 4-5, layer 1. 5028.

No.131 Jar in pink self-coloured fabric (5YR 8/3). Sections 1-2, layer 2. 4475.

No.132 Cheese press in white fabric. Burnt. Sections 1-10, layer 1. 9681.

Fig.87, No.133 Jar. NVCC. Light reddish-brown colour-coat (5YR 6/4) and very pale brown fabric (10YR 8/4). Late 3rd/early 4th century. Sections 1-2, layer 1. Twenty-one sherds: 4332-4350, 4356-4366, 4380.

No.134 Flanged bowl. NVCC. Dark grey colour-coat (10YR 4/1) and pink fabric (5YR 8/3). Previously made in NVGW; late 3rd/early 4th century. RPNV 79. Sections 6-7, layer 2. 5113.

No.135 Bowl NVCC. Red colour-coat (2.5YR 5/6). Sections 1-2), layer 2. 4472.

No.136 Bowl. NVCC. Red colour-coat (2.5YR 5/6) and pink fabric (5YR 8/3). Sections 1-2, layer 2. 4482.

No.137 Narrow-mouthed jar. NVCC. Dark greyish-brown colour-coat (10YR 4/2). Grooved rim. Sections 1-2, layer 1. 4302.

No.138 Narrow-mouthed jar. NVCC. Red colour-coat (2.5YR 4/8) and pink fabric (5YR 8/3). Grooved rim. Heavily weathered. Sections 1-10, layer 1. 9671.

No.139 Hunt Cup. NVCC. White fabric with reddish-brown colour-coat (5YR 5/3) over barbotine decoration. Martin Howe has kindly commented as follows:-

> This sherd comes from a rather squat cup, in the same form as RPNV 28.
>
> The form shows some affinities with Rhenish products, but the body, the form of the hound and the use of pellet docoration indicates that this is a product of the Nene valley industry, and is possibly from a kiln in the area of Stanground or Water Newton.
>
> The decorative motif is that of a hare pursued by two hounds. The hind quarters of one of these can be seen on this sherd, and it shows the sinuous, ultimately Celtic wolf hound employed by the Nene valley potters. This style of animal differed markedly from the Rhenish products, whose animals have a short puggish appearance.

Sections 4-5, layer 2: 4682.

No.140 Flanged bowl imitating samian form 38 in Oxford Ware. Light red fabric (2.5YR 6/6) with red colour-coat (2.5YR 5/8). Sections 1-2, layer 2. Four sherds 4551-4.

No.141 Jar. NVCC. Reddish-brown colour-coat (5YR 4/3) and pink fabric (5YR 7/4). Heavily weathered. Sections 1-2, layer 2. 4474.

No.142 Jar. NVCC. Dark reddish-grey colour-coat (5YR 4/2). Sections 0-10, layer 1. 9791.

No.143 Bowl. NVCC. Red colour-coat (2.5YR 5/8) and very pale brown fabric (10YR 7/3). Heavily weathered. Imitation of samian form 36. RPNV 81. Late 3rd/early 4th century. Sections 1-2, layer 1. 4310.

No.144 Bowl. NVCC. Weak red colour-coat (2.5YR 4/2). Sections 2-3, layer 2. 4557.

No.145 Bowl. NVCC. Dark grey colour-coat (10YR 4/1). Sections 2-3, layer 2. 4580.

No.146 Bowl. NVCC. Dark grey colour-coat (10YR 4/1). Grey inner core (10YR 5/1) and white outer core. Barbotine decoration under colour-coat. 3rd century. Sections 6-7, layer 1. 5091.

No.147 Bowl. NVCC. Dark grey colour-coat (10YR 4/1) and very pale brown fabric (10YR 8/4). Late 3rd/early 4th century. Sections 1-2, layer 2. Ten sherds: 4555-4565.

No.148 Bowl imitating samian form 37 in London-type ware. Grey fabric (2.5YR N6) with dark grey surfaces (10YR 4/1). Residual. Sections 0-10, layer 1. 9854.

F.227 Phase 9:

Pit with NVGW, NVCC and calcite-gritted fabrics. No early grey or gritty fabrics. One sherd of Antonine samian. One sherd of possible Hadham Ware (Finds No. 5119).

Fig.88, No.149 Jar in very dark greyish-brown calcite-gritted fabric (10YR 3/2). Moderate inclusions up to 3mm. Layer 1. 5148.

No.150 Jar in very dark grey calcite-gritted fabric (10YR 3/1). Moderate inclusions up to 4mm. Layer 1. 5143.

No.151 Jar in hard very dark grey calcite-gritted fabric (10YR 3/1). Sparse inclusions up to 2mm. Layer 1. 5396.

No.152 Narrow-mouthed jar in fine light grey fabric (10YR 6/1). Layer 1. 5398.

No.153 Dish in NVGW. RPNV 19. Layer 2. 5163.

F.233 Phase 9:

Ditch with mostly NVGW and calcite-gritted fabrics, and some earlier grey wares. Bone pin of ?late 2nd/early 3rd century date (Finds No. 1542).

Fig.88, No.154 Jar in fine dark grey fabric (10YR 4/1). Sections 4-5, layer 1. 5413.

No.155 Jar in NVGW. Burnished decoration on the neck. Sections 4-5, layer 1. 5419.

No.156 Jar in NVGW. Sections 4-5, layer 1. 5423.

No.157 Jar in NVGW. Sections 2-3, layer 1. 5359.

No.158 Jar in gritty dark grey fabric (10YR 4/1). Sections 2-3, layer 1. 5670.

No.159 Dish in NVGW. Champhered base. Sections 4-5, layer 1. 5412.

F.238 Phase 8:

Ditch with mostly gritty fabrics, and some NVGW, calcite-gritted and London-type ware. Scraps of 1st and 2nd century samian.

Fig.88 No.160 Bowl in London-type fabric, imitating samian form 37. Dark grey (10YR 4/1). Early 2nd century. (Compare Rodwell 1978 fig.7.13 no.106 and fig.7.18 no.128; Perrin 1980 fig.5 motif no.3; also Woods 1970, fig.37 nos.262-263). Sections 2-3, layer 1. Three sherds: 5682, 5683, 5653.

No.161 Jar in gritty greyish brown fabric (10YR 5/2). for similar decoration on shoulder see Friendship-Taylor (1979) fig.38, nos.89-92; Field and Mynard (1979) fig.83, nos.63-64; Johnston (1969) fig.5 no.23. Sections 2-3, layer 1. 5681.

No.162 Flanged bowl in NVGW. Sections 0-0, layer 1. 14905.

No.163 Bowl in gritty grey fabric (10YR 5/1). Sections 2-3, layer 1. Three sherds: 5550, 5538, 5494.

No.164 Jar in NVGW. Sections 2-3, layer 1. 5549.

No.165 Jar in gritty grey fabric (10YR 5/1). Sections 0-1, layer 1. 5483.

F.241 (Sections 2-3, layer 1) Phase 8:

Ditch. Calcite-gritted fabrics only.

Fig.88, No.166 Jar in hard black calcite-gritted fabric. Abundant inclusions up to 3mm. 6113.

No.167 Jar in hard calcite-gritted fabric. Core reddish brown (5YR 6/4), ext. reddish brown (5YR 5/3), int. red (2.5YR 5/6). Abundant inclusions up to 6mm. 6116.

No.168 Jar in hard calcite-gritted fabric. Mottled in colour, very dark grey (5YR 3/1) and reddish grey (5YR 5/2). Abundant inclusions up to 6mm. Notched and scratched decoration. 6114.

F.247 (Sections 0-1, layer 1) Phase 8:

Ditch with calcite-gritted, gritty and London-type fabrics. No NVCC or NVGW. One sherd of Hadrianic/early Antonine samian.

Fig.88, No.169 Jar in hard weak red calcite-gritted fabric (2.5YR 5/2). Black external surface. Moderate inclusions up to 2mm. Two sherds: 6277, 6239.

No.170 Jar in hard reddish brown calcite-gritted fabric (2.5YR 5/4). Black external surface. Abundant inclusions up to 3mm. Five sherds: 6283, 6257, 6224, 6284, 6281.

No.171 Jar in hard weak red calcite-gritted fabric (2.5YR 5/2). Black rim and external surface. Moderate inclusions up to 2mm. Two sherds: 6240, 6254.

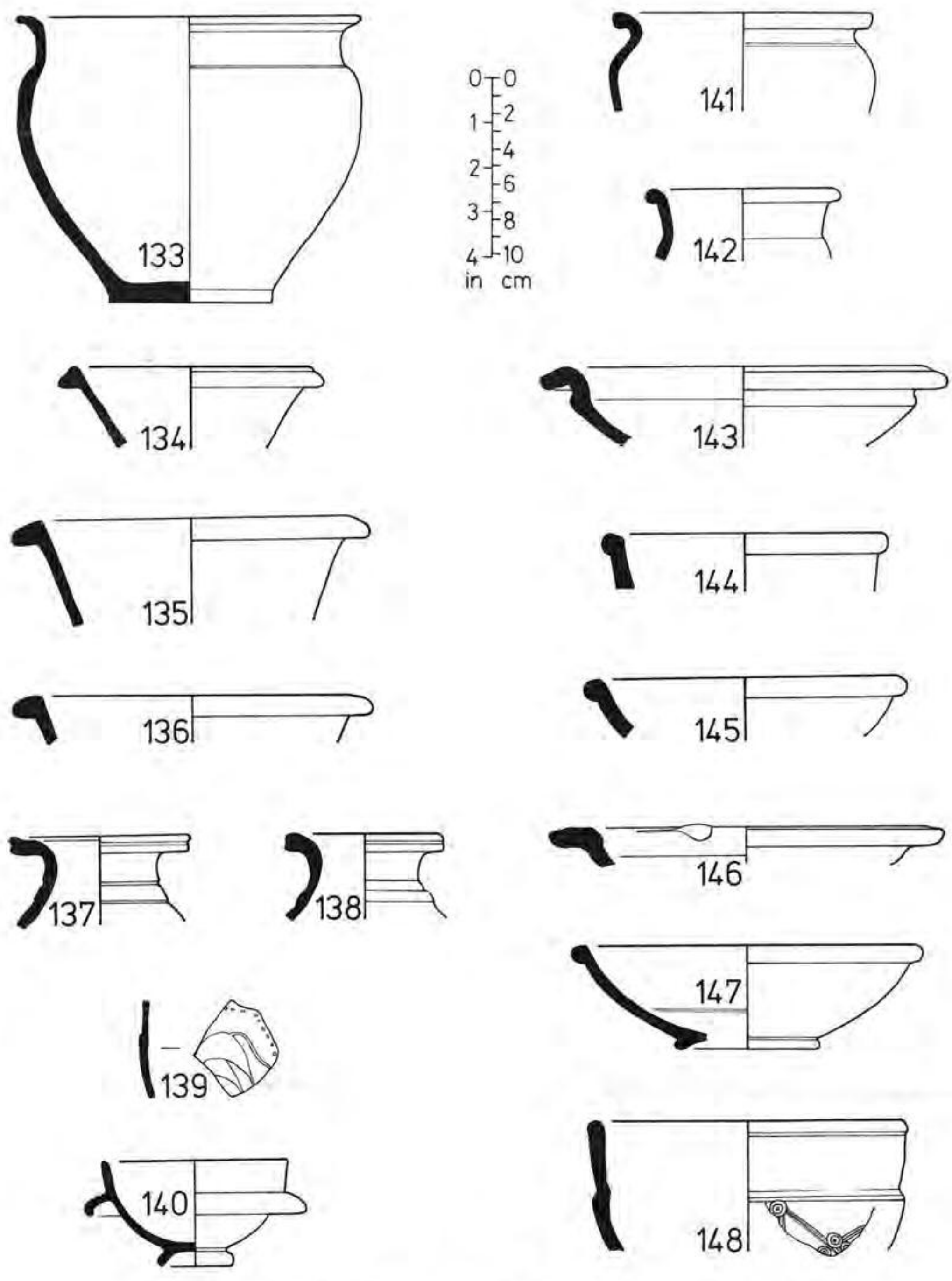


Fig.87 Maxey East Field: Romano-British coarse pottery. Scale 1:4.

F.248 Phase 8:
Ditch with some NVGW, early grey and gritty fabrics. Samian very mixed, ranging from Flavian to Antonine.

Fig.89,No.172 Jar in grey fabric (10YR 6/1). Sections 0-4, layer 1. 6694.

No.173 Jar in gritty fabric (10YR 5/1). Sections 0-1, layer 1. 6871.

No.174 Jar in grey fabric (10YR 4/1). Sections 0-1, layer 1. 6929.

No.175 Jar in London-type fabric, imitating samian form Dechelette 67. Fine dark greyish brown fabric (10YR 4/2) with stabbed decoration. Early 2nd century. Sections 2-3, layer 1. Two sherds: 6664, 6665.

No.176 Lid in hard reddish-brown calcite-gritted fabric (2.5YR 5/4). Grey core with internal surface heavily sooted. Possibly used as a fire-cover. Moderate inclusions up to 4mm. For similar decoration see Ringstead (Jackson 1980 fig.9 no.47). Sections 0-1, layer 1. 6739.

No.177 Lid in hard reddish-brown calcite-gritted fabric (5YR 5/4). Moderate inclusions up to 2mm. Sections 2-3, layer 1. Two sherds: 6603, 6653.

No.178 Jar in hard greyish brown calcite-gritted fabric (10YR 5/2). Moderate inclusions up to 2mm. Sections 0-1, layer 1. Two sherds: 6829, 6752.

No.179 Jar in hard black calcite-gritted fabric. Sparse inclusions up to 2mm. Sections 0-1, layer 1. Two sherds: 6805, 6817.

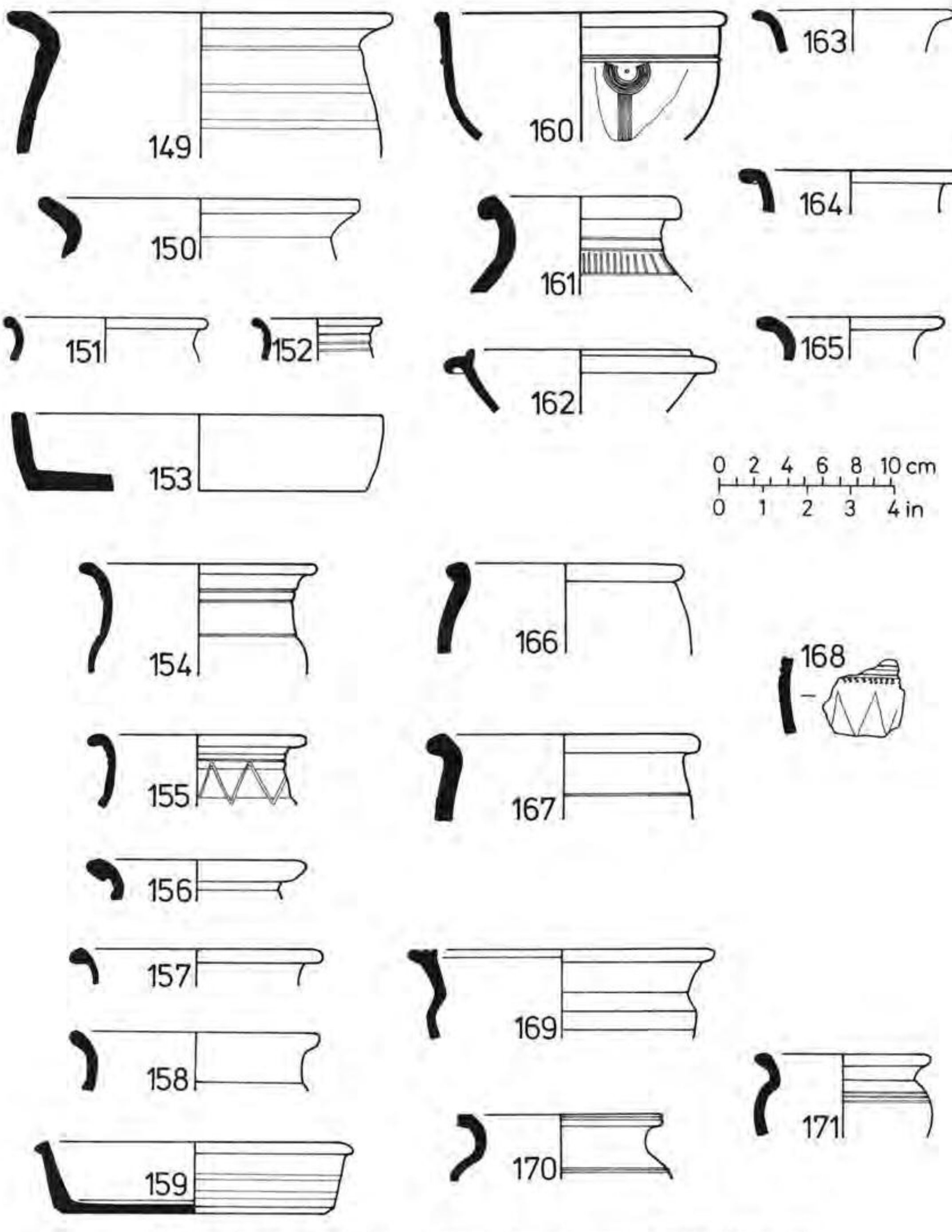


Fig.88 Maxey East Field: Romano-British coarse pottery. Scale 1:4.

No.180 Dish in hard reddish brown calcite-gritted fabric (2.5YR 4/4). Moderate inclusions up to 3mm. Blackened external surface. Compare Hayes 1978, 20. Sections 0-1, layer 1. Two sherds: 6830, 6962.

No.181 Hemispherical flanged bowl in very pale brown fabric (10YR 8/4). Sooting under flange. Similar to Little Chester products of Trajanic date (Brassington 1971). Sections 0-1, layer 1. 6980.

F.250 (Sections 1-2) Phases 7-9:

Ditch section at junction of Features 161 and 199. Produces mostly NVGW, NVCC and calcite-gritted fabrics, small quantities of other grey ware and gritty fabrics, and Hadrianic/Antonine samian with one or two 1st century sherds. See also mortaria M8-9.

Fig.89 No.182 Jar NVCC. Dark reddish-brown colour-coat (5YR 3/2), layer 1. 7283.

No.183 Bowl. NVCC. Yellowish-red colour-coat (5YR 4/6). Pink fabric (5YR 8/4), layer 1. 7379.

No.184 Flagon in white self-coloured fabric. One-handled, layer 2. 7446.

No.185 Jar in hard calcite-gritted fabric. Interior pink (5YR 7/4), exterior dark grey (5YR 4/1). Sparse inclusions up to 2mm. Layer 1. 7203.

No.186 Dish. Reddish-grey colour-coat (5YR 5/2). Pink fabric (5YR 8/4). RPNV 87. Replaces NVGW form. Late 3rd/early 4th century. Layer 1, 7354.

No.187 Jar in NVGW. Layer 2. 7450.

No.188 Jar in fine light grey fabric (10YR 7/1). Layer 1. 7166.

No.189 Jar in hard light red calcite-gritted fabric (2.5YR 6/6). Sparse inclusions up to 2mm. Layer 1. 7208.

No.190 Bowl in NVGW. RPNV 18. Layer 1. 7268.

F.254 Phase 9:

This large pit produced large quantities of NVGW, NVCC and calcite-gritted fabrics, and sherds of most other fabrics. Two coins dated AD 117-138 and AD 260-268, and the range of NVCC forms present

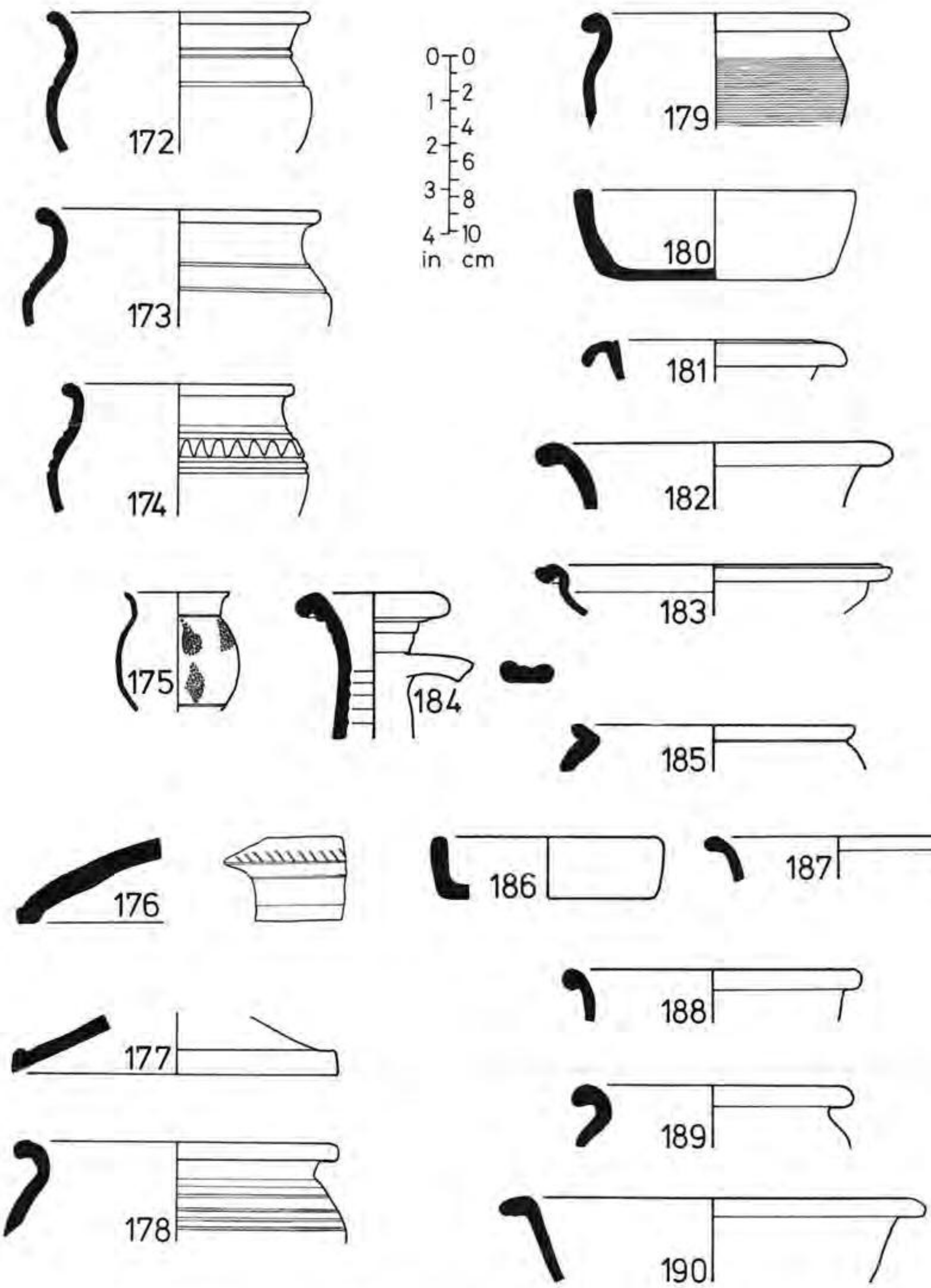


Fig.89 Maxey East Field: Romano-British coarse pottery. Scale 1:4.

suggest a late 3rd/early 4th century date. See also mortaria M1, 2, and 22. Five sherds of Hadham Ware (Finds Nos. 8373, 8395, 8396, 8447, 14862).

Fig.90, No.191 Bowl. NVCC. Red colour-coat (2.5YR 5/6). Late 3rd/early 4th century. (Compare Wild 1974, fig.8H). Layer 1. 8423.

No.192 Bowl. NVCC. Pink fabric (7.5YR 7/4) with a reddish-brown colour-coat (2.5YR 4/4). Late 3rd/early 4th century. Layer 1. Three sherds: 8398, 8401, 8403.

No.193 Jar. NVCC. Dark greyish brown colour-coat (10YR 4/2). Heavily weathered. Layer 1. 14320.

No.194 Bowl. NVCC. Dark brown colour-coat (7.5YR 4/2) and white painted arc decoration. RPNV 85. Layer 1. 8356.

No.195 Flagon. NVCC. Pink fabric (7.5YR 7/4) with a yellowish-red colour-coat (5YR 5/80. ?RPNV 67. Layer 1. 14263.

No.196 Jar in NVGW. Layer 1. 14424.

No.197 Narrow-mouthed jar in NVGW. Layer 2. 8494.

No.198 Jar in NVGW. Rouletted decoration. Layer 2. Two sherds: 8457, 9615.

No.199 Jar in NVGW. Layer 1. 9603.

No.200 Bowl. NVCC. Weak red colour-coat (2.5YR 5/2). Heavily weathered. Layer 1. Two sherds: 14435, 14791.

No.201 Jar. NVCC. Very dark grey colour-coat (10YR 3/2). Weathered. Layer 1. 14222.

No.202 Bowl NVCC. Red colour-coat (2.5YR 5/6). Layer 1. Two sherds: 14792, 14818.

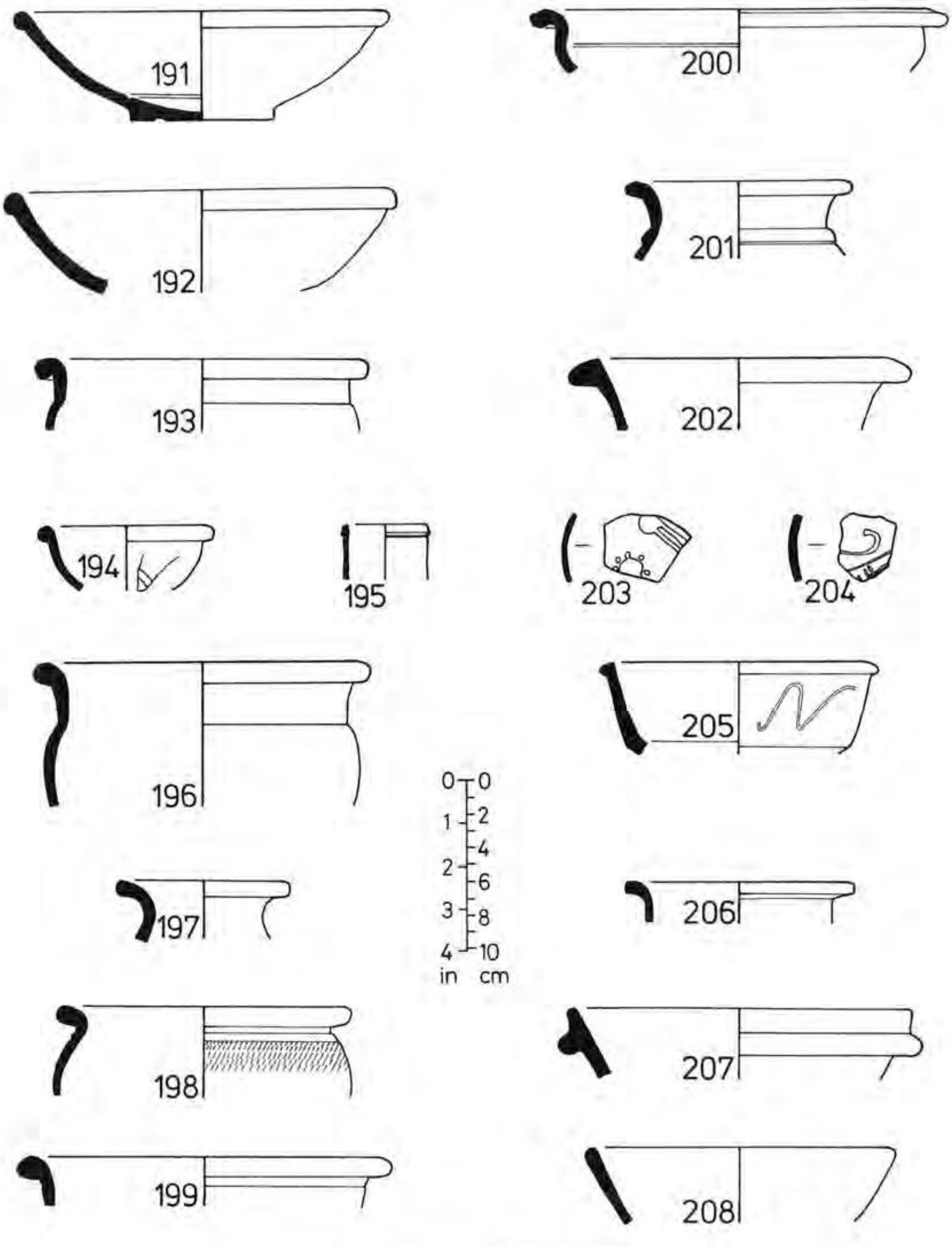


Fig.90 Maxey East Field: Romano-British coarse pottery. Scale 1:4.

No.203 Beaker. NVCC. Pink fabric (7.5YR 7/4) with a reddish grey colour-coat (5YR 4/2) and reddish-brown painted decoration (5YR 5/3). Late 3rd century. Layer 1. 14249.

No.204 Scroll-decorated beaker. NVCC. Reddish-yellow fabric (5YR 7/6) with barbotine decoration under a dark grey colour-coat (5YR 4/1). Late 2nd/3rd century. RPNV 29-30. Layer 1. 14417.

No.205 Bowl in NVGW. Burnished decoration. RPNV 17. Layer 1. Two sherds: 14286, 14302.

No.206 Jar in NVGW. Layer 1. Two sherds: 14237, 14457.

No.207 Flanged bowl in NVGW. RPNV 21. Layer 1. 14440.

No.208 Bowl in NVGW. Layer 1. Two sherds: 8333, 8343.

F.308 Phase 8:

All grey wares are early, before the start of NVGW. Samian is Hadrianic/Antonine. This feature also produced the only sherd of roughcast decorated beaker on the site (No. 12229), and Anne Anderson has kindly identified this as a product of the lower Nene valley. Similar finds from Orton Hall Farm, Chesterton and Ashton confirm that roughcast ware was made locally, and that the most probable date for this appears on the present evidence to be about AD 140-160 (Rob Perrin pers. comm.). A dolphin brooch, dating to the second half of the 1st century AD was also found (Finds. No. 12088).

Fig.91, No.209 Jar in gritty light brownish grey fabric (10YR 6/2) with dark grey core (10YR 4/1). Sections 1-2, layer 1. Two sherds: 12029, 12159.

No.210 Jar in gritty light reddish brown fabric (2.5YR 6/4). Sections 1-2, layer 1. 11286.

No.211 Jar in gritty brown fabric (10YR 5/3) with light reddish brown core (2.5YR 6/4). Sections 0-3, layer 1. 12555.

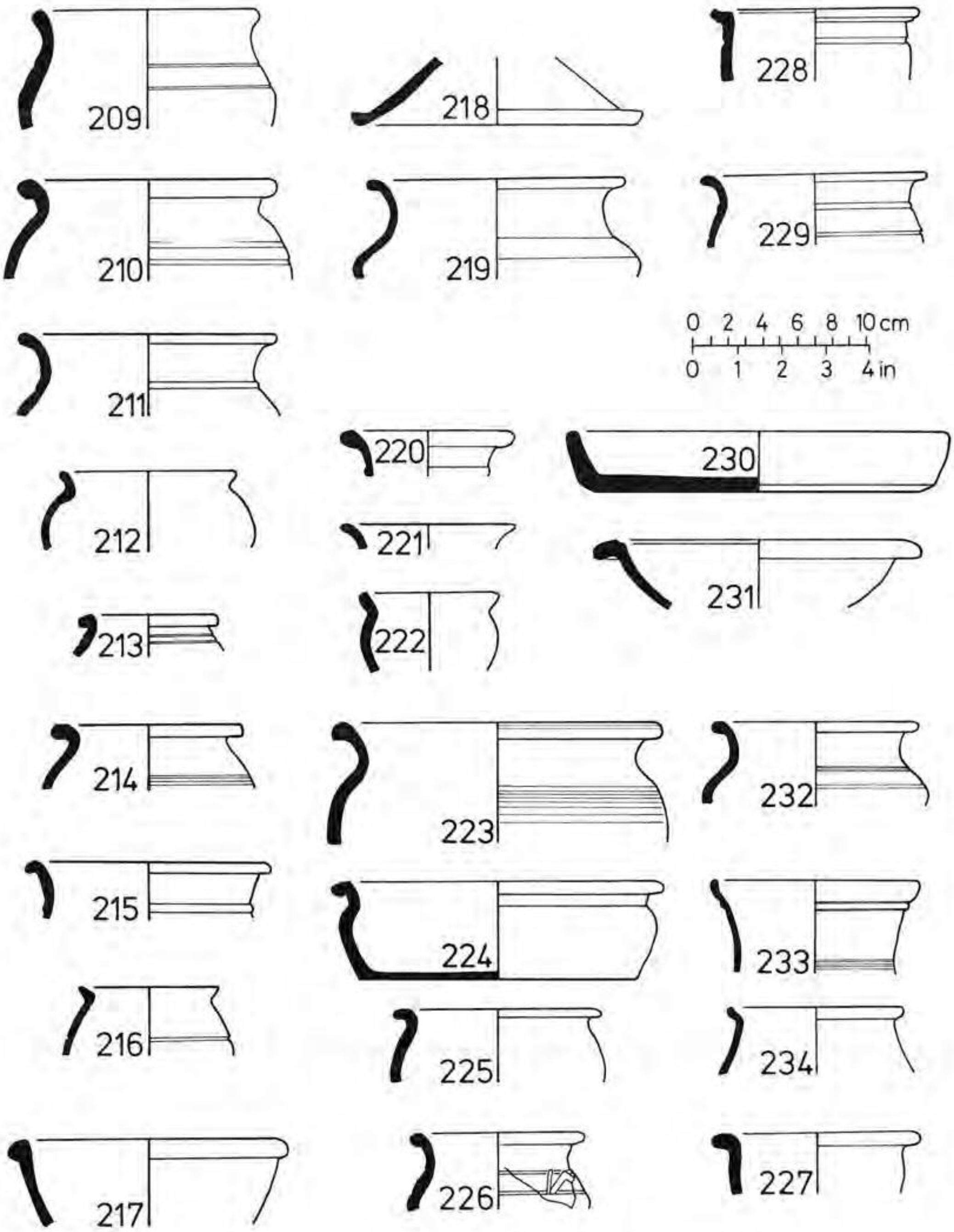


Fig.91 Maxey East Field: Romano-British coarse pottery, Scale 1:4.

No.212 Jar in gritty pale brown fabric (10YR 6/3). Sections 1-2, layer 1. 12378.

No.213 Narrow necked jar in dark grey fabric (10YR 4/1). Sections 1-2, layer 1. 11291.

No.214 Jar in hard very dark grey calcite-gritted fabric (10YR 3/1). Sparse inclusions up to 2mm. Sections 1-2, layer 1. 12246.

No.215 Jar in dark grey fabric (10YR 4/1). Sections 1-2, layer 1. Three sherds: 11292, 11293, 11295.

No.216 Jar in dark grey fabric (10YR 4/1). Sections 0-3, layer 1. 12528.

No.217 Bowl in light grey fabric (10YR 7/1). Sections 1-2, layer 1. 12172.

F.310 Phase 8:

Ditch with mostly calcite-gritted and gritty fabrics, one sherd of samian dated AD 80-100 (No. 14956) and a Nauheim derivative brooch of the 1st century AD (Finds No. 11113).

Fig.91, No.218 Lid in hard reddish-brown calcite-gritted fabric (2.5YR 5/4) with dark grey surfaces (10YR 4/1). Moderate inclusions up to 2mm. Sections 1-2, layer 2. Two sherds: 11124, 11106.

No.219 Jar in light, reddish brown fabric (2.5YR 6/4) with dark grey surfaces (10YR 4/1). Late 1st-early 2nd century. Sections 3-4, layer 2. 11255.

No.220 Jar in gritty grey fabric (10YR 6/1). Sections 3-4, layer 1. 11226.

F.329 Phase 9:

Ditch with calcite-gritted, early grey and gritty fabrics, and NVGW. Four NVCC sherds, including two with painted decoration (late

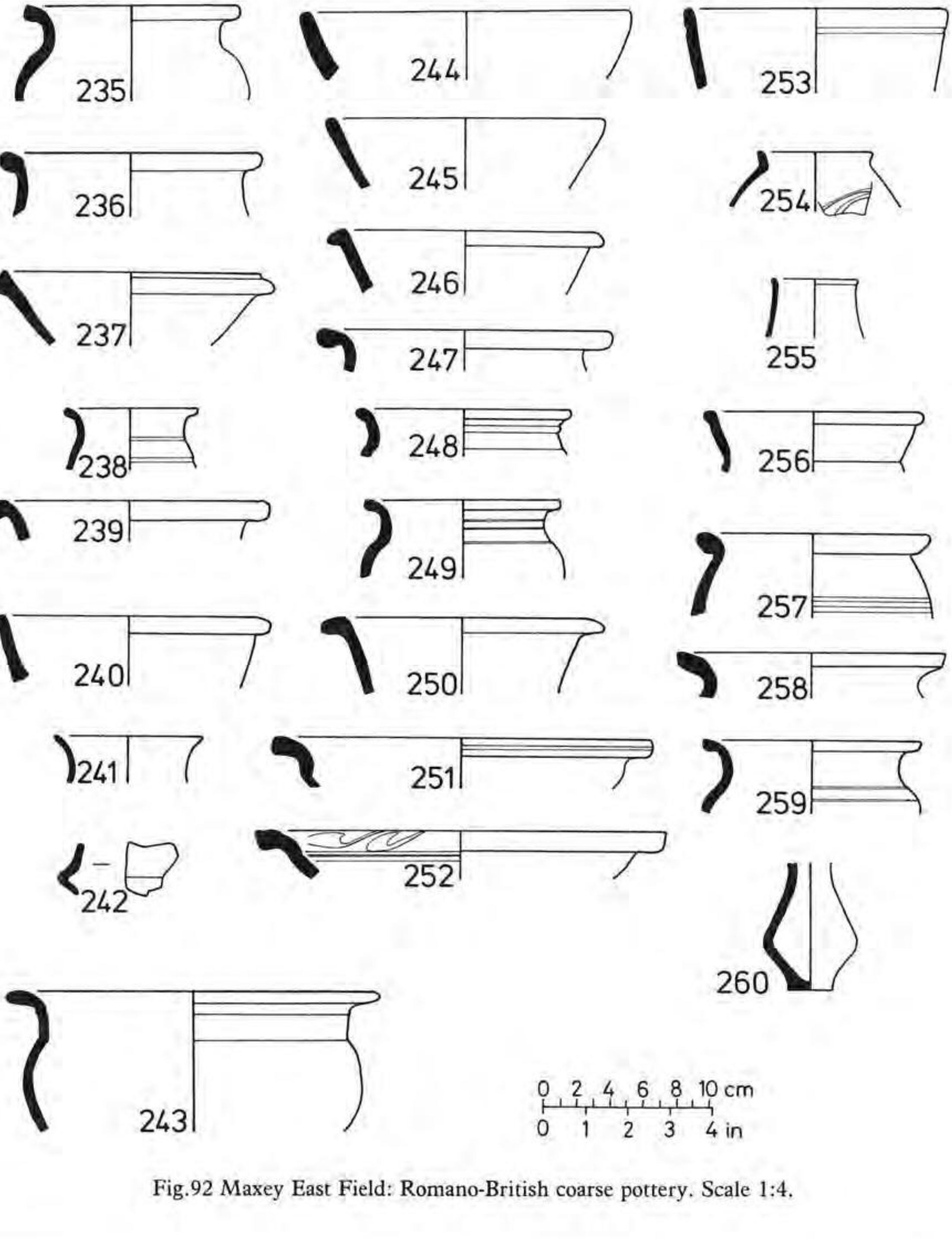


Fig.92 Maxey East Field: Romano-British coarse pottery. Scale 1:4.

3rd/early 4th century?). Two sherds of 2nd century samian. One sherd of possible Hadham Ware (Finds No. 10309).

Fig.91,No.221 Cup. NVCC. White fabric with pink core (5YR 8/3). ?RPNV 59. Colour-coat lost. Sections 0-3, layer 1. 10552.

No.222 Jar in hard reddish-brown calcite-gritted fabric (2.5YR 5/4). External surface dark grey (10YR 4/1). Sparse inclusions up to 2mm. Sections 2-3, layer 1. 10242.

No.223 Jar in hard red calcite-gritted fabric (2.5YR 4/8). Dark greyish-brown external surface (10YR 4/2). Abundant inclusions up to 3mm. Sections 2-3, layer 1. Two sherds: 10238, 10555.

No.224 Dish in hard grey calcite-gritted fabric (10YR 5/1). Abundant inclusions up to 2mm. Sections 0-1, layer 1. 8208.

No.225 Jar in hard reddish-grey calcite-gritted fabric (5YR 5/2). Burnt external surface. Sparse inclusions up to 2mm. Sections 0-3, layer 1. 10556.

No.226 Jar in dark grey gritty fabric (10YR 3/1). Sections 0-1, layer 1. Two sherds: 8211, 8245.

No.227 Jar in very dark grey gritty fabric (10YR 3/1). Sections 0-1, layer 1. 8245.

No.228 Jar in NVGW. Sections 2-3, layer 1. 10263.

No.229 Jar in NVGW. Sections 0-1, layer 1. 8197.

No.230 Dish in NVGW. RPNV 19. Sections 2-3, layer 1. 10288.

No.231 Bowl in NVGW. Sections 0-1, layer 1. 8262.

F.331 (Sections 0-1, layer 1) Phase 8:
Ditch with calcite-gritted, early grey and gritty fabrics. No NVGW or

NVCC. One sherd of Hadrianic or Antonine samian (No.8294).

Fig.91,No.232 Jar in gritty greyish brown fabric (10YR 5/2). 8269.

F.342 (layer 1) Phase 8:

Pit with calcite-gritted and early grey fabrics.

Fig.91,No.233 Beaker in a fine light red fabric (2.5YR 6/6) with a grey core. 14741.

No.234 Beaker in a grey fabric (10YR 6/1) with pale brown surfaces (10YR 6/3). Five sherds: 14732, 14773, 14767, 15017, 14775.

F.360 (Sections 4-5, layer 1) Phase 8:

Ditch with NVGW, NVCC, calcite-gritted and gritty fabrics.

Fig.92,No.235 Jar in hard calcite-grited fabric (2.5YR 5/6). Dark greyish-brown external surface (10YR 4/2). 10354.

No.236 Jar with light red colour-coat (2.5YR 6/6). Heavily weathered. Three sherds: 10346, 10350, 10343.

No.237 Flanged bowl. NVCC. Black colour-coat (2.5YR N2.5). Weathered. 10344.

F.361 (Sections 1-2, layer 1) Phase 8:

Ditch with NVGW, calcite-gritted and gritty fabrics.

Fig.92,No.238 Jar in NVGW. 9896.

No.239 Jar in hard reddish-brown calcite-gritted fabric (2.5YR 4/4). External surface black. Sparse inclusions up to 2mm. 9911.

No.240 Bowl in NVGW. 9905.

F.362 (Sections 1-2, layer 1) Phase 8:

Ditch with NVGW, calcite-gritted and gritty fabrics.

Fig.92,No.241 Biconical beaker in fine greyish-brown fabric (10YR 5/2) with black internal surface. 9878.

No.242 As 241.

F.442 (Sections 0-2, layer 1) Phase 8:

Ditch with NVGW, NVCC and calcite-gritted fabrics.

Fig.92,No.243 Jar in NVGW. 10326.

F.473 Phases 8 and 9:

Ditch with NVGW, NVCC and calcite-gritted fabrics. No early grey or gritty fabrics. Antonine samian. See also mortaria M23-29.

Fig.92,No.244 Bowl in NVGW. RPNV 19. Sections 1-2, layer 2. Two sherds: 11489, 11507.

No.245 Bowl in NVGW. RPNV 19. Sections 2-3, layer 2. 13298.

No.246 Bowl in NVGW. RPNV 18. Sections 1-2, layer 2. 11476.

No.247 Jar in NVGW. Sections 1-2, layer 2. 11510.

No.248 Jar in NVGW. Sections 5-6, layer 1. 13506.

No.249 Jar in NVGW. Sections 5-6, layer 1. 13567.

No.250 Bowl. NVCC. Reddish-brown colour-coat (2.5YR 5/4). Late 3rd century. Sections 0-0, layer 1. 10777.

No.251 Bowl. NVCC. Very dark grey colour-coat (10YR 3/1). Grooved rim. Sections 5-6, layer 1. 13531.

No.252 Segmental dish imitating samian form 36 variant. NVCC. Dark grey colour-coat (7.5YR N4) over barbotine decoration. 'Stanground'-type fabric (Dannell 1973 fig.1 no.1a). 1st half of 3rd century. Sections 2-3, layer 2. 13252.

No.253 Bowl. NVCC. Very dark grey colour-coat (10YR 3/1). Sections 5-6, layer 1. 13514.

No.254 Beaker. NVCC. Reddish-brown colour-coat (2.5YR 5/4) and light red fabric (2.5YR 6/8). White barbotine decoration over the colour-coat. Late 3rd century. Sections 1-2, layer 2. 11061.

No.255 Beaker. NVCC. Grey colour-coat (2.5YR N5). Late 3rd century. Sections 2-3, layer 2. Two sherds: 13261, 13266.

No.256 Bowl imitating samian form 30 in London-type fabric. Dark grey fabric (7.5YR N4) with grey surfaces (7.5YR N5). Sections 1-2, layer 2. 11421.

No.257 Jar in gritty greyish-brown fabric (10YR 5/2). Sections 5-6, layer 1. 13516.

No.258 Jar in hard weak red calcite-gritted fabric (2.5YR 5/2). Blackened rim and external surface. Sparse inclusions up to 2mm. Sections 1-2, layer 2. 11481.

No.259 Jar in fine light grey fabric (10YR 7/2). Sections 5-6, layer 2. 13564.

No.260 Miniature flask, 'incense vessel' or 'unguent jar' in very pale brown self-coloured fabric (10YR 8/4). (Compare Bird *et al.* 1978 no.1222 (fig.162, p.364). Sections 5-6, layer 2. 13613.

F.489 Phases 8 and 9:

Ditch with NVGW, NVCC and calcite-gritted fabrics. No early grey or gritty fabrics. Samian is late 2nd century. Four sherds of undecorated folded NVCC beaker (Nos. 11643, 10734, 11631, 10755), mid-late 3rd century (RPNV 42). See also mortaria M30.

Fig.93,No.261 Bowl. NVCC. Dark grey colour-coat (10YR 4/1). Sections 1-2, layer 2. 11909.

No.262 Jar in NVGW. Sections 1-2, layer 2. 11913.

No.263 Jar in NVGW. Sections 1-2, layer 2. 11915.

No.264 Jar in NVGW. Sections 1-2, layer 1. 11888.

No.265 Dish in NVGW. Sections 1-2, layer 2. 11956.

No.266 Dish in NVGW. Sections 1-2, layer 2. 11954.

No.267 Dish in NVGW. Sections 1-2, layer 1. Two sherds: 11612, 11632.

No.268 Jar in NVGW. Sections 1-2, layer 2. 11953.

No.269 Jar in NVGW. Sections 0-0, layer 1. 14508.

F.491 Phases 8 and 9:

Large pit with mostly NVGW and calcite-gritted fabrics. Hadrianic and Antonine samian. See also mortaria M31.

Fig.93,No.270 Bowl in NVGW. Sections 1-2, layer 1. 13418.

No.271 Jar in NVGW. Grooved rim. Sections 0-0, layer 1. 13587.

No.272 Jar in NVGW. Weathered. Sections 1-2, layer 1. 13479.

F.600 Phase 9:

Barrow mound. A few NVGW, early grey wares and NVCC sherds. Also a coin dating AD 351-353, (Finds No. 19661). This is the latest datable find on the site, and may suggest that Phase 9 occupation or activity in the area continued until at least the mid-4th century. See also mortaria M32.

Fig.93,No.273 Jar. NVCC. Very dark greyish brown colour-coat (10YR 3/2). White outer core, light grey inner core (7.5YR N7). Late 3rd/early 4th century. Two sherds: 22022, 22027.

No.274 Lid. NVCC. Dark brown colour-coat (7.5YR 4/2). RPNV 72. 19601.

No.275 Castor Box. NVCC. Grey core (7.5YR N6), reddish yellow outer core (5YR 6/6) and dark grey colour-coat (5YR 4/1). Poorly executed rouletted decoration. RPNV 89. Late 3rd/early 4th century. 19621.

Stamped Gallo-Belgic sherd:

Fig.94,No.276 Stamped base sherd from an imitation Gallo-Belgic platter, F.198 (structure 5), Quadrant 15, layer 1. 4782. Miss Valery Rigby kindly provided the following comments:-

> The sherd is in a lower Nene valley platterware, and is related to products from West Stow and Longthorpe. The stamp is illiterate and unique, although related stamps have been found at Fishbourne, Chichester, Chalctonbury, London and Southwark. The fringed border makes this one of a fairly rare kind, as such borders are usually found on mortaria, and until recently have not been recorded on other vessel forms. A date after AD 70 and before AD 120 is suggested.

Calcite-gritted Storage Vessels

These large calcite-gritted jars were produced essentially for storage or industrial purposes, and occur in quantity throughout the Roman period. In most cases the rim diameter appears to be in excess of 30cm, and there is a wide variety of rim types. For an example where the complete profile can be restored see Catalogue No.311 below.

Little typological development of this form can be detected, and such a utilitarian vessel appears to have changed little over the four centuries of its production. One kiln producing these vessels is known from Water Newton, dating to the Trajanic period (Howe, Perrin and Macreth 1980, 10).

For other examples see Frere and St. Joseph 1974, fig.55 nos.144-120; Woods 1970, figs.5, 34 and 35; Friendship-Taylor 1979, fig.33 nos.30-32; Field and Mynard 1979, fig.85, nos.91-93.

F.108 Phase 7-8:

Fig.95,No.277 Hard red fabric (2.5YR 5/6), with moderate inclusions up to 5mm. Sections 5-6, layer 1. 9018.

F.155 Phase 9:

Fig.95,No.278 Hard red fabric (2.5YR 5/6), with sparse inclusions up to 7mm. Sections 3-4, layer 1. 1443.

No.279 Body sherd of storage vessel. Hard yellowish-red fabric (5YR 5/6), with a dark grey core (10YR 4/1). Moderate inclusions up to 4mm. The external surface has lines scratched on after firing, possibly intended to form a grid pattern. The external surface is somewhat weathered, so some lines may not now be visible. Sections 1-2, layer 2. 2602.

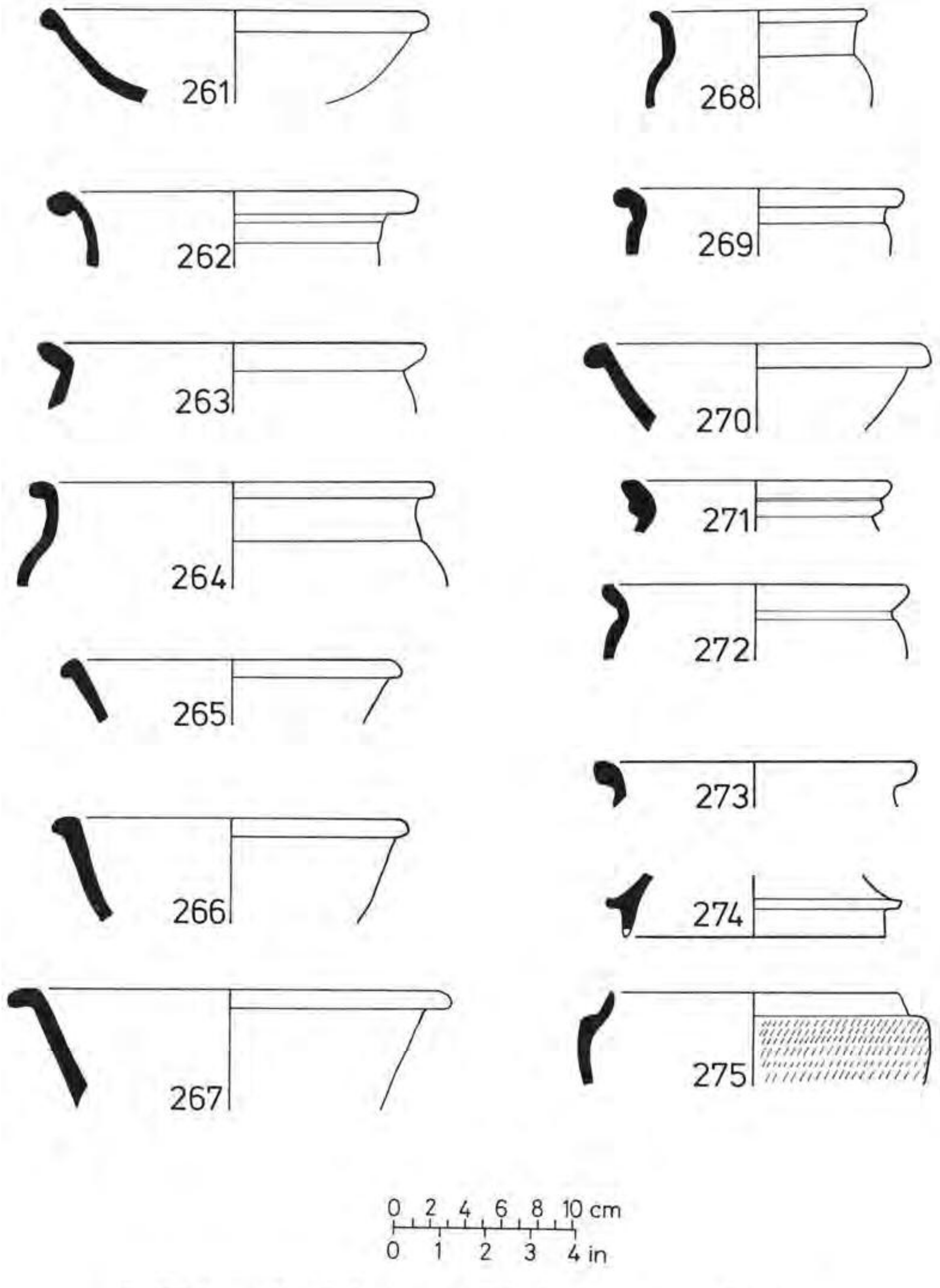


Fig.93 Maxey East Field: Romano-British coarse pottery. Scale 1:4.

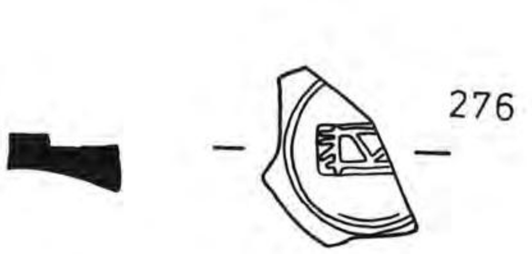


Fig.94 Maxey East Field: Gallo-Belgic stamp. Scale 1:2.

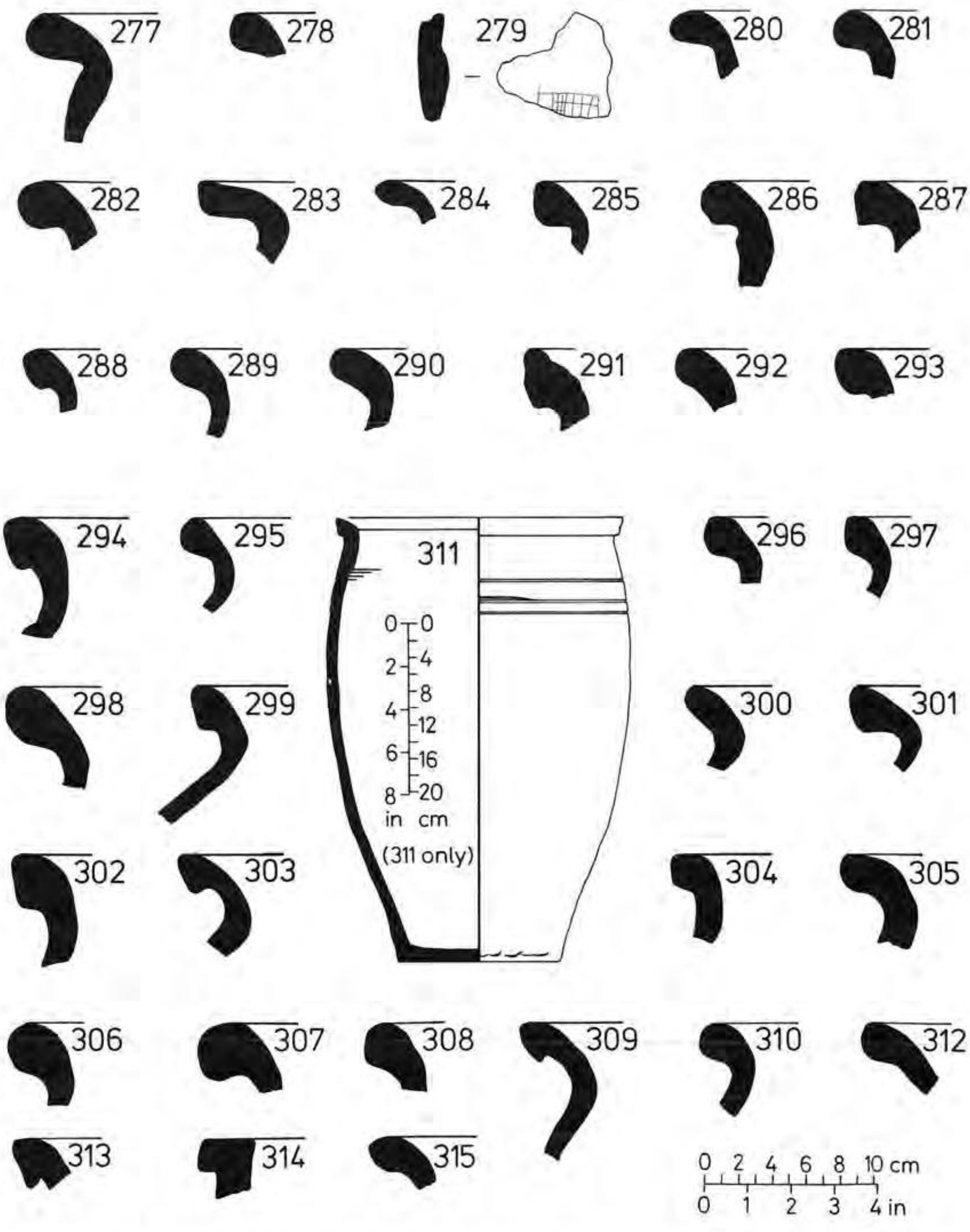


Fig.95 Maxey East Field: Romano-British calcite-gritted storage jars. Scale 1:4 (except No.311).

F.161 Phase 7-9:

Fig.95,No.280 Hard red fabric (2.4YR 4/6), with a grey core and moderate inclusions up to 3mm. 'Corky' surface. Sections 15-16, layer 1. 8532.

No.281 Hard light reddish-brown fabric (5YR 6/3), with abundant inclusions up to 4mm. Sections 1-2, layer 2. 3015.

No.282 Hard very dark greyish-brown fabric (10YR 3/2). Sections 5-6, layer 2. 2862.

F.170 Phase 8:

Fig.95,No.283 Hard reddish-brown fabric (2.5YR 4/4), with very dark grey surfaces (10YR 3/1), and abundant inclusions up to 5mm. Sections 0-11, layer 1. 3956.

No.284 Hard greyish-brown fabric (10YR 5/2), with abundant inclusions up to 2mm. Sections 7-8, layer 1. 2288.

No.285 Hard reddish-yellow fabric (5YR 6/6), with abundant inclusions up to 3mm. Sections 0-11, layer 1. 3958.

F.199 Phase 7-9:

Fig.95,No.286 Hard red fabric (2.5YR 5/6), with grey core, and moderate inclusions up to 4mm. Sections 1-2, layer 1. 2395.

No.287 Hard light brown fabric (7.5YR 6/4), with grey core, and moderate inclusions up to 4mm. Sections 1-2, layer 1. 2371.

No.288 Hard red fabric (2.5YR 5/6), with grey core, and moderate inclusions up to 4mm. Sections 10-11, layer 1. 7432.

F.203 Phase 8:

Fig.95,No.289 Hard red fabric (2.5YR 5/6), with abundant inclusions up to 5mm. Sections 0-1, layer 1. 2652.

F.218 Phase 9:

Fig.95,No.290 Hard red fabric (2.5YR 5/6), with dark grey core (10YR 4/1), and moderate inclusions up to 3mm. Sections 1-10, layer 1. 9721.

No.291 Hard light red fabric (2.5YR 6/6), with sparse inclusions up to 4mm. Sections 0-10, layer 1. 9826.

No.292 Hard reddish-brown fabric (2.5YR 5/4), with dark grey core (10YR 4/1), and moderate inclusions up to 3mm. Sections 4-5, layer 2. 4646.

No.293 Hard reddish-brown fabric (2.5YR 5/4), with moderate inclusions up to 4mm. Sections 1-10, layer 1. 9739.

F.222 Phase 9:

Fig.95,No.294 Hard reddish-yellow fabric (5YR 6/6), with grey core, and moderate inclusions up to 4mm. Sections 6-7, layer 1. 7504.

F.227 Phase 9:

Fig.95,No.295 Hard reddish-brown fabric (2.5YR 5/4), with moderate inclusions up to 3mm. Layer 2. 5176.

F.238 Phase 8:

Fig.95,No.296 Hard reddish-yellow fabric (5YR 6/6), with moderate inclusions up to 6mm. Sections 2-3, layer 1. 5687.

No.297 Hard light red fabric (2.5YR 6/8), with light brownish-grey core (10YR 6/2), and moderate inclusions up to 4mm. Sections 2-3, layer 1. 5540.

No.298 Hard yellowish-red fabric (5YR 5/6), with light brownish-grey core (10YR 6/2), and abundant inclusions up to 2mm. Sections 0-1, layer 1. 5484.

F.250 Phase 7-9:

Fig.95,No.299 Hard red fabric (2.5YR 5/8), with grey core, and sparse inclusions up to 3mm. Sections 1-2, layer 1. Three sherds: 7216, 7269, 7217.

No.300 Hard red fabric (2.5YR 5/8), with grey core, and moderate inclusions up to 2mm. Sections 1-2, layer 1. Three sherds: 7313, 7314, 7271.

No.301 Hard reddish-brown fabric (5YR 5/4), with grey core, and abundant inclusions up to 3mm. Sections 1-2, layer 1. 7382.

No.302 Hard reddish-yellow fabric (5YR 6/6), with grey core, and moderate inclusions up to 5mm. Sections 1-2, layer 1. 7316.

F.308 Phase 8:

Fig.95,No.303 Hard red fabric (2.5YR 5/6), with grey core, and sparse inclusions up to 3mm. Sections 1-2, layer 1. Four sherds: 12022, 14971, 12072, 12073.

No.304 Hard red fabric (2.5YR 5/6), with grey core, and moderate inclusions up to 2mm. Sections 1-2, layer 1. 12425.

F.309 Phase 8:

Fig.95,No.305 Hard reddish-brown fabric (2.5YR 4/4), with moderate inclusions up to 5mm. Sections 0-1, layer 1. 11159.

No.306 Hard reddish-yellow fabric (5YR 6/6), with moderate inclusions up to 3mm. Sections 0-1, layer 1. 11164.

F.310 Phase 8:

Fig.95,No.307 Hard red fabric (2.5YR 5/8), with abundant inclusions up to 5mm. Sections 3-4, layer 2. 14963.

No.308 Hard red fabric (2.5YR 4/6), with moderate inclusions up to 5mm. Sections 1-2, layer 1. 11114.

F.326 Phase 8:

Fig.95,No.309 Hard red fabric (2.5YR 5/6), with grey core, and moderate inclusions up to 5mm. 'Corky' surface. Sections 0-1, layer 1. 10625.

No.310 Hard reddish-yellow fabric (7.5YR 6/6), with grey core, and sparse inclusions up to 2mm. Sections 0-1, layer 1. 10626.

F.329 Phase 9:

Fig.95,No.311 Complete profile. Rim diameter 340mm, Base diameter 190mm, height 530mm. Sections 0-3, layer 1. 10569.

F.473 Phase 8-9:

Fig.95,No.312 Hard red fabric (2.5YR 5/6), with grey core, and moderate inclusions up to 3mm. Sections 5-6, layer 2. 13689.

No.313 Hard red fabric (2.5YR 4/6), with grey core, and moderate inclusions up to 2mm. Sections 1-2, layer 2. 11477.

F.495 Phase 8:

Fig.95,No.314 Hard red fabric (2.5YR 5/6), with moderate inclusions up to 2mm. Sections 1-2, layer 1. 13786.

No.315 Hard red fabric (2.5YR 5/6), with moderate inclusions up to 4mm. Sections 1-2, layer 1. 13701.

F.228 Phase 8:

Fig.96,No.316 Calcite-gritted storage jar base, with turntable impression. The turntable appears to be made from two planks, with a central raised pivot. Sections 0-1, layer 1. 6031 (Drawn by F.Pryor).

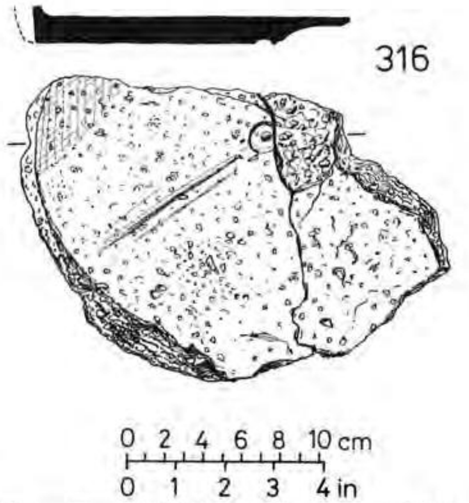


Fig.96 Maxey East Field: base of Romano-British calcite-gritted storage jar with turntable impression. Scale 1:4.

Discussion (Figs.97-106, 204)

Approximately 155kg of pottery were recovered, most of which came from the Phase 8 and Phase 9 settlements on the East Field. The pottery is presented in groups, by feature and layer where appropriate, but it is clear that the physical overlap of successive phases of the Roman settlement, and in particular the intensive recutting of ditches, must have resulted in the frequent disturbance of the material deposited in the ditches. Within the ditch deposits, therefore, pottery from the three Roman phases (7-9) is well mixed. The lack of major published kiln groups from the Nene valley means that it is not possible to separate such groups by phase, and consequently the evidence of ditch recuts, their stratigraphic relationships and spatial organisation have arguably been of greater value in distinguishing ditch phases than the evidence of the pottery. For pit deposits and structures, the pottery recovered must inevitably contain a relatively high percentage of residual material, but these features could generally be phased from the pottery far more certainly.

The illustrated groups show the full range of types found on the site, and the assemblage as a whole is entirely consistent with what might be expected on a 'native' settlement of this type in the area, with an essentially local assemblage (see The Sources of the Pottery, below), a wide range of utilitarian forms in local coarse wares, and very few traded wares from outside the locality. The small groups of finer colour-coated wares and the samian vessels may well have been treasured possessions on a site of this nature, and may have been in use for some considerable time as the use of a repaired samian vessel demonstrates (Fig.78, S1). The status of the settlement is perhaps reflected too by the unusually small coin collection (see Chapter 2, part III).

The presence of cheese-presses and colanders, although few in number, show that milk was being processed on the site, although the animal bone report (Chapter 2, part VII) argues that while cattle and sheep were the mainstays of the economy, livestock management was geared towards meat production rather than dairy products. This accounts for the relative scarcity of these vessels on the site, and suggests that they were for domestic use rather than for the production of dairy produce on a commercial scale.

The large number of storage vessels (Fig. 95) accounts for a considerable proportion of the calcite-gritted wares, which form more than half of the total assemblage by weight (Table 19). These vessels may be associated with the preparation and storage of food during Phases 8 and 9, for which we also have the evidence of eight quernstones, and botanical evidence of a wide range of cereals and legumes (Chapter 2, part VIII). Although primary crop processing does not appear to have taken place within the excavated area, an increase in Phases 8 and 9 in the intensity of cereal production, and a greater diversity in the crops produced may have necessitated the storage of substantial volumes of produce, for which these vessels would be suited. The absence of storage pits and a high ground water table demands that such produce, if stored, must have been kept above ground.

Phase 7 (Figs.97-99, 166)
The pottery from Phase 7 forms only a very small part of the total assemblage, and this Phase is poorly represented compared with Phases 8 and 9. The pottery from Phase 7 consists primarily of poorly-made calcite-gritted vessels, fragmentary in nature, and few in number. None could be illustrated. They derive from a small settlement in the south-west corner of the East Field, where three structures and a contemporary field system were excavated.

The major linear features which cross the site may have their origins in Phase 7, but were clearly in use, and were probably frequently recut, during later phases of occupation. Figures 97 and 98 illustrate the relative weights of the various fabric categories along these ditches, and while it can be assumed that they must contain material from Phase 7, it proved impossible to isolate this from later shell-gritted wares.

Figure 97 shows the distribution of pottery by weight from the ditch (Phases 7-9) comprising features 107, 108, 119, 121, 161, 162, 199 and 250. The bulk of the pottery in this ditch occurs in sections 11 to 15, associated with the Phase 8 settlement adjacent to the ditch at this point, while in section 2, the proportion of NVGW argues that much of this material is also of Phase 8 date.

In Figure 98, the distribution in the more northerly linear ditch (Features 127, 153, 158, 160, 168, 255, 259 and 418) is illustrated. This again shows a concentration near the Phase 8 settlement nucleus (section 8), while little material appears to have been deposited in this ditch on the west side of the field. Within two of the Phase 7 structures (structures 2 and 9; Fig.99), even a very low finds density shows patterning, near the entranceway, suggesting perhaps that these buildings were used as dwellings (Pryor 1983a).

Phase 8 (Figs.100-104, 167).
It is in Phase 8 dated to the second half of the 1st century to the mid-2nd century, and Phase 9, late 3rd to early 4th century, that there is a marked expansion of settlement on the East Field, and it is to these two phases that virtually all of the pottery here belongs.

During Phases 8 and 9, the supply of pottery to the site is essentially from the local pottery kilns of the Nene valley. The most useful introduction to this industry are Hartley (1960) *Notes on the Roman Pottery Industry in the Nene Valley*, and a recent catalogue of a wide range of products of the grey and colour-coated kilns of the lower Nene valley by Howe, Perrin and Mackreth (1980), *Roman Pottery from the Nene Valley: a guide*. This includes a discussion of the history and development of the local pottery industry, and much of this is of direct relevance to the pottery at Maxey.

During Phase 8, there is more evidence of native traditions in the pottery, with bowl, beaker and platter forms in Romanised fabrics, combined with considerable amounts of pottery from, or in the style of products from kilns producing grey wares in the upper Nene valley, such as Ecton and Mears Ashby (Johnston 1969). It is possible that the origins of the NVGW industry may be found in a movement of potters from the upper Nene, in response to the development of *Durobrivae* in the Trajanic period, although evidence of direct links is at present lacking. The pottery from Orton Hall Farm, Monument 97, and Chesterton, suggests that the NVGW kilns were in operation by the second quarter of the 2nd century. The presence at Maxey of substantial quantities of the basic utilitarian forms in this ware, suggests that Phase 8 lasts until the mid-2nd century. Some similarities with groups from Fengate and Sulehay, dated to the mid-2nd century can be seen in the grey wares from Phase 8 at Maxey.

During this period, samian was in use on the site, probably from the second quarter of the 2nd century. The range of forms is limited to the standard bowls, cups and dishes, with a few more expensive decorated bowls. While the date range of the samian is fairly wide, the greater proportion was made during the second and third quarters of the 2nd century AD.

The distribution of the samian sherds is shown in Figure 100, with the sherds divided into four production periods. The distribution in all four periods shows marked similarity, with the material concentrated in and around the main Phase 8 settlement in the north-east corner of the East Field, with a consistent but lower density of sherds around the Phase 8 ring-gully (structure 10) to the south-west. The distribution of Antonine samian shows a dense concentration of sherds in the north-east corner of the East Field, and this illustrates the shift in focus of the settlement in Phase 8, although the possibility that samian vessels were treasured and stayed long in use may mean that some of these may well have survived in use as late as Phase 9.

The mortaria from Phase 8 contexts consist of two Nene valley vessels, one from Mancetter-Hartshill, and one possibly from the Verulamium region. The overall distribution of mortaria sherds is shown in Figure 101. None of the mortaria need be earlier than *c.*AD135, and so all date to Phases 8 and 9. The distribution is similar to that of the samian (see Figure 100), and as such, reflects the focus of Phase 8 settlement, and the deposition of material in Phase 9 in the same area.

The distribution of pottery by the weight in the main area of Phase 8 settlement around structures 3, 4, 5, 11, 26 and 28 is shown in Figure 102. This illustrates the density of material in structures 3 and 5, in contrast to structures 4, 11, 26 and 28. Structures 3 and 5 were clearly the eaves-drip gullies of dwellings, and had filled

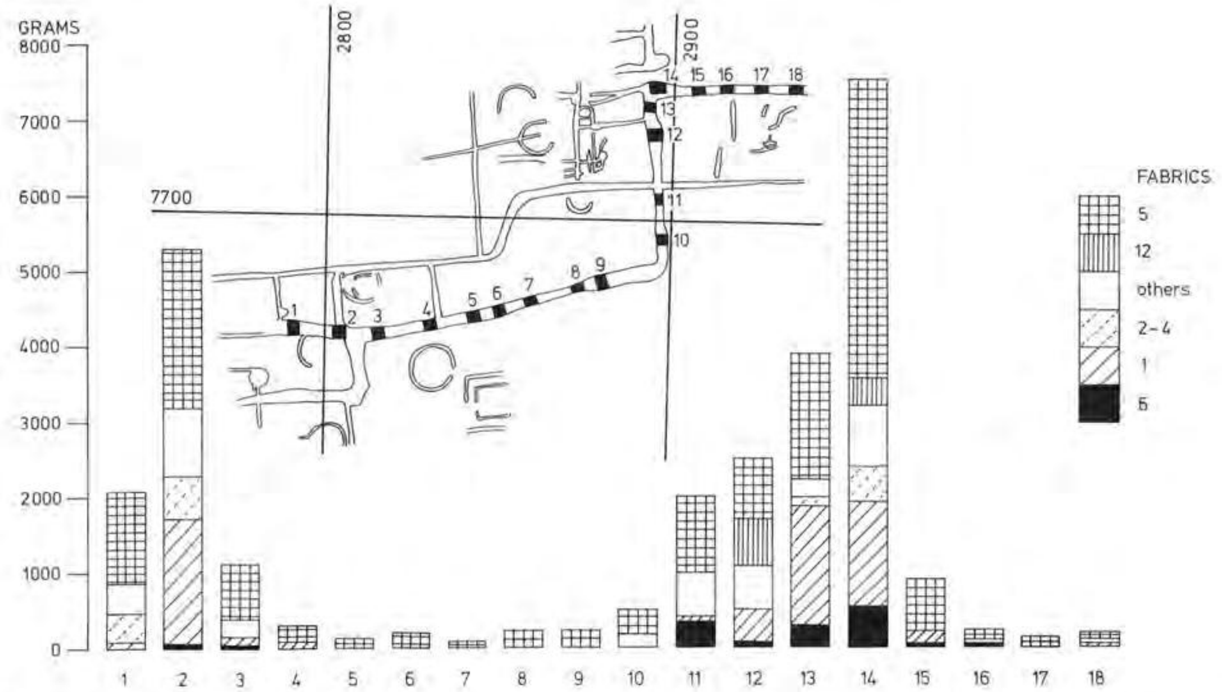


Fig.97 Maxey East Field: distribution in linear features of Roman pottery (Phases 7-9) by fabric/weight (continued in Fig.98). Scale 1:1800.

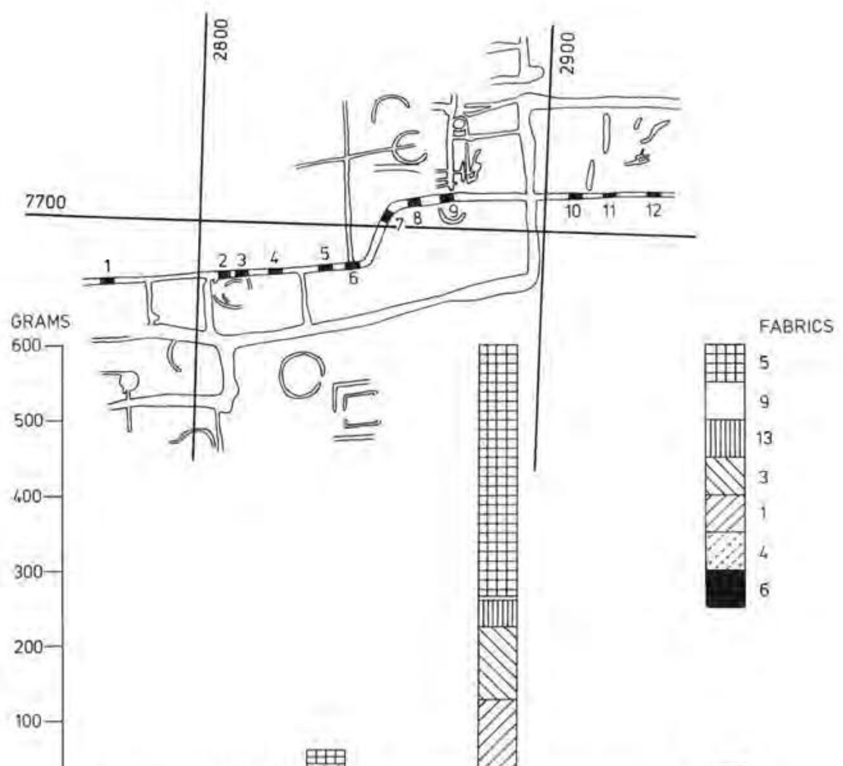


Fig.98 Maxey East Field: distribution in linear features of Roman pottery (Phases 7-9) by fabric/weight (continued from Fig. 97). Scale 1:1800.

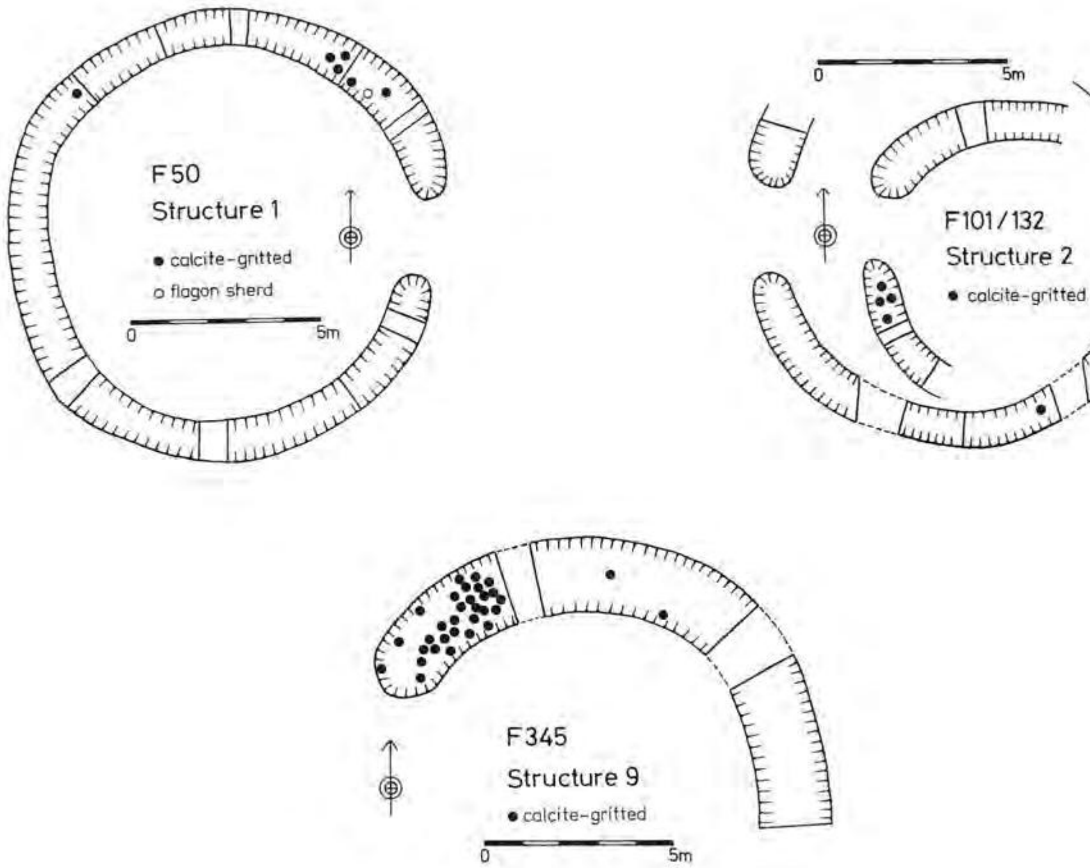


Fig.99 Maxey East Field: distribution of pottery in Phase 7 structures 1 (top), 2 (centre) and 9 (bottom). Scale 1:200.

up with substantial quantities of occupation debris, as shown also by high phosphate values obtained from samples of the feature fills (see Chapter 2, part IV above).

The distribution of pottery within structure 3 is illustrated in greater detail in Figure 104, where each column represents approximately 1m of excavated feature. This shows an increase in finds density around the entranceway on the east side, and in an adjacent feature (241). This increase gains added weight when it is recalled that this side of the structure was truncated by a medieval furrow, and suggests a similar patterning in the deposition of finds as that shown in two structures of Phase 7 date.

Structure 4, in sharp contrast to the adjacent dwelling, structure 3, produced no pottery finds. There is nothing to suggest that the two structures are not contemporary. The phosphate results do not suggest that structure 4 was for livestock, and it is perhaps best seen (see Roman Features description section, above) as performing an ancillary role within the Phase 8 settlement such as a store.

The pottery distribution within the linear features shows a dense concentration to the north-east of structure 3, and in particular on the southern side of the ditched trackway leading to an area beyond the limits of the present excavations.

Figure 103 illustrates the distribution of pottery within features of Phase 8 date in the south-west corner of the East Field. Here, the bulk of the pottery comes from the eaves-drip gully of a dwelling, structure 10, with little pottery finding its way into the ditches except in close proximity to the structure.

Phase 9 (Figs.105,106,167)

There is no evidence for occupation on the site during most of the 3rd century, and local products of the early to mid-3rd century are absent. The last quarter of the 3rd century seems the best date for the start of Phase 9. This phase sees pits and ditches being dug in the north-east corner of the East Field, but the focus of this settlement would appear to be further to the north-east. The recovery of a stone column fragment (Fig.118), may indi-

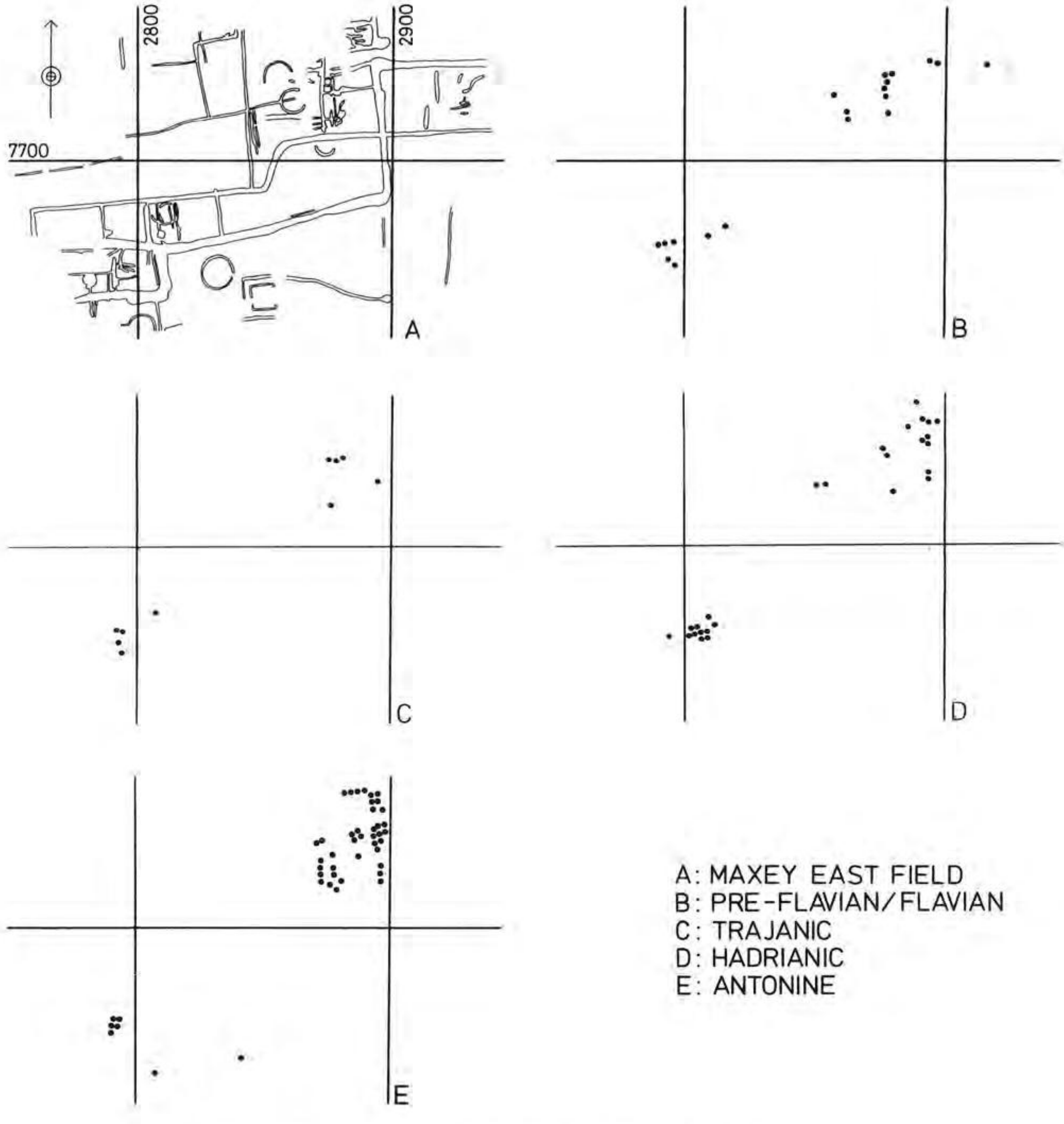


Fig.100 Maxey East Field: distribution of dated samian. Scale 1:2500.

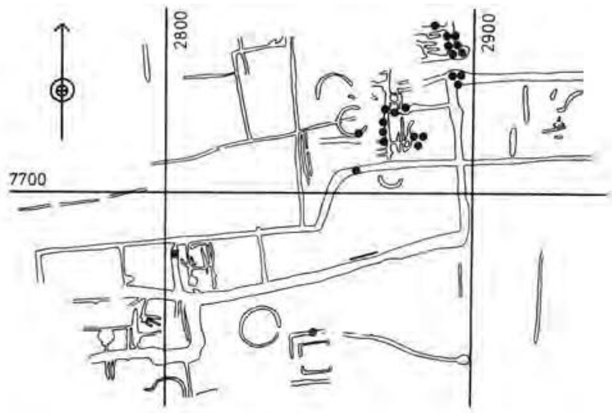


Fig.101 Maxey East Field: distribution of mortaria. Scale 1:2500.

cate that the Phase 9 settlement may have been on a somewhat grander and more prosperous scale than the preceding 'native' farmsteads of Phases 7 and 8, and a greater degree of material prosperity is perhaps indicated by the small finds, and by the presence among the pottery of at least one Hunt Cup, a Castor box from the West Field, and a range of folded beakers, scroll-decorated beakers, and beakers with barbotine and painted decoration. The pottery suggests a terminal date for Phase 9 probably no later than the end of the first quarter of the 4th century.

The distribution of NVCC wares is shown in Figure 105. This emphasises the concentration of Phase 9 material in the north-east corner of the East Field. This picture is repeated in Figure 106, which shows the distribution by weight of pottery from Phase 9 features. Little Phase 9 material was deposited outside the north-east corner of the East Field, and this supports the belief that while no buildings of this phase were found in the excavated area, they lay in fairly close proximity to the site, and to the north-east.

The Sources of the Pottery
Table 19 shows the relative proportions of the principal fabric groups reaching the site, and this demonstrates the essentially local nature of the assemblage. Calcite-gritted wares account for no less than 52.8% of the assemblage by weight, although this is certainly exaggerated by the presence of large storage jars in some numbers (Figs.95, 96). NVGW accounts for 20% by weight, NVCC wares 6.8%, and other local grey and gritty wares 12.3%.

The mortaria are all from sources which one would expect to encounter on sites in the area, with two-thirds of the vessels from the Nene valley, two from Mancetter-Hartshill, and one probably from the Verulamium region.

In Phase 9, an Oxford Ware flanged bowl, and a few sherds of Hadham ware are present, but these are not uncommon on sites in the area during this period.

The flints
by Francis Pryor

Introduction
The flints from Maxey derive from three principal contexts: the ploughsoil surface; later Iron Age and Roman features; secondary (Phase 3) deposits of the central ring-ditch mound (structure 14, F.600). Only a very few flints were found in primary contexts of features belonging to Phases 1 and 2. The discussion that follows the catalogue will consider the three main contexts individually, then as a whole.

Catalogue of illustrated flints

Ploughsoil surface (Grid to nearest 5m square):

Fig.107,No.1 Bifacially retouched flake with two episodes of retouch: first use (heavy stippling), patinated, long-end scraper; second use: crude scraper retouch. Wt 21g. Grid 2690/7685.

No.2 Flake with crude bificial retouch (plough damage?), with scraping edge and 5 denticulate points, all utilised. Wt 13g. Grid 2885/7720.

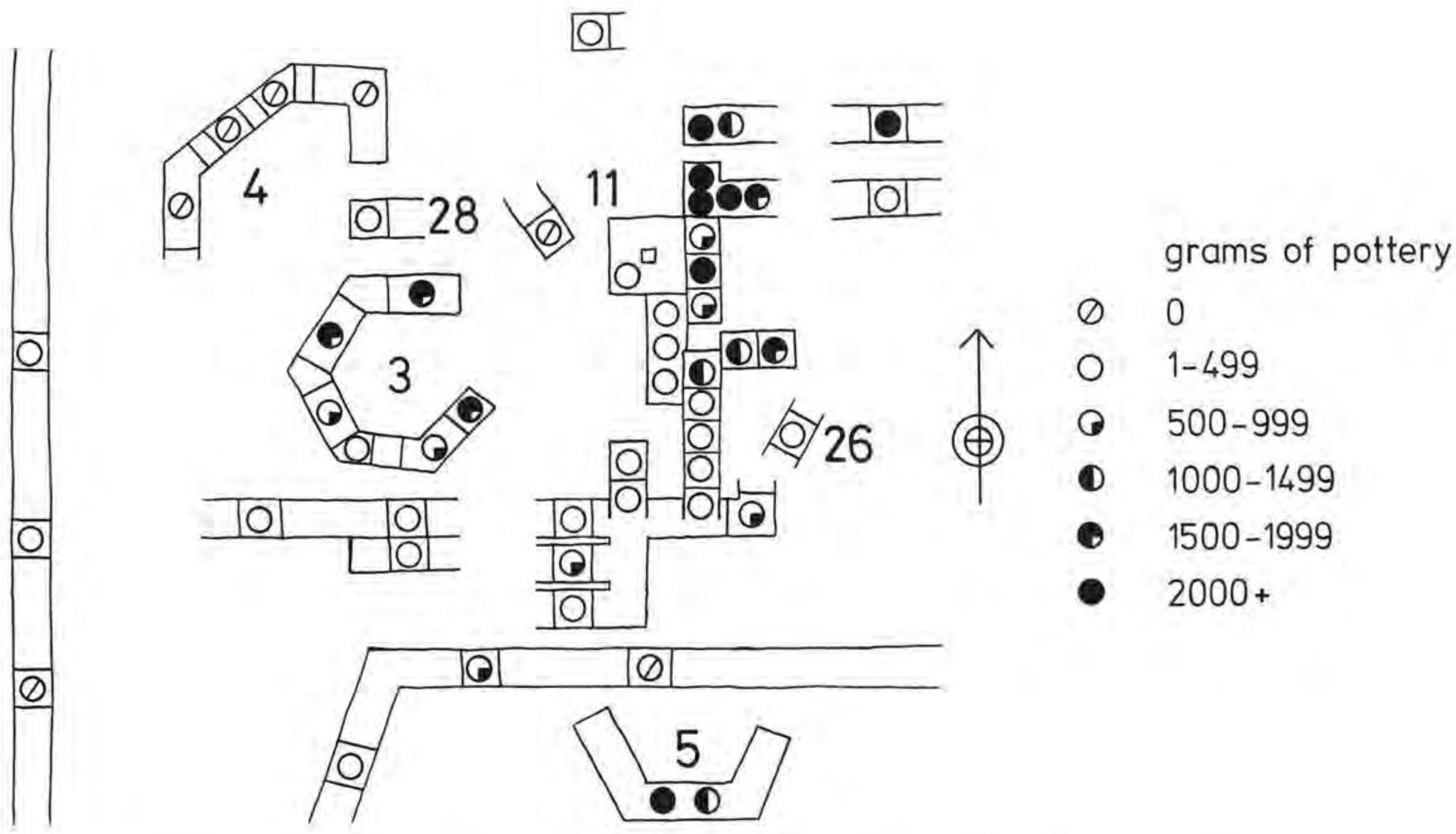


Fig.102 Maxey East Field: diagrammatic distribution of pottery (by weight) in the main Phase 8 settlement area (centred on Grid 2870/7730).

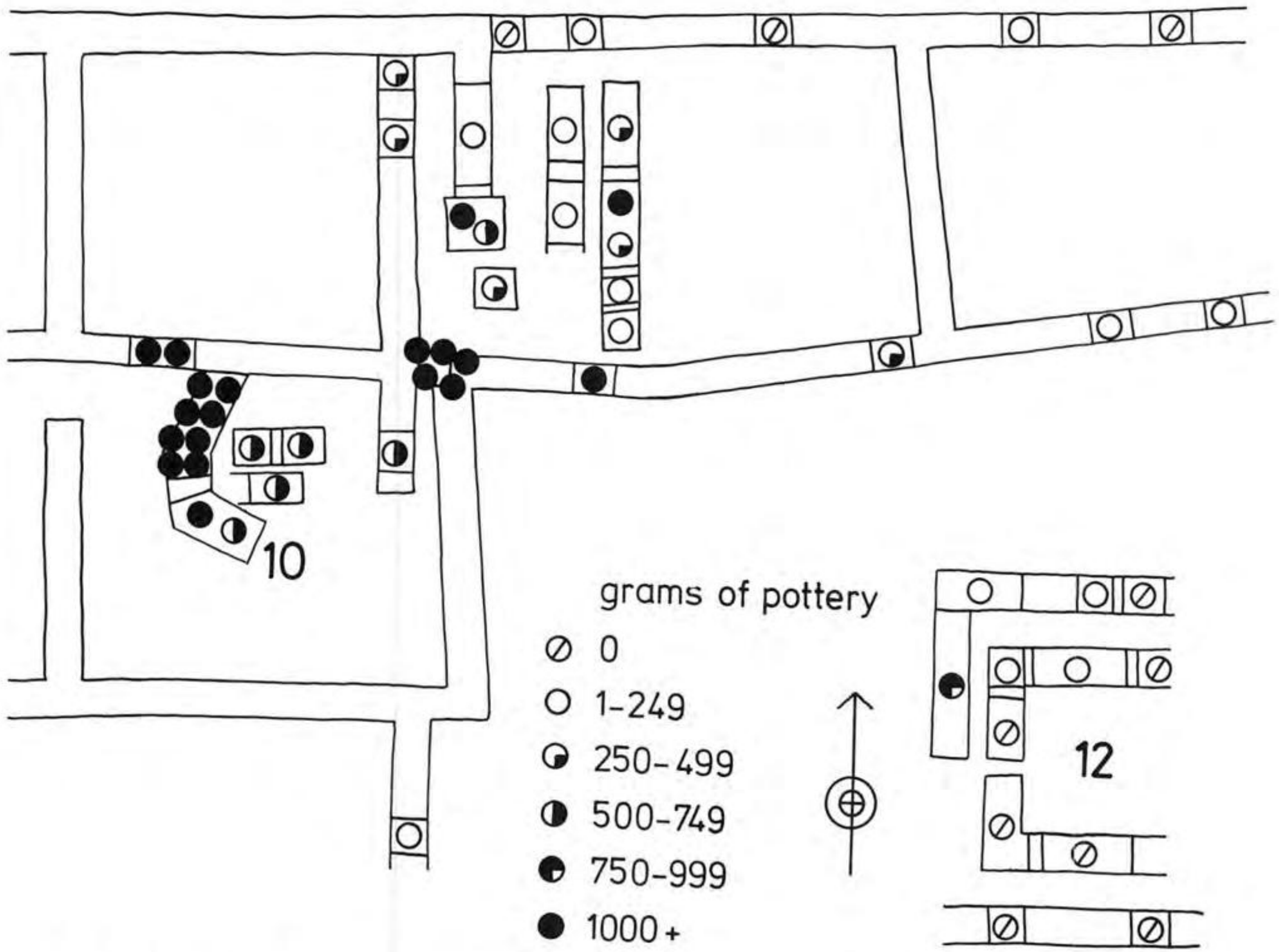


Fig.103 Maxey East Field: diagrammatic distribution of pottery (by weight) in the south-west part of the site, Phase 8 (centred on Grid 2830/7660).

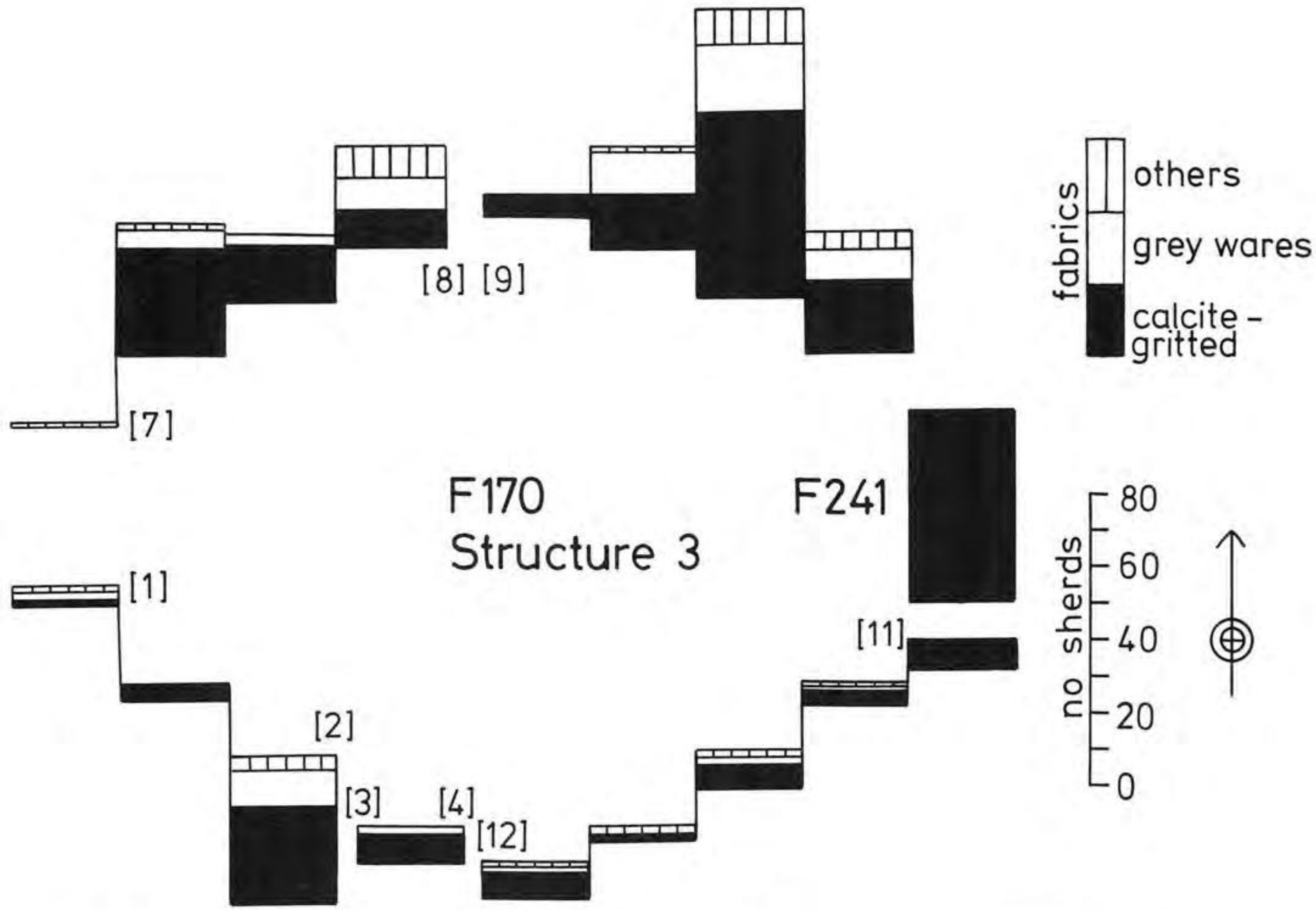


Fig.104 Maxey East Field: diagrammatic distribution of pottery (by sherd type/number) in Phase 8 structure 3 (see also Fig. 68).

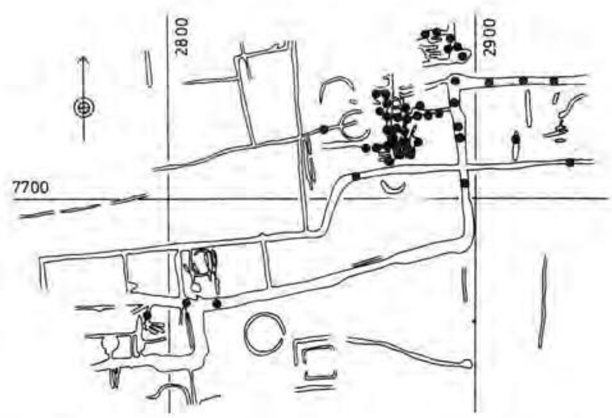


Fig.105 Maxey East Field: distribution of colour-coated pottery. Scale 1:2500.

No.3 Tanged blade with bifacial retouch, broken at distal end; utilised across broken end. Wt 2g. Grid 2780/7720.
No.4 Piercer; unifacial (dorsal) retouched broken flake; utilised point. Wt 9g. Grid 2925/7720.
No.5 Denticulated tool formed from bashed pebble; at least 4 points, all utilised. Wt 17g. Grid 2905/7655.
No.6 Long-end scraper with (secondary?) modification as a hollow-side scraper (possible plough damage?). Wt 19g. Grid 2710/7740.
No.7 Irregular long-end scraper/denticulate; unifacial retouch; points utilised. Wt 46g. Grid 2660/7715.
No.8 Short-end scraper of Late Neolithic type; original patina removed at scraping edge by subsequent retouch, use or plough damage. Wt. 36g. Grid 2930/7665.
No.9 Short-end scraper on cortical waste fragment. Wt 18g. Grid 2930/7670.
No.10 Short-end scraper. Wt 5g. Grid 2700/7645.
No.11 Disc-scraper on broken flake; bifacial retouch; heavy use or damage scars. Wt 18g. Grid 2780/7675.
No.12 Disc-scraper with bifacial retouch and two (utilised) denticulate points. Wt 11g. Grid 2635/7685.
Fig.108, No.1 Short-side scraper with heavy use or plough damage scars. Wt 60g. Grid 2780/7690.
No.2 Bifacially retouched flake with two worn denticulate points and two possible retouched scraping surfaces; flake side-struck. Wt 12g. Grid 2690/7720.
No.3 Hollow-end scraper with retouch on ventral face for possible haft (?). Wt 7g. Grid 2935/7665.
No.4 End scraper on broken flake; denticulate retouch (or plough damage?); worn points and scraping edge. Wt 8g. Grid 2860/7740.
No.5 Single platform core with flakes removed part of way round; small gravel pebble; points and edges worn. Wt 21g. Grid 2870/7715.
No.6 Core with two platforms at right-angles; most sharp edges and points utilised or damaged. Wt 29g. Grid 2910/7650.

Features other than the central ring-ditch and mound:

F.203 (gully, structure 6) Phase 8:
Fig.108, No.7 Leaf arrowhead; translucent, amber flint; distal end missing. Wt 2g. Layer 1. M80.700.

F.228 (ring-gully) Phase 8:
No.8 Awl; bifacially retouched and worn at tip. Wt 8g. Layer 1. M80.6068.

F.109 (ditch) Phase 8:
No.9 Denticulate tool formed on striking platform rejuvenation flake; very oblique angle (140°). Wt 2.5g. Layer 1. M80.620.

F.50 (ring-gully, structure 1) Phase 7:
No.10 Denticulate tool on pebble; utilised. Wt 11g. Layer 1. M80.303.

F.250 (pit) Phase7-9:
No.11 Serrated tool on large flake; scraper retouch on dorsal face; distal end: edges ground before removal of serration flakes from dorsal face (left side) and ventral face (right side); all edges worn; striking platform facetted (prepared). Wt 57g. Layer 1. M80.6701.

Central ring-ditch and mound (structure 14) Phase 2:

F.600:
Fig.109, No.1 Piercer, unifacial retouch, on flake. Wt 3.5g. Layer 1. M81.19616.
No.2 Bifacially retouched flake; heavily utilised; possibly a thick transverse arrowhead? Wt 3.5g. Layer 1. M81.19689.
No.3 Broken utilised blade. Wt 8g. Layer 3. M81.19673.
No.4 Denticulated tool on workshop waste; points utilised. Wt 17g. Layer 1. M81.19699.
No.5 Denticulated tool on workshop waste; points heavily worn. Wt 12g. Layer 1. M81.19692.
No.6 Piercer made from polished axe fragment; irregular unifacial retouch; slight evidence for wear. Wt 6g. Layer 1. M81.22051.
No.7 Denticulated tool on workshop waste; points worn. Wt 4g. Layer 1. M81.19684.
No.8 Small pebble core with opposed parallel striking platforms and use of main facets. Wt 14g. Layer 1. M81.19695.
No.9 Denticulated tool on pebble core fragment; points utilised. Wt 7g. Layer 1. M81.22001.

F.607:
No.10 Bashed pebble with numerous impact cones; facets damaged. Wt 24g. Layer 1. M81.19643.

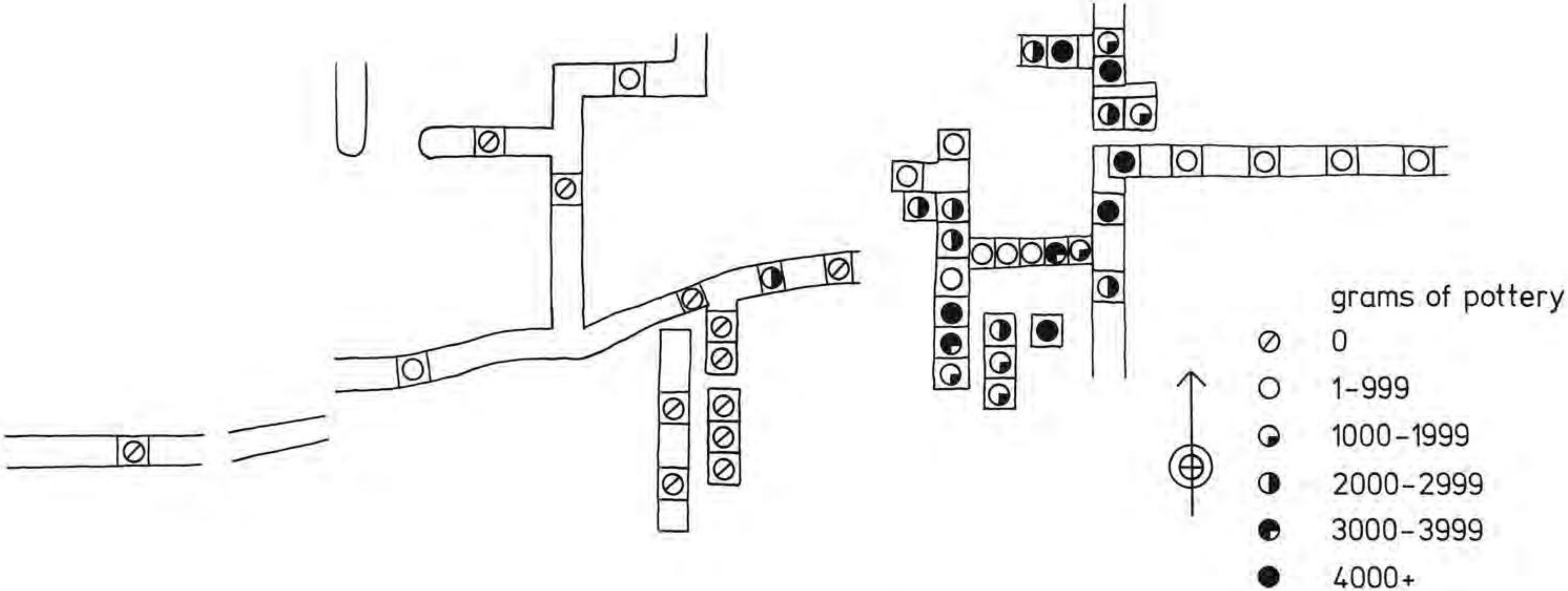


Fig.106 Maxey East Field: diagrammatic distribution of pottery (by weight) in linear features of Phase 9 (centred on Grid 2850/7730).

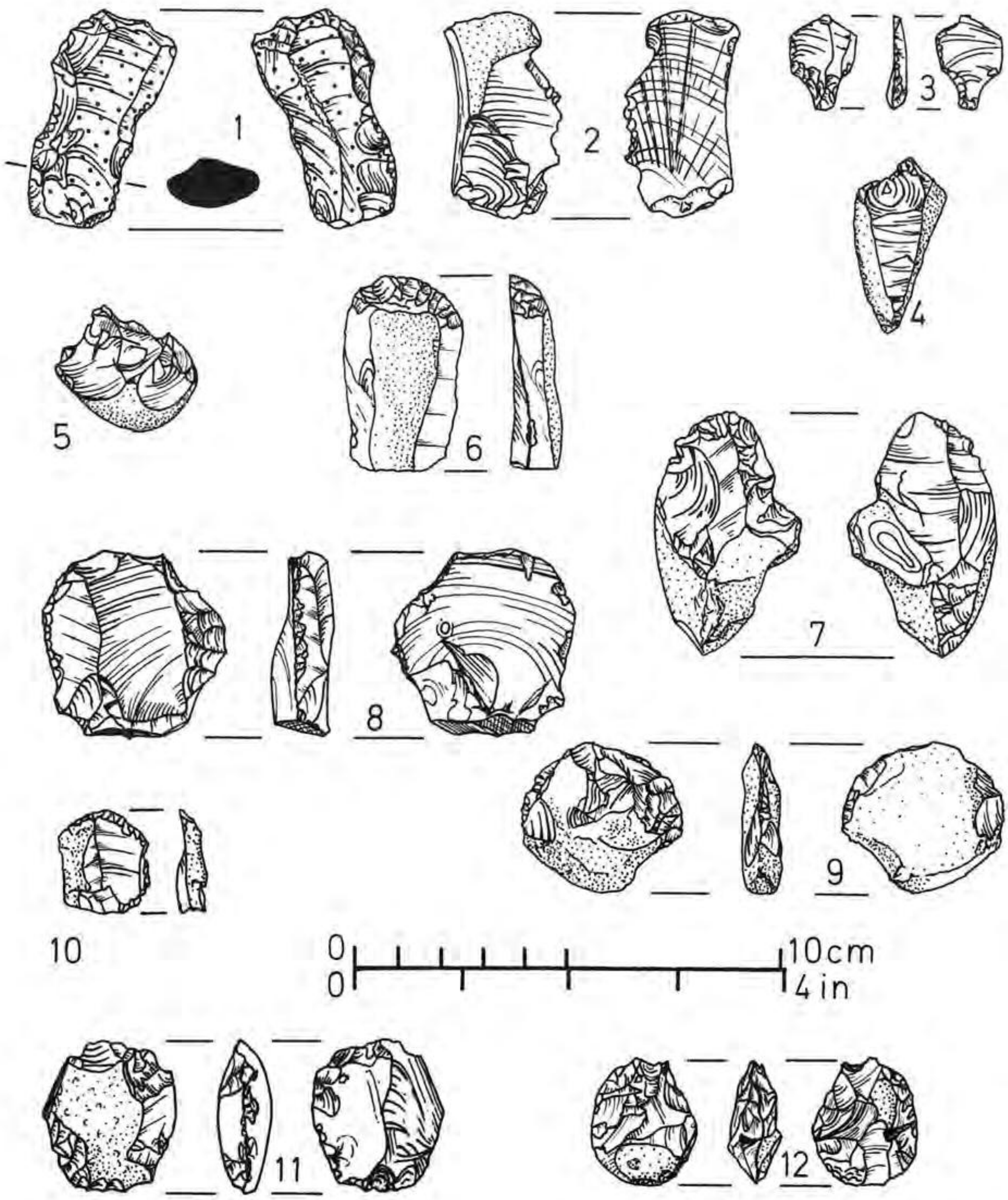


Fig.107 Maxey East and West Fields: selected flints from the topsoil. Scale 2:3.

Discussion
The terminology used here is basically that of Clark (Clark *et al.* 1960, 214-26), with additions (e.g. Wainwright in Wainwright and Longworth 1971).

Flints from the topsoil surface (Figs.107; 108 Nos.1-6; Table 21)

This collection was recoverd by controlled field-walking, using grid frames and working under ideal conditions. Given the site's known history, it was expected that the majority of the flintwork would be Neolithic, and that knapping debris would be prolific. In the event neither expectation was satisfied. The collection is surprisingly typologically homogeneous, but the majority of forms —

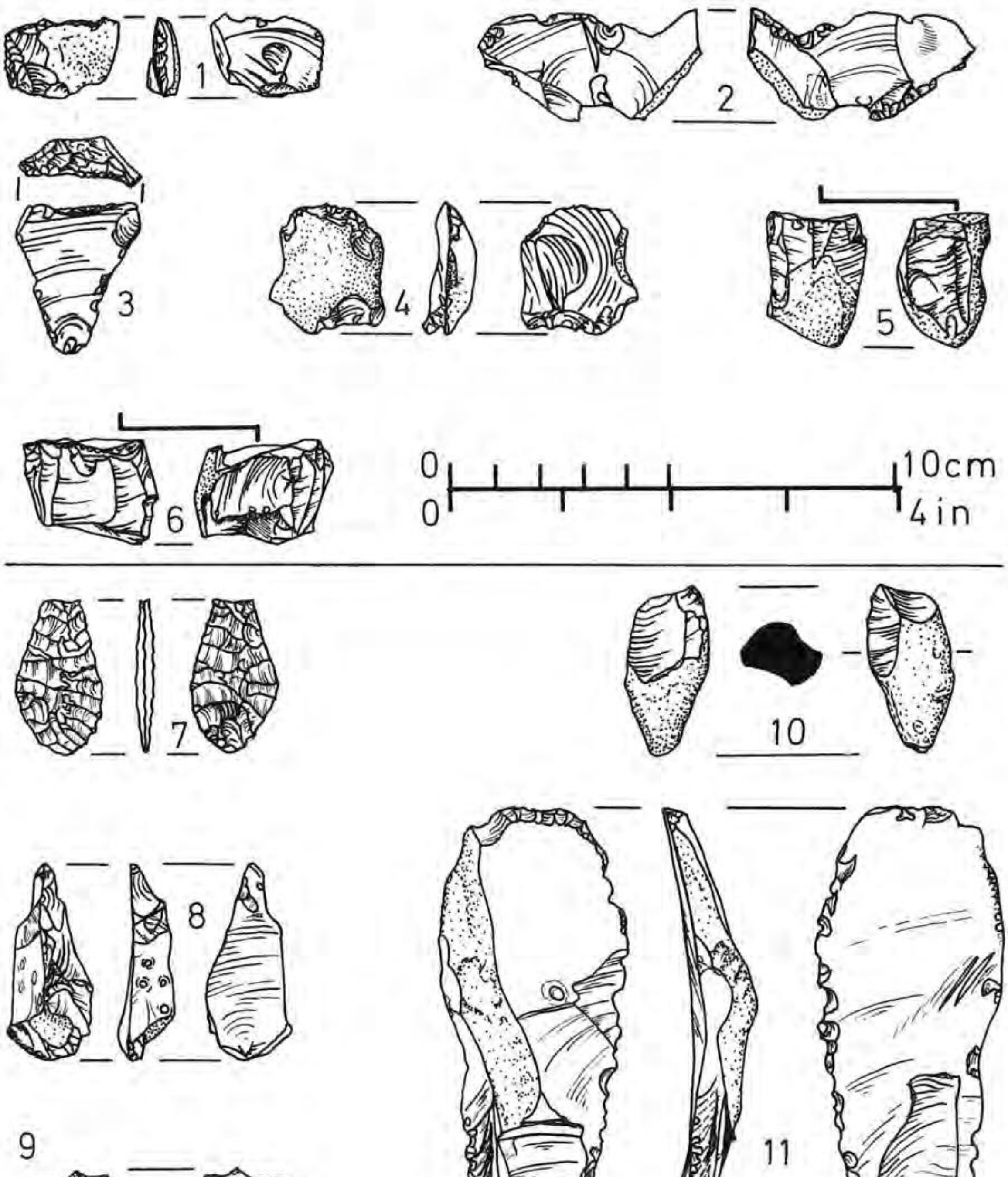


Fig.108 Maxey East and West Fields: selected flints from the topsoil (Nos. 1-6) and features other than the central ring-ditch and mound (Nos. 7-11). Scale 2:3.

particularly the denticulate tools, piercers and small cores — are probably post-Beaker Bronze Age types, as exemplified locally at Fengate (Pryor 1980a, 124-5). Two obvious exceptions are the long-end scrapers of Figure 107, Numbers 1 and 6; these are of probable Neolithic, or even earlier Neolithic date, but both seem to have been re-used or modified at a later period (the possibility of recent plough damage should not be forgotten, however). The later retouched edges show quite distinct signs of wear. Flint knapping debris is rare; cores are few and tiny (less than 10×10mm) waste flakes are absent; this is particularly remarkable given that standard (40,000 cm^3)

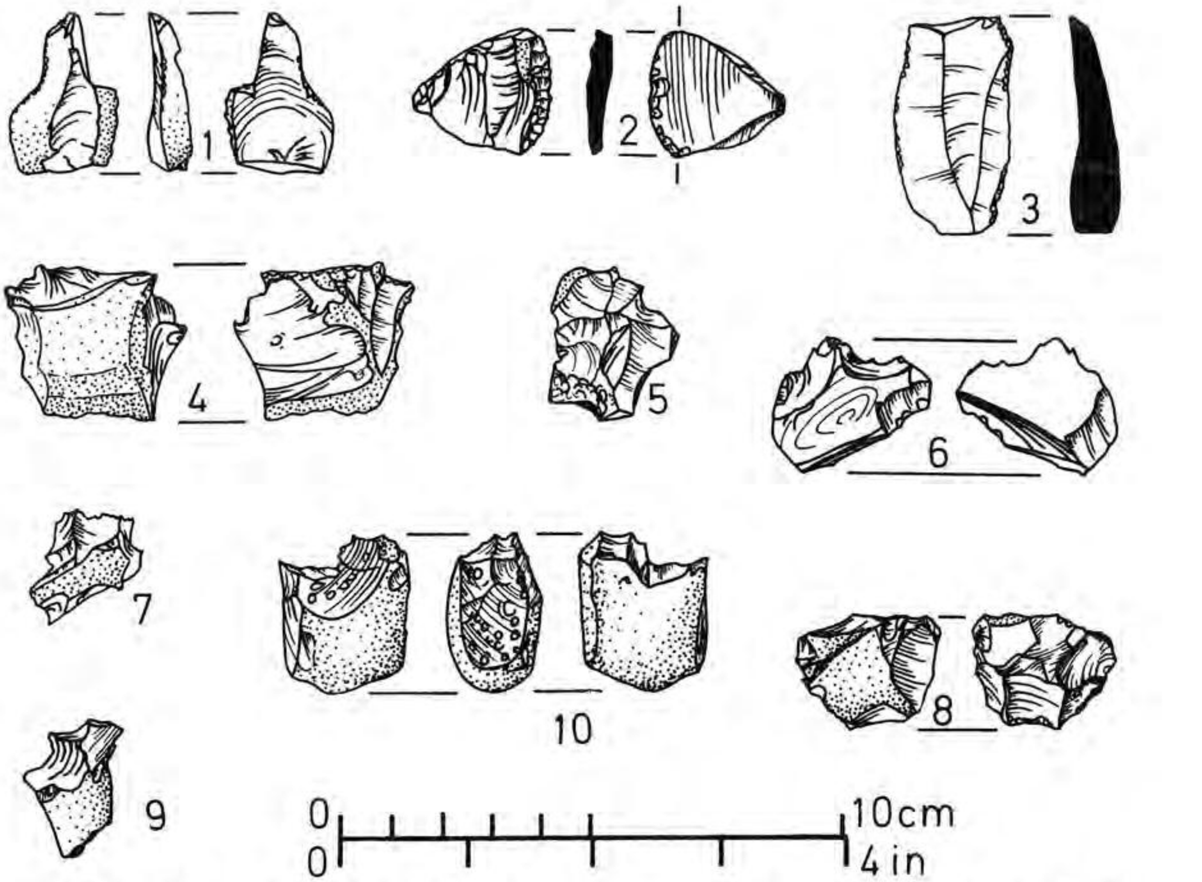


Fig.109 Maxey West Field: selected flints from the central ring-ditch and mound (Phases 2 and 3). Scale 2:3.

samples were wet sieved over the entire site on a 20m grid. The high ratio of implements to by-products, even allowing for the possible mis-identification of post-depositional edge-damage, is also to be noted. The topsoil collection may be summarised thus:

Implements (62.62% of total)

Utilised flakes	45	(67.2%)
Retouched flakes	9	(13.4%)
Long-end scrapers	2	(3.0%)
Short-end scrapers	1	(1.5%)
Disc-scrapers	1	(1.5%)
Short-side scrapers	1	(1.5%)
Scrapers on broken flake	1	(1.5%)
Hollow scrapers	1	(1.5%)
Piercers	1	(1.5%)
Denticulated tools	2	(3.0%)
Tanged blades	1	(1.5%)
Total	67	

By-products (37.38% of total)

Waste flakes	16	(40.0%)
Irregular workshop waste	17	(42.5%)
Core, single platform	1	(2.5%)
Core, two parallel platforms	1	(2.5%)
Core, two right-angled platforms	1	(2.5%)
Core, platforms hard to define	1	(2.5%)
Pebble core	3	(7.5%)
Total	40	

1. Flakes, utilised and waste (n=42), unbroken:

Lengths (mm)

0-10	*10-20*	*20-30*	*30-40*	*40-50*
—	15	19	7	1

Breadths (mm)

0-5	*5-10*	*10-15*	*15-20*	*20-25*	*25-30*	*30-35*	*35-40*
—	—	4	9	10	15	2	2

Breadth/Length ratio

	0:5-1:5	*1:5-2:5*	*2:5-3:5*	*3:5-4:5*	*4:5-5:5*	*5:5-6:5*	*6:5+*
Waste	—	2	1	1	2	1	3
Util.	—	—	5	4	1	7	15
Total	—	2	6	5	3	8	18
%	—	4.8	14.3	11.9	7.1	19.0	42.9

2. Flakes, utilised and waste (n=27), with visible platforms, internal (ventral) angles (to nearest 5°):

90-95°	*95-100°*	*100-105°*	*105-110°*	*110-115°*	*115-120°*	*120-125°*
10	1	3	3	6	1	2

125-130°	*135-140°*
—	1

3. Mean values, unbroken waste flakes (n=10):

	Length	*Breadth*	*Thickness*	*Weight*
Total	215mm	206mm	91mm	51g
Mean	21.50	20.60	9.10	5.10

4. Mean values, unbroken utilised flakes (n=32):

	Length	*Breadth*	*Thickness*	*Weight*
Total	744mm	754mm	263.5mm	161.5g
Mean	22.83	22.86	8.44	5.06

Table 21: Maxey topsoil flints, metrical data

Flints from features other than the central ring-ditch and mound (Fig.108, Nos.7-11; Table 22)

This material almost entirely derives from features of Phases 6-9 and is therefore residual. The evidence for Middle or Late Iron Age flintworking in the region is very poor indeed, and may be discounted with some certainty (Pryor forthcoming). This residual material is typologically closely similar to that just discussed, but it includes a finely-finished broken leaf arrowhead (Fig. 108, No.7) of Green's (1980) type 3B. The large, crudely denticulated flake (Fig.108, No.11), is also probably Neolithic; both types, however, continue in use into the 2nd millennium BC. These two pieces apart, the remaining flints are of general Bronze Age type, as discussed above. Again, there is no good evidence for (redeposited) flint knapping. The collection comprises the following types:

Implements (57.6% of total)		
Utilised flakes	10	(52.5%)
Serrated flakes ('saw')	1	(5.3%)
Serrated flakes (fine retouch)	1	(5.3%)
Scrapers, too damaged to classify	1	(5.3%)
Leaf arrowheads	1	(5.3%)
Denticulated tools	4	(21.0%)
Awls	1	(5.3%)
Total	19	
By-products (42.4% of total)		
Waste flakes	8	(52.5%)
Irregular workshop waste	4	(28.6%)
Core, one platform, flakes removed part of way round	1	(7.1%)
Core, one platform, flakes removed all of way round	1	(7.1%)
Total	14	

1. Flakes, utilised and waste (n = 17), unbroken:

Lengths (mm)

0-10	*10-20*	*20-30*	*30-40*	*40-50*	*50-60*
—	4	8	3	1	1

Breadths (mm)

0-5	*5-10*	*10-15*	*15-20*	*20-25*	*25-30*
—	1	1	9	5	1

Breadth/Length ratio

	0:5-1:5	*1:5-2:5*	*2:5-3:5*	*3:5-4:5*	*4:5-5:5*	*5:5-6:5*	*6:5+*
Waste	—	—	2	2	2	—	1
Util.	—	—	6	1	1	1	1
Total	—	—	8	3	3	1	2
%	—	—	47.1	17.6	17.6	5.9	11.8

2. Flakes, utilised and waste (n = 12), with visible platforms, internal (ventral) angles (to nearest 5°):

90-95°	*95-100°*	*100-105°*	*105-110°*	*110-115°*
2	1	3	4	2

3. Mean values, unbroken waste flakes (n = 7):

	Length	*Breadth*	*Thickness*	*Weight*
Total	160mm	124mm	45mm	16.5g
Mean	22.85	17.71	6.42	2.35

4. Mean values, unbroken utilised flakes (n = 10):

	Length	*Breadth*	*Thickness*	*Weight*
Total	318mm	187.5mm	60.5mm	38g
Mean	31.8	18.75	6.05	3.80

Table 22: Maxey, features other than F.600/607, flint metrical data

Flints from the central mound (F. 600) and ring-ditch (F. 607) (Figs.54;109; Table 23)

This collection probably derives from settlement debris which accumulated on top of the mound, after the monument had ceased its original ceremonial function. It is probable that this secondary occupation was seasonal, perhaps as a refuge from winter flooding (see discussion of Phase 3, part II, above). The flints are mixed together in the secondary deposits with later material including sherds of Romano-British pottery (Fig.54). The roughly circular distribution of this material suggests that it has slipped down the side of the mound to come to rest atop the bank that runs around the ring-ditch inner edge; some material was moved down the bank's outer face into the upper (tertiary) layers of the ditch; by this period the bank, ditch and mound probably formed a smooth, gently sloping profile. The monument would have been cloaked in grass and movement of soil, and the objects in it, must have been extremely slow. Small waste flakes were not recovered from the many wet sieve samples examined (see part II); this must suggest that flint-knapping did not take place in the vicinity of the mound, and that the collection accumulated as the result of casual discard of material brought to the site from settlements elsewhere. The two utilised polished axe fragments are both from the same axe and suggest (a) that pre-Bronze Age sites were being 'mined' for flint and (b) that larger pieces or blocks of flint were carried as part, perhaps, of a kit to be modified as and when required. One might expect the flint axe to originate from a settlement site and we know with some assurance that these are absent in the immediate vicinity of the mound (the nearest suitable known site is the Etton causewayed enclosure). The polished axe fragments apart, the collection is closely similar to that from the two contexts described above, although its size does not allow this to be demonstrated statistically. The denticulated tools and the short, squat waste flakes are certainly post-Neolithic in character. In sum, the secondary contexts yielded the following flint types:

Implements (33.3% of total)		
Utilised flakes	9	(45.0%)
Retouched flakes	4	(20.0%)
Hammerstones	1	(5.0%)
Utilised polished axe fragments	2	(10.0%)
Denticulated tools	4	(20.0%)
Total	20	

By-products (66.6% of total)		
Waste flakes	25	(62.5%)
Irregular workshop waste	9	(22.5%)
Pebble cores	6	(15.0%)
Total	40	

At this point it is appropriate to mention the six flints that were found in primary contexts in the central mound (they are not included in Table 23 nor in the list given above):

F.600 layer 3: 3 utilised, 1 waste flake; total weight 21g.

F.600 layer 4: 2 waste flakes; total weight 1.5g.

The quantity of soil that it was necessary to sieve in order to recover these flints is discussed in part II, above. The assemblage is very small indeed and indicates that the area was not the scene of substantial settlement, either before, or during, the period when the mound was thrown-up.

1. Flakes, utilised and waste (n=33), unbroken:

Lengths (mm)

0-10	*10-20*	*20-30*	*30-40*	*40-50*	*50-60*	*60-70*
1	15	15	1	—	—	—

Breadths (mm)

0-5	*5-10*	*10-15*	*15-20*	*20-25*	*25-30*	*30-35*	*35-40*	*40-45*
1	—	5	7	12	6	—	1	1

Breadth/Length ratio

	0:5-1:5	*1:5-2:5*	*2:5-3:5*	*3:5-4:5*	*4:5-5:5*	*5:5-6:5*	*6:5+*
Waste	—	—	2	6	6	5	5
Util.	—	1	—	1	3	1	3
Total	—	1	2	7	9	6	8
%	—	3.0	6.1	21.2	27.3	18.2	24.2

2. Flakes, utilised and waste (n=19), with visible platforms, internal (ventral) angles (to nearest 5°):

90-95°	*95-100°*	*100-105°*	*105-110°*	*110-115°*	*115-120°*	*120-125°*	*125-130°*	*130-135°*
3	—	1	4	7	1	1	1	1

3. Mean values, unbroken waste flakes (n=24):

	Length	*Breadth*	*Thickness*	*Weight*
Total	479mm	471.5mm	152.5mm	62.5g
Mean	19.95	19.64	6.35	2.6

4. Mean values, unbroken utilised flakes (n=9):

	Length	*Breadth*	*Thickness*	*Weight*
Total	233mm	215mm	70mm	34.5g
Mean	25.88	23.88	7.77	3.83

Table 23: Maxey, F.600/607, secondary contexts, flint metrical data

Discussion of the combined flint collections (Fig.110; Table 24)

Taken as a whole, the vast majority of the Maxey flints are of Bronze Age type, as illustrated, for example, at Newark Road, Fengate (Pryor 1980a, 106-125, with refs). There are, as one would expect, one or two obvious exceptions, which have been discussed in passing above, but the fact remains that the majority of flints seem to be broadly contemporary and typologically uniform. It would be unnecessary to linger on the similarities, but a few points deserve mention. Both denticulated tools and single-point piercers (as distinct from the drill-action of awls) are frequently encountered. Both implement types were important at Newark Road, Fengate, and at other subsites of the 2nd millennium ditched enclosure system. Amongst by-products, small cores are a feature of Newark Road that also finds close parallels at Maxey; however the term 'pebble core' was not used in the Fengate reports, even though the type is illustrated (e.g. Pryor 1980a fig. 68, nos. 73 and 74) and was frequently encountered. Gravel-based flint industries of the Bronze Age are notoriously hard to categorise; cores present very particular problems, since 'striking platforms' may sometimes only consist of two or three flake beds; we note, for example, in the Third Fengate Report that 'the designation of any particular piece of flint as a core was often a highly subjective affair' (Pryor 1980a, 123). The same undoubtedly applies at Maxey, where the technical standard of flint craftsmanship also seems poor: many of the flints exhibit undetached impact cones and side struck flakes are also frequently encountered.

The Maxey flints compare closely in size with those from Newark Road, Fengate, where complete utilised flakes weigh on average 3.6g (Pryor 1980a, 118) and waste flakes weigh even less (1.9g) (Pryor 1980a, 123). The Maxey figures are broadly comparable, although utilised flakes are substantially heavier (the inclusion of some residual Neolithic material may account for this slight discrepancy) (Table 24). The sample of utilised flakes is very small. In other respects, the general composition of implements is very similar: scrapers, for example, form about 10% of the implement inventory, although denticulated tools are more frequently encountered at Maxey than Fengate. It must be stressed, however, that the Maxey collection is far smaller than that from Newark Road (200, as opposed to 1681 flints), and the figures may well be distorted. Despite the size difference of the collections involved, the similarity of flake breadth: length ratios is most striking (Fig.110). Similarities of workmanship and implement type aside, the actual flint selected for use at the two sites is closely similar: little attention seems to have been paid to the knapping-quality of the gravel flint chosen; small pebbles, criss-crossed with internal planes of weakness, and other rolled or partially frost-shattered source material was selected, and cortex removal flakes are very rarely encountered. Neither Fengate nor Maxey, moreover, have provided incontrovertible evidence for *in situ* knapping floors or workshop areas, in post-Neolithic contexts (contrast the earlier Neolithic house or the features of divisions 6-8) (Pryor 1974a, 10-13; 1978, 122-28).

1. Flakes, utilised and waste (n=92), unbroken:
See Fig. 110.

2. Flakes, utilised and waste (n=58), with visible platforms, internal (ventral) angles (to nearest 5°):

90-95°	*95-100°*	*100-105°*	*105-110°*	*110-115°*	*115-120°*	*120-125°*	*125-130°*	*130-135°*	*135-140°*
15	2	7	11	15	2	3	1	1	1

3. Mean values, unbroken waste flakes (n=41):

	Length	*Breadth*	*Thickness*	*Weight*
Total	854mm	801.5mm	288.5mm	130g
Mean	20.83	19.55	7.04	3.17

4. Mean values, unbroken utilised flakes (n=51):

	Length	*Breadth*	*Thickness*	*Weight*
Total	1295mm	1156.5mm	394mm	234gm
Mean	25.39	22.68	7.73	4.59

Table 24: Maxey, flints from all contexts, metrical data

Dating depends on similarities with Newark Road, and is therefore both approximate and relative. The Newark Road collection is markedly dissimilar to the Late Neolithic assemblage from Storey's Bar Road, but finds a *terminus ante quem* in the abandonment of the ditched enclosure system by *c.*1000 bc. The available evidence would suggest that flint debris began to accumulate in the Fengate enclosure ditches sometime after 2000 bc.

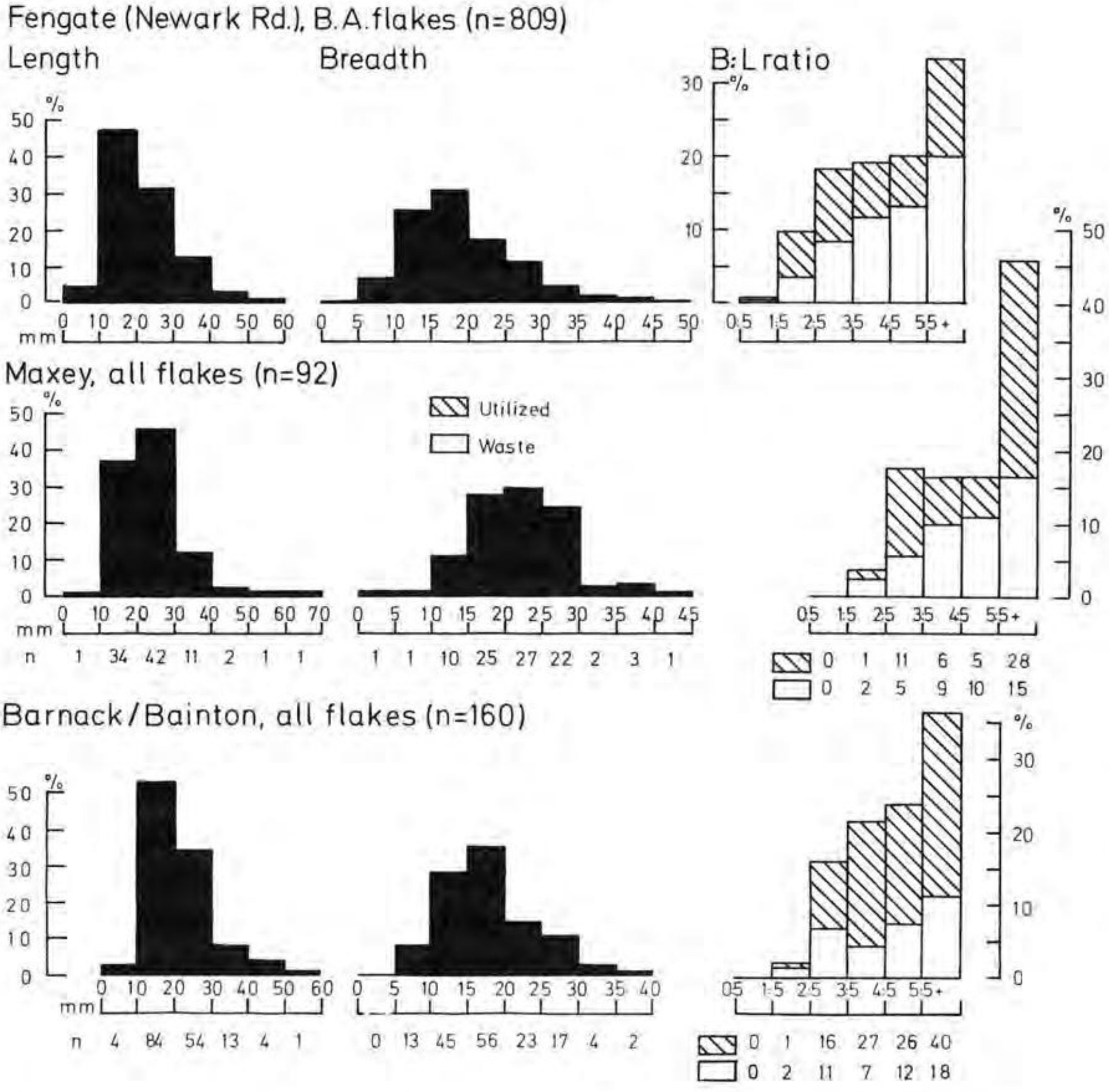


Fig.110 Comparative histograms showing dimensions of flint flakes from Bronze Age contexts at Fengate (top), Maxey, East and West Fields (centre) and Barnack/Bainton (bottom).

Turning to the circumstances surrounding the deposition of the Maxey flints, again we find close similarities between the two sites, in the 2nd millennium. Broader issues must be reserved for Chapter 5, but a few points require discussion here. The Fengate flints found their way into the linear ditch fillings by natural processes; they were not back-filled, but instead were ultimately derived from ditch sides and topsoil in the immediate vicinity. For purposes of discussion, the Fengate linear ditch fillings may be considered as linear strips of accumulated topsoil (Pryor 1974c, 337). The landscape at contemporary Maxey was not transected by earthfast features of this sort; instead flints accumulated on the surface, to become incorporated within the modern ploughsoil (Fig.36). The principal difference between the two types of context is that flint from within the Fengate linear ditches has been protected from plough damage, whereas that at Maxey has been exposed to ox, horse and tractor ploughing for perhaps two millennia. Despite this, the range of implement types and the degree of utilisation and retouch is similar at the two sites; there are no obviously discernible examples of post-depositional modification at Maxey, other than some examples of apparent 'hollow-scraper' secondary retouch and crude, bifacial 'retouch' or bruising. Similarly, Maxey flints from the secondary henge mound deposits do not appear fresh and unmodified when compared with the modern ploughsoil collection; both groups are in comparable state, despite the fact that one has been subjected to perhaps a quarter of the plough damage of the other. It is hard to explain the lack of extensive and severe plough damage in a topsoil flint collection from an area so intensively farmed as Maxey.

Denticulate tools are clearly important and the few 'cores' recovered may have been made for use as piercing implements (Pryor 1982); some of the smaller pebble 'cores', for example are not the exhausted remnants of onetime large pieces of flint: the removal of perhaps six or eight, thin cortical flakes, of little practical use in themselves makes little sense unless it is the 'core', and not the flakes that is the desired end-product. Small 'cores' of this sort invariably have well-worn denticulations. Many tools, especially scrapers, show signs of re-use or modification (e.g. Fig.107, No.11); in other cases patination has been removed, indicating that the gap in time between the two episodes of use, is considerable (e.g. Fig.107, Nos. 1 and 8). It must also be admitted at this point that it is often hard to distinguish between awls, piercers, denticulates, scrapers and cores; irregular workshop waste may be given crude 'scraper' retouch and any sharp points may be worn; it thus ceases to be a by-product and becomes an implement. If the distinction between tool types and indeed the fundamental difference between implement and by-product is often hard to establish, what is there that may be said to characterise the assemblage?

The first important characteristic of these assemblages or collections is negative: little attempt is apparently made to produce flakes or blades. Quantities are very small indeed, when compared with other classes of material. This would suggest that cutting edges were not required, presumably because metal tools were by now sufficiently widely available. Deliberately 'backed' blades, for example, are absent and finely-serrated blades, when found, are usually residual. This leads us to the second characteristic: a positive stress on pointed pieces, whether tools or by-products. These points are almost invariably worn. The technique employed to manufacture denticulates and piercers may in some cases resemble the 'core' technique of previous periods, but it is more often less complex: it is suggested that 'poor' flint whose worn and cracked surface indicates the presence of internal planes of weakness was deliberately selected. It was then broken or bashed and suitable pieces of the resulting 'irregular workshop waste' were utilised as tools; similarly, large pre-existing tools, such as the Neolithic polished axe (Fig.109, No.6) were bashed rather than flaked. This technique produces tools with numerous sharp points and strong, sharp scraping edges; it is economical in its use of flint and ideally suited to the locally available source material: frost-shattered and heavily rolled river gravel.

It has been suggested that this apparent decline in flint-working standards ultimately reflects the gradual exhaustion of sources of good quality flint and that this process had been continuing for many centuries (Pitts and Jacobi 1979). Recent work at Grimes Graves, however, does not apparently suggest that the Floorstone seams were exhausted (Mercer 1981a). An alternative view is that the change in technique was brought about by other, economic and social, factors; in the present case, the widespread use of metal cutting tools (whose availability is indicated by the Fenland Rapiers of the Middle Bronze Age) replaced flint blades or flake knives. Heavy-duty piercing, scoring and scraping tools could still best be made from local flint, however. We must assume that these tools were primarily intended for the working of hide, sinew and bone (Pryor 1980a, 124-5). Microwear analyses could help answer some of these questions, if suitable fresh deposits of flint can be found; secondary ditch infillings are clearly not suitable, nor are flints from the modern topsoil. The buried landscapes of the nearby Fen, however, must hold the key to future advances in the field. In conclusion the flint collection from Maxey may be summarised thus:

Implements (53.69% of total)

Utilised flakes	64	(61.01%)
Retouched flakes	13	(12.30%)
Long-end scrapers	2	(2.00%)
Short-end scrapers	3	(2.80%)
Disc-scrapers	1	(0.95%)
Short-side scrapers	1	(0.95%)
Scrapers on broken flake	1	(0.95%)
Hollow scrapers	1	(0.95%)
Scrapers, too damaged to classify	1	(0.95%)
Piercers	1	(0.95%)
Awls	1	(0.95%)
Denticulated tools	10	(9.40%)
Tanged blades	1	(0.95%)
Flakes with fine serrations	1	(0.95%)
Flakes with coarse serrations	1	(0.95%)
Leaf arrowheads	1	(0.95%)
Polished axe fragments	2	(2.00%)
Hammerstones (flint)	1	(0.95%)
Total	106	

By-products (46.31% of total)

Waste flakes	49	(52.13%)
Irregular workshop waste	30	(31.91%)
Core, single platform, flakes removed all way round	1	(1.11%)
Core, single platform, flakes removed part of way round	2	(2.13%)
Core, two parallel platforms	1	(1.11%)
Core, two platforms, at right-angles	1	(1.11%)
Core, platforms hard to define	1	(1.11%)
Pebble cores	9	(9.57%)
Total	94	

The Other Finds

by David Crowther

Introduction

The section is in two parts, Catalogue and Discussion. The Catalogue includes some examples of smaller, self-contained reports (the Brooches, for example) which include a short discussion; otherwise it is largely descriptive. The basic system of classification employed is that of Chenhall (1978) and the analysis program is described in Crowther and Booth (1981).

Catalogue

The Coins (not illustrated)
by Adrian Challands

F254 (Ditch) Phase 9:

No.1 Hadrian (AD 117-138). Sestertius: reverse, seated figure, otherwise uncertain. Very worn. Sections 0-0, layer 1. 8319.

No.2 Sabrina (AD 260-8). RIC 13. Slight wear, some corrosion. Sections 0-0, layer 1. 8320.

F.259 (Ditch) Phase 8:

No.3 Antoninus Pius (AD 138-61). Dupondius: as RIC 807, but details uncertain. Moderately worn and corroded. Sections 7-8, layer 1. 8172.

F.155 Phase 9:

No.4 Constantius I (Memorial issue) (AD307-8). RIC 6, Trier 879. Slightly worn and corroded. Sections 3-4, layer 1. 2303.

F.600 (secondary mound deposits) Phase 9:

No.5 Magnentius (AD 351-2). RIC 8, Amiens 25. Unworn. Layer 1. 19661.

Abbreviation

RIC *Roman Imperial Coinage*

Comment on the coins

by Richard Reece

This is a strange assembly of only five Roman coins. On any site with well established coin-use and coin-loss, the most commonly found coins are radiates of the Gallic Empire (260-274) and issues of the House of Constantine (330-48). Both categories are absent from this group. This suggests that we have the sporadic loss of irrelevant objects, rather than a sample of normal coin-loss, and hence coin-use; it may be enough to question the relevance of coins to the practical economy of the site. Since this list is so untypical of coin-use and coin- loss in Roman Britain it cannot be explained by comparison, but should be noted for future reference. It could lead to a most interesting future study, perhaps best entitled 'The pattern of coin-loss on coin-less sites'.

The Brooches

by Nina Crummy

Copper alloy

F.521 (Ditch) Phase 5:

Fig.111,No.1 Nauheim brooch, incomplete. A one-piece bow brooch with round-section wire bow decorated with two longitudinal grooves. The bilateral spring has two curves and the chord is superior. The bow divides to form the open catchplate, most of which is missing. The pin is bent. Length 47mm. The metal is a bronze (copper-tin alloy), containing a very small amount of lead. This type of alloy would possess the necessary 'springiness' to be used for a one-piece brooch.

Nauheim brooches are not common in Britain. They date to the latter part of the 1st century BC but also run into the first half of the 1st century AD. Sections 1-2, layer 1, secondary filling.

F.160 (Ditch) Phase 8:

Fig.111,No.2 Celtic fan-tailed brooch, complete. A small, two-piece brooch with grooved rectangular-section bow which widens out to a flat fan-tailed foot. The bow, which was at least partially coated with a tin or tin-lead alloy has a small plain transverse indentation just above the junction with the foot. This may be intended to be zoomorphic. The indentation is so crudely done that it is difficult to be sure of this, but equally it is hard to see why such an indentation was made unless it were an essential part of the decoration. The foot is decorated with marginal grooves and an inner triangle of irregular punched dots. The spring cover is semi-cylindrical and slightly faceted on the outer face, particularly on the left hand side. The spring is of six turns, with the axial bar and external chord held by a lug with a double hole (as *Camulodunum* Type IV). This brooch belongs to a type, of which most examples have an enamelled foot and are hinged. The Maxey brooch is paralleled by one from Lullingstone Villa. These two seem to represent an early form, possibly a prototype, of the main 2nd century enamelled group. The simple foot and the method of attaching the spring indicate a date for this brooch within the second half of the 1st century AD. The original base metal of the pin was probably low in lead, perhaps either fairly pure copper or bronze, but X-ray fluorescence analysis detected high lead levels. These may be due to the remains of tin-lead coating or to contamination with corrosive products containing lead. The pin gave a similar analysis to the bow. Length 30mm. Sections 1-2, layer 1. 1638.

F.178 (Pit) Phase 8:

Fig.111,No.3 Nauheim Derivative, incomplete. The bow and catchplate of a one-piece brooch. The bow is flat, wide and tapering, and had a reverse curve, now distorted. No decoration is visible. The catchplate is solid. Length 52mm. As with the Nauheim brooch (No. 1), the metal is a springy bronze, also containing small amounts of zinc and lead. Sections 0-0, layer 1. 2740.

F.308 (structure 10) Phase 8:

Fig.111,No.4 Dolphin brooch, incomplete. A small, corroded hinged brooch with long, possibly moulded crossbar. Probably a Dolphin brooch, but possibly an undeveloped Polden Hill brooch, though few of these are hinged. There are transverse mouldings on the head. The bow is narrow, D-shaped in section, and apparently plain. The catchplate is damaged, but appears to have been solid. The pin is missing. Length 35mm. The original metal was bronze with probably a very small amount of lead. Sections 1-2, layer 1. 12088.

F.310 (structure 10) Phase 8:

Fig.111,No.5 Nauheim Derivative brooch, incomplete. An almost complete one-piece brooch, but the end of the pin is missing. The bow is narrow and flat, the catchplate solid. The spring has four bilateral turns and the chord is inferior. The metal is a tin bronze with some lead. Length 41.5mm. Sections 1-2, layer 1. 11113.

F.161 (Ditch) Phase 9:

Fig.111,No.6 Oval plate brooch, incomplete. A large example, the pin, spring and spring-fitting of which are missing (brooches of this type are usually sprung on one lug). The base metal is a bronze. The surface of the brooch bears two narrow walls, one on the rim, and one 2.5mm within the rim, and an inner, thick, high wall which forms the setting for a large conical piece of glass. The glass of the inset is iron-rich, black in colour, with some surface air bubbles and seems to be fixed in its setting by an adhesive substance. A similar inset from Wanborough, Wilts. consisted of a black outer layer over a clear glass core (Justine Bayley, pers. comm.).

The zones defined by the setting and the thin walls were mercury-gilded and embellished by punched patterns. The inner zone seems to be of sloping SSSs, and the outer is a sharp zig-zag. These zones of gilt fine decoration would, on a well-preserved example of the type, be seen to have the effect of lightening what would otherwise be a coarse and heavy brooch. The back of the brooch is tin coated. Diameter 35mm by 28.5mm.

This brooch probably dates to the 4th century AD, though the type may make its appearance towards the end of the 3rd century. A close parallel for this example comes from Swaffham, Norfolk (Fitch, 1857) but its outer punched pattern is of concentric circles. Sections 3-4, layer 1. 342.

F.170 (structure 3) Phase 8:

No.7 Brooch fragment. A pin from a small hinged brooch. Length 24mm. Sections 9-0, layer 1. 3765.

F.238 (structure 6, yard) Phase 8:

No.8 Brooch fragment. A pin from a sprung brooch. Length 46mm. Sections 0-1, layer 1. 5523.

Iron

F.219 (structure 8) Phase 7:

Fig.112,No.9 Brooch fragment. The solid catchplate of an iron brooch, probably of Nauheim Derivative form. Length 21mm. Sections 2-0, layer 1. 5259.

F.176 (Grave) Phase 8:

Fig.112,No.10 Nauheim Derivative brooch, fragmented, incomplete. Six fragments of a corroded iron one-piece brooch. One fragment is clearly a four-turn bilateral spring with inferior chord which indicates that this brooch was probably a Nauheim derivative. No further information was recovered from radiography. Layer 1; ? male inhumation, aged 36-53 years, brooch on left shoulder.

F.251 (Ditch surrounding structure 6) Phase 8:

Fig.112,No.11 Nauheim Derivative brooch, incomplete. A much-corroded small iron one-piece brooch, with narrow, flat bow. Surface examination suggested the spring to have four bilateral turns, though radiography indicated a probable fifth (see illustration). The chord is inferior. Most of the pin is missing. Length 38mm. Sections 0-1, layer 1. 7125.

Discussion of the brooches

The eight identifiable brooches reflect the three Roman phases (7-9) of the site. The Nauheim brooch (No. 1) is rare in this country and clearly

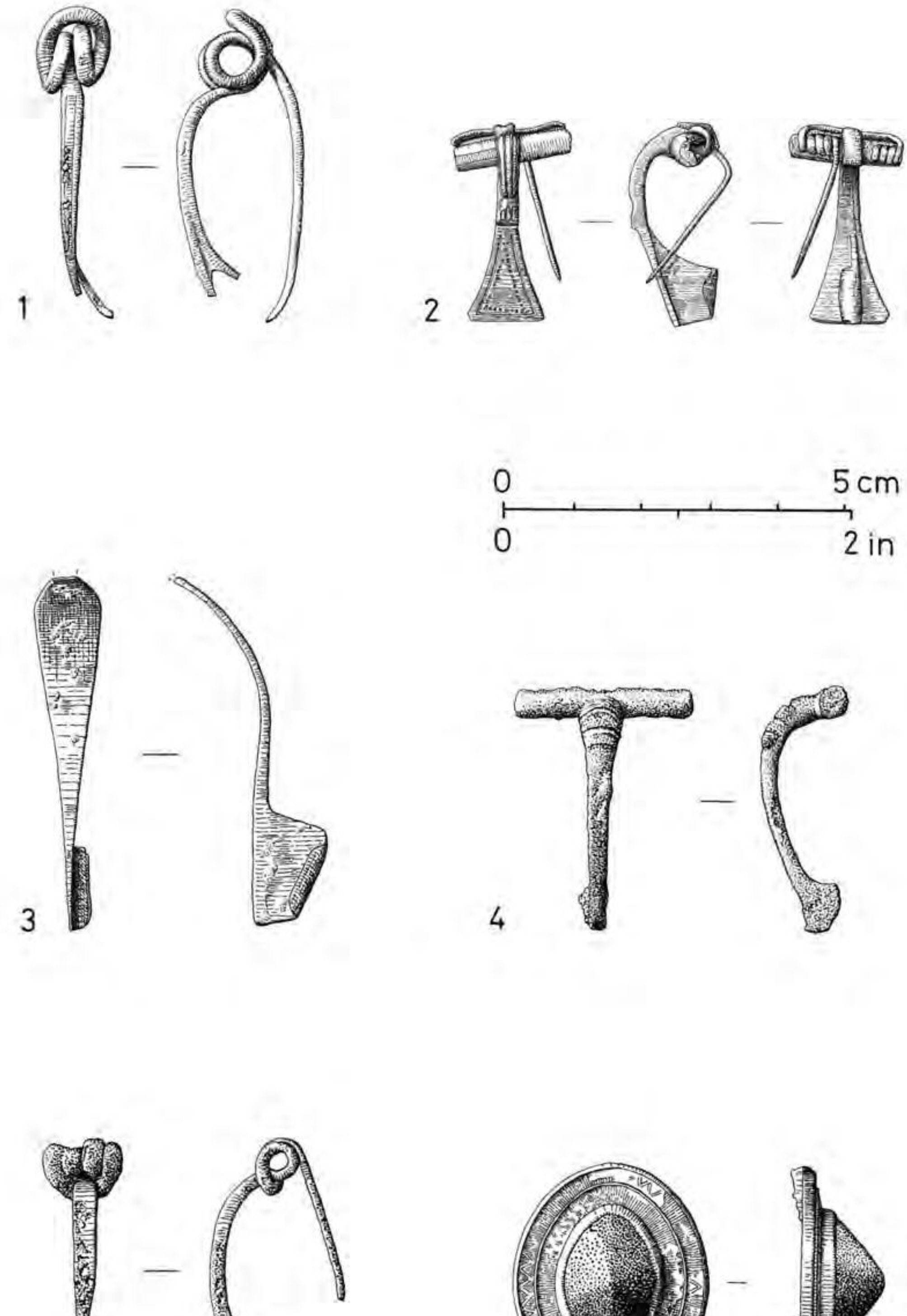


Fig.111 Maxey East and West Fields: copper alloy brooches. Scale 1:1.

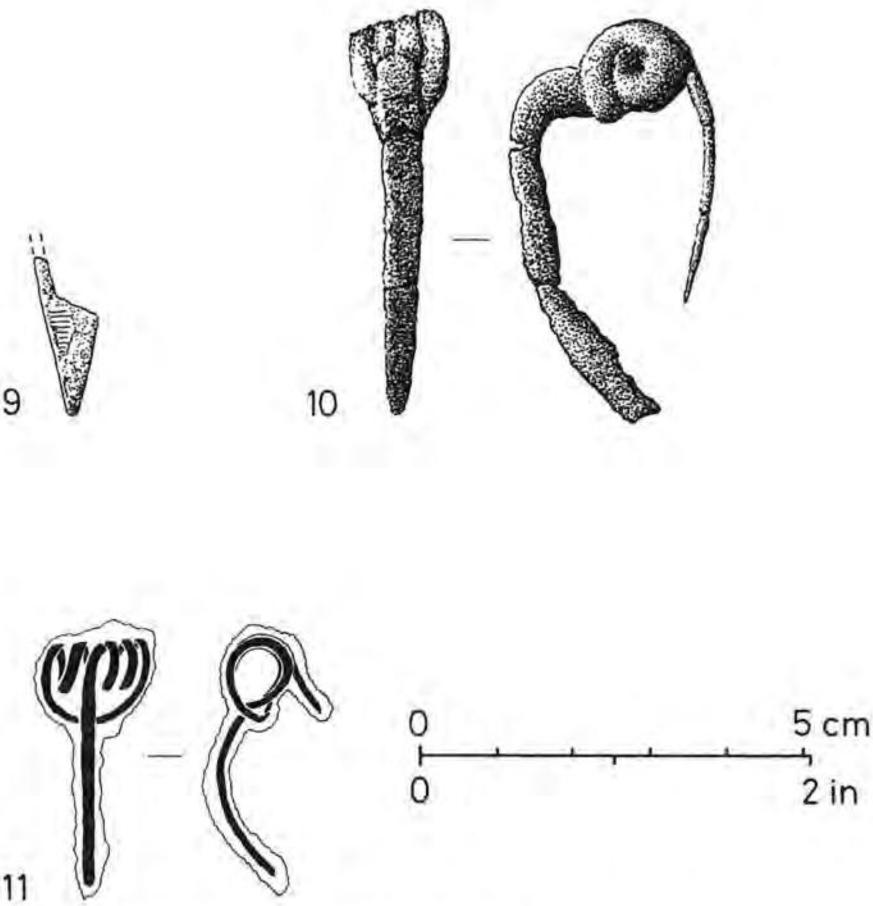


Fig.112 Maxey East Field: iron brooches. Scale 1:1.

indicates pre-conquest activity, while the four (five if the catchplate, No.9, is correctly identified) Nauheim Derivative brooches point to immediately pre-conquest and early Roman occupation (Phases 7 and 8). The later date is further strengthened by the Celtic fan-tailed brooch (No.2) and the Dolphin brooch (No.4). The absence of enamelled bow and plate brooches implies little or no occupation of the site in the 2nd and 3rd centuries when enamelling flourished; alternatively, of course it may also reflect the settlement's rather impoverished status. The 4th century plate brooch (No.6) stands well apart from the rest of the collection and is all that indicates the re- occupation of the site late in the Roman period (Phase 9).

The most important piece in the group is the Celtic fan-tailed brooch. The discovery of a parallel to the Lullingstone Villa brooch, which Hull (forthcoming) considered to be the forerunner of the 2nd century Celtic fan-tailed brooches with enamelled foot, adds credence to his supposition. The geographical distance between the two findspots suggests a fairly widespread market for this early type. That the brooch dates to the second half of the 1st century, possibly within a date range AD 50-80, is supported by the method of attaching the spring, which parallels that used on *Camulodunum* Type IV brooches (AD 50-70).

The copper alloys have been analysed using X-ray fluorescence by Paul Wilthew of the Ancient Monuments Laboratory, to whom I am indebted for his work and comments.

Abbreviation: Camulodunum (Hawkes and Hull 1947).

The other copper alloy objects

Personal artefacts

F.170 (structure 3) Phase 8;

Fig.113,No.1 Buckle, incomplete. Simple C-shaped buckle loop of flat rectangular section. Expanded terminals are pierced to take bar and pin. Terminals 16mm apart. A tightly dated parallel from Fishbourne (Cunliffe 1971, II, 110) came from a context of late 1st century AD date. Sections 9-0, layer 1. 3675.

F.203 (structure 6, yard) Phase 8:

Fig.113,No.2 Ligula, complete. Simple drawn wire with round spatulate terminal slightly off-centre, flattened by hammering. Stem is round in section, 3mm in diameter, gently tapering to a point. Length 112mm. Sections 0-1, layer 1. 2661.

Unclassifiable artefacts

F.489 (Ditch, structure 13) Phase 8:

Fig.113,No.3 Wire, incomplete. Round-section length of alloy wire, 1.5mm thick, *c.*110mm long. One, possibly intact end is bent back, hook-like. The wire forms a flattened and distorted loop, and may be a light binding, such as a wire-twist, common on medieval sites. The item is heavily corroded and has been drawn from a radiograph. Sections 1-2, layer 2. 11908.

F.131 (Pit) Phase 8:

No.4 Fragment. Sheet alloy of irregular shape. Max. dimension 14mm; thickness 1mm. One face highly polished with traces of concentric striations on surface. Possibly a mirror fragment. Sections 0-0, layer 1. 373.

F.170 (structure 3) Phase 8:

No.5 Fragment. Sheet alloy of irregular shape. Max. dimension 12mm; thickness 0.5mm. Sections 3-4, layer 1. 1728.

F.173 (structure 6, yard) Phase 8:

No.6 Wire fragment. Square-section length of alloy 2mm thick, 47mm long, broken at both ends. Sections 0-1, layer 1. 1756.

F.362 (Ditch south of structure 6 yard) Phase 8:

No.7 Fragment. Strip of alloy, oval in section (2.5mm × 1.5mm), tapering to a flattened point. Length 17mm. The item is bow-shaped and broken at the wide end. Possibly a fitting. Sections 1-2, layer 1. 10201.

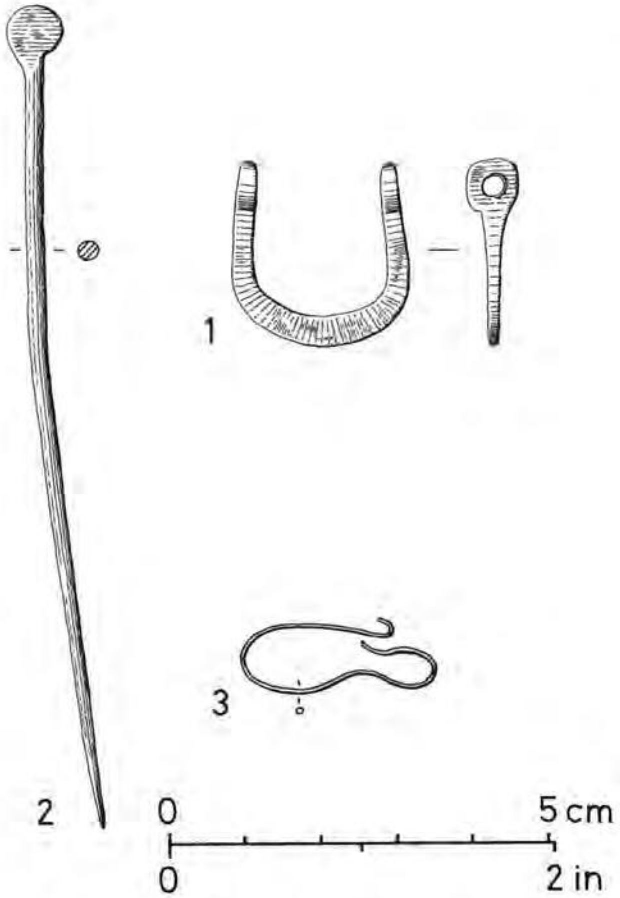


Fig.113 Maxey East Field: copper alloy objects. Scale 1:1.

Lead objects

F.250 (Pit) Phase 9:
No.1 Fragment. Strip of folded lead, 2mm thick. Max. dimension 57mm. Sections 1-2, layer 1. 7408

The other iron objects

Tools and equipment
F.173 (structure 6, yard) Phase 8:
Fig.114, No.1 Latch lifter, complete. Square-sectioned rod (3mm wide), curved c.40mm from head to operate latch. Implement head comprises an abrupt bend in the rod to provide an eye for suspension. Locks and keys to operate them may be complex or simple, this form being the simplest. Sections 3-0, layer 1. 1765.

F.248 (Ditch near structure 6, yard) Phase 8:
Fig.114, No.2 Spatula or modelling tool, incomplete. The piece comprises a heavily mineralised plate of metal 2mm thick, with a sharp and possibly much worn blade edge at one expanded end (50mm wide). The piece narrows to a width of 17mm at the opposite end, abruptly bends and possibly thickens, though corrosion is much advanced at this point. This item is similar to, though more delicate than, implements described as 'paring chisels', but an example (with tang), similarly thin, has been recovered from a 4th century well at Porchester Castle (Cunliffe 1975, 240, no.211). Such implements are only used with hand-pressure (Manning 1976, 25), and if the material to be pared or scraped was soft enough, its strength would doubtless be adequate. A 'potter's or plasterer's spatula' from Silchester (Boon 1974, 283, no.12) offers another close parallel for this item. Sections 2-3, layer 1. 6656.

F.218 (Ditch) Phase 9:
Fig.114, No.3 Chain swivel, complete. Heavily corroded iron ring, c.55mm in diameter, circular in section. This has been pierced by an iron rod with an expanded terminal, which has been bent to form a second ring, c.30mm in diameter. Sections 1-2, layer 1. 4310.

F.254 (Pit) Phase 9:
Fig.114, No.4 Knife, incomplete. Blade tip and tang tip missing. The blade is narrow and triangular in section. Length 150mm. Sections 0-1, layer 1. 8318.

F.491 (Pit) Phase 9:
Fig.114, No.5 Stylus fragment. Comprises only the eraser and part of the stem. Length 40mm. The stem is rectangular in section, the end of which has been crudely hammered to produce a flattened, widened terminal which is slightly bent and dished. Although the stems of styli are generally round in section, a squared section at the eraser end is not unusual, and a similarly crude example comes from Carrawburgh (Manning 1976, no.109). Sections 1-2, layer 1. 13537.

Structural artefacts
F.152 (Grave) Phase 8:
Fig.114, Nos.6-21 (No.19 only illustrated) Coffin nails. A minimum of eight fragmented nails of Manning type 1b (Manning 1976, 42), with flat heads and square-sectioned tapering stems (see part II, Phase 8 for a note on the wood traces in the corrosion products). Only one nail (No.19) was complete when excavated. Length 65mm. Layer 1. 713-20; 731-4; 739-42.

F.155 (Ditch) Phase 9:
Fig.114, No.22 Nail, complete. Manning type 1b; stem section 4×3mm. Length 63mm. Stem bends 28mm below head. Sections 5-6, layer 1. 1704.

F.250 (Pit) Phase 9:
Fig.114, No.23 Split-spike loop or split-pin, incomplete. Heavily mineralised and much decayed. Loop head flattened perhaps as a result of hammering into wood. Sections 1-2, layer 1. 7371.

F.254 (Pit) Phase 9:
Fig.114, No.24 Nail, complete. Manning type 1b. Length 49mm. Sections 0-1, layer 1. 8316.

No.25 Binding fragment. Strip of metal 5mm thick and 29mm-33mm wide, pierced by a hole 7mm in diameter; here the metal thickens to 9mm, and narrows to a width of 14mm, at which point the object has broken. At the other end, also broken, is the edge of another hole for mounting. The thickened end may be forming a shoulder for a collar, and this item is possibly a strap-hinge fragment. Length 103mm. Sections 0-1, layer 1. 8386.

No.26 Binding fragment. Strip of metal 5mm thick and 34mm wide. The fragment is bent double, though originally of single thickness as demonstrated by a pierced rivet hole which penetrates one thickness only. Probably part of No. 25, above, although the two do not join; both are from same context. Sections 0-1, layer 1. 8387.

No.27 Plate, incomplete. A sheet of metal 3mm thick, with two opposing edges parallel and 126mm apart. Four mounting holes remain. Sections 0-1, layer 1. 8388.

Unclassifiable objects
F.247 (Ditch near structure 6 yard) Phase 8:
Fig.114, No.28 Rod, incomplete. Piece of hammered and shaped rod, rectangular in section, with one surface flattened as if for mounting. The piece then curves and develops a rounder section. At the curve, the rod is more robust, perhaps to take a stress. Possibly part of a hook. Sections 0-1, layer 1. 6218.

F.491 (Pit) Phase 9:
Fig.114, No.29 Object, incomplete. Roughly rectangular-section stem of iron, c.3mm thick, with expanded head or terminal. Probably a pin; too delicate for a nail. Sections 1-2, layer 1. 13497.

Note
The Catalogue of unillustrated iron objects is completed in summary form (Table 25).

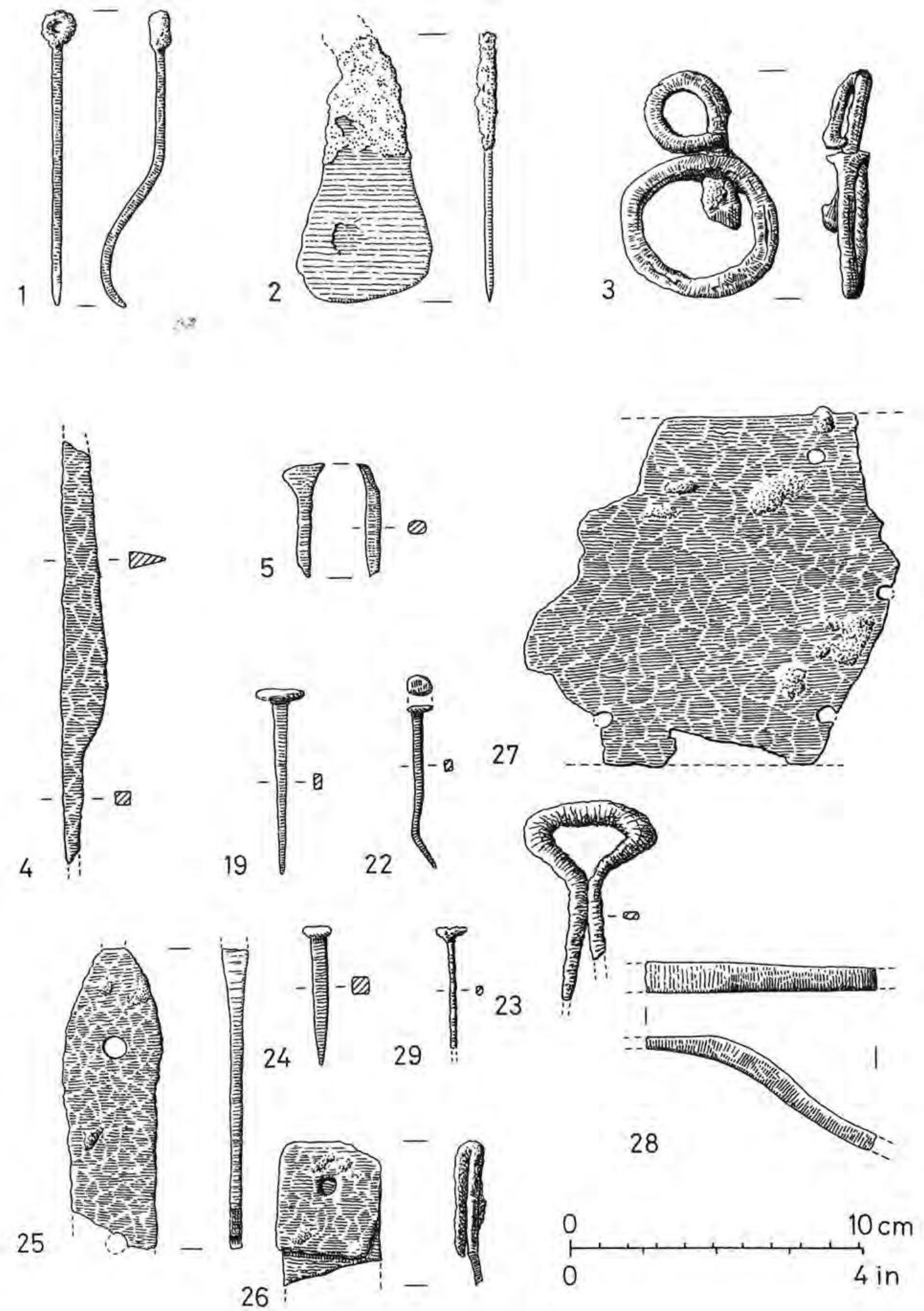


Fig.114 Maxey East Field: iron objects. Scale 1:2.

Finds No.	Manning type	State	Context	Phase	Notes
8317		incomplete	F.254 (pit)	9	Head diameter 29mm; length 33mm.
1540	1b	incomplete	F.161 (ditch)	9	Length 24mm.
1702	1b	incomplete	F.155 (ditch)	9	Head rectangular; length 31mm; bent.
725		point only	F.151 (grave)	8	Coffin nail fragment.
2657		incomplete	F.203 (ditch, struct.6)	8	Square-sectioned stem.
6297	1b	incomplete	F.248 (ditch, struct.6)	8	Square-sectioned, tapering stem.
8538		fragment	F.161 (ditch)	8	Stem only; length 22mm.
12228	1b	incomplete	F.308 (struct.10)	8	Square-sectioned stem; bent; length 45mm.
1991	1b	incomplete	F.161 (ditch)	9	Head and part stem; bent; length 54mm.
2579		incomplete	F.161 (ditch)	9	Head and part stem; length 44mm.
2580	1b	incomplete	F.161 (ditch)	9	Head and part stem; length 53mm.
3110		incomplete	F.161 (ditch)	9	Nail/stud; length 41mm; round head (29mm diameter).
3122		fragment	F.161 (ditch)	9	Square-section stem only; length 38mm.
5410	2	incomplete	F.232 (ditch)	9	Head and part stem; length 30mm.
5913	1b	incomplete	F.222 (ditch)	9	Head and part stem; bent; length 62mm.
7101	1b	incomplete	F.222 (ditch)	9	Head and part stem; length 52mm.
7259		fragment	F.250 (pit)	9	Square-sectioned stem only; length 32mm.
7260		fragment	F.250 (pit)	9	Square-sectioned stem only; length 34mm.
7329	1b	incomplete	F.250 (pit)	9	Head diameter 20mm; square-sectioned stem; length 38mm.
9612	1b	incomplete	F.254 (pit)	9	Head and part stem; length 52mm.
10478	1b	incomplete	F.329 (gully)	9	Head and part stem; length 40mm.
1543	1b	incomplete	F.155 (ditch)	9	Head and part stem; length 49mm.
1559		fragment	F.161 (ditch)	9	Square-sectioned stem only; length 25mm.
13612	1b	incomplete	F.473 (ditch)	9	Head and part square-sectioned stem; bent; length 40mm.
21037		fragment	F.600 (mound, secondary)	9?	Square-sectioned stem only; length 41mm.
1541	1b	incomplete	F,161 (ditch)	7	Head and part stem; length 25mm.
2881		fragment	F.257 (pit)	7	Square-sectioned stem only; length 41mm.

RODS

Finds No.	Cross-section	Length	Context	Notes
1369	7×4mm	57mm	F.178 (pit)	Phase 8, fragment.
1371	6×4mm	36mm	F.178 (pit)	Phase 8, fragment; part of 1369?

Table 25: List of iron nails and rods, not illustrated.

Shale

F.473 (Ditch) Phase 9:

Fig.115, No.1 Bracelet fragment. Undecorated fragment of rounded D- or oval-section (turned). The internal diameter of 55mm suggests the item was for a child's wrist, or perhaps performed some other function of personal adornment (such as a hair-ring). Sections 1-2, layer 2. 11434.

Glass fragments (not illustrated)
By John Shepherd

No.1 Fragment, colourless, free-blown glass; *c.*1st to early 3rd century AD. Surface find; East Field. 68

F.161 (Ditch) Phase 8:

No.2 Bluish-green, mould-blown glass, probably from a square-sectioned bottle. Isings form 50; late 1st/2nd centuries AD. Sections 7-8, layer 1. 3157.

F.199 (Ditch) Phase 8:

No.3 Fragment greenish-colourless, free-blown glass; indeterminate form and date. Sections 7-8, layer 1. 4090.

F.218 (Ditch) Phase 9:

No.4 Fragment bluish-green, mould-blown glass, from a square-sectioned bottle. Isings form 50; late 1st/2nd centuries AD. Sections 1-10, layer 1. 9667.

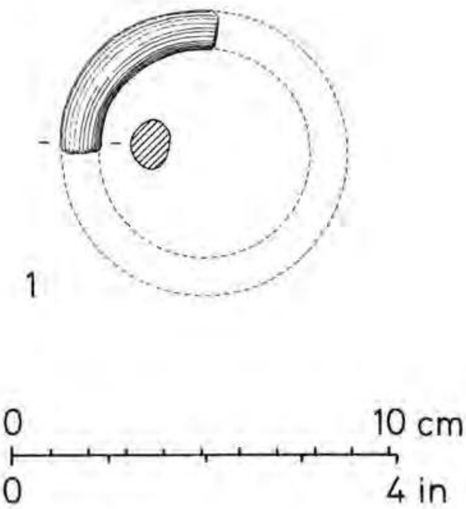


Fig.115 Maxey East Field: shale bracelet fragment. Scale 1:2.

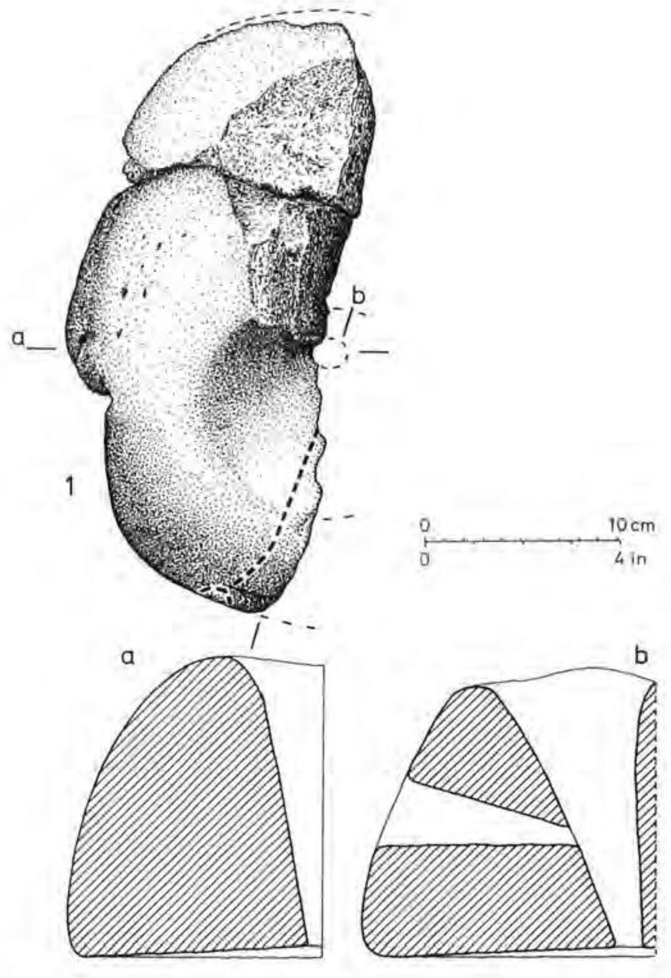


Fig.116 Maxey East Field: stone rotary quern. Scale 1:4.

Stone

Tools and equipment (Table 27)

F.219 (Gully, structure 8) Phase 7:

Fig.116,No.1 Rotary ('beehive') quern, upper stone, fragmented, incomplete. Diameter *c*.330mm; max. thickness 155mm. Central hopper perforation is cone-shaped and asymetrical in section, the diameter tapering from *c*.110mm to *c*.15mm, and is biassed towards the handle socket. The handle socket narrows from a max. diameter (*c*.40mm) at the open side, and penetrates as far as the central perforation. The stone has fractured along the handle socket. Another perforation, below and to one side of the handle socket, is oval in section (max. width 16mm) and extends just 10mm into the stone. The low-angle grinding surface has no evidence for pecking or grooving. In form, this quern confirms with Curwen's (1937, 148) *Flat Beehive* class, a derivative type current through the Iron Age and into the 2nd century AD

Two adjoining fragments are represented, found within 1m of each other, yet both are much weathered, even at the conjoining faces. The smaller fragment (5257) weighs 1.20kg and has a dark purple-grey surface discolouration which may be the result of burning, or the chemistry of a burial/surface environment. The other, larger, fragment weighs 7.50kg, is uniformly light buff-grey in colour, and has a grinding surface slightly, yet unmistakably, smoother than its partner. This may represent uneven wear of the stone when complete, or may indicate re- use of the larger fragment. Given this possibility, and the different surface colouring of the pieces, one can suggest that each fragment may have experienced rather different histories after fracture, but before ultimate deposition within the excavated context. Sections 2-0, layer 1. 1558, 5257.

F.228 (structure 28) Phase 8:

Fig.117,No.2 Rotary ('beehive') quern, upper stone, fragmented incomplete. Two joining fragments of Curwen's *Flat Beehive*, Hunsbury-derivative class (Curwen 1937, 148). Diameter *c*.320mm. Max. thickness *c*.105mm. Central hopper perforation is funnel-shaped in section, narrowing from a max. width of 140mm to 30mm. Short handle socket penetrates *c*.50mm into the stone, and is oval in section (Max. diameter 35mm). Concentric grooves are present on the grinding surface. Weight 7.40kg. Sections 1-0, layer 1. 6106-7.

F.255 (Ditch) Phase 8:

Fig.117,No.3 Rotary quern, upper stone, fragmented, incomplete. Griding surface pecked in a series of roughly concentric rows which disappear towards the centre, due to wear. Diameter *c*.470mm; thickness at edge 30mm; diameter of central hole 90mm. Sections 0-6, layer 1. 8177-8.

F.308 (structure 10) Phase 8:

Fig.117,No.4 Rotary quern, upper stone fragment. Some pecking evident on outer edge of grinding surface. Diameter *c*.420mm; thickness at edge 45mm; diameter of central hole 7mm. Sections 3-0, layer 1. 12536.

Note

Further items of tools and equipment in stone which have not been illustrated are listed in Tables 26 and 27.

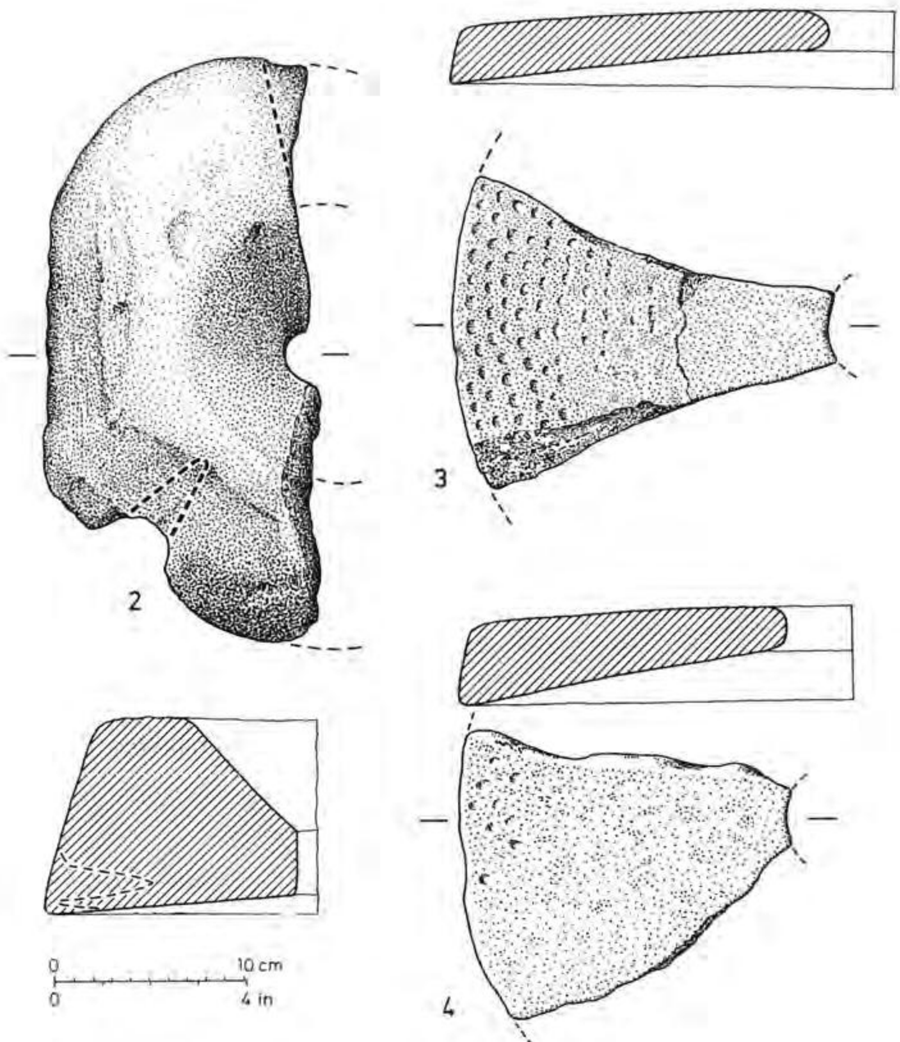


Fig.117 Maxey East Field: stone rotary querns. Scale 1:4.

1. Rotary quern fragments

Finds No.	*Thickness* (mm)	*Diameter* (mm)	*Context*	*Phase*	*Notes*
3674	*c.*70 (at edge)	?	F.170 (struct. 3)	8	Upper stone; much worn; nodule from gravel?
3911	*c.*105	*c.*300	F.213 (pit)	8	"Beehive" upper stone; ? joins No. 2, above.
8525	*c.*60	?	F.161 (ditch)	8	
12537-8	38 (at edge)	*c.*400	F.308 (struct. 10)	8	Upper stone; semicircular groove through edge (diameter 15mm), vertically.
9999	*c.*850	*c.*140	F.199 (ditch)	7-9	Fragment of upper stone; 'puddingstone'.

2. Miscellaneous items

Finds No.	*State*	*Description*	*Context*	*Phase*	*Notes*
6625	incomplete	whetstone	F.248 (struct. 6 yard)	8	Heavily used; two grooves indicate use to sharpen pointed implements.
2222	fragment	whetstone	F.170 (struct. 3)	8	Corner only; thickness 31mm.
6105	fragment	weight	F.228 (struct. 28)	8	Perforated; carefully worked; triangular section (thickness 37mm).

Table 26: List of diagnostic stone tools and equipment (not illustrated).

Finds Number	Petrographic Report	Phase	Notes
2222	1b	8	Table 26
3674	1a	8	Table 26
3911	2	8	Table 26
5257	2	7	Fig.116, No.1
6105	1b	8	Fragment
6107	2	8	Fig.117, No.2
6625	2	8	Table 26
7951	1a	8	Fragment
8178	1b	8	Fig.117, No.3
8525	1b	8	Table 26
8539	1b	7-9	Fragment
9999	—	7-9	Table 26
12536	1b	8	Fig.117, No.4
12538	1b	8	Table 26
21177	1b	5.2	Fragment

Table 27: Maxey East and West Fields: List of stone finds discussed in the petrographic report.

Structural artefacts

F.493 (Ditch associated with structure 13) Phase 8

Fig.118,No.5 Column fragment. Made from local Jurassic Barnack limestone. Comprises part of the necking and shaft of a turned column of simplified Tuscan order (columns of this order come from the Flavian palace at Fishbourne — Cunliffe 1971, 3ff). Diameter at neck 230mm.

This item was found in a context that produced considerable quantities of untooled limestone rubble, much of which may be intrusive from Phase 9. It was found outside the controlled excavation by workmen at the gravel face. Its provenance is in no doubt however, as the known archaeological feature was still clearly visible by the excavator's bucket. Layer 1. 21120.

The petrography of stone artefacts from Maxey
by Christopher J. Collins and Peter R. Crowther

The items discussed below will be referred to, throughout by their finds number. Details of phasing, context and description or illustration are given in Table 27. Thin sections of fifteen probable artefacts in stone were kindly prepared by technical staff of the Department of Geology, Leicester University under C.J.C.'s supervision. All except one are sandstones, *sensu lato*, the exception being a conglomerate (treated at the end of the report). The sandstones can be divided petrographically into two groups (terminology follows Pettijohn *et al.* 1973):

Group 1: Grain supported sandstones, i.e. those in which constituent mineral grains are in contact with each other, and the matrix or cement restricted to the interstices between grains. The group can be sub-divided into:

a. sublitharenites (3674, 7951)
b. lithic arenites (2222, 6105, 8525, 8539, 2177)
c. arkosic arenites (8178, 12536, 12538)

Group 2: Matrix supported sandstones, i.e. those in which the constituent grains are not generally in contact, appearing in thin section to 'float' within the matrix (3911, 5257, 6107, 6625). It follows that the matrix material occupies a larger proportion of the rock than in Group 1 sandstones.

The individual pieces will be considered in greater detail, by group, below:

Group 1a (sublitharenites):

3674 Red-brown weathered surface, lighter on fresh fractures, medium to fine grained and powdery, with black lithic fragments (*c.*1mm diameter) distributed irregularly. In thin section, the rock is seen to be composed principally of subangular to subrounded, equigranular quartz, with some lithic fragments and rare opaque iron minerals.

7951 Similar to 3674, but slightly coarser grained, with a definite sandy texture and more lithic fragments visible in hand specimen.

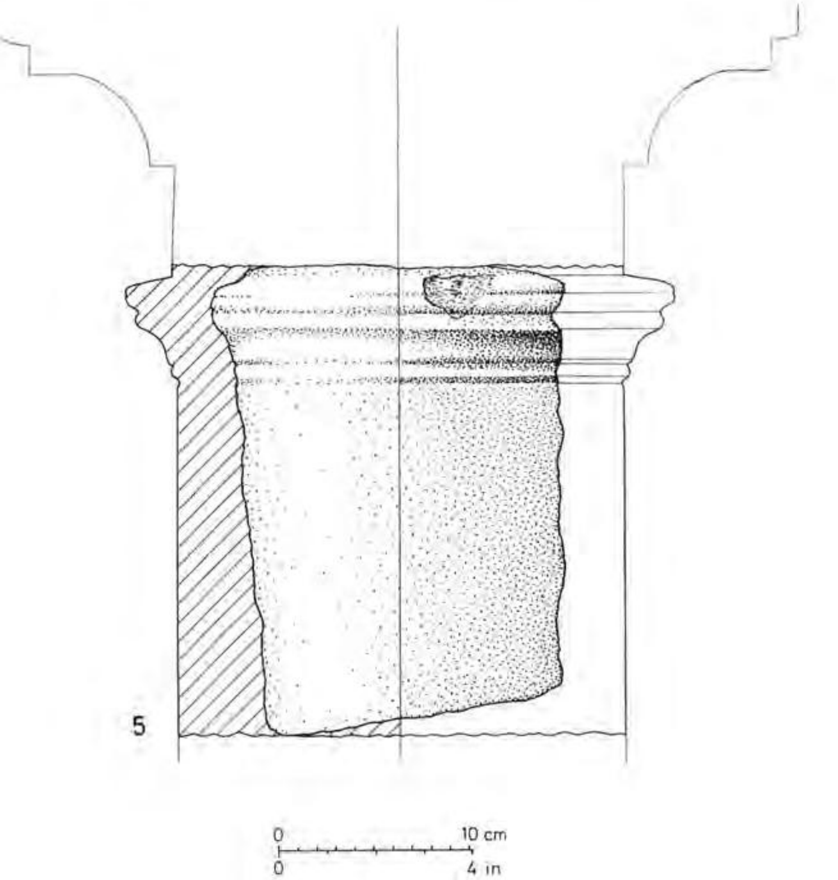


Fig.118 Maxey East Field: stone column fragment. Scale 1:4.

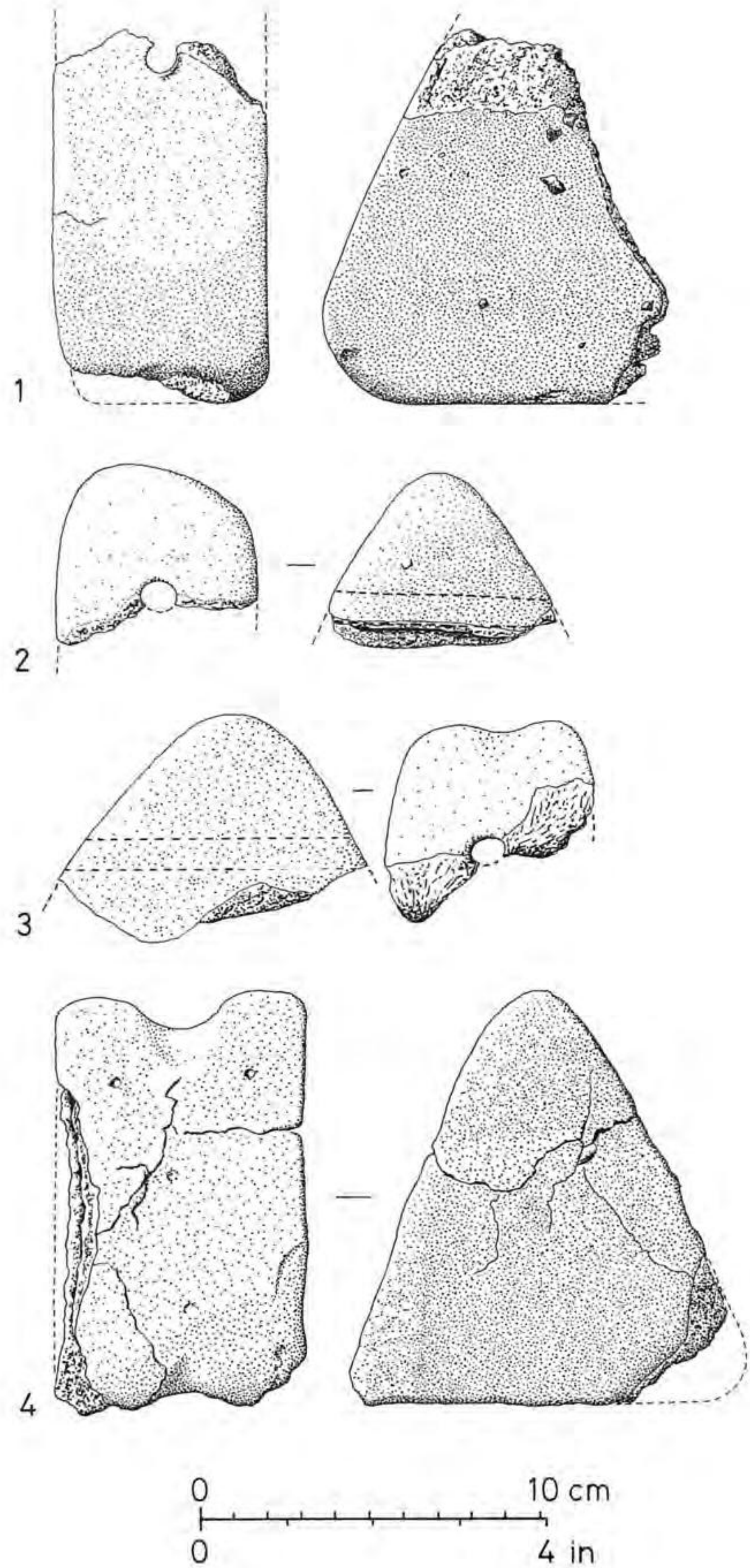


Fig.119 Maxey East Field: fired clay loomweights. Scale 1.2.

Group 1b (lithic arenites):

2222, 6105, 8525, 8539 and 2177 comprise a petrographically homogeneous group in thin section, distinguished from each other by only slight variations in composition and grain size. Quartz grains predominate (over 60%) and are well sorted; lithic fragments (15-20%), feldspar (5-10%, mainly plagioclase) and some opaque iron materials account for the remainder. Feldspars have begun to convert to micaceous alteration products. Grains are subangular, equigranular in size (0.5-2.0mm average diameter), and interlocking, with some larger more angular lithic fragments (up to 5mm in diameter) also present.

Some variation in hand specimens occurs. No. 2222 has weathered creamy-grey and is visibly micaceous; 6105 is a well consolidated red-brown rock; 8525 and 8539 are closely similar, weathering buff-brown with black lithic fragments particularly obvious on fresh surfaces; 2177 has weathered grey-brown.

Group 1c (arkosic arenites):

12536, 12538 Hard, gritty textured, coarse grained, grey-black weathering sandstone; lighter grey coloured on freshly broken surfaces, with subangular quartzite clasts (up to 6mm in diameter). In thin section, the rock appears poorly sorted and composed of angular to subangular quartz (50%, grains up to 1.5mm in diameter), some large lithic clasts (15%) and substantial angular to subrounded feldspar (25-30%, grains up to 1mm in diameter; plagioclase, microcline and perthites recognised) with minor amounts of opaque iron minerals and micaceous alteration products of the feldspars.

8178 Similar, but weathers to a more buff colour. Freshly broken surfaces are noticeably redder than 12536 and 12538 due to iron staining, and there are fewer lithic clasts. In thin section the rock appears better sorted, the grains are less angular and feldspar content is down to approximately 15%.

These three specimens petrographically resemble thin sections of Millstone Grit quernstones from Leicestershire in the collections of Leicestershire Museum Service.

Group 2 (matrix supported sandstones):

3911, 5257, 6107 are all calcareous sandstones cemented by calcite and there is little to distinguish them in thin section. They consist of subangular to subrounded, well sorted, equigranular quartz grains (60% *c.*0.75mm in diameter), with lithic fragments of quartzite and granodiorite composition (5-10%), and some opaque iron minerals and alteration products, all cemented by a fine grained calcite matrix (30%). Some recrystallization of the matrix in 6107 has produced larger sparry calcite grains.

Nos. 3911 and 6107 are identical in hand specimen, weathering a yellow brown-buff colour with lithic clasts (including angular quartzite pebbles) up to 5mm in diameter. No. 5257 is more grey on weathered surfaces.

6625 Much finer grained than the other three calcareous sandstones, weathering to dark grey from light grey on freshly broken surfaces. In thin section, it is composed of subrounded quartz grains (60%, 0.5mm in diameter), set in fine grained calcite (35%), with only small amounts of lithic fragments and opaque iron minerals.

Quern fragment in conglomerate ('puddingstone') This object (No. 9999) is in a quartzite conglomerate composed of well rounded quartzite pebbles, the surfaces of which have weathered blue-black, averaging 20×10mm in size and showing a red colour on freshly fractured surfaces. These pebbles lie in a brown weathering matrix of irregular quartz grains (*c.*2.0mm in diameter).

Fired and vitrified clay

Introduction

This account is in two parts. The first is devoted to the numerous, mainly lightly fired, clay items that were found in most Roman and later Iron Age features over the site as a whole; the second is a report by Dr Paul Craddock of the British Museum Research Laboratory on a small group of vitrified clay objects from a restricted area of the East Field.

1. Fired clay

Tools and Equipment: Loomweights: This large collection is discussed at the conclusion of the catalogue; this discussion defines corner forms and fabrics.

F.222 (Ditch) Phase 9:

Fig.119,No.1 Triangular loomweight, incomplete. Fabric 2; corner forms 1/2, 3/4. Thickness 64mm; weight 655g. Sides show some marks of burnishing or careful smoothing. Sections 2-3, layer 1. 5765.

F.257 (Pit) Phase 7:

Fig.119,No.2 Triangular loomweight, fragmented, incomplete. Fabric 1; corner form 3. Thickness 55mm; weight 213g. Sections 0-1, layer 1. 2875-6; 2882-3; 2885-7.

F.205 (Structure 7) Phase 7:

Fig.119,No.3 Triangular loomweight fragment. fabric 2; corner form 4. Thickness 60mm; weight 240g. This item has been examined by Mr J. Cooper (British Museum Natural History)

'(This fragment is) not made from local clay, and may have been manufactured further south from a brickearth of tile clay (very fine-grained matrix), possibly from Pleistocene deposits or Reading Beds clays (Palaeocene), with admixtures of sand, shell, and chalk/lime.' (The full report is in the Introduction to the Roman pottery report, above.) Sections 2-3, layer 1. 4036.

F.108 (Ditch) Phase 8:

Fig.119,No.4 Triangular loomweight, fragmented, incomplete. Fabric 1; corner forms 2-2-?. Thickness 74mm; weight 905g. Sections 3-4, layer 1. 692.

F.195 (Pit) Phase 8:

Fig.120,No.5 Triangular loomweight, fragmented, incomplete. Fabric 2; corner forms 3/4,-3. Thickness 72mm; weight 825g. Sections 0-0, layer 1. 2820.

No.6 Triangular loomweight, fragmented, incomplete. Fabric 2; corner forms 1-3/4-?. Thickness 67mm; weight 891g. Sections 0-0, layer 1. 2819.

F.247 (Ditch of structure 6 yard) Phase 8:

Fig.120,No.7 Triangular loomweight, incomplete. Fabric 1; corner forms 1/2-3/4-2. Thickness 53mm; weight 1050g. Lower right corner partially pierced. Sections 0-1, layer 1. 6219.

F.248 (Ditch of structure 6 yard) Phase 8:

Fig.121,No.8 Triangular loomweight, fragmented, incomplete. Fabric 1; corner forms ?-3/4-2. Thickness 49mm. Weight 435g. Sections 2-3, layer 1. 6659.

F.251 (Ditch of structure 6 yard) Phase 8:

Fig.121,No.9 Triangular loomweight, incomplete. Fabric 2; corner forms 3/4-2-3/4. Thickness 58mm; weight 580g. Sections 1-0, layer 1. 7043.

F.198 (structure 5) Phase 8

Fig.121,No.10 Triangular loomweight, incomplete. Fabric 2; corner forms 3-3/4-?. Thickness 48mm; weight 590g. Sections 0-0, layer 1. 7710.

F.342 (Pit) Phase 8:

Fig.122,No.11 Triangular loomweight, incomplete. Fabric 1; corner forms ?-3/4-2. Thickness 55mm; weight 425g. Sections 1-0, layer 2. 15063.

F.170 (structure 3) Phase 8:

Fig.122,No.12 Triangular loomweight, incomplete. Fabric 2; corner form 3/4. Thickness 57mm; weight 540g. Sections 9-0, layer 1. 3639.

F.495 (structure 13) Phase 8:

Fig.122,No.13 Triangular loomweight, fragmented, incomplete. Fabric 1; corner form 4. Thickness 61mm; weight 632g. Sections 1-2, layer 1. 13816-7; 13820.

F.234 (structure 6, yard ditch) Phase 8:

Fig.122,No.14 Triangular loomweight, fragment. Fabric 1; corner form 4. Thickness *c.*63mm; weight 203g. Corner groove unusually deep. Sections 2-0, layer 1. 5471.

F.239 (structure 6, yard gully) Phase 8:

Fig.123,No.15 Triangular loomweight, fragmented, incomplete. Fabric 1; corner forms 4-3/4-?. Thickness 49mm; weight 697g. Sections 1-0, layer 1. 5766-82; 5867.

No.16 Triangular loomweight fragment. Fabric 1; corner form 4. Thickness 72mm; weight 200g. Sections 0-2, layer 1. 10538.

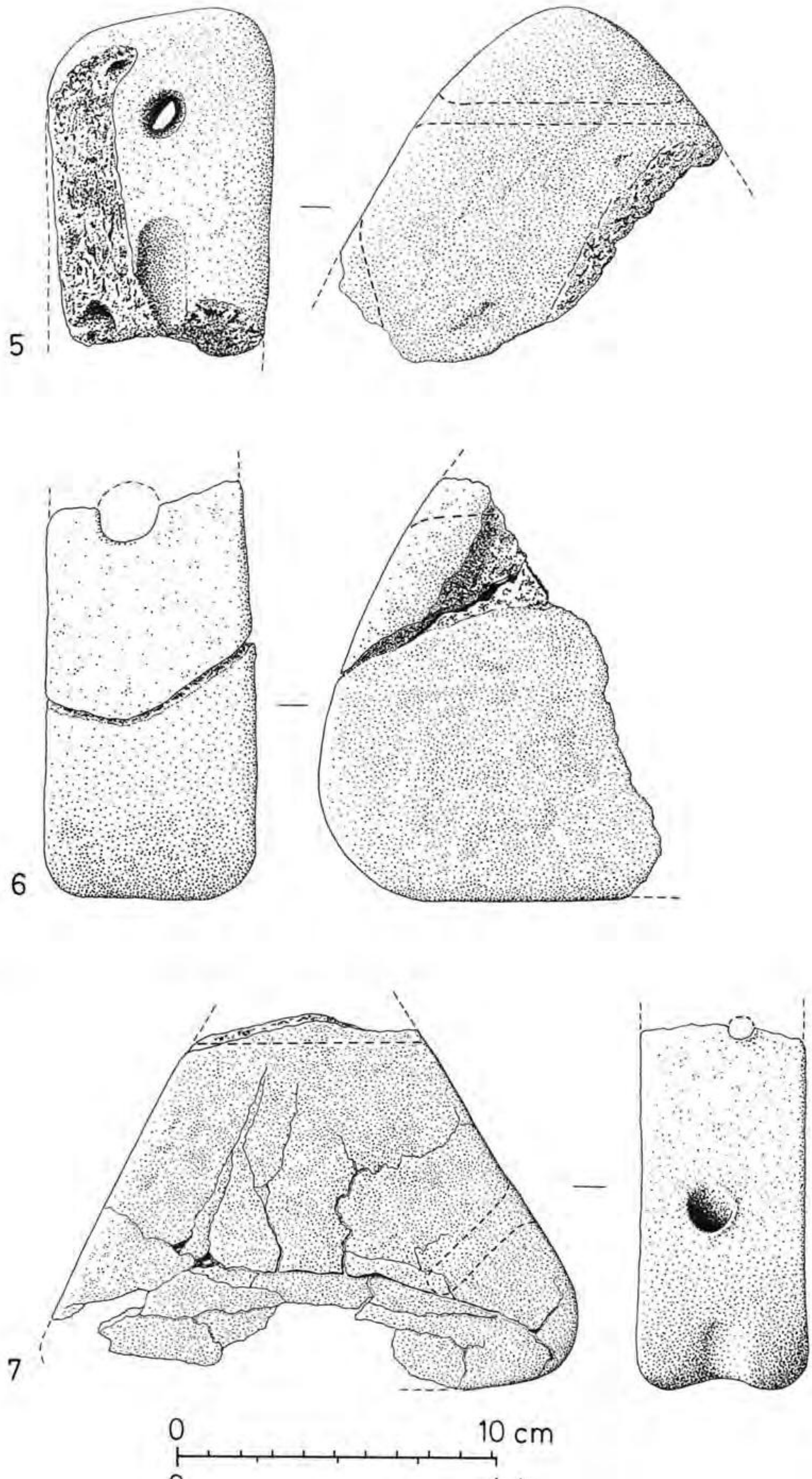


Fig.120 Maxey East Field: fired clay loomweights. Scale 1:2.

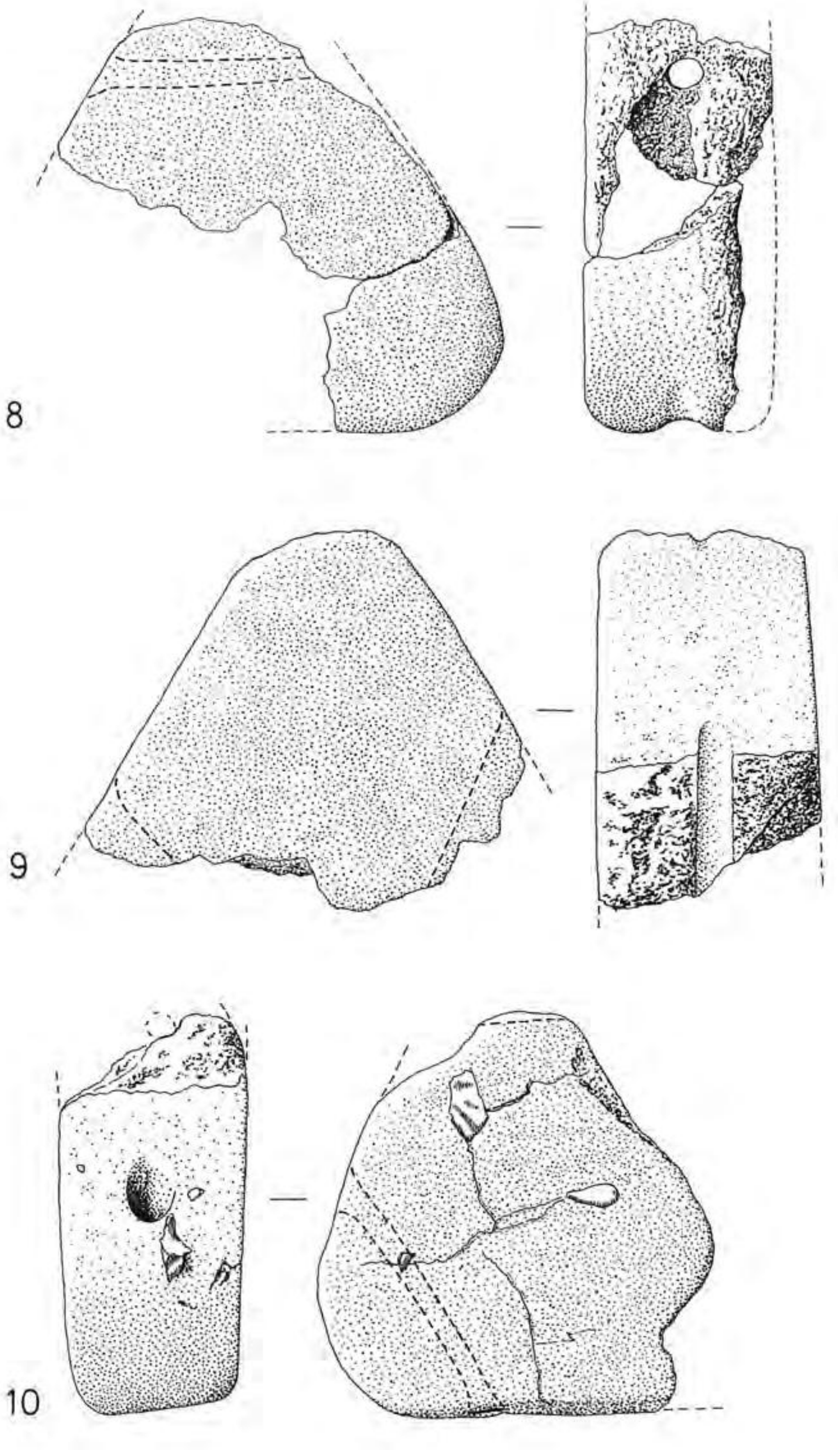


Fig.121 Maxey East Field: fired clay loomweights. Scale 1:2.

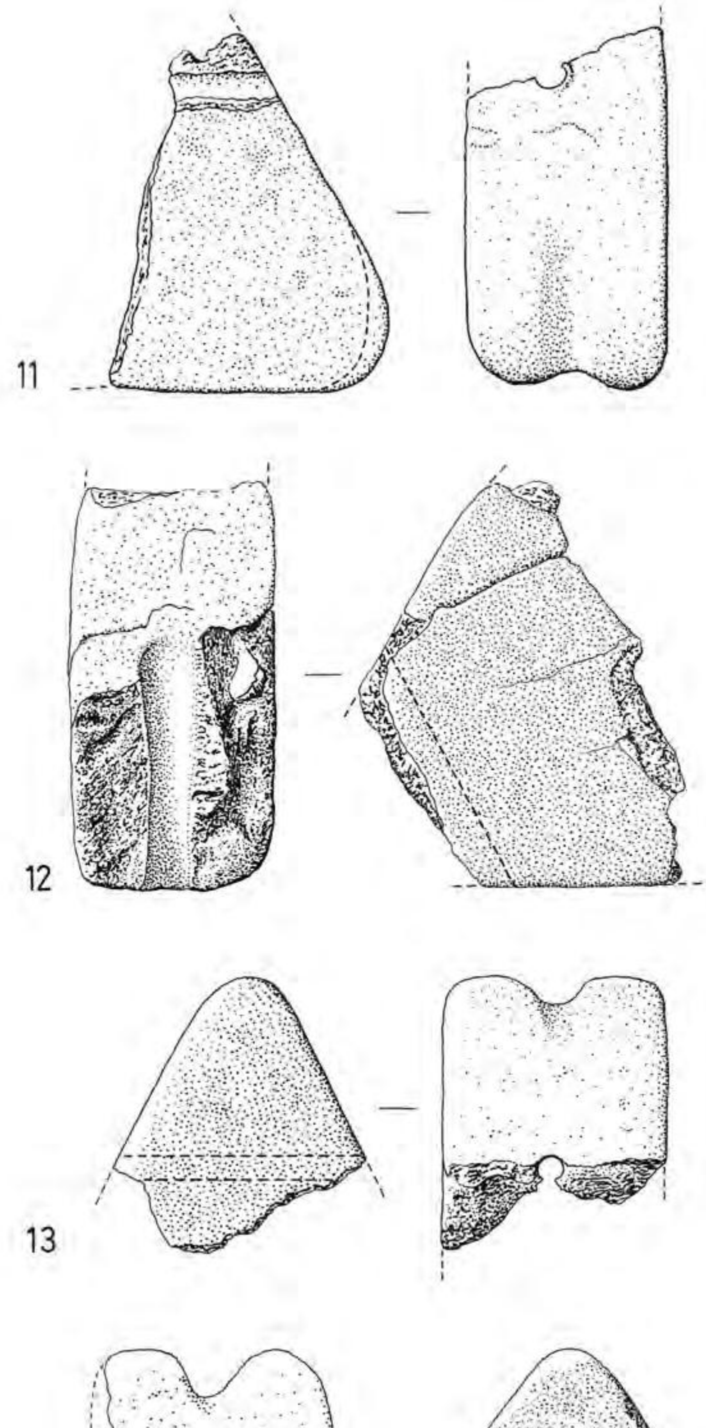


Fig.122 Maxey East Field: fired clay loomweights. Scale 1:2.

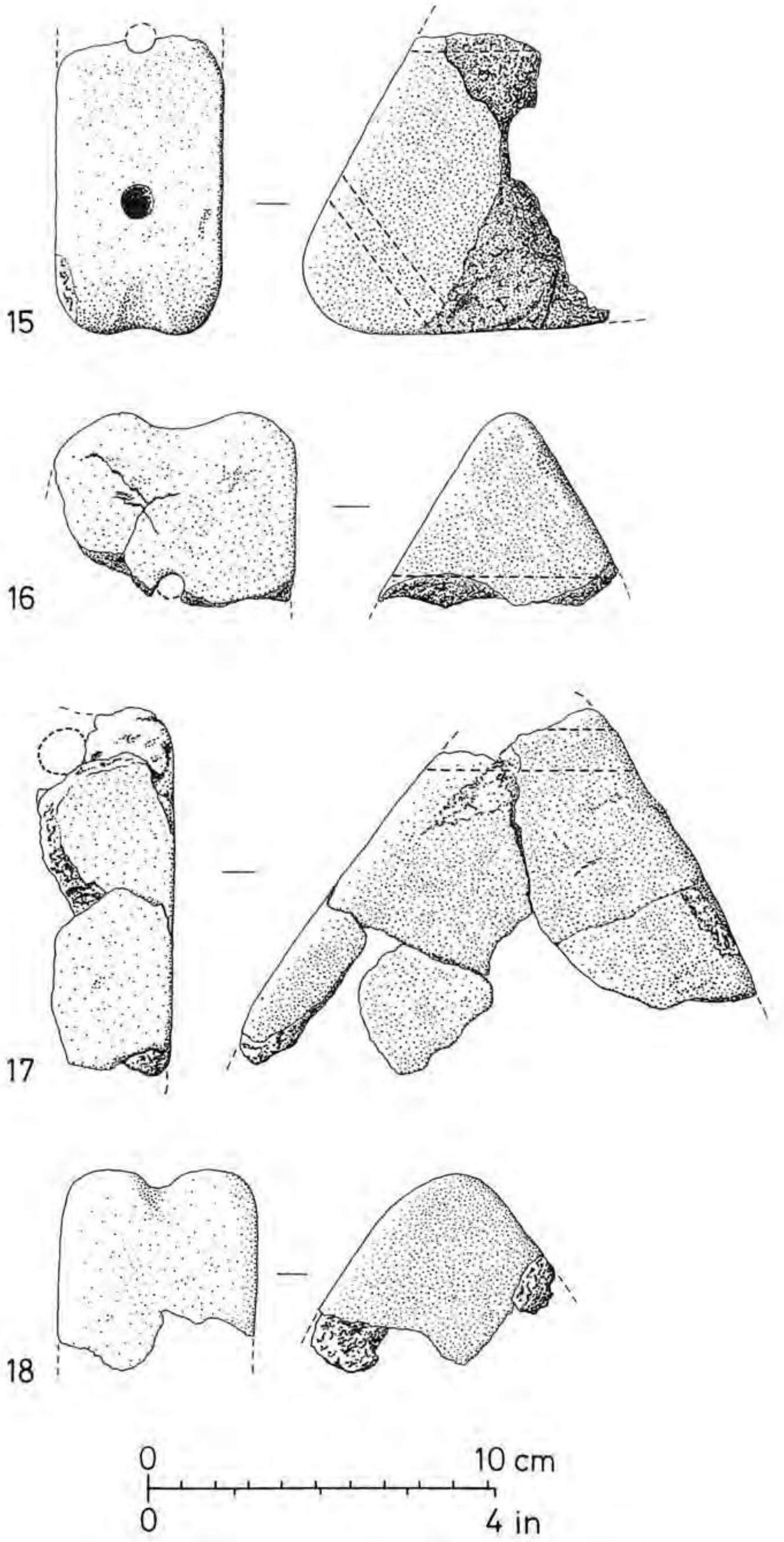


Fig.123 Maxey East Field: fired clay loomweights. Scale 1:2.

F.342 (Pit) Phase 8:

Fig.123,No.17 Triangular loomweight, fragmented, incomplete. Fabric 1; corner form 3/4. Weight 300g. Sections 1-0, layer 1. 14643-7; 14770-1.

F.170 (structure 3) Phase 8:

Fig.123,No.18 Triangular loomweight, fragmented, incomplete. Fabric 2; corner form 2. Thickness 58mm; weight 244g. Sections 1-2, layer 1. 1935-50; 2201-16; 2225-9; 2231.

F.156 (structure 6, yard) Phase 8:

Fig.124,No.19 Triangular loomweight, fragmented, incomplete. Fabric 2; corner form 1. Thickness c.68mm; weight 135g. Sections 3-4, layer 1. 2506-9; 2511-6,

Note Items of fired clay tools and equipment that have not been illustrated are listed in Table 28.

Discussion of the loomweights

Thirty triangular loomweights were recovered from contexts of Phases 7-9, plus one from the top filling of a Phase 5 pit. Two fabric types could readily be discerned:

Fabric 1: vegetable temper, some vegetable inclusions.

Fabric 2: mineral inclusions.

Considerable variation in the density and size of inclusions, as well as fabric colour, are apparent, even within the same loomweight.

Triangular loomweights have a limited range of corner treatment for their suspension. The surface may be indented with a shallow groove, or the body may be perforated. Both may be present on the same corner; occasionally no obvious modification of the corner is evident. Four corner forms may be distinguished:

Corner form 1: no surface groove; no perforation.

Corner form 2: surface groove; no perforation.

Corner form 3: no surface groove; perforated.

Corner form 4: surface groove; perforated.

Corners are often missing from complete loomweights, having been broken along the perforation. These corner forms cannot be identified closer than either 3 or 4; such uncertainty is indicated in the catalogue, as corner form 3/4.

Although triangular loomweights are often equilateral, occasionally they are isosceles. From this one may infer that there was a correct, symmetrical, way of suspending them, with the centre of gravity running down the mid-line of the weight. On certain perforated corners it is apparent also that emergence of each end of a perforation is not always equidistant from the corner point, suggesting that these fragments are from side angles, rather than the 'apex' angle. Where the orientation of a weight can be inferred, either by shape or by perforation angle, each corner form is separated by a hyphen, with the 'apex' corner form in the middle. There is no evidence to suggest that the treatment of an 'apex' corner was invariably different from that of the others, though this can be observed on several occasions.

Structural artefacts: In addition to the oven fragment described below, a large area of collapsed oven wall was found in the pit, F.572 of the Phase 5.2 structure 19. The fabric of this oven is described by Mr Cooper, above (see Table 20, finds no. 1572); it is made from shell-tempered locally-derived clay. A plan was drawn of the oven *in situ* (Fig.58) and it was block-lifted by a team from the Ancient Monuments Laboratory. It is currently being conserved in Peterborough Museum and a full report will appear in due course.

F.248 (structure 6, yard) Phase 8:

Fig.124,No.20 Oven fragment. Fabric 2. Part of circular slab of clay with central perforation; upper surface carefully formed and smoothed, lower surface variable and fragmented. Typical thickness 45mm; diameter c.440mm; central perforation diameter c.200mm. Weight 675g. Sections 0-1, layer 1. 6734.

Unclassifiable artefacts:

F.579 (Grave) Phase 9:

Fig.124,No.21 Extruded object, fragment. A tiny cylindrical length of clay which has been extruded through a toothed template to produce a ribbed or fluted finish. Broken at both ends. Diameter c.5mm; length 16mm. Sections 0-0, layer 1. 19579.

Note items of unclassifiable fired clay that have not been illustrated are listed in Table 29.

2. Vitrified Clay

by Paul Craddock

These fragments, which have not been illustrated, were found in features 302, 312, 314 and 329 of the East Field. They are closely similar in appearance and all derive from features in the vicinity of the Phase 7 and 8 structures 9 and 10. All are of extensively vitrified clay with many entrapped gas bubbles. Similar pieces, also examined by the author, have recently been found at Cat's Water, Fengate (Craddock in Pryor 1983a) and Highstead, Kent (Tatton-Brown 1977).

The Maxey pieces were analysed qualitatively by X-ray fluorescence which showed all to contain iron, calcium, potassium, silicon, manganese and titanium; these are components of a calcareous clay, similar to the examples just mentioned. The rather high potassium content is probably a contribution from the wood ash of the fire.

The clay has been subject to temperatures in excess of 1000°C for prolonged periods, to completely vitrify the material. This rules out accidental burning, or even ordinary hearths and furnaces, and suggests that the clay formed part of a metallurgical furnace. However, no non-ferrous metal traces were found in the clay, and no slag was found either on the clay or in the filling of archaeological features. This rules out smelting, and suggests that the process was either bronze melting or iron forging. Since no evidence of the crucibles, moulds or bronze waste was recovered, the latter seems more likely.

Triangular loomweights

Finds No.	State	Context	Phase	Corner form	Notes
19467-70	Frag., incomplete	F.559 (pit)	5	3/4	Thickness 64mm; weight 870g. Fabric 1.
4527-8	Frag., incomplete	F.219 (str.8)	7	3/4	Weight 188g; also Finds Nos. 4530-1; 4535-41; 4544; 4550. Fabric 2.
11371-6	Frag., incomplete	F.345 (str.9)	7	2	Weight 250g. Fabric 2.
3487-8	Frag., incomplete	F.204 (str.7)	7	3/4	Weight 250g; also Finds Nos. 3507; 3525-6; 3529; 3532. Fabric 2.
6022-5	Frag., incomplete	F.228 (str.28)	8	3	Thickness c.72mm; weight 1235g; also Finds Nos. 6053-67; 6076; 6081-91. Fabric 2.
6108-10	Fragment	F.228 (str.28)	8	4	Weight 154g. Fabric 2.
13133	Frag., incomplete	F.170 (str.3)	8	3/4	Weight 73g. Fabric 2.
6731	Fragment	F.248 (str.6)	8	3/4	Thickness 77mm; weight 320g. Fabric 1.
13116	Fragment	F.170 (str.3)	8	4	Weight 141g. Fabric 2.
13709	Fragment	F.495 (str.13)	8	—	Weight 77g. Fabric 1.
9953	Fragment	F.360 (str.6)	8	3/4	Weight 46g. Fabric 1.
1361-7	Frag., incomplete	F.178 (pit)	8	—	Weight 486g; also Finds Nos. 2406-7; 2417-35; 2474-87; 2714-29; 2749. Fabric 1.

Table 28: list of fired clay tools and equipment, not illustrated.

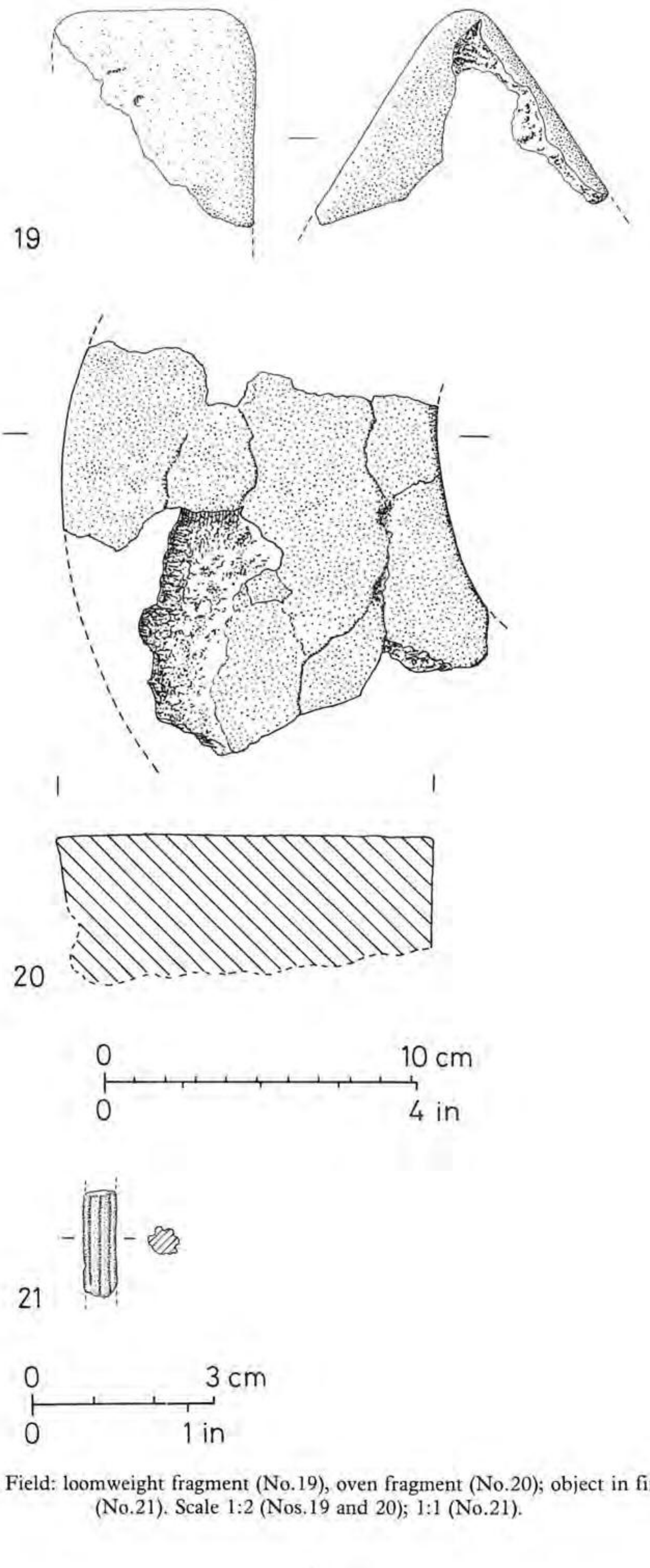


Fig.124 Maxey East Field: loomweight fragment (No.19), oven fragment (No.20); object in fired extruded clay (No.21). Scale 1:2 (Nos.19 and 20); 1:1 (No.21).

Feature	*Weight* (g)
Phase 7	
50	6.0
51	0.5
108	34.0
161	143.0
204	71.0
205	566.5
206	1.5
207	38
219	323.5
220	8.5
235	0.5
236	14.5
244	28.0
258	61.0
345	160.0
490	29.0
Total weight (Phase 7):— 1485.5g (22.12% of whole)	
Phase 8	
108	172.0
109	60.0
125	2.5
136	1.0
153	10.0
157	2.0
158	25.5
168	12.0
161	5.0
170	422.0
173	11.0
175	6.0
195	77.0
197	4.0
199	132.0
203	3.0
214	48.0
223	136.0
238	80.0
247	49.0
248	275.0
250	350.0
251	78.5
308	289.0
310	78.0
330	72.5
331	6.0
342	201.0
343	148.0
390	153.0
468	11.0
Total weight (Phase 8):— 2920.0g (43.5% of whole)	
Phase 9	
161	1449.5
155	87.0
218	130.0
227	66.0
233	39.0
242	39.0
242	90.0
254	106.0
329	146.0
352	69.0
473	73.0
491	38.0
489	14.0
Total weight (Phase 9):— 2307.5g (34.38% of whole)	
Total weight (All Phases):— 6713g.	

Table 29: List of unclassifiable fired clay objects, not illustrated.

Daub (not illustrated)

F.170 (structure 3) Phase 8:

No.1 Amorphous lump of burnt clay with vegetable matter. Weight 475g. No wattle holes or impressions. Sections 11-12, layer 1. 13112-3.

No.2 Amorphous lump of burnt clay, perhaps daub. No wattle holes or impressions. Weight 451g. Sections 9-0, layer 1. 3749.

F.219 (structure 8) Phase 1:

No.3 Burnt daub fragment with three wattle holes in line (diameters 5mm; *c*.45mm apart). Weight 920g. Sections 2-0, layer 1. 5258.

Bone objects

Personal artefacts

F.233 (Ditch) Phase 9:

Fig.125,No.1 Pin, lathe-turned, incomplete. Head consists of two grooves below a conical head. The head ends in a pair of collars and a rounded, conical tip. The conical field has been decorated with a series of incised crosses in a manner similar to a biconical example from Bignor Villa, Sussex (Frere 1982, 181ff). A 1st-2nd century date has been suggested (N. Crummy, pers. comm.), and is supported by a pin of similar form from a late 2nd century context at Lincoln (Mann, pers. comm.). Shaft diameter 3.5mm. Sections 2-3, layer 1. 1542.

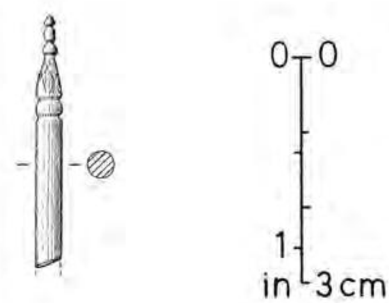
1


Fig.125 Maxey East Field: bone pin fragment. Scale 1:1.

Oyster shell

by Charles French

Valves and fragments of valves of the flat or edible oyster *Ostrea edulis* L. were found in five features. All contexts are dated to the Roman period (Phases 7-9).

There are two left (lower) convex valves in Features 203 and 234 (Finds Nos. 951 and 957); three right (upper) valves in Features 203, 308 and 361 (Finds Nos. 952, 956 and 958); and several fragments from Features 238 and 345 (Finds Nos. 953 and 954).

This oyster inhabits the low-water mark to offshore zone, and coastal creeks, estuaries and sheltered water. As it is an edible species and a luxury choice today, the oyster valves found at Maxey are, in all probability, food debris.

Discussion

Introduction

The nature and distribution of material culture can provide insights into social behaviour and development, through the recognition of pattern and change; the pattern must be observed, however, in material of sufficient abundance for viable analysis. The data should also possess enough variety to offer scope for the observation of contrast between material of different categories.

Rarely do small finds from a rural site of this period occur in sufficient quantities to justify statistical or numerical analyses, and Maxey, unfortunately, is no exception. After other specialists have claimed their subject matter, the residue of 'Other finds' may be few in number, but it is varied in type. It is the intention of this discussion, then, to exploit this diversity in order to examine certain chronological and spatial differences between, admittedly, small numbers of objects of different fabrics, forms and functions.

The 'Other finds' from Maxey total some 453 objects or fragments of objects. They include artefacts made from copper alloy, iron, lead, fired clay, bone, stone and shale. The collection is presented within a three-stage hierarchical scheme of phase, function and fabric:

1. Phase The phasing of the various contexts involved has already been discussed (part II). The use of certain intrinsically dateable artefacts to date contexts is well-established, but problems of residuality and primacy are serious at Maxey where *in situ* floor or rubbish deposits are lacking.

2. Function The small finds from each Phase are presented within a simple classification scheme based on the original function of each artefact, as currently understood. It is taken from an ambitious scheme developed by Robert Chenhall (1978) for museum cataloguing. This scheme is hierarchical and comprises three levels, from the specific to the general. Thus an Object Name (e.g. 'anvil') falls within a specific functional group (Metalworking Tools and Equipment), which is one group of many within the general category 'Tools and Equipment'. Only the general level has been used in this Discussion and in the Catalogue, above. The 'Other finds' from Maxey fall into four general categories.

Personal Artefacts
Tools and Equipment
Structural Artefacts
Unclassifiable Artefacts

Chenhall's definitions for these categories have been followed, with the exception of *Structural Artefacts*, whose definition has had to be modified for present purposes.

Personal Artefacts were originally created to serve the personal needs of individuals as clothing, adornment, body protection, grooming aids or symbols of beliefs or achievements (Chenhall 1978, 25).

Tools and Equipment includes artefacts originally created to be used in carrying on an activity such as an art, craft, trade, profession or hobby; the tools, implements and equipment used in the process of modifying resources available for some human purpose (Chenhall 1978, 25ff).

Structural Artefacts were originally created to be used in and around structures in a relatively permanent way. Once used, they are not in themselves entities for disposal or modification. This category includes constructional components for complex artefacts of known or unknown function.

Unclassifiable Artefacts were originally intended to serve some human purpose which cannot be identified at the time the object is catalogued (Chenhall 1978, 38).

These four functional divisions divide the collection into groups of potentially different status. Objects enter the archaeological record either through accidental loss or via deliberate discard. In the case of certain kinds of premeditated deposition, such as burial, point-of-discard and point-of-excavation will be the same. In certain cases of accidental loss, point-of-loss and point-of-excavation might also be the same. In the main, however, the archaeology of artefacts is the archaeology of rubbish; whether rubbish is an asset or a liability — manure or health hazard — it requires managment. Often, therefore, point-of-discard and point-of-excavation will not be the same. Central to this argument is the consideration of whether certain types of artefacts are more or less likely to have entered the archaeological record through loss or discard. Mindful, therefore, of the proposition that 'people do not live on top of their rubbish', might they not live on top of their personalia? This perhaps is a crude argument, crudely expressed; but nevertheless, by dividing the collection into groups that might be termed 'curated' items, or possessions, and groups that might hold a different (perhaps lesser) status, exclusive patterning might emerge. If present, such patterning demands explanation.

3. Fabric The material of which an object is made is by no means its most significant attribute, especially when explanations for spatial patterning are being sought. It is, however, a generally satisfactory and widely accepted means of organising a catalogue, and it has been retained for that purpose here.

The discussion that follows will first discuss the material phase by phase and will conclude with more general considerations.

Phase 5
Summary inventory:

Personal Artefacts:	*1 brooch*
Tools and Equipment:	*1 loomweight*
Structural Artefacts:	
Unclassifiable Artefacts:	*2 fired clay fragments.*

This collection is too small for useful discussion, but the brooch (a Nauheim type) is from secondary ditch deposits and is probably not, therefore, contemporary.

Phase 7 (Figs.126-128)
Summary inventory:

Personal Artefacts:	*1 brooch*
Tools and Equipment:	*5 loomweights*
	1 quern
Structural Artefacts:	*2 nails*
	1 daub fragment
Unclassifiable Artefacts:	*121 fired clay fragments*

Figures 126 and 127 locate the position of *Personal Artefacts, Structural Artefacts* and *Tools and Equipment* from this Phase. Only ten artefacts of these types were found, and while it is desirable to present the evidence in this manner, its interpretive value is undeniably limited. Nevertheless, it is noteworthy that all are located either within gullies of a structural nature, or at land-division entrance points. They are located within areas likely to have witnessed a concentration of human activity.

One of the ten small finds is an incomplete quernstone, fractured into two pieces prior to

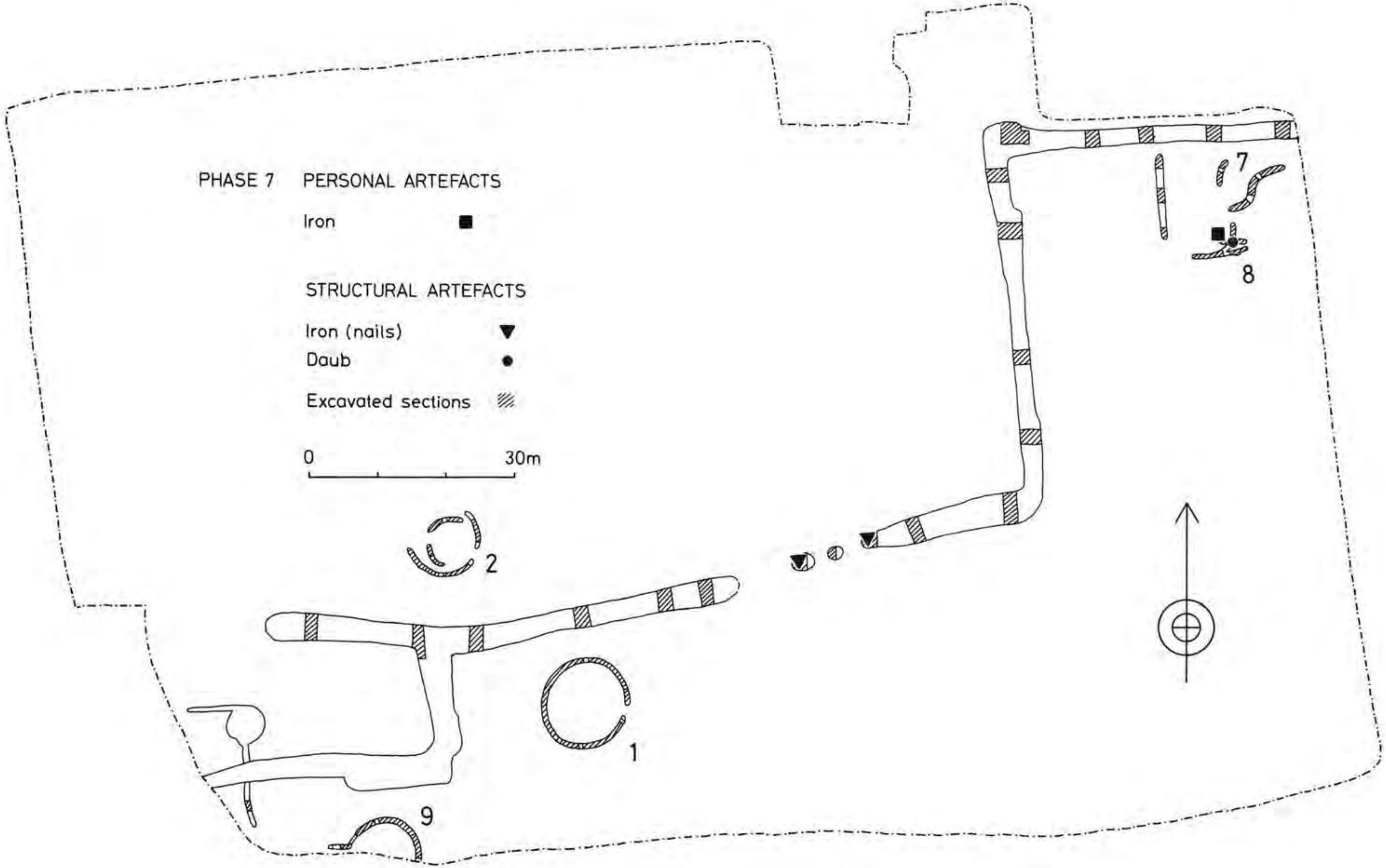


Fig.126 Maxey East Field: distribution of Phase 7 *personal* and *structural artefacts.* Scale 1:800.

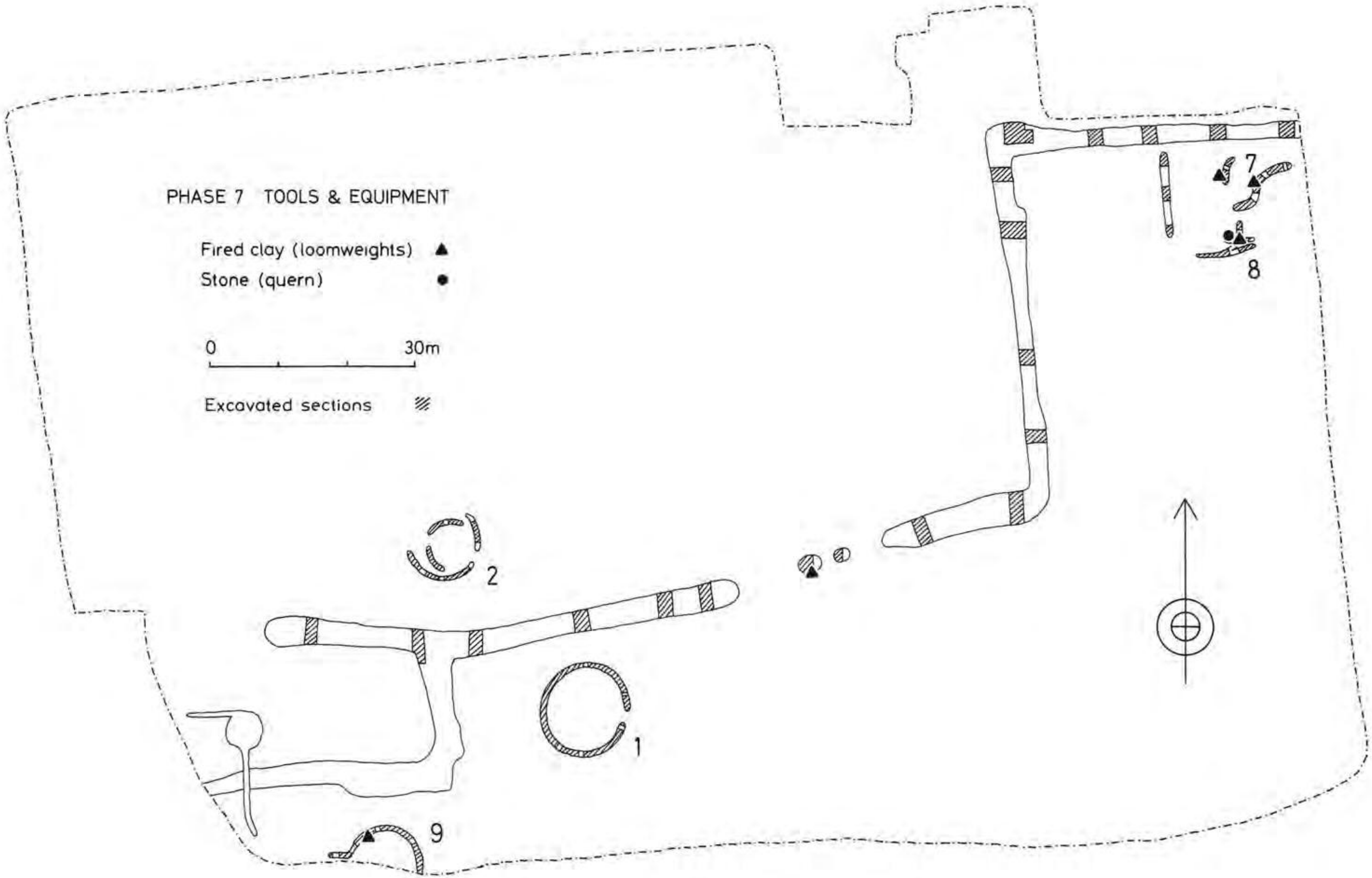


Fig.127 Maxey East Field: distribution of Phase 7 *tools and equipment*. Scale 1:800.

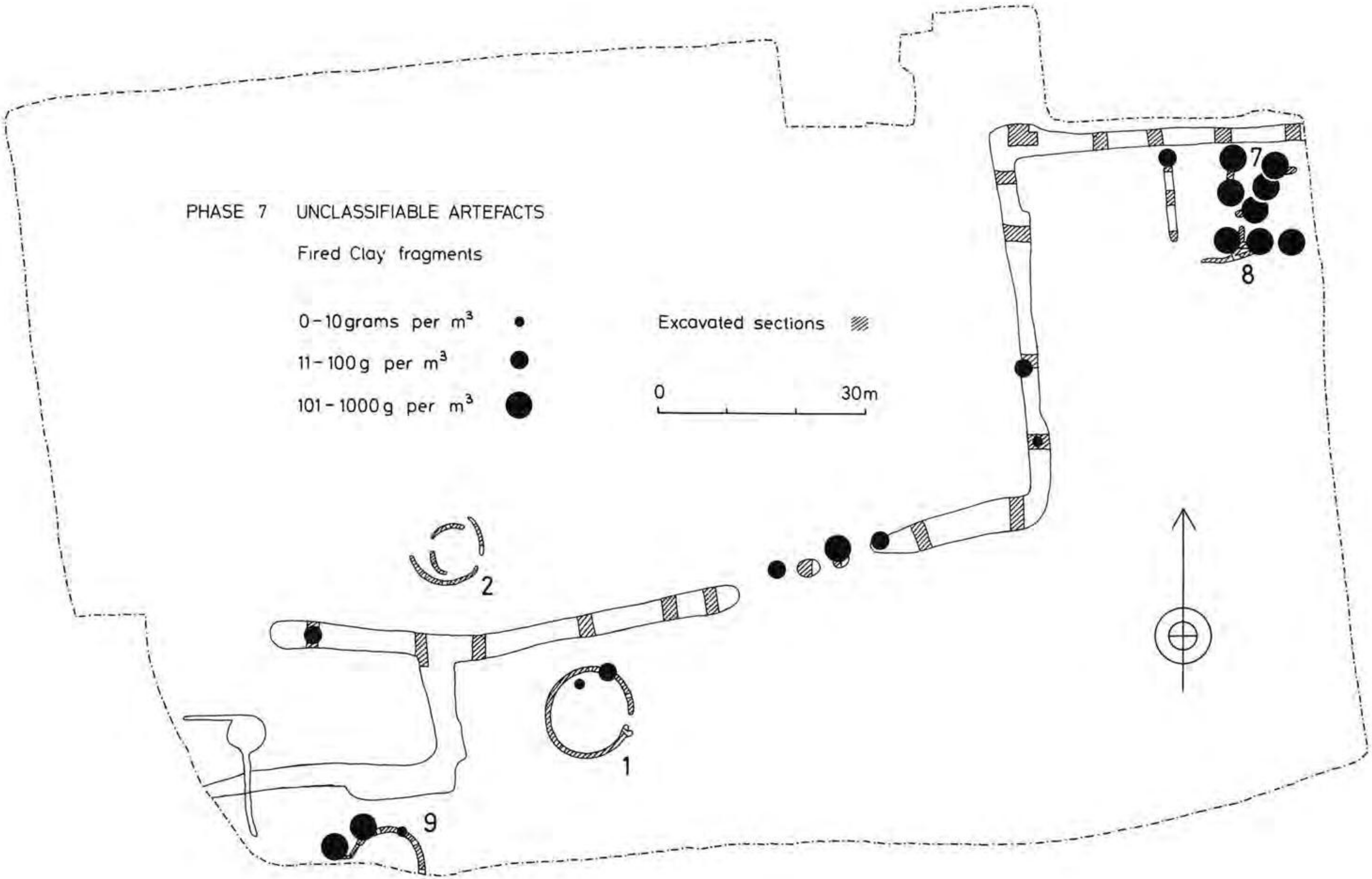


Fig.128 Maxey East Field: distribution of Phase 7 unclassifiable artefacts. Scale 1:800.

deposition. This item, weighing nearly 9kg, was found in a structure 8 gully. Heavy quernstone fragments such as this are perhaps unlikely to move from their point-of-use. In this case, two conjoining fragments have apparently experienced different histories after fracture, yet both lie within a metre of each other. This structure also produced three of the five Phase 7 loomweights, and, given the small holding capacity of its gullies, large quantities of unclassifiable fired clay fragments.

Figure 128 presents the population of unclassifiable fired clay fragments, expressed by weight per m^3 of feature filling (see also Table 29). This method was chosen to prevent the bias that would have existed, had simple weight values been presented, making no allowance for a large feature's capacity for holding more material. The distribution of unclassifiable fired clay fragments often follows the loomweight distribution (Figs.127 and 128). Such fragments are likely, therefore, to be from loomweights.

Areas where fired clay fragments are absent may also be significant: north of structure 8, for example, no fired clay fragments were recovered from the Phase 7 deposits of an east to west ditch that was thought to have been open at the time (until Phase 8, and perhaps later). The absence of this material could be due to any of the following reasons:

a. The ditch was not open when fired clay was being deposited around structure 8; i.e. the features are not contemporary.

b. The features are indeed contemporary, but fired clay was prevented from entering the east to west ditch.

c. Fired clay entered the ditch, but has not survived

Option (a) must be considered unlikely on simple stratigraphic grounds; (b), though possible, would gain plausibility if a sharp decline, rather than a complete absence of fired clay had been observed. The east to west ditch forms part of a major land-division, and must have been regularly recut, in order to remain visible for so long. It is most improbable that material as friable as this would survive repeated excavation and exposure (although it should be noted that small fragments — possible residual? — were found in higher Phase 8 deposits in this feature). Option (c) seems on the whole to be the most probable explanation for this unusual disparity.

Phase 8 (Figs.129-132)
Summary inventory:

Personal Artefacts:	*8 brooches*
	1 ligula
	1 buckle
Tools and Equipment	*1 latchlifter*
	1 spatula
	24 loomweights
	8 querns
	2 whetstones
Structural Artefacts:	*9 coffin nails*
	4 nails
	1 oven fragment
	2 daub fragments
	1 stone column fragment
Unclassifiable Artefacts:	*7 copper alloy fragments*
	5 iron fragments
	141 fired clay fragments

The distribution of *Personal Artefacts* (and one coin) is presented in Figure 130, and *Structural Artefacts* in Figure 131. By far the best represented phase in terms of features and finds, Phase 8 produced a total of 63 identifiable items, plus a further 153 unclassifiable artefacts. As with the previous phase, the 'Other finds' are largely limited to areas of presumed human traffic and settlement. Thus six out of ten *Personal Artefacts* are from structures, one from an inhumation.

A broadly similar tendency emerges for *Tools and Equipment* (Fig.130). Of the thirty-six items in this category, eighteen came from structural features including the structure 6 gullies to the east of structure 3. A further ten items came from a pair of parallel gullies that may have been cut to channel traffic into the structure 3/4/6/ complex. Twenty- four loomweights were found — two thirds of the indentifiable 'Other finds' population. Eighteen of these came from structural or associated features, and it seems reasonable to suggest that weaving was an activity around domestic areas in this phase. Five out of seven quern fragments came from structural gullies.

Given the extent of the archaeological evidence from this phase, few *Structural Artefacts* were recovered (Fig.131). Apart from nine coffin nails from one inhumation, only eight *Structural Artefacts* were found, including just one nail from a structural feature. Remains of a clay oven were recovered at the entrance to the structure 6 'yard' area, around which large quantities of unclassifiable fired clay were recovered.

Figure 132 plots the distribution of unclassifiable fired clay material. Only twelve out of twenty-nine contexts containing fired clay fragments also produced indentifiable loomweights. As with Phase 7, major ditches, even near settlement areas, produced only limited quantities of fired clay, or none at all. Again, this absence, or near-absence, could be cultural or post-depositional, but with ditch maintenance a postulated critical factor.

Phase 9 (Figs.133-136)
Summary inventory:

Personal Artefacts:	*1 brooch*
	1 bracelet
Tools and Equipment:	*1 chain swivel*
	1 knife
	1 stylus
	1 loomweight
Structural Artefacts:	*22 nails*
	1 split pin
	2 bindings
	1 plate
Unclassifiable Artefacts:	*1 bronze fragment*
	2 iron fragments
	1 lead fragment
	1 fired clay object fragment
	64 fired clay fragments

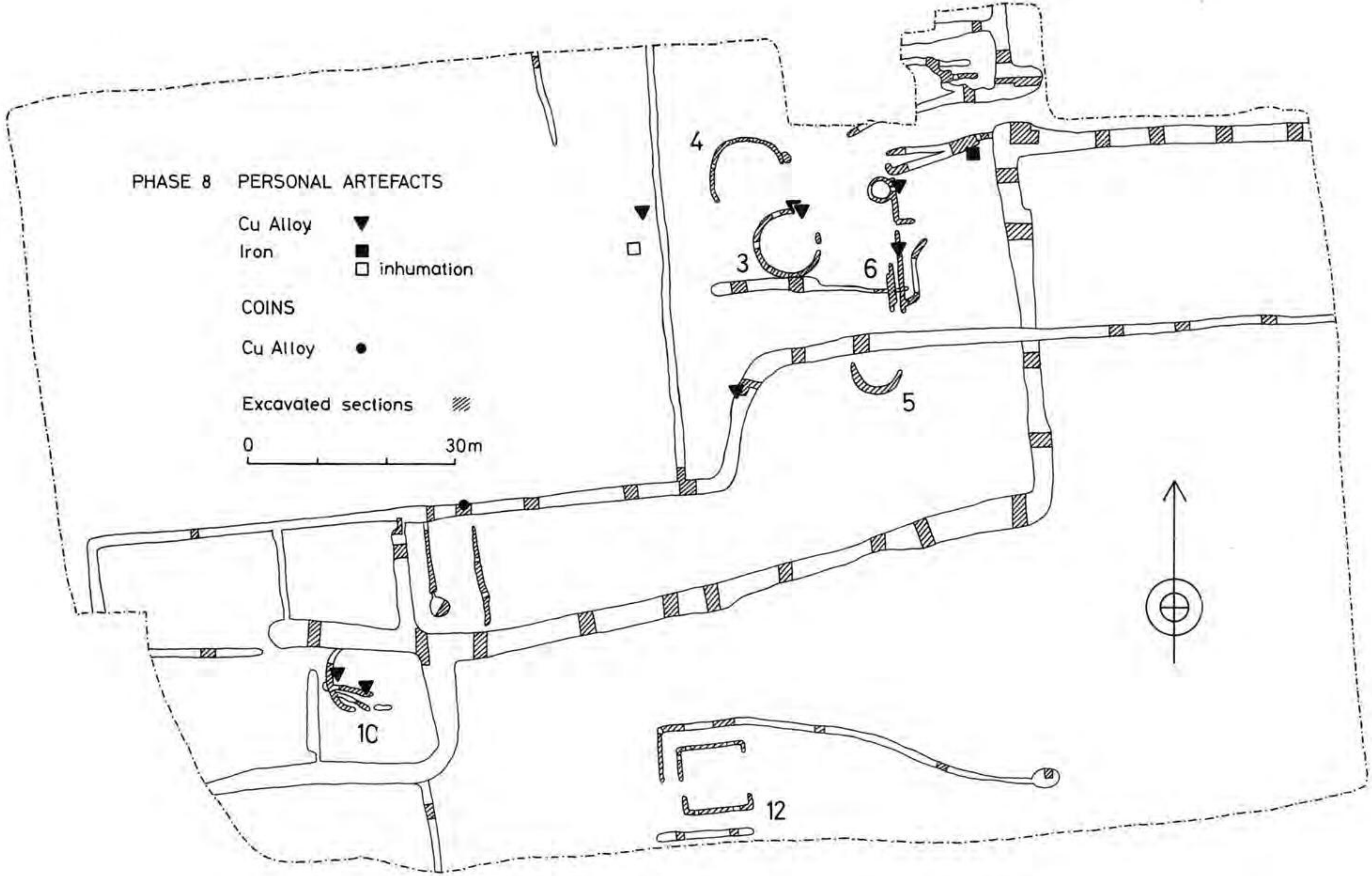


Fig.129 Maxey East Field distribution of Phase 8 *personal artefacts* and coins. Scale 1:800.

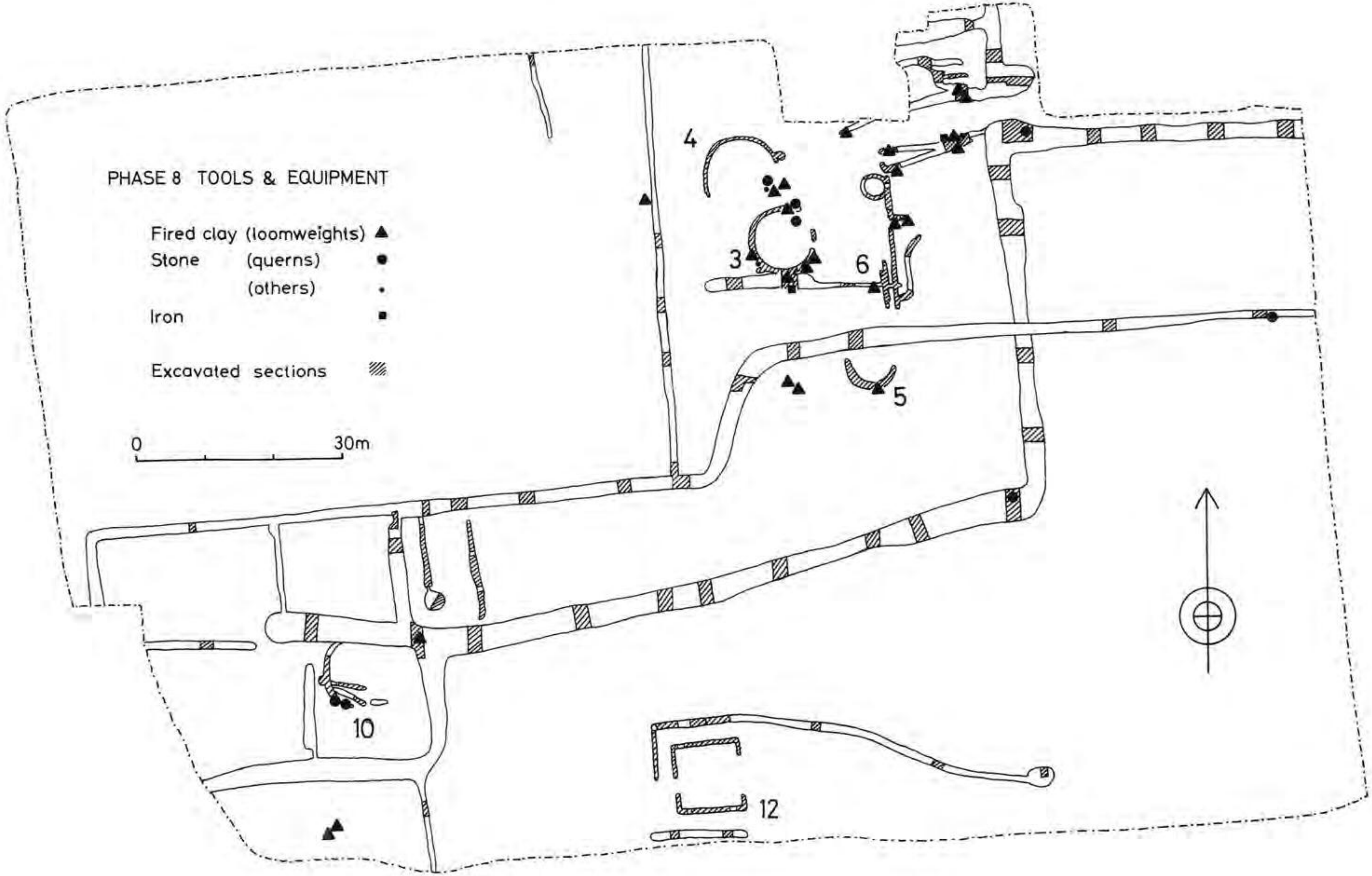


Fig.130 Maxey East Field: distribution of Phase 8 *tools and equipment*. Scale 1:800.

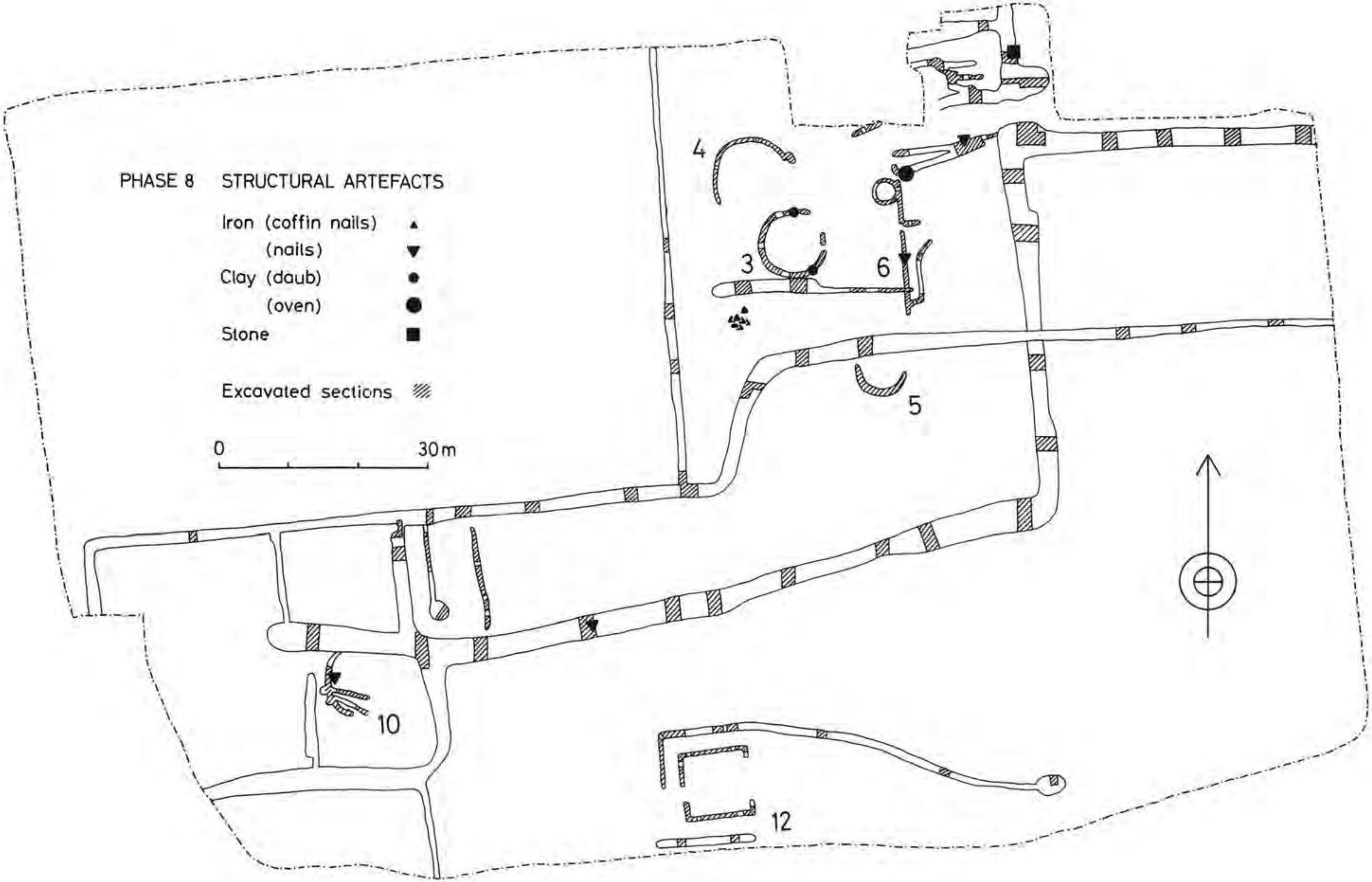


Fig.131 Maxey East Field: distribution of Phase 8 *structural artefacts*. Scale 1:800.

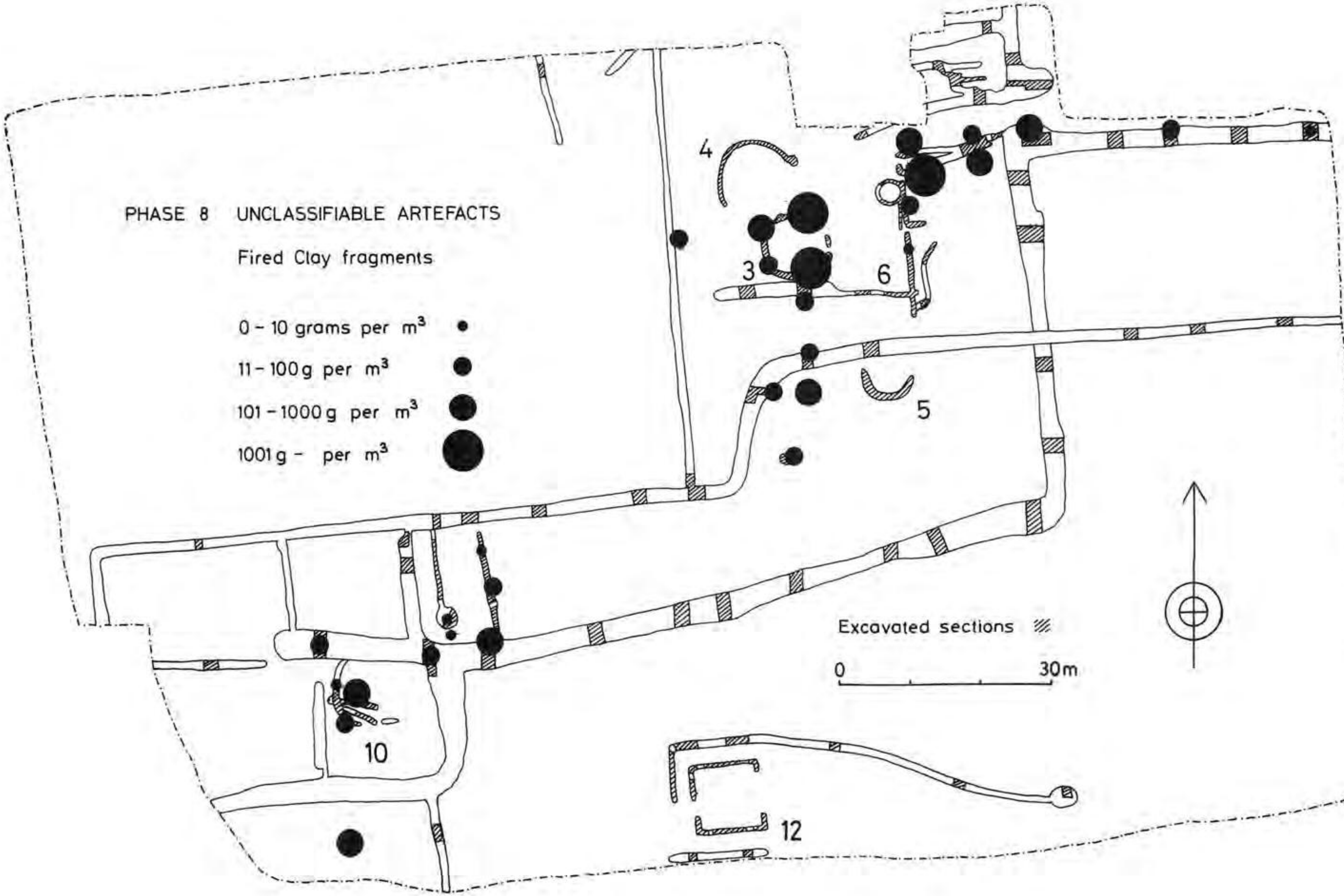


Fig.132 Maxey East Field: distribution of Phase 8 unclassifiable artefacts. Scale 1:800.

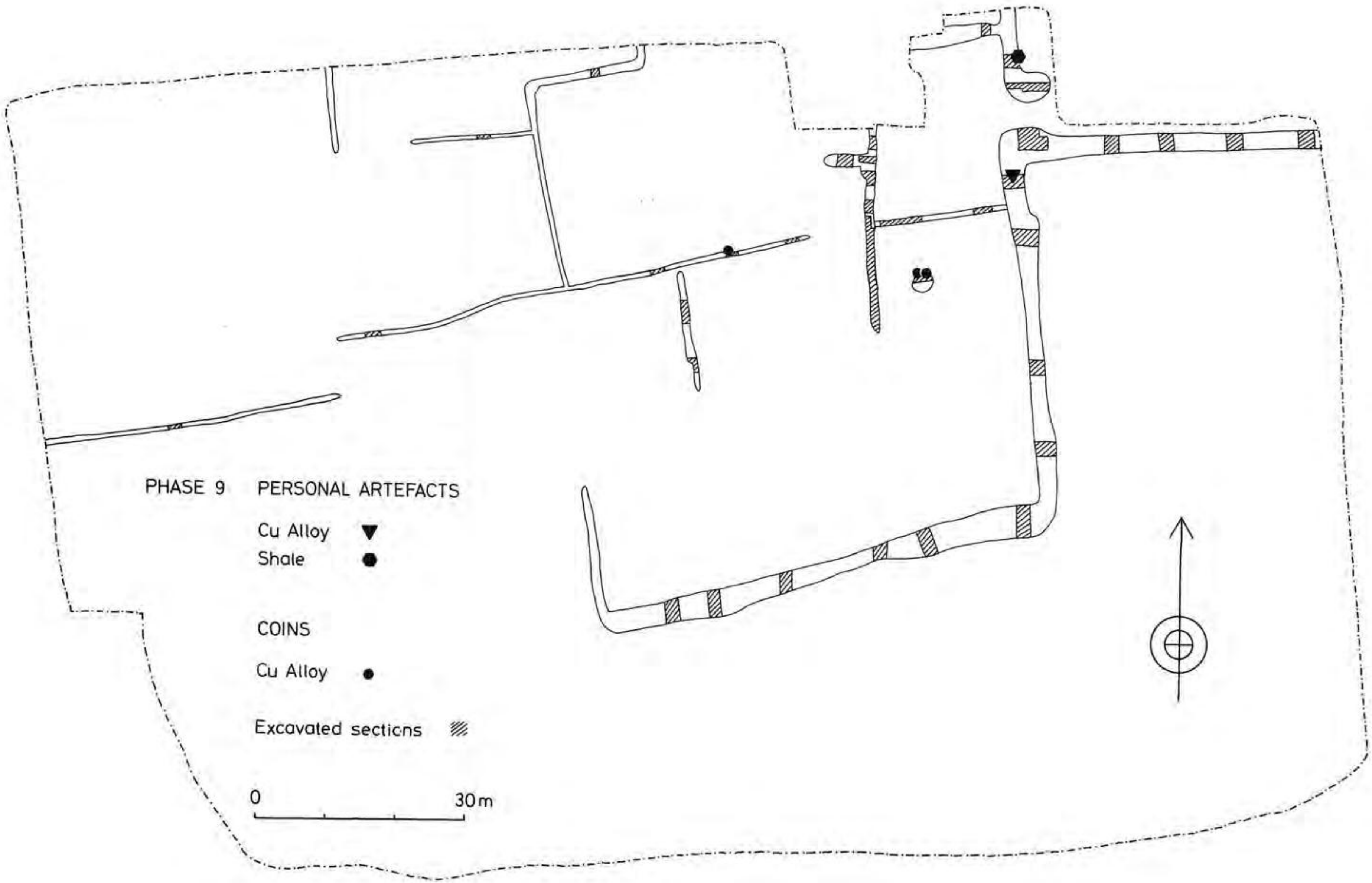


Fig.133 Maxey East Field: distribution of Phase 9 *personal artefacts* and coins. Scale 1:800.

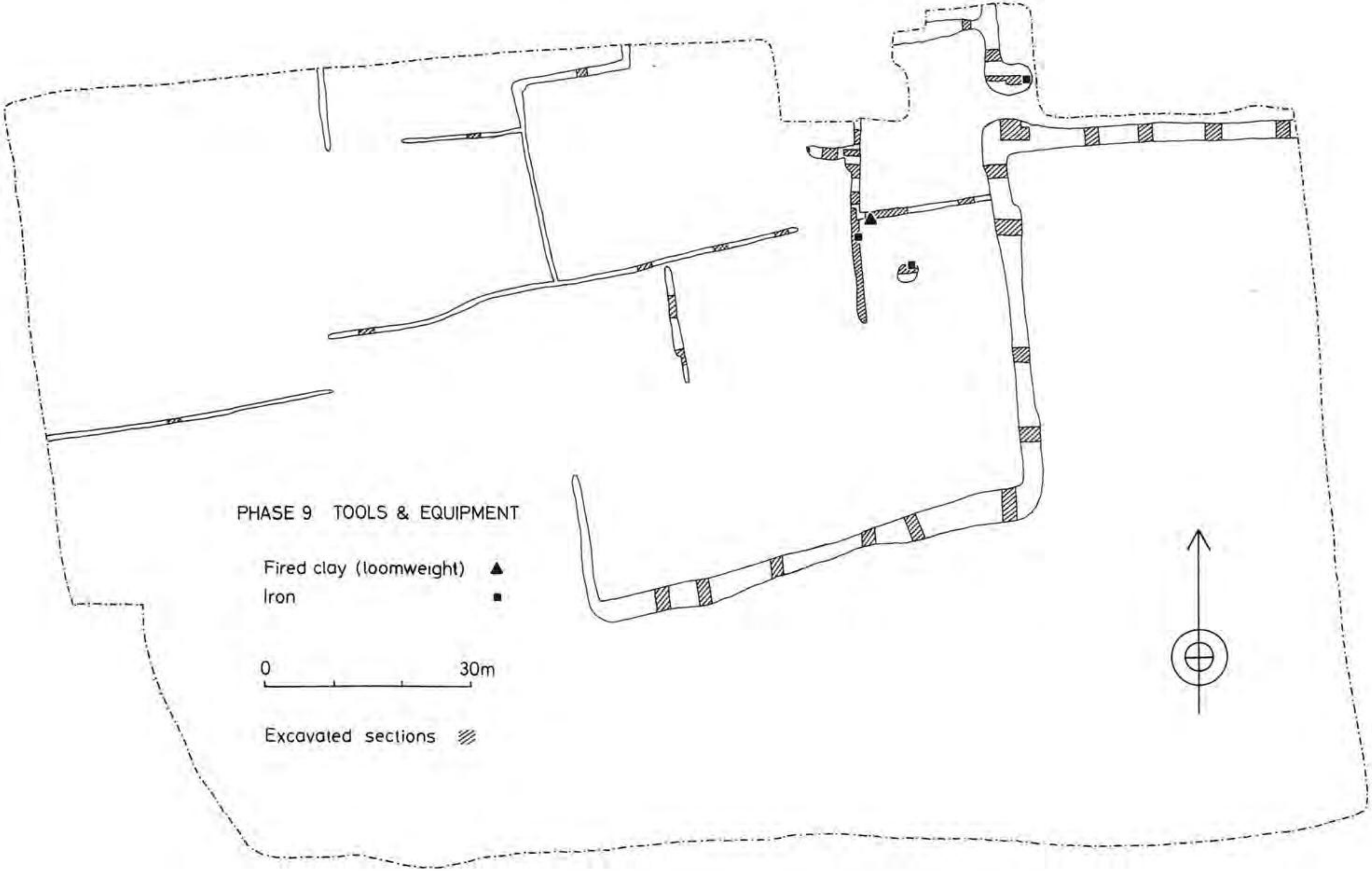


Fig.134 Maxey East Field: distribution of Phase 9 *tools and equipment*. Scale 1:800.

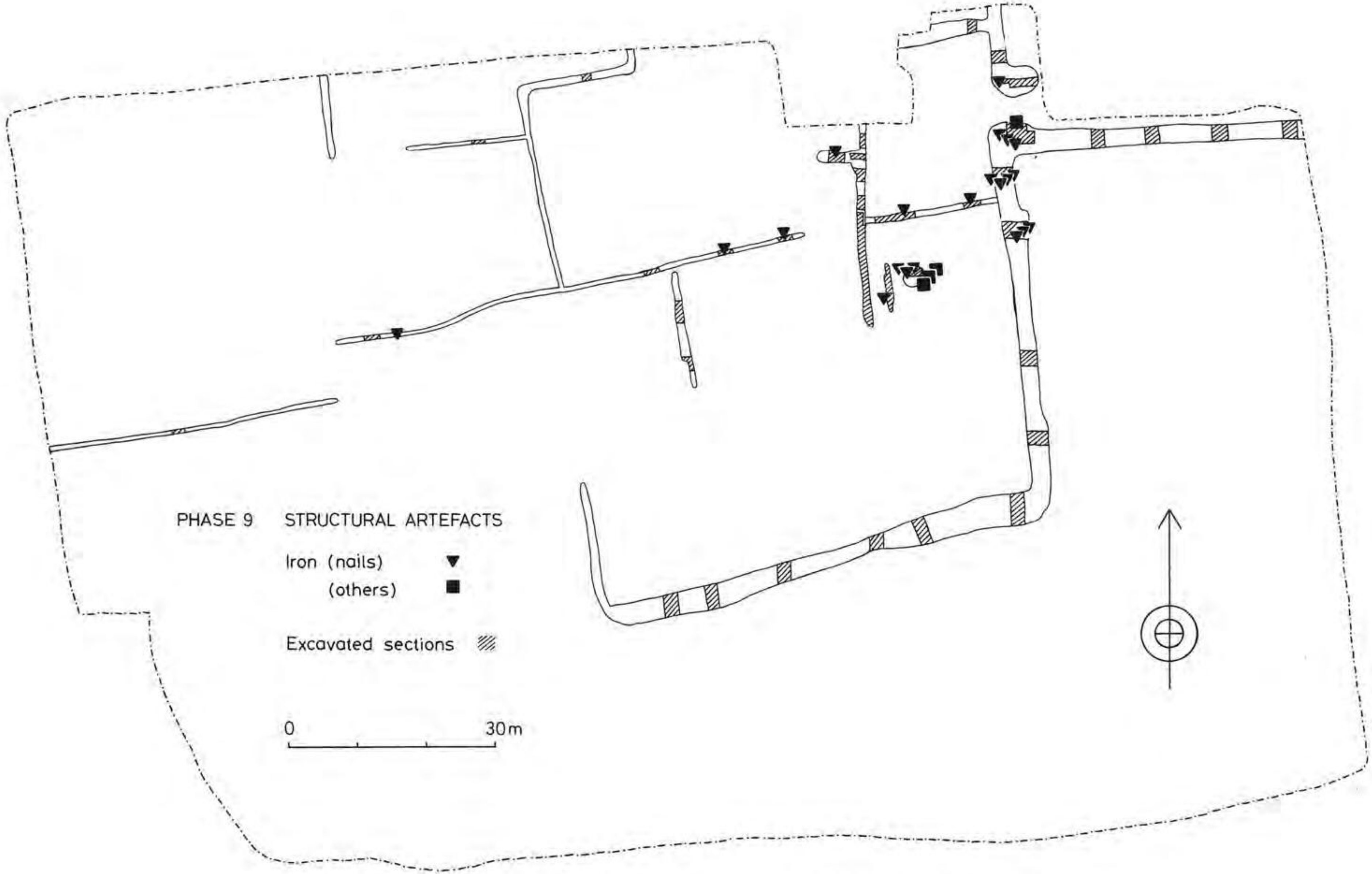


Fig.135 Maxey East Field: distribution of Phase 9 *structural artefacts*. Scale 1:800.

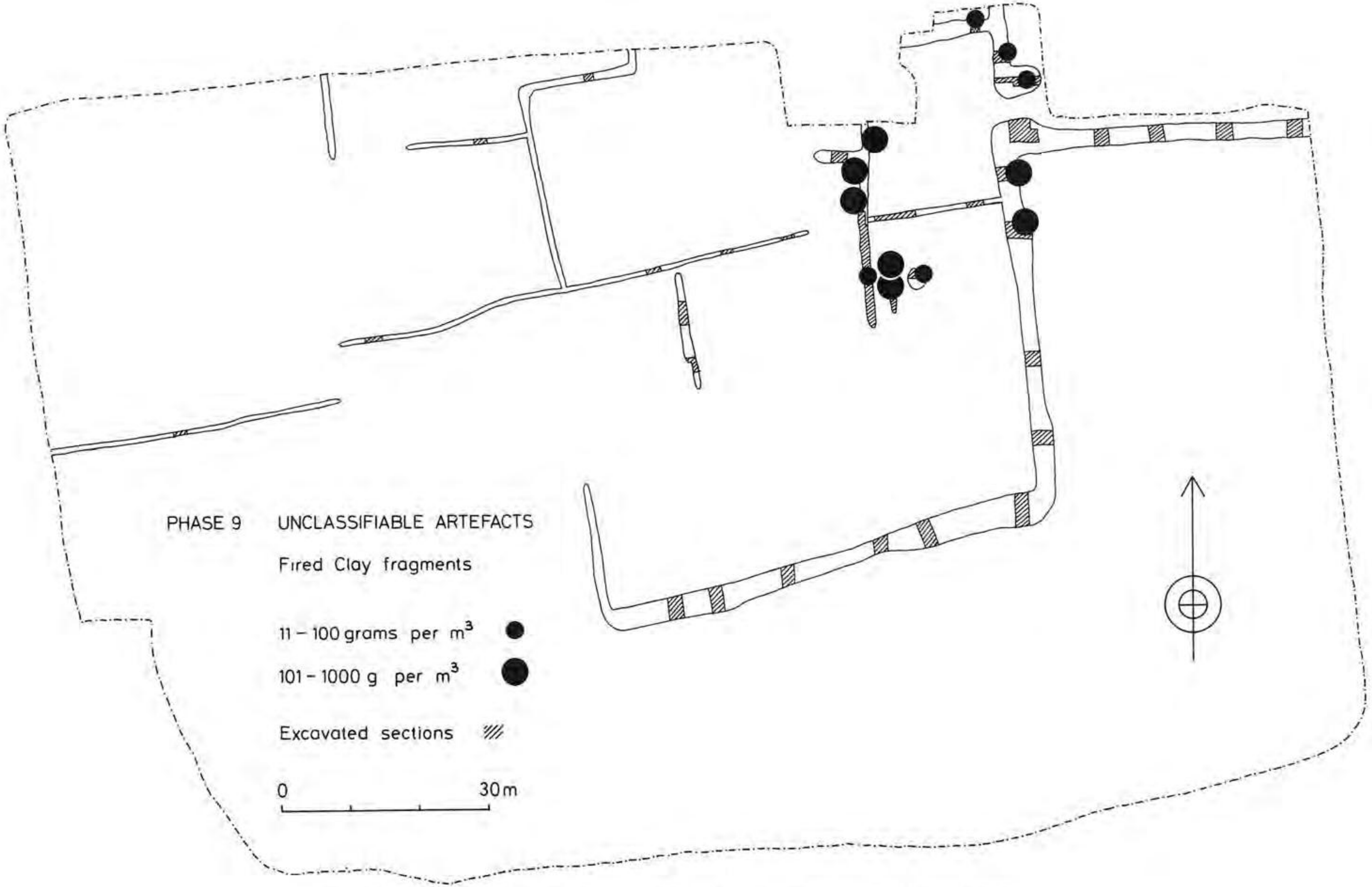


Fig.136 Maxey East Field: distribution of Phase 9 unclassifiable artefacts. Scale 1:800.

Unlike the previous two phases, no structures from this phase were recognised with any certainty within the excavated area; moreover, with the exception of a pit and a neighboring gully, only fields and enclosures bounded by ditches were present.

The identifiable 'Other finds' from this phase total some thirty-two items. Only two *Personal Artefacts* were recovered (Fig.133), both in the vicinity of an access point between field or enclosure ditches. The locations of the four items of *Tools and Equipment* are shown in Figure 134. The lack of material in these functional categories complements the lack of structural or related features. This paucity is not reflected, however, in the distribution of *Structural Artefacts*, which is shown in Figure 135. All twenty-six items in this category are iron constructional components (nails and bindings). Their distribution is limited, and follows that of the unclassifiable (and unidentifiable) fired clay fragments (Fig.136). Clearly, some of this material could be residual from Phase 8, but in that case it is unusual that survival should be so uneven; Phase 8, moreover, was not especially rich in constructional material. At present we can offer no explanation for the heavy bias in Phase 9 towards *Structural Artefacts*.

General conclusions

We have already noted (in the Introduction) that one of the objectives of presenting the collection as a series of functional groups, by phase, was to observe variation in the patterning of material of different type, and by implication of different status, synchronically and diachronically. Certain functional types might largely owe their presence in the archaeological record to loss, others to discard. It was also noted that lost items are more likely to be excavated near their point-of-loss than discarded material, due largely to the management and manipulation of rubbish.

Although an object's original function(s) is a more-or-less fixed attribute, like its fabric, it is perhaps unwise to then attach 'value' to it, as a means of determining whether a specific item had been lost or discarded. We must seek pattern at a different scale, and have found that some potentially significant variations in the quantities and distributions of functional types have emerged. For example, *Personal Artefacts* and *Tools and Equipment* tend to occur around structures, gullies and access points, in areas of probable human activity or traffic flow. Not all structures 'generate' such material; this could perhaps reflect the function of certain structures, although it is worth stressing that material often begins to accumulate in quantity only once a feature ceases to be maintained open. It is therefore dangerous to assume that finds distributions necessarily reflect human activity at the precise time that a given feature was actually being used.

The distribution of *Structural Artefacts* appears to be quite different from *Personal Artefacts* or *Tools and Equipment*. Few *Structural Artefacts* were recovered from Phases 7 and 8, yet in Phase 9 (a period of no structural features and few *Personal Artefacts* or *Tools and Equipment)*, the population of such items was comparatively large. This concentration of iron constructional components outside a settlement area defies simple explanation. It has been argued (in part I) that the high quantities of nails from the metal-detector survey of the modern ploughsoil resulted from the deliberate spreading of wood ash on the land. It was also argued that domestic waste was spread on the fields, perhaps with manure and midden material, in Phase 8. We could perhaps invoke such a mechanism to account for the nails etc. of Phase 9, but their distribution is not as diffuse as might be expected (Fig.135), and their location over the main Phase 8 settlement area is also somewhat improbable, given that land was already already rich in settlement debris (and consequently would not have required manuring). On the whole, the evidence suggests that the *Structural Artefacts* involved are not residual and do not derive from the spreading of secondary refuse; we are forced, therefore, to conclude that they derive either from collapsed Phase 9 buildings, such as sheds or barns, or from a contemporary fire-wood pile or re-usable timber storage area, such as may be seen on many farms. There is certainly no evidence to suggest that fire-wood was so plentiful that old timber could simply be discarded (M. Taylor 1981,11).

Attention has been drawn in passing to the presence or absence of quantities of unclassifiable fired clay fragments. The absence of this material from lengths of major, multi-phase ditches is significant, since it would not survive repeated exposure, such as one might expect from regular ditch maintenance. Indeed, the state and survival of this material has a value as a means whereby feature infilling rates and maintenance practices can be assessed, at a very approximate level.

It is hoped, despite the small numbers involved, that this discussion has demonstrated the value of examining functional categories of finds and their distribution. In the past 'Other finds' have been studied for themselves, and as a means of providing tighter chronology. The former is still important, even if the latter is now seen to be less straightforward than was once thought, due to problems of residuality, curation etc., which are now better appreciated than hitherto. These contextual concerns could relegate the study of 'Other finds' to a mere catalogue of peripheral hardware unless efforts are made to find new directions for research. It is suggested that a more holistic approach is required in which different categories of material are seen in their synchronic, diachronic and spatial contexts; these, in turn, must be closely integrated within the site report as a larger whole.

IV. Geophysical and Geochemical Analyses of Subsoil Features

by David Gurney

The two reports that appear below should be read in conjunction with the topsoil surveys discussed in part I. Sampling and analytical methods are given in Appendix III. Sampling and analysis was carried out by the author, under the general guidance of P.T. Craddock (Phosphates) and A.J. Clarke (Magnetic Susceptibility).

Geophysical analysis of subsoil features

(Figs.137,138).

Introduction

It was not originally intended to sample features for magnetic susceptibility, but as the excavations progressed, various situations arose where it was considered that this approach might produce interesting results. The following contexts were therefore sampled: the central ring-ditch of the henge complex (structure 14, F.607); the oval barrow (structure 16), mound (F.541) and timber slot (F.542); the Phase 5.2 ditches around the oval barrow (F.506, F.533 and F.538); and the Middle Iron Age oven/hearth, structure 19 (F.572). However, despite the very high magnetic values obtained from samples from the hearth, and the fact that it appeared as a strong and distinctive anomaly on the magnetometer survey, the ploughsoil magnetic survey failed to locate any enhancement in the ploughsoil above the feature. This was partly due perhaps to the sampling interval, which may have resulted in a 'near-miss' with samples being taken 2-3 metres from the feature, centrally placed within a 5m sampling square. The feature also appeared to have been little disturbed by ploughing, and the hearth itself was sealed by a layer of gravel which constituted the upper fill of the feature.

The analyses

The central ring-ditch (Phase 2, structure 14, F607):

Twenty samples were taken from ten sections of the central ring-ditch (F.607), sampling the upper and the lower fill. The range of values is 13-45 SI/Kg × 10^{-8}, with a mean of value of 29 and standard deviation of 8.

These low values confirm the findings of the phosphate analyses (below), and suggest little or no domestic occupation or activity within the vicinity of the ring-ditch or mound.

The oval barrow (Phase 2, structure 16, F.541 and F.542):

(Figs.137,138)

Thirty-eight samples were taken from part of a north to south section (a-b on Figure 138), including samples from the timber slot (F.542, at section 15), the mound (F.541, layer 3) and the buried soil (F.541, layer 4).

The range values is 30-225 SI/Kg × 10^{-8}, with a mean value of 94, and standard deviation of 49. Values for the buried soil L4 were low, suggesting an absence of occupation before the construction of the mortuary enclosure, while slightly higher values from the mound material L3, may reflect activities and occupation during the construction and use of the mortuary enclosure.

The unusually dark filling of the timber slot (F.542) was initially thought to be a burnt soil, and accordingly ninety-three soil samples were taken from seventeen sections around the feature, to test this hypothesis. Where two layers were present, both were sampled. On the illustration (Fig.138), values from layer 2 are shown outside the ditch; layer 1 values appear on the inside.

The range of values is 72-320 SI/Kg × 10^{-8}, with a mean value of 139 and a standard deviation of 57. These values are not altogether consistent with the suggestion that the timber revetment or structure burnt down, although the small fragments of charcoal are suggestive of this (see discussion of structure 16 in part II). The dark fill contained no impression of individual posts, and it is assumed that this humus- rich deposit (see French, part V, below) is the remains if a once- continuous 'wall' of square dressed timbers, set edge-to-edge. Values of both upper and lower fill where these were sampled are similar, so whatever process or processes resulted in the observed magnetic enhancement, it appears to have operated uniformly on the total fill of the feature.

While the levels of magnetic enhancement in samples from this ditch do not suggest that the timber structure burnt down with any great heat, producing an enhancement such as might be expected in a kiln or cremation, the values do suggest that some burning may have taken place. This need not have been a blazing inferno, but the evidence would suggest perhaps a slow smouldering fire, at least in the latter stages, when any superstructure had burnt down, and timbers set into the gravel subsoil continued to burn slowly.

It is noticeable that there are higher values in samples taken from the south-eastern sections of the ditch, and in sections 7 to 10 the lowest sample is 195 SI/Kg × 10^{-8}. It is hard to explain this localised enhancement, but the phosphate results suggest a similar pattern which is equally inexplicable.

The oven (Phase 5.2, structure 19, F.572):

The discovery of an oven, initially by magnetometer survey of the ploughsoil surface (see report by A.David, part I), and later by excavation, gave an opportunity to sample the fill of a feature which could reasonably be assumed to have been extensively burnt, and which therefore should be significantly enhanced.

The results of the five samples taken from different parts of the fill of this feature prove beyond doubt that this was the case, with a range of values from 536-611 SI/Kg × 10^{-8}, a mean value of 566 and standard deviation of 25. These values are far higher than any others from the site and illustrate the level of enhancement which may be reached with a extremely burnt soil. This also suggests that while the filling of the oval barrow timber slot (F.542), discussed above, is enhanced relative to the central ring-ditch (F.607), the oval mound (F.541) and surrounding Iron Age drainage ditches, the range of values does not suggest that it was subjected to much appreciable heat.

Linear ditches (Phase 5.2, F.506, F.533 and F.538):

Thirty samples were taken from main drainage ditches (features 506, 533 and 538) to establish the 'background' level of magnetic enhancement. These ditches belong to Phase 5.2 and surrounded the earlier (Phase 2) oval barrow (structure 16).

Samples were taken from eight sections and have a range of 60-107 SI/Kg × 10^{-8}, with a mean of 86 and a standard deviation of 11.

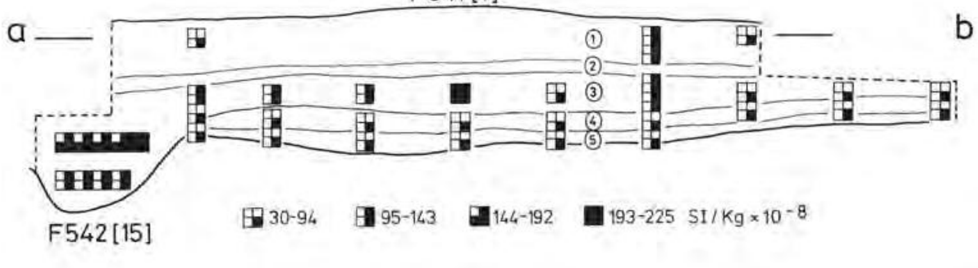


Fig.137 Maxey West Field: schematic section through the oval barrow, showing magnetic susceptibility results (for location see Fig.138).

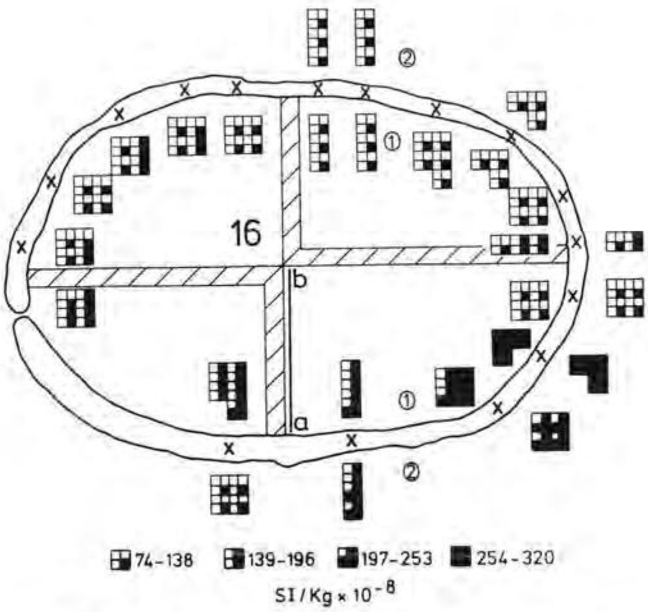


Fig. 138 Maxey West Field: results of magnetic susceptibility analyses of samples (locations denoted by 'X') taken from the gully (F.542) of the oval barrow. For a full plan see Fig. 44.

Discussion

The use of magnetic susceptibility analysis, combined with phosphate analysis has been a valuable locational and interpretative tool. The ploughsoil survey successfully located the main area of Phase 8 settlement on the East Field; assisted in the interpretation of the series of small rectangular enclosures in the south-west corner of the East Field; located an area of Iron Age settlement on the West Field; and provided negative evidence in the area of the cursus, henge, central ring-ditch and oval barrow.

The limited sampling of features generally supported the interpretations provided by the ploughsoil and phosphate surveys, and suggest that the timbers of the oval barrow (F.541, F.542 structure 16) may have burnt down.

The opportunity to sample an area of specific pyrotechnical activity (oven F.572, structure 19) provided confirmation of the extremely high levels of enhancement which could be generated in such contexts.

Soil phosphate analysis of subsoil features
(Figs.139-150)

Introduction

Extensive sampling of structural, linear and non-linear features was undertaken to complement the results of the ploughsoil phosphate survey. Structures were sampled as extensively as possible, and linear features were sampled on an average of one sample for every 3-4m of uncontaminated infilling. Samples were not taken in the vicinity of medieval furrows, or where earthmoving machinery had churned the surface. Results are expressed in mg P/100g, hereafter abbreviated to mg.

The analyses

The cursus (Phase 1, structure 27): (Fig.139)
Forty-two samples were taken from the two cursus ditches, thirty-three from the northern ditch F.60, and nine from the southern ditch F.517; of the former, four samples were taken from the charcoally layer, 2. The range of all samples was 14-165mg, the mean value 74mg, and the standard deviation 42mg.

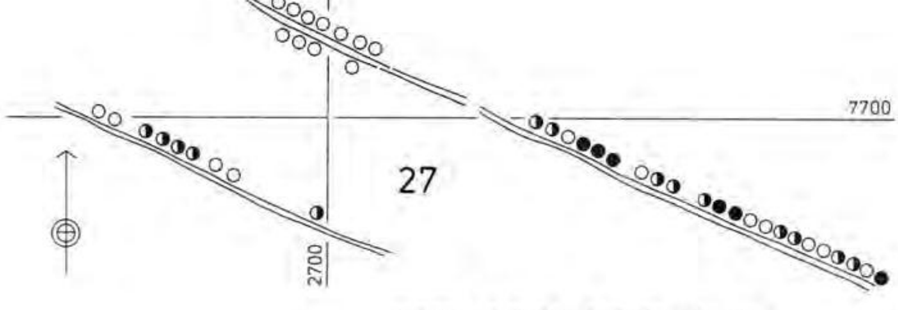


Fig.139 Maxey East and West Fields: results of phosphate analyses of the cursus ditches. Scale: 1:400.

The generally low values of the samples suggests that little occupation debris was deposited in the features, and that no substantial settlement was nearby (as is also suggested by the absence of finds). At the western end, values tend to be somewhat higher in the southern ditch, while values increase in the northern ditch as it crosses the East Field. The three highest values there are immediately adjacent to the ring-gully of structure 1 (F.50), and as this feature does actually cut the cursus at this point, the values may be contamination by the later feature.

Thus the horizontal distribution of phosphate along the cursus ditches is variable, and there are no areas of particular enhancement. Values do not increase in the cursus as it approaches the area of the oval barrow and the henge. Values are generally fairly low, and argue against the presence of occupation in the vicinity, unless the cursus was kept ritually 'clean'.

One of these cursus ditches was also sampled during excavation of the causewayed enclosure at Etton. Only a single ditch was found, but its nature and alignment, combined with the evidence of aerial photographs, clearly indicate that the feature was part of the cursus seen at Maxey. Values from the Etton samples were slightly higher than those from Maxey, with a range of 49-120mg, and a mean value of 86.

Central ring-ditch of henge complex (Phase 2, structure 14, F.607): (Fig.140)
Twenty samples were taken from ten sections across the central ring-ditch; upper and lower fillings were selected. The overall range is 40-170mg, with a mean of 76mg, and standard deviation of 38mg. The upper fill samples have a range of 40-100mg, and a mean 53mg, while the lower fill has a range of 39-170mg and mean of 100mg. In all but one instance, the upper fill has a considerably lower value than the lower, primary fill, and this may suggest that the lower fill does include, perhaps, some occupation debris from activities related to the construction of the mound, while the upper fill, consisting of slumped mound material did not contain any phosphate-enhanced material. Values are however generally low in both layers, and do not suggest substantial occupation or activity on or around the central mound. The results of the magnetic susceptibility samples from the central ring-ditch confirm these conclusions (see above).

The henge ditch (Phase 2, structure 15, F.523): (Fig.140)
Thirty-three samples were taken from the henge ditch, and these have a range of 14-88mg, a mean value of 39mg, and standard deviation of 17mg. The mean value is close to that of the upper central ring-ditch, and this, combined with an absence of finds, indicates little or no activity within the henge which might result in the deposition of phosphate-rich occupation debris after the construction of the central mound and the henge ditch.

The oval barrow (Phase 2, structure 16, F.541 and F.542): (Figs.141, 142)
Twenty-five samples were taken from sections around the timber slot (F.542) of the oval barrow. The range of these samples was 31-85mg, with a mean of 58mg, and standard deviation of 16mg. All values are fairly low, although there is a relative enhancement of samples taken from sections in the south-east quadrant of the ditch, correlating with an enhancement of magnetic susceptibility noted above. There is no apparent explanation of this phenomenon.

Twenty-three samples were also taken in three profiles through the mound of the oval barrow, F.541, including samples of the mound itself (layer 3) and the buried soil (layer 4). The overall range of these samples was 48-170mg, with a mean of 81mg, and standard deviation of 29mg. While magnetic values for layer 3 were higher than layer 4, phosphate values for these layers are similar, and a slight enhancement is found in layer 5, between the buried soil (layer 4) and the subsoil. This may be a natural enhancement a few centimetres below the old land surface, or may indicate the slight vertical displacement of phosphates originally deposited in the old land surface before the construction of the mound. In either case, the enhancement is slight, and is probably not particularly significant. The results of the ploughsoil survey in this area confirm the low values of the samples discussed here.

Square-ditched barrows (?) (Phase 4, structure 17 and 18): (Fig.143)
These structures are the two possible Iron Age square-ditched barrows north of the cursus, near the henge entranceway. Eight samples were taken from structure 18, with a range of 42-150mg, and a mean value of 65, and ten samples were taken from structure 17, with a range of

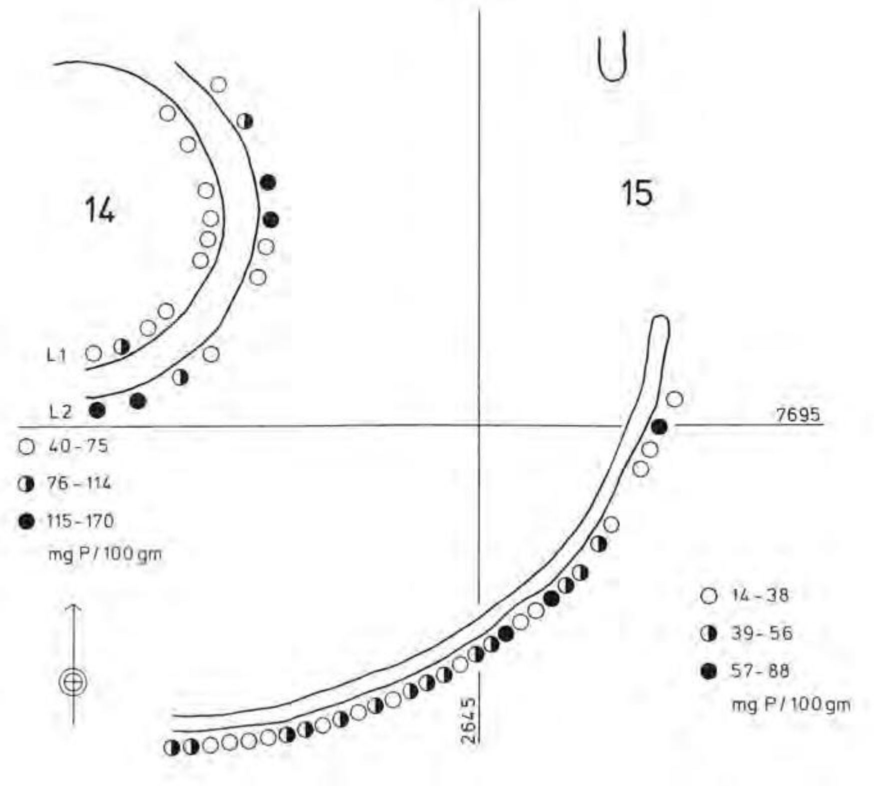


Fig.140 Maxey West Field: results of phosphate analyses in features of the henge complex. Scale 1:400.

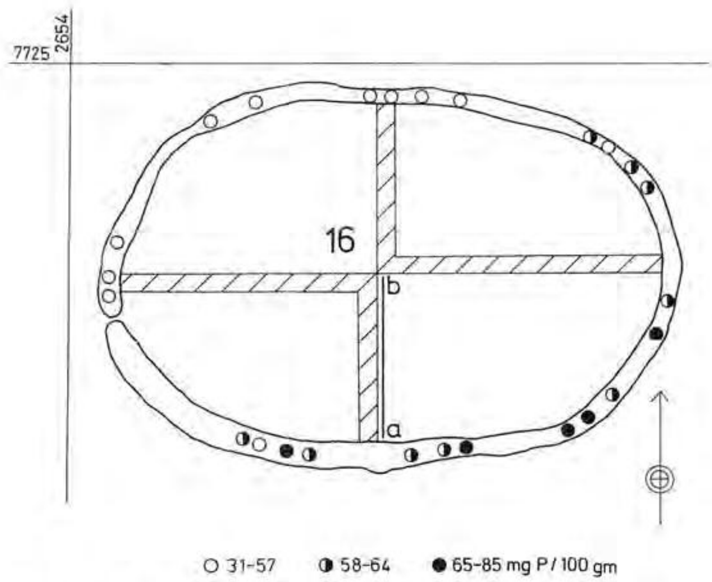


Fig.141 Maxey West Field: results of phosphate analyses in the gully (F.542) of the oval barrow. Scale 1:100.

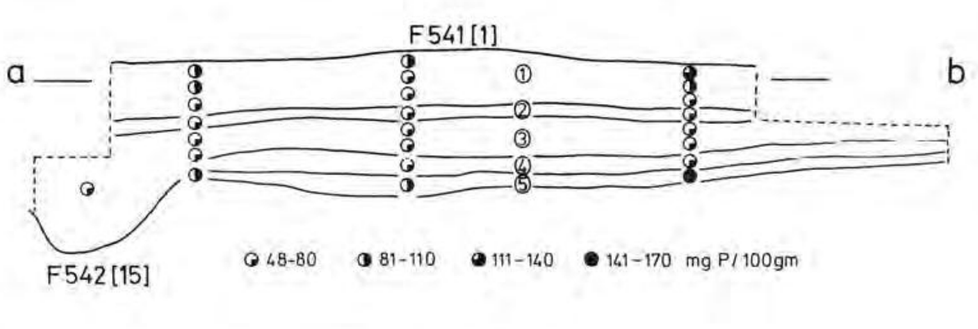


Fig.142 Maxey West Field: results of phosphate analyses in the oval barrow (for locations see Fig.141). Scale 1:15.

53-150mg and a mean value of 71. Two of the four internal features (possibly post-holes) within this structure were also sampled and both gave values of 59mg.

The low phosphate values and absence of occupation evidence lends credence to the interpretation of these structures as barrows, and it would be difficult to argue that they were associated with either human or animal occupation.

The oven and associated features (Phase 5.2, structure 19 and 20): (Fig.143)
Most of the small non-linear features associated with these structures were not sampled, but two post-holes gave values of 220mg (F.577) and 125mg (F.578), and the fill of the pit containing the hearth or oven, with its extremely high magnetic susceptibility value, and containing considerable quantities of pottery and animal bone, gave a value of 372mg, confirming that considerable occupation debris was present in the fill of this feature.

Ring gullies (Phase 5, structures 22 and 23): (Fig.144)
These structures are part of the Phase 5 settlement on the southern edge of the West Field. Structure 22 is a curving ring-gully, and gave nine values of 35, 50, 59, 62, 82, 88, 90, 105 and 120mg.

The ditch of structure 23 (Features 502 and 510) gave values of 130 and 150mg, and an immediately adjacent ditch F.503, values of 56, 73, 82 and 93mg.

Small ring-gully (Phase 6, structure 29): (Fig.144)
This very small ring-gully, possibly a stack-stand, gave a single value of 9mg, and the pit F.520 at the southern end, 24mg. A narrow ditch immediately to the south (F.525/526) was sampled at four loci, giving values of 53, 56, 56 and 67mg.

Ring-gully (Phase 5.2, structure 30): (Fig.143)
This curving ring-gully probably the eaves-drip gully of a round-house was sampled at three loci, giving results of 73, 110 and 125mg. These values are considerably lower than those obtained from later ring-gullies (e.g. Phase 8, structures 3 and 5), where large quantities of

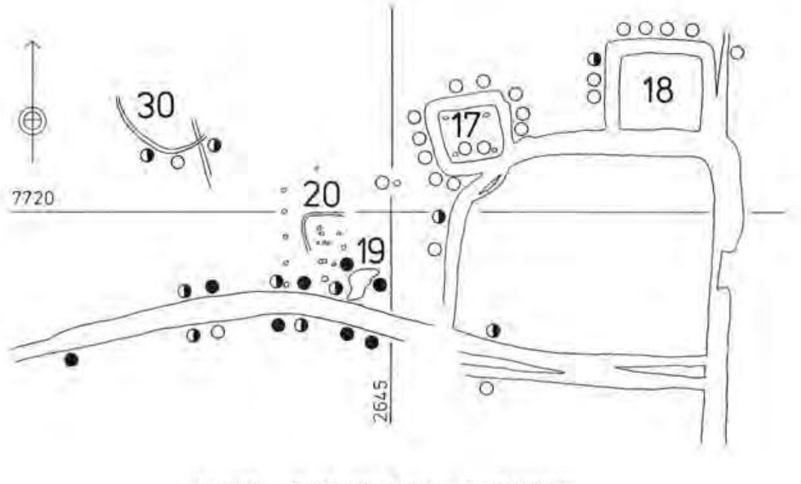


Fig.143 Maxey West Field: results of phosphate analyses of Iron Age (Phases 4 and 5) features in the north part of the site. Scale 1:400.

occupation debris combined with high phosphate values suggest either a long-lived or intensive occupation, but similar ring-gullies with a few finds and low phosphates are not uncommon (see structures 22, 1, 2 and 4).

Curved ditch (Phase 6, structure 21, F.535): (Fig.145)
This 'structure' is a large curving ditch at the south-east corner of the West Field, forming an enclosure which was associated with the Phase 6 settlement. F.535 was sampled at nine loci, and results of 78, 100, 135, 180, 220, 230, 240, 260 and 329mg were obtained. A larger well, F.559, in the south-east corner of the field, and adjacent to the butt of F.535 gave a value of 358mg. The absence of features within this enclosure, and the proximity of the well may suggest that this was an enclosure for livestock, and the phosphate evidence would support this view. The hypothesis (part II) that the ditch may once have surrounded a terp-like platform is neither confirmed nor rejected by these findings; surface run-off from any platform would accumulate in the semi-circular ditch. If there was a platform it might have held animals, as well as people.

Small ring-gully (Phase 6, structure 24, F.543): (Fig.144)
This structure is another possible stack-stand, this time within the Phase 6 settlement on the southern edge of the West Field. Six samples gave values of 67, 160, 160, 190, 230 and 270mg, but these values need not imply a different function of this feature from structure 29 above, as the proximity of structure 24 to a settlement area would almost certainly result in higher levels of occupation debris being deposited in its fill.

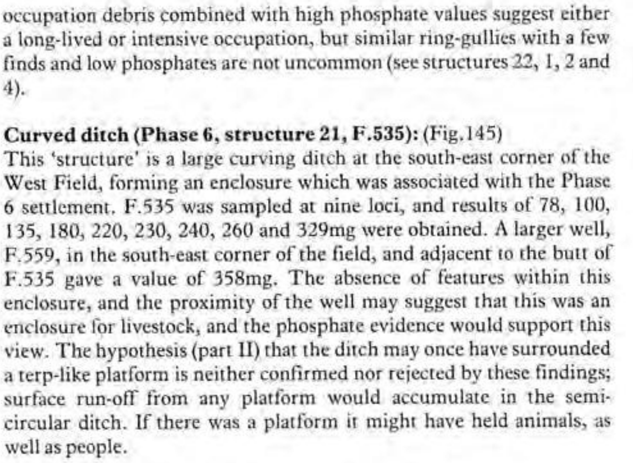


Fig.144 Maxey West Field: results of phosphate analyses of Iron Age (Phases 5 and 6) features in the south-west part of the site. Scale 1:400.

Possible rectilinear building (Phase 6, structure 25, F.500): (Fig.144)
The fragment of right-angled gully gave values of 78, 130, 135 and 180mg.

Ring-gully (Phase 7, structure 1, F.50): (Fig.146)
This ring-gully was sampled at twelve loci, evenly distributed along the circumference; the sample range is 62-180mg, with a mean value of 118mg. Finds and bone densities were low.

Ring-gully (Phase 7, structure 2): (Fig.146)
The outer circular gully of this structure was sampled at eight loci, and the inner gully at three. The range of values is 50-220mg, and the mean value is 118mg, the same value obtained for structure 1. These two structures are clearly comparable, as they both appear to belong to Phase 7, both had few finds in their feature fills, and both produced low phosphate results. As adjacent Phase 7 features also had fairly low finds concentrations, it can probably be safely assumed that the absence of both finds and phosphates is due to the low number of finds in use in the structure, and the presence of relatively low levels of occupation debris associated with the structure. If the adjacent features contained high levels of occupation debris, it would seem clear that the actual area of the house was kept clean, and that the rubbish generated was deposited in adjacent pits and ditches, but in this case, it would appear that the settlement only generated low levels of occupation debris. This suggests that the occupation of these structures was either short-lived, or only occasional. Perhaps these structures are on the periphery of a much larger settlement to the south, although regrettably this area was destroyed by earlier quarrying operations, so this cannot be confirmed.

Gullies and ditches of structure 7 (Phase 7): (Fig.147)
This structure consists of the probable entrance ditches to round-house structure 8. Eleven samples were taken with a range of 130-358mg, and a mean value of 242mg, suggesting considerable quantitites of occupation debris, or activities just outside the house entrance resulting in an enhancement of material dumped in, or weathering into, these features.

Ring-gully (Phase 7, structure 8, F.206, F.208): (Fig.147)
This structure is the possible house ring-gully to which structure 7 is a probable entrance. Values of 130, 150, 165 and 290mg were obtained for the ring-gully, while short lengths of ditch nearby gave values of 230, 280, 290 and 386mg. This suggests that the main phosphate enhancement was at the entrance to the house, a patterning in the deposition of occupation debris which was observed at Fengate in structures used for human occupation in both the distribution of finds and phosphate, contrasting with the generally unpatterned distributions generated in structures used for livestock.

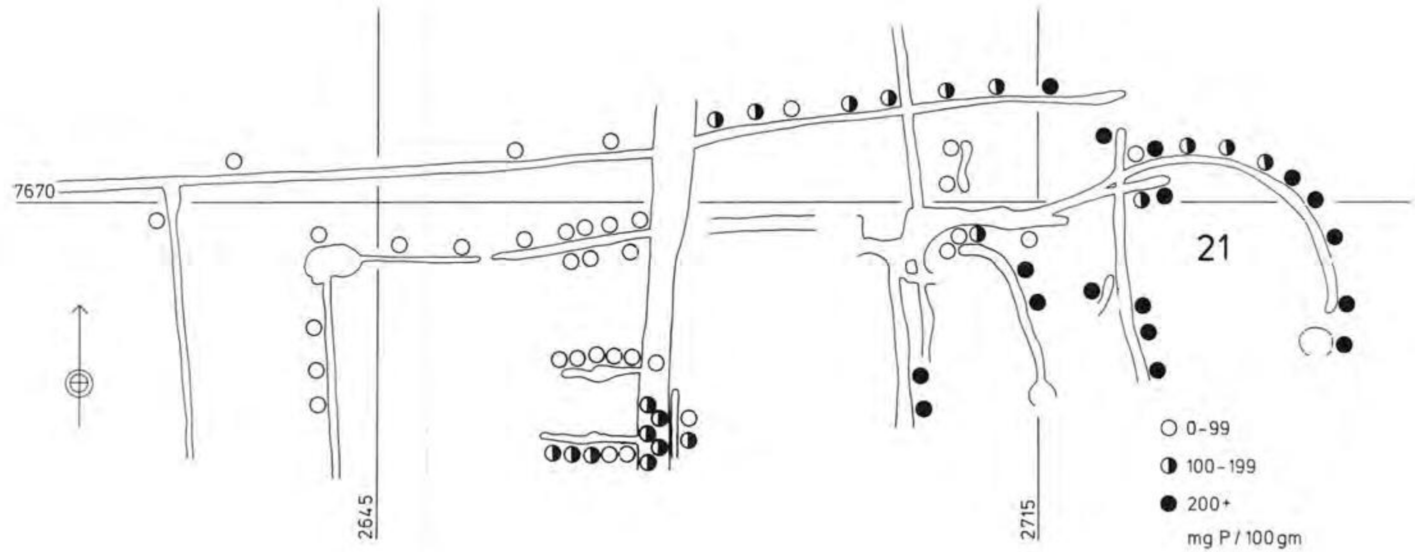


Fig.145 Maxey West Field: results of phosphate analyses of Iron Age (Phases 5 and 6) features in the south-east part of the site. Scale 1:800.

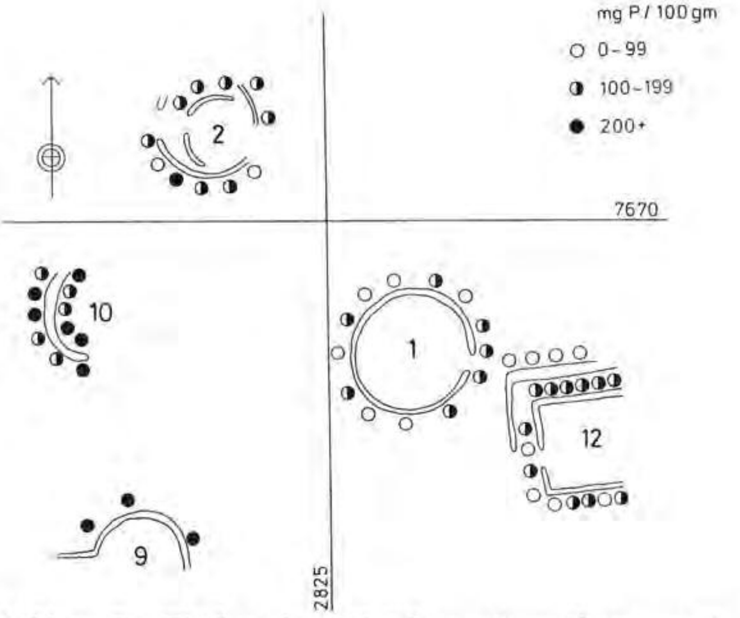


Fig.146 Maxey East Field: results of phosphate analyses of structures 1, 2, 9, 10 and 12 (Phases 7 and 8), with linear features omitted. Scale 1:400.

Probable ring-gully (Phase 7, structure 9, F.345): (Fig. 146)
This structure is to the south-west of structures 1 and 2, and had been partially destroyed by earlier quarry activities. Three values of 220, 240 and 240mg were obtained, considerably higher than the values obtained from the Phase 7 structures, 1 and 2. Perhaps this structure was occupied more intensively during this phase, and as suggested above, the other structures were peripheral to the main settlement and were only occasionally used.

Round building (Phase 8, structure 3, F.170): (Fig.148)
This structure appears to be the main structure occupied during Phase 8, and the finds and phosphate evidence confirm this view. Eight samples were taken, with a range of 200-386mg, and a mean of 257mg. More than 300 finds of pottery, and over 750 finds of animal bone in the ring-gully show that substantial quantities of occupation debris from the house, or from nearby activities, were deposited or weathered into the feature. This occupation was either particularly intensive, or long-lived. The ploughsoil survey results show that levels of phosphate around this structure are high, particularly to the east outside the entrance to the house, while a single low value was obtained from a sample point which fell in the centre of the house. If this is not a spurious value, then it does suggest that the interior of the house was kept clean, and that large quantities of debris were deposited in or outside the ring-gully.

Ring-gully (Phase 8, structure 4, F.182): (Fig.148)
This structure, immediately north of structure 3, forms an interesting comparison with it. Two samples from the ring-gully gave values of 125 and 165mg, and there were no finds. This implies a functional distinction between the two structures if they are precisely contemporary, as is possibly the case. The ploughsoil values above this structure are higher than those above structure 3, although this may result from the general spread of enhanced material around structure 3 rather than the disturbed deposits associated with structure 4. If the enhancement above structure 4 does relate to the function of the structure, then the possibility remains that this structure was for livestock, although the lower values of the feature fills and its close proximity to structure 3 would perhaps argue against this interpretation. Its use for storage would be consistent with the evidence, and perhaps be a more plausible explanation.

Crescentic gully (Phase 8, structure 5, F.198): (Fig.148)
This structure is possibly contemporary or near-contemporary with structures 3 and 4, and like structure 3, appears to have been intensively

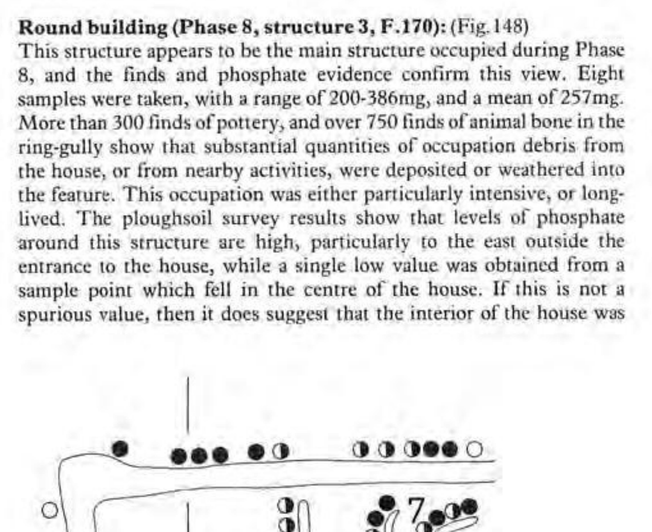


Fig.147 Maxey East Field: results of phosphate analyses of structures 7 and 8 (Phase 7). Scale 1:400.

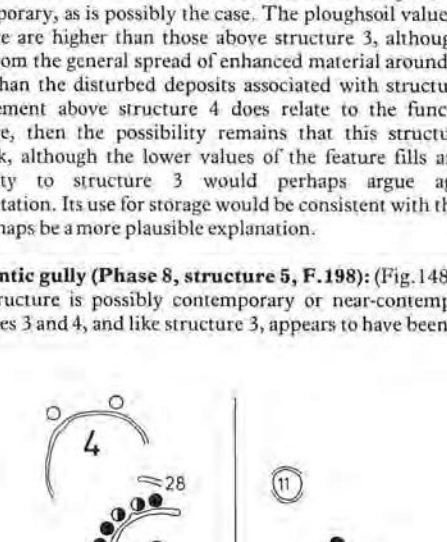


Fig.148 Maxey East Field: results of phosphate analyses of structures 3, 4, 5 and 26 (Phase 8), with linear features omitted. Scale 1:400.

Fig.149 Maxey East Field: results of phosphate analyses of linear features (Phases 7-9) in the north-east part of the site, with structures omitted. Scale 1:400.

occupied, with more than 700 finds of pottery, 1600 of animal bone. The retrieval methods used in the excavation of this feature probably accounts for many of these finds (see Lane, Chapter 2, Introduction),but even using the standard procedures, the finds densities would still have been very high. Eight phosphate samples gave a range of 220-386mg, with a mean of 354mg, the highest mean value obtained for any feature.

Probable ring-gully (Phase 8, structure 10, F.308): (Fig.146)
This is a Phase 8 structure in the south-west corner of the East Field. Eleven samples were taken, with a range of 165-386mg, and a mean value of 201mg. This structure appears to have been for human occupation, and the phosphate enhancement the result of occupation debris.

'Stack-stand' (Phase 8, structure 11, F.224): (Fig.148)
Not sampled.

Square-ditched enclosure (Phase 8, structure 12): (Fig.146)
Nineteen samples were taken from the ditches forming a double concentric square enclosure, which has been interpreted as a possible rural temple or shrine. These samples have a range of 9-190mg, and a mean value of 102mg. Values from the inner square are higher than the values of the four samples taken from the northern side of the outer square. It was initially thought that an alternative interpretation of this unusual structure might be that of a livestock enclosure, but if this is the case, then phosphate values both in the feature fills and in the ploughsoil above are unusually low. The results of the phosphate samples tends to support the view that this might indeed be a shrine.

Possible ring-gully (Phase 8, structure 26): (Fig.148)
Short arc of possible ring-gully, part of the main Phase 8 settlement. Four values of 228, 358, 386 and 386mg were obtained, confirming the high phosphate levels in this area of the site, and the intense or long-lived Phase 8 occupation.

Possible arc of ring-gully (Phase 8, structure 28): (Fig.148)
Not sampled.

Non-linear features of all phases:
Few non-linear features were sampled in the West Field, and where values were obtained, these tend to confirm the general levels of enhancement or lack of enhancement seen in the results from the structural and linear features. The well associated with structure 21 gave a value of 358mg, and the oven or hearth structure 19, gave a value of 372mg. The three graves excavated on the West Field produced appropriately high values of 386mg (F.555 within the oval barrow) and 343mg and 386mg for the two Phase 9 insertions into the central henge complex mound, secondary deposits (F.569 and F.579, respectively).

In the East Field, values for non-linear features around structures were similar to values obtained for the structures themselves, suggesting that the reason for the low phosphate levels in some structures was not caused by the desposition of occupation debris elsewhere, in ditches or rubbish pits. In the archaeologically 'blank' areas of the site, values obtained for non-linear features were generally low (less than 100mg). Values obtained from samples taken at the level of the skeletal remains in graves (features 150, 151, 152, 157, 164, 176 and 192) ranged from 300-400mg, while the grave fills themselves tended to have lower values, seven samples had a range of 125-290mg, and a mean of 193mg) which must reflect the general 'background' phosphate level in the material used to backfill the graves.

Linear features of all phases: (Figs.145,147,149,150)
The problems with sampling linear non-structural features is that most of these features filled-in over a long period of time — there is little evidence of backfilling — and consequently, the phosphate values obtained will not reflect the level in the vicinity of the ditch, when first dug, or the level in an adjacent settlement with any certainty. On the West Field, the complex of structures and enclosures comprising the Iron Age settlement along the southern edge of the field is illustrated (Fig.145), showing an increased enhancement in the area of structures 22, 23 and 25, with values below 100mg in the surrounding enclosures. In the eastern half of the enclosure, structure 21, a long curving ditch and well F.559 show higher values, generally above 200mg, and this may suggest that this eastern enclosure was a yard for livestock associated with the structures of the settlement to the west. On the East Field, three areas are illustrated. The first (Fig.147) comprises the ditches around structures 7 and 8, but these ditches may well have been open for a considerable length of time, and the east to west ditch F.255 almost certainly post-dates these two structures. The main drainage ditch F.161/199 may be of Phase 7 or earlier date, but was probably cleared out on many occasions, and was open during Phase 9. The higher values along this ditch appear to relate to use of this area during Phase 9, when enclosures and ditches containing substantial quantities of occupation debris were laid out in this area.

The second area is shown on Figure 149, and this includes many linear features of Phases 8 and 9. The Phase 8 features associated with the settlement, including structures 3, 4, 5, 11, 26 and 28, have high values, confirming the findings of the analysis of the Phase 8 structures and the ploughsoil survey, and the suggestion that occupation debris was deposited to the east of structure 3, outside its entrance. The Phase 8 ditches to the west have lower values. The ditch F.158 which it has been suggested belongs to the late or closing years of Phase 8, and which may therefore post-date the occupation of structures 3 and 5, has low values when compared with the enhanced areas, which have values greater than 300mg. It may therefore be possible that this ditch was dug when the occupation of structures 3 and 5 had ceased, and thus did not

Fig.150 Maxey East Field: results of phosphate analyses of linear features (Phases 7 and 8) in the south-west part of the site, with structures omitted. Scale 1:400.

receive phosphate-rich occupation debris which had been deposited in the features contemporary with the settlement.

The Phase 9 features in this area of the site mostly have values in excess of 300mg, and this combined with the substantial quantities of pottery and animal bone found in these features, and the large backfilled pit F.254, indicate the disposal of large amounts of late 3rd/early 4th century rubbish in this area, although there are no Phase 9 structures within the excavated area from which this might have originated.

The third area (Fig.150) is in the south-west corner of the East Field, in an area of Phase 7 and 8 settlement, although it is unlikely that any of the values reflect Phase 7 activities, as the Phase 8 settlement was more extensive, and must have included the re-use and renewal of earlier features. The area around structure 10 suggests considerable deposition of occupation debris, with values in excess of 300mg, while the samples taken from the series of rectangular yards or enclosures have somewhat lower values, and this argues against the use of these as livestock yards, as was the conclusion of the ploughsoil survey.

C Horizon five-metre phosphate survey

The 5m survey which had proved to be of considerable value for the ploughsoil was repeated after the ploughsoil had been mechanically removed, and samples were taken on a strict 5m grid, directly below the sampling points of the ploughsoil survey. The strict adherance to this grid meant that quite a high percentage of sampling points fell on locations such as medieval furrows, features, or points where contamination and disturbance by the earthmoving machinery was apparent, and further points could not be sampled because of spoil heaps or ridges between the passes made by the machine.

It was decided that these samples could not be included in any assessment of the subsoil phosphate content, so samples from these locations were disregarded. Further plotting of the results produced a meaningless and extremely variable distribution, which made no sense in archaeological terms. It was concluded that the sample values probably reflected no more than the natural variation of the subsoil, which varied enormously from almost pure sand, through various admixtures of gravelly sand and sandy gravel, to solid patches of concreted gravel with iron-panning. It seems certain now that all of the potentially valuable information was in the ploughsoil, containing the disturbed occupation horizons and features-fills relating to ancient occupation of the site, and that there is no reason to believe that this evidence should have leached down through 40-50cm of ploughsoil and locked on to the upper layer of the subsoil. Phosphates generally bond-on at the point of application, and there is little evidence to suggest that leaching on such a large scale would occur in these circumstances. In retrospect, the time spent on sampling and analysis of this survey appears to have been of little value.

Other stripped surface surveys

A further more detailed survey of the stripped surface employing a 2m grid was carried out around the oval barrow, structure 16. The ploughsoil above this structure was removed by Hymac, and this exposed a spread of a dark layer which was initially interpreted as an occupation horizon in what was thought, at that time, to be an oval Iron Age house, sitting as it did within an Iron Age enclosure. The area of the dark layer was sampled, and the stripped surface was sampled throughout the area enclosed by the Iron Age ditches. This again produced variable and unpatterned results. Samples taken on the very edge of the Iron Age ditches tended to be somewhat higher but as these samples almost certainly came from the edge of the ditch fills rather than the stripped surface itself, this is to be expected.

Two samples transects were also taken from the stripped surface through two structures on the East Field. The first of these was through structure 2, sampling the subsoil; and the second was from the medieval furrow which passes through structure 1, and which it was thought might contain the remains, although disturbed, of any floor deposits associated with this structure. This furrow was also forked over, allowed to weather and carefully searched, but with little result. Both these transects showed that there was no variation between samples taken outside and samples taken within the structures at the level of the stripped surface. Material disturbed by the furrow had almost certainly been so dispersed as to be undetectable, and the low values obtained for this structure (1) would in any case suggest that there was little enhancement in the feature fills. The problems referred to above for the 5m subsoil survey apply also to the transect through structure 2.

Discussion of the five-metre and other subsoil surveys

The ploughsoil phosphate and magnetic susceptibility surveys provided much valuable evidence about the site, and suggest that such surveys can play an important interpretative role, as well as being useful locational tools. The general trends observed in the ploughsoil appear on the whole to be confirmed by the results of phosphate analysis of feature samples, and the combined evidence of this analysis and finds distributions can add much precision to the broader interpretation of ploughsoil studies, although the two sets of results from ploughsoil and feature samples do need to be examined together.

In the West Field the cursus, central henge ring-ditch and mound, henge ditch, oval barrow and the Iron

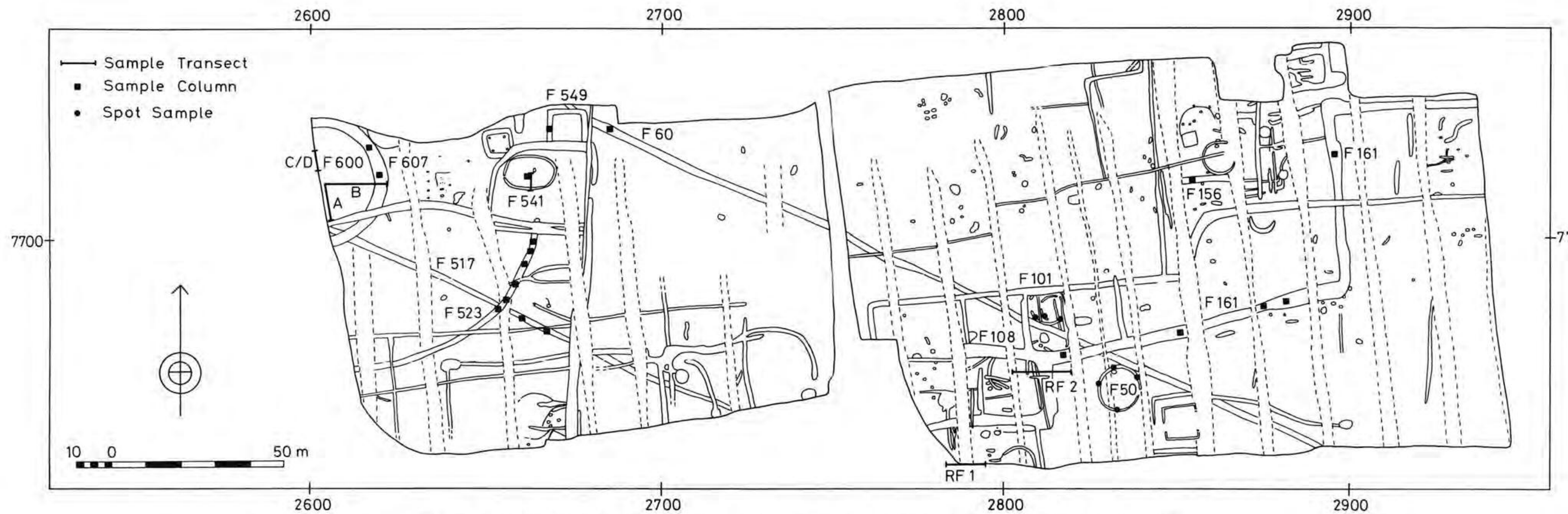


Fig.151 Maxey East and West Fields: sample location plan for soils, sediments and molluscan analyses. Scale 1:1200.

Age square barrows all provided negative evidence for occupation on any significant scale, and phosphate and magnetic values were low. Enhancement of some areas within the henge may indicate the presence of ploughed-out cremation circles or later burials, but there is no evidence for domestic occupation within the henge itself. The results all point towards a ritual or religious function for this part of the site, and the settlements with which those features are associated are probably well beyond the confines of the present excavations.

The Iron Age settlement along the southern edge of the West Field showed enhancement of phosphate and magnetic values, with the settlement to the west, and a probable stock enclosure to the east.

In the East Field, the main area of settlement in Phase 8 was clearly identifiable by the distribution of surface finds, and the enhancement of both ploughsoil and feature fills. The distribution of phosphates within the features of this phase can be used to suggest the patterns of disposal of occupation debris, and also to suggest functional distinctions between structures. The Phase 8 settlement was also much more intensive or long-lived that that of the preceding phase, as the values for Phase 7 and 8 structures and features contrast strongly. In Phase 9, quantities of occupation debris were deposited in newly dug ditches and pits in the north-east corner of the site, and enclosures were laid out over part of the former area of the Phase 8 settlement, although again the settlement generating this rubbish appears to lie beyond the limits of the excavated area.

V. Soil, Sediment and Molluscan Analyses of Excavated Features

by Charles French

Introduction

All the major excavated features were investigated for molluscan and soil/sediment evidence (Appendix I), with special attention paid to the Neolithic complex in the north-western corner of the West Field. For purposes of reference, the present day ground surface is taken at *c*.9.0m OD.

Soil/sediment analyses of prehistoric features

(Figs.151-158)

All the major prehistoric features and structural complexes were investigated. Three levels of information are potentially obtainable — feature specific, site specific and possibly regional. The examination of soil composition, structure and micromorphology may suggest the processes responsible for feature deposits or infills, pedogenic processes and land-use changes.

The major prehistoric structures sampled include the cursus ditches, mortuary structure, the henge ditch, the centrally placed mound within the henge and the square barrows (Figs.40,44,49).

The methods used are described in Appendix I. The results have been presented in tabular (Tables 30,31,49,51;M9-M27) and/or histogram form (Figs.152-158).

The pH range of all feature deposits is between 7 and 8 (Table M9). There is a tendency to become more calcareous towards the base of the features, especially in ditches.

The cursus (structure 27):

The Neolithic cursus consisted of northern (F.517) and southern (F.60) ditches which ran parallel about 40m apart across the site from the north-west to the south-east for a distance of *c*.4km (Fig.40). Both ditch fills consist of loam to sandy loam (10 YR 4/3) with some scattered gravel pebbles, although there is generally more gravel towards the base of the profile (Table M10) (Fig.43).

The alkali-soluble humus content of both ditches is low (Table M9). This may be a reflection of the age of the monument and the consequently greater length of time for the breakdown of the organic matter and the long period over which soil processes have been active.

Both ditches are dominated by well sorted medium sand, slightly skewed and leptokurtic (Table M11). The subordinate fraction consists of coarse/medium silt, which becomes more of an equal mix of all silt size grades with depth. It is poorly sorted, only slightly skewed and mesokurtic (Table M12). These measures suggest that the ditches underwent slow, natural infilling processes with little previous or *in situ* sorting or mixing.

The wide, shallow nature of these ditches suggests that they remained open to weather for a considerable length of time, and that they were not intended for drainage purposes. Whatever the use of the cursus, it would have had little impact as a monument in a forested environment. It therefore suggests the possibility of considerable inroads having been made into the primary woodland in this area by the middle neolithic. The following micromorphological analysis of the buried soils beneath the mortuary structure and mound within the henge provides corroborative evidence for this, as does the preliminary pollen evidence from the Etton causewayed enclosure nearby (Scaife 1983).

The oval barrow (structure 16):

Samples were taken from the southern baulk through the later Neolithic funerary monument (F.541), which was surrounded by an oval ditch (F.542) broken by one small entrance on its western side (Fig.44). The profile was subject to additional micromorphological (see below) and heavy mineral analyses (see Chapter 4). The heavy mineral analyses are included with the Barnack/Bainton material because of the similarity between both mineral suites.

The following is a stratigraphical summary of the composition of the oval barrow (Table M13) (Figs.45,152):

Depth (cm) below ground surface	
0-35	sandy loam to sandy clay loam ploughsoil (10YR 4/3) with a blocky subangular structure and a few scattered gravel pebbles
35-55	structureless loam (10 YR 3/2) with some gravel which comprises the mound material
55-65	structureless sandy loam/loamy sand (10 YR 3/3) with even gravel mix
65+	First Terrace sands and gravels

The four statistical measures were calculated separately for the sand (Table M14) and silt (Table M15) fractions due to the presence of unanalysed fines (Fig.153). The sand fraction of the ploughsoil and mound material is dominated by medium sand and is very well sorted. There is only slight skewness which suggests that there was little mixing with foreign material during the building of the mound. The kurtosis values are slightly leptokurtic and indicate some sorting of the sand in its previous environment, but little sorting in its present environment. The silt fraction is mainly dominated by medium silt, which becomes slightly finer with depth. The statistical measures indicate that the fraction has not undergone much sorting, transport or mixing.

The underlying buried soil contains more sand and gravel and less silt than the mound material (Table M13; Fig.152), and it exhibits similar statistical measures to the overlying mound material (Tables M14, M15; Fig.153).

The alkali-soluble humus content is low throughout the mound and buried soil (Table M9). This may suggest that the mound material did not contain turves and that the buried soil is not an organic A horizon. Both these features were subsequently confirmed by the following micromorphological analyses.

The infill of the surrounding oval ditch (F.542) is composed of sandy loam (10 YR 3/1) with relatively high silt and sand contents and very little gravel (Tables M13-15). This ditch probably held a continuous row of squared timber uprights packed with sand. The uprights either rotted or were burnt *in situ* as there are no signs of their physical removal. The alkali-soluble humus content of the ditch fill is also slightly higher (Table M9).

As the ditch was overlain in places by mound material, it is considered that the mound with its single, central burial was a later phase to a free-standing, oval, wooden mortuary structure.

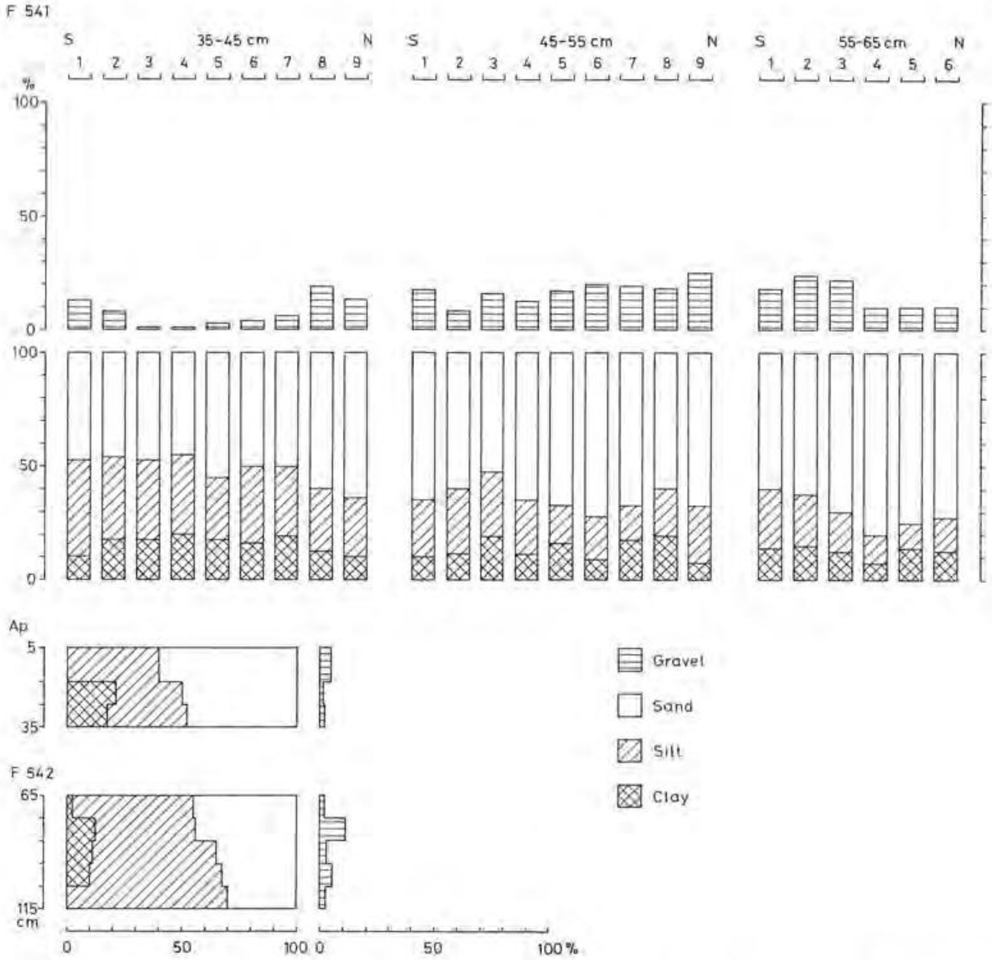


Fig.152 Maxey West Field. Analysis of sediments: composition (expressed as percentages by weight) of the oval barrow (F.541).

The micromorphological analyses of the oval barrow

1. Description

Thin sections for fabric and mineral analyses were made of three samples from the barrow mound (F.541), the underlying buried soil and the overlying ploughsoil. The reason for the better preservation here than elsewhere on the same site is the now ploughed-out, but protective, spread of the medieval headland which passes from east to west over the monument.

The micromorphological description of the ploughsoil (*c*.0-25cm) is as follows (Table 30):

> *c*.25cm thick; heterogeneous; medium blocky ped structure; porous (*c*.24%), with many inter- and intra-pedal channels with dendroid branching patterns and numerous intrapedal voids and metavughs; *c*.25.6% skeleton grains, medium to coarse, mainly rounded but some irregular angular, which are well sorted and consist mainly of quartz with a few feldspar and mica grains, and a few rounded opaque minerals; *c*.1%-4% angular flint gravel; few fragments of pottery; few individual pieces of organic matter but much intimately mixed with the soil fabric; few fragments of charcoal but many small flecks intimately mixed with the soil fabric; probably earthworm faecal pellets; cutans (*c*.6%), very poorly oriented, embedded grain and normal void dirty coatings or matri-argillans, and one channel ferri-argillan with strong continuous orientation; nodules (*c*.4%), both sesquioxidic and manganiferous; silasepic, comprised predominantly of silt with clay; porphyroskelic.

This Ap horizon has been re-worked by ploughing and earthworm mixing. The high silt content of the plasma fabric suggests that it has a possible loessic component (Weir *et al.* 1971, 131-149; Catt 1977, 221-229). These authors have suggested that loess soils had already developed a textural B horizon by *c*.800 BC. Widespread deforestation and extensive areas of bare soils are probable factors contributing to the loessic component of soils.

The micromorphological description of the mound material (depth of sample *c*.45cm to 55cm) is as follows (Table 30):

> *c*.20cm thick; heterogeneous; apedal; quite porous (*c*.22%), with many intrapedal voids, metavughs and some channels; *c*.29% skeleton grains with a uniform distribution, well sorted and consisting mainly of quartz grains and a few feldspar grains, rounded and angular, plus a few opaque minerals, mainly limonites; angular and rounded flint gravel pebbles are common; much organic matter intimately mixed with the soil fabric; abundant small flecks of charcoal intimately mixed in with the soil fabric; cutans (*c*.6%), very poorly oriented embedded grain and normal void, dirty matri-argillans; nodules (*c*.2%), both sesquioxidic and manganiferous coatings; silasepic, with relatively equal amounts of silt and clay, although it exhibits signs of disturbance with darker more organic Ap soil mixed in; more porphyroskelic than the above Ap horizon.
>
> Although this horizon is mound material and therefore redeposited and slightly disturbed, it is acting as a B horizon. It exhibits slight indications of gleying, the slight deposition of illuvial clay, much local matrix material, and iron/aluminium oxides and hydroxides.

The buried soil sealed beneath the mound material is divided into a thicker, coarser textured upper zone (*c*.55cm to 63cm) and a thin, finer textured lower zone (*c*.63cm to 65cm).

The micromorphological description of the upper zone is as follows (Table 30):

> Approximately 8cm thick, heterogeneous; apedal; porous (*c*.20%), with mainly simple packing between grains, some compound packing voids, metavughs and channels; skeleton grains (*c*.22%) comprise most of the soil material and are mainly medium to coarse, mainly rounded quartz with a few feldspar grains; abundant limonite and other opaque minerals, and probably broken-up iron pans — iron hydroxide sharpened

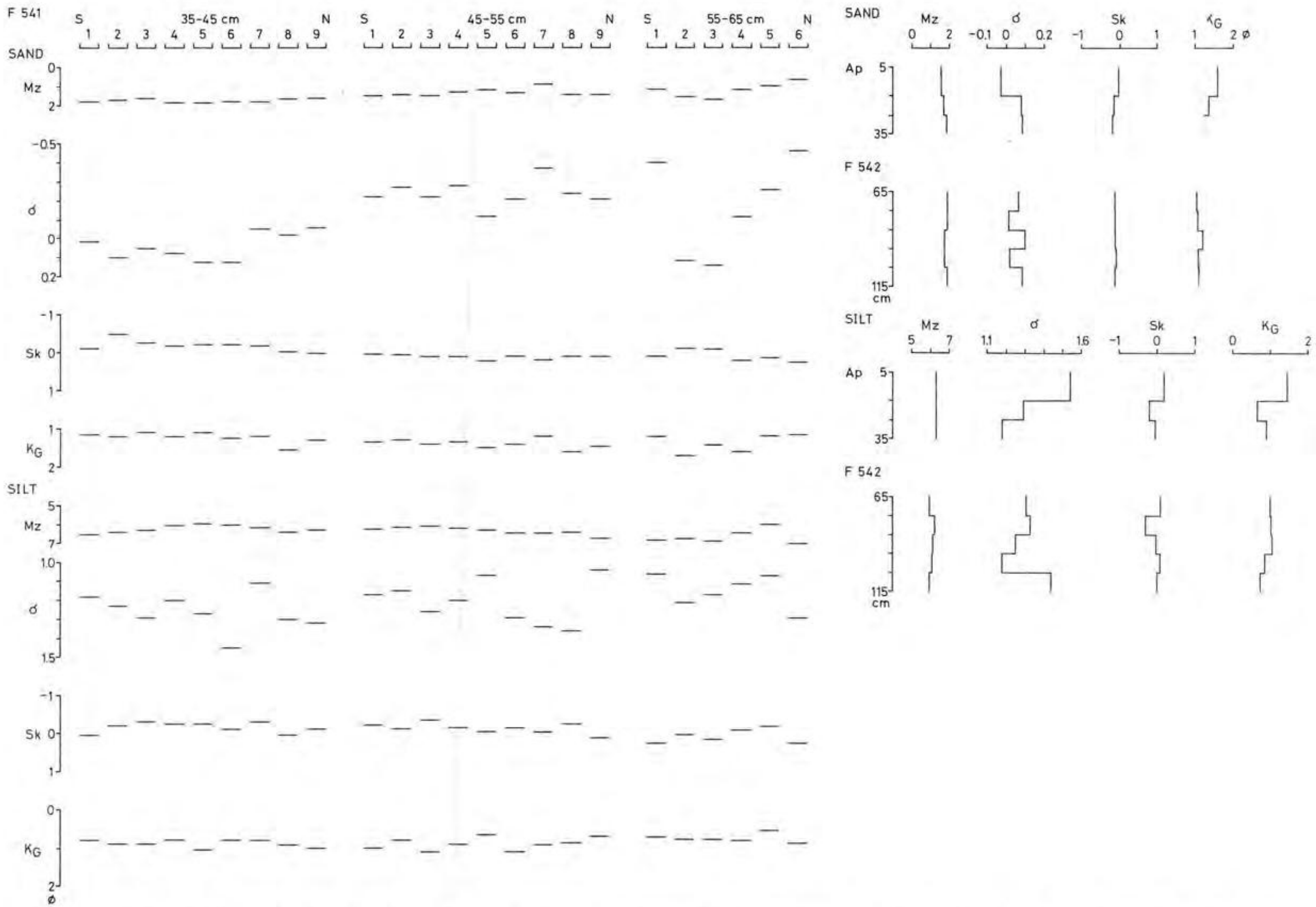


Fig.153 Maxey West Field. Analysis of sediments: the four statistical measures (Mz: mean size; σ: standard deviation; Sk: skewness; K_G : kurtosis) for the sand and silt fractions of the oval barrow (F.541).

nodules; little organic matter and rare fine flecks of charcoal intimately mixed with the soil fabric; cutans are very common (*c*.27%), both embedded grain and normal void, some flecked but mainly limpid argillans with very strong continuous orientation, a few dusty, dirty matri-argillans with fine charcoal; numerous nodules (*c*.11%), both sesquioxidic nodules and some manganiferous coatings; mainly argillic plasma (argillasepic), with a little silt; porphyroskelic to intextic.

Horizon	*Ah*	*Mound*	*Buried Soil*	
Depth (cm)	*0-35*	*35-55*	*55-63*	*63-65*
Voids, Channels	23.75	22.0	20.0	23.3
Minerals: Quartz	24.4	26.6	21.35	20.65
Feldspar	1.2	0.65	0.65	3.35
Heavy Minerals	—	2.0	—	—
Plasma Fabric	36.9	38.6	16.1	28.6
Charcoal	1.9	0.65	4.0	—
Organic Matter	0.65	1.3	—	—
Coatings	6.25	6.0	26.6	19.3
Nodules	4.4	2.0	11.3	4.6
Faecal Pellets	0.65	—	—	—

(Point counts of 150)

Table 30: The micromorphological characteristics of the oval barrow (expressed as percentages) at Maxey.

This upper zone has a Bt fabric. The numerous nodules and its relatively coarse texture indicate its proximity to the terrace sand and gravel subsoil, and suggests that it may have been the base of the weathered B horizon of the pre-monument soil. The numerous nodules and some manganiferous coatings suggest that the soil is subject to gleying, and may represent a flush zone. The strong continuous orientation of many of the cutans (limpid ferri-argillans) suggests illuviation under stable, probably wooded conditions (Macphail 1983), and these have absorbed sesquioxides.

The micromorphological description of the lower zone is as follows (Table 30):

Approximately 2cm thick; heterogeneous; apedal; porous (*c*.23%) with intrapedal compound packing voids, metavughs and channels; skeleton grains are less common and less coarse than above, consisting mainly of fine/medium, sand-sized, mainly rounded quartz with a few feldspar grains; a few opaque minerals; little organic matter and a few flecks of charcoal intimately mixed with the soil fabric; cutans (*c*.19%), both embedded grain and normal void and within the plasma fabric, some flecked but mainly limpid argillans with strong continuous orientation, ferri-argillans, dusty argillans and possible agricutans with fine charcoal and organic matter; nodules (*c*.4.5%), both sesquioxidic and a few manganiferous; mainly argillasepic; porphyroskelic.

This lower zone also has a Bt fabric, and also exhibits signs of gleying and the translocation of disturbed soil material. Moreover, there is a concentration of illuviated clay minerals, iron/aluminium oxides and hydroxides at the morphological boundary between the upper and lower zones.

2. Discussion

The distinctive concentration of cutans in the buried soil profile must be explained. The strong continuous orientation and sharp boundaries of the cutans in both upper and lower zones suggest that they are mainly coatings of illuvated clay materials, especially at the interface between the two zones and in the lower zone. These illuviation argillans are mainly layer lattice and allophane clay mineral types (Brewer 1976, 212-214). It is generally accepted that they form when clay particles moving in suspension are deposited on the walls of non-capillary voids in lower horizons as the percolating water is stopped by capillary withdrawal into the soil matrix (Soil Survey Staff 1975). This process generally occurs under stable, probably wooded conditions (Fisher 1982, 299-304; Weir *et al.* 1971, 131-149; Slager and van de Wetering 1977, 259-267). Consequently, this area at Maxey must have been deforested to some extent prior to the construction of the later Neolithic mortuary structure. By implication this lends credence to the idea of the earlier cursus ditches being situated on open ground (see above).

The second main kind of cutan present in both zones is ferri-argillans, which are composed of a mixture of clay minerals and iron oxides or hydroxides absorbed in the clay (Brewer 1976,213-214). It is suggested that they formed by the oxidation of these materials in suspension due to hydromorphism.

The third kind of cutan present is embedded grain argillans, which are coatings of clay more of less impregnated around skeleton grains in the S-matrix. These are two applicable explanations suggested for their formation. First, they may be stress argillans resulting from the shrinkage and swelling of fine material in the S-matrix. Second, they may be coatings which collect on mineral grains and develop a preferred orientation during transport to the present site. As some of these embedded grain argillans have abrupt as well as diffuse boundaries with the S-matrix material, they may have formed at a site other than the present one. But it is more probable that water has re-mobilised the clay and eroded off the coatings prior to the deposition of second coatings of clay (R.Macphail, pers. comm.).

The numerous nodules present in both zones also warrant explanation. They are concentrations of oxides or hydroxides of iron and/or manganese in amorphous gel or crystalline forms. Nodules occur in two ways. First, they are formed by alternating periods of reduction and oxidation associated with intermittent waterlogging, and the mobility of iron and manganese leads to the concentration of these elements in some areas and depletion in others. Second, they may occur as weathered mineral pseudomorphs (Brewer 1976,258-282). It is suggested that the nodules in this profile are formed by this process. Some are possibly lithorelicts derived from the subsoil; some are eroded, 'older' fragments of iron pan; and the manganese coatings are probably of more recent origin.

As previously mentioned, although the mound material is now acting as a weathered B horizon to the overlying ploughsoil, both these horizons are morphologically distinct from the underlying Bt fabric of the upper and lower buried soil zones. This suggests that the A horizon and some of the B horizon of the buried soil were removed in antiquity, presumably prior to the construction of the mortuary structure. What is certain is that turves did not comprise the mound which later covered the mortuary structure.

The truncated buried soil was subject to four types of alteration. The plasma fabric indicates that the soil has been slightly disturbed. It also contains many finely comminuted pieces of charcoal. Charcoal fragments may be translocated with clay particles and deposited in argillans (Courty and Féderoff 1981, 257-277). The occurrence of numerous nodules and ferri-argillans suggest that the truncated soil was subject to gleying and therefore probably subject to seasonal waterlogging. The illuviated clay minerals also indicate quite severe leaching of the profile.

The problem is — when did these pedogenic processes occur? It is suggested that the processes of illuviation, gleying and redesposition had begun prior to the construction of the monument. The comminuted charcoal is intimately mixed with the soil fabric, even though the buried soil is within reach of modern ploughs; the cutans have not been disturbed; and the extreme micromorphological discontinuity between the present-day soil profile and the buried soil, are all suggestive of these processes being prehistoric in origin. If these processes were more recent in origin, there would be many more compound argillans. On the other hand, the deposition of iron and manganese is more recent.

It has been suggested that the major pedogenic processes in Flandrian times were decalcification, leaching, clay translocation, reduction, the removal of iron oxides and podzolisation (Keeley 1982, 103-113). It is a widely held view that the main periods of clay translocation were the Atlantic (*c*.5500BC-3000BC) and Sub-Boreal (*c*.3000BC-500BC) climatic periods. During these periods, moist episodes alternating with seasonally dry episodes provided optimum conditions for clay translocation (Bullock and Murphy 1979, 225-252; Kwaad and Mücher 1977, 1-37).

It seems resonable to suggest that the processes of gleying, leaching and very slight illuviation continued after the monument ceased to be used. It is instructive that if there had been no medieval headland overlying this monument, it is improbable that either the mound or buried soil would have been as well preserved. Since the enlargement of the Maxey Cut in 1953 and recent gravel quarrying operations, the area has not been subject to the influence of seasonal standing water and consequent gleying.

Finally, the above evidence for leaching, the neutral pH values (Tables M8,M9) and the heavy mineral analysis suggests that the buried soil has begun to suffer decalcification. The indications of very slight acidic chemical weathering of the mineral suites are suggestive of this process.

In conclusion, there appear to be six phases of pedogenesis which may be recognised:

1. The deposition of ferri-argillans in the buried soil occurred under stable, probably wooded conditions.

2. The deposition of dusty argillans in the buried soil suggests disturbance of some kind, possibly clearance.

3. The rare fine charcoal — agricutan coatings in the buried soil are evidence of a slight amount of soil disturbance, possibly cultivation or some other anthropogenic activity, which reached deep into the soil.

These first three phases all occurred prior to the building of the mortuary structure.

4. A deep truncation of the soil occurred which was probably connected with the construction of the funerary structure in the later Neolithic period.

5. The deposition of iron and manganese probably occurred at the same time as the truncated soil was buried by the mound material.

6. The processes of leaching, slight illuviation, which produced matri-argillans, and gleying have probably continued since the monument ceased to be used more or less to the present day. But the buried soil and mound material have suffered very little influence from the overlying ploughsoil.

Comparable conclusions have been reached for buried soils beneath other Neolithic sites. For example at West Heslerton, Yorks, limpid argillans preceded dusty coatings and sesquioxidic coatings which contained fine charcoal. It has been suggested that these features indicate a phase of stable wooded conditions (after an original clearance of the site), followed by clearance, burning and podzolisation (Macphail 1983). Thin sections made by Cornwall for Kilham, Yorks, indicate cultivation of the buried soil prior to the building of the long barrow; and pre-barrow clearance, cultivation and burning were present at Willerby Wold, Yorks (Macphail 1983). On the other hand, the buried soil beneath other sites such as Ascott-under-Wychwood, Wilts (Evans 1972, 251-256) and Nutbane, Hants indicate only minor pre-barrow disturbance in the Neolithic (Macphail 1983).

Fisher (1982, 299-304) has pointed out that cutans formed as a result of agriculture (agricutans) tend to be compound illuviation features, whereas coatings of illuvial clay minerals are more probably a result of stable forested conditions. Both the Maxey and Barnack/Bainton (see Chapter 4) buried soils suggest similar conclusions. Thus there is a measure of support for Fisher's (1982, 299-304) model that the initial formation of argillic horizons in brown earths found buried beneath several Neolithic monuments in southern England may be attributed to stable forested conditions rather than clearance and cultivation as originally suggested by Evans (1972, 274-277) and Limbrey (1975, 181-191).

The henge ditch (structure 15): (Figs.40,48,154)

The infill of the Late Neolithic henge ditch (F.523) is generally a sandy loam with gravel. Medium sand is the predominant particle size, with silt as the subordinate fraction. The minor clay content decreases with depth, and the gravel content increases markedly with depth (Table M16; Fig.154). The ditch has a low humus content throughout (Table M9).

The lower layer of the henge ditch is asymmetrically infilled with a combination of gravel from *c.*12% to *c.*80% with sandy loam (Table M16; Figs.48,154). This unusually high gravel content may suggest the deliberate back-filling of the ditch with material from an external bank before the ditch had undergone any appreciable natural silting-up processes. It is unlikely that even a very unconsolidated bank would have generated this much coarse material by natural erosive forces such as frost and rapid water run-off. But there is the slight possiblility that the henge bank did not have sufficient time to become consolidated by vegetation, that is within one to two years (Reynolds 1979, 104-108). It is also possible that the henge was not well maintained during its lifetime, and/or that it was not in use for any length of time. The distinct absence of artefacts is also suggestive of a possibly brief period of use.

The sand fraction is well sorted, not strongly skewed and mainly leptokurtic (Table M17; Fig.155). These statistical measures imply that the fraction underwent some previous sorting elsewhere, was transported largely unmodified, and underwent very little sorting *in situ*. On the other hand, the silt fraction is a poorly sorted mix of the various silt size grades (Table M18; Fig.155). This suggests that the silt content may have been derived from a variety of sources including possible deliberate back-filling with bank material, natural run-off water, wind-blowing and possibly settling out of suspension in standing water.

Consequently, the henge ditch was probably subject to both man-induced and natural infilling processes, which resulted in at least the lower half of the ditch being infilled quite rapidly. Moreover, these processes cast some doubt on the longevity and importance of the site, although it remained undisturbed by other monuments or settlement features until the Middle Iron Age.

The mounds within the central ring-ditch (structure 14): (Figs.49, 50-52,156-58)

The late Neolithic mound (F.600) was positioned in the centre of the henge. Two phases of construction were distinguished. First, there was a small primary mound with a diameter of *c.*17.5m situated within a ditch, narrow berm and internal gravel bank. Second, an enlarged secondary mound with a diameter of *c.*40m was constructed which encompassed and probably covered both the bank and primary mound, with the surrounding ditch open but probably partially back-filled. The whole complex of henge, mortuary structure in its entrance-way and internal mounds are regarded as near contemporaries.

Samples were taken from the mound in four series of transects at 50cm intervals through the primary mound on the south to north baulk for both the upper layer (3) (C:1-7) and the underlying possible buried soil (5) (D:1-8), and through the secondary mound (layer 4) on the south to north baulk (A:1-22) and east to west baulk (B:1-26).

The possible buried soil (layer 5) is a clean, well oxidised sandy loam (2.5 YR 4/4) (Table M19; Fig.156). It is dominated by the medium sand fraction with a subordinate medium, silt fraction.

The primary mound material (layer 3) is comprised of a sandy loam to loam (10 YR 4/2-4/3) with little or no gravel content (Table M19;Fig.156). Its size distribution is similar to that of layer 5 below.

Both layers 3 and 5 exhibited a relatively high alkali-soluble humus content (Table M9). This suggests that both layers were highly organic originally, and that complete humification has been impeded by the sealing of both layers by the enlarged mound and the headland, and by localised gleying conditions. Both these features were confirmed by the following micromorphological analysis.

The four statistical measures for the sand (Table M20) and silt (Table M21) fractions of both layers are fairly uniform. The sand fraction is consistently very well sorted, whereas the silt fraction is poorly sorted (Fig.157).

The enlarged secondary mound is a sandy loam (10YR 3/3-4/3) with a few scattered pebbles which becomes a sandy clay loam in some places (Table M19; Fig.156). It exhibits a low alkali-soluble humus content throughout (Table M9). Medium sand tends to dominate, with only a scatter of other size grades. But on the southern and eastern extremities of the mound there is a greater clay content and a subordinate peak of medium silt (Table M19; Fig.156).

The four statistical measures for the sand (Table M20) and silt (Table M21) fractions are basically similar to those exhibited by the primary mound material, except for the skewness values (Fig.158). The regular fluctuations in skewness values for both fractions and changes in composition towards the edges of the mounds may possibly suggest that the secondary mound material was dumped in batches from slightly different sources.

The ditch (F.607) surrounding the barrow was *c.*1m deep and *c.*2.5m to 3.0m wide (Figs.49-52). It consists of a sandy loam (10 YR 4/4) with scattered gravel pebbles, which becomes markedly dominated by gravel towards the base of the profile (Table M19; Fig.156). Gravel tip lines were also evident in section. The high gravel content towards the base of the profile (72%-77%) may be the result of slip from an unconsolidated internal bank. But it is more probable that it is due to the deliberate levelling-off of the top of the bank in order to conform with the new profile of the mound represented by layer 4.

The four statistical measures for the sand (Table M20) and silt (Table M21) fractions of the secondary ditch fill (Fig.157) are remarkable and suggest that natural silting processes were responsible for its accumulation.

The micromorphological analysis of the primary and secondary barrow mounds within the henge (Figs.50-52)

Thin sections for fabric and mineral analysis were made of three samples from the pre-monument buried soil (F.600:5), the primary mound (F.600:3) overlying this buried soil and the secondary, enlarged mound (F.600:4). The whole complex was partially covered and therefore protected by the medieval headland.

The micromorphological description of the buried soil (*c.*40cm to 45cm) (F.600:5) is divided into three zones, as follows:

> *The uppermost zone* (Table 31): *c.*2cm thick; heterogeneous; apedal, porous (*c.*19%) with intrapedal voids, channels, metavughs and branching dendroid channels; *c.*28% skeleton grains, medium to fine, mainly rounded, some angular, well sorted quartz grains with a few feldspar and mica grains; a few flecks of charcoal and much organic matter intimately bound with the soil plasma; cutans (*c.*8.5%), very poorly oriented, mainly flecked, embedded grain and normal void, dirty ferri-

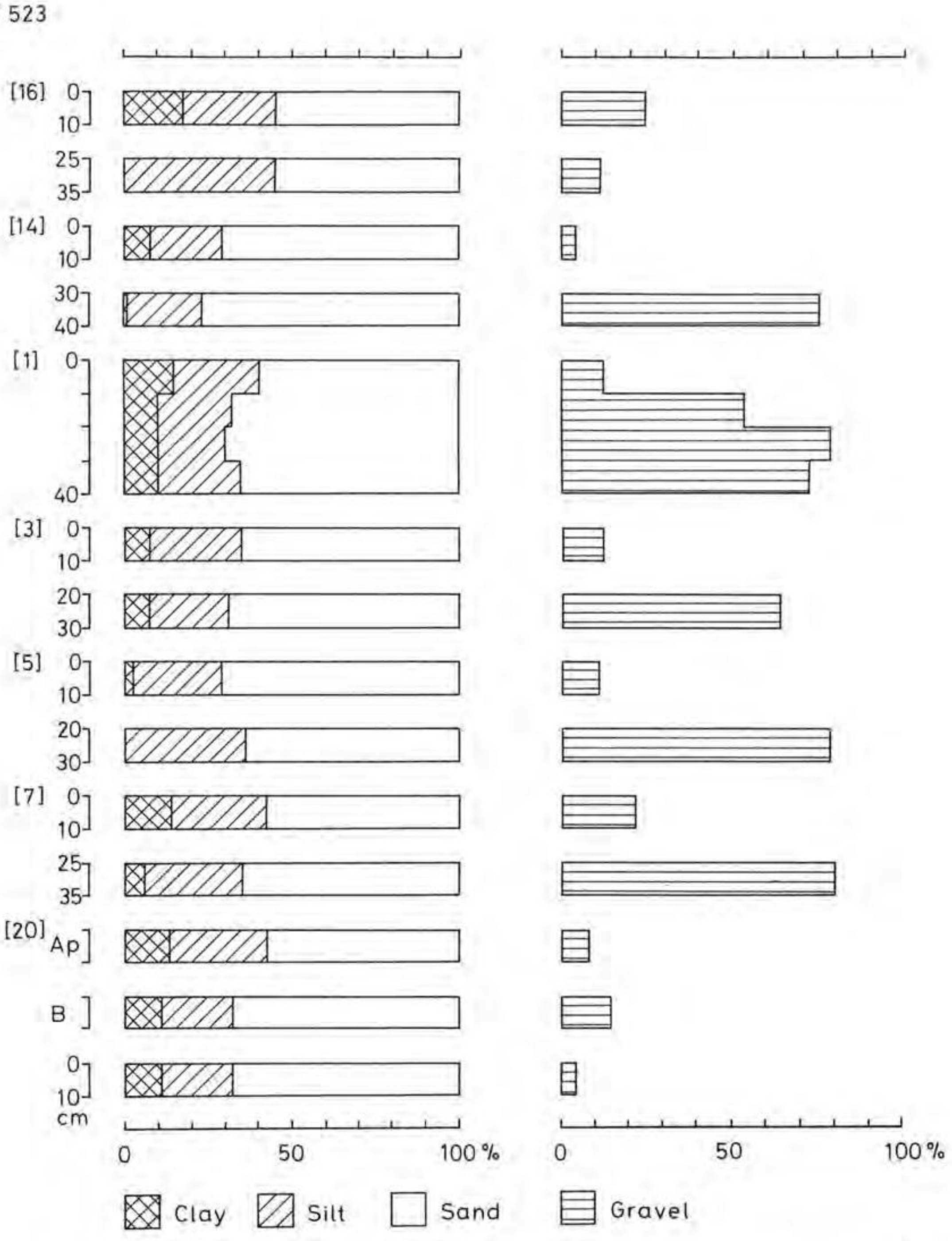


Fig.154 Maxey West Field. Analysis of sediments: the composition (expressed as percentages by weight) of the henge ditch (F.523).

argillans and matri-argillans; a few, mainly sesquioxidic nodules; silasepic, dominated by silt; porphyroskelic.

*The middle zone: c.*1.5cm thick and has similar characteristics to the upper zone but the fabric is less coarse, contains more silt and is slightly less organic.

*The lower zone c.*0.5cm thick and resembles the upper zone, although the plasma contains numerous fine flecks of charcoal.

The horizon under scrutiny has a relatively high silt content. This and the laminated appearance of the soil are suggestive of a considerable loessic component. Weir *et al.* (1971, 131-149) and Catt (1977, 221-229; 1978, 12-20) suggest that loess was mainly deposited during the early part of the late Devensian period. Its present patchy distribution is a result of erosion processes during the late Devensian and early Flandrian, and subsequently from early agriculture. A possible loessic component was also noted for the present-day ploughsoil at Maxey (see above).

This horizon is probably a buried soil. The dendroid branching channels are suggestive of roots and soil animal activity. There is a considerable amount of organic matter intimately bound with the soil fabric. Together, these features suggest that it is A horizon material. The presence of some dirty (dusty) ferri-argillans and sesquioxidic nodules suggests that it is lower A horizon material, but not B horizon material. The dirty argillans are suggestive of clearance (Macphail 1983), and possibly represent some early phases of cultivation (Bouma 1969; Kwaad and Mücher 1979, 173-192), although the soil does not appear to have suffered severe or prolonged disturbance. It is possible that the relative lack of disturbance of this lower A horizon is because the area within the circumference of the henge monument remained unploughed once it was built. It would appear that the turves were removed from this soil and used to construct the primary mound (see below). The buried soil was only identified beneath the protective cover of the primary mound, but not beneath the secondary mound material.

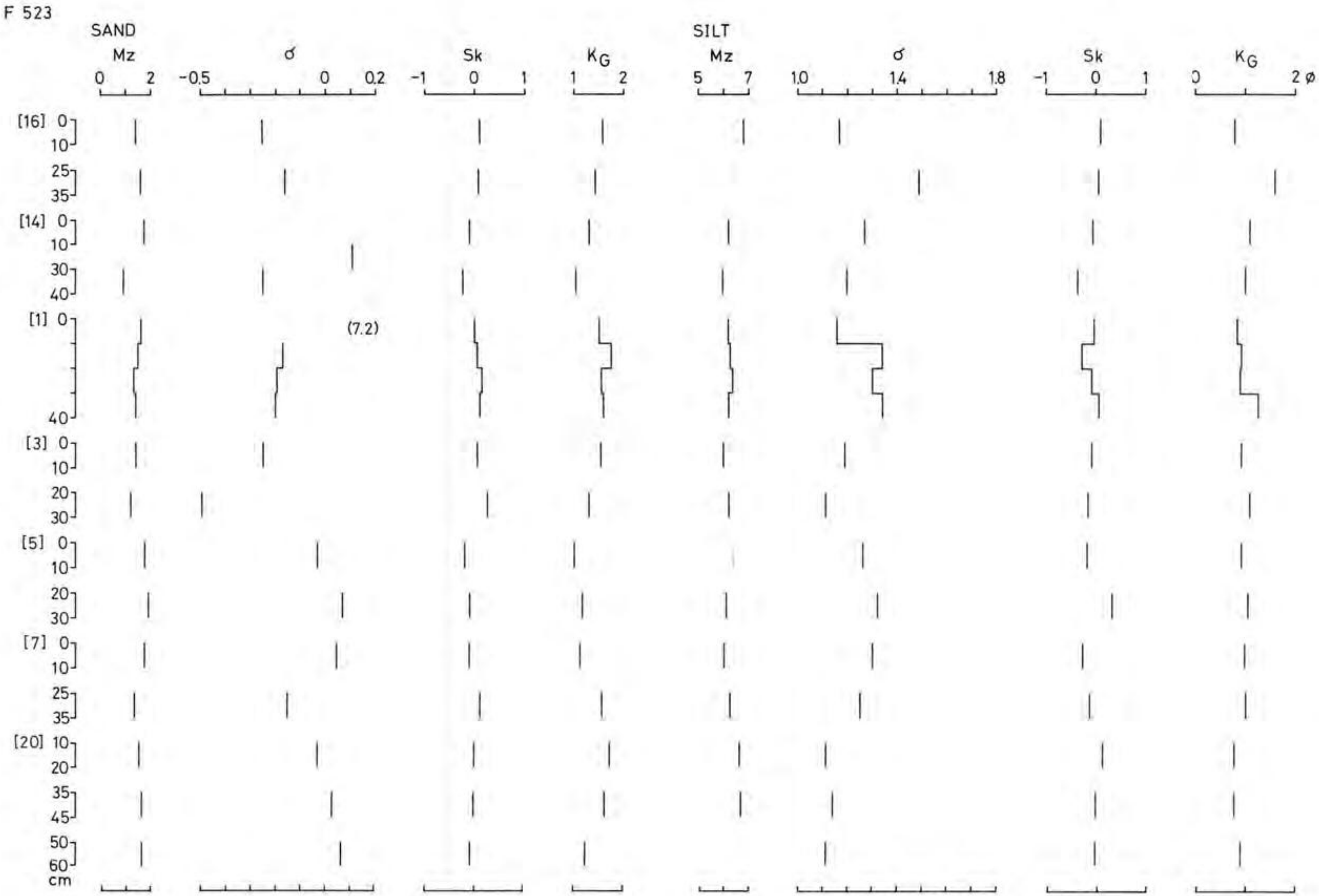


Fig.155 Maxey West Field. Analysis of sediments: the four statistical measures (Mz: mean size; σ: standard deviation; Sk: skewness; K_G: kurtosis) for the sand and silt fractions of the henge ditch (F.523).

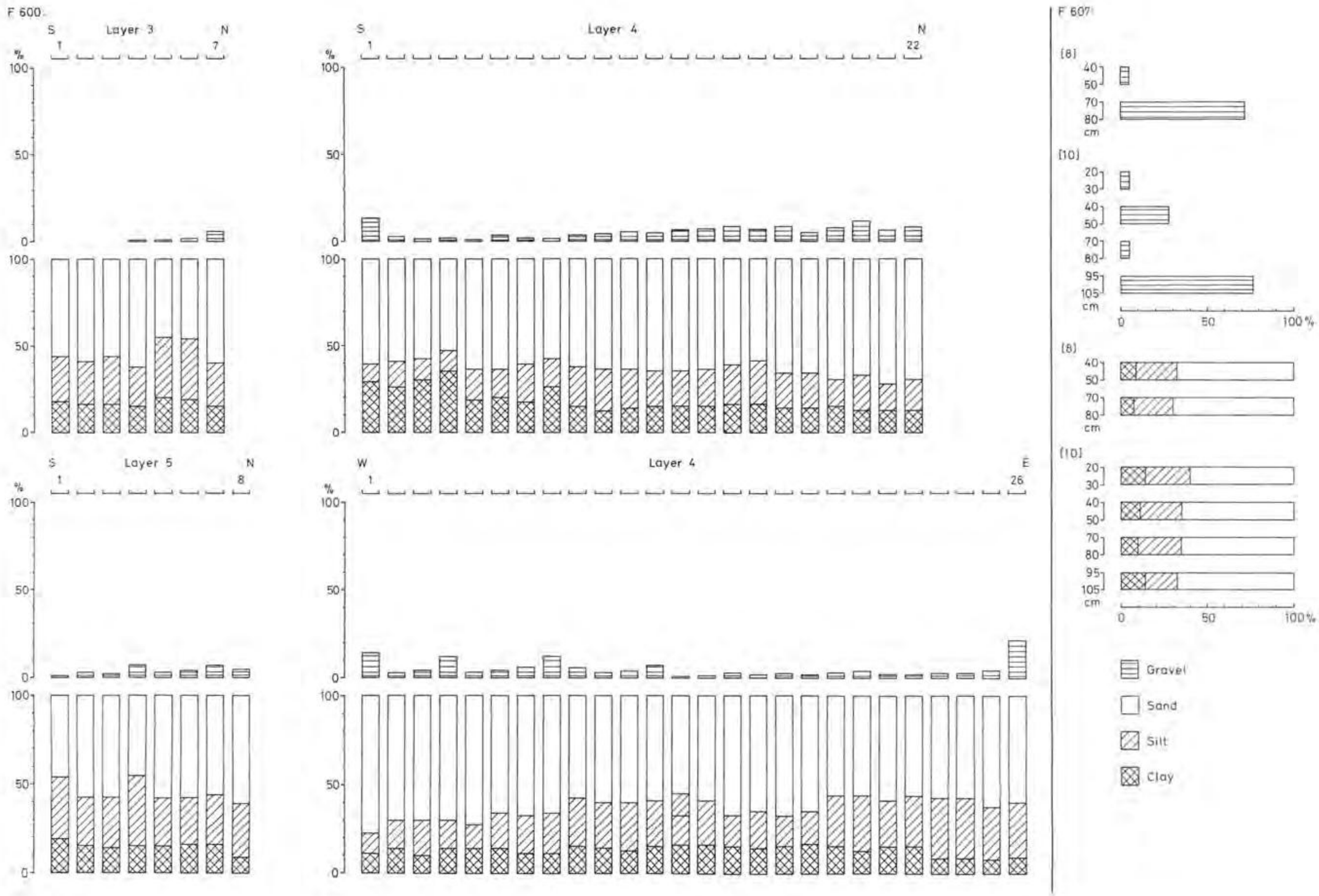


Fig.156 Maxey West Field. Analysis of sediments: the composition (expressed as percentages by weight) of the central mound (F.600) and the central ring-ditch (F.607).

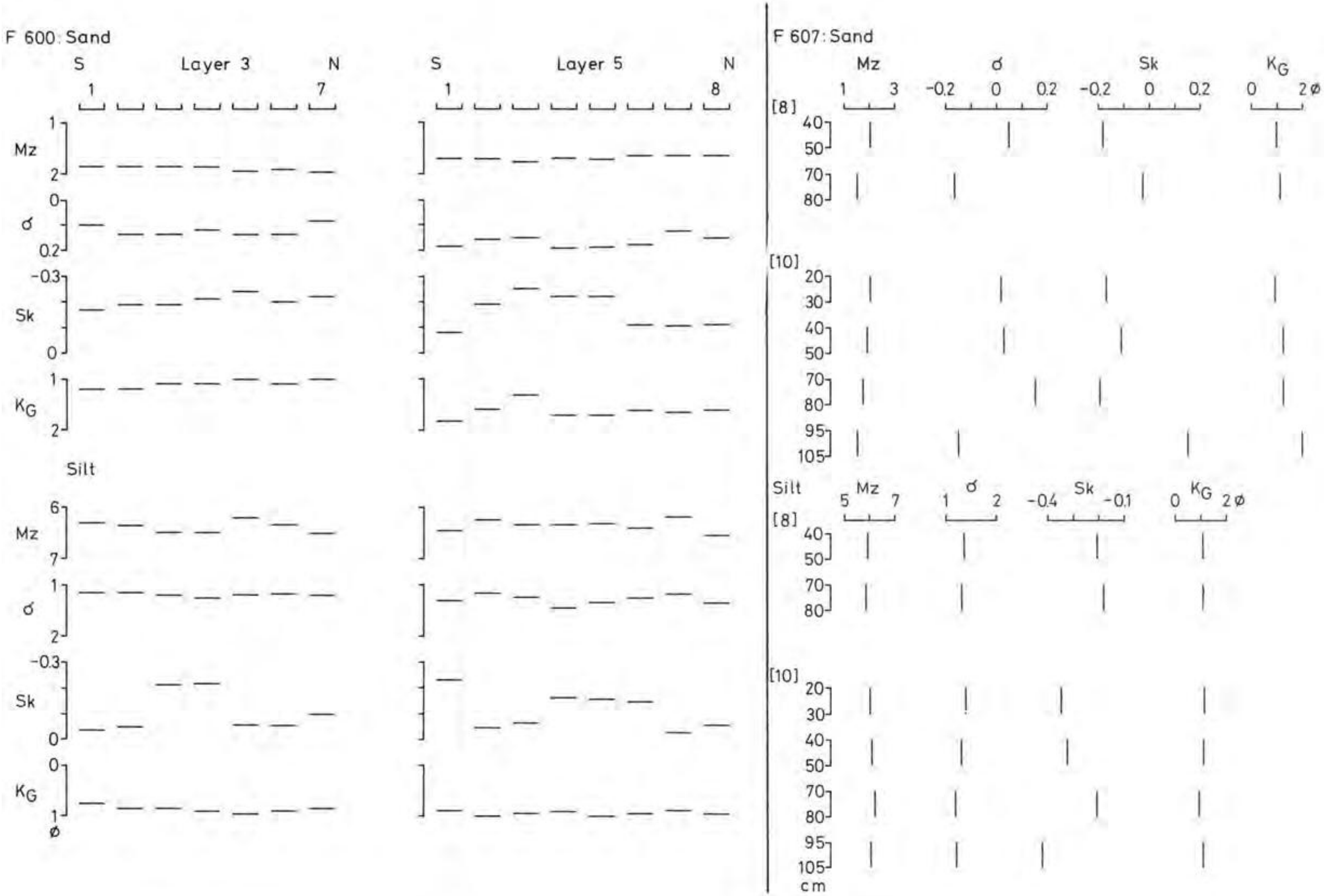


Fig.157 Maxey West Field. Analysis of sediments: the four statistical measures (Mz: mean size; σ: standard deviation; Sk: skewness; K_G: kurtosis) for the sand and silt fractions of the primary mound (F.600, layer 3) and the central ring-ditch (F.607).

In the latter case it has probably been rendered indistinguishable by subsequent and more recent ploughing.

The other important archaeological inference from these features is that the henge, and probably the adjacent and slightly earlier cursus, were built in a locally open landscape which had been previously cleared and possibly undergone limited agricultural use.

The micromorphological description of the primary mound material (*c*.20cm-30cm) (F.600:3) is as follows (Table 31):

> Approximately 25cm thick, heterogeneous; blocky peds; very porous (*c*.28%), with numerous voids, metavughs, channels and dendritic channels; abundant (*c*.32.5%) skeleton grains; fine and medium, mainly rounded, well sorted quartz grains with some feldspar and mica grains; a few flecks of charcoal and much organic matter intimately bound with the soil fabric; numerous manganiferous coatings and some sesquioxidic nodules; clusters of faecal pellets, possibly of enchytraeids; cutans (*c*.3%), poorly oriented, flecked, dusty, dirty, embedded grain ferri-argillans; silasepic, consisting mainly of silt with some clay; porphyroskelic.

This is turf material which has been worm-sorted. The faecal pellets are probably in secondary, post-depositional channels, the turf habitat providing an excellent soil environment for burrowing and a plentiful food supply. On the prepared slide there is a discontinuity which represents the interface between two adjacent turves. The soil of the primary mound is more or less similar to the Ap horizon material overlying the nearby mortuary structure, except that the turves represent the local undisturbed surface or A horizon of the later Neolithic period. If the turves comprising the primary mound were stripped from the soil surface on the intended site of the barrow, this implies that the central area of the henge was probably less disturbed grassland, as compared to the soil surface beneath the nearby mortuary structure.

In the field, the turves composing the primary mound were picked out by irregular mottled zones of reduction and oxidisation (Figs.50-52). The turves composing the Bronze Age barrow at Sproxton, Leics had a relic lamina fabric picked out by manganese (Macphail 1979, A.M.L.R. No.29).

The micromorphological description of the secondary mound material (F.600:4) is as follows (Table 31):

> Approximately 25cm thick; heterogeneous; apedal; very porous (*c*.28%), with irregular, intrapedal voids, metavughs and channels; abundant skeleton grains (*c*.30%), fine and medium, mostly rounded, some angular, quartz grains with a few feldspar grains; charcoal fragments in the voids; many fine flecks of charcoal and some organic matter intimately bound with the plasma fabric; some (*c*.10%) cutans, both embedded grains and normal void, mainly flecked but some with weak orientation, dusty, dirty ferri-argillans, limpid argillans and matri-argillans; sesquioxidic nodules common (*c*.4%); one papule of argillic material; silasepic, composed mainly of silt with little clay; porphyroskelic.

This soil is probably a mixture of A and B horizon material. It is probably made up of scraped-up former topsoil and ditch up-cast. It is relatively similar to the mound material of the mortuary structure (see above), although it is more porous and has a slightly coarser fabric. This 'made' soil has begun to exhibit characteristics of pedogenesis, in particular, leaching, illuviation and gleying. Some of these features may be the result of later agricultural disturbance.

Horizon *Depth (cm)*	*Buried Soil* *40-50*	*Primary Mound* *20-30*	*Secondary Mound* *20-30*
Voids, Channels	19.3	28.0	28.0
Minerals: Quartz	26.0	30.0	26.6
Feldspar	2.0	2.0	2.0
Mica	—	0.65	—
Heavy Minerals	—	—	0.65
Plasma Fabric	41.5	32.0	27.3
Charcoal	—	0.65	—
Organic Matter	—	—	1.3
Coatings	8.6	3.3	10.0
Nodules	2.6	2.0	4.0
Faecal Pellets	—	1.3	—

(Point counts of 150)

Table 31: Micromorphological characteristics of the central ring-ditch mound (expressed as percentages)

The square barrows (structures 17 and 18): (Figs.44,55)
Two possible Early Iron Age square barrows were situated immediately to the north of the mortuary structure (Fig.44).

Both surrounding ditches (F.549/556 and F.554) are composed of sandy loam (19 YR 4/3) (Table M22) with lenses of gravel (Fig.55). The gravel may represent deliberate levelling of a internal mound but may well be a result of natural weathering processes in an area of very unconsolidated subsoil. The four statistical measures for the sand (Table M23) and silt (Table M24) fractions do not suggest anything other than natural weathering processes. The sand fraction is well sorted, slightly skewed and leptokurtic which indicates some sorting prior to deposition and some mixing *in situ*. The subordinate silt fraction is very poorly sorted, slightly skewed and mesokurtic, thus suggesting little mixing or sorting of this fraction.

Linear and structural features (Late Iron Age and Roman): (Figs.40,64,71,151)
The major elements of the Late Iron Age/Romano-British ditched enclosure system were analysed as well as two of the five ring-gully structures (Figs.40,151). The methods used are described in Appendix I. The results are presented in tabular form (Tables M9,M25-27).

The ring-gullies:
The infilling sediments of the ring-gullies (F.50, F.101) are similar in composition to the other linear features. The gullies are generally infilled with a structureless sandy loam (10 YR 4/3) with varying amounts of gravel and small stones (Table M25;Fig.64).

The statistical measures (Tables M26,M27) suggest that the ring gullies became infilled by natural erosion processes after their internal structures went out of use. The only apparent evidence of deliberate back-filling occurred in F.50, presumably for construction purposes.

The field ditches:
The ditches of the field system were sampled at eight loci in F.161 F.108, and F.156 (Fig.71). The infilling sediments of these ditches exhibit remarkable uniformity, and are more or less similar to the overlying ploughsoil. The ditches are infilled with sandy or silt loam with varying amounts of gravel and small stones (Table M25). Medium sand, coarse/medium silt, and gravel and flint pebbles with a 2mm to 3cm size range are the dominant size fractions.

The gravel fraction comprises *c*.14% to *c*.67% of each sample (Table M25), and tends to be more abundant in ditch bases. This probably reflects the presence of the terrace gravel subsoil, which is generally unconsolidated and therefore susceptible to physical weathering processes when exposed. It has been shown that the size distribution of the gravel fraction is chiefly a function of the grain size properties of the gravel supplied by the source in the particular area (Folk and Ward 1957, 3-26). In this case the source is Devensian First Terrace gravels.

The sand fraction is very well sorted (Table M26), and probably underwent sorting in both its previous and present environments of deposition. As no strong skewness values are exhibited (Table M26), there was probably not much mixing of soil material within the ditches. As with most sands the kurtosis is leptokurtic (Table M26), which indicates a mix of one predominant and one subordinate coarser or finer population within the size grade (Folk 1966, 73-93).

The silt fraction is secondary in importance to the sand fraction. It is very poorly sorted, only slightly skewed and has a range of kurtosis values (Table M27). As neither the skewness nor kurtosis values are extreme, it indicates that the silt fraction has undergone very little effective sorting in its previous and present environments of deposition (Folk 1966, 73-93; Folk and Ward 1957, 3-26).

The clay fraction comprises *c*.0.625% to 13.75% of each sample (Table M25). Its minor importance is mainly due to the relative deficiency of fine material in the subsoil and ploughsoil.

Considered together, the four graphic measures for the sand and silt indicate several features of the infilling sediments. Both the sand and silt have not undergone transport over any distance. The sand/gravel subsoil, and sandy/silt loam soil are major influences in determining feature fills. The dominance of the medium sand grade may be explained by the sorting action of intermittent periods of slow- moving water down the ditch sides and along their bottoms. A proportion of the finer grades of sediment must have been carried away in suspension. Thus, the processes of ditch infilling were generally natural and determined by physical weathering processes. The variable alkali-soluble humus content (Table M9) probably represents the organic debris which accumulated naturally in the ditches after the last 'mucking-out' of the ditches.

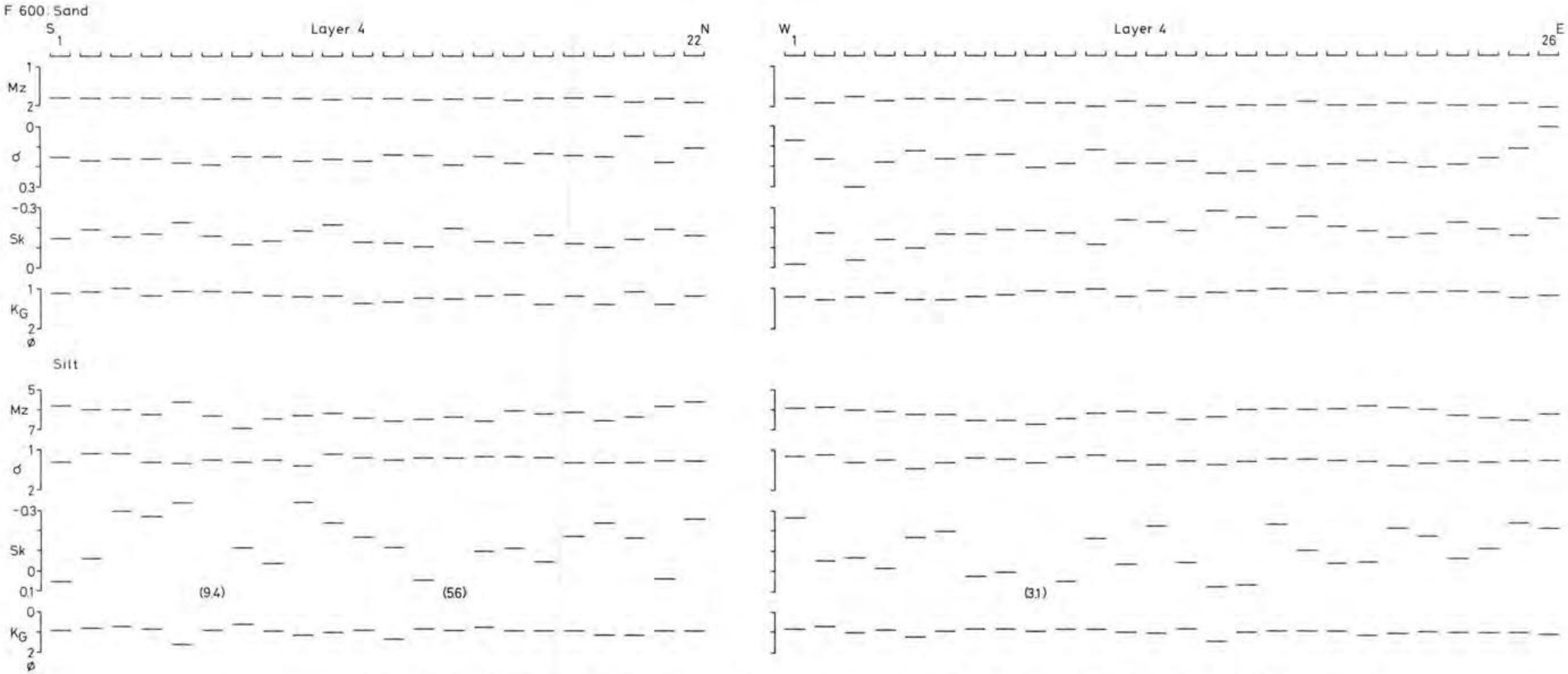


Fig.158 Maxey West Field. Analysis of sediments: the four statistical measures (Mz: mean size; σ: standard deviation; Sk: skewness; K_G : kurtosis) for the sand and silt fractions of the enlarged mound (F.600, layer 4).

Sorting and depositional processes in linear features:
Three types of sorting influences are at work in determining the soil and sediment composition of the ditch infills at Maxey. The sand and gravel subsoil was laid down in a high velocity, freshwater environment of deposition at the end of the last glaciation (Burton 1981, 11). There is much bedding of small stones, gravel and sand as a result of changes in water velocity. Hence the subsoil as excavated is variable. This in turn often directly influences the nature of the infilling sediments of features, and may account for much of the minor variation in texture of the infilling sediments. In particular, the subsoil is the major source of the medium sand fraction, which dominates the ploughsoil and feature composition, and flint and limestone gravel and pebbles.

'Local' sorting involves the assortment of particles at a particular locus as a result of several influences (Russell 1939, 32-47). Frost action causes the collapse of the upper edges of ditches, and consequently changes feature profiles. 'Puddling' and trampling by humans and livestock may cause localised sorting in specific places on a site, especially in entranceways and around wells. The deliberate 'mucking-out' of ditches, testified to by the longevity of the larger field ditches, widens and deepens ditch profiles and increases water flow and percolation. The deliberate dumping of rubbish in features may artificially enhance their humic content. Deliberate back-filling of features with gravel bank material has been recognised in the henge ditch and central ring-ditch (see above) but where it has been subsequently mixed with soil material, it may not be recognised.

'Progressive' sorting involves an assortment of particles in the direction of transport (Russell 1939,32-47). Applications of hydrodynamic theory suggest that sand with an average diameter of 0.18mm (2.47ø) or the fine sand is the most easily moved. Grains of this size may be transported at relatively low velocities by surface creep, saltation and in suspension (Stratham 1979). The threshold velocity must increase to move grains of sizes greater or lesser diameter than fine sand.

The dominance of medium sand in the subsoil suggests that the water action was strong enough to move and sort the medium sand fraction. This is reflected in the feature fills, and because of variable water conditions in the ditches has resulted in the medium sand being mixed with finer sediments. During episodes of standing water, the longer the time elapsed, the more fine material (i.e. silt and clay) settles out of suspension. When there was water flow in the ditches, the finer grades were transported in suspension and redeposited elsewhere. Vegetation on the ditch sides and brush drains such as a Fengate (Pryor 1983a) would interrupt water flow and trap material, especially the coarser size grades (i.e. gravel and sand). Surface creep of material of all grade sizes would occur down bank and ditch sides until they were consolidated by vegetation (i.e. within 1-2 years) (Reynolds 1979, 104-108) and after ditches were 'mucked-out'.

Sand may also travel by saltation as it requires strong winds to carry sand clear of the ground. Silt particles may remain in suspension by wind of a moderate velocity. Vegetation and hollows such as ditches often trap wind-carried material. Clay particles and dry organic matter are easily wind carried, and are generally brought down by rain (Inman 1949, 125-145; Morgan 1979, 5-15; Stratham 1979), but as it is unknown how much open ground there was in the vicinity of the site, it is difficult to estimate how much soil material was moved by this process. Nevertheless, there is micromorphological evidence for a loessic or wind-blown silt component of the present-day ploughsoil and the late Neolithic buried lower A horizon beneath the central mound within the henge at Maxey.

Molluscan analysis of the linear features

(Figs.71,167)

All linear features at Maxey were examined for molluscs, but with little success. Sampling and analytical procedures are described in Appendix I. Due to the low abundance of the molluscan assemblages, rank-order graphs were not plotted and diversity indices were not calculated.

A constant check for the presence of snails was provided by the flot and wet sieve samples which were taken from the Ap and B horizons and every layer of every feature sectioned. Consequently, only where flot samples revealed the presence of snails were bulk samples taken for analysis.

No molluscs were present in the Ap and B horizons except for modern examples of the burrowing species *Cecilioides acicula*. Most archaeological features were devoid of molluscs except for the major elements of the Late Iron Age/Romano-British ditched field systems (Fig.167). In particular, the main east to west linear series of ditches (F.108/F.156/F.161) (Fig.71) was the only feature containing any appreciable numbers of molluscs (Table 32). The ditches are *c.*1.5-2.0m in width and *c.*30-80cm in depth.

All the samples from this ditch system are discussed together. The impoverished assemblages are dominated by freshwater (*c.*15-52%) and land species (*c.*40-80%) plus a few marsh species (*c.*0-8%) (Table 32). The limited group of three freshwater species includes the slum species *Anisus leucostoma* and *Lymnaea truncatula*, and the catholic species *Lymnaea peregra*. They suggest poor water conditions with intermittent, shallow standing water, subject to drying out, and vegetation clogging the ditches. Similar conditions were indicated by the molluscs from the 1st/2nd century AD enclosure ditch at Site OS 124 (Evans 1972, 346-349).

There is also a small group of land snail species present, mainly represented by the three open-country species of *Vallonia*. The presence of a few, but only banded examples of *Cepaea nemoralis* may also indicate open conditions. The few intermediate species present, mainly *Trichia striolata* and *T.hispida*, are able to tolerate most habitats. The complete absence of any woodland or shade-loving species is also indicative of open conditions. Thus, after the abandonment of the ditches one may envisage damp, unkempt ditches in a generally open environment.

There is probably a variety of causes for the absence of molluscs from the infill of the archaeological features. Although the pH values are neutral to calcareous (Table M9), they are sufficiently low to hinder good preservation unless aided by partial or intermittent waterlogging with base-rich water. It is clear that the pumping operations of the gravel company within the last decade have lowered the mean annual level of the local water-table below the base of even the deepest ditches. The recent decline in preservation is clearly demonstrated by the much more diverse and abundant fauna that was found in a similar early Roman ditch about 500m to the west by Evans (1972, 346-349) in the early 1960s. Repeated cleaning-out of the ditches during their period of use would have been detrimental to snail life, as would agricultural activity. Some of the more fragile shells may also have been destroyed by past and present ploughing. Thus the molluscs which remain preserved in these ditches are essentially a 'survival element' of an original, possibly more varied fauna.

Dry weight: 1.0kg						
Feature:	*F.161:11*		*17:*		*19:*	
Depth (cm)	*15-25*	*25-35*	*15-25*	*25-35*	*5-25*	*25-50*
Lymnaea truncatula (Müller)	1	—	7	1	—	—
L. peregra (Müller)	2	6	14	1	—	—
Anisus leucostoma (Millet)	—	8	10	8	—	—
Carychium tridentatum (Risso)	—	1	—	—	—	—
Succinea putris (Linnaeus)	—	—	—	—	—	—
Succinea/Oxyloma spp.	—	1	5	—	—	—
Cochlicopa sp.	—	1	1	—	—	—
Vertigo pygmaea (Draparnaud)	1	—	—	—	—	—
Pupilla muscorum (Linnaeus)	2	—	—	—	—	—
Vallonia costata (Müller)	—	—	4	—	—	—
V. pulchella (Müller)	—	—	2	—	—	—
V. excentrica Sterki	—	—	6	—	—	—
Vallonia spp.	4	6	4	1	—	—
Trichia striolata (Pffeifer)	—	2	5	—	—	—
Cepaea nemoralis (Linnaeus)	4	4	2	—	—	—

Dry weight: 1.0kg					
Feature	*F.161:21*		*F.156:1*		
Depth (cm)	*5-25*	*25-50*	*0-10*	*10-20*	*20-30*
L. truncatula (Müller)	—	1	—	—	—
L. peregra (Müller)	1	—	2	2	—
A. leucostoma (Millet)	—	13	—	—	—
C. tridentatum (Risso)	—	—	—	—	—
S. putris (Linnaeus)	1	—	1	—	—
Succinea/Oxyloma spp.	—	—	1	—	—
Cochlicopa sp.	—	—	—	—	—
V. pygmaea (Draparnaud)	—	—	—	—	—
P. muscorum (Linnaeus)	—	1	—	—	—
V. costata (Müller)	—	1	—	—	—
V. pulchella (Müller)	—	—	—	—	—
V. excentrica Sterki	—	2	—	—	—
Vallonia spp.	—	6	4	—	—
T. striolata (Pfeiffer)	—	6	—	—	—
T. hispida (Linnaeus)	—	—	5	4	—

Table 32: The molluscs from the linear features at Maxey.

VI. The Human Bones

by Ann Stirland

Introduction

The discussion that follows is based on primary data given in Tables 33 and 34. The small group of burials consists of nine inhumations and one cremation; one of the inhumations (F.192) also includes a few foetal bones. With one exception (F.555 the primary inhumation within the oval barrow, structure 16, of Phase 2) (Pl.XIV), the interments are probably Roman. Two were located on the West Field (F.569 and F.579), cut into secondary deposits of the henge complex central mound (structure 14, F.600); they probably date to Phase 9. The remaining interments probably date to Phase 8, and are located on the East Field within, and on the fringes of, the known contemporary settlement area.

Discussion

The whole group consist of adults, of whom six may be assigned to an age range. With the exception of F.157, the sexable males are in the range 36-53 years, and probably closer to the former than the latter. The burial in F.157 is possibly 'middle-aged', given the condition of his surviving teeth and jaws, and the arthritic condition of one hand and foot. It is never possible to assign a particular age to a skeleton, only a

F.555

	R	L
(upper annotations)		C (on 7)
Upper	~~8 7 6 5 4~~ 3 ~~2 1~~	~~1 2~~ 3 4 5 6 7 ~~8~~
Lower	~~8 7 6 5 4~~ 3 2 ~~1~~	~~1 2~~ 3 4 5 6 7 8
(lower annotations)		A (on 6)

Distal neck caries on ⌊7

Periodontal disease = Moderate;
Calculus = Slight;

Attrition = M1=4/5; M2=4/5; m_3=5

F.569

	R	L
Upper	~~8 7 6 5~~ 4 3 ~~2 1~~	~~1~~ 2 3 4 5 6 ~~7 8~~
Lower	8 7 ~~6 5 4 3 2 1~~	~~1 2 3 4 5 6 7 8~~

All teeth that survive do so without sockets.

Attrition = M^1=5; M_2=4^+; M_3=4

F.579

	R	L
Upper	~~8 7 6 5 4 3 2 1~~	~~1 2 3 4 5 6 7 8~~
Lower	~~8 7 6 5 4 3 2 1~~	~~1 2 3 4 5~~ 6 ~~7 8~~

Attrition = M_1 = 5.

F.151

	R	L
Upper	8/ 7/ 6 5 4 3 2 1/	1 2 3/ 4/ 5/ 6 7/ 8/
Lower	8/ 7 6 5 4/ 3 2 1	1 2 3/ 4 5 6 7 8/

Calculus = Slight;
Hyoplasia = Moderate;
⌊1 is shovelled.

Attrition = M_1 = 2^+; M_2 = 2.

F.152

	R	L
(upper annotations)	A, C (on 8)	C (on 7)
Upper	8 7 6 5 4 3 2 1/	1/ 2 3 4 5 6 7 8
Lower	8 7 6/ 5/ 4 3 2 1	1/ 2 3 4 5 6 7 8

Distal crown carries on⌊7 and on 7⌋
Calculus = Considerable;
Hypplasia = Moderate;
Attrition = M1 = 3/3^+; M2 = 2^+; M3 = 2.

F.157

	R	L
Upper	8/ 7/ X X 4 3 X X	X X X X 5 X X X
Lower	~~8 7 6 5~~ 4 3 2 1/	1/ 2 X 4 X X X X
(lower annotations)	C C C (on 4 3 2); A (on 4)	A (on 5)

Distal neck carries on 4 3 2⌉;

Periodontal disease = Severe;
Calculus = Considerable;
Hypoplasia = Slight.

No attrition possible, since all molars missing.

F.192

	R	L
(upper annotations)	NP (on 8); C C (on 4 3)	
Upper	8 7 6 5 4 3 2 1	~~1 2~~ 3 4 ~~5~~ 6 7 ~~8~~
Lower	8 7/ 6/ 5 4 3 2 1	1 2 ~~3~~ 4 5 X X X
(lower annotations)	C (on 8)	

Distal neck carries on 3⌋; mesial neck on 4⌋; occlusal on 8⌋. Upper R M^3 missing; removed antemortem? Mandibular R. canine rotated;

Periodontal disease = Severe;
Calculus = Moderate;

R, maxillary molars have impacted roots and L. maxillary⌊7;

Attrition = M^1 = 4^+; M^2 = 3^+.

SYMBOLS:

1 = medial incisor;
2 = lateral incisor;
3 = canine;
4 = 1st premolar;
5 = 2nd premolar;
6 = 1st molar;
7 = 2nd molar;
8 = 3rd molar;

~~3~~ = tooth and socket both missing;
X = loss antemortem;
8/ = loss postmortem;
NP = not present;
C = caries (decay);
A = abscess;

Periodontal disease = resorption of the jaw margins due to infection (Pyrrohoea);

Calculus = tartar;

Enamel Hypoplasia = pits and ridges along the long axis of teeth. Caused by a cessation of enamel production due to lack of growth. This in turn caused by periods of illness or poor nutrition.

Attrition = patterns of wear on molar surfaces.

Table 33: Maxey human bones, dentition.

Context	Sex	Age at death Teeth	Pubic	Derived Range	Stature	Build	Anomalies/Pathologies etc.	Remarks
F.157 (Phase 8)	M	Middle Aged?					Teeth bad *cf.* dentition sheet. Slight hypoplasia. Stress at 4-5yrs. Vascular tracks on both tibias. Eburnation (polishing) of 1st L. metatarsel plus some osteophytosis. Eburnation of articular surfaces of L. carpels, 2 thumb phalanges and distal L. ulna.	
F.164 (Phase 8)	A few small to tiny fragments of cremated bone from a probable adult, sex unknown. Includes fragments of cranium, ribs, 4 tooth roots, 3 good crowns plus other crown fragments. Most white and calcined, although some black fragments. *Weight=110g.* V. incomplete. Temperature=fairly high.							
F.192 (Phase 8)	M	B=25—35 M=30—32	30.6	30—32 yrs.	1.65m+2.99cm =just over 5ft 6in	Robust and muscular	Schmorl's nodes on thoracic vertebrae 6-12 and lumbar 1. Osteophytosis of Lumbar 3-5. Enlarged muscle insertions on both clavicles and both humeri. Exostosis on anterior mid-shaft of L. femur. Parietal and occipital osteoporosis.	Much more complete.

Teeth: B=Brothwell 1981; M=Miles 1963. *Stature:* Steele 1970; Trotter 1970. *Sex:* M=Male; F=Female.

Context	Sex	Age at death Teeth	Pubic	Derived Range	Stature	Build	Anomalies/Pathologies etc.	Remarks
F.555 (Phase 2)	M	B=35—45 M=36—53		36—53 yrs.			Moderate Periodontal disease	Very fragmented
F.569 (Phase 9)	M	B=35—45 M=36—39		36—39 yrs			Plaque on L.Femoral neck; supracondylar process on L.Humerus. Lot of physical stress?	Very eroded and leached
F.579 (Phase 9)	?F	B=35—45 M=36		36—45 yrs				Very fragmented leached and eroded
F.150 (Phase 8)	?M				1.67m±3.27cm =nearly 5ft 7in	Muscular	Eburnation of superior articular processes of three Lumbar vertebrae. Vascular tracks on R. tibia.	
F.151 (Phase 8)	F	B=17—25 M=12—18	18.95	18—19yrs	1.59m±3.72cm =5ft 3½in		Moderate enamel hypoplasia suggesting stress at 2-3yrs possibly dietary; caused by weaning? Schmorl's nodes on all thoracic vertebrae decreasing upwards and on 1st 4 lumbar, decreasing downwards	
F.152 (Phase 8)	F	B=17—25 M=18—24		18—24 yrs	1.58m±3.72cm =5ft 3¼in	Muscular	Both femora have 3 nutrient foramina. R.humerus has a septal aperture. Medium hypoplasia. Stress at about 2 yrs. Weaning?	
F.176 (Phase 8)	?M						Both tibias have vascular tracks. Slight osteophytosis of R. femoral head.	Very fragmented.

Table 34: Maxey human bones.

range. Similarly, sexing of skeletal material must fall within a range of uncertainty. In this instance, the following five categories have been employed:

M; ?M; unknown; ?F; F.

Using these criteria, there are four males, two (?) males and three females. The Neolithic primary burial within the oval barrow (F.555) almost certainly falls within the group of definite males.

It is only possible to calculate stature in four cases. The two females (F.151 and F.152) are almost identical in height at just over 5ft3ins, and the male (F.192) and (?) male (F.150) are also very close, at just over 5ft 6ins.

Much of the bone is fragmented and in some cases also leached and eroded. Much non-metrical information has therefore been lost. It is, however, possible to say that at least three of the group, F.150, F.192 and the female F.152 are robust and muscular in build.

There is no evidence for healed fractures or for any trauma occurring concurrently with death. The pathologies that are present are to be associated largely with the kind of physical stress that accompanies continual hard labour. The youngest female, F.151, and the male, F.192, both have clear examples of Schmorl's nodes on thoracic and lumbar vertebrae. This is a condition in which the intervetebral disc collapses into the vertebral body below, without necessarily extruding or 'slipping' and damaging the anterior alignment. The effect is to produce depressions in the vertebral bodies, and the cause may be sudden shock, such as a fall, or continual stress over a longer period of time.

Two individuals, both probably male (F.150 and F.157) have eburnation or polishing of various articular surfaces of the spine, hands and feet. There is also some osteophytosis, or extra bony lipping, associated with the foot. These conditions are very much a function of 'wear and tear' of the skeleton. Three of the probable or actual males have vascular tracks or bands across their tibias. These are now thought to be sulci or grooves for the passage of blood vessels across the surface of the bone. The burial F.176 also has a slight osteophytosis of the right femoral head. The males F.569 and F.192 both have bony extoses, or protuberances, on longbones; the former has a supracondylar process of the left humerus, the latter has a similar growth on the anterior mid-shaft of the left femur.

There is only one example of a pathology which could be attributed to a dietry or disease condition: F.192 has osteoporosis of both the parietal and occipital regions of the skull. Given the probable age of this individual, this condition is unlikely to be a function of senility. It is more likely to be a result of a deficiency disease, such as iron deficiency anaemia, and should probably be more correctly referred to as spongy hypertostosis (Steinbock 1976, 214 and 218-19).

VII. A study of Mandibular Teeth from Romano-British Contexts at Maxey

by Paul Halstead

Introductory note

(by Francis Pryor)

Most of the animal bone recovered from Maxey was in a grossly fragmented state. This damage was almost entirely modern, and probably took place during, or shortly before, excavation. The reasons for the damage were discussed at length and it is thought that two factors were largely responsible: first, large areas of the East Field were stripped using a forty-ton tractor and box scraper, provided through the courtesy of the gravel company; this machine undoubtedly caused bone and other material to shatter to a considerable depth beneath it. Second, the matrix in which the bones were found was clay-rich and the summer of 1980 was dry; this compacted soil baked hard and required considerable force to remove; moreover bones embedded within it were not readily seen nor extracted. These then were the reasons why it was decided to study a *sample* of the faunal material; as it was, the sample took many weeks to reconstitute and repair. A larger study of the whole assemblage would probably not be cost-effective, given its very damaged condition. Dr Halstead gives his reasons for selecting his sample, below.

The scope of this study

This report deals only with the mandibular teeth of the larger mammals (mandibles are more numerous and less fragmentary than maxillae). This material provides some indication of the relative frequency with which different species are represented and constitutes the single most important body of evidence for mortality patterns. Some initial consideration of the nature of animal exploitation at Maxey should, therefore, be possible.

Chronologically this report is restricted to the Romano-British period, as the features of the habitation clusters (gullies, pits, minor ditches and so on) and associated field-ditches in the Maxey East Field account for the bulk of the faunal material. Whatever their precise circumstances of discard in and around the habitation clusters, it seems quite likely that the deposition of pottery and bone in the field-ditches was associated with the practice of middening — i.e. of spreading refuse on fields as a fertiliser (D.R.Crowther 1983; Halstead 1982). As these different depositional pathways may well affect the composition of faunal samples, both categories of material should be considered. In fact nearly half of the mandibular material from the East Field was recovered from the 'habitation features' of the middle Romano- British occupation phase (8), but the main Phase 8 field- ditches were also open during the early Romano-British phase (7) and/or the late Romano-British phase (9). For this reason, the Romano-British period is treated here as a single chronological unit.

Archaeozoological methodology and presentation of the data

The large mammals represented among the Maxey mandibles are cattle, horses, pigs, dogs and ovicaprids. The permanent teeth of sheep and goat cannot be differentiated reliably, but a distinction is possible on deciduous m2/p3 and m3/p4 (following the method of S. Payne — pers. comm.). Of seventy mandibles (and fragments thereof) containing one or both of these teeth, sixty-one could confidently (and a further four probably) be assigned to sheep, none to goat and in five cases the teeth were too worn or fragmentary for identification. Although the postcranial material has not yet been analysed, the working assumption can be made that the Maxey ovicaprids were all sheep.

Ageing of the paltry remains of horse and dog follows Silver (1969) and of pig follows Bull and Payne (1982). The remains of sheep and cattle are sufficiently abundant to warrant more detailed analysis and explanation. The sheep evidence is recorded and aged after Payne (1973). This system was preferred to that of Grant (1975), because it offers a more clearly defined and flexible method of recording tooth wear and because, in determining age classes, it gives precedence to the eruption and initial wear of teeth, which are less variable than subsequent tooth wear (Deniz and Payne 1982). For similar reasons, the eruption and wear of cattle teeth are recorded using a modification of Payne's ovicaprid system. Absolute ages for bovine dental development are taken from Higham (1967, which accords well with most authorities — see Grigson 1982, appendix 2), but broader age classes are defined, again modelled on Payne's ovicaprid system (Table 35). Classes A-E are distinguished on exactly the same criteria used by Payne for ovicaprids, while the distinction of classes F-I is based on certain of Grant's M3 wear stages which are both clearly definable (Grant 1975, fig.220) and apparently long-lasting (Grant 1982, table 2). Young individuals of all these species can be aged with reasonable accuracy on the evidence of tooth eruption, but adults (with the complete permanent dentition) can only be aged on the basis of tooth wear, which may vary greatly in accordance with the attritional quality of the diet. Thus the attribution of the remains of older individuals to different age classes should be seen as a relative rather than absolute guide to adult mortality.

Loose teeth and fragmentary mandibles are difficult both to age and to quantify and so an exhaustive search was made for joins between fragments within each feature (or within each section of long, linear features). The reassembly of freshly broken material led to a significant reduction in the number of separate fragments and a concomitant increase in information. Virtually no old breaks were joined and the vast

Age Class	*Suggested Age*	*Definition*
A	0-1 mths.	p4 unworn
B	1-8 mths.	p4 in wear, M1 unworn
C	8-18 mths.	M1 in wear, M2 unworn
D	18-30 mths.	M2 in wear, M3 unworn
E	30-36 mths.	M3 in wear, posterior cusp unworn
F	young adult	M3 post. cusp in wear, M3 wear <stage g*
G	adult	M3 wear at stage g*
H	old adult	M3 wear at stage h or j*
I	senile	M3 wear> stage j*

*wear stages as defined in Grant 1975, figure 220

Table 35: The definition of age classes for cattle mandibles

effort of searching for such joins between different features (or different sections of linear features) seemed unlikely to be worthwhile, given the fact that material was evidently lost during excavation (below), that much of the site remains unexcavated and that much of the bone originally discarded may never have been incorporated in surviving archaeological deposits (below).

Once the effects of recent fragmentation had as far as possible been repaired, many of the more complete jaws and more accurately ageable fragments in each feature were demonstrably derived from different mandibles and were recorded as such. Many of the smaller and/or less accurately ageable fragments, however, could only be recorded as possibly belonging (or possibly not belonging) to some other, more informative specimen from the same feature. This problem was particularly accute for the abundant loose teeth of sheep and cattle, and especially so for loose M1 and M2 which cannot easily be distinguished. For this reason, the figures given in this report do not represent actual numbers of mandible fragments, but *minimum numbers of mandibles*. The calculation of these figures began with the most complete and accurately ageable jaws and proceeded to the less informative specimens. Any teeth which could have been derived from a previously recorded mandible in the same feature were discounted at this stage. The search for such notional 'joins' was restricted, for the same reason as that for physical joins, to material from the same feature (or the same section of linear features).

Sampling and recovery

The distinction drawn above for the Romano-British period, between field-ditches and habitation features, corresponds closely with a two-fold division made at the time of excavation, between long, linear features of which only a 20% sample was excavated and other features which were generally excavated in their entirety.

For both types of feature, most bone recovery took place in the trench without sieving, a process which inevitably involves significant losses coupled with the probability of biases against certain (small) species and (young) age groups (Payne 1975). A series of 40 litre soil samples (40,000cm^3), passed through a 4mm wet-sieve, should ensure fairly complete recovery of useful large mammalian fragments and does not indicate that any common age group was completely or largely overlooked in the trench. For example, a mortality curve based on the small sample of sheep teeth recovered in the wet-sieve is very similar to that based on the much larger sample recovered in the trench (Fig.159). Each wet-sieve sample, however, contains far too little material to allow correction of losses and biases in bone retrieval in the trench. Moreover, the fraction of excavated deposit processed in this way varies enormously, both between individual features and between different categories of features, so simply to amalgamate bone from the trench with that from the wet-sieve would be misleading. Subsequent anaysis will be based, therefore, solely on material recovered from the trench.

It is also the case that loose teeth and teeth attached to the mandible may face different recovery biases (Payne 1975). Bias against the recovery of small animals should be more marked for loose than for attached teeth and this may account for the fact that the ratio of sheep to cattle at Maxey is lower among loose teeth than among attached teeth (Table 36). Loose teeth should not be ignored, however, in case the mandibles of particular age groups are subject to different levels of predepositional and postdepositional fragmentation. Figure 160 compares the mortality profiles of attached and loose teeth for each of the two commonest species, sheep and cow. The two sets of data give remarkably similar mortality curves, even though the practice of discounting loose teeth which could have come from a fragmentary mandible in the same feature favours a divergence. Further mortality curves can be based, therefore, solely on attached teeth, which are in general more accurately ageable.

The spatial organisation of bone discard

The mandibular material from the habitation clusters and that from the field-ditches do indeed differ in composition. In comparison with the habitation features, the ditches have produced a much lower ratio of sheep to cattle (Table 36) and a more gradual mortality curve (Fig.161) for both sheep and cattle. Differences between the two categories of features in recovery standards have been eliminated by excluding material from the wet-sieve. Differences in the preservation of material, however, are implied by the fact that the proportion of the minimum numbers of mandibles made up by loose teeth is far higher in the ditches than in the habitation features (Table 36). The greater fragmentation of material from the ditches may have introduced a bias against the less robust mandibles of sheep and of young animals and the smaller loose teeth of sheep and young animals would then have been less likely to be recovered than those of larger animals. The fact that the mortality curves from attached and loose teeth are so similar (Fig.160), however, would require that any increase in the frequency of loose teeth from sheep and young animals in the ditches was exactly offset by the poor recovery rate of small, loose teeth.

An alternative or additional possibility is that the mandibles of cattle and older animals were preferentially discarded on the middens (and then spread on the fields), while those of sheep and younger animals tended to be disposed of around the habitation clusters. In this context it is worth noting that the larger an animal is, the more likely it is that it will be dismembered for consumption and that some of its bones will be discarded uncooked (Halstead 1982). The Romano-British inhabitants of Maxey may, therefore, have been preferentially discarding on the midden the uncooked animal waste which would have been the most useful additive to fertiliser.

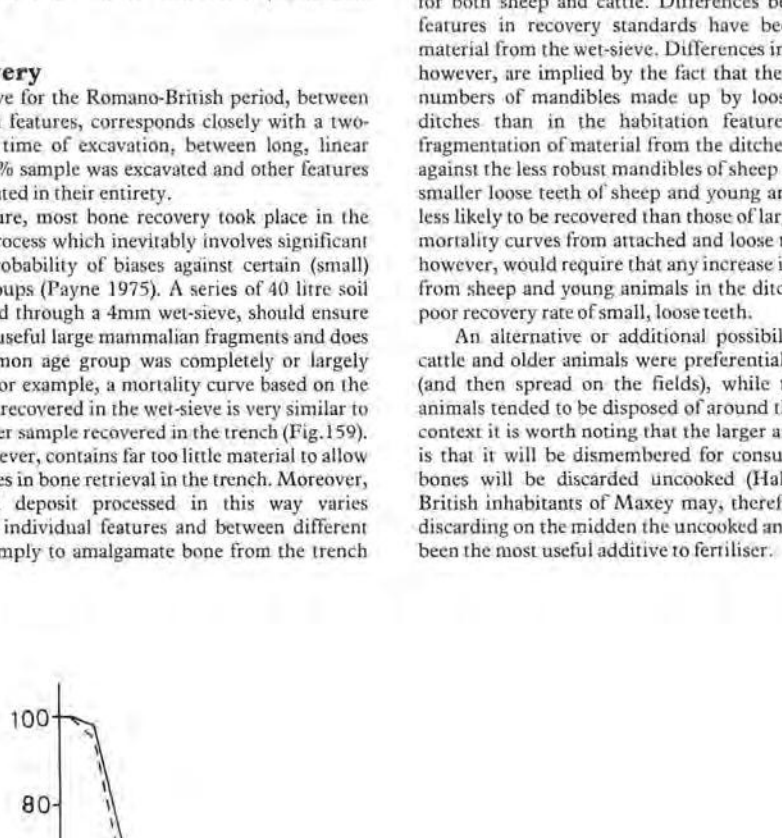


Fig.159 Maxey East Field, Roman phases (7-9): mortality curves for sheep mandibles. *Solid line* = recovered in trench (N = 151); *broken line* = recovered in wet sieve (N = 21). *Horizontal axis* = age classes (after Payne 1973); *vertical axis* = % of animals alive.

Alternative interpretations of the observed spatial differences in surviving animal bone can be evaluated more fully when the postcranial material has been analysed. Whatever the reason for these differences, however, it is unsatisfactory simply to amalgamate the evidence from the two groups of features, as habitation features were dug in their entirety while only a 20% sample of field-ditches was excavated. Nor can the data from the ditches be multiplied up by five and then summed with that from the habitation features, as the relative abundance of the two groups of features to the north and south of the excavations in the East Field is unknown. Moreover, it is unlikely that the material recently surviving in the field-ditches and that in the habitation features represent similar proportions of what was originally spread on the fields or discarded around the habitation clusters. In the following section, therefore, the evidence from the two groups of features will be presented separately.

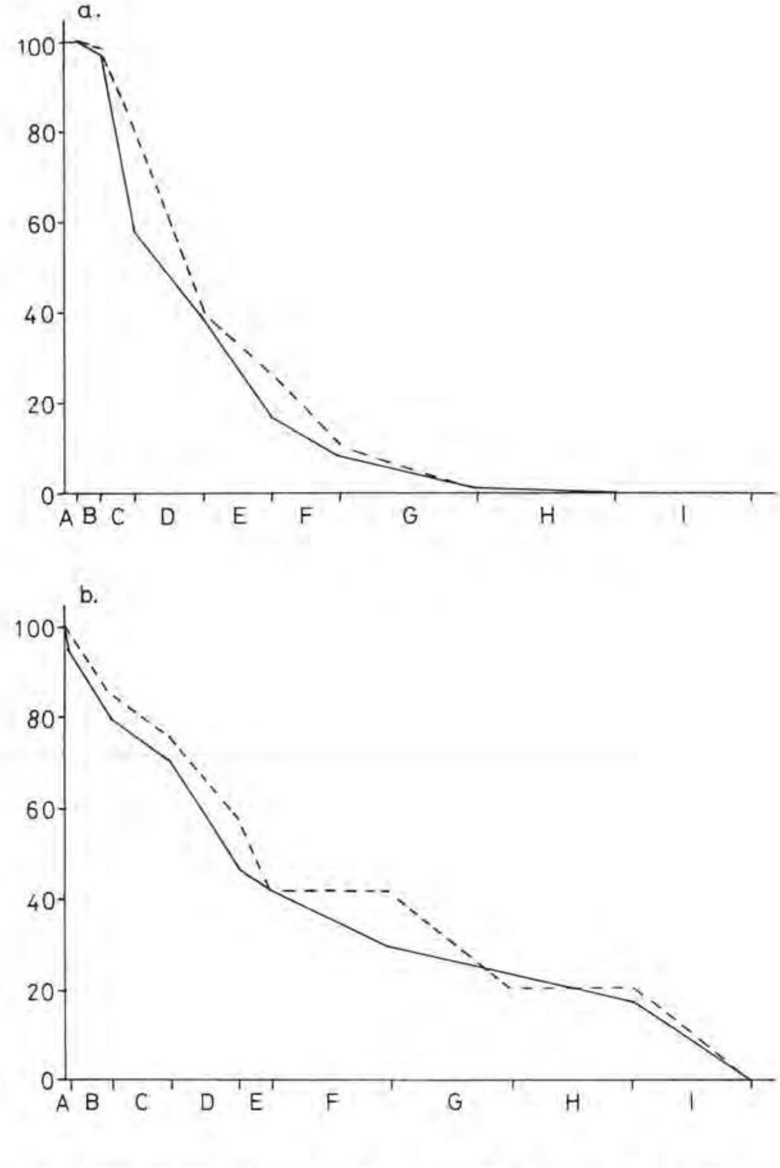


Fig.160 Maxey East Field, Roman phases (7-9): mortality curves for sheep and cow mandibles (excluding material from wet sieve). *a.* sheep *b.* cow
Solid line=mandibles represented by attached teeth; *broken line*=mandibles represented by loose teeth. *Horizontal axis*=age classes (after Payne 1973 for sheep, see Table 35 for cow); *vertical axis*= % of animals alive.

		sheep		*cow*		*pig*		*horse*	*dog*	*total*
		no.	*%**	*no.*	*%**	*no.*	*%**	*no.*	*no.*	*no.*
habitation	a	64	68	20	21	10	11	2	5	101
features	b	25	68	12	32	0	0	0	0	37
field-	a	35	57	23	38	3	5	2	6	69
ditches	b	27	57	20	43	0	0	2	0	49

Key

a minimum numbers of mandibles represented by attached teeth

b minimum numbers of additional mandibles represented by loose teeth

* Percentages given for sheep, cow and pig only, for comparability with King 1978.

Table 36: Mandibles from Romano-British Maxey: the representation of different species in habitation features and field-ditches (excluding material from wet-sieve)

Animal husbandry and economy

Maxey is located on the landward edge of the Fens, on a gravel island which had apparently been cleared of trees well before the Roman period (Pryor, Chapter 5). The spatial distribution of Romano-British pottery in the modern ploughsoil suggests a division of the island into arable land, which benefitted from periodic middening, and permanent pasture (D.R.Crowther 1983). Floodland around Maxey would have provided additional summer grazing, with attendant risks of liver fluke and foot rot for sheep, though the area may have been relatively free of floods in the middle Romano-British Phase 8 (Gurney, part II, above).

In the absence of local woodland, pigs made up a small proportion of the livestock (Table 36) and were killed for their meat at various ages between six months and three years. Mandibles of horses were also few and, in addition to a foal of *c.*6-12 months age, indicated the slaughter of at least one adult (5+ years) and one old individual which had presumably served as mounts or pack animals.

Although only part of the restricted area of the gravel island was apparently given over to arable land, there is no reason to conclude that stock raising was on a particularly large scale. A shortage of winter grazing may be indicated by the sharp cull of lambs which took place at Maxey at *c.*6-12 months (age class C), that is in their first winter, but cattle rather than sheep would have been best suited to take full advantage of any wet summer grazing in the vicinity. Sheep mandibles predominate heavily over those of cattle, however, even in the field-ditches. Although differences in contextual make-up must reduce the comparability of faunal collections at the inter-site level, King's (1978) survey of over a hundred assemblages from England and Wales indicates a clear trend towards lower percentages of sheep at 'Romanised' sites (towns, villas and road-side settlements) than at 'native' Romano-British sites. The proportional representation of species is based here on mandibular material alone, which often produces somewhat lower figures for cattle than the other skeletal elements (King 1978, table 2), but nevertheless the high percentages of sheep clearly tally with the ceramic and architectural evidence in placing Maxey firmly in the category of 'native' site. In the case of 'native' sites on light arable soils (King 1978, 212; Ellison and Harriss 1972), high percentages of sheep are in keeping both with the lack of pannage for pigs or meadows for cattle and with the traditional role of sheep in maintaining soil fertility (Thomas 1957). At Maxey, therefore, this emphasis on sheep raising may indicate the concentration of livestock on the arable land and pasture on the gravel island, with only limited use of the surrounding wet grazing.

The mortality curves for sheep and cattle can be examined in some detail. In Figure 161a, the sheep curves for habitation features and field ditches are compared with ethnographically derived model curves for milk, meat and wool production strategies (Payne 1973). Similar models are not available for cattle, but clearly the mortality curves for dairy and beef herds would be basically similar to those for sheep flocks kept for milk and meat (e.g. Legge 1981), while an emphasis on male traction animals would produce a curve more akin to that for wool flocks.

The first point to note is that the three ethnographic sheep models are based on complete information and so include a significant level of natural infant mortality. The low level of infant mortality in the archaeologically based curves, by contrast, is likely to be a product of the survival and recovery biases against such young remains (*cf.* Binford and Bertram 1977) and perhaps of the differential disposal of this segment of the population.

The same biases of disposal, survival and recovery might, of course, disguise the distinctive feature of a dairy economy — namely the slaughter of unweaned lambs or calves which would otherwise compete with man for the supply of milk. The complete destruction or loss of the mandibles of unweaned animals would have the effect, however, of creating a mortality curve dominated by adult deaths, much like that for a wool flock. At Maxey the severe cull of young but weaned sheep and cattle (between 6/8 months and three years — age classes C to E) clearly conforms to a meat curve rather than to a wool/traction or badly preserved milk curve (Fig.161). Thus although the Maxey livestock doubtless supplied some milk, traction and wool, the main emphasis of animal husbandry seems to have been on the production of meat, and of course hides and manure.

A striking feature of the sheep mortality curves from Maxey is the extreme paucity of adult deaths (Fig.161a) and, from an examination of the relationship between tooth eruption and wear at Maxey (*cf.* Deniz and Payne 1982, fig.35), it is clear that this is not simply an artefact of slow tooth wear. The structure implied for the Maxey flock by the data from the habitation features would be demographicaly impossible and would rapidly have led to extinction of the flock (*cf.* Cribb 1982). If we assume for the moment that flock size was stable and that all animals of two years and more were breeding females (Payne 1973), we have the following number of potential lambings for a cohort of 100 sheep:

alive at end of C/year 1 – 49 sheep: potential lambings— 0
alive at end of D/year 2 – 28 sheep: potential lambings—28
alive at end of E/year 3 – 16 sheep: potential lambings—16
alive at end of F/year 4 – 5 sheep: potential lambings— 5
alive at end of G/year 6 – 0 sheep: potential lambings— 5
Total: 54

In other words, to reproduce itself the cohort would need to produce 100 viable lambs from fifty-four potential lambings. This is equivalent to a lambing rate of 185%, which is far in excess of any likely sustainable level for traditional farming. Allowance should of course be made for one or two breeding males, for occasional disastrous lambing seasons and for the archaeological invisibility of infant mortality. These factors would all exacerbate the demographic problem, as would any growth in the size of the flock (the alternative, of diminishing flock size, is obviously viable only in the short term).

Adult sheep are particularly poorly represented in the habitation features, but even if we restrict our calculations to material from the field-ditches, with its observed bias towards older sheep, the lambing target remains quite high at 88%:

alive at end of C/year 1 – 74 sheep: potential lambings— 0
alive at end of D/year 2 – 61 sheep: potential lambings—61
alive at end of E/year 3 – 19 sheep: potential lambings—19
alive at end of F/year 4 – 13 sheep: potential lambings—13
alive at end of G/year 6 – 4 sheep: potential lambings—17
alive at end of H/year 8 – 0 sheep: potential lambings— 4
Total: 114

Once allowance is made for all the biases noted above, even the field-ditches would probably produce a demographically inviable mortality curve.

So far the flock has been treated as a 'closed system', but the apparent surfeit of lambs over breeding animals could be the consequence of the import to Maxey of lambs or the export of old ewes. In artefactual and architectural terms, Maxey seems to be a low status site and so is more likely to be involved in the export of animals 'upwards', to a higher level in the settlement hierarchy, and so the marketting of fattened, barren ewes is the more likely of these two possibilities. There is evidence from Roman Exeter that lamb predominated heavily over mutton in the urban market (Maltby 1979), but the market involvement of small 'native' sites like Maxey may have been too small scale to have much impact on urban faunal samples. At any rate, the large scale export of meat from Maxey, in the most economical form of young animals, can be ruled out with some confidence.

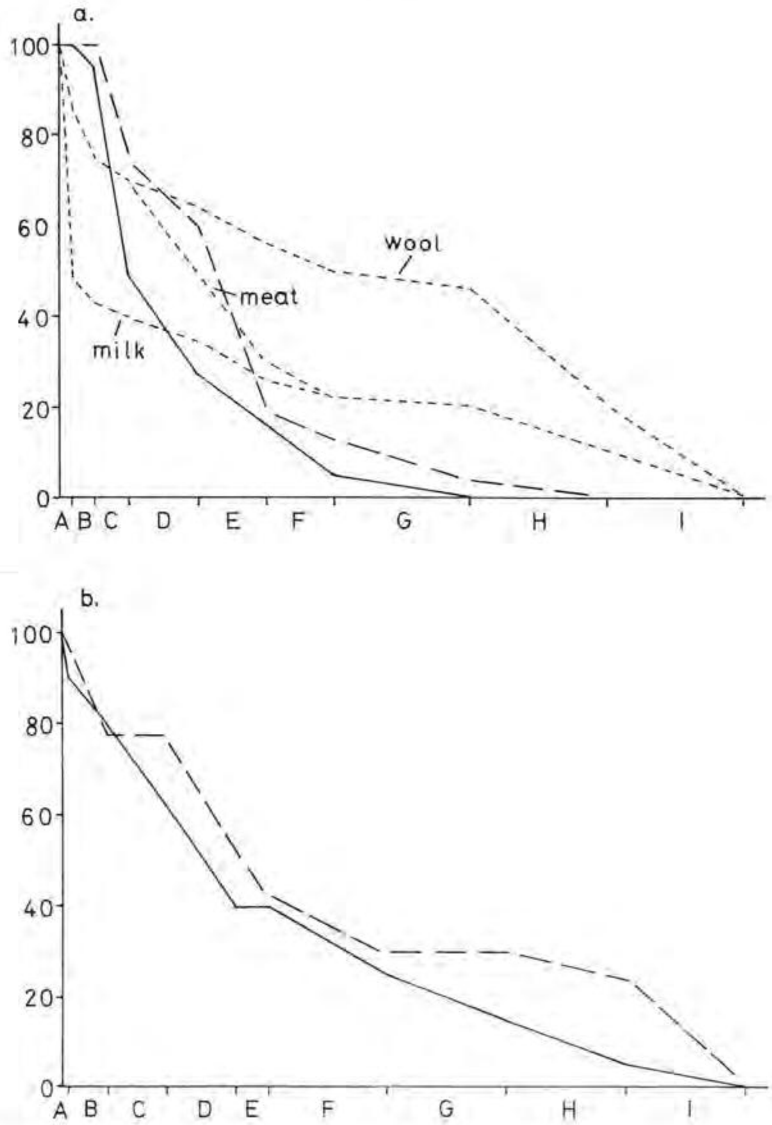


Fig.161 Maxey East Field, Roman phases (7-9): mortality curves for sheep and cow mandibles (represented by attached teeth only, excluding material from wet sieve). *a.* sheep *b.* cow
Solid line = mandibles from habitation clusters; *broken line* = mandibles from field ditches; *dotted line* = model curves for sheep (after Payne 1973). *Horizontal axis* = age classes (after Payne 1973 for sheep, see Table 35 for cow); *vertical axis* = % animals alive.

The mortality curves for the Maxey cattle (Fig.161b) imply a rather higher proportion of old animals, but some of these must have served as traction animals for the arable sector and so would not have been breeding cows (it is hoped that direct postcranial evidence for this can be presented in a future study). Moreover the reproductive potential of cattle is lower than that of sheep (Dahl and Hjort 1976) and so, as a substantial kill-off of young cattle was taking place at Maxey, the scope for exporting further young cattle may have been quite limited.

The divergence between Iron Age and 'native' Romano-British sites (with faunal assemblages dominated by sheep), and the more Romanised towns and villas (with a growing emphasis on cattle and pigs), has been interpreted in terms of diffusion to the towns and villas of Mediterranean cultural tastes (King 1978). It could be argued, however, that these changes in livestock proportions at Romanised sites are part of a more general process of economic intensification (*cf.* M.Jones 1981) in response to the development of an urban market. If so, Maxey may well illustrate the reverse side of the coin — the survival of more traditional and less intensive economic practices at 'native' Romano-British sites. Arable production at Maxey seems to have been on a small scale, using only a fraction of the restricted area of the gravel island, and the scale of livestock husbandry may have been equally modest. The predominance of sheep over cattle may indicate greater concern with meeting the manuring requirements of the arable sector than with making full use of any seasonal grazing on local floodland. The management of sheep and cattle was clearly not geared to the production of wool or dairy products, but rather to meat. Most of this meat seems to have been consumed locally as the mortality curves suggest scope for the export, at most, of a few young steers and of fattened, old ewes. The faunal evidence implies, therefore, that the marketting of animal produce from Maxey was on a par with the very low level of import to the site of manufactured goods such as fine pottery.

VIII. Evidence for Domestic Cereal use at Maxey

by F.J.Green

Introduction

The bulk of the plant remains discussed here were examined by the author, but a substantial proportion of the identifications were undertaken by Rupert Housely, to whom thanks are due. The methods of analysis used here include dominance and soil-seed density (F.J.Green 1982, 43-44). These analytical procedures provide information on the quantities and proportions of the different cereals and components involved, which in turn give information on the intensity of past activities. These methods do not provide information on the nature of the actual activities that gave rise to the plant assemblages. Information of this type can only be deduced by a qualitative examination, using data obtained from ethnographic research, such as Hillman (1983, 37-84) and G.Jones (1983, 85-116). An assessment of plant remains from this site has been made using techniques advocated by both authors, and it marks a departure from some of the more simplistic forms of analysis which have generally applied inappropriate statistics in attempts to evaluate crop importance. This study makes the assumption that the crops represented do indeed indicate their importance to the economy. However, this would be impossible without the crop wastes that are associated with all stages of crop-processing. Plant remains can indicate the activities that produced them and can thus point to the taphonomic processes that are the concern of the archaeologist or palaeoethnobotanist.

Recovery Methods (Fig.162)

Soil samples were manually disaggregated in water and all floating plant remains were collected in a sieve (mesh 500 microns). This process was repeated until all floating plant remains were recovered. The residues of gravel and unfloated material were then placed into a sieve in the water sieving machine (Fig.162). Finer particles of mineral soil were removed by this means and close inspection of the residue for small bones, plant remains and pottery then took place. Any plant remains located by this means were united with the flot samples. It was assumed (rightly) that the bulk of plant remains would be removed by flotation and that the sieve would only reveal the very largest items.

The soils at Maxey were gravelly and friable and it was therefore decided to construct a water sieve which could speed-up the sieving process. Previous experiments at Crickley Hill, Gloucs., using a Cambridge dry sieving frame (Payne 1972, 50-57) over a large tank of water with a sieve suspended from the shaker, had indicated that bulk water sieving was possible, even on a site with a limited water supply. It is not necessary to have clean water for water sieving, so long as the objects recovered are washed or rinsed in clean water. At Maxey there was a limitless supply of clean water from the gravel pits. The technique is not suitable for waterlogged deposits with quantities of anaerobically-preserved organic material, but it proved a most effective means for recovery of smaller animal bones and other artefacts.

The water sieve consisted of a tank with a sieve suspended in the water, to a depth of one or two centimetres only. The sieve rested in a steel frame mounted on rollers which ran on runners around the rim of the tank. The frame was equipped with a long handle (to avoid splashing the operator), and could be raised and lowered by pressure on the handle. As residue accumulated in the tank, less water was required and could easily be removed by vigorous action with the (empty) sieve, or by baling. The tank was provided with legs which could be adjusted (an improvement suggested by the Trust for Wessex Archaeology who also use the machine). The sieving machine was found to be useful in breaking down and cleaning residues; although it was not designed specifically for the retrieval of plant remains, it could be used for the recovery of charred material which had not floated. It also proved to be a very useful 'control' for the processing of waterlogged deposits, as non-floating residue was recovered. These samples, however, had to be processed with care and using clean water only. It must be stressed that the apparatus was not suited for use on heavy, clay soils, unless pre-treated. It is, however, well adapted for the recovery of plant materials where charred items are heavily impregnated with calcium or other minerals, and do not, therefore, float.

Sampling procedures

Many of the contexts at Maxey were of Neolithic date and plant remains would only be recovered if very large quantities of soil were processed. Accordingly, a standard sample unit of at least four buckets (40,000ml) was decided upon. Where features were extensive, multiple sample units were removed, in an attempt to monitor vertical and lateral variation. Where waterlogged features were encountered sample units of 500ml were removed for examination in laboratory conditions. We have already discussed the sampling procedures for the topsoil and 'B' horizon surveys (Green, part I).

Identification procedures

All plant materials recovered from the site were identified by comparison with modern collections, principally the author's own reference collection and that of the Department of Archaeology, Southampton University. The most difficult problem was the reliable identification and separation of the different glume wheats. The recent works of Körber Grohne were unfortunately not available when the Maxey indentifications were undertaken. In future, where doubt exists about the indentification of glume wheats from important or early contexts, then a select programme of electron microscopy would be essential.

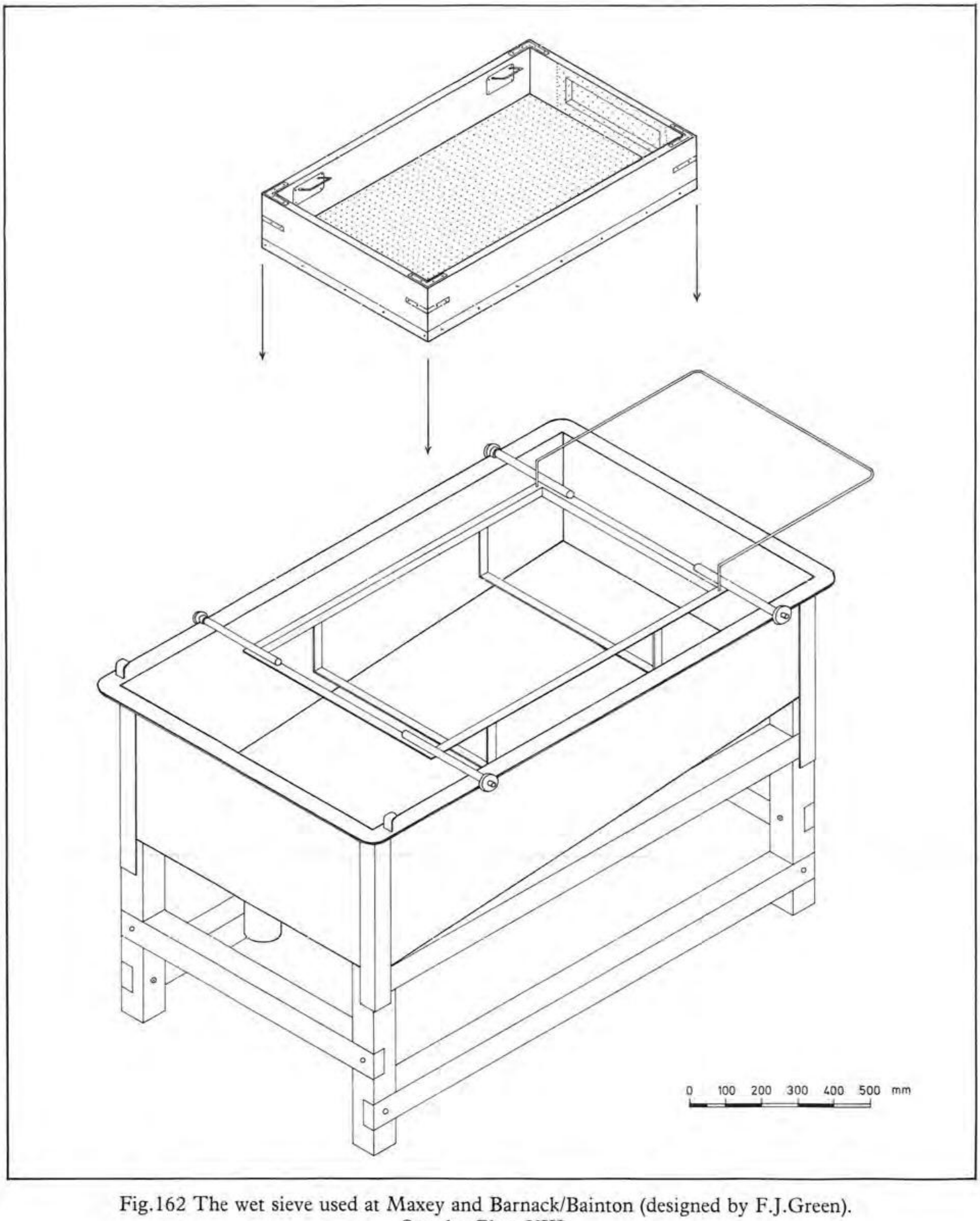


Fig.162 The wet sieve used at Maxey and Barnack/Bainton (designed by F.J.Green). See also Plate VIII.

The Analyses (Tables 37-41)

Preservation

The bulk of plant remains from the site were preserved by having been charred or burnt; these processes were the result of various cultural activities involving cereals and other plant products. Waterlogged or anaerobically preserved plant remains were only recovered from one feature, a well of Phase 5 (F.605), the results of which are given in Table 39. It is unfortunate that anaerobically preserved plant remains did not constitute a greater proportion of the assemblage, as the increase in information provided by this means would have greatly facilitated interpretation of an otherwise meagre collection.

The charred plant remains resulting from stubble-burning on the field surface were, as indicated, clearly separable from charred archaeological material (see part I). The modern material was incompletely preserved and showed specific signs of tarring and puffing. Few archaeological grains exhibited these characteristics. The evidence suggests that the archaeological material was charred while dry and the moisture content low. This has important implications with respect to the interpretation of the charred plant remains discussed here. It is suggested that charring occurred in a domestic context associated with the final processing of food for domestic consumption.

The charred plant remains from archaeological contexts were invariably poorly preserved. Most of the grains and other plant remains were badly eroded, mainly because of alkaline, non-waterlogged soil conditions and possibly as a result of the recovery techniques used. However, the very large total sample from the site, and the fact that control samples of soil were removed and processed under laboratory conditions mitigates the latter possibility, as both field and laboratory processed samples showed no significant differences.

The poor preservation or absence of some plant materials has therefore been interpreted as a function of site activities. The lack of some extra-floral part of cereals, and the under-representation of legume, orchard or fruit crops is consistent with other charred deposits where these groups are usually poorly represented. The fact that the bulk of the plant remains from the site are glume wheats may be giving a biassed overall view of the economy and of associated agricultural and domestic activities; other free-threshing cereals may well have played a much larger part than the archaeological record indicates.

RANUNCULACEAE
Caltha palustris L.
Ranunculus acris L./repens L.
CRUCIFERAE
Brassica sp.
Raphanus raphanistrum L.
CARYOPHYLLACEAE
Agrostemma githago L.
Cerastium sp.
MALVACEAE
Malva sp.
PAPILIONACEAE
Trifolium sp.
Vicia cf. hirsuta (L.) S.F.Gray
Vicia cf. cracca L.
ROSACEAE
cf. Fragaria sp.
EUPHORBIACEAE
Euphorbia peplis L.
POLYGONACEAE
Polygonum persicaria L.
URTICACEAE
Urtica dioica L.
CORYLACEAE
Corylus avellana L.
GENTIANACEAE
Gentianella sp.
BORAGINACEAE
Lithospermum arvense L.
LABIATAE
Prunella vulgaris L.
PLANTAGINACEAE
Plantago lanceolata L.
VALERIANACEAE
Valerienella sp.
COMPOSITAE
Chrysanthemum segetum L.
Centaurea nigra L.
Lapsanna communis L.
Sonchus oleraceus L.

Table 37: Plant species present only in archaeological deposits at Maxey East and West Fields.

The archaeological evidence (Tables 37 and 41)

Phase 1

Eight soil samples or *c.*320 litres of soil were examined from ditches of the cursus. None contained any plant remains apart from modern uncharred and often viable seeds of the same range as those from the topsoil survey (Table 9). This contamination is almost certainly the result of plough-damage in the thin soils of the south part of the West Field. The lack of charred plant remains from a cursus ditch is not surprising, as material would only be recovered if domestic or ritual activity involving fire and plants had taken place near the monument. This clearly was not the case.

Phase 2

These deposits were extensively sampled; 104 sample units, or *c.*3000 litres of soil being processed. Approximately 11% of these samples produced charred plant remains. This represents the lowest recovery rate, other than Phase 1, on the site (Fig.163). The range of plant remains recovered is not particularly revealing. No noticeable concentrations were located and most deposits contained very small groups of material. The maximum number of components was recovered from Feature 600 (the central henge mound) and consisted of twelve items. Such sparse evidence is considered as little more than 'background noise', and of little interpretive use.

The range of species recovered includes various types of wheat, such as *Triticum aestivo-compactum* (Bread/Club Wheat), *Triticum spelta* (Spelt Wheat) and grains that might be *Triticum aestivum* . Barley (*Hordeum vulgare*) was recorded in three samples and hazelnut fragments (*Corylus avellana*) were recorded in F.600. The general lack of the former species is worthy of comment, since it is a species commonly recorded on most Neolithic to Iron Age sites (M.Jones 1980).

The sparseness of the plant remains presents further interpretational problems. The presence of *Triticum aestivo-compactum* for example, which is found in features of all phases producing plant remains, may itself be an indicator of some post-depositional contamination which cannot readily be evaluated. This is possibly indicated by the high dominance of this species over all others from Phase 2 deposits, since it can only be matched with a similarly high peak in Phase 12 (the furrows and later). The soil-seed density figures for this phase, however, indicate that there is a below average density for this plant species, when compared with the other phases from which it was recovered.

In sum, there is insufficient evidence from this phase to indicate if the plant material recovered is archaeologically significant. What evidence there is, if not 'background noise', or contamination, is clearly only indicative of an extremely low level of economic or domestic activity, none of which can be evaluated. This, of course, is in complete agreement with the archaeological evidence which suggests that this phase saw ceremonial, but no 'domestic' or other, broadly-speaking, economic activity in the area of the henge complex of features.

Phase 3

This Phase is only represented by flint scatters on secondary mound deposits within the central ring-ditch of the henge complex. No samples suitable for botanical analysis were available.

Phase 4

Only 15 samples, or 580 litres of soil were examined from this phase which saw the construction of the two small Iron Age square-ditched barrows or enclosures (structures 17 and 18). The finds consisted of single specimens and a maximum concentration of six charred fragments. None of the cereal evidence could be identified to species. This suggests that conditions for preservation were poor and that there is a distinct possibility that this cereal evidence had been exposed to destructive agents over a long period. It is improbable, therefore, that the soil from which the samples were taken had been incorporated into sealed archaeological contexts rapidly. The soil-seed density figures (Table 38) form part of a general trend in which the quantity of plant remains recovered increases through time. None of the ruderal evidence from this phase was at all specific either as to the environment or to possible crop-processing activities. The evidence from this phase suggests little or no economic activity involving plant material. Again, as in Phase 2, this is entirely consistent with the archaeological picture.

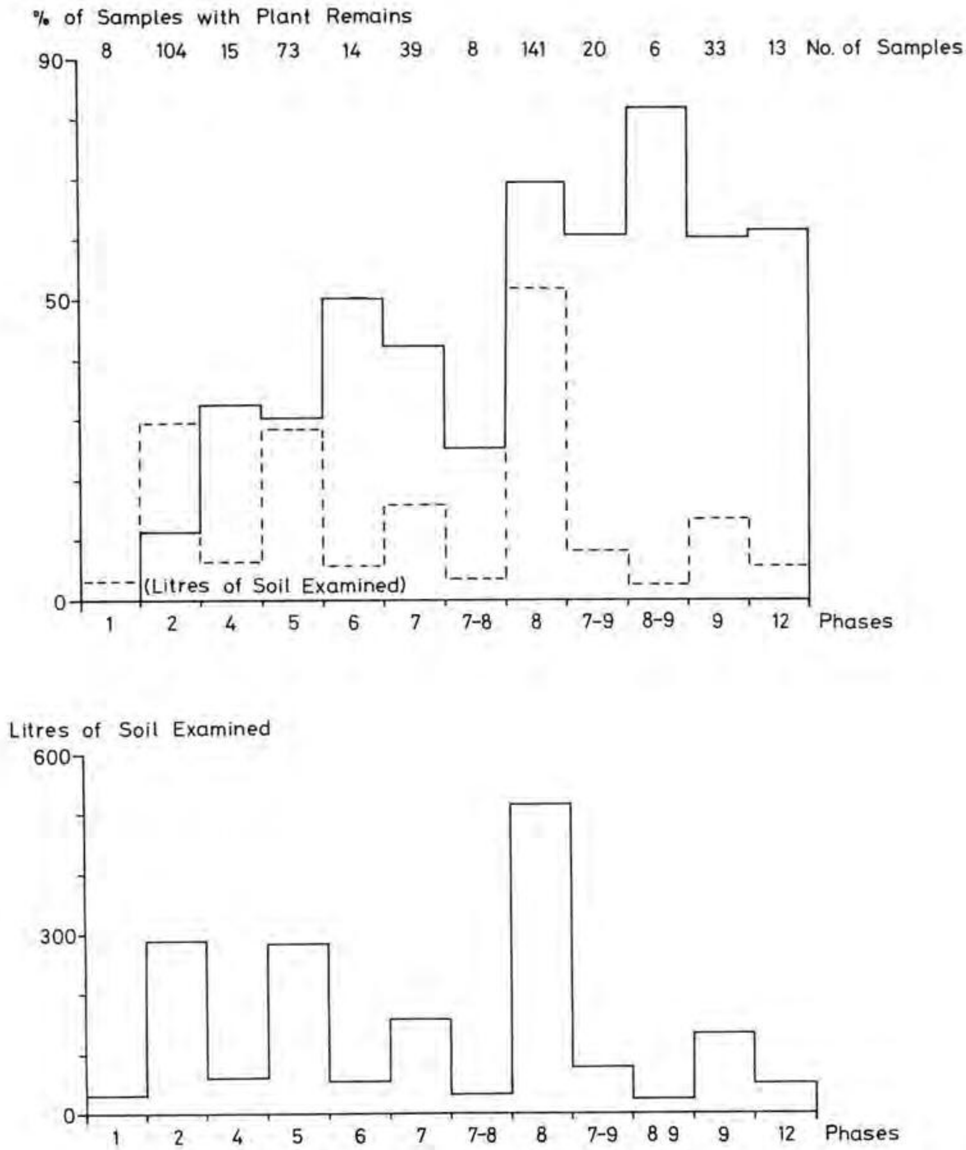


Fig.163 Maxey East and West Field: histograms to accompany palaeobotanical report (Chapter 2, part VIII). *Above:* percentage of samples with plant remains (broken line: soil weight examined). *Below:* litres of soil examined.

Phases:	*2*	*4*	*5*	*6*	*7-8*	*7*	*8*	*7-9*	*8-9*	*9*
Triticum spelta (Glumes)	—	—	—	—	—	—	10.5	1.0	3.63	0.33
T. spelta (Caryopses)	0.25	—	0.75	1.0	—	0.25	5.41	0.6	—	3.03
T. dicoccum (Glumes)	—	—	0.5	—	—	—	1.13	—	2.42	1.75
T. dicoccum (Caryopses)	—	—	1.0	0.25	5.75	3.4	3.38	0.78	1.25	1.56
T. aestivum/compactum	0.33	—	0.43	0.75	—	0.75	1.03	0.44	8.75	0.42
T. aestivum (Rachis)	—	—	—	—	—	—	0.38	—	—	0.75
Triticum sp.	—	—	0.5	1.5	2.75	10.05	2.36	0.88	2.53	18.75
Hordeum vulgare (Rachis)	—	—	—	—	—	—	1.0	0.25	—	0.5
H. vulgare (Caryopses)	—	—	0.42	0.33	1.0	12.88	2.57	—	1.15	5.3
Hordeum sp. (Caryopses)	0.25	—	—	—	—	0.75	1.05	0.63	—	—
Avena sp. (Caryopses)	—	—	—	0.25	2.0	1.08	1.58	1.0	0.1	3.5
Secale cereale (Caryopses)	—	—	—	—	—	—	0.25	—	—	—
Cereal sp. (Caryopses)	0.25	0.58	0.88	0.63	1.75	33.7	2.2	1.2	12.46	18.16
Total Components:	14	7	70	100	60	1093	2972	89	1714	1657

Table 38: The seed density analysis of cereals from the pre-Roman and Roman soil samples, Maxey East and West Fields.

The features involved are funerary and their associated settlements have yet to be located.

Phase 5

This is the first phase from which plant remains were recovered from a wide range of features, including ditches, gullies, pits, an oven and a well. The features in question were confined to the West Field and the sub-phases (5.1 and 5.2) have been ignored for present purposes. Seventy-three samples, or 2840 litres of soil were examined. Thirty per cent of the samples produced plant remains. Although most samples produced isolated finds or very small groups of charred plant remains, some contexts were quite productive and allow a more realistic cultural and economic interpretation to be attempted.

Deposits from this phase were characterised by a high percentage dominance of cereals that could not be identified to species. This indicates (once again) that the cereal evidence may have lain about the site before incorporation into features where further disturbance was minimal. Forty-six per cent of all cereal evidence belonged to this group. Examination of the evidence from later phases indicates that this is not unduly high, and is within the range of what could be reasonably expected. Wheat species as a group are the most dominant element and account for 47% of the cereals. A soil-seed density of 0.5 grains per litre was recorded. The major wheat species present was emmer (*Triticum dicoccum*), a species commonly encountered on Middle Iron Age sites throughout lowland Britain (F.J.Green 1981, 132-33). The plant was represented by caryopses, glumes and spikelet forks. One seed per litre was found to be the soil-seed density, whereas the other fragments showed a density of 0.5. Spelt wheat (*Triticum spelta*) was found in much smaller quantities and no chaff fragments were recorded (glumes, spiklet-forks). Bread or club wheat (*Triticum aestivo-compactum*) was the least significant species of wheat recorded from this phase.

Taxa	
RANUNCULACEAE	
Ranunculus acris/repens L.	3
R. cf. lingua L.	2
Ranunculus sp.	1
CARYOPHYLLACEAE	
Silene sp.	163
CHENOPODIACEAE	
Chenopodium album L.	98
ROSACEAE	
Fragaria vesca L.	23
UMBELLIFERAE	
Torilis nodosa (L.) Gaertn.	1
POLYGONACEAE	
Polygonum persicaria L.	61
Rumex cf. crispus L.	78
URTICACEAE	
Urtica dioica L.	93
CAPRIFOLIACEAE	
Sambucus nigra L.	1
COMPOSITAE	
Carduus nutans L.	4
Cirsium palustre (L.) Scop.	2
CYPERACEAE	
Carex sp.	1
Plant remains unidentified	2

Table 39: The waterlogged plant remains from the well (Feature 605), Maxey West Field.

Although emmer chaff fragments were present, this does not indicate that the site is a primary production unit. If major crop-processing activities associated with the early part of the crop-processing cycle, as described by Hillman (1983, 37-84) had been taking place, it would be reasonable to expect the recovery of much higher concentrations of these fragments, along with an associated weed assemblage also indicative of such activities. The waste products associated with kiln firings and accidental charring at this stage, as recorded by Hillman at Catsgore (Hillman 1982, 137-41) were absent. The absolute lack of non-caryopses fragments of spelt suggests that this crop was reaching the site in a processed form. All the evidence from this phase suggests the regular charring of highly processed crops prior to food preparation, possibly during a final parching stage, or, more probably, from deliberate burning of fine sievings, with the large weed seeds removed by hand immediately prior to food preparation.

The evidence for other cereals, such as barley and oats is also interesting. Oats, including the wild species, were completely absent from this and preceding phases (they appear from Phase 6 onwards). Barley, however, seems to be only marginally less important than *Triticum spelta* in terms of soil-seed density; although on percentage dominance the reverse is the case. Barley rachis or chaff fragments were lacking and once again this would suggest the waste resulting from the final phases of food preparation. However the absence of awns, lemmas and paleas from these deposits does suggest that this material was not being burnt, but was used for fodder instead. Its possible accumulation might have been for this purpose. Such stored material would only rarely be subjected to accidental firing.

The large bell-shaped pit or water-hole, F.559 contained a similar range of material to other features of this phase, except for thirty-one hazel-nut fragments. This is the only feature of this phase to produce such evidence which probably represents deliberate burning, possibly as a result of the waste being swept up and burnt on a domestic hearth. These nuts indicate that wild plant foods, possibly collected from local hedgerows, were being consumed. The lack of similar evidence from other phases is, however, hard to explain.

The most important feature for providing evidence as to the environment was the well, F.605, whose lower layers were still partially waterlogged. The range of species recorded (Table 39) is typical of those from archaeological sites associated with disturbed ground in and around human settlements. A large quantity of *Rumex*, *Polygonum*, *Chenopodium*, *Urtica* and *Silene* species were recorded, along with small quantities of *Ranunculus acris/repens*, *Ranunculus cf. lingua*, Compositae, such as *Cirsium palustre* and *Carduus nutans*. *Torilis nodosa* and possibly *Fragaria* were also present.

Unfortunately wells rarely, if ever, provide the fullest range of plant species associated with a site. A well acts as a bottle trap for those species that might be accidentally blown or carried on the base of water-collecting utensils. In most cases it is reasonable to assume that the well was covered to stop refuse from falling in. The only species not commonly recorded from this type of feature are *Ranunculus lingua* and *Cirsium palustre*. These indicate the proximity of marsh or fen and may simply have been growing on the site in damp ditches. *Polygonum persicaria* is also indicative of wet conditions and is commonly found on damp sites or damp cultivated areas. Nettle is also a species usually associated with disturbed habitats in and around human settlements and the margins of woods and fields, is also associated with shifting watercourses (F.J.Green 1979, 276).

The evidence from this deposit illustrates the paucity of environmental data provided by charred remains alone; without additional evidence, it is hard to be more precise about the site's general environment. However, it can safely be suggested that the ground surface may have been quite damp and that water may have been contained in shallow ditches and channels on the site, and that the number of such features of itself suggests that the inhabitants had problems with drainage (see also French, part V).

Phase 6

Only fourteen soil samples were examined from this phase; of these 560 litres of soil, 50% produced evidence for plant remains. This is consistent with the increasing trend seen in Figure 163. Concentrations of seed within deposits were low and none contained more than ten items; as in the preceding phase 50% of cereals could not be identified to species. However, on the basis of percentage dominance, a higher proportion of the cereal grains could be identified to species level. This indicates that plant remains were being incorporated into features at a faster rate, so that less damage occurred. On the basis of percentage dominance the evidence compares favourably with the material from Phases 7-8 (Fig.163). On a straight quantitative analysis, however, wheat seems to be more important. *Triticum spelta* was clearly the most dominant variety of wheat. It is therefore possible to see a major change between the Middle (Phase 5) and Late (Phase 6) Iron Age deposits, with more spelt being recovered than emmer. This is consistent with the picture from other sites in Britain where the same pattern has been recorded (F.J.Green 1981, 132-33) It is difficult to be precise about the importance of this phenomenon. It may be that, in terms of the actual economy, spelt does indeed replace emmer. On the other hand the absolute quatities of emmer production may not change; instead there is an increase in spelt production for a variety of economic or environmental reasons

Turning to the other cereals, such as barley and bread/club wheats, there is little difference between this and preceding phases. Bread and club wheat may be marginally more important both on dominance and soil-seed density than previously. However, barley, which is less well represented than spelt by dominance, was recovered in larger quantities per litre of soil examined than emmer. This does indicate that barley was more important than in the preceding phase in terms of utilisation on the site. Whether this reflects a real increase in agricultural production of this cereal is questionable.

Although oats were absent from preceding phases, they were only recorded in very small quantities in Phase 6. The slight evidence for oats may indicate that is was a weed of other crops, but it is never-the-less potentially under-represented, as it frequently occurs on earlier Iron Age sites on other areas. The fact that this species was not recorded as a pure crop at any period at Maxey may well argue in favour of it being a persistent crop commensual. The cereal evidence from this phase suggests fairly low levels of domestic usage and is indicative of material discarded from domestic activities associated with the later stages of food preparation. The presence of a single charred, crushed oat caryopsis, a grain crushed in antiquity prior to charring, may suggest that crushed, toasted oats were consumed as groats. Crushing probably took place in wooden pestles and mortars, for which, of course, there is no archaeological evidence. This hypothesis is perhaps supported by the absence of stone querns from primary contexts prior to Phase 7.

Crop species other than cereals make their first appearance in this phase. Various legumes such as pea (*pisum sativum*), with a distinctively wrinkled testa and a wide range of weedy *Vicia* species were recorded for the first time. None of these species are present in large quantities, either as crop-processing wastes, or as accidentally charred pure crops. The presence of peas on this site may well indicate a diversification in crops in the late Iron Age, although it would, perhaps, be unwise to place too much weight on the very slim evidence available.

Finally there was a singular absence of ruderal species from this phase. This may simply imply that the overall sample was too small, or that few activities involving cereals, as we have already indicated, were taking place. There were also no charred glume bases, spikelet forks and other chaff or waste materials from this phase.

Phase 7

Eleven features were examined, consisting of ditches, ring-gullies and one pit. Thirty-nine samples (or 1500 litres of soil) were analysed, and of these over 40% produced plant remains. Wheat was less important, on the basis of dominance analysis, in this than in preceding phases or those of the full Roman period. This, however, may be seen as a problem of sampling as much as a real difference. Using soil-seed density as a basis however, wheat was more significantly represented in this than in previous phases and it marks the beginning of a trend which continued through the Roman phases (7-9) and which resulted in larger accumulations of charred wheat grains. As with some of the earlier phases, preservation conditions inevitably bias interpretation. Over 50% of the cereals could not be identified to species, and once again this must indicate that cereal remains were being incorporated slowly within archaeological contexts. The discovery of a single quern from this phase does not suggest that the damage to the grains (which were lacking their pericarp) could be explained by milling. It is also worth noting that the samples from this phase produced a very high soil-seed density which is comparable with those from Phases 8-9.

Spelt and emmer were the main types of wheat found in this phase. On all criteria, emmer is marginally more important than spelt. *Triticum aestivo-compactum*, bread/club wheats, were better represented in this than in preceding phases. On the basis of soil-seed density, this species is better represented than either emmer or spelt and on dominance it has a near-equal importance to the other two species. Barley is also more important. Once again, soil-seed density indicates that this follows an upward trend. Taken as a whole, the cereal evidence suggests that no primary processing was taking place in this phase. Samples from Feature 345 (structure 9, ring-gully), where many hundred charred grains were recovered, possibly indicate accidental burning of a stored crop. All three samples from this feature produced similar results. No other economic species were recorded from this phase.

The range of ruderal species was limited. Several samples produced evidence of onion couch bulbils, fragments of which seem to be commonly recovered from Iron Age and Roman sites. It is possible that these very obvious fragments would have been removed by hand-clearing prior to usage; similarly, the culm nodes recovered from this phase would be removed at this stage. Apart from some caryopses of *Bromus secalinus/mollis*, the bulk of wild plants consisted of small and medium-sized seeds, mostly *Rumex* and *Juncus* species, possibly representing fine sievings of cereals immediately prior to consumption.

Phases 7-8 and 7-9

Although plant remains from features that were in use from Phase 7 to 9 can be sub-divided it is probably best to consider them together, because of the wide disparity in the numbers of samples examined from individual phases. There were, for example, only eight samples from features of Phases 7-8, but 141 from features of Phase 8 alone (Fig.163). However, dominance and soil-seed densities have been calculated separately and these are given in Table 38. Twenty-eight samples (1220 litres of soil) were examined (Fig.163).

Deposits of Phases 7-8 produced a small quantity of charred emmer grains, some oats and some barley, with a range of weed species similar to that of earlier phases. The only species of interest was a charred fragment of apple (*Malus sylvestris*), a species that is potentially under-represented, unless preserved in anaerobic conditions. This species rarely seems to come in contact with fire.

Phases 8 and 8-9

A total of 141 soil samples (over 5000 litres of soil) were examined from this phase; this is nearly one third of the total for the whole site. The most noticeable difference between this and preceding phases is the very high proportion (68%) of deposits that contained plant remains.

We will first consider cereals. Wheat accounted for nearly 60% of the cereal remains, on the basis of dominance analysis. This follows the trend established in preceding phases and shows a distinct increase in the quantity of wheats recovered. By the same token, Phase 8 deposits had a lower than expected percentage dominance of cereals that could not be identified to a particular species. Fewer than 9% of the wheat caryopses from these deposits could not be identified further. Soil-seed density analysis shows the same pattern: a lower density of unidentified grains per litre of soil examined. However the evidence from Phases 8-9 and 9 alone, does indicate a high unidentifiable wheat count. This possibly results from the smaller number of samples involved. In Phase 9 the settlement area shifted northwards and this must affect the assemblage as well. Phase 9 features were almost invariably recuts of Phase 8 features and, as there is no obvious difference in the type of domestic material found within them, samples from the two phases will be considered together below.

Triticum spelta was the most commonly encountered species from deposits of Phases 8-9, being marginally more common than *Triticum dicoccum*. It is interesting to note that although glume bases and spikelet forks were present for both these cereals, emmer was not so important, in terms of percentage dominance. Those deposits only attributable to Phases 7-9 contained no emmer spikelet forks or glume bases, and in this respect compare more closely with samples from Phase 7.

Phases:	*2*	*4*	*5*	*6*	*7-8*	*7*	*8*	*7-9*	*8-9*	*9*
Triticum spelta (Glumes)	—	—	—	—	—	—	9.0	4.0	1.0	0.5
T. spelta (Caryopses)	7.0	—	4.0	16.0	—	1.0	21.0	6.0	—	7.0
T. dicoccum (Glumes)	—	—	6.0	—	—	—	0.5	—	0.5	1.0
T. dicoccum (Caryopses)	—	—	23.0	8.0	38.0	2.0	13.0	8.0	6.0	1.5
T. aestivum/compactum (Caryopses)	29.0	—	10.0	12.0	—	1.0	5.0	8.0	19.0	1.0
T. aestivum (Rachis)	—	—	—	—	—	—	0.5	—	—	0.5
Triticum sp.	—	—	4.0	24.0	18.0	21.0	9.0	8.0	10.0	18.0
Hordeum vulgare (Rachis)	—	—	—	—	—	1.0	0.5	—	—	0.5
H. vulgare (Caryopses)	—	—	7.0	16.0	7.0	31.0	12.0	—	5.0	17.0
Hordeum sp. (Caryopses)	21.0	—	—	—	—	1.0	1.0	6.0	—	—
Avena sp. (Caryopses)	—	—	—	4.0	13.0	1.0	6.0	13.0	1.0	5.0
Secale cereale (Caryopses)	—	—	—	—	—	—	0.5	—	—	—
Cereal sp. (Caryopses)	43.0	100.00	46.0	20.0	24.0	52.0	21.0	47.0	58.0	48.0
Total Components:	14	7	70	100	60	1093	2972	89	1714	1657

Table 40: The percentage dominance of cereals in the pre-Roman and Roman phases, Maxey East and West Fields.

Triticum aestivum was present in all Phases 7-9. On the basis of soil-seed density it seems to be no more important than in earlier periods. Some deposits, however, did produce a much higher quantity of this particular species. It would seem that its use as a crop was increasing during the Roman phases at Maxey, as has been observed on other sites in lowland Britain (F.J.Green 1981, 133). Contexts of Phase 8-9 date were the first to produce barley in large quantities and this may also be seen to reflect a general trend towards crop diversity; percentage dominance, however, suggests that it may not be of any greater importance in the assemblage as a whole. The only awn and apex fragment of a barley lemma was recovered from a ditch deposit of Phases 8-9. Certainly oats were of no greater importance at this period then hitherto (as indicated by dominance), although soil-seed density figures suggest that larger quantities of oat grains were recovered from Phase 9 contexts that from any other phase. It is also important to note the near-absence of rye from all phases (only one positively identifiable grain was recorded).

The evidence from Phases 8-9 suggests a much more intensive use of cereals than previously; but there does not seem to have been any change in the proportions of the principal cereals used. There is also no specific evidence to suggest that bread wheat, barley or oats were either gaining in importance or being used in different ways. No pure grain deposits of these species (burnt while in store) were recovered; this, however, does not preclude their use as crops which could have played an important rôle in the cereal economy.

We must now turn to non-cereal crops of Phases 8-9. Legumes such as *Pisum* and *Vicia faba* were recorded in several contexts, but no large accumulations were noted. It is none the less reasonable to suggest that these species were being grown as crops. It is possible that they might have been grown in fields or garden plots immediately adjacent to the settlement. Suitable areas to the south-east are thought to have been manured at this time (see Crowther, part I, above). Apple (*Malus sylvestris*), sloe (*Prunus spinosa*) and strawberry (*Fragaria* sp.) were also recovered. These fruit species may have been available in hedgerows. Their presence in samples that were otherwise largely composed of cereals and associated weed species, suggests that some deposits include material representing a wider range of activities, including some of a possible seasonal nature.

Lentils (*Lens* sp.) were recovered from deposits of Phase 8 (Table 41); although in many cases it was not absolutely certain that lentils were indeed present (owing to poor preservation). However archaeological evidence from other sites (F.J.Green 1981, 141) has indicated that lentils do occur in late Roman contexts, either as a crop contaminant or as an imported species. Only two seeds of flax (*Linum usitatissimum*) were recovered from deposits of Phases 8-9 (Table 41). The distinctive cell patterning of the testa allowed positive identification to be made. Flax was an important crop on the Fen-edge from Early to Middle Bronze Age times (Murphy 1983, 51) and is known from many sites elsewhere in Britain from the later Iron Age onwards (F.J.Green 1981, 143).

Finally we must review the evidence for wild plants, ruderals and chaff. The bulk of weed seeds recovered from the Roman phases (8-9) consisted of small-seeded species with rarer occurrences of larger seeded types. The latter included *Raphanus*, *Galium lithospermum* and onion couch bulbils. The very small quantities of these fragments possibly reflects the presence of waste material that had been removed by hand during the process of food-preparation. Glume bases were present in some samples (although rarely in large quantities), and other, heavier, contaminants, such as *Lolium* species and spikelet forks of the glume wheats were also found. *Bromus secalinus/mollis* was also present in some samples, but it never became a major constituent. Some deposits contained single specimens of culm nodes and culm bases. Taken as a whole, this evidence supports the hypothesis that primary crop cleaning and processing was not practised on the site (or else it has left no visible remains). Feature 203 (a gully of the Phase 8 complex of features collectively referred to as structure 6) yielded more than two caryopses for every glume fragment recovered.

Phase 9

We have already discussed the majority of samples from this phase which are, for the most part, indistinguishable from those of Phase 8. One feature, however, produced the most remarkable range of evidence from the whole site. The feature concerned (F.329) was a small ditch or gully belonging to the later (Phase 9) use of the complex of features known as structure 6 (discussed immediately above). This deposit yielded some twenty-nine wild taxa or crop commensuals (Table 41). Glume wheats predominated over other cereals in all samples (Table 40) of Phase 9. This indicates that these plant remains are the end-products of the final cleaning process of food preparation. This in turn suggests that the species present on the site need not represent the mix of crops in the fields. Mixtures of species, as were noted in Feature 329, were consistently recorded from deposits containing above average concentrations of cereal and ruderal seeds.

Post-Roman

The majority of samples were from soils of the relict ridge-and-furrow system discussed at length in part I, above. Over 30% of all cereal evidence (by dominance) consisted of *Triticum aestivo-compactum* (Table 10). Small quantities of barley were also recovered. The evidence from the furrows adds little to the foregoing discussion, but it is significant to the assessment of contamination.

Conclusions

It is hoped that this qualitative, rather than quantitative study gives sufficient indication of the nature of plant-processing and use at Maxey in the various periods considered. It has not been possible to apply (in a fully detailed form) the methods of analysis suggested by Hillman (1983, 37-84) and G.Jones (1983, 85-116), but these studies are none the less highly relevant to the evidence presented above. The detailed analyses suggested by these authors have not been possible due to the poor preservation encountered and the near-total absence of, or more importantly, of groups of indicator species. Again, detailed measurements of grain could not be taken, due to poor preservation, and this has inevitably meant a loss of information, particularly as regards sieve sizes and from tail grain.

The state of the plant evidence indicates that botanical material may well have been lying around on the surface for long periods prior to incorporation within sealed archaeological deposits. For this reason, deposits that exhibited badly eroded grains were not included in the detailed analyses, as more delicate fragments and weed species probably did not survive.

The absence of large pits and the height of the local ground water table suggest that cereals, if stored, must have been kept above ground (this was also noted at Cat's Water, Fengate (G.Wilson in Pryor 1983a)). The archaeological evidence for two possible stack-stands (structures 11 and 24, Fig.68), suggests that hay or straw was indeed stored in small ricks. It is quite probable that cereals were stored on the ear in this way, although there was no direct evidence for this (*cf.* Buurman 1979). Unfortunately the methods of harvesting the cereals may only be guessed at due to the lack of primary processing residues which might well have provided more specific information.

It was not possible to attempt an intra-site analysis, as few non-linear features were found to contain plant materials. It was also not possible to study changing patterns of refuse disposal or to assess the different types of features that might have been employed for this purpose. All that the evidence available indicates is an increase in disposal, most probably resulting from broadly similar activities, from the later Iron Age and throughout the Roman periods represented on the site.

Thus it seems probable that the botanical evidence from all Roman and earlier phases ultimately results from normal domestic activities associated with the cleaning of grain prior to consumption and domestic usage. The processes involved the removal of small weed seeds and other waste material by sieving, while larger contaminants were removed by hand. Hillman has suggested that the waste would be swept up and placed on the fire, especially in wetter climates where these activities would usually take place indoors. Daily activities of this sort see the gradual accumulation of large

Phases:	*2*	*4*	*5*	*6*	*7*	*7-8*	*8*	*7-9*	*9*	*8-9*
RANUNCULACEAE										
Caltha palustris L.	—	—	—	—	—	—	—	—	6/1	—
Ranunculus acris/repens L.	—	—	—	—	—	—	—	—	2/1	—
R. lingua L.	—	—	—	—	—	—	1/1	—	—	—
CRUCIFERAE										
Brassica sp.	—	—	—	—	—	—	—	—	6/1	—
Raphanus raphanistrum L.	—	—	—	—	—	—	4/4	—	—	—
CARYOPYLLACEAE										
Silene sp.	—	—	—	—	—	—	1/1	—	—	—
Agrostemma githago L.	—	—	—	—	—	—	1/1	—	—	—
Cerastium sp.	—	—	—	—	—	—	—	—	3/1	—
Stellaria sp.	—	—	—	—	—	—	8/5	—	3/1	—
CHENOPODIACEAE										
Chenopodium album L.	—	—	1/1	—	—	—	7/4	—	7/2	—
Chenopodium sp.	—	—	—	—	—	—	28/4	—	50/3	2/1
MALVACEAE										
Malva sp.	—	—	—	—	—	—	1/1	—	—	—
LINACEAE										
Linum cf. usitatissimum L.	—	—	—	—	—	—	—	—	—	2/1
PAPILIONACEAE										
Medicago sp.	—	—	—	—	—	—	1/1	—	7/2	2/1
Trifolium sp.	—	—	—	—	—	—	4/2	—	7/2	7/1
Vicia hirsuta (L.) S.F.Grey	—	—	—	—	—	—	—	—	59/3	62/1
Vicia cracca L.	—	—	—	—	—	—	74/1	—	31/2	—
Vicia sp.	—	—	3/1	1/1	3/2	1/1	62/21	1/1	6/4	11/1
Vicia/Lathyrus	—	—	—	—	1/1	—	—	—	1/1	—
cf. Lens sp.	—	—	—	—	—	—	3/1	—	—	—
ROSACEAE										
cf. Fragaria sp.	—	—	—	—	—	—	4/2	—	—	—
EUPHORBIACEAE										
Euphorbia peplis L.	—	—	2/1	—	—	—	—	—	—	—
POLYGONACEAE										
Polgonum aviculare agg. L.	—	—	—	—	—	—	—	—	1/1	—
Polygonum persicaria L.	—	—	—	—	—	—	2/1	—	—	—
Polygonum sp.	—	—	—	—	—	—	220/16	—	1/1	—
Rumex sp.	—	—	—	—	1/1	—	60/11	1/1	83/4	60/2
URTICACEAE										
Urtica dioica L.	—	—	—	—	—	—	—	—	1/1	—
CORYLACEAE										
Corylus avellana L.	5/1	—	31/1	—	—	—	—	—	1/1	—
GENTIANACEAE										
Gentianella sp.	—	—	—	—	—	—	—	—	—	4/1
BORAGINACEAE										
Lithospermum arvense L.	—	—	—	—	—	1/1	1/1	—	—	14/2
LABIATAE										
Prunella vulgaris L.	—	—	—	—	—	—	10/3	—	11/1	—
Lamium sp.	—	—	—	—	—	—	1/1	—	—	—
Labiatae sp.	—	—	—	—	—	—	—	—	—	11/1
PLANTAGINACEAE										
Plantago lanceolata L.	—	—	—	—	—	1	2/2	—	—	2/2
RUBIACEAE										
Galium aparine L.	—	—	—	—	—	—	3/2	—	13/3	—
Galium sp.	2/1	4/3	4/2	—	2/1	3/1	59/18	—	21/3	9/2
CAPRIFOLIACEAE										
Sambucus nigra L.	—	—	—	—	—	—	3/3	—	3/2	—
VALERIANACEAE										
Valerianella dentata (L.) Poll.	—	—	—	—	—	—	25/3	—	—	16/1
Valerianella sp.	—	—	—	—	—	—	3/3	—	12/2	—
COMPOSITAE										
Lapsana communis L.	—	—	—	—	—	—	—	—	1/1	—
Chrysanthemum segetum L.	—	—	—	—	—	—	—	—	—	1/1
Centaurea nigra L.	—	—	—	—	—	—	—	—	—	1/1
Sonchus sp.	—	—	—	—	—	—	3/3	—	—	—
COMPOSITAE sp.	—	—	—	—	—	—	—	—	1/1	—
JUNCACEAE										
Juncus sp.	—	—	—	2/1	3/1	—	25/9	3/1	160/7	6/1
CYPERACEAE										
Carex sp.	—	—	—	—	—	—	46/9	—	28/4	1/1
GRAMINEAE										
Lolium cf. perenne L.	—	—	—	1/1	—	—	3/3	—	7/1	—
Lolium cf. temulentum L.	—	—	—	—	—	—	2/1	—	14/2	—
Bromus secalinus/mollis L.	—	—	—	—	2/1	3/1	139/18	3/1	160/7	5/1
Arrhenatherum elatius/cf. tuberosum (Gilib.)	—	—	—	—	2/2	—	6/4	2/2	2/2	—
cf. Setaria sp.	—	—	—	—	—	—	1/1	—	—	—
Avena strigosa Schreb.	—	—	—	—	—	—	1/1	—	—	—
GRAMINEAE sp.	1/1	—	—	1/1	—	1/1	27/14	—	4/2	9/1
GRAMINEAE roots	—	—	—	—	—	—	+	—	—	—

(*Note:* results are expressed in the form *x/y*, where: *x* = no. of seeds and *y* = no. of samples the species occurred in.)

Table 41: The plant taxa from the excavated features by phase, Maxey East and West Fields.

quantities of charred plant material; these accumulations are compositionally distinct from accidentally charred grains from stores or from primary crop-processing activities. It would appear that the Maxey evidence best fits Hillman's (1983, 37-84) crop-processing stages 12-14 (with, perhaps stage 11). Thus winnowing, coarse sieving and earlier stages in the crop-processing cycle must have taken place away from the site (i.e. the main settlement area), or in parts of the site that were not excavated (an improbable suggestion given the deliberately extensive nature of the 20% excavated sample). On the whole it seems probable that primary processing activities took place outside the East and West Fields, and this hypothesis gains some support from the fact that the settlement's focus shifted northwards in Phase 9.

The overall impression of the agricultural and horticultural aspects of the local economy suggests a settlement, or farmstead, of remarkably low status. Indeed, such a site might well be considered at the lowest possible level in the agricultural economy of the region. Interpretation is not helped by the lack of comparative data from any site in the area. The increase in evidence for cereals and other plant foods in the late Iron Age and Roman periods may reflect greater demand on the part of the site's inhabitants; similarly, the presence of eight quernstones in Phase 8 (one was recorded from Phase 7) suggests that food preparation was taking place on a larger scale than hitherto. Despite these modest signs of expansion, everything indicates a humble domestic site which has left no evidence of primary cereal production. Similarly, the faunal evidence (part VII, above) indicates a broadly complementary picture, with a modest scale of livestock husbandry, primarily based on the rearing of sheep for meat, which was consumed on site.

Comparisons, as we have seen, are hard to find. Fengate (Cat's Water) was located hard by the Fen, in a lower-lying, altogether wetter environment. That site, too, had a substantial Iron Age presence which presented serious problems of residuality when it came to the analysis of Roman features. The Fengate economy seems to have been more geared towards livestock than cereal production, or indeed consumption (querns were very rare). The site at Abingdon, Ashville might be thought to be comparable, but the work of M.Jones (1978, 93-110) indicates that the two sites have little in common either as regards crop production or other, crop-related, activities. In this respect it is important to note that the cereal evidence from Maxey is in complete contrast to the range of evidence normally recovered from sites in central southern England, from Iron Age to Roman times (F.J.Green 1981).

Note

The two papers cited by G.Jones (1983) and Hillman (1983) have since been published by W. Casperie and W. van Zeist (eds.) (1984), *Plants and Ancient man: studies in palaeoethnobotany* (Rotterdam and Boston).

IX. Discussion

by Francis Pryor

Introduction

This brief discussion is intended to draw the many reports of this Chapter together into a more coherent whole, but it is not proposed to provide successive synopses of the various papers; instead we will attempt to emphasise aspects of the studies which relate directly to the excavation. Wider implications of the project and many of its component studies will be considered in Chapter 5.

Descriptions are necessarily brief and will generally not include dimensions which are given in part II. Similarly, reference will be made to principal illustrations only. The arrangement of the discussion is chronological, by Phase, and it will be apparent that it relies heavily on the contributions of the various authors concerned; unfortunately, however, shortage of space precludes more than brief acknowledgement in the running text.

Phase 1 (Neolithic)

This phase sees the construction and use of the cursus (structure 27). Its approximate course is shown in Figure 2, but it should be noted that no terminal has yet been found: at either end it passes beneath alluvium where it is obscured from the aerial camera. It does not appear, however, to continue beyond the alluvial spreads to the north-west or south-east.

Surface survey did not show any concentration of flint over the cursus ditches, either at Maxey (Fig.28) or elsewhere in the valley as a whole (M.Taylor, Chapter 1). Phosphate samples were taken in the topsoil at 1m intervals in a transverse section across the monument in the West Field, but these showed no increase in enhancement (Gurney, part IV; Craddock *et al.* forthcoming). Its use as a drove for livestock seems, therefore, improbable. Evidence for a bank was sought, but not found, either in off-centre ditch deposits or as a remnant beneath the henge ring-ditch central mound (structure 14). Both ditches are very shallow, if wide, and would have required some kind of vertical component, perhaps a low bank or hedge, to have made any mark on the landscape. The general slightness of the features also suggests that they were dug across open countryside, as they would scarcely be noticed in forest, woodland or scrub.

The filling of the two ditches (French, part V) seems to have been naturally derived by weathering; this is also borne out by the open profile of both ditches as seen in the present and in Simpson's earlier excavations. Both ditches were marked by a widespread occurrence of comminuted charcoal in upper primary deposits; the burning took place outside the ditch and a natural explanation is, of course, possible, but the clearance by fire of trees or scrub must always be borne in mind.

The absence of flints in the topsoil was reflected in the features themselves which were almost entirely clear of artefacts or bone, despite the excavation of considerable lengths of both ditches. This must indicate that the area was not the scene of extensive or prolongued settlement.

The dating of the cursus as a single monument will be discussed in Chapter 5, but the recent excavations have demonstrated that the southern ditch was completely filled-in when it was cut by the inner ring-ditch and the outer 'henge' ditch of the henge complex (i.e. structures 14 and 15 of Phase 2). These ditches are most probably of Late Neolithic date and provide a *terminus ante quem* for the cursus at Maxey, if not elsewhere.

One final point of chronology must be mentioned before we move to Phase 2, and that concerns the spatial relationships of the cursus and the monuments of the henge complex. It is particularly noticeable that the later features do not appear to respect the cursus in any way whatsoever: the oval barrow is located at an angle to the cursus axis and is significantly off-centre, as is the centre-point of both inner and outer henge ditch. One can only assume that the cursus had vanished from view when the later features were constructed and that the positioning of one atop the other is entirely coincidental. This implies that the cursus had been abondoned for several decades, at the very least, for its physical presence to be obliterated by natural means. Its other 'social', or 'folk memory' presence might well have taken even longer to subside; these, however, are matters that must be reserved for Chapter 5. Suffice it to note here that the considerable lapse of time between Phase 1 and 2 justifies the use of the term 'later Neolithic' to describe the latter period.

Phase 2 (Later Neolithic) (Figs.164,165)
This phase, like Phase 1, sees no archaeological evidence for actual settlement or occupation on site. The features concerned are either ceremonial, symbolic or funerary in nature. Three groups of features may be identified (structures 14, 15 and 16), but all are probably contemporary and share many points in common. These structures are together known as the 'henge complex' and comprise a central ring-ditch, with internal bank and mound (structure 14), an outer concentric, henge ditch in two lengths (structure 15) separated by an east-facing entranceway or gap in which sits an oval barrow (structure 16). The oval barrow is placed over a timber slot (for a wooden structure or enclosure) and has a single loosely crouched inhumation near its centre (see A.Stirland, part VI, F.555). The oval barrow is located at the centre of the henge ditch gap and is aligned precisely on the centre point of the henge complex. The outer (henge) ditch was accompanied by a concentric external bank, for which evidence is provided in the ditch filling and, possibly by the detailed surface contour survey (see the Introduction, above). The central ring-ditch and the larger diameter henge ditch appear to have been laid out using the same centre point.

The layout of features comprising the henge complex clearly respects a West to East axis which appears to start at the distinct kink at the extreme west part of the outer ditch (Fig.40). Thereafter it bisects the space between the two pit circles, passes through the centre of the inner ring ditch, and continues eastwards through the centre of the oval barrow. The North to South axis, on the other hand, does not appear to be marked in any special way, either by kinks in the outer henge ditch or by significant internal features.

The surface survey produced a thin, apparently random, scatter of flints that bore no relation to the underlying features. No pre-Iron Age pottery was recovered either, but this may be due to post-depositional factors (shell-grits dissolve out in the soil). The paucity of surface material was reflected in the excavated features which produced virtually no artefacts or ecofacts (bone survival was, however, possible, as witnessed by the burial within the oval barrow).

The oval barrow (Fig.44, structure 16) consists of a continuous oval gully or timber-slot broached to the west by a very narrow entranceway. This slot contained a timber wall (or revetment) of square-dressed oak uprights set side-by-side, around the gully. Although the ditch does not contain burnt filling or fire-cracked gravel sides, there is evidence to suggest (Gurney, part IV; Taylor in Pryor, part II) that some at least of these timbers were burnt *in situ*. It is still not entirely clear whether the timbers formed part of a barrow mound revetment, as is often found around long barrows, or whether they were part of a free-standing, possibly roofed, structure. On the whole the evidence supports the latter hypothesis, although the evidence for a roof is poor: there are no internal roof support post-holes, nor are there door posts; the ground-plan of the slot, too, is somewhat, irregular, with rounded, poorly defined corners. The structure, then, would seem to have consisted of a massive oak wall, of unknown height, broached at one point by a narrow gap which gave onto the interior of the henge monument. The barrow make-up clearly ran across the post 'ghosts' of the timber-slot; it is perhaps just possible that this represents slump after the firing of a revetment, but Dr French (pers. comm.) considers that this is most improbable in the light of his detailed soil micromorphological study which shows no break or disturbance at this point; in addition, the barrow soil shows no signs of burning whatsoever, and considerable reddening of the matrix would be expected had a revetment been fired. It would seem that two separate events are indicated: the burning of the timber wall and the construction of the barrow. The resolution of the timber wall-revetment problem is not advanced by drawing parallels with other sites: whichever explanation is accepted, there are good parallels for burnt Neolithic timber revetments in Yorkshire (Manby 1976); similarly, the convincingly demonstrated roofed forecourt timber mortuary structure at Nutbane, Hants. was deliberately burnt prior to the construction of the mound (F.de M.Morgan 1959, 34). Fortunately we have access to other, independent, sources of information which throw unexpected light on the dilemma.

The medieval plough headland which largely covered the oval barrow and most of the north part of the henge complex (Fig.20) protected the monuments beneath it. These preserved soils were studied in depth by Dr French, using various techniques, including particle-size analysis, heavy mineral analysis and micromorphology (part V; French 1983a). This many-facetted approach has provided invaluable information that has not only helped to resolve problems, but has provided new insights into the construction and use of the monuments concerned.

Dr French has shown (part V) that the soil beneath the oval barrow had been cleared of trees, probably well before the monument's construction, since when it had seen light, or limited, agricultural disturbance. Shortly before the construction of the barrow, and most probably contemporary with the building of the timber structure, the soil profile was severely truncated, thereby removing the ploughsoil (A horizon) and the upper part of the B horizon, and leaving only the lower B horizon (or Bt horizon). This truncated soil shows evidence for disturbance, no doubt closely associated with the construction of the timber structure. It is hard to understand why some 400-500mm of topsoil should be removed, as this represents a very considerable quantity of earth; clearly functional explanations are inappropriate in these contexts, but it is not impossible that turf from this area was used in the construction of the central ring- ditch primary mound. Heavy mineral analysis of the Bt horizon reveals the presence of the mineral collophane; 'it is the dominant mineral of fossil bone, in which it has been formed by phosphatic enrichment' (Dr French's heavy mineral analysis of the Maxey soil is in chapter 4, part V). Dr French urges caution in the interpretation of this phenomenon, but the presence of bone on the truncated soil within the pre-barrow mortuary structure is a possibility.

The timber structure, as we have seen, was probably burnt down within a relatively short time of its erection and the truncation of the old land surface. Additional evidence for burning is provided by quantities of finely comminuted flecks of charcoal in the truncated soil. Charcoal was far less frequently encountered in the make-up of the barrow above it. It would not appear that the firing of the timber structure involved fierce heat, or a massive conflagration, as magnetic enhancement is relatively slight (Gurney, part IV) and charcoal (as opposed to decayed wood) does not penetrate more than a centimetre or two below the surface of the truncated soil. Indeed, the rarity of reddened soil or fire-cracked gravel pebbles contrasts with the picture at Nutbane (F.de M.Morgan 1959).

The timber structure's destruction was followed by the construction of the mound which was composed of dumped topsoil, in contrast to the laid turves that made up the primary mound within the henge complex central ring-ditch. This earth barrow appeared to seal the near-central burial of a male, aged 36-53 years (Stirland, part VI; Fig.44, F.555), which was unaccompanied by grave-goods. The burial did not extend into the overlying barrow which appeared to truncate it. At the time of excavation it was thought that this burial had been disturbed while the barrow was being erected, but this explanation is not altogether satisfactory. It is also hard to imagine that this very shallow single grave is contemporary with the construction of the timber structure, if for no other reason than its absolute level, which is at, or above the truncated horizon surface. We must suppose, therefore, that the grave is contemporary with the barrow and that the bones nearer the surface have been partially dissolved by downward percolating humic acids from topsoil in the barrow and the substantial medieval plough headland above it.

The proposed sequence may be summarised thus:

- *0.* Open country with slight agricultural activity.
- *1A.* Truncation of topsoil.
- *1B.* Construction of timber structure/enclosure. Possible use of the turf to form central henge primary mound.
- *1C.* Interior of structure possibly used to house bones or bodies.
- *2.* Structure burnt.
- *3A.* Single burial placed near centre.
- *3B.* Erection of dumped topsoil mound.

The oval barrow belongs to a class of monuments that have received much attention of late: a recent overview (Loveday and Petchey 1982) suggests that many 'oblong ditches' are probably Neolithic, but that some are Iron Age (a stratigraphic impossibility in the present case); the Maxey oval barrow would belong to Loveday and Petchey's (1982, fig.31) 'Ovate' class, and they cite visible or excavated parallels at Freshwater, Isle of Wight; Wilsford, Wilts.; Skendelby, Lincs. and Dorchester, Oxon. (Loveday and Petchey 1982, fig.32, with refs.). One might cite even closer, Neolithic parallels at Alfriston, Sussex (Drewett 1975) and Barrow Hills, Radley (Bradley 1984). The latter site provides a particularly close parallel in its second and third phases; the later of which is marked by two very narrow entranceways which compare closely with Maxey. This small oval- ditched site has a central burial of two adult males and dating evidence includes a belt slider (in shale or jet), a polished knife-like flint blade, a leaf arrowhead and (in secondary contexts) sherds of Abingdon Ware. There is also evidence that the final version of this four-phased monument was capped by a mound. A Middle Neolithic date is clearly indicated (R.Bradley, pers. comm.). Local parallels are particularly hard to find, but the recently excavated mound 2 at Orton Meadows, Orton Longueville, Peterborough is instructive (O'Neill 1980/1). The first funerary phase of this multi-period barrow consisted of an elongated U-shaped ditched enclosure, with a restricted gap or entranceway at the base of the "U". The enclosure was *c.*12m long by 9m wide. Features within the enclosure were of special interest:

> Down the centre ran a weathered linear feature incorporating stonework used perhaps with turves to form a kind of boundary or lining structure. At the south-west end were a small group of stones, one of which may have acted as a marker, behind which were two Neolithic round bottomed bowls, similar to two bowls found at Broome Heath, Norfolk. Another stone to the south-west again may have been another marker, while a post-hole to one side may have been a third. Within the linear feature was the flexed skeleton of an infant, . . . and elsewhere in the feature occurred other human bones, some of which may have been incorporated into the initial construction of the feature . . . The last phase of this period was the deliberate levelling of the site and the back-filling of the ditches to form a flattened mound or platform apparently bounded by the outer edges of the original ditches. (O'Neill 1980/81, 5).

This report has been quoted extensively, as it is not readily available. Apart from the slight morphological similarity of the ditched enclosure, the mention of loose human bones is of interest, and might support the interpretation of the Maxey mineral enrichment mentioned above. The deliberate levelling of the site, and the backfilling of the ditches is an activity, as we shall see below, that is frequently represented at Maxey. The pottery, too, is of interest, as the only securely dated local examples of the type (those from the Padholme Road house, Fengate (Pryor 1974, 38: Gak 4197) are of mid-3rd millennium bc date). Unfortunately, however, plain Neolithic bowls of this sort are notoriously long-lived, and are of little use as a means of dating.

As parallels for this class of monument are rare, it might be appropriate to consider its place in the general development of funerary rites and monuments, towards the latter part of the Neolithic (the following brief discussion draws heavily on the advice of Ian Kinnes). Kinnes would suggest a guess-date for the Maxey oval barrow of about 2200 to 2500 bc, which, as we have seen is in general accord with Orton meadows (a site that might perhaps be two or three centuries earlier in its initial phase). The oval barrow generally falls within the long barrow tradition of funerary monuments, but is plainly much smaller and rounder in plan. With the exception of Hazleton, Gloucs. (Saville 1983), Kinnes knows of no long barrow with enclosure entrances that face broadly westwards; consequently, the reversal of the alignment of the Maxey monument, towards the interior of the henge, argues strongly that the two monuments are contemporary. The restricted entranceway at Maxey is a feature very much in keeping with the long barrow tradition of timber-built funerary enclosures and structures. The oval plan of the Maxey monument is, as we have seen, atypical and the central single grave might be seen to anticipate Beaker and Early Bronze Age practice. Put succinctly the site seems to display features that are characteristic of both the Neolithic non-megalithic, long barrow tradition, and the single grave tradition of the full Bronze Age.

The second element of the Phase 2 henge complex is the outer ditch of the so-called 'henge' monument (structure 15; see also RCHM 1960, fig.6, no.59). A considerable length of ditch was excavated during the recent campaign (Figs.42,47), but very few artefacts or ecofacts were recovered. Evidence for an accompanying external bank was provided by the presence of a pronounced off-centre gravel layer in most of the excavated sections (Fig.48); there were also hints, as we have seen, of a low bank in the topsoil contour survey. Dr French's analysis (part V) of the ditch soils suggests that the ditch was dug and the external bank erected, but that shortly after this, before the ditch had had time to accumulate any appreciable naturally-derived 'rapid' deposits, it was partially back-filled with materials derived from the external bank. The period between the two events was probably less than two years.

After the slighting of the bank, the ditch slowly accumulated material through natural processes. These later, secondary and tertiary, levels produced the only dating evidence yet found: weathered sherds of Collared Urn (Fig.74), almost certainly from the same vessel, which no doubt housed a secondary cremation near the inside lip of the ditch. These sherds probably provide a *terminus ante quem* for the monument.

The slightness of the ditch, its large diameter and its somewhat irregular, quasi-polyhedral plan (Fig.40) are not typical of the British lowland zone henge series, as presently understood, and a description as a 'hengiform monument' (Wainwright 1969, 129) is probably more appropriate than the term 'henge' used in this report (for brevity). If the plan and size of the ditch and bank are atypical, then the presence, to the west (in Gavin Simpson's excavations), of pit circles including cremations is a common feature of lowland henge sites: examples include Dorchester, Oxon. (Atkinson *et al.* 1951), Llandegai (Houlder 1968) and Milfield, Northumberland (Harding 1981). The pit circles found by Simpson seem to have been confined to the area he excavated, but this could be a post-depositional effect, for it is known that plough-damage has been severe in the seventeen years that intervened between his excavation and the present project. Our topsoil phosphate survey (Gurney, part I) showed evidence for at least one localised, relatively pronounced, area of phosphate enhancement in the wide 'berm' between the inner and outer henge ditches, and it is just conceivable that this might have resulted from the ploughing-out of cremations (Fig.23).

The henge ditch failed to produce any dateable material from primary contexts, and the monument as a whole is dated by the Mildenhall Ware found by Simpson in the pit circles (see Chapter 3). This date would accord well with that suggested for the oval barrow.

The centre of the henge monument was occupied by a ring-ditch which enclosed a central mound; collectively the features of this area are known as structure 14 (Fig.49), and they comprise the third principal element of the henge complex. All features of this central group proved to be remarkably free of artefacts and ecofacts. Close examination of the central mound showed it to be of two phases: a primary central mound, constructed of laid turves, and an enlarged secondary mound, made from dumped topsoil.

The primary mound might have included turf brought from the soil beneath the oval barrow, but it is also interesting to note that the soil beneath the primary mound had also been truncated, but less severely (by perhaps 200mm, or so). It seems probable that the primary mound was thrown-up at the time that the central ring-ditch was excavated.

The initial excavation of the central ring-ditch also involved the construction of an internal bank. This bank had a topsoil core, and was capped by gravel. Again, we cannot be absolutely certain, but there was probably a berm of several metres between the primary mound and the inner ring-ditch bank. Available evidence does, however, suggest that the soil of the berm area had not been truncated, and the turf was still intact. The probable presence of the berm is important as it shows that the ring-ditch bank was an integral, free-standing feature: it was not a revetment to a barrow, a phenomenom that is frequently encountered on Bronze Age sites in the region: for example barrows at Chippenham (Leaf 1936; 1940). Snailwell (Lethbridge 1950), Barton Mills and Worlington (Cawdor and Fox 1925; Briscoe 1957), Orton Meadows I (Pryor, pers. observation), Barnack (Donaldson *et al.* 1977, 210), and Sproxton, Leics. (Clay 1981, (kerbstones)).

Shortly after the initial phase, the inner bank was slighted, and its upper, gravel, layers were thrown back into the ditch, to give a substantial deposit of clean gravel along its inner wall. At the same time, or very shortly after, an enlarged mound of dumped topsoil (as opposed to laid turf) was placed over the central, primary, mound, across the berm and over the slighted bank, probably forming a *glacis*-like slope into the inner ring-ditch. The enlarged mound was composed of locally-derived topsoil which may well have been dumped in place by gang labour. Evidence for this is suggested by the regular undulations of the skewness figures (Fig.158, Sk). The regular peaks on this graph (with samples taken at 0.50m intervals across the monument) are from samples 2.0-2.5m apart. Other explanations are of course possible: the mound could have been constructed using cells with permanent or temporary partitions (e.g. Phillips 1936), but there was no visible evidence for this either in the mound itself, or in the old land surface beneath. The make-up of the enlarged mound is almost entirely free from artefacts, ecofacts, or other occupation debris. There is no evidence to suggest that any of the later activities within the henge complex (the erection of the enlarged mound or the oval barrow) involved the wholesale removal of turf from specific, presumably important, areas. There are, moreover, indications (French part V) that the interval between the primary, constructional phase and the later activities referred to

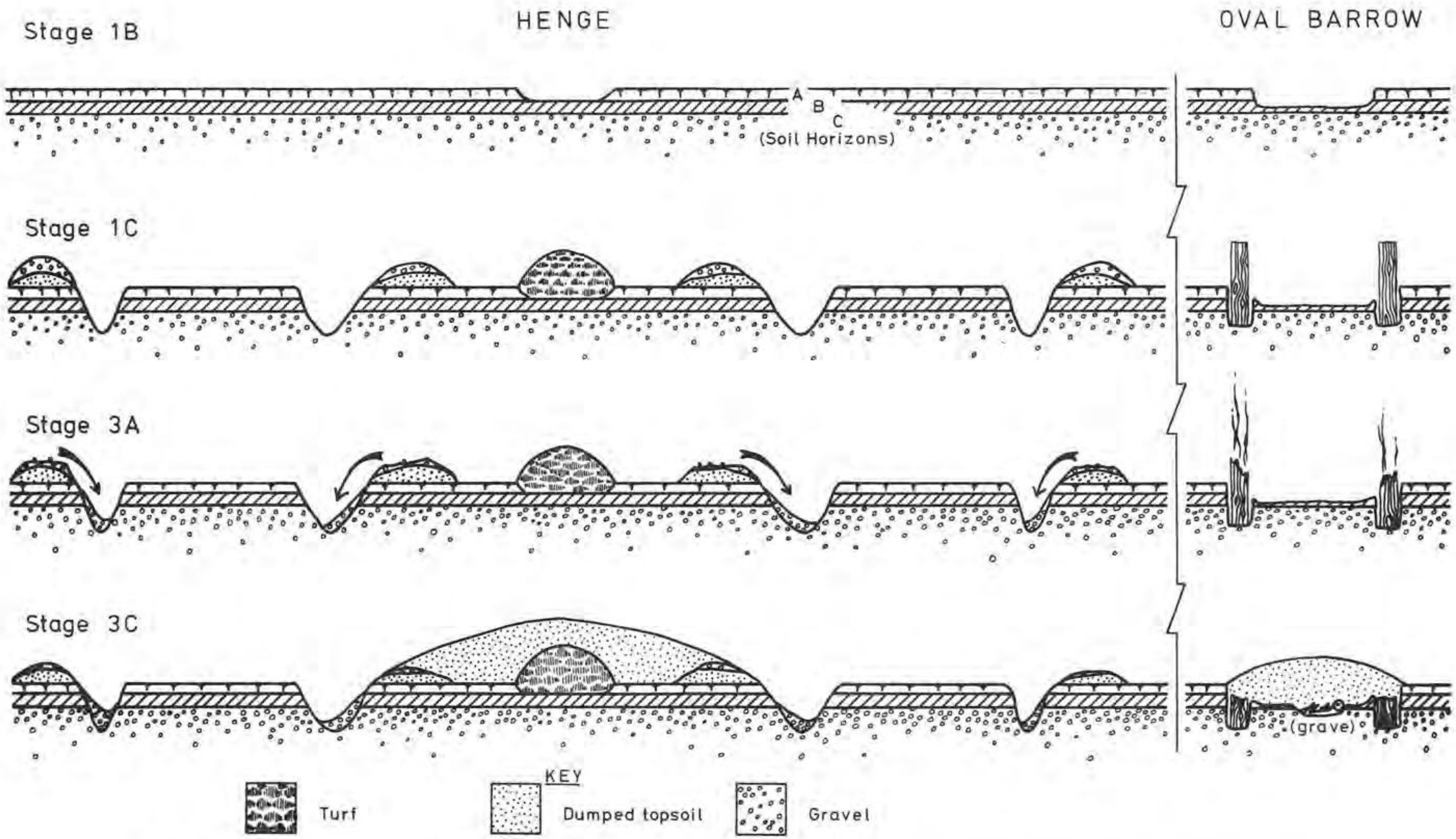


Fig.164 Schematic section through major features of the henge complex, showing suggested evolution of the monument. Not to scale.

above, was slight (perhaps less than a decade or two). Finally, there is no evidence from either the primary or the enlarged mound to suggest that they were used as barrows. Funerary activity seems to have been deliberately excluded from this central area, being confined to the berm (Simpson's pit circles, Chapter 3) and, of course, the oval barrow. It should be emphasised that the overlying medieval plough headland meant that survival was particularly good in this area, and it is extremely improbable that any central primary, or Neolithic satellite burials were missed; almost the entire central area has now been stripped and excavated (Fig.40).

The various components of the henge complex seem to share several features in common: first, the events described above are all short-lived and there is evidence to suggest that they took place within a relatively brief time-span. Second, they often involve the truncation of soil, but paradoxically in areas where mounds are to be sited. Third, careful construction is seemingly always matched by (careful?) destruction, a duality of opposed intentions that must, surely, have been of symbolic significance. Fourth, the activities did not involve the dumping, burial or loss of domestic debris; indeed quite the contrary is indicated.

Although direct stratigraphic links are lacking, it is possible, because of the similarities just outlined, to propose an overall sequence of events for the features of the henge complex (Fig.164):

- *O.* Prior to Phase 2: clearence of trees and light agricultural disturbance. Construction, use and abandonment of cursus. Cursus ditches weather to flat profile.
- *1A.* Centre-point of monument complex agreed and fixed.
- *1B.* Turf and topsoil stripped in area of oval barrow and henge central, primary mound.
- *1C.* Timber structure built at site of oval barrow. Outer henge ditch and external bank constructed. Henge inner ring-ditch and internal bank, also primary mound constructed.
- *2.* Possible use of oval timber structure to house bodies/bones. Excavation and use of pit circles IIIa and IIIb (Fig.170; Chapter 3).
- *3A.* Timber structure burnt. Banks beside both henge ditches slighted.
- *3B.* Central burial beneath oval barrow.
- *3C.* Enlarged central mound constructed, perhaps using gang labour. Oval barrow constructed.
- *4.* Abandonment.

Phase 3 (Middle and Late Bronze Age) (Fig.165)
This phase is represented by flint scatters; there are no earth-fast features. The first flint scatter is very diffuse, random and covers both East and West Fields (Fig.28). The material was recovered during the initial topsoil survey (see Crowther, part I) and its distribution bears no relationship whatsoever to the arrangement of pre-Iron Age subsoil features. The means whereby this material came to be deposited are hard to imagine, but direct deposition, in the sense of on-the-spot flint knapping may be ruled out, simply because of the small quantities of flints involved. Some items may have been lost through casual discard, but the majority probably found their way into the soil during manuring. This is a topic that will be further discussed in Chapter 5.

The second spread of flints is more concentrated. It was located in slipped secondary deposits on the sides of the central-ring ditch mound (structure 14; Fig.54) and most probably represents casual use of the mound, perhaps during winter floods when it would have provided a dry island refuge. The flints are most probably of post-Neolithic age, in the main, although one or two Neolithic objects (a polished flint axe, for instance) have been crudely re-worked. Knapping, on any appreciable scale seems improbable, given the absence of small waste flakes and the small size of the assemblage.

The dating of this material is necessarily crude, but the preponderance of piercing and boring implements, and the near absence of blades or flakes that have been detached with any degree of control (hinge fracture is very frequently encountered), suggest a late date. The closest parallels are with flints from 2nd millennium bc ditches at Fengate, especially those of the Newark Road subsite (Pryor 1980a). A date range centering on the Middle Bronze Age is indicated (Pryor, Part III).

Phase 4 (Early Iron Age) (Fig.165)
The evidence for this phase is precisely the reverse of Phase 3: we have features, but no finds. The two structures of this phase (Fig.44), are both thought to be square-ditched barrows. Structures 17 and 18 are located in the north part of the henge entranceway; structure 17 is smaller, with rounder corners and is less severely rectilinear than structure 18, to the west. Structure 17 is distinguished by four small pits or post-holes, located at each corner. Neither feature yielded burials, but this is almost certainly a result of the drastic machining techniques that had to be employed at this point, for various, mainly financial, reasons (discussed in part II). Structure 18 showed some evidence for a gravel mound preserved beneath the plough headland. None of the ditches or pits produced any artefacts or ecofacts, and a settlement function may therefore be discounted.

A date within the Early or early Middle Iron Age is demanded by the stratigraphy, since both square ditches are cut by a major east to west boundary ditch of Phase 5.2 (later Middle Iron Age). The two square ditches form part of a larger group, or cemetery, comprising at least nine square-ditched features (the other seven are shown in Fig.168). Simpson (Chapter 3) notes their similarity to the celebrated La Tène barrows of East Yorkshire (Stead 1979; Whimster 1981, 75-128). Another closely comparable group of six square-ditched features is known in the Welland valley, at Greatford, Lincs. (Whimster 1981, 123, 342 and fig.47).

Phase 5 (Middle and Late Iron Age) (Fig.166)
Phase 5 can be divided into two distinct sub-phases, 5.1 and 5.2. Features of both phases are almost entirely confined within the West Field (except for two small pits). It must be pointed out, however, that the dating of the phase is problematical, as it relies almost entirely on coarse, shell-gritted pottery, usually of amorphous shape. Much of the material is badly damaged by the heavy machinery used to strip the site and frequently derives from substantial ditches. Ditch deposits are notoriously prone to contamination by residual sherds;

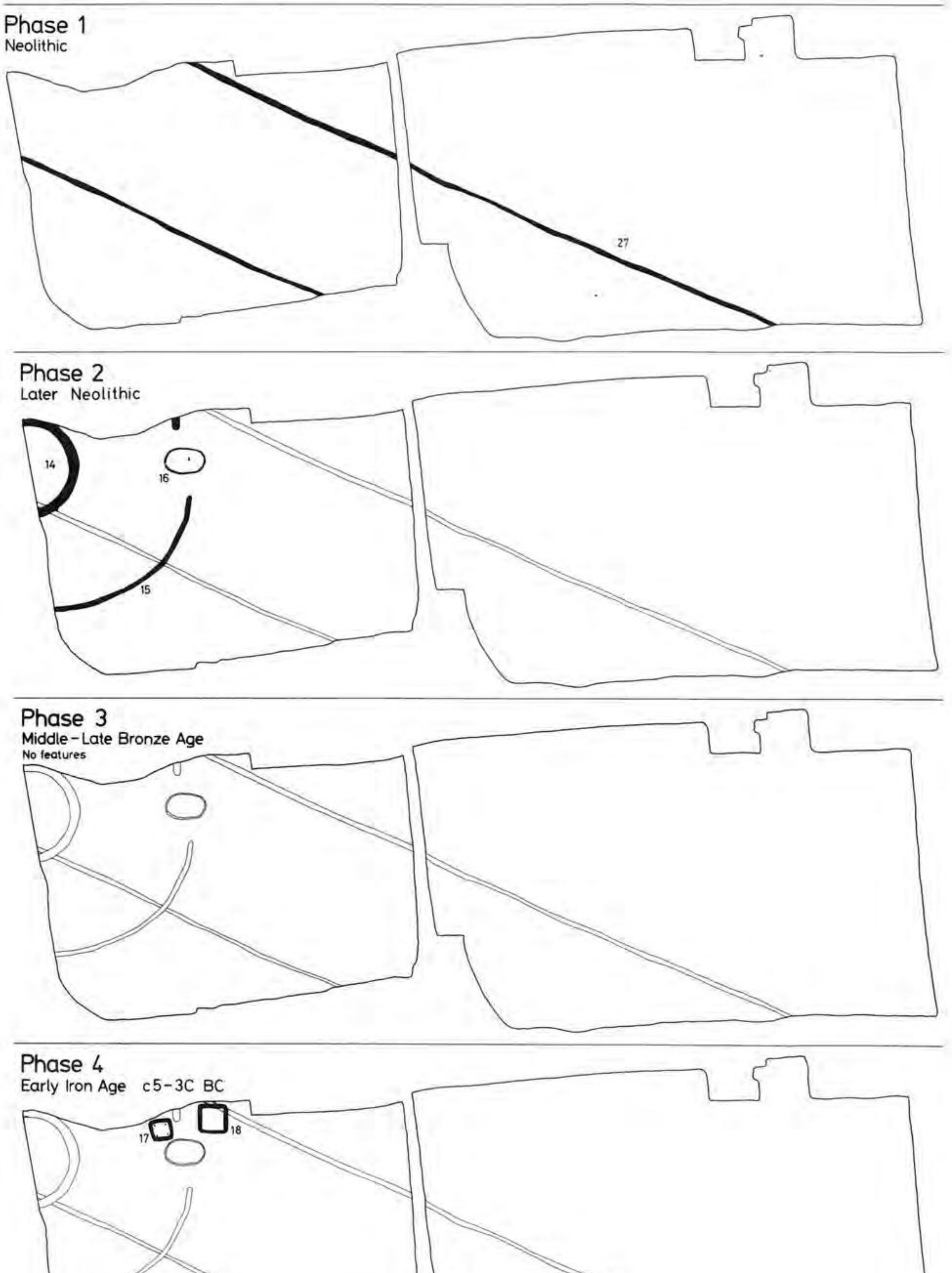


Fig.165 Maxey East and West Fields: plan of Phases 1-4. Scale 1:1800.

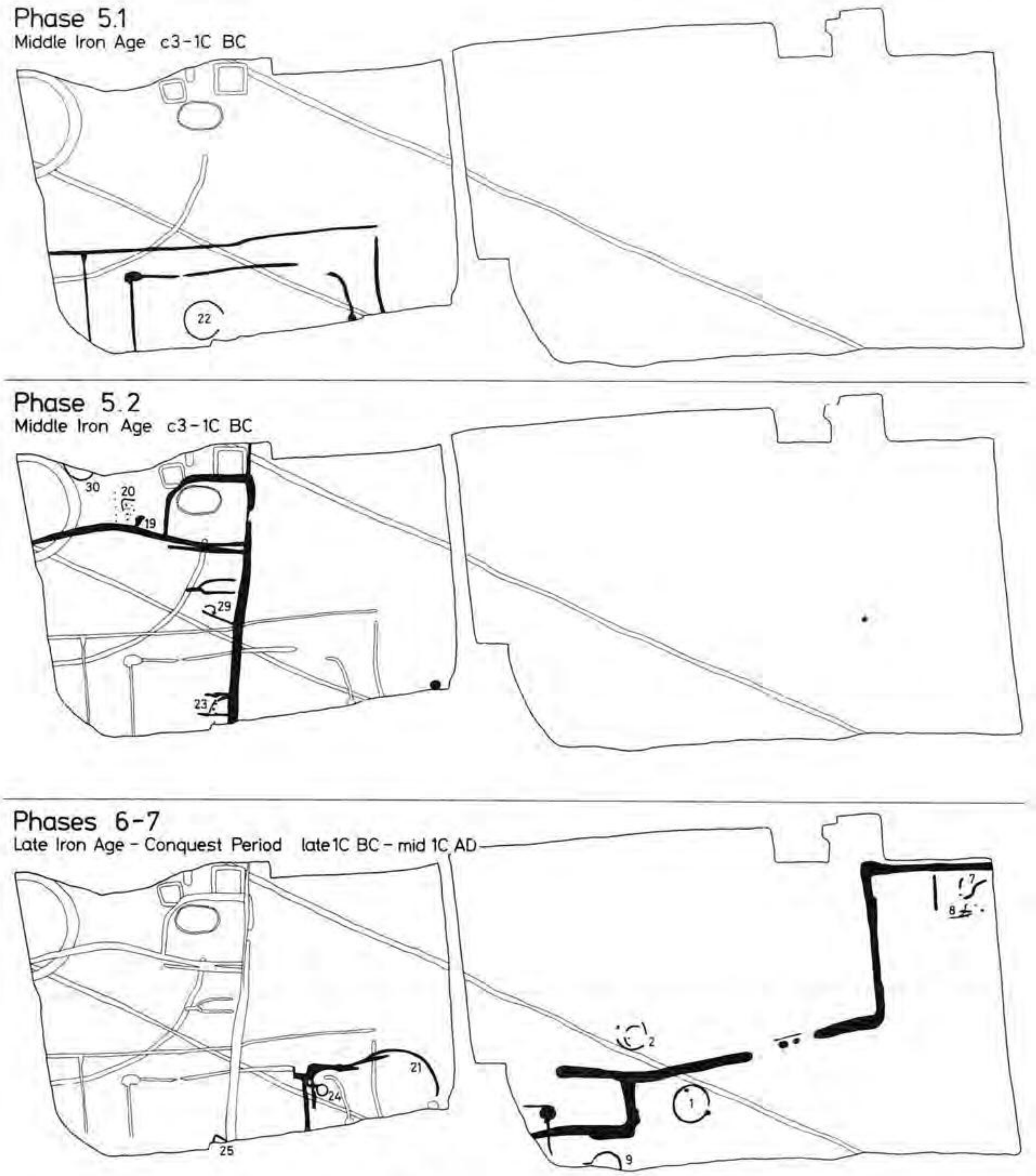


Fig.166 Maxey East and West Fields: plan of Phases 5.1-6 and 7. Scale 1:1800.

the problem is exacerbated, moreover, by the frequent maintenance re- cuts that must have been necessary on so wet a site where the ditches were cut through loose, poorly compacted gravel (archaeological problems associated with ditch maintenance are fully considered elsewhere: Pryor 1983a, chapter 6). It is particular interesting to note, however, that surface pottery gave no indication that the land available for study was the site of at least one substantial Iron Age settlement (Crowther, part I). This is most probably due to the fact that shell-grits readily dissolve-out in the slightly acid environment of the topsoil; thus damaged, pottery quickly disintegrates.

Phase 5.1 (Fig. 56)

It is difficult to determine with any certainty the lapse of time between Phases 4 and 5.1, but a gap of perhaps one to three centuries is indicated. This apparent hiatus is most probably of significance to the immediate study area alone, as there are numerous local examples of earlier Iron Age features and settlements (e.g. Simpson

1981; see Chapter 1 for further refs.). Certainly the arrangement of the Phase 5.1 enclosure(s) does not suggest that the site was recolonised by extensive secondary woodland, although a degree of invasive scrub-cover is always possible; it was observed at Fengate, for example, following the abandonment of the 2nd millennium ditched fields or enclosures (French in Pryor 1980a, 210). Unfortunately none of the linear features of this phase were suitable for environmental analysis.

The principal features of this phase are shallow, generally straight, linear ditches which demarcate the north part of a recilinear enclosure. One of the ditches of the enclosure passes out of the excavation, to the west, where it probably joins Simpson's 'southern side-ditch'. This ditch is cut by ditches that form a continuation of our Phase 5.2 system, thus providing independent confirmation for the phasing suggested here.

The generally slight linear ditches of Phase 5.1 form, as we have seen, the double side of an incomplete enclosure occupying most of the south half of the West Field. It is still not entirely clear, however, whether these parallel ditches form a continuous droveway around a smaller enclosure, or whether they merely indicate enlargement or contraction. Two observations support the droveway hypothesis: first, the inner ditch has not been filled-in (which might discount the expansion hypothesis); second, the western entranceway in the inner east to west ditch does not have a counterpart in the outer ditch. When field systems are enlarged, points of access tend to be continued in more or less the same position; in the present case the entranceway is positioned to provide access to the drove from the enclosure, but not from the open land beyond; similarly, the well at the north-west corner of the inner enclosure can be reached from both drove and enclosure (but not beyond). The two corner entranceways to the north-east suggest that the enclosures were used for livestock (Pryor 1978, 157). The centre-west of the excavated enclosures was occupied by a round building which is probably contemporary; the area was rich in potsherds and other domestic rubbish (a fact confirmed by the topsoil phosphate and magnetic susceptibility surveys (Gurney, part I)), and seems to have been the site of the farmhouse; perhaps the animal byres, sheds etc. were located further south, outside the excavated area.

The dating of Phase 5.1 largely depends on pottery, as stratigraphy is not especially informative. We have, however, noted that Simpson was able to demonstrate that the Iron Age ditches to the west were of at least two phases. In the present case, the Phase 5.1 enclosure(s) is cut by the main north to south boundary ditch of Phase 5.2 and by a large diameter semicircular ditch of probable Phase 6 date (Fig.56), Features 506 and 546, respectively. Pottery of Phase 5.1 is generally harder and better fired than the Fengate Padholme Road pit groups (Pryor 1974a, figs.20-22), which include forms which might be dated early in the Middle Iron Age. Some of the forms, too, are later, and a date in the second, or just possibly the third century BC is indicated (Pryor, part III). At least one feature (Fig.56, the well F.559) probably continued in use until the Late Iron Age.

Phase 5.2 (Fig.166)

The positioning of structures and the linear features of this sub-phase suggests either a gap of some decades between the two main elements of Phase 5, or a change in local settlement pattern and land management arrangements. On the whole the former seems more probable: features of Phase 5.1 that are cut by those of 5.2 have filled-in naturally and there is little re-use or pre-existing sites. The pottery, too, is distinctively later in appearance, with globular forms predominating (Pryor, part III). The available evidence suggests that this phase was relatively long-lived: some of the northerly features, for example, produced soft, deeply scored pottery that is of undoubted Middle Iron Age character; elsewhere, to south and west (in Simpson's excavations), and around structure 23, pottery included much harder fabrics and associated tub-shaped and globular forms. An overlap (of some duration) with the Late Iron Age is indicated.

The linear ditches of Phase 5.2 define five separate areas: there are large fields or open land to the east, the south-west and north-west, and a small sub-square enclosure in the area of the henge entranceway. This small enclosure clearly respects the oval barrow and the two Early Iron Age square-ditched structures; it is broached by an eastwards-facing entranceway, which is in turn blocked by an extension of the main north to south ditch, somewhat later in Phase 5.2, or possibly in the Late Iron Age proper. There are no signs of human habitation inside this small enclosure, but the ditch does contain considerable quantities of debris, much of which probably derived from settlement and possible industrial areas immediately to the west. These areas are occupied by structures 19, 20 and 30. Structures 19 and 20 probably form part of the same complex of features grouped a large, shallow pit, which contained the collapsed near-complete side of a clay domed oven, which was successfully block-lifted by members of the Ancient Monuments Laboratory Conservation Department. It is currently in Peterborough Museum undergoing consolidation and cleaning, prior to final conservation and display. The main east to west ditch immediately south of these structures was particularly clearly displayed in the initial topsoil magnetometer survey which successfully located the collapsed oven. The high readings indicated that the ditch had been partially filled-in with material derived from the kiln, an observation that was corroborated in the subsequent excavation; in other words, both ditch and the structures immediately north of it were open and in use at precisely the same time. Large quantities of shell-gritted pottery and oven fabric were found, but no trace of these was observed in the topsoil survey. Structure 30 is the eaves-drip gully of a round building, partially sealed beneath late slipped henge central mound deposits. To the south, the somewhat amorphous slots and gullies of structures 23 directly overly the old structure, 22, but do not seem to be related to it. They are more probably associated in some way with the Phase 6 rectilinear structure (25), nearby.

Phase 6 (Late Iron Age) (Fig.56)

The relationship of features belonging to Phases 6 and 7 is hard to establish, as the land between them (the 'peninsula' that extends north between the East and West Fields) was not available for study. The division is, to an extent arbitrary but Late Iron Age features on the West Field are considered to belong to Phase 6; this phase, however, does not develop into a fully-fledged Romano-British settlement, so the distinction may not be

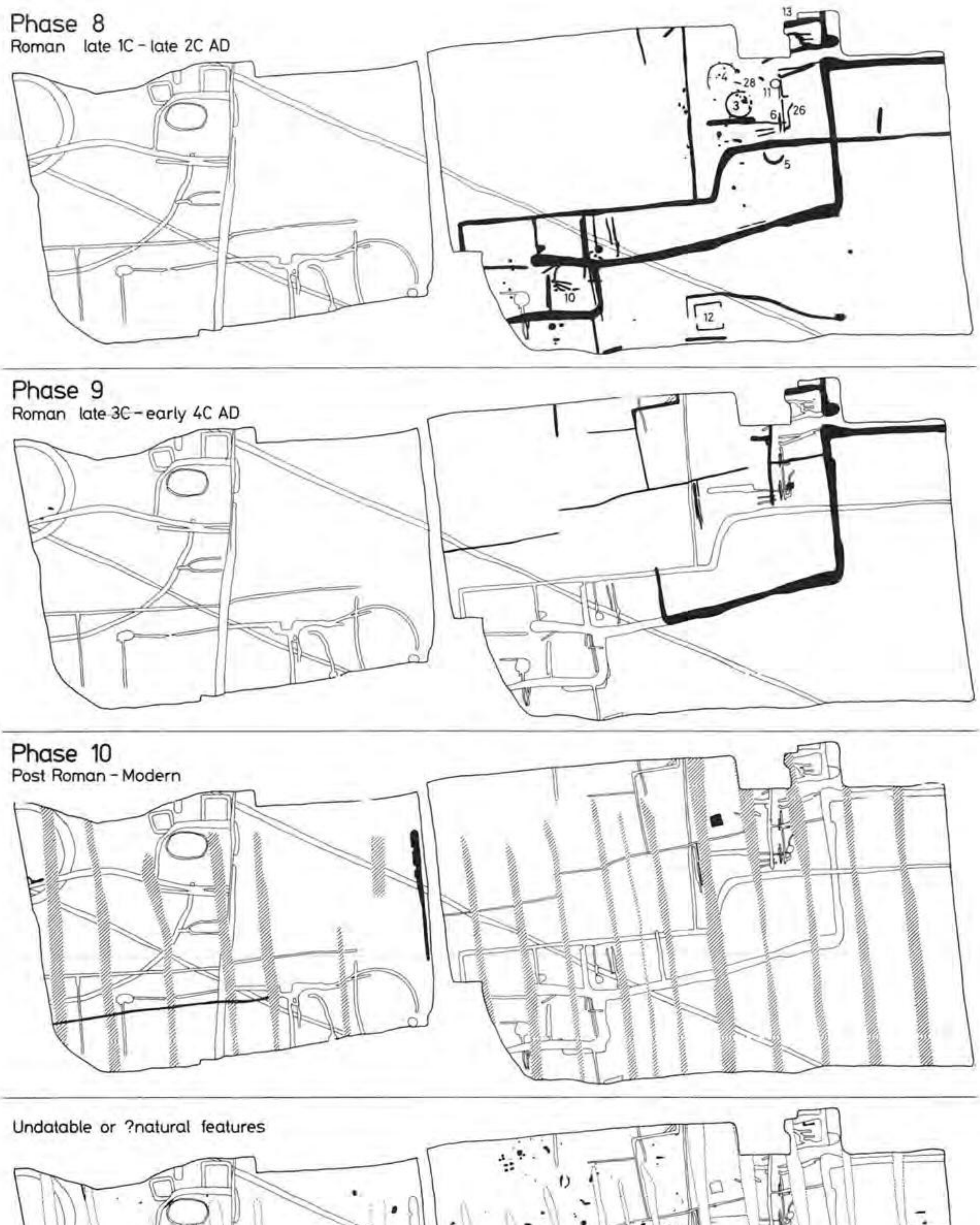


Fig.167 Maxey East and West Fields: plan of Phases 8-10 and other features (bottom). Scale 1:1800.

altogether without foundation. The features in question are all confined to the south part of the West Field, mainly in the south-east corner, in an area that was seriously damaged by the plough and subsequent earth-moving operations. Preservation is, therefore, minimal. Apart from some ill-defined linear features, the two main identifiable structures consist of a small ring-ditch, structure 24, most probably a stack-stand for hay or unthreshed cereals (Buurman 1974; Pryor 1983a, structures 22-25), and an arc of ring-ditch, structure 21, of large diameter. The function of the latter feature is somewhat obscure, but it is far too large to serve as a single eaves-drip gully, and it may have been used to drain surface water from a house-platform, or low single building 'terp'; this hypothesis finds some support from the fact that it appears to drain into a somewhat larger field boundary ditch, to the west. Closely comparable features were found at Fengate (Pryor 1983a, structure 4, 37-39 etc.) and parallels have been drawn with the Netherlands (Pryor 1983b).

Phase 7-9 (Roman) (Figs.166,167)

The economy

The Romano-British settlements at Maxey may be characterised as native farmsteads. The buildings, as we shall see, tended to shift from one phase to another, while the ditched fields or yards remained substantially unaltered. There is no purely archaeological reason (for example the wholesale cutting of new drains, or the construction of granaries) to suggest that the economy changed substantially between Phases 7 and 9. Moreover, much of the faunal bone came from large linear ditches that were known to be maintained open throughout the period, with a consequent mixing-together of fresh and residual material. We will therefore treat the Roman phases as a whole for this brief discussion of the economy.

The faunal bone had been seriously damaged shortly before and during excavation. Reasons for this are discussed in the faunal bone report, but it was decided to confine the study, at least for the time-being, to an analysis of the mandibular teeth of the larger mammals (Halstead, part VII). Pigs comprised a small proportion of the livestock, no doubt reflecting the rarity of woodland in the area, and were killed for their meat. A few horse teeth were also recovered. The majority of teeth examined were from sheep, followed by cattle. This preponderance of sheep, Halstead notes, firmly places Maxey in the category of 'native', rather than 'Romanised' (after King 1978).

The site is located on the southern fringes of the gravel 'island' where much of the land would have been flooded during wet winters, and therefore not suitable for cereal agriculture. It was expected that large-scale stock raising would be the mainstay of the local economy, but this does not seem to have been the case. The expected shortage of winter grazing, however, may be indicated by the sharp cull of lambs at *c*.6-12 months. Given these conditions one would expect cattle to predominate, but instead sheep mandibles are far more frequently found. The traditional role of sheep in maintaining soil fertility, and the comparative rarity of cattle indicates that the seasonally-available Fen pastures were not directly exploited (although hay may well have been gathered) by livestock from Maxey, which seem to have been confined to the pastures of the gravel island.

The mortality curves for sheep and cattle (Fig.161) suggest that the main emphasis was on the production of meat, and with it hides and manure. This was unexpected, as much emphasis has recently been placed on the Roman Fenland as 'one of the major wool-producing areas of the south-east' (Potter 1981, 130). One is tempted to suggest that the intensive wool production would have been confined to the Imperial Estate (wherever that was); native sites such as Maxey would have continued the old patterns, much as in the Iron Age. Potter (after Wild 1970) notes the general rarity of loomweights on Romano-British sites in Fenland and has taken this to suggest that weaving took place at centres perhaps outside the areas of production. Both Maxey (Crowther, part III) and Fengate (Wild in Pryor 1983a) have produced some quantities of triangular clay loomweights, and it would seem that they were used for purely local or domestic cloth manufacture (as Halstead notes, the raising of sheep and cattle for meat does not preclude their use as sources of wool, milk or traction).

Halstead notes that a striking feature of the sheep mortality curves, is the extreme paucity of adult deaths, Indeed the pattern (Fig.161a) at Maxey would be demographically impossible, given a 'closed system', and 'would rapidly have led to the extinction of the flock' (Halstead, part VII). The explanation offered is that barren, fattened ewes were marketed 'upwards', to a higher level in the settlement heirarchy (probably at markets in Great Casterton or Durobrivae (Water Newton)). There is, however, no evidence for the large-scale export of meat in the more usual form of young animals.

The faunal bone study emphasises the survival of more traditional, less intensive, practices of livestock management, on some native sites in the full Roman period, even in areas of considerable prosperity (Wild 1974). It is a point that deserves emphasis, if misleading generalisations are to be avoided.

We have already noted that sheep were kept both for meat and for manure. Green's study of the botanical evidence (part VIII) does not suggest that this manure was being used on cereal fields in the immediate vicinity. Instead it seems probable that grain was grown on somewhat higher, more reliably flood-free land, either around the modern village of Maxey, or on markedly higher land of the valley sides. It would seem that grain was 'imported' to the site, ready threshed, as there is no clear evidence for on-site threshing floors.

The distances involved in such 'importation', however, may well have been very small, as threshed grain would have been readily available from neighbouring farms on higher land of Maxey 'island'. How this commodity was paid for is another matter altogether, but exchange or barter would seem to be indicated; certainly the coin evidence does not suggest that transactions involving money took place on a regular basis (see report by Richard Reece, part III above).

The surface survey (Fig.30) showed a concentration of material outside structure 3, a principal Phase 8 house. Crowther (Part I) has convincingly argued that this material derived from a midden or rubbish heap which was probably held for spreading on the land. The open country to the south-east of the main ditched yards (Fig.30) is covered by a relatively dense, but evenly spread, scatter of potsherds, which Crowther suggests are the result of manuring. It is not clear what this land was used for (although the topsoil above the possible temple — structure 12 — is largely free from pottery), but agriculture or horticulture of some sort is probably indicated. In this regard, it is most instructive to note that the land immediately north and west of the main system of ditched yards is very thinly covered with Roman pottery, suggesting, perhaps, that this land was not regularly manured with occupation debris. This clearly distinguished difference suggests the continuance of tenure arrangements, property boundaries, and their associated land management practices, over several generations. It certainly does not indicate drastic agrarian change or reform, and as such tends to reinforce the impression that the 'native' rural economy is both non-intensive and based on tradition; an impression moreover that finds support in the faunal bone and botanical studies.

The Phase discussions that follow do not attempt to analyse every structure or major linear feature, for which the reader must consult part II. Initially attempts were made to subdivide features of the three main phases into sub-phases, in the manner of Phase 5, but this proved impossible as there were no clearly discernible changes of ditch alignment or structure location that could be correlated with the stratigraphy. We also doubt the usefulness of such exercises which almost invariably lack chronological 'controls' of any kind.

Phase 7 (mid-1st century AD) (Fig.166)

We have already noted that there may be a considerable degree of chronological overlap between the features of Phases 6 (West Field) and 7 (East Field). The layout of features seems to be different and their alignments are also hard to reconcile with each other. Pottery from features of Phase 7 is almost invariably calcite (shell) gritted, but it lacks the distinctive Iron Age decorative and formal traits that are characteristic of Phases 5 and 6 (Gurney, part II and III). The only exception are two shallow pits which had been dug in the centre of the main entranceway of the principal east to west ditch. These pits were cut into the ditch's primary silts, which had been removed by recutting everywhere else. The pits (which contained 'scored wares' of Phase 5 type), and the primary ditch silts, are probably of later Iron Age date. This is the only certain, stratigraphic indication that the 'native' Romano-British farmstead does indeed have truly 'native' origins, if only in the arrangement of its principal boundary ditch.

There are two settlement areas, one to the south-west and one, very fragmentary, to the north-east. The former consists of at least three round buildings (structures 1, 2 and 9), grouped around what appears to be a three-sided yard. These features, and the ditches around them, produced fragments of vitrified clay (Craddock, part III) which may be associated with metal-working. The settlement probably continued further southwards, into the quarry. The quarry, too, formed the arbitrary edge to the other settlement area, some of whose features ('hornworks' perhaps) were probably associated with stock management in some way. The aerial photographs indicate that the bulk of this settlement lay further west. It was destroyed by quarrying in the late 1970s.

Phase 8 (late 1st to late 2nd century AD) (Fig.167)

This is the principal Roman phase. It sees an expansion of settlement (which also changes its focus), but the linear ditch system continues on elaborated, but basically Iron Age, lines. David Gurney's analysis of this settlement (part II) indicates that there were at least four houses and numerous ancillary sheds and outbuildings. Pottery is now fully 'Romanised' and early products of the nearby Nene valley kilns were in use; considerable quantities of samian ware indicate at least a degree of prosperity, especially as some of the more expensive decorated bowls are present. Analysis of the distribution of so-called 'Other finds' by David Crowther (part III) shows that *personal artefacts* (i.e. brooches etc.) have a different distribution to *tools and equipment* or *structural artefacts*. The farmstead includes at least one small ring-ditched stack-stand (structure 11; see discussion of Phase 6, above) which is located close to the centre of the settlement, no doubt in an area free from livestock.

An unusual feature of this phase is the presence outside the main settlement area of a possible Romano-Celtic temple (structure 12; Figs.63,69 and 103). Gurney notes (part II) that the arguments for and against this interpretation are evenly matched. The near void of topsoil finds in the 'temple' area is, however, of interest. The settlement also includes a small cemetery of six inhumations, one of which was buried in a tightly bound contracted bundle (Fig.73, F.157), highly reminiscent of local Iron Age practice (e.g. Cat's Water, Fengate, see C.E.Wilson 1981, 137a).

Outside the main settlement area to the north, Phase 8 also saw a expansion of the yard system that originally formed a settlement focus in Phase 7 (to the south-west). These small yards seem, at first glance, to be obvious candidates for livestock corrals, but the surface and subsoil phosphate surveys discount this altogether. perhaps the settlement associated with these farmyards lay further south, outside the excavated area.

The paucity of 3rd century material suggests that the Phase 8 settlement barely survived that long. This, of course, is consistent with the well-known episodes of freshwater flooding which bedevilled large areas of the Fen-edge at this time (French in Pryor 1983a; Bromwich 1970). The site at Maxey seems to be located fractionally above the zone of actual freshwater inundation (as evidenced by alluvial clay), but the effects could well have been disastrous for crop and pastures, during wetter seasons. The archaeological evidence suggests that there was a general withdrawal at this time from the low-lying settlement sites, and it is surely unreasonable to suppose that farmsteads had actually to be flooded before people withdrew to higher land.

Phase 9 (late 3rd to early 4th century AD)

This phase is well represented by 'large quantities of late 3rd and early 4th century pottery . . . in the north-east corner of the site' (Gurney part II). It is a phase without proven buildings, at least on the excavated area, but it sees a small extension of the linear ditched enclosure system to the west of the Phase 8 settlement area. Presumably the area had been at least seasonally abandoned during the period of high ground-water levels, but earlier ditches were still visible and could be partially recut, to aid surface drainage.

The buildings of this period probably lay on slightly higher ground to the north of the East Field, where cropmarks are visible but unfortunately not clear. Some of these buildings must have been a great improvement on the earlier wattle 'native' round buildings, being of at least partial stone construction as witnessed by the recovery of a column fragment (Fig.118). There are other indications, too, for at least a degree of material prosperity (for example the gilded plate brooch, Fig.111 No.6; Crummy, part III). The pottery suggests that this final Roman phase did not last long into the 4th century.

Phase 10 (Post-Roman) (Fig.167)

Features of this period include furrows of the characteristic Welland valley 'broad rig' type (see discussion by Hall, Chapter 1). The surface survey showed that the distribution of medieval pottery (Fig.31) did not seem to respect the layout of the underlying furrows. The distribution of modern material is dense, but random, and provides an example of the distributive effects of regular manuring (Fig.32; Crowther, part I). A few 18th century hand-dug gravel pits were also found.

Contents

THE FENLAND PROJECT NO. 1: THE LOWER WELLAND VALLEY: VOL. 1