SUSSEX ARCHAEOLOGICAL COLLECTIONS

RELATING TO THE HISTORY AND ANTIQUITIES
OF THE COUNTIES OF EAST AND WEST SUSSEX

VOLUME 124

PUBLISHED BY
THE SUSSEX ARCHAEOLOGICAL SOCIETY
LEWES

1986

ISSN 0143–8204

Published by the Sussex Archaeological Society, Barbican House,
Lewes, East Sussex BN7 1YE.

The Editor will be pleased to hear from prospective contributors, and to discuss possible articles before submission. Copies of 'Notes for Contributors' are available from him or from the General Administrator of the Sussex Archaeological Society at the above address. The deadline for the submission of articles is 30 September each year, except by prior arrangement.

A list of back numbers of *Sussex Archaeological Collections* and of *Sussex Notes and Queries* which are still available may be obtained from the Hon. Membership Secretary.

The Society welcomes as members anyone interested in the historical or archaeological heritage of the counties of East or West Sussex. Besides receiving *Sussex Archaeological Collections* and a thrice-yearly *Newsletter,* members can participate in a wide-ranging programme of lectures, conferences, visits and other events, and have free entry to the Society's properties, including Fishbourne Roman Palace and Michelham Priory. Further details are available from the Hon. Membership Secretary of the Society at the above address.

PRINTED IN GREAT BRITAIN BY
DERRY & SONS LTD., NOTTINGHAM
1986

CONTENTS

(*includes microfiche)

	Page
OFFICERS AND COUNCIL OF THE SOCIETY	v
ABBREVIATIONS USED IN REFERENCES AND NOTES IN THIS VOLUME	vi
AN EARLY MESOLITHIC SITE AND PREHISTORIC FLINTWORK FROM GRAFFHAM COMMON AND NEIGHBOURING AREAS ON THE LOWER GREENSAND, WEST SUSSEX *by R. D. C. Holgate, E. W. Holden and H. G. Holden*	1
PREHISTORIC STONE IMPLEMENTS FROM SUSSEX AND THEIR PETROLOGICAL IDENTIFICATION* *by A.G. Woodcock and A. R. Woolley*	9
EXCAVATIONS AT SEAFORD HEAD CAMP, EAST SUSSEX, 1983 *by Owen Bedwin*	25
EXCAVATIONS AT THE LATE PREHISTORIC AND ROMANO-BRITISH ENCLOSURE COMPLEX AT CARNE'S SEAT, GOODWOOD, WEST SUSSEX, 1984* *by Robin Holgate*	35
THE EXCAVATION OF A ROMANO-BRITISH SITE BY CHICHESTER HARBOUR, FISHBOURNE *by D. J. Rudkin*	51
EXCAVATIONS IN FLETCHER'S CROFT, STEYNING, 1967–8* *by Jane Evans*	79
EXCAVATIONS AT CUTHMAN'S FIELD, CHURCH STREET, STEYNING, 1962* *by K. J. Barton*	97
THE EXCAVATION OF A SAXON SUNKEN BUILDING AT NORTH MARDEN, WEST SUSSEX, 1982 *by Peter Drewett and others*	109
BURGAGE TENURE AND TOPOGRAPHY IN LEWES, EAST SUSSEX *by John Houghton*	119

THE BOTANICAL EXAMINATION OF HEDGES IN EAST SUSSEX AS A TOOL IN HISTORICAL RESEARCH 129
by Monica Maloney and Eileen Howard

MEDIEVAL CHOIR STALLS IN CHICHESTER: A RE-ASSESSMENT 141
by Charles Tracy

EPIDEMIC MORTALITY IN 16TH-CENTURY RYE 157
by Graham J. Mayhew

THE GHASTLY WAR-FLAME: FIRE BEACONS IN SUSSEX UNTIL THE MID 17TH CENTURY 179
by Frank Kitchen

WEST GRINSTEAD: A CENTRE OF CATHOLICISM IN SUSSEX, 1671–1814 193
by Timothy J. McCann

THE DRAINAGE OF BRIGHTON: SEWERAGE AND OUTFALL PROVISION AS AN ISSUE IN A FAMOUS SEASIDE RESORT *c.* 1840–80 213
by Sue Farrant

A GOOD READ: THE EAST SUSSEX BOOKHAWKING ASSOCIATION, 1855–88 227
by Sheila R. Haines

ARCHAEOLOGICAL NOTES

Prehistoric Sites Threatened by Coastal Erosion between Seaford Head and Beachy Head, East Sussex — *Robin Holgate* 243
Excavations at Lordington, Stoughton, West Sussex, 1984 — *Robin Holgate* 244
Mesolithic Flintwork from Hollycombe, Linch, West Sussex — *Robin Holgate* 251
The White Horse near Litlington: A Further Note — *Fiona Marsden* 251
A Possible Barrow at Lewes, TQ 40791047 — *M. J. Allen* 252
Excavations in Seaford, 1985 — *Robin Holgate* 254
The Chichester Entrenchments at the Richmond Arms Hotel, Goodwood, West Sussex — *Robin Holgate* 255
Two More Hoards of Roman Coins from Westmeston, East Sussex — *David Rudling* 256
A Henry I Penny Found at Falmer — *David Rudling* 257
A Medieval Tripod Pitcher from Riverpark Farm, Lodsworth, West Sussex — *Ann Bott and Alec Down* 258

HISTORICAL NOTES

A Saxon Boundary in Warminghurst — *Michael Bevan* 260
The Early Descent of the Honour of Petworth — *Kathleen Thompson* 262
The Bramber—Beeding Causeway — *E. W. Holden* 263
Hexagonal Heavenly Cities at Clayton and Plumpton — *John Edwards* 263
A Recusant Hoard from Midhurst — *Timothy J. McCann* 265
A Short-Lived Charity of 17th-Century Chichester — *Alison McCann* 266
Napoleonic Barracks in Sussex — *Ann Hudson* 267
The Tanyard Buildings, Horsham: A Suggested Chronology — *Jeremy Greenwood* 268

INDEX OF PERSONS AND PLACES *(by Monica Maloney)* 269

SUSSEX ARCHAEOLOGICAL SOCIETY
Officers

President
Professor GRAHAME CLARK, C.B.E., F.B.A.

Vice-Presidents

THE DUKE OF RICHMOND AND GORDON
THE EARL OF INCHCAPE
THE VENERABLE LANCELOT MASON
LORD BRIGGS OF LEWES, M.A., B.Sc.(Econ.), Hon.D.Litt., Hon.D.Sc., Hon.LL.D.
I. V. ASKEW, M.C., D.L.
Professor B. W. CUNLIFFE, M.A., Ph.D., F.B.A., F.S.A.
S. E. GRAVES
E. W. HOLDEN, F.S.A.
Miss K. M. E. MURRAY, M.A., B.Litt., Hon.D.Litt., F.S.A.
K. W. DICKINS, B.A., F.S.A.
A. DALE, O.B.E., B.A., B.Litt., F.S.A.
G. A. HOLLEYMAN, F.S.A.
K. W. SUCKLING
Mrs. M. SUCKLING

Hon. General Secretary
C. H. C. WHITTICK, M.A.

Hon. Treasurer
J. H. FARRANT, M.A.

Hon. Editor of Collections
T. P. HUDSON, M.A., Ph.D.

Council

EX-OFFICIO MEMBERS
The President, the Hon. General Secretary, the Hon. Treasurer, and the Hon. Editor of Collections

ELECTED MEMBERS

SUE FARRANT, B.A., Ph.D.
J. FRANKS, M.Phil., F.R.I.C.S.
D. R. RUDLING, B.Sc., M.A., M.I.F.A.
M. E. MOORE
Mrs. P. COMBES
RICHARD HARRIS, A.A.(Dip.), M.A.
P. E. LEACH, A.A.(Dip.), B.A., F.R.I.B.A.
A. WOODCOCK, M.Sc., M.A., Ph.D., A.M.A., M.I.F.A.
Mrs. M. E. HOLT
T. J. McCANN, B.A.
Mrs. R. KENWARD, M.A., F.S.A.
P. L. DREWETT, B.Sc., F.S.A., M.I.F.A.

CO-OPTED MEMBERS

Mrs. D. MEADES
Lt.-Col. GRATTAN HART, D.L.

Appointments made by the Council or its Committees

Chairman: P. L. DREWETT, B.Sc., F.S.A., M.I.F.A.

Vice-Chairman: Mrs. P. COMBES

Hon. Membership Secretary: Vacant

Hon. Editor of Newsletter: SUE FARRANT, B.A., Ph.D.

Chairman of Finance Committee: J. H. FARRANT, M.A.

Chairman of Museums and Library Committee: Vacant

Hon. Educational Liaison Officer: Mrs. D. MEADES

Hon. Librarian: JOYCE CROW, B.A.

Curator of Museums: FIONA MARSDEN, M.A., A.M.A.

General Administrator: JOHN HOUGHTON, Hon.F.Inst.M.

Headquarters: Barbican House, Lewes, East Sussex BN7 1YE

May 1986

ABBREVIATIONS

used in References and Notes in this volume

Add. Ch.	Additional Charter
Add. MS.	Additional Manuscript
Agric.	*Agricultural*
Antiq.	*Antiquarian, Antiquaries, Antiquities*
Arch.	*Archaeological, Archaeology*
Assoc.	*Association*
Coll.	*Collections*
Com.	Commission
Dir.	*Directory*
Econ.	*Economic*
Eng.	*English*
Geog.	*Geographical, Geography*
Hist.	*Historical, History*
Inst.	*Institute*
Jnl.	*Journal*
Mag.	*Magazine*
N. & Q.	*Notes and Queries*
O.S.	Ordnance Survey
Prehist.	*Prehistoric*
Proc.	*Proceedings*
Rec.	*Record*
Rev.	*Review*
Sci.	*Science*
Soc.	*Social, Society*
Suss.	*Sussex*
Univ.	*University*

Sussex Archaeological Collections **124** (1986), 1–8.

AN EARLY MESOLITHIC SITE AND PREHISTORIC FLINTWORK FROM GRAFFHAM COMMON AND NEIGHBOURING AREAS ON THE LOWER GREENSAND, WEST SUSSEX

by R. D. C. Holgate, E. W. Holden and H. G. Holden

Surface flint collection in the Graffham Common area on the Lower Greensand since 1978 has produced a substantial early Mesolithic flint assemblage and a range of smaller assemblages dating from the early Mesolithic period to the Bronze Age.

INTRODUCTION

Flints were collected from the surface of sandy rides within a large conifer plantation on Graffham Common (Fig. 1) during visits by E. W. and H. G. Holden between 1978 and 1985. Three dense scatters (Fig. 2: A, B and C) were found in the vicinity of SU 933189. Flints seemed only to come to the surface after the sand had been disturbed by horse-riding and they were found more readily after rain. No digging of any kind took place, only the gradual accumulation of worked flints, rarely more than a few at any one time. When the rides were formed, possibly some 25 years ago, the surface vegetation (mainly heather and bracken) was removed for a width of 4–5 metres and the topsoil, to a depth of *c.* 0·15 metre, was formed into low banks each side of the rides.

Graffham Common lies 2–3 km. north of the South Downs on undulating ground which rises to some 40–50 metres O.D. near the site. A small stream flows northwards *c.* 300 metres south-east of the flint scatter (Fig. 2). The whole of the common lies on the Folkestone Beds of the Lower Greensand; on, or very close to, the surface are patches of hill gravel and flint rubble.

THE GRAFFHAM COMMON FLINT ASSEMBLAGE

The three discrete areas which produced humanly-struck flint (A, B and C) occur within 100 metres of one another, and as they date to the same period they will be discussed as a single assemblage. A total of 1,967 flints were recovered and these are summarized in Table 1.

The flint is olive green, orange, grey or dark grey-brown in colour, and cortex, where present on artefacts, is usually thick and unabraded. Flint of this nature can be found locally on the Lower Greensand as nodules, though much of the natural flint to be found in the immediate vicinity of the site today consists of angular lumps of flint gravel, much of which is badly frost-cracked. It is clear that only the best flint available was selected for flaking; this flint proved to contain relatively few flaws, thus making it eminently suitable for controlled flaking.

The majority of pieces in the total assemblage (*c.* 95 per cent) consist of debitage, i.e. debris resulting from flint flaking. Most blades and flakes come from carefully worked cores, but seven flakes resulted from axe manufacture. The core reduction strategy followed is typical of that used in the Mesolithic period. Good quality flint nodules were selected and flaked into cylindrical cores with two opposing platforms (e.g. Fig. 3, No. 2) using both hard and soft hammers. Then blades and bladelets were struck off using a soft hammer (or possibly a punch), with the edge of the platform being abraded between each blade/bladelet removal to trim off any overhangs. In some instances, a blade removal plunged, taking

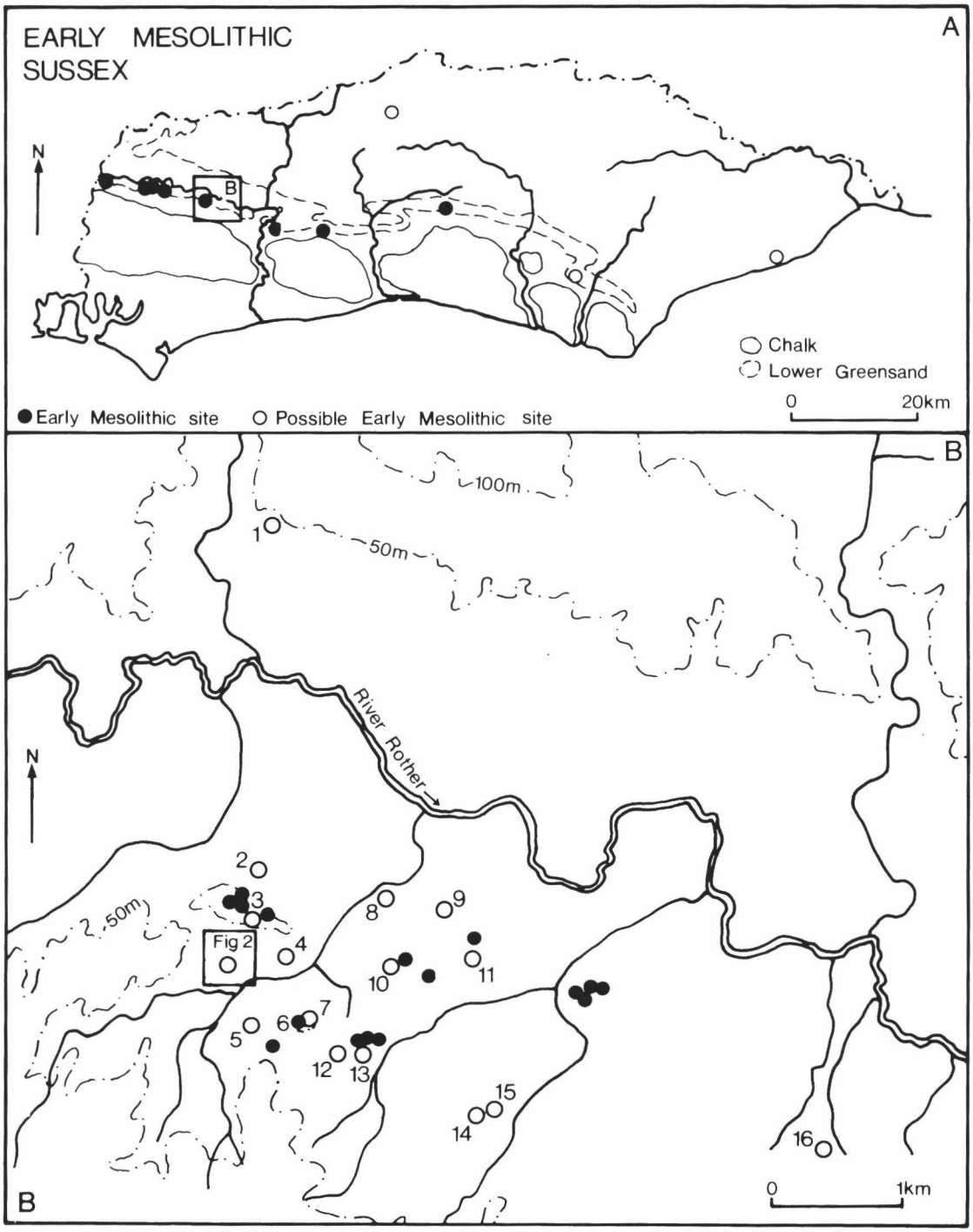


Fig. 1. A, location map of Graffham Common and early Mesolithic sites in Sussex (after Jacobi 1978, with additions); B, localities where humanly-struck flint has been recovered in the vicinity of Graffham Common (open circles) and round barrows (filled circles) on the Lower Greensand.

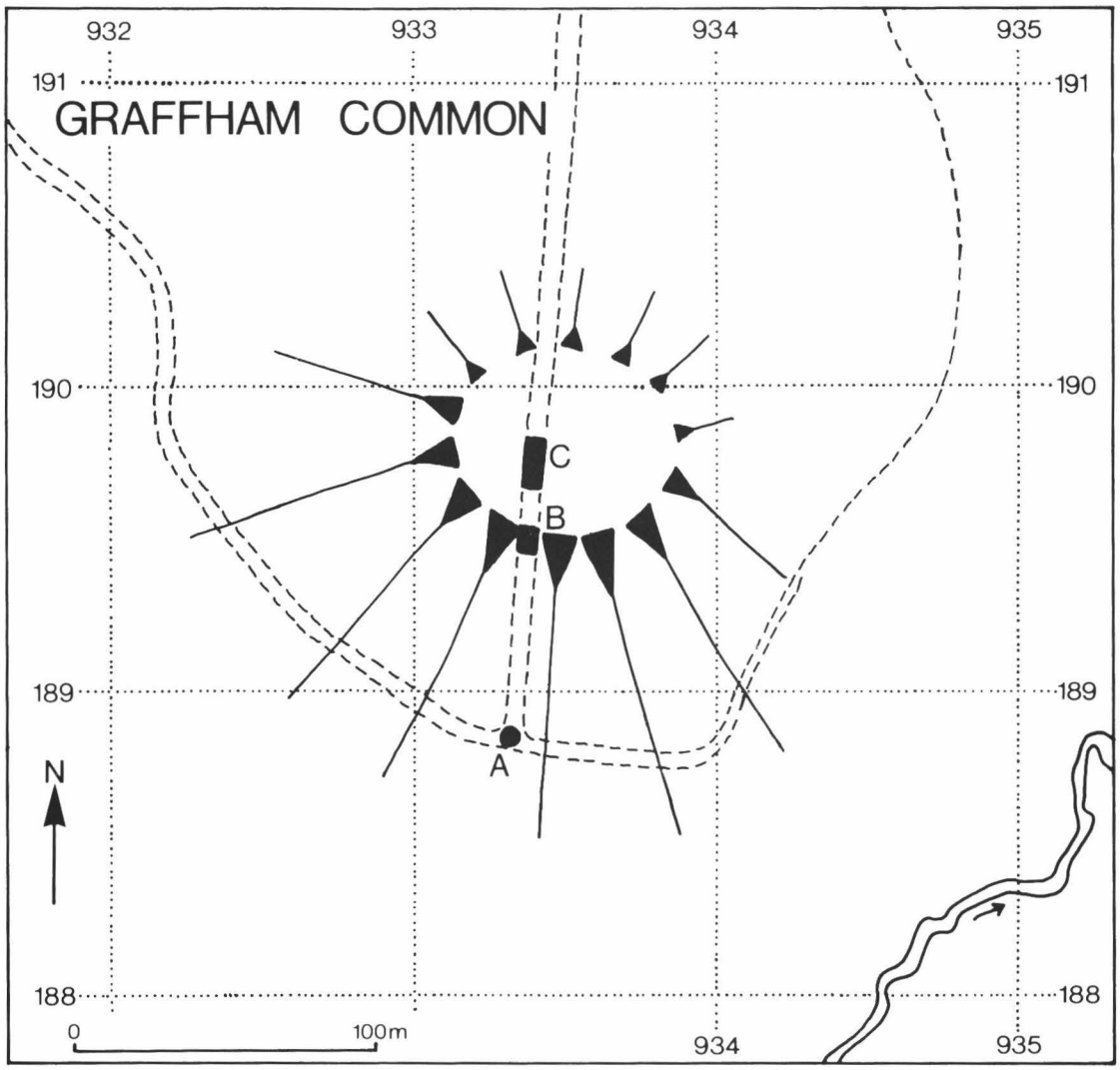


Fig. 2. Sketch plan of the early Mesolithic site at Graffham Common.

the opposing platform away with it and leaving a tetrahedrally-shaped core with only one platform (e.g. Fig. 3, No. 1). This, in turn, was used as a single platform core to produce bladelets. When the angle between the striking platform and the flaked surface approached a right angle, the platform was frequently 'rejuvenated' by removing the whole platform in the form of a core tablet (e.g. Fig. 3, No. 3). 'Cresting' was also used to prepare the flaked surface prior to blade/bladelet removal. A more comprehensive description of this particular sequence of core reduction can be found in Barton (1981).

Few implements (*c.* 0·9 per cent) are present in the assemblage. Of these, fragments of microliths predominate with a total of 11 (e.g. Fig. 4, Nos. 1–9). Microliths have been classified according to their shape and extent of retouch (Clark 1933) and those present in the assemblage belong to the obliquely blunted or blunted-

TABLE 1

The Graffham Common Flint Assemblage

	A	*B*	*C*	*Total*
Debitage				
Flakes	200	46	208	454
Blades	91	2	52	145
Bladelets	3	11	11	25
Blade/bladelet fragments	168	112	583	863
Axe-thinning flakes		3	4	7
Chips	26	12	242	280
Single platform, flake cores	2			2
Single plateform, bladelets cores	9		2	11
Two opposing platforms, bladelet cores		1	4	5
Shattered pieces	40	10	19	69
Crested blades	3		3	6
Core tablets		2	7	9
Tranchet axe-sharpening flake			1	1
Implement				
Scrapers	2		1	3
Fabricator			1	1
Microlith fragments	2	1	8	11
Horsham point			1	1
By-products				
Microburins			5	5
Miss-hit microliths	1		1	2
Fire-fractured flint	26	5	36	67
Total	573	205	1,189	1,967

down-one-edge classes (Clark's Types A and B). These two types consistently recur in early Mesolithic (8th and 7th millennia b.c.) assemblages (Jacobi 1973). One Horsham point (Fig. 4, No. 10) was also recovered; these are considered to date to the 7th and early 6th millennia b.c. (Jacobi & Tebbutt 1981). The only other implements consist of a fabricator (Fig. 3, No. 6) and three scrapers (e.g. Fig. 3, No. 5). Five microburins (e.g. Fig. 4, Nos. 12, 13 and 14), two miss-hit microlith fragments (e.g. Fig. 4, No. 11), seven axe-thinning flakes and a tranchet axe-sharpening flake (Fig. 3, No. 4) testify to the manufacture of microliths and the preparation of tranchet axes ready for use on or in the vicinity of the site. The fire-fractured flint, to which ten of the blade fragments and two of the microlith fragments should be added, is likely to have come from hearths.

Clearly, only a sample of the flint assemblage has been collected from the site, but the consistent adoption of a blade technology to flake good quality, locally available nodular flint suggests that the assemblage is contemporary and Mesolithic in date. The absence of geometric microliths and the presence of obliquely blunted and single-edge-blunted microliths, along with a Horsham point, narrow this down to the early

Mesolithic period. However, the number of implements present in the assemblage is low (0·9 per cent). The microburins and miss-hit microliths show that hunting equipment was manufactured on the site and the axe-thinning flakes and tranchet axe-sharpening flake suggest that axes were also flaked; both of these items, though, were probably used and, in some cases, eventually disposed of elsewhere. The variety of implements in the assemblage indicates that the site is more than a mere hunting stand, but whether or not it was a short-stay camp occupied at one particular time of the year or a site visited on more than one occasion to perform one or more special activities (a 'task-specific' site) must still remain an open question.

The Lower Greensand in Sussex supported a number of early Mesolithic sites (Fig. 1A). The first discoveries were made while observing sand quarrying activities and subsequent excavations have yielded large flint assemblages, the remains of hearths and, in the case of Hassocks (Toms 1907) and Selmeston (Clark 1934), so-called 'pit-dwellings'. The flint assemblages are characterized by large quantities of microliths and microburins, and smaller numbers of scrapers, burins, microdenticulates, notched flakes and axe-sharpening flakes, and the occasional tranchet axe or fabricator (e.g. West Heath: Clark 1932; Brailsford 1937; Iping Common: Keef *& al.* 1965; Hassocks: Toms 1907; Selmeston: Clark 1934; and Rackham: Garton 1980). The assemblage from Graffham Common would therefore appear to be a typical example of those recovered from early Mesolithic sites on the Sussex Lower Greensand.

Off the Lower Greensand in Sussex, there are two possible early Mesolithic sites in the Weald: Hastings and St Leonard's Forest (Fig. 1A; Jacobi 1978, 19). Others may exist on the South Downs and West Sussex coastal plain, but none have been discovered to date. The present picture would suggest that the Weald, especially the Lower Greensand close to rivers and streams, was exploited by itinerant bands of hunter-gatherers, but whether this region was exploited all the year round is unclear. As Britain was still joined to the European continent at this time (Jacobi 1973, 245–6), it is possible that these Wealden sites represent summer camps occupied by hunting bands originating from the area south of the downs. Until an early Mesolithic site with associated faunal and botanical information has been investigated, it is unwise to speculate further.

FLINTWORK FROM THE VICINITY OF GRAFFHAM COMMON

In addition to the Graffham Common site, E. W. and H. G. Holden have found flints at other localities on the Lower Greensand within 5 km. of the common. These are listed below.

1. SU 937223: 2 flakes; 1 scraper (Fig. 3, No. 7).
2. SU 936197: 2 flakes; 2 blades.
3. SU 935193: 3 flakes; 1 blade; 1 microlith (Fig. 4, No. 15).
4. SU 937190: 2 flakes.
5. SU 935185: 5 flakes; 1 blade; 1 single platform, bladelet core.
6. SU 938185: 1 two opposing platforms, bladelet core.
7. SU 939185: 49 flakes; 4 blades; 2 bladelet fragments; 24 chips; 2 fire-fractured flints.
8. SU 945195: 1 ?scraper.
9. SU 950194: 1 leaf-shaped arrowhead (Fig. 3, No. 9; in the possession of H. G. Holden).
10. SU 946190: 1 flake.
11. SU 952190: 3 blades; 1 single edge retouched flake (Fig. 3, No. 8).
12. SU 942183: 1 flake; 1 bladelet.
13. SU 944183: 1 flake; 2 blades.
14. SU 953178: 1 blade.
15. SU 954178: 1 ?scraper.
16. SU 978176: (these flints, found by E. W. and H. G. Holden with C. F. Tebbutt, are now in Worthing Museum and the list below was compiled from notes made by E. W. Holden and R. Jacobi; the microliths are early Mesolithic forms) 48 flakes; 34 blades; 76 blade/bladelet fragments; 13 cores; 1 ?fabricator; 9 microliths; 1 barbed and tanged arrowhead fragment.

The flints from the following localities are probably Mesolithic: 2, 3, 4, 5, 6, 7, 11, 12, 13, 14 and 16. Site 16 could be similar in nature and proportions to the Graffham Common site discussed above. Of the remaining flints, 9 is early

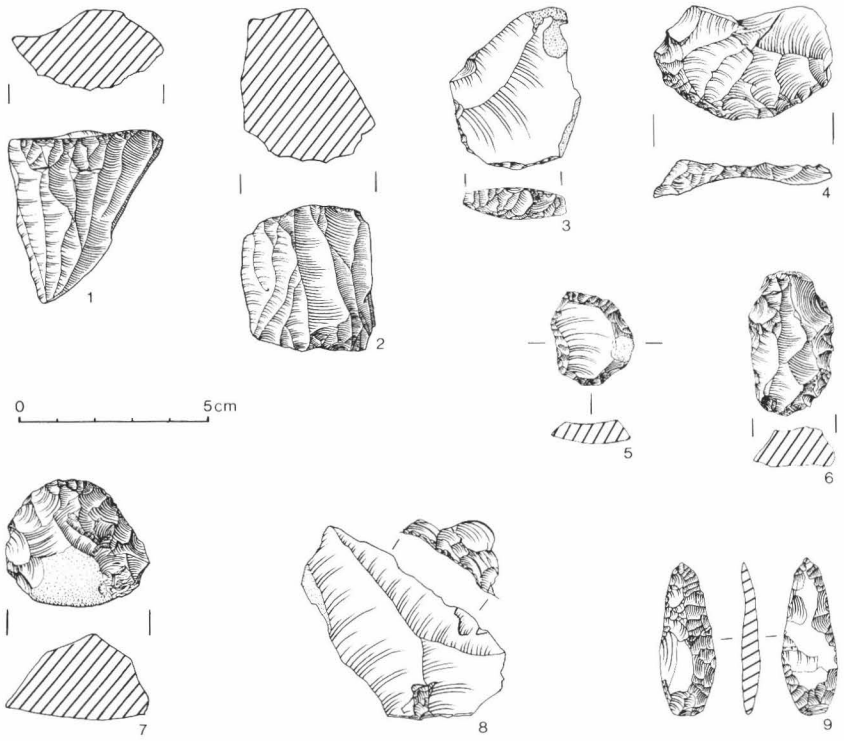


Fig. 3. Flints from the Lower Greensand around Graffham Common. 1 and 5 from Area A; 2 from Area B; 3, 4 and 6 from Area C; 7 from Site 1; 8 from Site 11; 9 from Site 9. 1, single platform, bladelet core; 2, two opposing platforms, bladelet core; 3, core tablet; 4, tranchet axe-sharpening flake; 5, scraper; 6, fabricator; 7, scraper; 8, one edge retouched flake; 9, leaf-shaped arrowhead. (Drawn by Ruth Parkin)

Neolithic, and 1 and at least the arrowhead in 16 could be late Neolithic or early Bronze Age in date.

The majority of known prehistoric sites on the Lower Greensand date to the early Mesolithic period (Fig. 1A). The only other prehistoric settlements where excavations have taken place are the late Neolithic/early Bronze Age site at Rackham (Holden & Bradley 1975) and the late Neolithic and late Bronze Age sites at Selmeston (Clark 1934). At present archaeological evidence would suggest that the Lower Greensand was exploited in the early Mesolithic, then only visited sporadically until the late Neolithic, when certain areas were settled, perhaps intermittently, until the end of the Bronze Age. During this phase of settlement, round barrow cemeteries proliferated, as exemplified by West Heath with radiocarbon dates between *c.* 1700 and *c.* 1200 b.c. (Drewett 1976, 150). The area around Graffham Common appears to follow this pattern, but whether this is merely an illusion created by the limited amount of fieldwork undertaken on the Sussex Lower Greensand is still an open question. One way to resolve this problem is to carry out a systematic surface artefact collection survey of land under cultivation, extending the work of Holloway (1979) and Garwood (1985). In the river valleys, floodplain deposits overlie the Lower Greensand in places. Here, a number of small Mesolithic and Neolithic sites, for example Henfield and Isfield (Wymer 1977, 305–6, 309) and Litlington (Holloway 1979; Garwood 1985), are already known

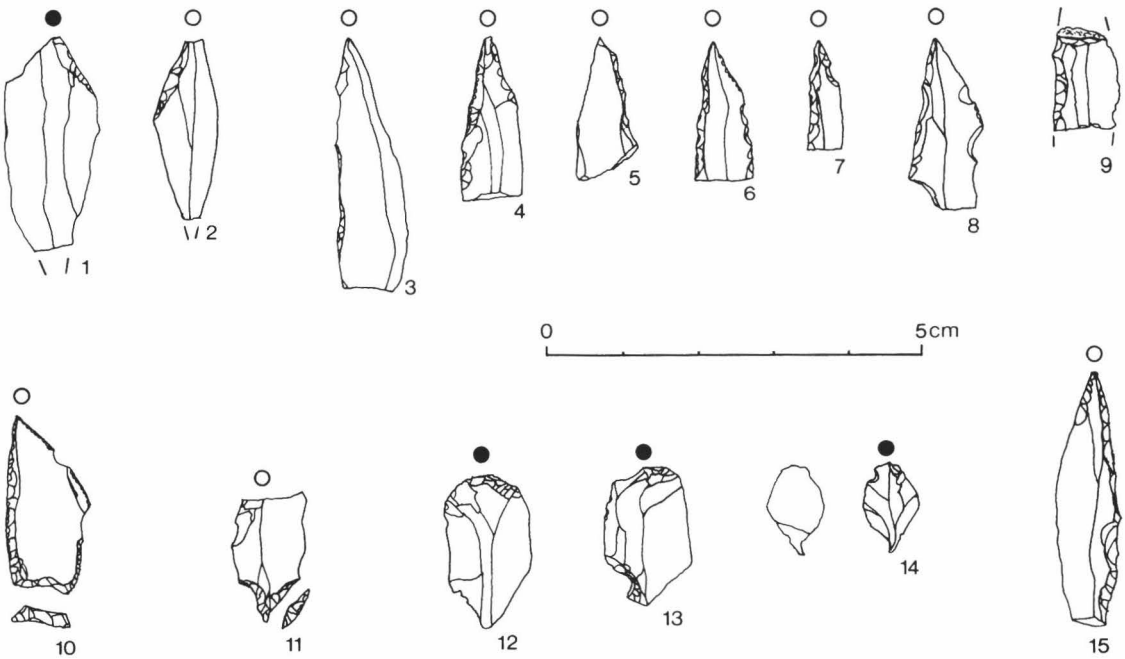


Fig. 4. Microliths and microburins from Graffham Common. 1–7 and 10–14 from Area C; 8 from Area A; 9 from Area B; 15 from Site 3. 1–2, obliquely blunted microliths; 3–9 and 15, microliths blunted down one edge; 10, Horsham point; 11, miss-hit microlith; 12–14, microburins. Filled circle: bulb present. Open circle: bulb absent. (Drawn by Ruth Parkin)

but have yet to be excavated. These are areas where fieldwork should perhaps be concentrated, not only to discover more sites, but also to locate sites with sealed deposits where archaeological, faunal and environmental information is well preserved.

Acknowledgements

We are extremely grateful to Ruth Parkin for the flint drawings. All the flint (unless otherwise stated) has been deposited in Chichester District Museum.

Authors: R. D. C. Holgate, Institute of Archaeology, University of London.
E. W. and H.G. Holden, 93 Penlands Vale, Steyning, West Sussex BN4 3PL.

References

Barton, R. N. E. 1981 'Some Conjoined Artifacts from a New Mesolithic Site at Hengistbury Head, Dorset', *Proc. Dorset Natural Hist. and Arch. Soc.* **103**, 13–20.

Brailsford, J. W. 1937 'A New Microlithic Site on West Heath', *Suss. Arch. Coll.* **78**, 224–9.

Clark, J. G. D. 1932 'A Microlithic Flaking Site at West Heath, W. Harting', *Suss. Arch. Coll.* **73**, 145–55.

—— 1933 'The Classification of a Microlithic Culture: the Tardenoisian of Horsham', *Arch. Jnl.* **90**, 52–77.

—— 1934 'A Late Mesolithic Settlement Site at Selmeston, Sussex', *Antiq. Jnl.* **14**, 134–58.

Drewett, P. L. 1976 'The Excavation of Four Round Barrows of the Second Millennium B.C. at West Heath, Harting, 1973–75' *Suss. Arch. Coll.* **114**, 126–50.

Garton, D. 1980 'An Early Mesolithic Site at Rackham, West Sussex', *Suss. Arch. Coll.* **118**, 145–52.

Garwood, P. 1985 'The Cuckmere Valley Project Fieldwalking Programme, 1982–3', *Bulletin of Inst. Arch. Univ. London,* **21/2**, 49–68.

Holden, E. W. & Bradley, R. J. 1975 'A Late Neolithic Site at Rackham', *Suss. Arch. Coll.* **113**, 85–103.

Holloway, A. E. 1979 'Mesolithic and Later Finds at Selmeston and Berwick', *Suss. Arch. Coll.* **117**, 244–7.

Jacobi, R. M. 1973 'Aspects of the "Mesolithic Age" in Great Britain', in *The Mesolithic in Europe* (ed. S. K. Kozlowski), 237–65. Warsaw: Univ. Press.

—— 1978 'The Mesolithic of Sussex', in *Archaeology in Sussex to AD 1500* (ed. P. L. Drewett), 15–22. C.B.A. Research Reports, **29**.

Jacobi, R. M. & Tebbutt, C. F. 1981 'A Late Mesolithic Rock-Shelter Site at High Hurstwood, Sussex', *Suss. Arch. Coll.* **119**, 1–36.

Keef, P. A. M., Wymer, J. J. & Dimbleby, G. W. 1965 'A Mesolithic Site on Iping Common, Sussex, England', *Proc. Prehist. Soc.* **31**, 85–92.

Toms, H. S. 1907 'Pigmy Flint Implements Found near Brighton', *Brighton & Hove Natural Hist. and Philosophical Soc.* 1–10.

Wymer, J. J. 1977 *Gazetteer of Mesolithic Sites in England and Wales*. C.B.A. Research Reports, **20**.

Sussex Archaeological Collections **124** (1986), 9–23.

PREHISTORIC STONE IMPLEMENTS FROM SUSSEX AND THEIR PETROLOGICAL IDENTIFICATION

by A. G. Woodcock, B.Sc., M.Sc., M.A., Ph.D., A.M.A., M.I.F.A., and A. R. Woolley, B.Sc., Ph.D., F.G.S.

This paper presents the results of continuing research on stone implements from Sussex, and discusses the nature, distribution and significance of these implements. A list of all known finds, together with their petrological identifications, where these have been established, and an illustrated catalogue of the implements are included on microfiche.

INTRODUCTION

Although the majority of prehistoric stone implements from Sussex are made from locally obtained flint, it has long been recognized that other rocks were utilized and that some of them were foreign to the area. These are often loosely spoken of as 'stone' implements by archaeologists to distinguish them from those made of flint or chert.

In order to try and identify the rocks concerned a slice, approximately 1 mm. thick, is cut from the implement using a very fine diamond-coated wire. The slice is ground until completely smooth and then stuck to a glass microscope slide. The other side is then ground down to produce an almost transparent section, which can be examined under the petrological microscope. The injury to the implement is then filled with plaster or wax and coloured so successfully that it is difficult to detect that anything has been removed.

By making comparisons between slices taken from many implements it has been possible to identify implements of the same rock type. So far some 25 petrological categories or 'Groups' have been distinguished and some further subdivided, and a series of group numbers allocated (Clough & Cummins 1979, 127).

In some instances it is possible to identify the actual factory or group of workshops which produced the implements (e.g. Group VI from Great Langdale, Westmorland), in other cases merely to recognize that certain implements have been manufactured from a common source material, to suggest a likely area of origin, and postulate that a factory site may well await discovery in that region (e.g. Group I from Cornwall, which may have come from a factory site now drowned by the sea).

There has been a national policy for the petrological examination of stone implements for over 45 years. Since 1952 this work has been co-ordinated through the Implement Petrology Committee of the Council for British Archaeology. Already one research report has been published (Clough & Cummins 1979) and another is in preparation. Included within this will be a consideration of stone implements from Sussex, as part of a wider study of implements from south-east England (Woodcock *& al.* forthcoming). Implements from Surrey have already been published (Field & Woolley 1983).

The present report affords an opportunity to discuss the nature and significance of the Sussex material in greater depth than is possible in a regional survey, and to allow the inclusion of the most recent results of current research. By its very nature such a study is a continuing process, and the authors will be pleased to hear of any new discoveries that are made.

The County list is reproduced in full (microfiche, pp. 11–24). The numbering of the implements has not been adjusted to take account of any erroneous material included by previous workers (for example, artefacts of flint or of ethnographic origin) since much of the list (Evans 1968a) and various other individual implements, together with their County numbers, have already been published. Where numbers have been given by the 'Sub-Committee of the South-Western Group of Museums on the Petrological Identification of Stone Implements', these are listed (Evens *& al.* 1962; Keiller *& al.* 1941; Stone & Wallis 1947; 1951).

Where the 'County Number' is qualified by an asterisk, additional information is given in the notes. Where the 'Petrological Group' column is qualified by an asterisk the petrological sections were made during the course of this study; where two appear the petrological sections were made previously but were not available for confirmation by the present authors. Where the 'County Number' is underlined, the implement is illustrated (microfiche, pp. 29–51). Not all the implements have been seen by the authors and some of the illustrations are, therefore, based on the records of other workers. For this reason there is some variability in the quality of the information shown. Although most of the implements are illustrated, lack of space has enforced some selectivity.

Wherever possible a four- or six-figure National Grid Reference is given. Each reference is qualified by the addition of a letter: G (General), E (Estimated), or A (Accurate). A 'General' reference is merely included to locate the place in general terms, and is thus only a guide to the area in which the find was made, and does not pretend to indicate the exact find-spot. These 'General' references are taken from the middle of the places concerned or any convenient feature (a road junction, a church, a station, the centre of the densest area of buildings), or sometimes a conveniently placed intersection of national grid lines may be used. An 'Estimated' reference is an attempt to locate the find-spot from information provided with the material or in a publication. 'Estimated' references are also used in certain other circumstances, for example when a place name has gone out of use and does not occur on the maps, but the locality referred to can be reasonably deduced. 'Accurate' references are given where an exact find-spot is known or published, or can be calculated from carefully recorded distances and compass bearings of sufficient detail.

A full set of record cards, augmenting the information given in the lists, has been deposited in the Sussex Archaeological Society's library at Barbican House, High Street, Lewes. Cards for East Sussex are held at the County Planning Department, Southover House, Southover Road, Lewes, East Sussex and for West Sussex at the County Planning Department, County Hall, Chichester, West Sussex.

Basic to the study has been the establishment of a uniform terminology for the archaeological material, for many of the implements have been described in a highly subjective manner by previous workers. Although the authors have attempted to describe each artefact objectively, it has not proved possible to locate and re-examine all those concerned, and some of the attributions have been made on the basis of drawings only. Thus some allowance must be made for possible errors, and in particular for some overlap between such groups as mace heads, pebble hammers and shafthole adzes. Notwithstanding these difficulties the following categories of implement have been distinguished:

Axes. This group includes all those implements which are obvious axes. It also includes implements which may possibly have been adzes, but whose slightly asymmetric form is more likely to have been determined by the shape of the source material itself.

Adzes. This group includes only those implements which appear to have been deliberately designed for this purpose.

Implements with shaftholes. Whenever possible these have been classified according to the system of Roe (1966; 1979) and are divided into

battle axes, axe hammers, mace heads, shafthole adzes and pebble hammers (often described elsewhere as pebble mace heads, hour-glass pebbles, etc.).

Other items. These include cupped pebbles, pestles, hones, rubbers, etc.

The petrological examination of the artefacts has posed its own set of problems. In the Fourth Report published by the South-Western Group (Evens & *al.* 1962) 22 axes from Sussex were identified. By 1968 this list had been extended to 140, largely as a result of the work of Miss K. J. Evans, then of Worthing Museum (Evans 1968a). Many of the thin sections utilized for the South-Western Group Report have been made available, whilst a number of others have been collected from other sources. These two groups of thin sections, together with the numerous sections made during the course of the present study, are all now housed at the British Museum (Natural History), where they may be consulted. A number of sections have also been loaned by the Institute of Geological Sciences.

Apart from identifications based on the sections referred to above, some petrographical names given in the County list are taken either from South-Western Group Reports, which are based on sections no longer available, or from other sources for which again the sections can no longer be traced. A few names are based solely on macroscopic examination, for example the group designated as 'quartzite/sandstone' which, though not sectioned, can undoubtedly be categorized in this way. These particular implements are discussed in more detail later. Rock names could not be given to a few of the implements either because they cannot now be traced, a common situation with those in private hands, or because permission for sectioning has been withheld.

A rather worrying feature that has become apparent during the course of this work is the lack of agreement amongst petrologists who have examined the same thin sections, as to the rock type. This is particularly noticeable with regard to the decisions as to whether or not a particular section is sufficiently similar to one of the Groups to be assigned to it. The opportunity to make such comparisons has arisen because of the large number of sections of south-eastern implements kindly made available by the South-Western Group, together with other sections reported on by a number of petrologists during the last 20 years or so. Generally speaking the present petrologist has required a closer match with 'type' sections, in order to assign a group number, than other petrologists.

This approach could, of course, be partly responsible for the relatively few grouped implements, though in fact careful analysis suggests that this would change the figures by one or two per cent at most. However, it must be appreciated that variation in interpretation does exist, and it is essential for the validity of the petrological survey as a whole that some system should be devised for monitoring identifications and for achieving as much uniformity as possible in the future.

GROUPED IMPLEMENTS

Group I

Nine implements (5, 9, 24, 77, 101, 106, 116, 168, and 195) have been assigned to this group, making it the most prolific group in the county. The almost complete absence of Group I implements from West Sussex, however, is not easy to explain.

All the implements from this group are axes, with the rounded butts and oval sections found on many Group I axes. They vary considerably in their proportions, and this probably reflects the shape and size of the raw material used, as much as any other factor. Whilst individual axes might be matched, one with another, there is little to suggest a distinctive product or the production of specialized tool types. Rather, there seems to be an optimum width for the cutting edge of an axe, above or below which the implement was probably not efficient for general use, whilst the length was of lesser importance. Fig. 4 illustrates the range of shapes found

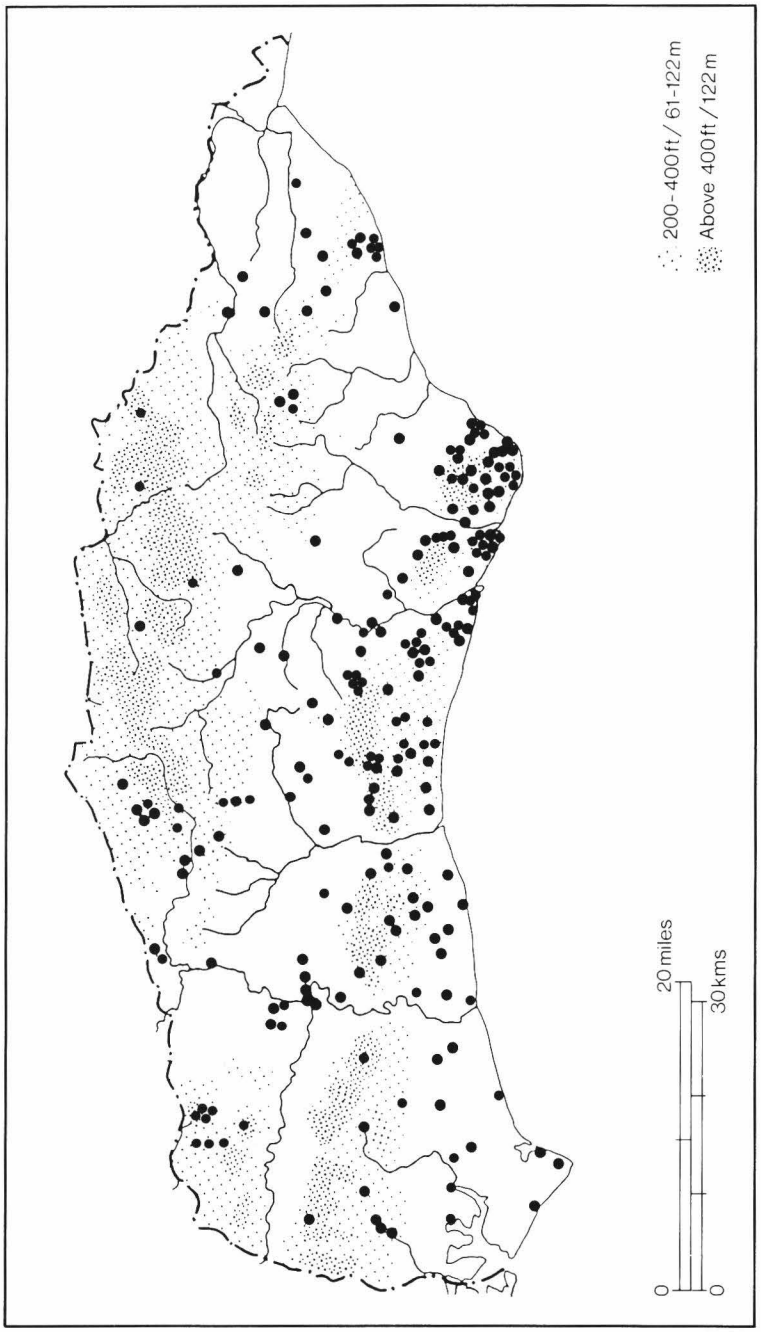


Fig. 1. Distribution map of finds of stone implements in Sussex.

amongst Sussex stone axes, and the grouped axes have been labelled to show the variability within individual groups.

Group II

The only representative of this group (11) was indentified by Stone & Wallis (1951) as belonging to Group IIa, and no further additions have been made. The implement is an axe fragment, which comes from the downs adjacent to the coast, and is of the same generalized form previously described.

Group III

The only implement assigned to Group III (10) is an axe from West Sussex, the attribution being made by Stone & Wallis (1951). This section was available for study together with a 'type' section (Cornwall 106: Stone & Wallis 1951, no. 677) and they illustrate some variability in petrological interpretation. Both sections are sufficiently different as to raise doubts as to whether the implement should have been assigned to Group III. Clearly the petrologist who originally erected the group and assigned this implement to it would have many examples to hand, and his interpretation must take precedence. However, there are numerous epidiorite bodies in the south-west of England, the rocks of which are presumably not dissimilar, so that it is difficult to gauge the significance of textural variants in terms of provenance.

Group IV

Only one implement (61), an axe, has been assigned to this group.

Group VI

This is the second most abundant group represented, with five Group VI implements (54, 133, 155, 158 and 179) and one near Group VI implement (48). This particular section has not been seen during the course of this study, the attribution being made by the Geological Museum in 1939. The implements are widely scattered and, as can be seen on the frequency distribution map of Cummins (1979, fig. 8), appear to have been traded down the central part of England, but hardly reached the extreme south-east or south-west corners.

With one exception, all the implements are axes, occurring in a wide variety of sizes and generally showing a high standard of finish. Three of the five axes have facets along their lateral edges, a feature commonly seen on axes of flint. The remaining implement (48) is a pestle. A number of similar pestles are known from Sussex and Curwen (1928a, 90–1) has argued that at least some are of Bronze Age date.

Group VII

This is the third most abundant group with five implements (57, 59, 79, 105, and 141) assigned to it. It is interesting that, as with the Group I implements, all the known examples come from East Sussex, of which four lie in reasonably close proximity to one another.

All the implements are axes, some with relatively broad cutting edges in relation to their length. On one example (59) the polishing has been concentrated in the area of the cutting edge, with much of the butt remaining in its original relatively crudely flaked state.

Group IX

Two implements (87 and 89) have been identified from this group, in spite of the considerable distance from the factory sites in County Antrim. Both implements are axes and noticeably small in size and rather crudely made. It is also interesting to note they were found within 5 km. of each other.

Group XIII

Three implements have been assigned to this group, and they are widely scattered in their distribution. One of the implements (6) is an axe, one (35) a battle axe, and other (178) a shafthole adze. The typology is so diverse that it is unlikely that the implements came from a single source.

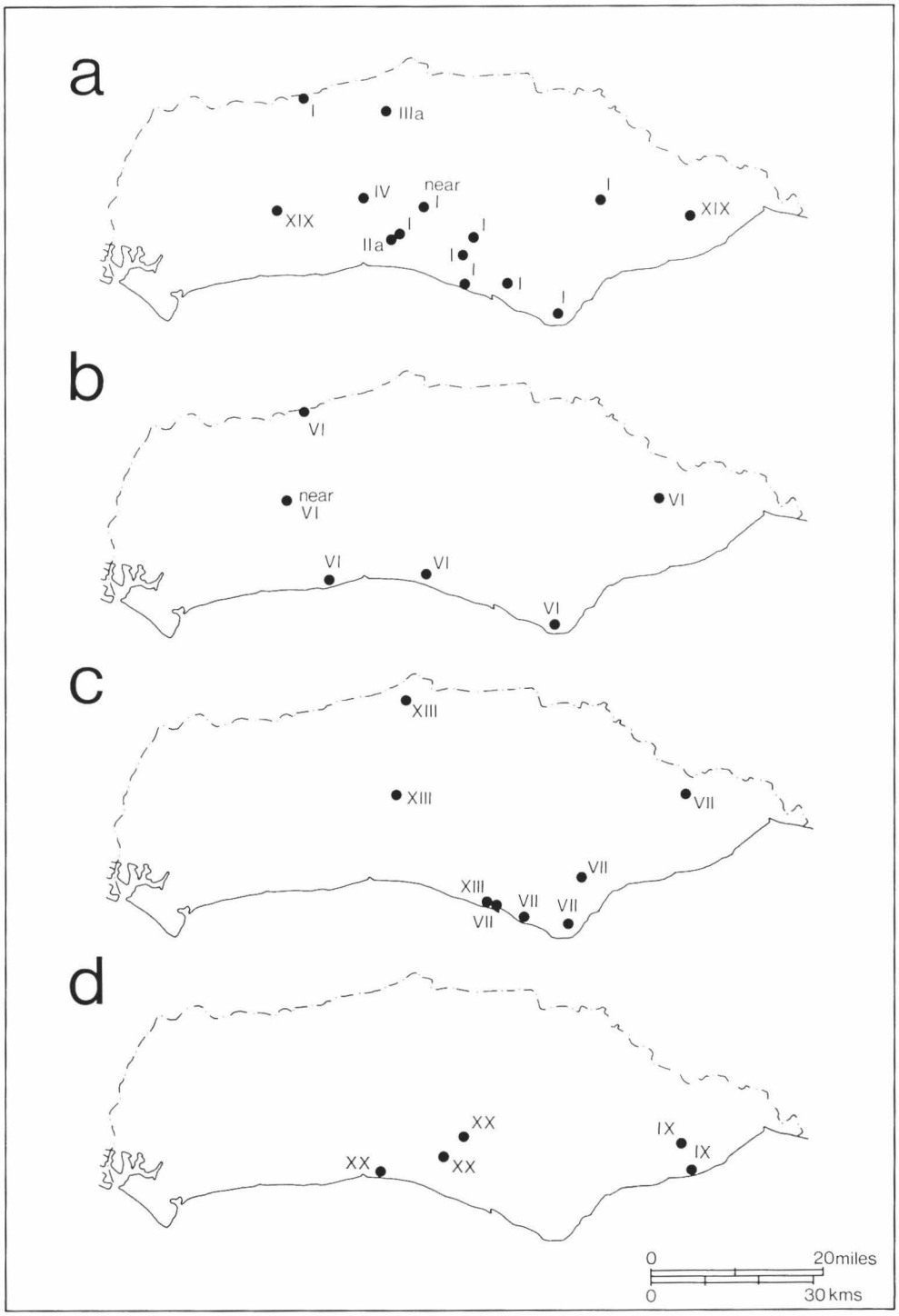


Fig. 2. Distribution of (a) Cornish Groups, (b) Lake District Groups, (c) Welsh Groups, and (d) other Groups in Sussex.

Group XIX

Two implements are known from this group. One (85) is an axe of elliptical section and somewhat asymmetric shape, the other (94) a shafthole adze.

Group XX

Four implements have been attributed to this group, and it is interesting to note that they have been found reasonably close to one another. Two of the implements (25 and 26) are axes, one (69) an adze, and the remaining implement (1) a pestle.

UNGROUPED IMPLEMENTS

Sedimentary Rocks

Details of rock types represented amongst the ungrouped implements are given in Table 2 (microfiche, pp. 3–4), and it is noteworthy that not only are ungrouped implements dominant in Sussex, but a large proportion are of sedimentary rocks, particularly quartzites and sandstones. Some difficulty has been found in assigning some sections to one or other of these categories. Quartzite is a term generally used by petrologists for a metamorphic quartz rock, but it may also be applied to a quartz sandstone in which grains are cemented by silica. Traditionally quartzite rocks were identified by breaking across, rather than around, the grains. Unmetamorphosed quartzites have sometimes been called orthoquartzites, but Pettijohn (1975, 230–1) says that recent literature indicates its gradual replacement by the term quartz arenite. In the present context the term quartzite has been used for those rocks composed of at least 98 per cent quartz (as estimated by eye, not determined by point counting). They grade continuously into rocks containing feldspar and a range of heavy minerals, particularly tourmaline, and all are considered to have originated in the south-east area, probably in the Lower Greensand, which would seem to be confirmed by the greater or lesser amounts of glauconite found in many of them.

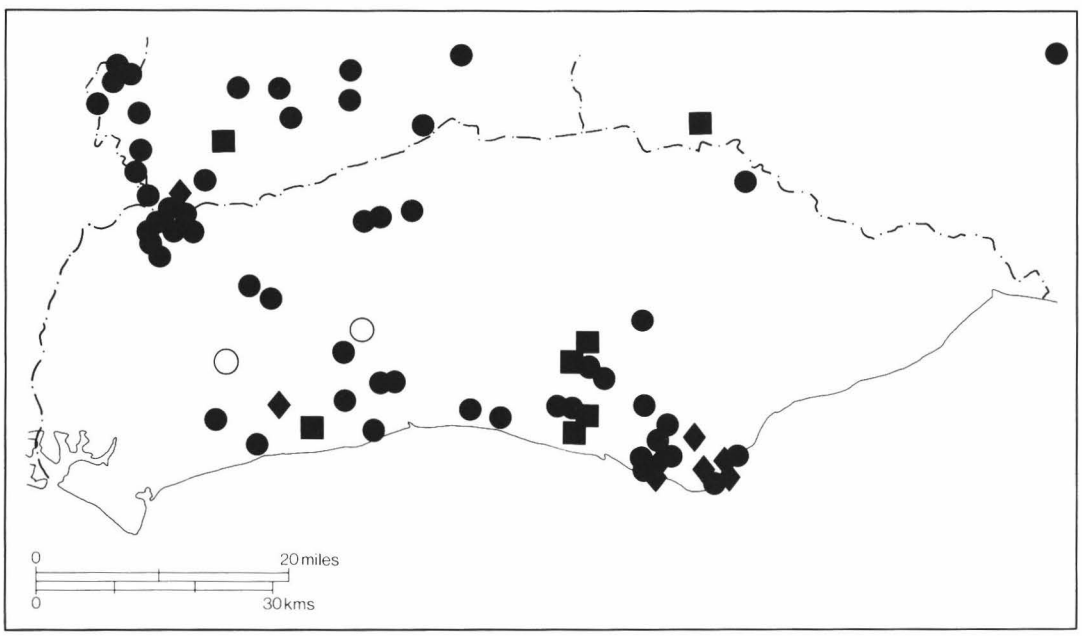


Fig. 3. Distribution of pebble hammers (solid circles), shafthole adzes (squares), and cupped pebbles (diamonds) made of quartzite/sandstone in Sussex. Two implements of uncertain attribution are represented by open circles.

Although two implements (46 and 151) have been identified as probably 'Carstone' (a hard ferruginous sandstone occurring as doggers and veins in the Folkestone Beds), many sandstones and quartzites have not been identified with particular horizons, although it is probable that many of them could be with careful work.

Perhaps the most characteristic feature of both Sussex and the south-eastern area implements generally is the abundance of pebble hammers, shafthole adzes, and cupped pebbles (some 38 per cent of all Sussex ungrouped implements examined), and nearly all manufactured from quartzite or sandstone. These implements seem not to have been made from rock quarried in particular places but rather from pebbles or small boulders, such as can be found at the present day scattered over many parts of the Chalk downland and the fringes of the Weald. This in fact accounts for the distinctive distribution pattern shown by these implements (Fig. 3), clustering as they do in just those areas where the raw material for their manufacture would have been most readily available. The distribution map also shows two particular concentrations of implements, one on the Tertiary deposits of the Weald, in south-west Surrey, east Hampshire and north-west Sussex, and the other on the Chalk downland of East Sussex, to the west of Eastbourne. Both are areas where both flint collectors and archaeologists have been particularly active, though not to such an extent as to bring into question the validity of these concentrations. Before we can explain them, however, it is necessary to look at the circumstances in which these implements have been found, for, whilst the majority are casual finds, some archaeological associations are known, as follows:

No.	*Type of implement*	*Circumstances of discovery*
70	Pebble hammer	Found in association with Mesolithic artefacts.
134	Shafthole adze	Found in association with a bronze hoard and gold ring.
189	Pebble hammer	Surface finds said to have been found amongst concentrations of Mesolithic flintwork.
190	Pebble hammer	
191	Pebble hammer	
192	Pebble hammer	
193	Pebble hammer	
194	Cupped pebble	

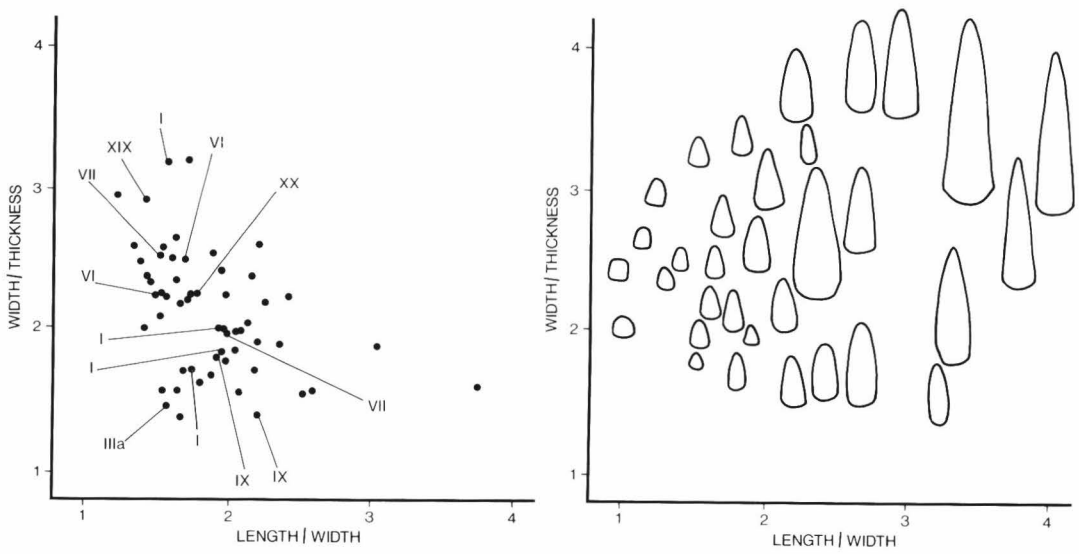


Fig. 4. Plot of width/thickness against length/width, to show the range of shapes of Sussex stone axes.

A surprisingly high proportion of these artefacts have been found either in direct or indirect association with Mesolithic material, and similar associations are known from other sites in this country, mostly but not exclusively in a Mesolithic context (Rankine 1949; Roe 1979). However, the majority of Mesolithic associations do seem to be in the south.

Certainly in the south-west Surrey, east Hampshire and north-west Sussex areas, Mesolithic sites are particularly numerous (Rankine 1956) and a corresponding concentration of pebble hammers might be expected. The situation in East Sussex is not very easy to explain for, with the exception of a number of sites in the Peacehaven (Calkin 1924) and Seaford areas (Clark 1932) associated with remnant Tertiary deposits, few Mesolithic sites have so far been discovered on the chalk downs themselves. On the other hand, the number of tranchet axes, surviving in museum collections, known to have come from this particular area is quite large (Wymer 1977). Most of the remaining implements of sandstone and quartzite are merely natural, or roughly shaped pieces (e.g. 8, 111, etc.), used for a variety of rubbing and sharpening purposes throughout the prehistoric, and no doubt more recent, periods.

Amongst those implements that are identifiable as prehistoric are axes (e.g. 98, 100, and 167) and battle axes (e.g. 151 and 196), at least some of which are likely to be of local manufacture.

Many of these implements cannot have made satisfactory working tools, and this lack of utility is also true of some of the implements of sandstone, mudstone and shale. Most probably these implements were made for ceremonial or 'show' purposes, for similar implements are known elsewhere in the British Neolithic, perhaps the best-known examples being the chalk axes from Stonehenge and Woodhenge.

Nine greywacke implements have been identified, implying a provenance in the west or north of Britain. It is possible that a few of these implements would have been placed in one or other of the greywacke groups (XV annd XIX) by other petrologists, but they do not match exactly the 'type' sections available to the authors. In some respects greywacke is an unsatisfactory rock type for a group because of the variability, particularly of grain size, through a greywacke unit, which may be such that rock specimens collected only a few metres, or even centimetres, apart may be texturally very different.

For the clear designation of a greywacke group the petrologist needs a set of slides representative of the textural range which was acceptable to the petrologist who first defined the group, and even then it may be debatable whether all of them have a single provenance. The fact that typologically the range of the implements themselves is very varied, including axes, pebble hammers, and a shafthole adze, would lend support to this view.

Igneous Rocks

Eight dolerite implements are known from Sussex, of which five are axes (23, 74, 75, 84 and 150), one a shafthole adze (103), and two battle axes (19 and 34). Although some may derive from the Whin Sill, provenances in the south-west and north-west of England, Wales, and Scotland are also likely. Of some interest are two axes (74 and 75) which were found together and undoubtedly originate from the same workshop, if not from the hands of the same maker. Both are characterized by the fact that the polishing extends only over the cutting edge and part of the butt, so that many of the original flake scars can be seen. These axes cannot, however, be matched precisely with any other of the dolerite axes from the south-east area.

Diorites, the second most abundant of the ungrouped igneous rocks, are very varied and include hornblende and pyroxene-bearing types usually containing quartz. The diorites grade towards gabbros and epidiorites on the one hand and granophyres and granites on the other. They do not appear to match the diorites of Charnwood Forest or the Malvern Hills and so prob-

ably derive from the south-west. All the eight implements assigned to this rock are typologically very different, representing a wide variety of forms.

There is one basalt implement known (90) and this contains olivine. The most likely source of this material is the Carboniferous basalts of the Midland Valley of Scotland. One lamprophyre is represented (38) which is a camptonite that undoubtedly derives from the sills in the Nuneaton area, the source of Group XIV (Shotton 1959). However, this particular rock is markedly finer grained than Group XIV and it is possible that Group XIV should be widened to include all camptonites of the Nuneaton area, or that they should be assigned subgroup numbers within XIV.

Perhaps the most important implement of igneous rock is the well known battle axe (32) from the Hove barrow burial in Sussex. This implement was found within an oak coffin (radiocarbon date 1239 b.c. ± 46), in association with an amber cup, a perforated whetstone (41) and an ogival dagger. This group is typical of the second phase of the Wessex culture. Permission to examine these implements petrologically has not yet been granted.

Metamorphic Rocks

Over half of the ungrouped metamorphic rocks are epidiorites (Table 2: microfiche, pp. 3–4), only the sandstone implements being more abundant. The epidiorites strongly enforce the conclusion apparent from the grouped implements, that the south-west was the predominant source of the rock used in south-east implements which are not of local origin. Many of the epidiorites are not too dissimilar to Groups I and II, though not sufficiently close for inclusion in them.

Of the 24 implements listed as epidiorites, 18 are axes, the majority of which show the same general characteristics of south-western axes described under Group I.

Among the schists are found chlorite schist (154) and hornblende (clinozoisite chorite schist) (17), while slates, phyllites, and other fine-grained sediments which have undergone some degree of metamorphism are represented by six implements of which two (148 and 152) are spotted slates. These grade into biotite-cordierite-andalusite hornfels of which (29) is an example. The relative abundance of spotted slates and biotite-cordierite hornfelses amongst implements of the south-west (Evens *& al.* 1962) and the occurrence of such rock types in the aureoles of the south-western granites such as Dartmoor and Lands End indicate again the likelihood of a south-west of England source. This is a further potential group of limited provenance.

How effective some of these implements would have been is debatable, since a forceful blow might be expected to cleave the rock along its planes of weakness. This is just what appears to have happened with one implement (177) which, although retaining the general shape of an axe, is undoubtedly much thinner than it was originally. No implements of jadetite, pyroxenite or nephrite have so far been found in Sussex.

THE ARCHAEOLOGICAL, GEOLOGICAL AND PETROLOGICAL IMPLICATIONS OF THE STUDY

Since there have already been several references to the distribution of a number of the implements considered in this study, it is necessary to discuss, in a more general way, the overall distribution pattern as shown in Fig. 1.

The distribution map (Fig. 1) shows all implements considered by this survey, and as such it is a continuing palimpsest of implement distributions, of implements which differ widely in typology and function, in their age, and in their point of origin. Thus, whilst in general terms the distribution map reflects the density of settlement in prehistoric times, it also reflects the degree of attention that has been paid to the various areas. For example, the concentration of implements in eastern Sussex, from the downland above Eastbourne, which contrasts mark-

edly with, say, the downs of western Sussex, is probably due, at least in part, to this factor. There is no reason to suspect that prehistoric settlement in the west of Sussex would be so dramatically less dense than in the east as the distribution map would seem to indicate. Also the marked difference between the numbers of artefacts from the South Downs and the Weald has undoubtedly been over-emphasized by the regional activities of archaeologists and collectors alike.

We also have to take account of topographical changes that have taken place since the implements were deposited. For example sea-level, relative to the land, has risen somewhat since Neolithic times, and whilst an accurate estimate is almost impossible to determine (Akeroyd 1972) since it probably varies around the coast, the rise has probably been of the order of three to six metres. Certainly the rise has been sufficient to inundate many areas which would have been above sea-level during the Neolithic.

The appearance of the Sussex coast would, therefore, have been significantly different then, with much of what is now marshland open to the sea, at least at high tide. Elsewhere, erosion has taken its toll, and the prehistoric coastline would have been some distance to the south of that of the present day.

Another factor, although perhaps not a major one, relates to the nature of the implements themselves, for they are, on the whole, recognizable as something unusual, and it is not unknown to find them built into later walls (e.g. 60, 110 and 137) or to discover them in later, prehistoric, Roman, or post-Roman contexts (e.g. 52, 53, 142 and 172). Are they merely relics of former prehistoric occupation on the site, or could they have been found elsewhere and preserved as something out of the ordinary?

Notwithstanding these reservations, it is possible to make a few useful observations. The implements are most numerous in those areas traditionally rich in prehistoric settlement sites, i.e. the chalk downland and other lighter soils. It is also noticeable just how many of the Wealden finds lie near to the rivers and streams which drain that area. This is a pattern which appears to match that of the flintworking sites, and seems to imply that Wealden resources were being exploited by prehistoric groups moving along these routeways.

Of all the implements in the study, those which have been attributed to a Cornish or a south-western source are by far the most numerous of the grouped implements represented (Table 1: microfiche, p. 2; Fig. 2a). This tendency is even more marked if those implements are included which, although ungrouped, are likely to have a south-western origin. To what degree this is due to the volume of production of the south-western manufacturers, or the relish with which these implements were acquired by the south-eastern population, is not clear. Certainly there is a noticeable eastward decline in implement numbers, as might be expected with an increase in the distance from the centres of production.

The distribution of these implements does not lend support to the idea that local erratic pebbles (e.g. the Selsey erratics) formed the source material for a number of them (Briggs 1976). Only in the case of (92), a shafthole adze, broken and perforated from one side only, does this seems likely. All the other broken implements of rock of non-local origin appear to have fractured subsequent to, rather than during, manufacture.

It is difficult to make meaningful comments about the distribution of the remaining grouped implements in the county (Fig. 2b-d) in view of the small numbers represented.

Table 3 (microfiche, p. 5) gives the proportions of implements from the south-east which can be assigned to the established petrological groups and, for comparison, the same data for four other areas. In this respect the south-east and south-west areas are similar in having relatively low proportions, i.e. 25 per cent and 34 per cent of implements assignable to groups, while in contrast Lincolnshire, Nottinghamshire and Rutland with 72 per cent, and Yorkshire and

East Anglia, both with 55 per cent, are high, the first of these remarkably so. It is not clear why there should be this difference between the south and north and midlands of England. For the south-east it is perhaps logical in so far as this area is the farthest from the known factory sites, which are located in the west and north of the country. But this argument would not apply to the south-west.

The south-east and south-west of England differ from the more northerly parts in being dominated, amongst the grouped implements, by those having a provenance in the south-west, i.e. Groups I–IV, while Group VI is usually the dominant group for the midlands and north. This is clearly illustrated by Table 3 (microfiche, p. 5). It is interesting to note that in terms of the relative proportions of Groups I–IV and VI, East Anglia occupies an intermediate position. A similar conclusion was reached by a study of the typology of jadeite implements (Bishop *& al.* 1977), a fact which may have some significance, although it is appreciated that jadeite axes have a continental provenance, and thus represent an international rather than a national trade.

The variation amongst the south-eastern counties of the proportion of grouped implements is also interesting (Table 4: microfiche, p. 5), with Kent and Surrey having 25 per cent, Hampshire 38 per cent and Sussex the remarkably low figure of 17 per cent. The increase in Hampshire, the westernmost county, might be explained as reflecting the shorter distance to the source areas, and certainly Hampshire has a significantly higher proportion of implements belonging to Groups I–IV and VI than the other south-eastern counties. The very low figure for Sussex, attributable essentially to the relative paucity of Group I implements, is difficult to explain, but two possibilities occur to us. Firstly, amongst ungrouped implements epidiorites are very abundant in Sussex (24 implements), and Group I, and indeed Groups II–IV, are also epidiorites. On the whole, therefore, Sussex is just as well represented by this rock type as the other counties, and it is simply that the particular type of epidiorite designated as Group I does not occur widely in Sussex. Perhaps Neolithic man in Sussex preferred a slightly different brand of such tools.

A second possible explanation for the low proportion of grouped implements is the use of local materials for implement manufacture and the fact that all types of implement are being considered together, rather than one type at a time (e.g. axes). In the statistics for the ungrouped implements (Table 2: microfiche, pp. 3–4), the sandstones and quartzites as a whole constitute 40 per cent of all the ungrouped implements and 30 per cent of the total number of implements identified petrologically in the south-east. However, in Sussex alone this group comprises 51 per cent of the ungrouped implements and 42 per cent of all implements, so providing a very good reason for the very low proportion of grouped implements found in the county. The group designated as quartzite/sandstone in the table includes those implements which have not been sectioned and therefore not differentiated petrologically.

It has already been pointed out that the implements of quartzite and sandstone are principally pebble hammers, shafthole adzes, and cupped pebbles. However, this ability to equate typological form with the material for manufacture is restricted to these few classes of implement, and contrasts markedly, for instance, with the situation amongst axes and battle axes.

It is also interesting to note how many of the stone axes come from the chalk downs in those areas where there are flint mines and the large-scale production of flint axes. This fact poses a number of interesting questions. For example, although stone axes may well have been superior to those of flint for a number of tasks, does the fact that flint axes would have been relatively freely available imply a certain prestige, or religious or social significance, to the ownership of a stone implement? What do we mean by trade, a term often used quite ambiguously by archaeologists, and how was it conducted? To what extent is the true picture distorted by

ignoring the export of flint axes from production centres in the south-east? Was there a significant exchange of axes between communities? Unfortunately the answers to these and other questions must remain unknown, for the evidence we have at the present is too fragmentary and inconclusive. Archaeological associations are few and implements in a primary dateable context rare. The more important of the associations have already been mentioned, whilst the remainder are included as notes to the lists. Those sites which appear potentially capable of producing substantial information lie outside the county, for it is from sites with a range of well preserved archaeological material that future advances will be made.

Contents of Microfiche

Table 1: Grouped implements from Sussex compared with those from adjacent counties (p. 2)
Table 2: Ungrouped implements from Sussex compared with those from adjacent counties (pp. 3–4)
Table 3: Comparison of proportions of grouped implements and of Groups I–IV and VI between the south-east (Kent, Surrey, Sussex and Hampshire) and other areas of England (p. 5)
Table 4: Proportions of grouped and ungrouped implements in Sussex and the adjacent counties (p. 5)
Table 5: Products of grouped rocks in Sussex (p. 6)
Table 6: Products of ungrouped rocks in Sussex (pp. 7–8)
Table 7: List of Sussex stone implement numbers according to rock type (pp. 9–10)
Gazetteer of stone implements from Sussex (pp. 11–24)
Notes (pp. 25–8)
Illustrated catalogue of Sussex stone implements (Figs. 5–27) (pp. 29–51)

Acknowledgements

We are grateful to the many museum curators and private individuals (unfortunately too numerous to name individually), who let us examine the stone implements under their care. Mr. R. V. Davis and Dr. I. F. Smith generously made available numerous thin sections, originally made for the South-Western Group, and Mr. R. Sanderson kindly looked out all the Institute of Geological Science's sections.

The present authors have only been involved in the project for a few years and are, therefore, very conscious of the contribution made by others in the past. Particular mention must be made of Miss K. J. Evans, whose published summary (Evans 1968a) has remained the principal source of information until this time.

Authors: A. G. Woodcock, East Sussex County Council Planning Department, Lewes, East Sussex BN7 1YA.
A. R. Woolley, Department of Mineralogy, British Museum (Natural History), Cromwell Road, London SW7 5BD.

References

Akeroyd, A. V. 1972 'Archaeological and Historical Evidence for Subsidance in Southern Britain', *Philosophical Transactions of the Royal Soc. London,* **A272**, 151–69.
Anon. 1856 'Catalogue of Antiquities Exhibited in the Museum Formed during the Annual Meeting of the Archaeological Institute held at Chichester in July 1853', *Suss. Arch. Coll.* **8**, 280–344.
Arundell, E. D. 1950–2 'Excavations at Seaford Head', *Suss. N. & Q.* **13**, 193–5.
Barton, K. J. 1963 'Worthing Museum—Archaeological Notes for 1963', *Suss. Arch. Coll.* **103**, 83–93.
Bell, M. 1977 'Excavations at Bishopstone', *Suss. Arch. Coll.* **115**, 1–299.
Bishop, A. C., Harrison, R. J., Kinnes, I. A. & Woolley, A. R. 1977 'Jadeite Axes in Europe and the British Isles: an

Interim Study', *Archaeologia Atlantica*, **2**, 1–8.
Briggs, C. S. 1976 'Notes on the Distribution of some Raw Materials in Later Prehistoric Britain', in *Settlement and Economy in the Third and Second Millennia B.C.* (ed. C. Burgess & R. Miket), 267–82.
Brightwell, H. 1949 'An Amateur and Archaeology', *Arch. Newsletter*, **1**(9), 7.
Burstow, G. P. & Wilson A. E. 1939 'A Roman Bath, Highdown Hill, Sussex', *Suss. Arch. Coll.* **80**, 62–87.
Calkin, B. J. 1924 'Pigmy and Other Flint Implements Found at Newhaven', *Suss. Arch. Coll.* **65**, 224–41.
Chandler, A. 1904 *South-Eastern Naturalist*, 55.
Chidgey, A. 1958 'Macehead', *Suss. N. & Q.* **15**, 27.
Clark, J. G. D. 1932 *The Mesolithic Age in Britain.* Cambridge: Univ. Press.
Clough, T. H. McK. & Cummins, W. A. (ed.) 1979 *Stone Axe Studies.* C. B. A. Research Reports, **23**.
Clough, T. H. McK. & Green, B. 1972 'The Petrological Identification of Stone Implements from East Anglia', *Proc. Prehist. Soc.* **38**, 108–55.
Cummins, W. A. 1979 'Neolithic Stone Axes: Distribution and Trade in England and Wales', in *Stone Axe Studies* (ed. Clough & Cummins), 5–12. C.B.A. Research Reports, **23**.
Cummins, W. A. & Moore, C. N. 1973 'Petrological Identification of Stone Implements from Lincolnshire, Nottinghamshire and Rutland', *Proc. Prehist. Soc.* **39**, 119–55.
Curwen, E. 1928a 'Notes on Some Uncommon Types of Stone Implements Found in Sussex', *Suss. Arch. Coll.* **69**, 83–91.
——1928b 'A Sussex Stone Implement', *Suss. N. & Q.* **2**, 165–7.
——1930 'Two Stone Implements from Deans, Piddinghoe', *Suss. Arch. Coll.* **71**, 253–4.
——1941 'An Egg-Shaped Macehead', *Antiq. Jnl.* **21**, 337–41.
——1943 'A Macehead from Washington', *Suss. N. & Q.* **9**, 133–4.
——1944 'A Perforated Stone Hoe from Ringmer', *Suss. N. & Q.* **10**, 76–8.
Curwen, E. C. 1930 'Wolstonbury', *Suss. Arch. Coll.* **71**, 237–45.
——1940 'Axes of Igneous Rock Found in Sussex', *Suss. N. & Q.* **8**, 67–9.
——1954 *The Archaeology of Sussex*, 2nd edn.
Curwen, E. C. & Holleyman, G. A. 1935 'Late Bronze Age Lynchet-Settlements on Plumpton Plain, Sussex', *Proc. Prehist. Soc.* **1**, 16–38.
Drewett, P. D. 1982 *The Archaeology of Bullock Down, Eastbourne, East Sussex: The Development of a Landscape.* Suss. Arch. Soc. Monograph, **1**.
Evans, Sir J. 1897 *The Ancient Stone Implements of Great Britain*, 2nd edn.
Evans, K. J. 1968a 'Stone Implements in Sussex', *Suss. N. & Q.* **17**, 15–21.
——1968b 'Worthing Museum Archaeological Notes for 1965 and 1966', *Suss. Arch. Coll.* **106**, 135–42.
——1979 in *Chichester Excavations*, **4**: *The Roman Villas at Chilgrove and Upmarden* (ed. A. Down), 168, 170, 178–9.
Evens, E. D., Grinsell, L. V., Piggott, S. & Wallis, F. S. 1962 'Fourth Report of the Sub-Committee of the South-Western Group of Museums and Art Galleries on the Petrological Identification of Stone Implements', *Proc. Prehist. Soc.* **28**, 209–66.
Field, D. & Woolley, A. R. 1983 'Neolithic and Bronze Age Ground Stone Implements from Surrey: Morphology, Petrology and Distribution', *Surrey Arch. Coll.* **74**, 85–109.
Fowler, J. 1930–1 'Neolithic Macehead', *Suss. N. & Q.* **3**, 56.
Grinsell, L. V. 1931 'Sussex in the Bronze Age', *Suss. Arch. Coll.* **72**, 30–68.
Heron-Allen, E. 1925 'Neolithic Celt Found at Selsey', *Suss. Arch. Coll.* **66**, 232.
Hodges, H. W. M. 1958 'A Perforated Stone Axe-Hammer from Cockhaise Farm, Lindfield', *Suss. N. & Q.* **15**, 37–9.
Holden, E. W. 1971 'A Sandstone Roundel and Mesolithic Flints from Bognor Common, Fittleworth, Sussex', *Suss. Arch. Coll.* **109**, 4–7.
Honeywood, T. 1877 'Flint Implements from St. Leonard's Forest', *Suss. Arch. Coll.* **27**, 177–83.
Keef, P. A. M. 1940 'Flint Chipping Sites and Hearths on Bedham Hill near Pulborough', *Suss. Arch. Coll.* **81**, 215–35.
Keen, L. & Radley, J. 1971 'Report on the Petrological Identification of Stone Axes from Yorkshire', *Proc. Prehist. Soc.* **37**, 16–37.
Keiller, A. D., Piggott, S. & Wallis, F. S. 1941 'First Report of the Sub-Committee of the South-Western Group of Museums and Art Galleries on the Petrological Identification of Stone Axes', *Proc. Prehist. Soc.* **7**, 50–72.
Martin, P. J. 1857 'Notice of a British Settlement and Walled Tumulus near Pulborough', *Suss. Arch. Coll.* **9**, 109–18.
Musson, R. 1950–2 'Two Stone Axes from Hampden Park, Eastbourne', *Suss. N. & Q.* **13**, 84–6.
Newnham, W. 1958 'A Mesolithic Site at Bishop's Wood, Warninglid', *Suss. N. & Q.* **15**, 63–4.
Pettijohn, F. J. 1975 *Sedimentary Rocks*, 3rd edn. New York: Harper & Row.
Phillips, B. 1857 'Discovery of a Tumulus at Hove, near Brighton', *Suss. Arch. Coll.* **9**, 119–24.
Pull, J. H. 1930 'Two Sussex Stone Hammers', *Worthing Herald*, 11 Jan.
Ramsden, H. F. S. 1928 'A Sussex Stone Implement and Primitive Rope-Making', *Suss. N. & Q.* **2**, 102–5.
Rankine, W. F. 1949 'Stone Maceheads with Mesolithic Associations in South-Eastern England', *Proc. Prehist. Soc.* **15**, 70–6.
——1951 'Quartzite Pebble Maceheads with Hour-Glass Perforation—their Distribution in England', *Arch. Newsletter*, **4**, 53–5.
——1956 *The Mesolithic of Southern England.* Surrey Arch. Soc. Research Paper, **4**.
Ratcliffe-Densham, H. B. A. 1948 'Stone Implement from Durrington', *Suss. N. & Q.* **12**, 87–9.
——1972a 'Stone Implement from Madehurst', *Suss. Arch. Coll.* **110**, 125–6.
——1972b 'Stone Implement from Patching', *Suss. Arch. Coll.* **110**, 126–7.
Read, C. H. 1899–1901 'Objects of the Bronze Age Found in High Down Camp, Sussex', *Proc. Soc. of Antiq. London*, **18**, 386–8.

Roe, F. E. S. 1966 'The Battle-Axe Series in Britain', *Proc. Prehist. Soc.* **32**, 199–245.

——1979 'Typology of Stone Implements with Shaftholes', in *Stone Axe Studies* (ed. Clough & Cummins), 23–48. C.B.A. Research Reports, **23**.

Shotton, F. W. 1959 'New Petrological Groups based on Axes from the West Midlands', *Proc. Prehist. Soc.* **25**, 159–67.

Smith, R. A. 1926a 'The Perforated Axe-Hammers of Britain', *Archaeologia*, **75**, 77–108

——1926b 'A Ground Axe of Igneous Rock', *Suss. Arch. Coll.* **67**, 217–18.

Stone, J. F. S. & Wallis, F. S. 1947 'Second Report of the Sub-Committee of the South-Western Group of Museums and Art Galleries on the Petrological Identification of Stone Axes', *Proc. Prehist. Soc.* **13**, 47–55.

——1951 'Third Report of the Sub-Committee of the South-Western Group of Museums and Art Galleries on the Petrological Identification of Stone Axes', *Proc. Prehist. Soc.* **17**, 99–158.

Tebbutt, C. F. 1974 'The Prehistoric Occupation of the Ashdown Forest', *Suss. Arch. Coll.* **112**, 34–43.

Winbolt, S. E. 1929 'A Neolithic Celt Found at Selsey', *Suss. County Mag.* **3**, 869.

——1931 'Excavations at Saxonbury Camp', *Suss. Arch. Coll.* **71**, 223–36.

Woodcock, A. G., Kelley, D. B. & Woolley, A. R. forthcoming 'The Petrological Identification of Stone Implements from South-East England. C.B.A. Research Reports.

Wymer, J. J. 1977 *Gazetteer of Mesolithic Sites in England and Wales*. C.B.A. Research Reports, **20**.

Vahey, Z. 1983 'A Roman Road at Icklesham', *Hastings Area Arch. Research Group Newsletter*, **4**(3), 1–21.

Sussex Archaeological Collections **124** (1986), 25–33.

EXCAVATIONS AT SEAFORD HEAD CAMP, EAST SUSSEX, 1983

by Owen Bedwin

(with a report on the soils by R. MacPhail)

Trial excavations through the defences of Seaford Head hill-fort established a likely early Iron Age date for its construction. A section through the rampart revealed post-holes at the front, an indication of wooden revetting. Beneath the rampart was a well-defined buried soil, analysis of which showed clear evidence of tillage immediately prior to the hill-fort's construction.

INTRODUCTION

The hill-fort on Seaford Head is a prominent earthwork on a cliff overlooking the English Channel (Fig. 1). It is a univallate fort, with bank and ditch well defined along most of the perimeter, though the ditch is largely silted up on the eastern side. There are a number of gaps through the bank and ditch, though none of these shows clear evidence of having been an original entrance. The area defined by the defences amounted to 4·2 ha. (10·5 a.) at the time of the 1983 excavation, but this is gradually being reduced by coastal erosion at the rate of a metre every two years. The original extent of the hill-fort is thus unknown, but it could have been considerably larger, with the defences forming a complete circuit. The approaches to the hill-fort are very steep to the west, but more gradual to the north and east.

Although the hill-fort is situated on top of the South Downs, the subsoil is not simply Upper Chalk. Most of the eastern half of the hill-fort lies on a substantial capping of clay-with-flints, which was over 3 metres thick immediately below the eastern defences. On the western side, only small pockets of clay-with-flints survive, but the ditch silts had a considerable clay content, implying there had been a more extensive clay-with-flints cover on this side also.

The hill-fort is now part of a municipal golf course, with the usual range of features, such as bunkers, tees and greens. Within the hill-fort, the sole surviving feature of archaeological significance is a low round barrow (Fig. 2). This was opened in 1876, with the discovery of Early Bronze Age material (Pitt-Rivers 1877). At the same time, a section was cut through the hill-fort defences on the western side, at a point now eroded away (Fig. 2). The ditch was shown to be 2·1 metres deep, with no finds in the bottom 1·3 metres of chalky rubble. Above this sterile material, however, were numerous sherds of Romano-British pottery and oyster shells. On the basis of this evidence, and of parallels with other hill-forts, Seaford Head was thought to be a 'British Camp', though by how many years its construction pre-dated the Roman Conquest remained uncertain. Some of the flint-gritted sherds found by Pitt-Rivers in the interior of the site during the 1876 excavations belong to what would now be described as the early Iron Age.

The excavation that forms the subject of this report was therefore designed with two main aims: (1) to obtain firmer dating evidence for the construction of the hill-fort; and (2) to obtain information about the environment in which the hill-fort was constructed. The excavation was carried out for three weeks in March and April 1983, under the direction of the author, as part of the London Institute of Archaeology's Easter

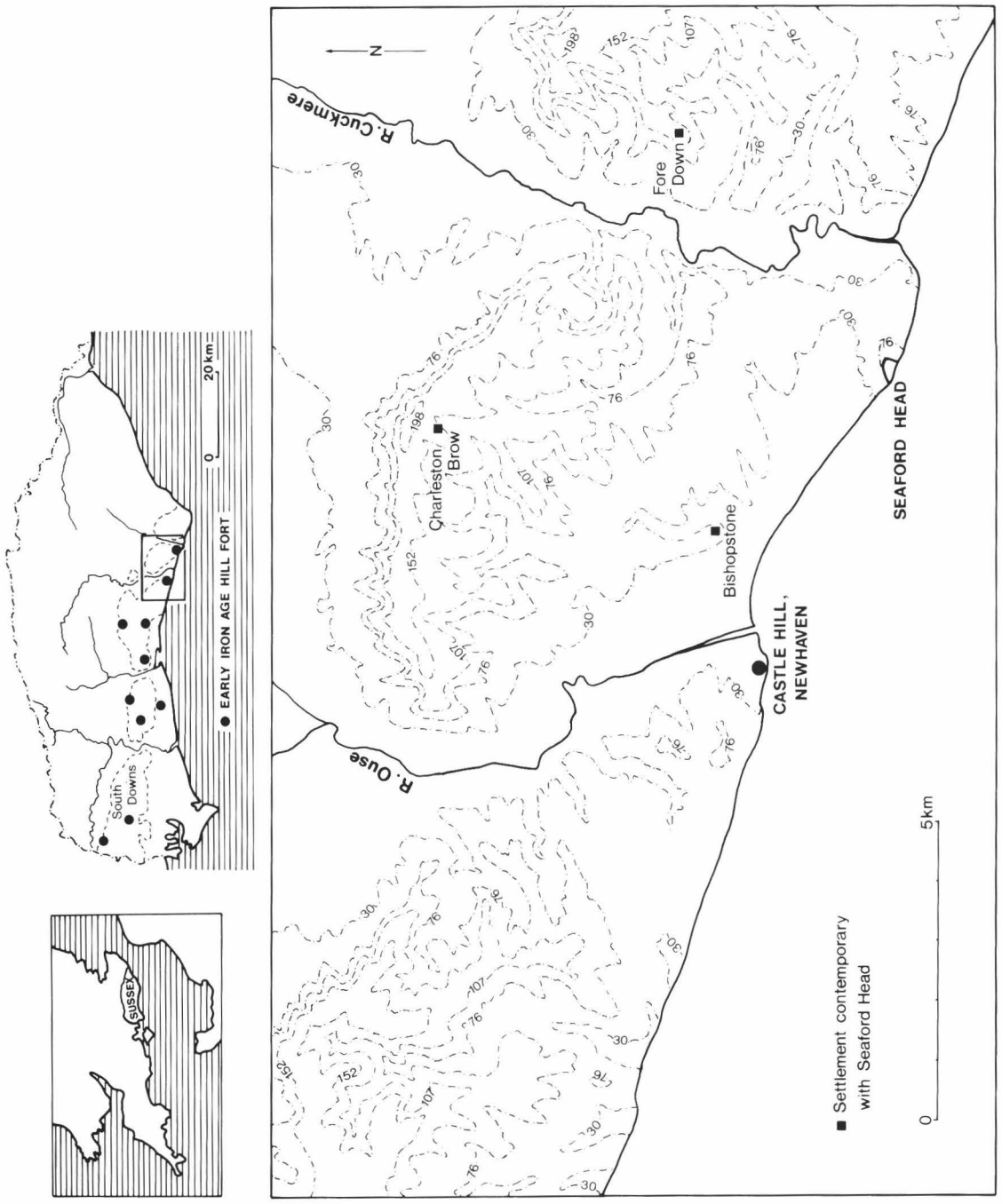


Fig. 1. Seaford Head, 1983. Site location.

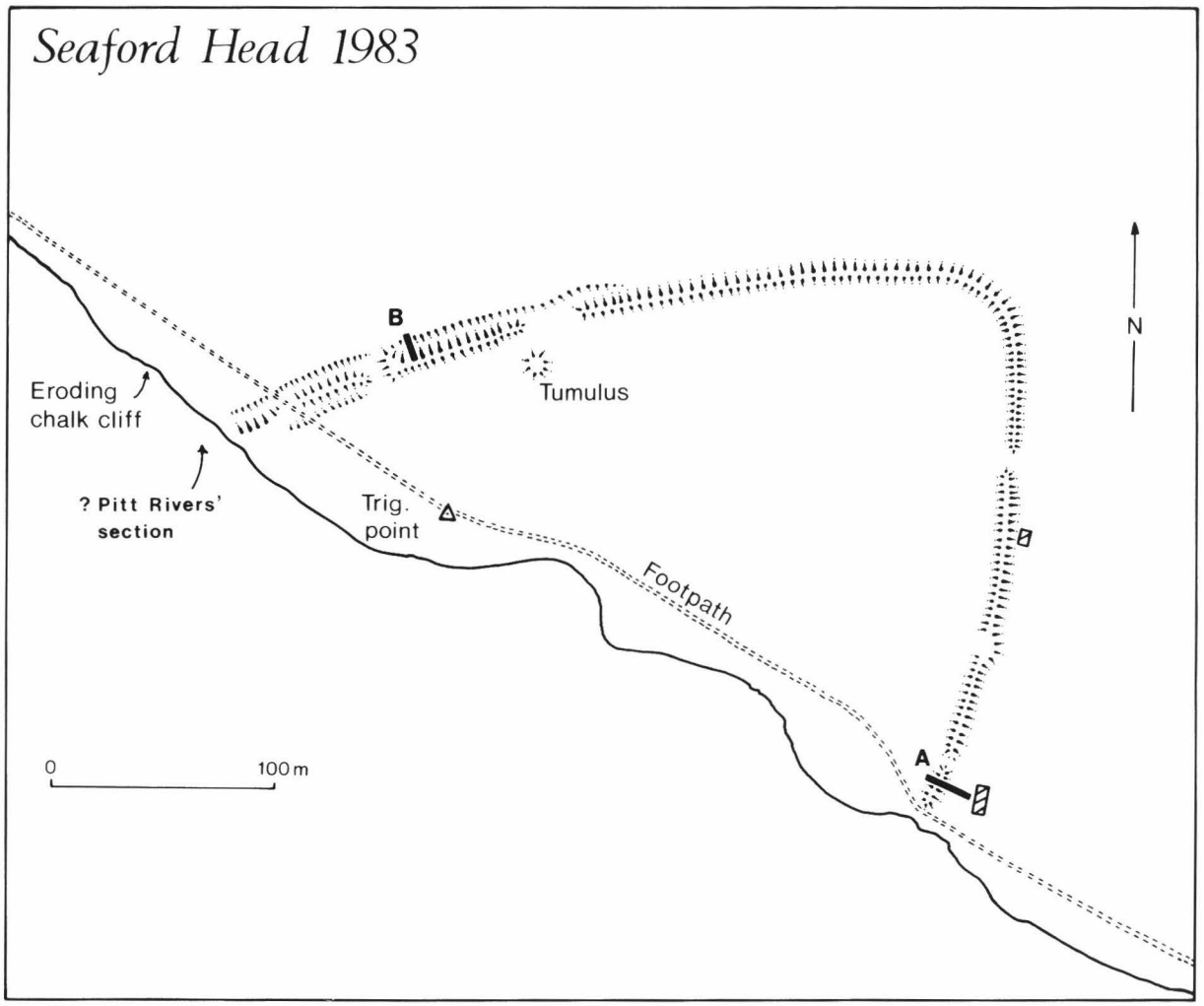


Fig. 2. Seaford Head, 1983. General site plan.

Field Course. The site (no. 110) is threatened by continuing coastal erosion. The work was funded by East Sussex County Council and the Department of the Environment, with scheduled monument consent being granted by the latter.

EXCAVATION

Two trenches were dug, both by hand. Trench A was a complete section through the defences on the eastern side; Trench B examined the ditch on the western side.

Trench A (Figs. 2–4)

This measured 19 metres by 2 metres. The natural subsoil was entirely clay-with-flints, a buff-brown deposit with occasional smallish flint nodules. Excavation showed that the ditch had a wide, flat bottom, and was cut a maximum of 1·8 metres into the subsoil. The silts within it were mainly stone-free silty clays (Contexts 24 and 29), interspersed with rather stonier lenses (Contexts 14 and 31). At the eastern end of the section, there was some indication of a small counterscarp bank (Contexts 14, 15 and 16), perhaps

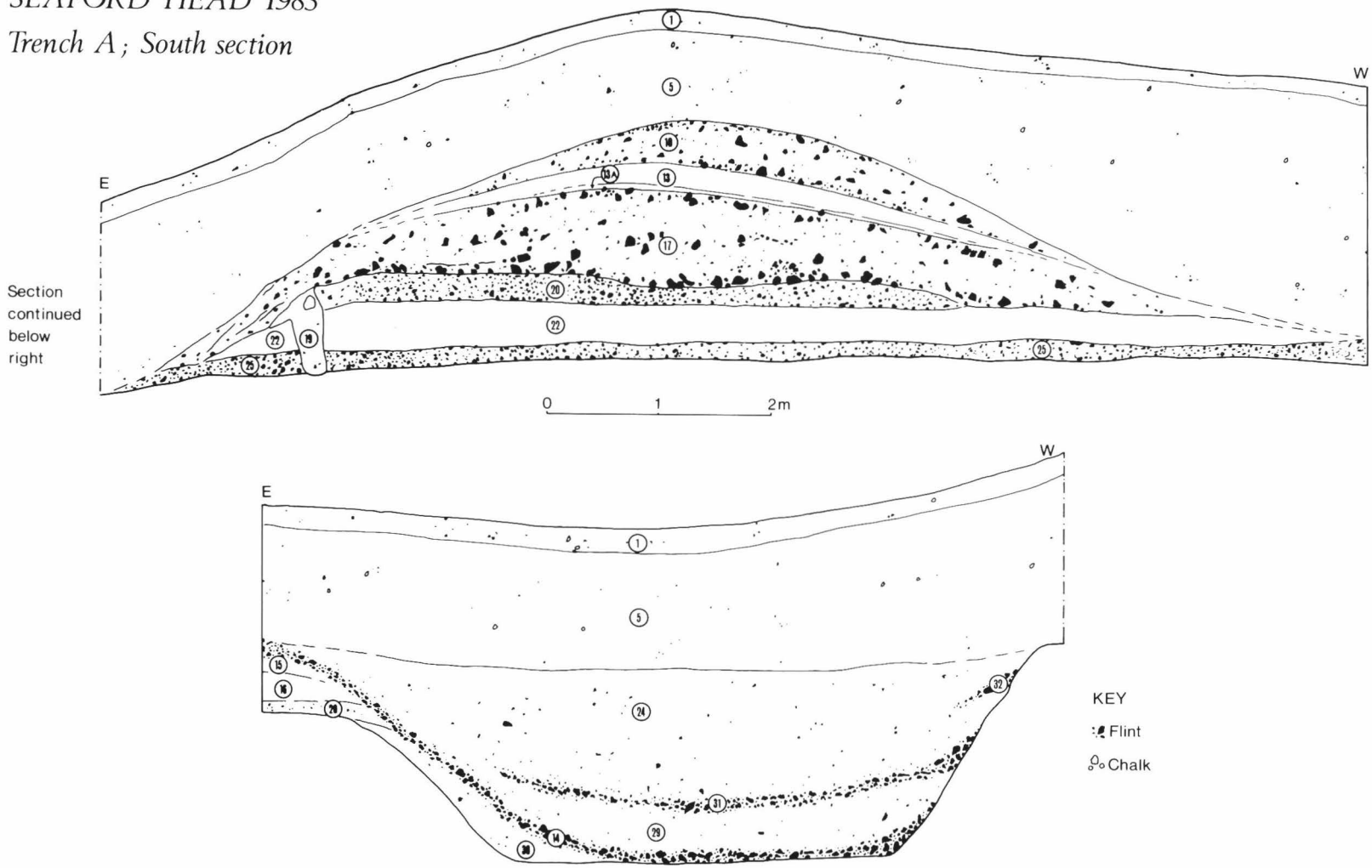


Fig. 3. Seaford Head, 1983. Trench A section.

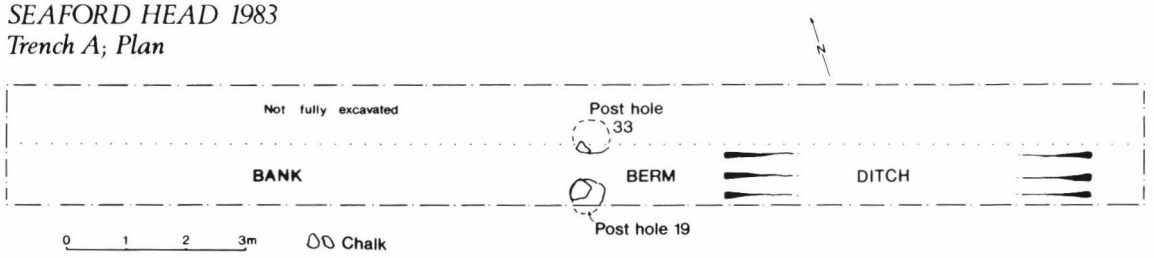


Fig. 4. Seaford Head, 1983. Trench A plan.

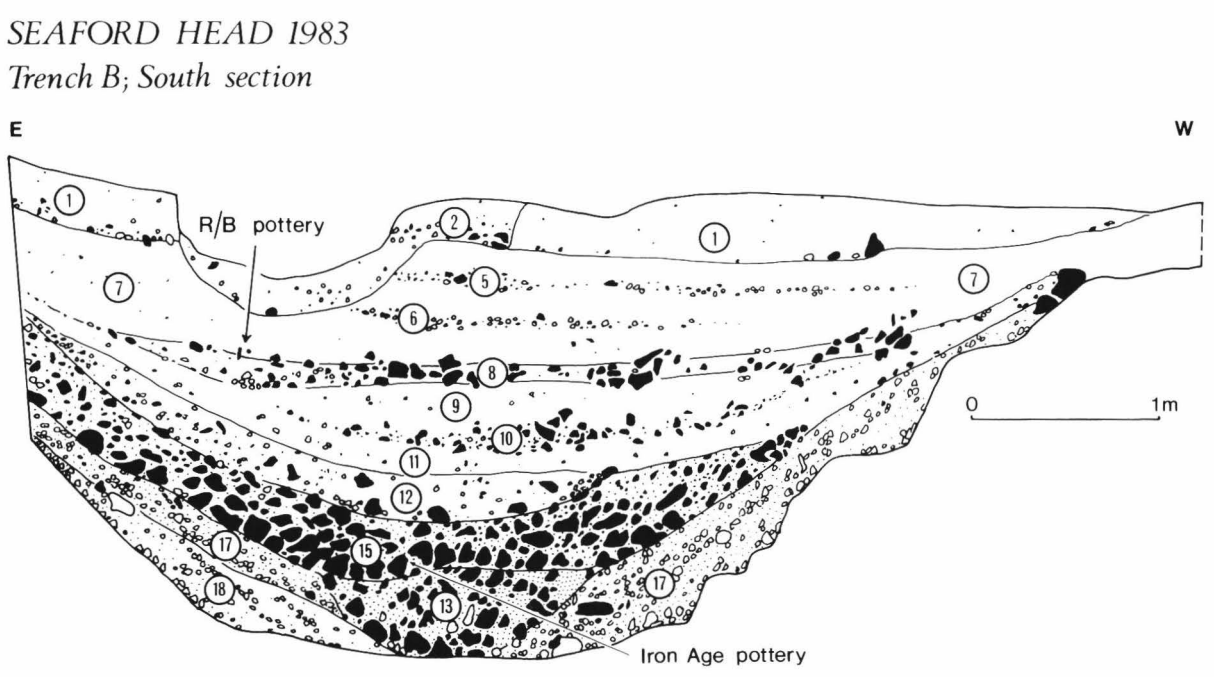


Fig. 5. Seaford Head, 1983. Trench B section.

derived from cleaning out the ditch at some stage. The only finds from the ditch silts were a single body sherd in a heavily flint-gritted fabric from near the bottom of Context 24, and a number of unretouched flint flakes.

The bank presented a more complicated appearance. Starting at the bottom, the stony layer (Context 25) and the stone-free layer (Context 22) represented a well-defined buried land surface. Through these two layers, a post-hole (Context 19) had been cut at the front of the bank. The drawn section does not fully indicate the depth of the post-hole below the former ground level, which was 80 cm. below the top of Context 22. A second post-hole (Context 33 in Fig. 3) was found. The distance between post-

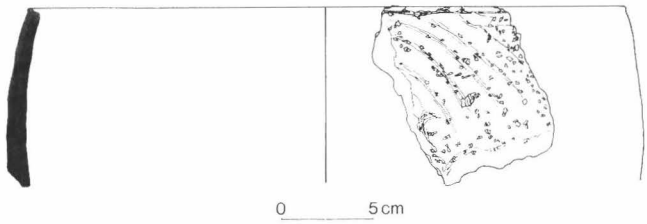


Fig. 6. Seaford Head, 1983. Early Iron Age pottery.

hole centres was 40 cm., a rather close spacing. These post-holes both contained large lumps of chalk, presumably as packing. The post-holes represent wooden revetting at the front of the bank. The distance between the foot of the posts and the inner edge of the ditch (i.e. the berm) would have been at least 80 cm.

Above the buried soil, the bank consisted of a series of layers varying slightly in colour, but more conspicuously in stoniness. Contexts 20, 17 and 10 simply represent dump deposits forming the bulk of the bank. Contexts 13 and the lens 13A were stone-free and very similar to Context 22, the buried soil. It is therefore possible that Context 17 represents the top of the original bank on which a soil (Contexts 13 and 13A) developed, and this was in turn buried by a second, smaller, phase of bank construction, indicated by Context 10. Above Context 10 was a thick, homogeneous, almost stone-free layer, Context 5, which covered the entire bank and ditch profile up to a maximum depth of 1·5 metres.

The only finds from the bank or the buried soil beneath were a few flint flakes and a single piece of burnt flint. Soil samples were taken from the profile shown in Fig. 3 for pollen and soil analysis, the results of which are discussed below.

Trench B (Figs. 2 and 5)

This measured 7 metres by 2 metres; the subsoil was Upper Chalk with some shallow pockets of clay-with-flints. The hill-fort ditch was cut 2·0 metres into the subsoil, again with a wide, flat bottom. Most of the silts contained either a chalky or a flint rubble, or a mixture of both, but the soil matrix was often clay-rich, suggesting a thicker covering of clay-with-flints at the time of hill-fort construction. Romano-British pottery was found in the upper part of the ditch (Contexts 1 and 7). From lower down in the ditch (Context 15), there were 16 sherds of a heavily flint-gritted fabric, mostly from the same vessel (Fig. 6). This material dated to the early Iron Age. A few unretouched flint flakes were found at various levels throughout the ditch, and the Romano-British pottery was accompanied by some animal bone fragments, plus limpet and oyster shells.

DISCUSSION

The results of the excavation can be summarized as follows:

(i) *Dating*

The earliest pottery in the ditch in Trench B belongs to the early Iron Age (6th/5th centuries B.C.). This material, together with similar, contemporary sherds found within the hill-fort by Pitt-Rivers (1877), strongly suggests an early Iron Age date for the building of the hill-fort. The Romano-British pottery from upper layers in the ditch in Trench B indicates deposition of domestic debris in a ditch already largely silted up.

(ii) *Environment*

Whereas Trench B provided the dating evidence, information about the environment

both at, and prior to, the construction of the hill-fort came from the buried Iron Age soil beneath the bank in Trench A. The information comes from pollen surviving in the buried soil and from an analysis of the soil structure itself.

To deal with the pollen first: in general, preservation of pollen was poor, but it did indicate an open environment. It was not, however, possible to distinguish between an arable and a pastoral environment. (A full report on the pollen analysis, by Dr. R. G. Scaife, is included in the archive.)

Analysis of the buried soil produced interesting results, with clear evidence of tillage right up to the time of hill-fort construction (see specialist report and archive, by Dr. R. MacPhail). This is important (a) because this is the first time that such an episode has been clearly demonstrated on a Sussex hill-fort, and (b) because it implies cultivation of what would appear to have been a rather unpromising soil, derived from acid, poorly-draining clay-with-flints. It is noteworthy that no lynchets contemporary with, or earlier than, the hill-fort are known in the vicinity. A group of strip lynchets to the west of the site is probably medieval, on the basis of appearance, and therefore postdates the hill-fort by a considerable period.

(iii) *Seaford Head and Other Contemporary Hill-Forts*

The dating of the construction of Seaford Head to the 6th/5th centuries B.C. adds this site to the list of early Iron Age hill-forts in Sussex, i.e. Hollingbury, Chanctonbury, Harting Beacon, Ditchling Beacon, Thundersbarrow and Harrow Hill. These are distributed at intervals along the South Downs and were clearly a major feature of the early Iron Age landscape. A similar pattern can be observed on the chalklands of Wessex.

In spite of their broadly similar dates and the fact that all seem to have been short-lived, it is not easy to arrive at a single, unifying interpretation for these sites. One problem is the considerable variation in size. At 0·4 ha., Harrow Hill is the smallest, with Harting Beacon (12 ha.) the largest, though, as pointed out in the introduction, Seaford Head (4·2 ha. in 1983) could have been larger still. Secondly, the evidence from inside those hill-forts which have been excavated on any scale shows no clear pattern. Inside Hollingbury (never ploughed) there was evidence for five round houses (Holmes 1984). Inside Harting Beacon (ploughed annually for the last 40 years) there were a number of four-post structures and an isolated six-post structure (Bedwin 1978; 1979). Excavations at Chanctonbury (unploughed but no doubt extensively disturbed by the later Romano-British temple) revealed only a single early Iron Age pit (Bedwin 1980). One factor common to all these sites is large areas of 'empty' space. This phenomenon has also been observed at two hill-forts excavated on a very large scale in Hampshire, namely Winklebury (Smith 1977) and Balksbury (Wainwright 1970), and may be contrasted with the crowded interior of the later hill-fort at Danebury (Cunliffe 1984). This has led to the interpretation of the early Iron Age hill-forts as stock enclosures, with animals being kept in those areas free of archaeological features. Such sites may have been used only seasonally. The spring waterlogging at Seaford Head noted during the 1983 excavation indicates that this hill-fort at least would have been rather unsuitable for overwintering animals.

If the stock enclosure idea is correct (and it is difficult to prove positively), then one question which immediately arises is: what happens when these early Iron Age hill-forts go out of use? If Danebury in Hampshire is the norm (Cunliffe 1984) for middle and later Iron Age hill-forts, then there would have been little or no room for large flocks or herds. Should we therefore assume that the pastoral element becomes far less important and the arable contribution to the economy far greater? Or was the management of animals changed so that they were maintained in new types of stock enclosure, or more likely, within the downland landscape as a whole without the need for purpose-built enclosures?

SPECIALIST REPORTS

Iron Age Pottery

A total of 17 sherds in a single flint-gritted fabric were found. The inclusions of calcined flint grit were coarse (up to 7 mm. diameter) and abundant. A single sherd came from Context 24 in Trench A, but was destroyed by a mattock in the act of discovery. The remaining 16 sherds, weighing 500 g. (from Context B/15), consisted of large, unabraded fragments from two or possibly three vessels only. The one reconstructable vessel form is shown in Fig. 6. This profile and the fabric are consistent with an early Iron Age date.

The Roman Pottery (by D. R. Rudling)

There was no Roman pottery from Trench A, but Trench B yielded 30 sherds (weighing 230 g.), two sherds coming from Context 1, the rest from Context 7. The most common fabric (20 sherds) was the local, handmade, grog-tempered East Sussex ware (general date range late Iron Age, i.e. 4th century or later), vessel forms present including bowls and jars. One body sherd has an incised lattice decoration. The second most common fabric (five sherds) was Central Gaulish Samian ware, the forms including Dragendorff types 18/31, 33 and 38. All the Samian is of Antonine date. Other fabric /form types include: a sherd from a flanged bowl with a low bead rim, sandy black ware, late 2nd 4th century; a base sherd of fine light grey ware; and three undiagnostic body sherds of fine off-white wares.

Flintwork

A total of 21 waste flakes were found, two from Trench B, the remainder from Trench A. None showed any sign of retouch.

Animal Bone and Molluscs

Only eight fragments of animal bone and teeth were found in Trenches A and B (cattle, horse and sheep). A total of 80 fragments of limpet shell and five of oyster shell were also recovered. The bulk of these (70 limpet and three oyster) accompanied the Romano-British pottery in Trench B, Context 7, and presumably reflect the availability and popularity of these shellfish during the Roman period.

The Soils (by R. MacPhail)

The rampart and buried soils in Trench A were investigated: in the field (MacPhail 1983); and by pH, loss on ignition, organic carbon and grain size analyses (Avery & Bascomb 1974) and by micromorphological (Bullock *& al.* 1985) and magnetic susceptibility (MS) enhancement studies (Allen & MacPhail 1985).

The rampart was constructed with 'clay-with-flints' and chalk soil material on which had formed a modern calcareous brown earth (MacPhail 1983, table 1). The upper part of the buried soil which was studied in detail, comprised two horizons ('bA' 0–18 cm.; 'bB' 18–46 cm.) of stone-free clay, and these were present over a stony clay subsoil. Grain size analysis (Table 1) confirmed the textural discontinuity between the buried A and B horizon as suggested from the micromorphological data (MacPhail 1984). The buried B horizon is enriched by clay, in part relating to the translocation of fine material into this horizon from above by slaking caused by Iron Age cultivation, to form dusty clay coatings. The buried A horizon above contains significantly higher quantities of coarse silt and fine sand (37% compared with 17%) which indicate a different origin for this soil material. The possibility that these differences represent an original variation in the parent material is unfounded because Flandrian pedologic turbation would have destroyed such layering well before the Iron Age. It is more likely, and the micromorphology supports this contention, that the buried A horizon is a ploughwash colluvium, derived from a possible 'Brickearth' loessial superficial deposit. Alternatively, hillwash processes under tillage have concentrated these coarse silt, fine sand elements. In sharp contrast, the fine character of the modern A and B horizons indicate rampart construction from the more clayey 'clay-with-flints' parent material present in the subsoil.

Chemically, the buried soil is much less organic than its modern counterparts, and in addition the buried A horizon is apparently less organic than the B horizon. Firstly, the buried soils have lost organic carbon through biochemical activity since the Iron Age. For example, the buried A horizon contains many 'iron hydroxide' pseudomorphs of originally organic material. There is a possibility that the buried B horizon has suffered less from oxidation of organic matter, or that this buried soil horizon just contained more organic matter than the overlying colluvial bA horizon. This last explanation would indicate a rather 'recent' depositional event for the latter.

These findings are supported by the magnetic susceptibility enhancement (MS) data (Allen & MacPhail 1985) which show that although overall MS levels are low for superficial deposits and chalk soils (Table 1), the two phases of soil formation and possible ploughwash colluviation can be recognized. MS enhancement appears anomalous—i.e. MS in the bA is lower than in the bB—but may be possibly explained by the lower horizon (bB) being less affected by gleying, and, in addition, originally seems to have been a more organic and biologically- (earthworm-) worked A horizon prior to cultivation and later burial by the overlying colluvial bA horizon.

Thus to summarize, evidence of cultivation is present throughout both horizons in the form of textural pedofeatures (Bullock *& al.* 1985; MacPhail *& al.* forthcoming) so there can be no doubt that Iron Age tillage occurred. First, an earthworm-worked stone-free horizon (bB) of a probable 'pastoral' soil (see pollen report in archive) was cultivated. This soil was then buried by colluvial deposition, possibly from agricultural practices operating locally, and subsequently the colluvium (bA) itself was tilled up to the time it was sealed by rampart construction.

Archive

The finds and a copy of the archive are lodged in Barbican House Museum, Lewes; a second copy of the archive is kept at the Institute of Archeology in London.

TABLE 1
Seaford Head: Analytical Data (Buried Iron Age Soil, Rampart Components and Modern Colluvium)

Sample	*pH*	*Loss on ignition*	*Organic carbon*	***Clay***	*F2*	*MZ*	*CZ*	***Silt***	*VFS*	*FS*	*MS*	*CS*	*VCS*	***Sand***	*MS*	*%Fe*
Buried soil																
Buried A	7·7	3·36	0·78	**38**	6	9	22	**37**	15	4	3	2	0	**24**	11	2·04
Buried B	7·7	4·05	0·94	**43**	14	15	7	**36**	10	6	3	1	1	**21**	18	2·72
Rampart																
Modern A	6·7	9·85	2·28	**49**	10	12	4	**26**	10	6	3	3	2	**24**	21	
Modern B	8·0	6·82	1·58	**53**	9	11	8	**28**	8	5	2	2	3	**20**	16	
Dump B (b2B)															12	
Clay-with flints upper (b3C)															17/21	
Clay-with-flints lower (b3C2)															14/19	
Modern colluvium															10	

Notes
Magnetic susceptibility (MS) (Si units 10^{-8} m^3 Kg^{-1}).
Fe (Iron) analyses by Dr. C. Bloomfield.

Acknowledgements

The author is grateful to Lewes District Council for permission to excavate. Thanks are also due to those who helped on site, especially David Rudling.

Author: Owen Bedwin, County Planning Department, County Hall, Chelmsford, Essex.

References

Allen, M. J. & MacPhail, R. I. 1985 'Review and Discussion of Magnetic Susceptibility and Micromorphology: Examples of Hazleton Long Cairn, Gloucestershire and Seaford Head Hillfort, Sussex'. Ancient Monuments Laboratory Report, **4583.**

Avery, B. W. & Bascomb, C. L. (eds.) 1974 *Soil Survey Laboratory Methods.* Soil Survey technical monograph, Harpenden.

Bedwin, O. 1978 'Excavations inside Harting Beacon Hill Fort, West Sussex 1976', *Suss. Arch. Coll.* **116,** 225–40.

——1979 'Excavations at Harting Beacon, West Sussex: 2nd Season 1977', *Suss. Arch. Coll.* **117,** 21–35.

——1980 'Excavations at Chanctonbury Ring, Wiston, West Sussex 1977', *Britannia,* **11,** 173–222.

Bullock, P., Federoff, N., Jungerius, A., Stoops, G., & Tursina, T. 1985 *Handbook for Soil Thin Section Description.* Wolverhampton: Waine Research Publications.

Cunliffe, B. W. 1984 *Danebury: an Iron Age Hillfort in Hampshire,* **1** and **2**. C.B.A. Research Reports, **52**.

Holmes, J. 1984 'Excavations at Hollingbury Camp, Sussex, 1967–9', *Suss. Arch. Coll.* **122,** 29–53.

MacPhail, R. I. 1983 'Preliminary Soil Report on Seaford Head, Sussex'. Ancient Monuments Laboratory Report.

——1984 'Second Soil Report on Seaford Head, Sussex (Laboratory Analysis)'. Ancient Monuments Laboratory Report.

Pitt-Rivers, A. H. L.-F. 1877 'Excavations in the Camp and Tumulus at Seaford, Sussex', *Jnl. Royal Anthropological Inst.* **6,** 187–99.

Smith, K. 1977 'The Excavation of Winklebury Camp, Basingstoke, Hampshire', *Proc. Prehist. Soc.* **43,** 31–130.

Wainwright, G. J. 1970 'The Excavation of Balksbury Camp, Andover, Hampshire', *Proc. Hampshire Field Club,* **26,** 21–55.

The Society is grateful to the Historic Buildings and Monuments Commission for a generous grant towards the cost of publishing this article.

Sussex Archaeological Collections **124** (1986), 35–50.

EXCAVATIONS AT THE LATE PREHISTORIC AND ROMANO-BRITISH ENCLOSURE COMPLEX AT CARNE'S SEAT, GOODWOOD, WEST SUSSEX, 1984

by Robin Holgate

with contributions by Sue Hamilton, D. F. Williams, G. B. Dannell, Mark Beech and Caroline Cartwright

Sample excavations of part of the banjo enclosure complex at Carne's Seat produced material ranging in date from the late Bronze Age (1st millennium B.C.) to the late Romano-British period (4th century A.D.). The main enclosure ditches were probably dug in the middle Iron Age.

INTRODUCTION

The site, centred at SU 88760945, is situated on a south-west-facing slope on the southern edge of the downs (Fig. 1). It was first noticed as a parch mark during aerial reconnaissance in the dry summer of 1976 (King 1979), although it does appear in part on photographs taken for other purposes in 1946, 1965 and 1971 now held in the County Planning Department, West Sussex County Council.

An attempt was made in 1981 to make a plan from these aerial photographs and in September 1984 sample excavations and a surface collection survey were undertaken by the Field Archaeology Unit as part of its 'Plough Damage Assessment' project to determine the nature and date of archaeological deposits on the site, and assess plough damage to these deposits (Figs. 2 and 4). The excavations and post-excavation work were funded by the Historic Buildings and Monuments Commission. Trenches A–C were supervised and excavated by Mr. James Kenny and a team of workers employed on a Manpower Services Commission Community Programme Scheme by West Sussex County Council, who were helped by local volunteers. Permission to excavate was kindly granted by the Goodwood Estate.

The main features of this site, clearly visible on the 1976 aerial photograph, appear to be three concentric lines of ditches enclosing a central area measuring 70 metres by 30 metres (Fig. 2). It is not clear whether all three ditches continued around the east side but there appear to be breaks in all three ditches at the south end of the west side, which presumably indicate an entrance, and there appears to be a further break in the outer ditch at the north end of the west side.

The 1946 photographs (nos. TUD UK 156 5392–3), however, appear to show a much more extensive arrangement of soil marks, including recent plough furrows. Although the scale of these photographs is very small an attempt has been made to map them (Fig. 3). The additional features visible appear to be a series of hollow-ways approaching the north-west entrance; ditches turning inwards to flank the south-west entrance; and a group of small ditches at the south-west corner which are in the form of a 'banjo' enclosure with funnel-shaped entrance, a type of Iron Age site well known in Hampshire, Wiltshire and Dorset (Perry 1970, 39).

THE SURFACE COLLECTION SURVEY

The survey was carried out using the transect method: transects spaced at 20-metre intervals and subdivided into 20-metre collection units were walked. A considerable quantity of

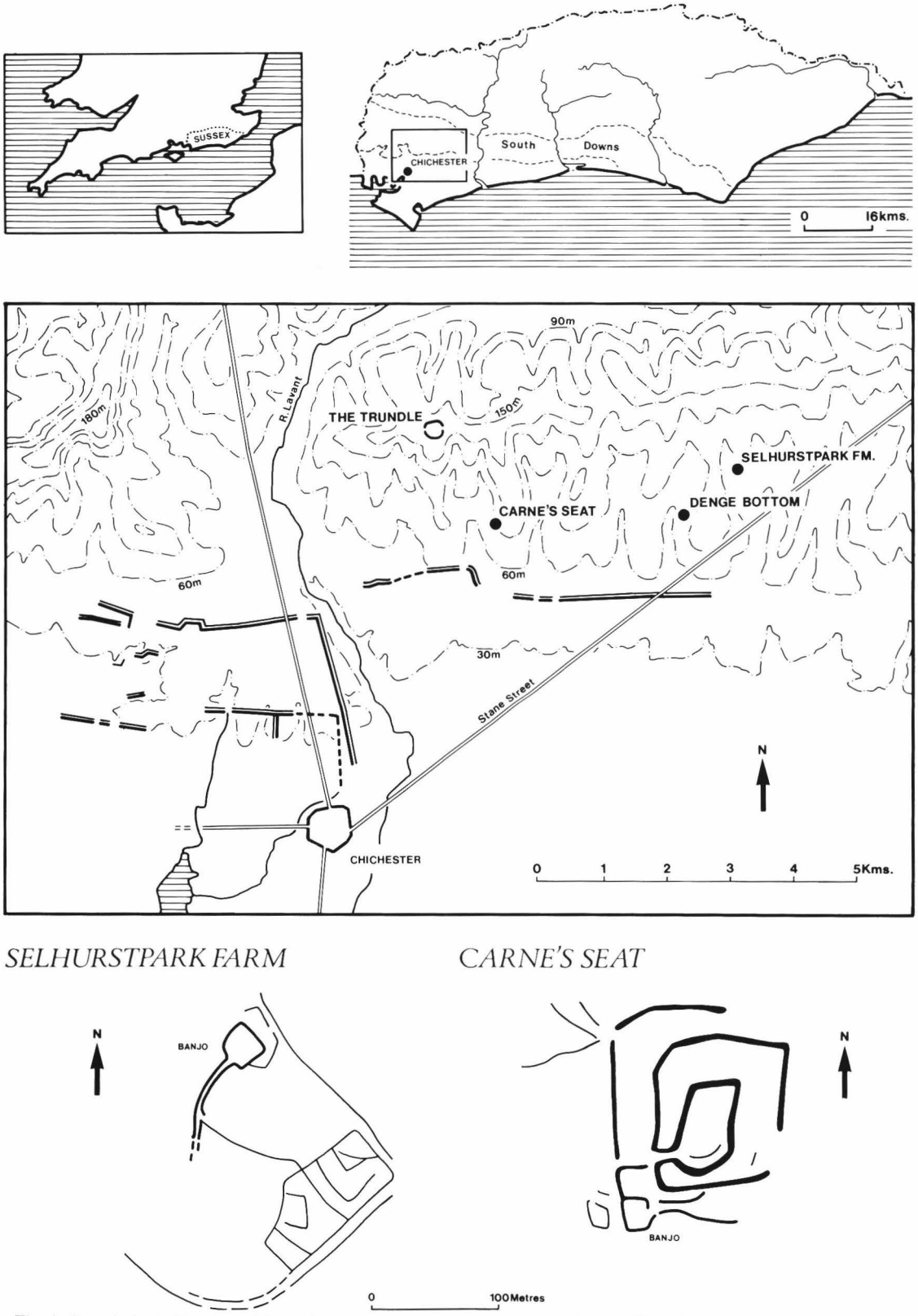


Fig. 1. Carne's Seat, Goodwood. Location map and banjo enclosure complexes in West Sussex. (By F. G. Aldsworth)

CARNE'S SEAT, GOODWOOD

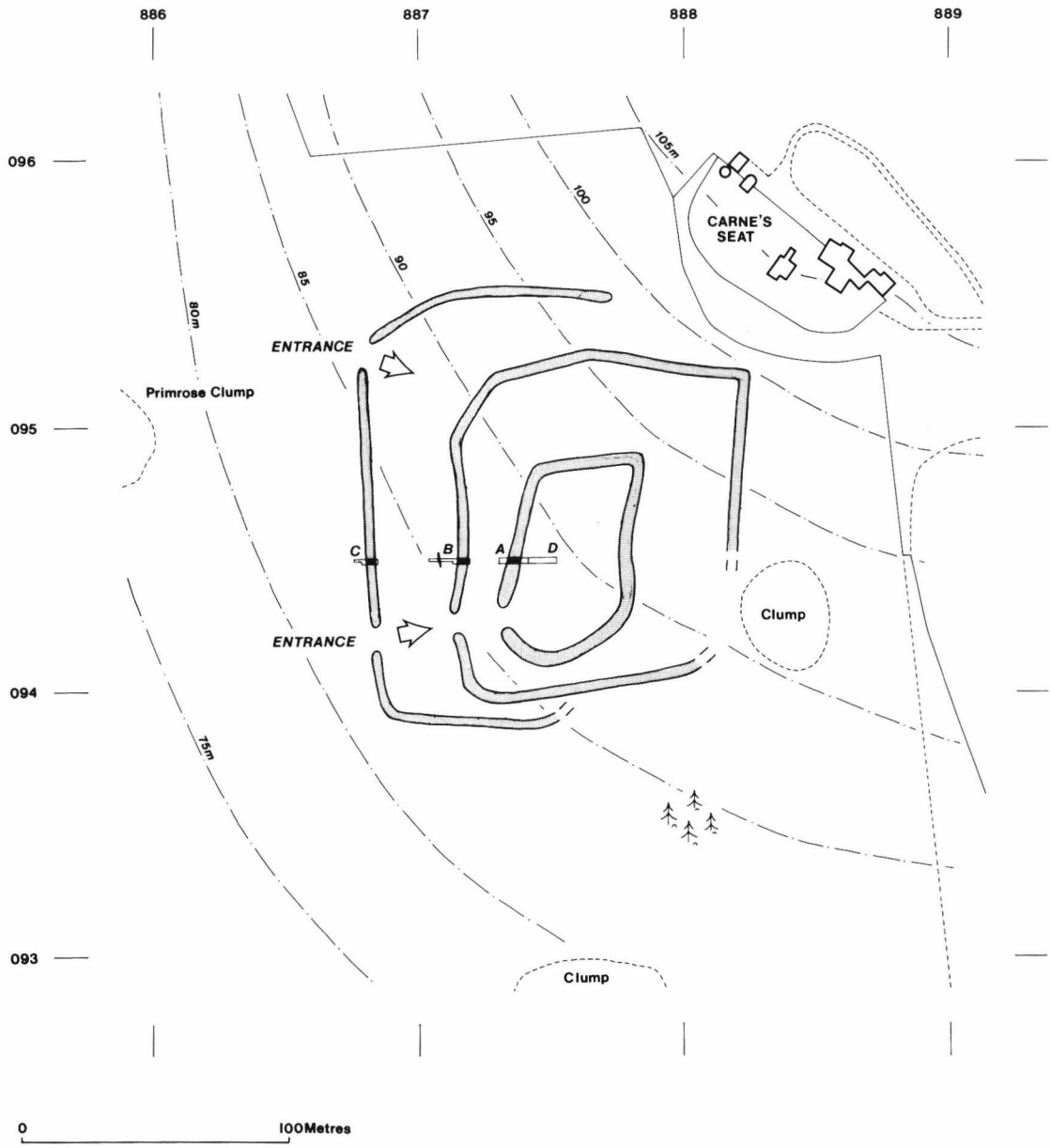


Fig. 2. Carne's Seat, Goodwood. General site plan showing features visible on 1976 aerial photograph. (By F. G. Aldsworth)

CARNE'S SEAT, GOODWOOD

Fig. 3. Carne's Seat, Goodwood. General site plan showing features visible on 1946 aerial photograph. (By F. G. Aldsworth)

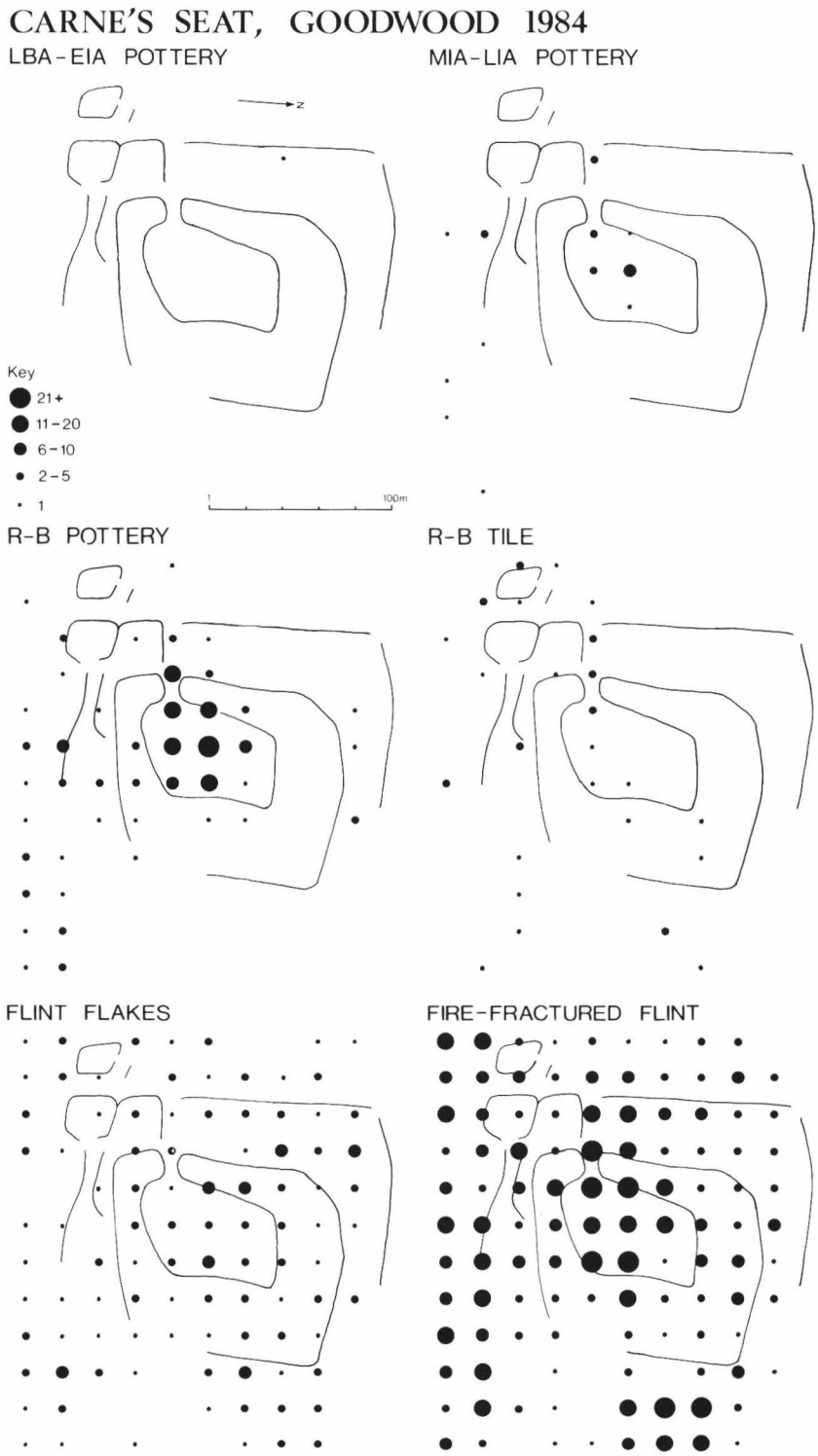


Fig. 4. Carne's Seat, Goodwood. Surface artefact collection survey: distribution of late Bronze Age/early Iron Age pottery, middle/late Iron Age pottery, Romano-British pottery and tile fragments, flint flakes and fire-fractured flint.

late prehistoric and Romano-British material was recovered, including pottery, tile fragments and flint (Fig. 4). The majority of the pottery was Romano-British in date, but some Iron Age pottery and one late Bronze Age sherd were also retrieved. The flint consisted mainly of fire-fractured flint and humanly-struck flakes; the only implements recovered were two scrapers and two miscellaneous retouched flakes. The flints are similar in nature to the excavated assemblage and probably date to the 1st millennium B.C. (see flintwork report below). Although they are spread throughout the area surveyed, there is a slight concentration of flakes in the north-west corner of the central enclosure complex. The middle/late Iron Age and

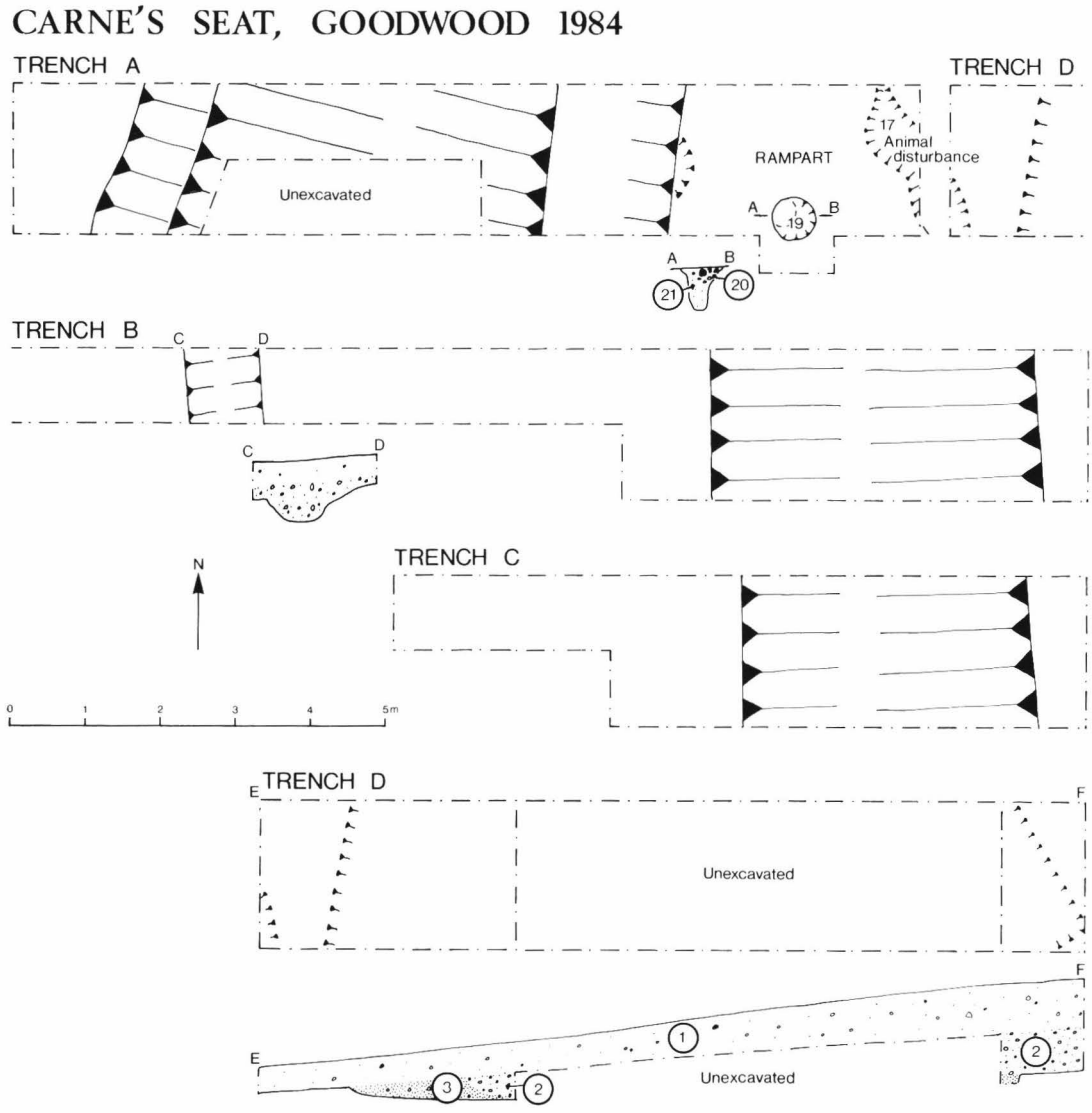


Fig. 5. Carne's Seat, Goodwood. Detailed trench plans. Key to layers: A20, grey brown silt loam; A21, grey silt loam; D1, modern ploughsoil; D2, orange brown silt loam; D3, dark grey brown silt loam.

Romano-British pottery is mainly concentrated over the area of the central enclosure, with a second, more diffuse, concentration to the south-west in the vicinity of the trackway emerging from the banjo enclosure. A thin spread of Romano-British tile fragments is situated between the entrance of the central enclosure complex and the banjo enclosure. No medieval or early post medieval material was recovered.

THE EXCAVATIONS

The three concentric ditches visible on the 1976 aerial photograph were sampled by excavation (Trenches A–C), along with the internal rampart and interior of the central enclosure (Trench D). The additional features visible on the 1946 photographs (Fig. 3) were not investigated.

Trench A revealed a substantial ditch (*c.* 8 metres wide; *c.* 3·5 metres deep below the surface of the chalk bedrock) and an internal strip of chalk where a timber-revetted rampart once stood (Fig. 5; for details of chronology, see the prehistoric pottery report below). The ditch appears to have silted up naturally. The step on the inner edge (containing Layer 4: Fig. 6) might have been an original, shallower ditch dug in the middle Iron Age and truncated by a later, deeper ditch. Alternatively, this feature could have been created before the upper half of the ditch silted up, perhaps relating to a refurbishment of the rampart in the Romano-British period. A shallower ditch (*c.* 1 metre wide; *c.* 0·5 metre deep)

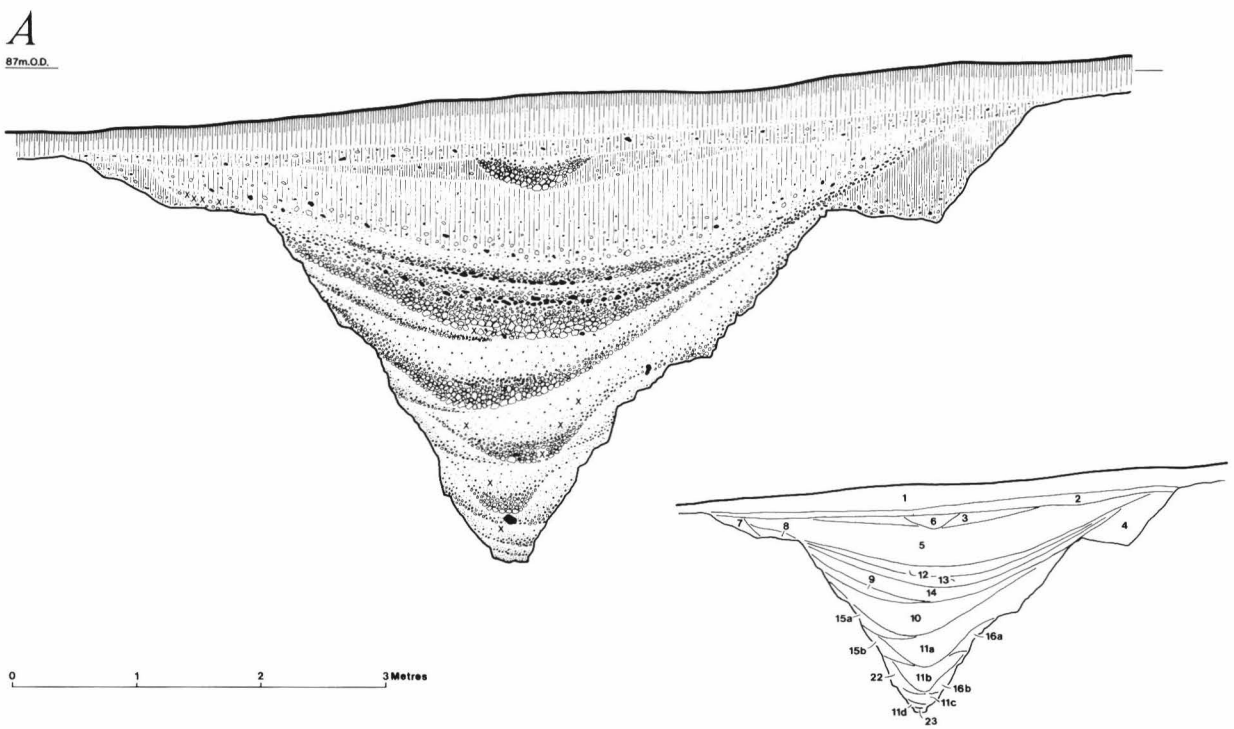


Fig. 6. Carne's Seat, Goodwood. Trench A section. Key to layers: 1, modern ploughsoil; 2, orange brown silt loam; 3, light grey brown silt loam; 4, light brown silt; 5, grey brown silt loam; 6, yellow brown silt loam; 7, dark grey brown silt loam; 8, very dark grey brown silt loam; 9, dark brown silt loam; 10, light grey silt; 11, light grey brown silt loam; 12, light grey brown silt loam; 13, light grey brown silt; 14, light grey brown silt loam; 15, grey brown loam; 16, light grey brown silt loam; 22, grey brown silt loam; 23, dark grey brown silt loam. (By F. G. Aldsworth)

was dug in the top of the ditch either during or after the 3rd century A.D.

Trench B located two ditches: a shallow ditch (*c.* 1 metre wide; *c.* 0·4 metre deep) of unknown date and a more substantial middle Iron Age ditch (*c.* 4·5 metres wide; *c.* 2 metres deep). Both ditches probably silted up naturally. A tree hole (containing Layer 18: Fig. 7) had cut into the upper fill of the Iron Age ditch.

Trench C located a ditch of similar proportions to the second ditch in Trench B (*c.* 4 metres wide; *c.* 1·8 metres deep). The ditch was probably dug in the middle Iron Age Period, though it could be earlier in date (?associated with the residual late Bronze Age pottery recovered from Trenches A and D and the survey); it probably silted up naturally.

Trench D sampled the inner edge of the

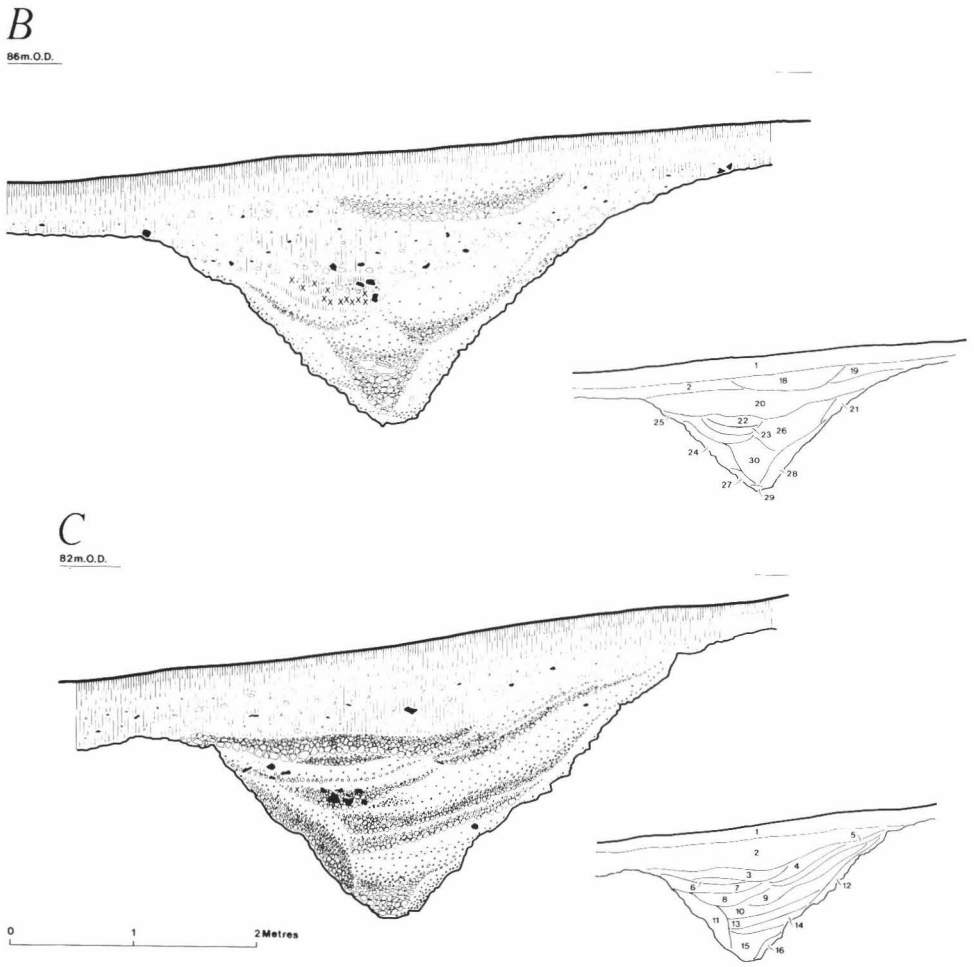


Fig. 7. Carne's Seat, Goodwood. Trenches B and C sections. Key to layers: 1, modern ploughsoil; 2, orange brown silt loam; 3, grey silt; 4, light orange brown silt loam; 5, grey silt; 6, orange brown silt loam; 7, grey brown silt loam; 8, light grey brown silt loam; 9, orange brown silt loam; 10, light grey brown silt loam; 11, grey brown silt loam; 12, orange brown silt loam; 13, grey silt; 14, orange brown silt loam; 15, grey silt; 16, dark grey silt; 18, orange brown silt loam fill of tree hole; 19, light orange brown silt loam; 20, dark orange brown silt loam; 21, light orange brown silt loam; 22, grey silt loam; 23, very dark grey silt loam; 24, grey brown silt loam; 25, grey brown silt loam; 26, light brown silt loam; 27, light brown silt loam; 28, orange brown silt loam; 29, light grey brown silt loam; 30, grey brown silt loam. (By F. G. Aldsworth)

rampart adjacent to the ditch in Trench A, and the interior of the enclosure defined by this rampart and ditch system. A positive lynchet (Layers 2 and 3: Fig. 5) had built up against the rampart, offering protection to surviving archaeological deposits inside the rampart. Features cut into the chalk bedrock are present within the confines of the rampart (Fig. 5), but the limited time available for the excavations precluded further investigation.

PREHISTORIC MATERIAL

Late Bronze Age and Iron Age Pottery (by Sue Hamilton)

Summary and introduction

The discussion below covers the 1st millennium B.C. ceramic material from Trenches A–D. The material was divided into fabric groups and each fabric group given dates based on the diagnostic form sherds which they contained. The relative proportions of different fabric types within individual layers allowed some indication of the timespan over which the various ditches were cut, used and passed into disuse. The late Bronze Age sherds appear to be residual and the main construction and use of the site may relate to the middle Iron Age 'saucepan phase'.

Fabric types

Fabric 1 (medium coarse flint-tempered). The fabric includes quartz sand (medium and fine size grade of medium abundance; clear and translucent, probably natural to the clay) and calcined flint (coarse and medium size grade of medium abundance). Surfaces are buff to dark brown in colour and the cores are reduced. There is evidence of slurrying and wet hand finish on some surfaces. Sherd sections average 8 mm. thick. Suggested date is late Bronze Age/early Iron Age.

Fabric 2 (medium coarse flint-tempered with grog). Fabric 2 has the same inclusion and surface finish characteristics as Fabric 1, but additionally with medium abundant grog tempering measuring *c.* 2mm. Surfaces are often oxidized and the cores are reduced. Sherd sections average 8 mm. thick. Suggested date is late Bronze Age/early Iron Age.

Fabric 3 (medium and fine flint-tempered). The fabric includes quartz sand (medium and fine size grade of medium abundance; clear and translucent, probably natural to the clay) and calcined flint (medium and fine size grade of medium abundance). Surfaces are burnished and generally dark brown to black in colour; cores are always reduced. Sherd sections are 6–8 mm. thick. Suggested date is middle Iron Age.

Fabric 4 (medium and fine flint-tempered with grog). Fabric 4 has the same inclusion, surface finishing and firing characteristics as Fabric 3, but additionally with medium abundant grog inclusions measuring *c.* 2 mm. Sherd sections are 6–8 mm. thick. Suggested date is middle Iron Age.

Fabric 5 (grog-tempered with fine quartz sand). The fabric is grog-tempered (measuring 2–4 mm. and of medium abundance) with some fine size grade quartz sand, perhaps natural to the clay. Surfaces are slightly burnished and are generally oxidized to a buff colour; cores are often reduced. Sherd sections are 5–6 mm. thick. Suggested date is middle/late Iron Age.

Fabric 6 (medium quartz sand-tempered). Medium and fine size grade quartz sand, clear and translucent, is present with medium abundance. Exterior surfaces are burnished and there is evidence of wheel-throwing on some sherds. Surface colour and core are either completely reduced (a few sherds having a thin line of oxidation before the reduced surface) or oxidized with buff-coloured surfaces and reduced cores. Sherd sections are 5–8 mm. thick. The date is late Iron Age.

Fabric 7 (grog-tempered). Fabric 7 is of 'East Sussex ware' type (Green 1977, 154; Hamilton 1977, 94). The date is late Iron Age.

Fabric 8 (flint- and shell-tempered). Medium size grade calcined flint is present with medium abundance along with occasional medium size grade shell which appears to be a deliberate addition. Exterior surfaces are burnished and oxidized; cores are reduced. Sherd sections average 8 mm. thick. Suggested date is late Iron Age.

Fabric 9 (silty with occasional flint tempering). The fabric is silty with occasional medium size grade calcined flint tempering. Exterior surfaces are burnished and oxidized; cores are reduced. Sherd sections average 8 mm. thick. Suggested date is late Iron Age.

Note: sand grades according to the Wentworth scale (Krumbein & Pettijohn 1938, 30). Inclusion abundance, sizes and morphological characteristics based on visual inspection and the use of a × 10 handlens.

The association of fabric types and form, dating and affinities (see Table 3: microfiche, p.53).

The isolation of diagnostic form sherds within each fabric group allows some comments to be made on the possible date range of each fabric type.

Fabrics 1 and 2 are associated with surface finishing techniques, such as vertical finger smearing, which are characteristic of the earlier 1st millennium B.C. (Champion 1980, 45). The shouldered jar sherds with slightly out-turned rims and 'pie crust' decoration on the rim tops fall within Barrett's earliest 1st millennium decorated traditions with perhaps a 9th- or 8th-century B.C. date (Barrett 1980, 307). Similar forms occur at Selsey (White 1934, fig. 2), Kingston Buci (Curwen *& al.* 1931, figs. 6–11) and Highdown (Wilson 1940, fig. 3). The coarse flint inclusions of both fabrics are more characteristic of Sussex latest Bronze Age material rather than earliest Iron Age material (Hamilton 1977).

Fabrics 3 and 4 are associated with 'saucepan' pottery decorated with linear grooves below the rim and above the base angle. Trench B, Layer 30 produced a three-quarters complete 'saucepan' vessel decorated with incised interlocking curvilinear arcs. This decorated form is comparable to material from North Bersted (Morris 1978, fig. 18: no. 88), Torberry (Cunliffe 1978, fig. 20: no. 93) and the Trundle (Curwen 1929, pl. xii: no. 150). Such decoration is more common in the easterly part of Cunliffe's St. Catherine's-Worthy Down style region (Cunliffe 1978, 46), but most typical of Cunliffe's Caburn-Cissbury style zone (Cunliffe 1978, 45). This material may span a period as much as three centuries from the 4th into the 1st centuries B.C. (Cunliffe 1984, 242). Locally a 2nd-century B.C. date is suggested for similar material at Torberry (Cunliffe 1978, 24). Possibly such types extend long enough into the 1st century B.C. to overlap with the production of wheel-thrown wares in West Sussex (Hamiliton 1985, 225). Fabric 3 is comparable with Copse Farm, Oving Fabric 2 (Hamilton 1985, 222) while Fabric 4 has parallels with 'saucepan' wares at North Bersted (e.g. Fabric 3: Morris 1978, 315).

Fabric 5. Only two diagnostic form sherds occurred in Fabric 5, namely one low pedestal base and one out-turned rim from a necked jar/bowl. These forms have a middle and later Iron Age currency rather than an earlier occurrence e.g. Form R1, Copse Farm, Oving (Hamilton 1985, fig. 5: no. 4).

Fabric 6 is comparable with Fabric 3 from Copse Farm, Oving (Hamilton 1985, 222) and has similar diagnostic form sherd associations including an out-turned rim and shoulder from a cordoned jar/bowl (Form R1 and C, Copse Farm, Oving: Hamilton 1985, fig. 6: no. 15) and everted rim, round-bodied jars (Copse Farm, Oving Form R3: Hamilton 1985, fig. 5: no. 3). At least one of the latter is decorated with vertical burnished stripes (Copse Farm, Oving Form D10: Hamilton 1985, fig.5: no. 11). Such material contributes to a now growing data base of late Iron Age wheel-thrown sandy wares from West Sussex. The production of such wares may have been established by 50 B.C. (Hamilton 1985, 225) and is succeeded by similar, although finer sand, Romano-British wares, for example those occurring at Chichester (Down 1978).

Fabric 7 is associated with no diagnostic form sherds but is comparable with Green's 'East Sussex ware' in fabric (Green 1977, 94). This ware represents an East Sussex handmade pottery tradition which becomes established in the 1st century B.C. and continues without significant alteration into the Romano-British period.

Fabric 8. Only a very small quantity of this fabric was present and none of the sherds were diagnostic. The size grade and abundance of the flint suggests that it is later than the larger or less consistent size categories of earlier Iron Age material. Shell tempering is not commonly associated with middle Iron Age 'saucepan' fabrics. Shell temper is known in late Iron Age fabrics, for example 'East Sussex ware'. The fabric may therefore be later Iron Age.

Fabric 9. Two diagnostic sherds were associated with this fabric. These were an everted rim from a round-bodied jar which is a similar form to that associated with Fabric 6 above, and one internally thickened out-turned rim from a large jar. The latter has scattered examples from the later Iron Age of Sussex (e.g. Bishopstone: Hamilton 1977, fig. 48: no. 53).

The ceramic evidence for the phasing of contexts (see Table 1)

Trench A. Late Bronze Age, middle and later Iron Age fabrics occurred in most stratigraphic contexts; upper and middle layers additionally had Romano-British sherds. The latter were, however, not present in the lowest layers. The presence of late Bronze Age sherds in upper as well as lower layers suggests that they may be residual and therefore not stratigraphically significant in their vertical distribution. The presence of high quantities of 'saucepan' sherds in Layer 4 might suggest a middle Iron Age feature which has been cut by the bulk of the ditch stratigraphy. Layer 4 is mirrored by the 'saucepan' fabric emphasis of Layer 8. The greater emphasis on 'saucepan' fabrics in lower layers 10 and 22 suggests that the ditch was cut or still in use in the middle Iron Age. From the upper silts Layer 5, as well as having late Bronze Age fabrics, is dominated by late Iron Age fabrics. This suggests a date by which the ditch in Trench A had silted up before occupation of the site in the Romano-British period.

Trench B. Trench B is similar to Trench A in having Romano-British sherds in its upper layers, but not in the lowest layers. There are no late Bronze Age sherds from this trench. The lower layers, 28 and 30, have exclusively 'saucepan' fabrics. The latter suggests, as with the ditch in Trench A, that the feature was cut or in use by this middle Iron Age date.

Trench C. The ditch in this trench is exclusively associated with 'saucepan' fabrics. These fabrics come from upper ditch levels. There is only a total of seven sherds involved but the evidence could be taken to suggest that this ditch section went out of use earlier than the ditch sections associated with Trenches A and B.

TABLE 1
Sherd Counts of Fabrics according to Context

	Fabrics									
Context	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*Total*
A1	4	3	3							10
A2		3	11	1						15
A3	3		5			2				10
A4	4		31			1				36
A5	12	19	3		1	41	1			77
A6				14						14
A7	10				3					13
A8		3	6	2	3					14
A9			1					1		2
A10	9	6	12			20				47
A11		1				1				2
A12			2			3				5
A13				1		3				4
A14		2		10						12
A15	1									1
A16									1	1
A18			3							3
A22			2		1					3
Total	43	37	79	28	8	71	1	1	1	269
B1			8			2				10
B2						1			3	4
B18						1				1
B19						2				2
B20				5						5
B21								1		1
B23						13				13
B25						2			1	3
B28			9							9
B30			103							103
Total			120	5		21		1	4	151
C1			1							1
C2			1							1
C3				5						5
Total			2	5						7
D1	2		1	6		6			1	16
D2			5			3				8
Total	2		6	6		9			1	24
Overall total	45	37	207	44	8	101	1	2	6	451

Amphorae (by D. F. Williams)

Five amphorae fragments were recovered: a handle of a Dressel 1, probably the 1B form (Trench B, Layer 23); three bodysherds from a Dressel 1 or Dressel 2–4 (Trench A, Layers 1 and 4; Trench B, Layer 25); and a bodysherd of unknown fabric (Trench B, Layer 25).

Dressel 1 are wine-carrying amphorae that were made primarily in the Campania, Latium and Etruria districts of Italy (Peacock 1971; 1977). The 1A form was produced from about 130 B.C. till around the middle of the 1st century B.C., while the 1B form was made from the first quarter of the 1st century B.C. until the last decade of the century (Peacock 1971; 1977; Tchernia 1983). Fairly large numbers of Dressel 1A have been recovered from Hengistbury Head in Dorset, while the majority of Dressel 1B vessels are found north of the Thames (Peacock 1984). It is clear, however, that the 1B form is also found in small numbers along the central south coast. A few rims of the 1B form appear for instance at Hengistbury (Peacock 1971), while examples are also known from Fishbourne (Cunliffe 1971, fig. 100: no. 159) and Chichester (Peacock 1978, fig. 10. 15: no. 3).

Apart from the Dressel 1 handle, there are three featureless bodysherds from Carne's Seat which may also belong to this form. However, it is difficult to be precise because similar fabrics were used for the later Dressel 2–4 form, which is the direct successor on Italian kiln sites to Dressel 1 amphorae (Peacock 1977). It is possible therefore that the Carne's Seat bodysherds belong instead to the Dressel 2–4 form, which ranges in date from the later 1st century B.C. to the mid 2nd century A.D. (Zevi 1966). In addition to Italy, this important form, widely distributed in late Iron Age and Roman Britain, was also made in a range of different fabrics in France, Spain and the Aegean, as well as in England, at Brockley Hill (Castle 1978).

Flintwork

A total of 155 humanly-struck flints and 3,174 fire-fractured flints were recovered. Details of provenance and typology are summarized in Table 4 (microfiche, p. 54). The two cores are both single platform flake cores and, with the exception of one blade which was soft hammer-struck, all the flakes and blades were struck with a hard hammer; they also have wide butts and show no signs of platform preparation. Only one implement, a scraper, was recovered. Hard hammer-struck flake-dominant assemblages with a limited range of implements are characteristic of the late Bronze Age. It is therefore probable that the Carne's Seat assemblage was associated with the 1st millennium B.C. occupation of the site.

ROMANO-BRITISH MATERIAL (by David Rudling)

The Pottery and Tile Fragments

Introduction

A total of 1,331 pieces of Romano-British pottery/tile from the excavations were examined. Most of the sherds were fairly small and abraded. All of the material was sorted (by Robin Holgate and the writer) into fabric groups and quantified by context (see Table 2 for a summary of the excavated finds; Fig. 4 for the finds from the survey).

Fabric types

A. Samian ware (incorporating comments by G. B. Dannell). All of the excavated Samian was of South Gaulish origin and 1st-century in date. The forms present include 18, 27, 29 and 35/6. Of the fieldwalking material, 7 sherds were from South Gaul (Forms 18, 27 and ?33), and 2 from Central Gaul (forms uncertain).

B. Grey sandy wares. A broad fabric group covering vessels in reduced medium/coarse sandy fabrics. Various local sources are likely, including the Rowlands Castle kilns (e.g. large jars with internal finger impressions). Forms in these fabrics include: jars; lids; a ?strainer; and a local copy of a Gallo-Belgic platter (cf. Cunliffe 1971, 178: Type 14).

C. Alice Holt/Farnham ware (Lyne & Jefferies 1979). Jars in grey sandy ware with a white slip on the rim. Classes present: 1A and 3B. Late 3rd/4th century. Other less distinctive sherds may have been catalogued as Fabric Type B.

D. Black sandy wares. Medium/coarse sandy fabrics, sometimes with red core and margins, and black surfaces.

E. Sandy oxidized wares. Orange, red or brown in colour; medium/coarse sandy fabrics.

F. Fine textured grey wares.

G. Fine textured, light self-coloured wares.

H. Fine, usually micaceous, orange-red fabrics with grey surfaces. 1st/early 2nd century.

I. New Forest ware (Fulford 1975). Two small sherds of colour-coated ware (Fabric 1) and 1 sherd of 'parchment' ware (Fabric 2: Type 89). Late 3rd/4th century.

J. Daub/burnt clay. Some of this material may be prehistoric.

K. Romano-British tile. Types present include *tegulae* and *imbrix*.

Discussion

Romano-British pottery was found in the upper fills of the ditches in Trenches A and B. Most of the sherds were very small and undatable; sufficient datable pieces, however, were recovered to indicate a broad date range of 1st to late 3rd/4th centuries. This material may indicate Romano-British occupation or manuring activities in the vicinity of the central enclosure complex.

Coin Report

One coin was recovered from Trench A, Layer 6:
Allectus. A.D. 293–6. Ae Antoninianus.
Obverse: IMP C ALLECTVS P F AVG
Reverse: PAX AVG, Pax standing left, holding olive-branch and transverse sceptre.
Mint-mark: $\frac{\text{SIA}}{\text{ML}}$ = Mint of London.
Reference: *RIC* (Webb 1933, 561), no. 33.

Iron Objects

Two similar iron rings (55 mm. in diameter) of circular section (6 mm. thick) were found in Trench A (Layers 7 and 12). Late Iron Age or Romano-British in date. The function of such rings is unknown (cf. Crummy 1983, 161, no. 4400).

AGRICULTURAL ECONOMY AND ENVIRONMENT

The Animal Bones (by Mark Beech)

Introduction

The excavations yielded a total of 1,098 bone fragments, with 8 species of mammals and bird being identified. Of these, 962 (87·6%) fragments originated from securely dated contexts, the remaining fragments coming from undated contexts, primarily the ploughsoil. It was possible to identify 587 of these 962 fragments (61%) to species and it is these that

TABLE 2
Proportions of Romano-British Pottery Fabrics by Sherd Count

	Fabrics											
Context	*A*	*B*	*C*	*D*	*E*	*F*	*G*	*H*	*I*	*J*	*K*	*Total*
A1	1	49		1	15	1						67
A2		25	3		4		1					33
A3		60					3	1				64
A4		11		2	1							14
A5	1	144	6		25	5	3			1		185
A6		1										1
A7	1	102	2		2		4					111
A9		6		1								7
A10										3		3
A12		41			4		5	2			1	53
A13		201		7	2	6	2					218
A14		182			9	27	4					222
A18		1		2								3
Total	3	823	11	13	62	39	22	3		4	1	981
B1		7										7
B2		6		1					1			8
B18		1										1
B19										1		1
B20	2	16		1								19
B21		1										1
B22		1										1
B23										1		1
B25		5		1						1		7
B26		1										1
Total	2	38		3					1	3		47
C1	1									1		2
Total		1								1		2
D1	3	119		8	47	1	5		1			184
D2	1	45		3	13		1					63
D3		38			15		1					54
Total	4	202		11	75	1	7		1			301
Overall total	9	1,064	11	27	137	40	29	3	2	8	1	1,331

form the basis for the analysis of the assemblage. No attempt has been made to undertake a detailed analysis of the bones from the ploughsoil. However all the bones within their individual contexts are listed in Tables 5–7 (microfiche, pp. 55–7).

The bones were recovered during excavation by hand only, no sieving being carried out. As a result of this method of collection the bone assemblage is biased towards the larger animals to the exclusion of smaller mammals, birds and fish. The majority of the bones were in poor condition, most being fragmented. This can be viewed in Tables 11–13 (microfiche, pp. 61–5), which indicate the scarcity of unfused bones (which naturally tend to be more fragile and less prone to survival), how few complete mandibles there were and how few bones were complete enough to be measured.

For the purposes of this report the contexts have been divided into two periods:

A. middle/late Iron Age (bone bearing contexts: A11, A16, A22, B23, B28, C3 and C15)

B. Iron Age/Romano-British (bone bearing contexts: A3, A4, A5, A6, A7, A8, A9, A10, A12, A13, A14, B19, B20, B21, B22, B25, B26, D1, D2 and D3).

It was not possible to subdivide the sample into smaller units as the dating evidence was not precise enough.

Ribs and vertebrae (other than atlas, axis and sacrum) were counted but not identified to species. Unidentified material which could not be assigned to species could often be put in one of the following categories: large artiodactyl (Cattle, Red Deer, Horse); small artiodactyl (Sheep, Goat, Fallow Deer, Roe Deer, Pig, Dog); unidentifiable rodent; and unidentifiable bird. No attempt was made to separate the identification of Sheep and Goat, bearing in mind the difficulty in distinguishing between them when there are few complete bone specimens on which metrical analysis could be carried out. In this report these species are considered together, under the title of Sheep/Goat. Measurements have been taken following the conventions of von den Driesch (1976).

Period A (middle/late Iron Age)

Eight contexts from Period A yielded bone material, a total of 113 fragments being recovered. Sixty fragments were identifiable to species, which came from five species of mammal. These were (in descending numbers): Cow, Pig, Sheep/Goat, Horse and Hare (see Tables 8 and 9: microfiche, pp. 58–9).

Cattle: Cow was represented by 23 fragments (38·3% of the total species). At least seven individuals were represented, and these included one immature animal.

Pig was represented by 21 fragments (35% of the total species). At least three individuals were represented, including one male.

Sheep/Goat was represented by 10 fragments (16·7% of the total species). At least four individuals were present, of which at least one was immature.

Horse was represented by three fragments (5% of the total species). At least one individual was present.

Hare. This is only represented by three fragments (5% of the total species), and is probably intrusive as it originates from the upper levels of Period A.

Period B (Iron Age/Romano-British)

More bone material came from Period B than Period A. A total of 849 fragments were recovered from 20 different contexts; 527 fragments were identifiable to species, leaving 322 indeterminate. Seven species were present from this period (in descending numbers): Hare, Sheep/Goat, Cow, Pig, Horse, Dog and Bird.

Hare was represented by 278 fragments, at least 13 individuals being present. The majority of these came from the uppermost level of Period A, adjacent to the ploughsoil. It seems likely that they represent an intrusive element in the assemblage, possibly a death assemblage from a relict burrow (both immature and mature specimens were present).

Sheep/Goat was represented by 117 fragments (22·2% of the total species). At least 18 individuals were present, of which at least one was immature.

Cattle was represented by 85 fragments (16·1% of the total species). At least 18 individuals were represented, of which at least one was immature.

Pig was represented by 32 fragments (6% of the total species). At least 15 individuals were represented.

Horse was represented by 12 fragments (2·3% of the total species). At least six individuals were present.

Dog was represented by two fragments (0·4% of the total species). At least two individuals were present.

Bird was represented by one fragment (0·2% of the total species). This was the proximal end of a femur, possibly of a small domestic duck (?) (Kevin Rielly pers. comm.).

Butchery

In general very little sign of butchery was observed on the bones. The butchery marks that were recorded are described below:

Period A (middle/late Iron Age). A Cow mandible showed traces of several knife-cut marks to the lingual surface of its posterior ramus. These may have been to facilitate removal of the tongue. A Pig pelvis was chopped dorso-ventrally through its acetabulum, and a Pig tibia was chopped distally-proximally through its distal end. These were probably done, respectively, to facilitate dismemberment of the hind-limb from the main carcass, and to separate the lower part of the hind-limb.

Period B (Iron Age/Romano-British). A Cow atlas had been chopped in a dorso-ventral direction through the articular caudal surface. A Cow scapula was chopped latero-medially through its proximal end. A Cow radio-ulna showed signs of several knife-cut marks to the lateral margin of the proximal radius, to the posterior surface of the radius midshaft, and to the olecranial process of the proximal ulna. These all were probably traces of dismemberment of the carcass and fore-limb. A Sheep/Goat scapula had traces of small knife-cuts to the posterior surface of its neck. A Sheep/Goat calcaneum was chopped dorso-ventrally through its proximal end. These again may represent traces of dismemberment.

Pathology

Period A (middle/late Iron Age). The only pathological specimen observed in this period was of Pig. A Pig maxilla (left hand side, from Context C15) had apparently lost its first upper molar and there had been subsequent regrowth of the bone over the crypt.

Period B (Iron Age/Romano-British). Slight traces of calcalus were observed on two Sheep/Goat premolars (on the posterior buccal surface of a P3 and P4, from Context A5). The best piece of pathology from all the Carne's Seat material came from this same context (A5). This was a Dog femoral shaft which had suffered a severe trauma—probably due to breakage of the bone—with subsequent regrowth of bone attempting to re-heal this nasty break.

Conclusions

The size of the bone sample from Carne's Seat inhibits the formulation of any firm conclusions; however it has been seen that a fairly standard faunal range is present in both periods. Cattle, Sheep/Goat and Pig, the major domestic animals, are present in both periods. Unfortunately the faunal data is insufficiently represented to formulate any sound conclusions regarding ageing, sexing and size of the animals. However, the data have been recorded should further analysis be required in the future (Tables 5–13: microfiche, pp. 55–65).

Marine Molluscs (by Caroline Cartwright)

Six molluscs were recovered (representing oyster *(Ostrea edulis)* and cockle *(Cerastoderma edule)*; details of context are summarized in Table 14 (microfiche, p. 66). From this very small amount of marine molluscan material, only a suggestion of the potential of exploitation of coastal resources is evident.

Geological Material (by Caroline Cartwright)

A total of 20 pieces of foreign stone were recovered from the excavations; details of context are summarized in Table 15 (microfiche, p. 66). This geological material derives from the sedimentary series in the Wealden District. Seven of the Greensand and other sandstone fragments are part of querns; whilst the smaller fragments may also be, alternatively they may be associated with building stone or raw material. The (possibly hafted) siliceous mudstone pebble exhibits end-battering typical of hammerstone usage.

Charcoal (by Caroline Cartwright)

The overall quantity of charcoal from the excavations is low, mostly comprising very small fragments of twigs or secondary roundwood (details of context are in Table 16: microfiche, p. 67). *Leguminosae* form the highest percentage (by weight) amongst the charcoal fragments, followed in frequency by *Corylus* sp. (Hazel) and *Crataegus* sp. (Hawthorn). *Salix* sp. (Willow) and *Quercus* sp. (Oak) are represented by a single small fragment of twig each.

If all these could be taken to be a chronologically representative sample of an ecological phase in the site's history, then this would suggest a hedgerow 'assemblage'. However, some of the charcoal represented on the site may have been specifically selected as wood for certain artefact types, building or fuel. Unfortunately the problems associated with the interpretation of small amounts of tiny fragments of charcoal from ditch sediments necessarily restrict analysis.

DISCUSSION

Carne's Seat is the first banjo enclosure complex in Sussex to be sampled by excavation. Although of a restricted nature the 1984 investigations enable some conclusions to be drawn which provide a foundation for future fieldwork at Carne's Seat and similar sites in West Sussex (Fig. 1; Bedwin 1984, 46).

The pottery and flintwork of late Bronze Age date suggest activity of some description on the site in the early 1st millennium B.C. It is possible that part of the enclosure complex was constructed at this date, but evidence to support this was not forthcoming in the 1984 excavations.

The two concentric, centrally-placed enclosures were constructed in the middle Iron Age. A considerable quantity of domestic debris (pottery, amphorae and quernstone fragments, animal bones and flint) was recovered from the ditches. The banjo enclosure could have been associated with this settlement, an interpretation that would be consistent with the results from the recent excavations of two banjo enclosures in Hampshire (Perry 1972; Monk & Fasham 1980). Both were shown to date to the middle/late Iron Age. At Bramdean, Perry suggested that the banjo enclosure had been used for driving in and retaining livestock. He added that associated dwellings were probably within an adjacent, larger enclosure, and that while the banjo enclosure could have been built with livestock management in mind, further excavations would probably yield evidence for a good deal of other mixed agricultural activity (Perry 1972, 71–2). At Micheldever Wood, a number of storage pits and carbonized plant remains were found within the banjo enclosure, leading Monk and Fasham to conclude that the site was not just concerned with cattle, but with an 'integrated and organised system of cereal and animal farming' (Monk & Fasham 1980, 341). At present, banjo enclosures are best interpreted as one element in a complex of enclosures and activity areas comprising certain middle/late Iron Age farmsteads. Thus while the Carne's Seat banjo enclosure has yet to be sampled by excavation, the 1984 surface collection survey and excavations suggest that the site as a whole probably represents a defended farmstead. Its position on the upper part of a south-west-facing slope is intriguing, as this makes the site inter-visible with the Trundle hill-fort to the north and the Chichester Entrenchments on the coastal plain to the south.

The survey and excavations also produced large quantities of Romano-British material from the upper fills of the central enclosure ditches and the surface of the ploughsoil in the vicinity of this part of the site. The date range for this material falls into two periods: 1st/2nd century and late 3rd/4th century. Although none of the features in the main enclosure interior were dated to the Romano-British period, it is possible that domestic activity of this date took place,

perhaps initially developing from the late Iron Age occupation of the site. Alternatively, the site could have been a 'farmyard' complex used for corralling animals and as a base for manuring neighbouring fields. A surface artefact collection survey of the immediate area surrounding the site could throw more light on this interpretation.

Contents of Microfiche

Iron Age pottery: Table 3 (by Sue Hamilton) (p. 53)
The flint assemblage: Table 4 (p. 54)
The animal bones: Tables 5–13 (by Mark Beech) (pp. 55–65)
Marine molluscs: Table 14 (by Caroline Cartwright) (p. 66)
Geological material: Table 15 (by Caroline Cartwright) (p. 66)
Charcoal: Table 16 (by Caroline Cartwright) (p. 67)

Archive

The finds and site archive have been deposited at Chichester District Museum (accession no. 6083).

Acknowledgements

I wish to thank the Goodwood Estate (through Mr. C. P. Nicoll) for permission to excavate. I would also like to thank Fred Aldsworth for his help and advice at all stages of the excavation and preparation of this report; James Kenny for supervising the excavation of Trenches A–C; and Sue Hamilton, Dr. D. F. Williams, David Rudling, G. B. Dannell, Caroline Cartwright and Mark Beech for their specialist reports. Finally, I must thank the Historic Buildings and Monuments Commisson for funding the excavation and post-excavation work; thanks are due in particular to Roger Thomas for his advice.

Author: Robin Holgate, Institute of Archaeology, University of London.

References

Barrett, J. C. 1980 'The Pottery of the Later Bronze Age in Lowland England', *Proc. Prehist. Soc.* **46**, 297–319.

Bedwin, O. 1984 'Aspects of Iron Age Settlement in Sussex', in *Aspects of the Iron Age in Central Southern Britain* (ed. B. Cunliffe & D. Miles), 46–51. Univ. of Oxford, Committee for Archaeology Monograph, **2**.

Castle, S. A. 1978 'Amphorae from Brockley Hill, 1975', *Britannia*, **9**, 383–92.

Champion, T. C. 1980 'Pottery in the First Millennium B.C.', in 'The Archaeology of Sussex Pottery' (ed. D. Freke), *Suss. Arch. Coll.* **118**, 43–52.

Crummy, N. 1983 *Colchester Archaeological Report*, **2**, *Small Finds from Excavations in Colchester 1971–9*. Colchester.

Cunliffe, B. W. 1971 *Excavations at Fishbourne 1961–1969*, **2**, *The Finds*. Reports of Research Committee of Soc. of Antiq., London, **27**.

—— 1978 *Iron Age Communities in Britain*, 2nd. edn. London.

—— 1984 *Danebury: an Iron Age Hillfort in Hampshire*. C.B.A. Research Reports, **52**.

Curwen, E. C. 1929 'Excavations in the Trundle, Goodwood, 1928', *Suss. Arch. Coll.* **70**, 33–85.

Curwen, E., Curwen, E. C. & Hawkes, C. F. C. 1931 'Prehistoric Remains from Kingston Buci', *Suss. Arch. Coll.* **72**, 185–217.

Down, A. 1978 *Chichester Excavations*, **3**. Chichester.

Driesch, A. von den 1976 *A Guide to the Measurement of Animal Bones from Archaeological Sites*. Peabody Museum Bulletin, Harvard.

Fulford, M. G. 1975 *New Forest Roman Pottery*. British Arch. Reports, **17**.

Grant, A. 1975 'The Animal Bones', in *Excavations at Portchester Castle*, **1**, *Roman* (ed. B. Cunliffe), 378–408, 437–50. Reports of Research Committee of Soc. of Antiq., London, **32**.

Green, C. M. 1977 'The Roman Pottery', in M. G. Bell, 'Excavations at Bishopstone, Sussex', *Suss. Arch. Coll.* **115**, 152–78.

Hamilton, S. 1977 'The Iron Age Pottery', in M. G. Bell, 'Excavations at Bishopstone, Sussex', *Suss. Arch. Coll.* **115**, 83–117.

—— 1985 'Iron Age Pottery', in O. Bedwin & R. Holgate, 'Excavations at Copse Farm, Oving, West Sussex', *Proc. Prehist. Soc.* **51**, 220–9.

King, A. C. 1979 'Results of Aerial Reconnaissance in West Sussex, 1976', *Suss. Arch. Coll.* **117**, 257.

Krumbein, W. C. & Pettijohn, F. C. 1938 *Manual of Sedimentary Petrology*.

Lyne, M. A. B. & Jefferies, R. S. 1979 *The Alice Holt/Farnham Roman Pottery Industry*. C.B.A. Research Reports, **30**.

Monk, M. A. & Fasham, P. J. 1980 'Carbonised Plant Remains from Two Iron Age Sites in Central Hampshire', *Proc. Prehist. Soc.* **46**, 321–44.

Morris, S. 1978 'The Iron Age Pottery', in O. Bedwin & M. W. Pitts, 'The Excavation of an Iron Age Settlement at North Bersted, Bognor Regis, West Sussex', *Suss. Arch. Coll.* **116**, 315–39.

Payne, S. 1973 'Kill-off Patterns in Sheep and Goats—the Mandibles from Asvan Kale', *Jnl. of Anatolian Studies*, **23**, 281–303.

Peacock, D. P. S. 1971 'Roman Amphorae in Pre-Roman Britain', in *The Iron Age and its Hill-Forts* (ed. M. Jesson & D. Hill), 169–88. Southampton.

—— 1977 'Recent Discoveries of Roman Amphora Kilns in Italy', *Antiq. Jnl.* **57**, 262–9.

—— 1978 'The Amphorae', in A. Down, *Chichester Excavations*, **3**, 243–4. Chichester.

—— 1984 'Amphorae in Iron Age Britain: a Reassessment', in *Cross-Channel Trade between Gaul and Britain in the Pre-Roman Iron Age* (ed. S. Macready & F. H. Thompson), 37–42. Soc. of Antiq., London, Occasional Paper (new series), **4**.

Perry, B. T. 1970 'Iron Age Enclosures and Settlements on the Hampshire Chalklands', *Arch. Jnl.* **76**, 29–43.

—— 1972 'Excavations at Bramdean, Hampshire, 1965 and 1966, and a Discussion of Similar Sites in Southern England', *Proc. Hampshire Field Club*, **29**, 41–77.

Tchernia, A. 1983 'Italian Wine in Gaul at the End of the Republic', in *Trade in the Ancient Economy* (ed. P. Garnsey, K. Hopkins & C. R. Whittaker), 87–104. London.

Webb, P. H. 1933 *Roman Imperial Coinage*, **5** (2). London.

White, G. M. 1934 'Prehistoric Remains from Selsey Bill', *Antiq. Jnl.* **14**, 40–52.

Wilson, A. E. 1940 'Report on Excavations at Highdown Hill, Sussex, August 1939', *Suss. Arch. Coll.* **81**, 173–203.

Zevi, F. 1966 'Appunti sulle Anfore Romane', *Archaeologia Classica*, **18**, 207–47.

The Society is grateful to the Historic Buildings and Monuments Commission for a generous grant towards the cost of publishing this article.

Sussex Archaeological Collections **124** (1986), 51–77.

THE EXCAVATION OF A ROMANO-BRITISH SITE BY CHICHESTER HARBOUR, FISHBOURNE

by D. J. Rudkin, B.A., A.M.A.

with reports by D. Bone, G. Dannell, B. Dickinson, J. French, P. Glover and R. Lintott

Excavation of a site threatened by drainage and ploughing revealed traces of two successive Romano-British buildings. The earlier was of timber construction, rectangular in plan, possibly with a central courtyard. It was constructed in the late 1st century A.D. and destroyed by fire in the middle of the 2nd century A.D. It was replaced by a large aisled masonry building which appears to have had an agricultural function. This was demolished in the late 3rd or early 4th century.

INTRODUCTION

The site is situated on the western shore of Fishbourne Channel (SU 83610424), which is the easternmost arm of Chichester Harbour (Figs. 1, 2). The land is low-lying, being no more than 3.28 ft. above O.D., and had been subject to annual flooding. It had, however, still remained in cultivation. The soil is a silty drift (brickearth) of the Park Gate Series, overlying chalk.

During drainage work on this harbourside land the landowner, Mr. R. Scarterfield, cut through a masonry feature. This was noticed by a local resident, Mr. T. Beaumont, and brought to the attention of the author. Superficial examination revealed associated pottery of the 2nd/3rd century A.D., suggesting that the feature was contemporary with, and possibly related to, the nearby Roman Palace. It had been long apparent

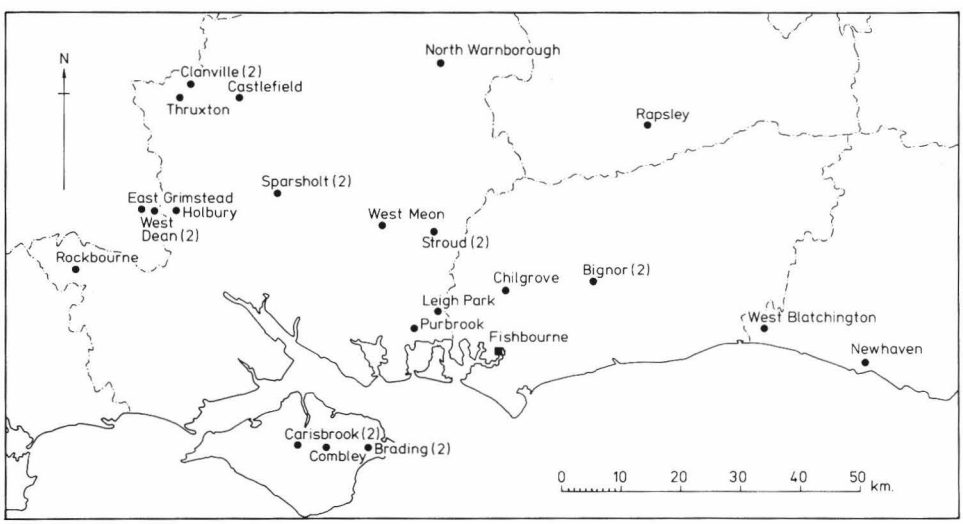


Fig. 1. Location plan of site, also showing distribution of aisled buildings in the area. (After Morris 1979)

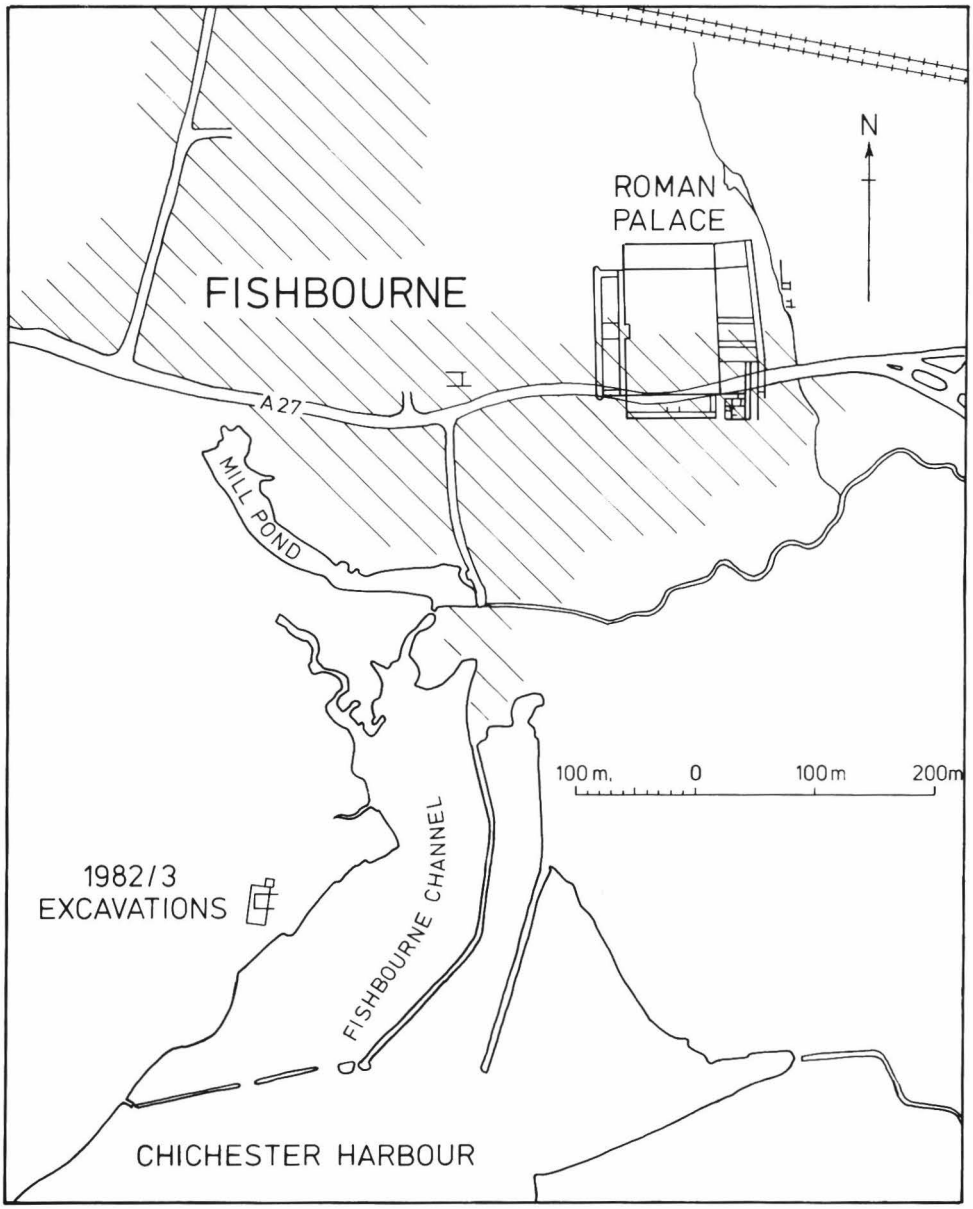


Fig. 2. Location of harbourside buildings in relation to the Roman Palace.

that the Roman Palace could not have existed in isolation, but until this time only one other structure had been discovered: footings beneath no. 104 Fishbourne Road. In consequence excavations were commenced on the site in the spring of 1982 by the author assisted by volunteers from the South Hampshire Archaeological Rescue Group and others and continued until the early winter. During this time approximately 40 per cent of the site was excavated. Although the landowner generously offered access to the site for a second year before further draining and

ploughing it was clear that the site could not be totally excavated on a one day a week basis. Fortunately through the good offices of Mr. F. Aldsworth, West Sussex County Council's Archaeological Officer, a Manpower Services Project was set up to excavate the eastern half of the site in 1983. Thus with the combination of volunteers on Sundays and an M.S.C. team, under the supervision of Mrs. T. Borne, during the week, it proved possible to excavate the total area by the autumn of 1983.

THE EXCAVATION

Initial work on site involved the manual excavation of eight small areas to ascertain the nature and extent of the site and observe the stratigraphy. The western half of the site was then stripped of ploughsoil mechanically and the underlying levels excavated manually in eight contiguous areas (C, L, M, N, P, R, S and T) down to the undisturbed brickearth. A similar procedure was adopted on the eastern side of the site but here the area code bears an E suffix. Later eastern extensions up to the western lip of the ditch were annotated MD, ND, PD and RD. The site was excavated and recorded in stratigraphic units. Traces of human activity were encountered, in the form of flintwork and pottery, dating from Neolithic to Iron Age. However, the main occupation of the site was during the Roman period. There were two successive buildings: a rectangular timber structure overlain by a later aisled masonry building.

The Timber Building (Fig. 3)

Evidence for this structure was in the form of robbed cill beam slots, cobbling, charred timber and a spread of burnt daub. The beam slots were straight-sided, flat-bottomed trenches cut down into the brickearth. The bottom was lined with a single course of flint nodules. In places flint packing was also to be seen on either side of the trench (Fig. 5, Section E-F). The central void was filled with burnt daub. In one place the charred remains of an oak timber (N24) remained *in situ*. On the eastern half of the site later disturbance had truncated the slots down to the level of the basal layer of flint. The beam slots demarcated two rectangular areas, one within the other. The overall dimensions of the 'outer' set of beam slots (N33, ME9, RE31, RD4) were 12.7 metres wide by at least 22 metres long. They were clearly observable continuing through the eastern face of the modern drainage ditch and under the public footpath and sea wall where further investigation was not possible. These outer beam slots were 0.45 metre wide with a width between the packing of 0.2 metre. The inner beam slots were not so clearly defined as they had been cut less deeply and were only recognizable as a line of flints. They were on average 0.2 metre wide. The most northerly of the inner slots (PE14) had only survived for 3 metres of its length but appeared again in section in the east face of the drainage ditch. Between these points the area had been subjected to much disturbance. The southern beam slot (NE18) survived for 6.6 metres, just to the east of a point where it was joined by a north-south footing of flints and stone (NE24) *c.* 0.35 metre wide. The continuation of the southern slot was not visible in the ditch sections. Just to the south of the line of the southern slot and east of the north-south footing was a linear spread of flints (ND21) *c.* 0.65 metre wide.

In the eastern face of the drainage ditch two lines of flint running approximately north-south were noted, 0.6 metre and 1.3 metres long, at the same depth as the basal layer of flint in the beam slots further west.

Enclosed in the south-east corner of the area demarcated by the inner beam slots and the north-south wall (NE24) was a cobbled surface of flint nodules (PE5).

In the south-east corner of the outer rectangular area a square space had been enclosed by two short beam slots 3 metres long. In a depression in the south-east corner of this enclosed area was a cache of 360 kg. of used tesserae.

Immediately to the west of the inner north-south beam slot (PE15) on the surface of the

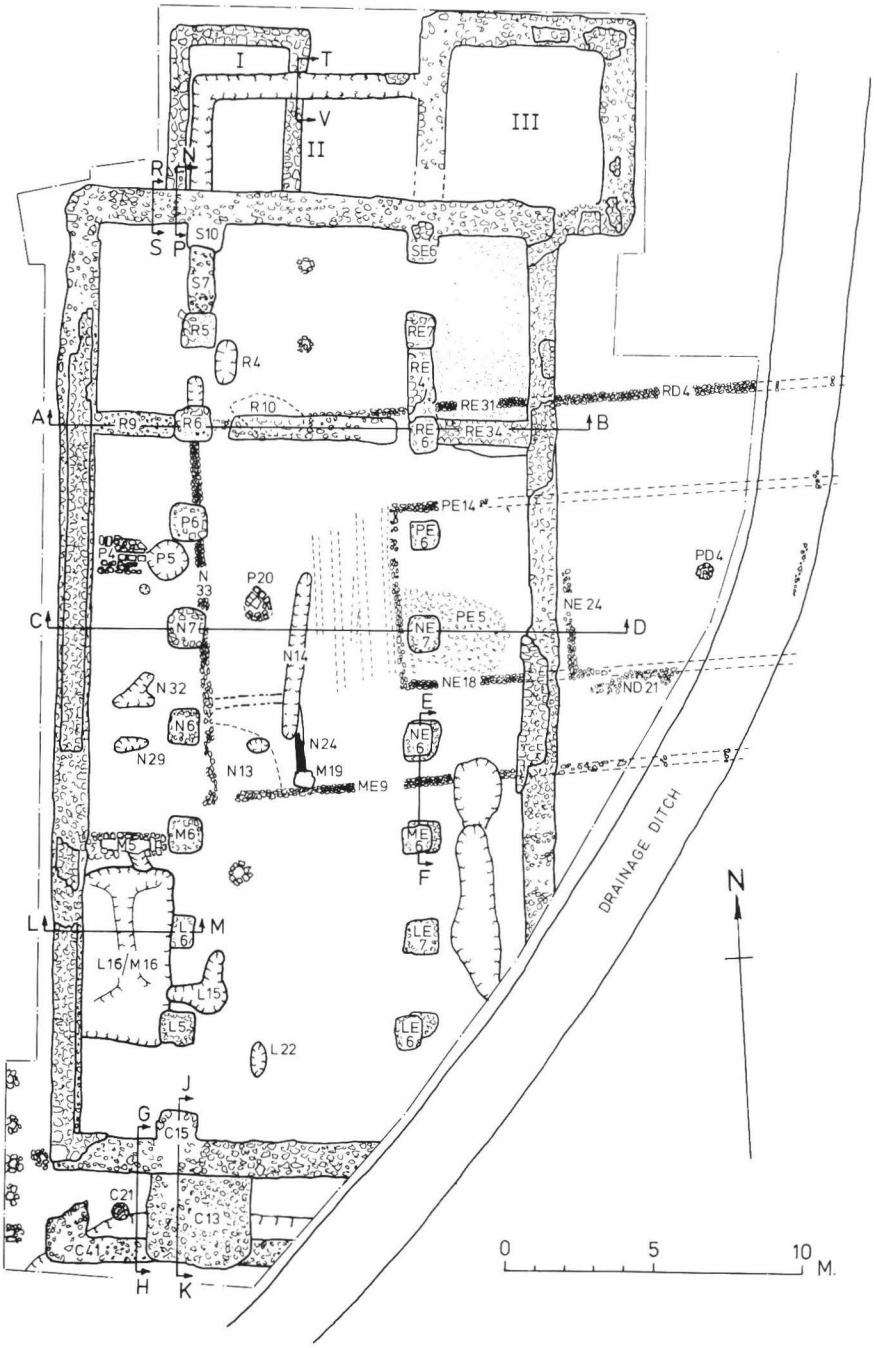


Fig. 3. Plan of buildings.

brickearth and beneath the destruction level of burnt daub were five vestigial black smears on an approximate north-south axis. To the west of these and approximately on the centre line of the structure was the remains of an elliptical hearth (P20) made of broken tegulae.

No post-holes associated with this structure were discovered but a circular pad of stones (PD4) on the centre line of the structure was observed.

Over much of the area between the inner and outer beam slots, and to a decreasing extent beyond this, was a thick destruction level of burnt daub and charred timber fragments. This was clearly seen to have been cut into and through by the wall foundations and post pad pits of the overlying aisled building (Figs. 4, 5).

At the southern end of the excavated area was a shallow gully (C37) *c.* 2 metres wide and *c.* 0.4 metre deep running approximately east-west. At its eastern end it could be observed cutting the west face of the drainage ditch, but not the eastern face. At its western end it turned through 90 degrees and disappeared into the adjacent baulk.

The Masonry Building (Fig. 3)

The complete plan of the masonry building, 32 metres long by 16 metres wide, was uncovered with the exception of its extreme south-east corner which was partly overlain by the public footpath and partly removed by the drainage ditch. The wall footings were 1.2 metres wide and consisted of chalk and flint.

Over much of the west and part of the east wall footings at least one course of the actual wall survived. This consisted of a facing of greensand and limestone blocks with a core of flint and stone rubble. This wall was approximately 0.8 metre wide.

Running down the inside of the structure and forming a nave and two aisles were two rows of ten post pads cut into the underlying levels. They were square in plan with an average length of side of 1.1 metres and an average depth of 0.4 metre. The construction technique of the pads varied but was normally three or four mortared courses of flint nodules overlain by a layer of compacted chalk. On some pads, e.g. N7 and N6, larger stones over this formed a setting *c.* 0.5 metre square. It was noticeable that where these settings occurred they were offset to the south-east corner of the pad. The northern and southernmost pads in both rows were keyed into the end walls of the building.

A wall footing (R9, RE34) *c.* 0.8 metre wide ran east-west across the northern part of the building along the line of the third set of post pads separating off the two northernmost bays. This area was then further subdivided by north-south wall footings (S7, RE4). The rectangular area so formed in the north-east corner was floored with a layer of gravel.

On the outer side of the north wall were footings and robber trenches of three extensions. To the west side substantial stone footings 0.6 metre wide and 0.5 metre deep enclosed an area of *c.* 3.2 by 4.7 metres. The western wall of this had been keyed into the north wall at a point where the construction was far inferior to elsewhere. The footings on the eastern side of this extension were observed to have been cut by a robber trench. South of that intersection point the upper courses of the footing had been removed. The robber trench 0.7 metre wide marked the wall lines of a second extension whose eastern side had in turn been overlain by the footings of a third extension. This was located on the north-east corner of the main building with its eastern wall protruding beyond the wall line of the latter. The footings were very substantial, being *c.* 1 metre wide and 0.3 metre deep.

Abutting the outside of the southern wall but detached from it was a large platform (C13) 3.5 by 3 metres and 0.95 metre deep. At the bottom was a core of mortared flint overlain by flint nodules in a mortar and soil matrix and a layer of tile, capped by a flint and gravel surface (Fig. 5, Section J–K). This platform cut through a wall robber trench (C49), with fragments of footing (C41) surviving, which ran parallel to the

south wall of the masonry building and 2.2 metres from it, running northward along the line of the west wall of the building. This fragmentary wall footing in turn cut through the bottom of the shallow gully (C37) of the previous period referred to above.

Inside the building abutting the inner face of the west wall and approximately half-way along it was a stone-lined flue (P4) 2 metres long with a **T**–shaped outlet at its western end. The flue was 0.36 metre wide with stone walls 0.34 metre wide on either side and a floor of tegulae set end to end. The stonework was discoloured by intense heat. At its eastern end was a circular furnace area 1.3 metres in diameter cut into the brickearth.

Butting up to the inner face of the southern part of the west wall was a large rectangular pit (L15, M16) cut down into the brickearth. It measured *c.* 6.2 by 3 metres and 0.2 metre deep. Through the centre ran a deeper channel on an approximate north-south axis. The pit had cut away the western side of an adjacent post pad (L6) but skirted round its southern neighbour (L5). Between these two were the remains of a flue (L14) linking the pit with a circular furnace area (L15) with a shallow stoking pit on its northern side. The furnace flue and the eastern side of the rectangular pit showed traces of intense heat. At the northern end of the pit a diagonal flue cut into the brickearth into a rectangular flue of stone (M5).

In the central part of the building was a **V**-shaped ditch (N14) with a flat bottom and semicircular ends cut 0.56 metre into the underlying levels. Adjacent to its southern end was a mortar platform (M19) 0.9 metre long and 0.7 metre wide.

Within the western aisle between the hypocaust pit and the corn drier were three ovoid hearths (N29 and N32) 1.3 metres long and *c.* 0.4 metre wide cut down *c.* 0.1 metre into the brickearth. A fourth hearth (R4) of similar size was found between two of the western aisle post pads (R5 and R6). A similar hearth (L22–C34) was located in the central aisle of the southern end of the building. Finally a further hearth (R10) was found overlying the remains of the east-west cross wall.

Outside the south-west corner of the building, running parallel to the west wall and 1.2 metres from it, was a row of five stone-packed post-holes. It was not possible to extend the excavated areas at this point to search for a continuation of the line. However there was no sign of a continuation at the northern end of the building where a localized extension was dug westward from the main excavated area.

INTERPRETATION

Two main periods of activity could be distinguished on the site: Period I consisted of the construction, occupation and destruction of a timber-framed building; Period II consisted of the erection of the masonry building, its occupation, modification, abandonment and subsequent robbing.

Period I

The evidence clearly indicates the presence of a rectangular building constructed on timber cills set in foundation trenches with a basal layer of flint nodules and with flint packing. Unfortunately almost all the beams had been deliberately removed, presumably for re-use, so there is no evidence for the mortising in of uprights to support the superstructure. It must be inferred that there was some form of self-supporting box-frame construction as no evidence was discovered for internal post-holes even though they were specifically sought. The single possible post pad (PD4) was felt to be of little structural significance. The plan of the structure, consisting of one rectangle inside another, is open to various interpretations. The presence of flint cobbling over the south-west quarter of the inner rectangle could lead to the speculation that this was an open courtyard area. This would best fit an interpretation which saw the structure comprising four wings surrounding a central open space. The fact that the outer footings were both

deeper and wider than the inner might indicate a taller outer wall with an inward sloping roof supported around the courtyard by a much lighter wall or even colonnade.

A second, more conventional, interpretation is that it was a typical aisled building where the inner foundations represent the supports for the two rows of aisle posts. If this is the case, then the ratio of nave to aisle width would have been approximately 2:1 as it was in the superseding building and indeed as is the case in 54 per cent of the agricultural aisled buildings of the period (Morris 1979). Such an explanation, however, would require post pads or holes for a westernmost pair of roof support posts. The logical position for the southerly one would have been at the north-east corner of the small square room seen in plan, but unfortunately this corner had been destroyed by the later gully. This does not however explain the absence of the northern pad/post-hole.

The small room *c.* 5 metres square in the south-west corner was used at the end of the building's life for the storage of used tesserae. To the north of this an oval tile hearth suggests that at least the western end of the building was heated. To the east of the hearth the five north-south lines of carbonized material lay directly on the brickearth. It is possible that these represent either collapsed roof timbers, or burnt joists of a timber floor. The latter is difficult to assimilate with the adjacent tiled hearth.

Neither the plan of the structure nor the artefactual material from it give a clear picture of its function. That it contained domestic pottery and a hearth would suggest that it was occupied, whereas the cache of tesserae suggests a storage element. Its close proximity to the harbour edge, even allowing for major sea-level changes, may suggest a store for materials shipped in and out of Fishbourne but there is no solid evidence to support this.

The dating of the timber building presents problems. Its construction date can be no more than an informed guess based on the 1st-century pottery present (*c.* 10 per cent of the total Samian ware), and the coins, two relatively unworn denarii of Galba and Vespasian. One may thus postulate a construction date somewhere in the last quarter of the 1st century A.D. An adjacent pit (T10) contained material which appears to have been deposited in the first half of the 2nd century A.D. during the life of the building. The destruction date is based on the pottery within and immediately beneath the destruction level and in the robbed-out beam slots. This suggests a *terminus post quem* of the middle of the 2nd century A.D.

Period II

The burnt timber building was replaced on the same site, but on a different alignment, by a large aisled masonry building of a type seen in central southern Britain, the Severn/Cotswolds area and the East Midlands (Morris 1979). The roof of clay tile, supplemented by Horsham stone tile, was supported on two rows of timber posts 0.6 metre square. These in turn were supported on massive flint and chalk post pads cut into the subsoil. It was noticeable that the settings for the posts were not central to the pads, which may indicate either incorrect initial setting out or later replacement of the posts. Clearly in one instance the original pad (R6) had been cut into by a post-hole with stone packing, presumably for a replacement roof support.

It is probable that the initial masonry building consisted of no more than four outer walls and a roof, and that it was internally subdivided and extended later, in a manner common to other such buildings (Morris 1979). The east-west internal cross wall (R9, R11) was probably such an addition. Its western part was considerably less substantial than the eastern length and the outer walls and was not keyed into the latter, but all the footings lay at the same depth (Fig. 4, Section A–B). As the overlying stratigraphy was too badly plough-damaged to offer further clues it is only possible to speculate on their contemporaneity. However, the north-south walls which subdivided this northern area into three separate rooms were of a much flimsier

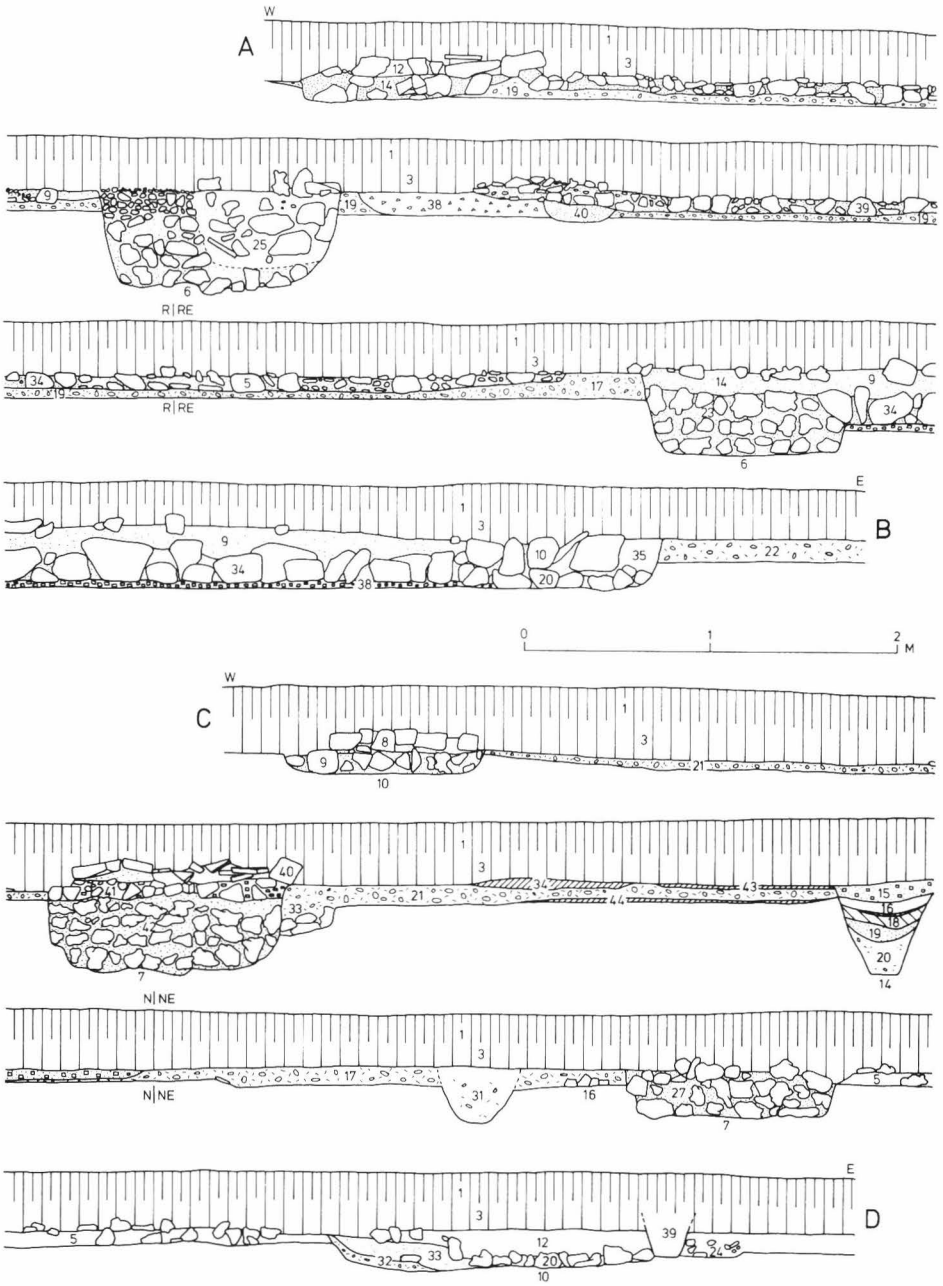


Fig. 4. Archaeological sections. For location of sections see Fig. 3.

construction than the main cross-wall and may indicate a later insertion. The room in the north-east corner was floored with coarse gravel, which may indicate that animals were stalled there, but as the internal dimensions were 6 metres by 3 metres this would provide very limited accommodation.

The outside of the building was much added to over a period of time. At the northern end a sequence of three extensions was added. This sequence is quite clear but it has not proved possible to date the separate events. The earliest extension, Annexe I, was keyed into the north wall of the building, but at a later date. This was achieved by partial demolition of the north wall, recognizable by the inferior rebuilding (Fig. 5, Section N–P). This first annexe was superseded by Annexe II, which survived as no more than a robber trench containing mortar and stone chips. Nevertheless, it could clearly be seen to cut through the eastern wall of its predecessor (Fig. 5, Section T–V). The footings of the earlier wall were then removed to a lower level inside what was now a new annexe whereas those outside were reduced only to ground level. This second annexe was spaced equidistant about the centre line of the main building, with its east and west walls on the line of the internal aisle posts. One questions the reasons for this if the aisle lines were not visible from outside the building. Was it perhaps continuing the line of a clerestory roof which would have been apparent?

Certainly such a method of roof construction would have allowed considerably more light into the central nave of the building, especially in areas, such as the northern end, where the side aisles appear to have been partitioned off.

The presence of a clerestory might also explain the presence on site of a quantity of Horsham stone tiles. Although these have been seen elsewhere in conjunction with clay roof tiles, e.g. at Chilgrove (Down 1979), it is difficult to see how the two types were used together on the same roof. If a clerestory was present then the stone tiles may have been used for cladding its vertical face whilst the clay tiles were used on the sloping roofs.

Annexe II was in turn replaced by Annexe III. Its western wall took up the line of the eastern wall of its predecessor, but its eastern wall protruded beyond the eastern wall of the main building. Such protruding rooms have been seen at opposite ends of the long sides of aisled buildings at Stroud (Hants.) (Moray-Williams 1909) and North Warnborough (Liddell 1931) where they may be imitating the wing rooms of the winged corridor villa. It has been suggested (Neal 1982) that these were tower rooms and certainly the footings for the Fishbourne structure would allow for such an interpretation. Unfortunately the presence or otherwise of a matching south-western room/tower at Fishbourne could not be proved owing to the damage done by the modern drainage ditch and the inaccessibility of the extreme south-east corner of the building. Coin evidence suggests that Annexe III was extant during the 260s and 270s and the walls were being robbed approximately 100 years later.

At the southern end of the building was another group of features which could be placed in order of development but not closely dated. This commenced with the construction of a wall footing (C41) *c.* 0.8 metre wide running parallel to the south wall of the building, coincidentally along the line of an earlier gulley (C37), and then turning northward along the line of the west wall of the building but not joining up to it. Enclosed by it was a post pad (C21) which may be associated with it. The structure appears to have been a simple extension or, in the light of what followed, a porch to a southern doorway. The wall was demolished and the footings almost totally removed before it was cut through by the massive flint platform (C13) which was built close to, but not touching, the south wall of the main building. Clearly the platform was designed to carry considerable weight, but its function remains unclear. There was no sign of any superstructure built on the upper gravel surface, but it may have been free-standing and removed at a later date. Two possibilites present them-

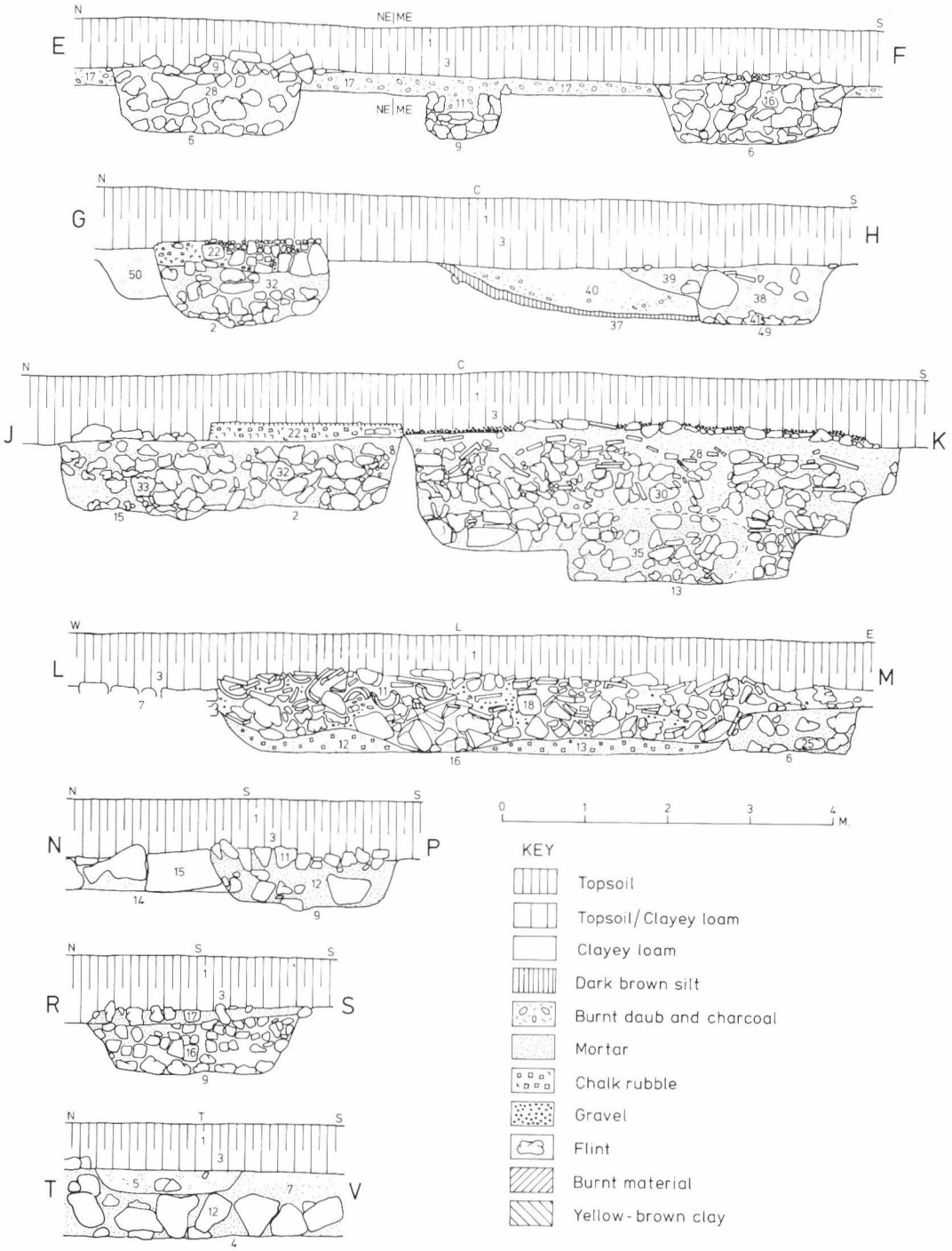


Fig. 5. Archaeological sections. For location of sections see Fig. 3.

selves; either that it supported some form of lifting or loading gear adjacent to a southern entrance to the building, or that it was the base for some form of substantial entrance porch, perhaps like the one postulated for the granary at Gorhambury (Herts.), with an upstairs loading bay (Neal 1982). There the remains consisted of a pair of square flint and chalk foundations set out 1 metre from the end wall of the building. It was argued that a single-storey porch would not have needed such massive foundations. The same argument could be applied to the Fishbourne structure. Such an explanation would require a second platform, which the damaged remains in the ditch side may indicate.

Inside the remainder of the building the features indicate an agricultural function. The T-shaped flue and furnace clearly represents one of the widely recognized 'corn driers'. Morris (1979) lists over 50 similar examples. As the upper levels of the structure were destroyed in antiquity one can only speculate on the overlying drying chamber and its method of flooring. It is possible that the post-hole immediately south of the furnace end of the flue may have been part of the floor support or for some form of enclosing structure of wattle and daub.

It should be noted that no carbonized grain was found associated with this structure and that it is classed as a 'corn drier' on form alone.

To the south of the 'corn drier' also abutting the inside of the west wall was the large rectangular pit which was clearly designed as an underfloor heating system. The furnace bowl and flue were clearly recognizable leading into the pit itself, as was the outlet leading into the large rectangular stone-built flue.

On either side of the pit were two platforms of mortar, flint and stone with a deeper 'flue' running north-south between them. The purpose of these is unclear. Presumably it restricted the circulation of gases to some extent but intense burning on the surface of these demonstrated that high temperatures were being reached. Perhaps the central deeper flue was required to provide the necessary 'draw'. It is assumed that the floor above was supported on columns of tiles. Although none remained *in situ,* pilae tiles were found in the pit and elsewhere on site. The floor itself poses more of a problem as there is no indication as to how it was constructed, or of what material. The answer to this may be dependent upon what one considers the function of the structure to have been: was it a heated domestic room or a large grain-drying floor? Certainly it appears to be a general trend for simple aisled buildings to become much more developed with the passage of time, acquiring mosaic floors, hypocausts and even bath suites, in fact becoming villas in their own right. Clearly this particular building was occupied, as may be seen from the domestic debris, but the quantity suggests that this may have been only at a fairly low level, and by the end of the building's life it had still not become predominately domestic. It seems more probable that this underfloor heating system was for a very unsophisticated corn drier in what was still essentially an agricultural building occupied by possibly no more than a 'farm bailiff' and his immediate dependants. If the structure was indeed a corn drier then the drying chamber may have been floored with wood. Such a wooden floor was found at Foxholes Farm (Herts.) and was assumed at Park Street (Herts.), whilst at Godmanchester remains of a hurdle plastered on both sides with daub probably represented the demolished flooring (Morris 1979).

Whatever the hypocaust's function it was not an original feature of the building as the digging of the pit entailed the cutting away of the western side of one of the post pads (L6). Neither does it appear to have survived until the final destruction of the building. The infilling of flint and stone rubble, including a stone door-post socket, was in place before the roof collapsed. It was only because the roof tiles fell into a depression over the top of the infilling that they survived largely intact. Elsewhere on the site they had been fragmented and dispersed. The pottery and coin evidence suggests that the infilling took place at the latter end of the 3rd century A.D.

In the middle of the building and at a slight angle to its axis was a long V-shaped gully with rounded ends and a narrow flat bottom. It had no outlets and must have operated as a soakaway. The lower levels consisted of a thick build-up of clayey soil which had then been capped by a layer of chalk, possibly intended as a new lining. Above this was a grey-brown clayey soil, followed by burnt material perhaps from the adjacent hearths and 'corn drier' furnace. This was overlain by a deposit containing tile fragments, and finally the gully was capped by a chalky mortar which spread discontinuously over the central part of the aisle floor, presumably attempting to level it up. In its earliest form the gully was probably designed as a soakaway. Soakaways and drains have been recognized in several agricultural buildings where they have generally been interpreted as drains for cattle byres. It is noticeable in the Fishbourne building that all the internal features occur in the western half of the building. It may be that the eastern side was used for stalling cattle. Clearly when the gully filled above a certain level its efficiency would be impaired and it would finally become redundant unless re-dug, for which there is no evidence. Coin evidence suggests that this filling process was taking place during the last quarter of the 3rd century at the earliest.

The five oval hearths may indicate some form of industrial activity taking place in the western half of the building. High temperatures appear to have been achieved in the most northerly hearth (R4) where there was marked burning of the surrounding brickearth. This would suggest the use of a forced draught which in turn might suggest smithing. However, no iron slag was recognized from the site.

The coin evidence suggests that there was activity on the site until the middle of the 4th century A.D. but it is probable that these few coins were lost during the robbing that clearly took place. The hearth (R11) overlying the demolished footings of the internal cross wall may belong to this last phase of activity.

Despite initial hopes it has not been possible to prove a direct link between either building and the Roman Palace although circumstantial evidence points to it. The timber building was constructed soon after the Flavian Palace and the masonry building outlived it to be abandoned at about the same time as the buildings currently under excavation to the east of the Palace (A. Down pers. comm.). It is probable that some material came from the Palace: the ceramic water pipe fragment, the tesserae and the painted wall plaster fragments (see below). Finally the fact that the aisled building did not develop into a fully-fledged villa as happened so frequently elsewhere may indicate that it was directly under the control of the adjacent Palace and as such retained its original agricultural function.

STONE

Building Materials (by D. A. Bone)

A comprehensive sampling was made of stone from the Period II masonry building. Chalk rubble and flint formed the bulk of the material present but attention was paid to the rarer and more exotic stones present to gain some idea of the source of the material used in construction.

Examples of the following stones were noted, in approximate order of abundance, with a suggested possible origin.

a. Flint, well-rounded beach-rolled cobbles—local foreshore.
b. Chalk, Upper or Middle—local outcrops or Isle of Wight.
c. Upper Greensand—the foot of the north scarp slope of the South Downs (Gallois 1965) or cliff outcrops on the Isle of Wight (hereafter I.O.W.) (Osborne White 1921).
d. Bembridge limestone—the north of the I.O.W.
e. Shelly limestone, lower Cretaceous or Tertiary—the Weald, I.O.W. or Isle of Purbeck.
f. London clay concretions, including a London clay septaria with calcite septa and other simple clay-ironstone, hardened clay or sandy-clay concretions—Bognor Regis foreshore, Chichester Harbour south of the Birdham/Itchenor line, or Alum Bay and Whitecliff Bay, I.O.W.
g. Ironstone concretion, probably Wealden—Weald clay at Sandown or Compton Bay, I.O.W. or less likely from the London clay.
h. 'Sussex Marble' limestone, really a fossiliferous Weald clay limestone—occurs in the Weald, I.O.W. and Isle of Purbeck, also as beach pebbles.
j. Ferruginous sandstone, probably Tertiary or Cretaceous—probably collected from the beach, judging by the rounded edges.

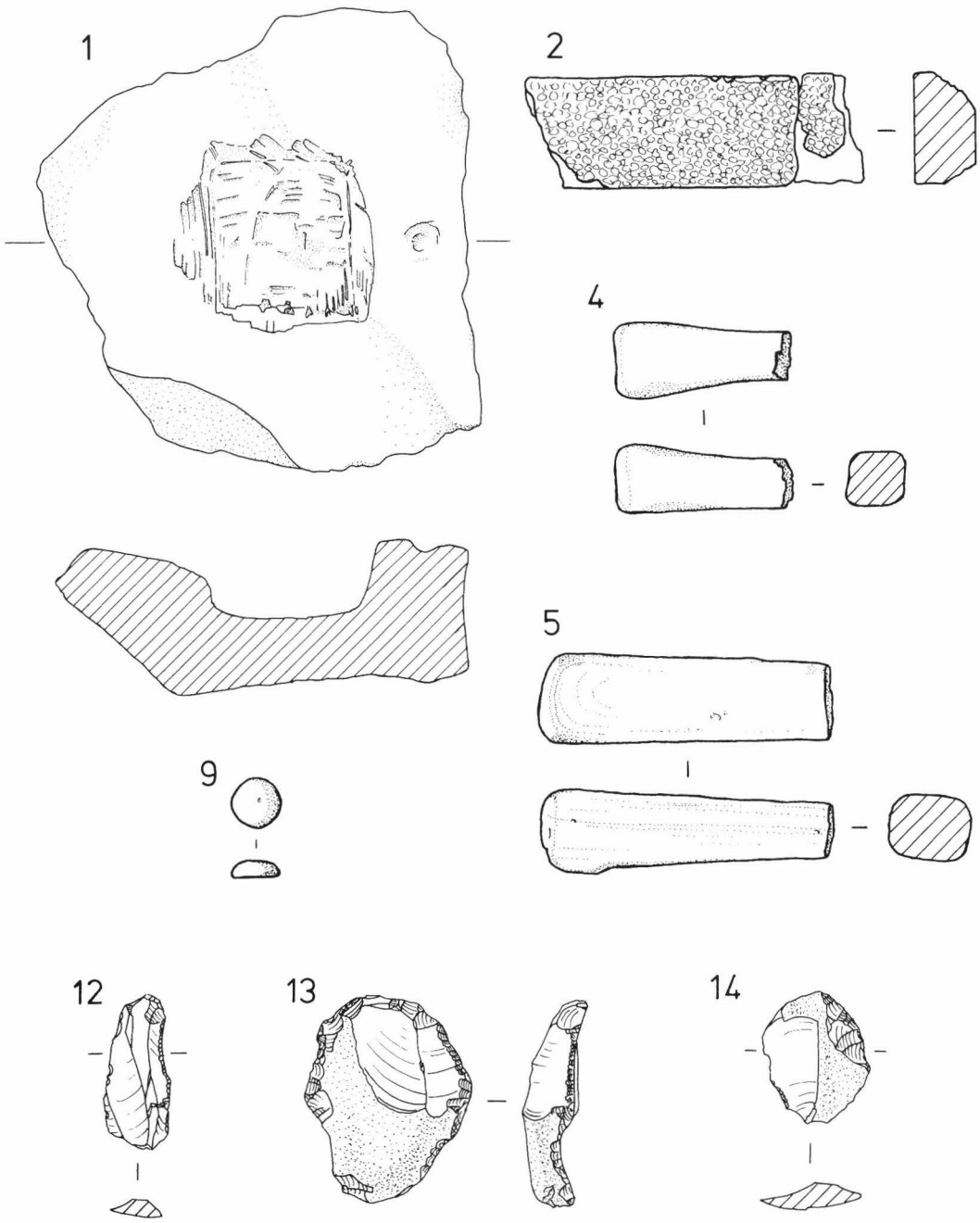


Fig. 6. Architectural fragments, other small stone artefacts and worked flint (No. 1 × $\frac{1}{4}$, remainder × $\frac{1}{2}$).

k. Cherts, both pure and calcareous, from the Upper Greensand—the former is beach-rolled and was probably collected with the flint.
l. Granite erratic—common on and around the coastal plain where they were deposited from drifting ice during the Pleistocene Ice Age.
m. Phosphatic chalk, coarse-grained, shelly chalk with abundant phosphatic grains; rounded and possibly beach-rolled—only currently known mainland source is Stoke Clump near Kingley Vale, NW. of Chichester.
n. Shelly limestone, possibly Tertiary—possibly I.O.W.
p. Tufa—probably from the superficial deposits overlying the Tertiary limestones of the northern half of the I.O.W. (Osborne White 1921). Comparable formations are not known on the local mainland.

Although the bulk of the building material is chalk and flint, there is a fair quantity of other stone. The occurrence of Bembridge limestone indicates a definite Isle of Wight source for this material and suggests that much of the other stone, particularly the Upper Greensand, could also have been shipped from the Isle of Wight. The rough, poor quality and varied nature of the materials also suggests the possible re-use of stone from earlier construction or the use of reject material from building-stone shipments. Much of the stone is obviously beach-rolled, and this, together with the varied assortment and scarcity of each type, would suggest beach collection for use as ballast on ships sailing from the Isle of Wight to Fishbourne. However, the possibility of scavenging the local Chichester Harbour for some building stone should not be dismissed. Overall, it would appear that the builders of this structure were looking for cheap building material, irrespective of quality or finish.

Architectural Fragments (Fig. 6)

1. Chalk block with square mortise hole. Probably a door-post socket. (L11)
2. (1416) Purbeck marble inlay strip, probably for wall decoration. Similar strips were found in large quantities in the eastern courtyard of the north wing of the Roman Palace (Cunliffe 1971). (P37)
3. Horsham stone roofing tiles from various locations on the site. Of the same form as those from Chilgrove I and II (Down 1979). (not illustrated)

Other Small Stone Artefacts (Fig. 6)

4. (7) Whetstone fragment of glauconitic limestone, possibly originating from the Jurassic limestone belt in the Towcester region (D. Peacock pers. comm.). (C4)
5. (852) Whetstone fragment, as No. 4 above. (NE3)
6. (571) Bead *c.* 17 mm. diam. made from the fossil sponge *Porosphera globularis* from the Chalk, with hole drilled through the central cavity. (TE12) (not illustrated)
7. (890) Bead *c.* 10 mm. diam. as above. (RE3) (not illustrated)
8. (508) Half a bead *c.* 14 mm. diam. made from marble. (TE12) (not illustrated)
9. (1341) Pebble counter, 13 mm. diam. possibly of polished chert. (LE13)

Tesserae

A depression in the SW. corner of the small room at the west end of the Period I building contained over 360 kg. of tesserae. These consisted of: white, 225 kg.; black/grey/brown, 124.5 kg.; red, 12 kg. Analysis of samples of each suggests the following materials: creamy white – marble; grey – burnt marble; grey/brown – siltstone, possibly a variety of Horsham stone; brown/dark brown – hard clay or mudstone, possibly local London clay; red – tile.

Many of the tesserae show traces of lime mortar still adhering and others were still conjoined in groups of up to 13 tesserae, clearly demonstrating that they had once been laid as part of a mosaic floor then lifted and stored for re-use. The proportions of the different colours of tesserae, assuming that they are still representative, in the approximate ratio of 10: 5: 1, is typical of the 1st century black and white geometric mosaics in the Roman Palace. Calculations based on the average size and weight of the tesserae would suggest that the tesserae recovered would have covered an area of *c.* 23 square metres.

It seems unlikely that the mosaic floor was originally laid in the Period I building; certainly no traces of a bedding survived. It is more probable that they were from a different building, possibly the Roman Palace.

Worked Flint (Fig. 6)

A total of 14 pieces of worked flint were found:

10. Waste flakes. (not illustrated)
11. Blades (8) some displaying minimal retouching. (not illustrated)
12. (119) Backed blade, with delicate blunting retouch along the length of one edge of the dorsal surface and at the distal end of the ventral surface. Honey-grey flint.
13. (183) Scraper formed by coarse, abrupt retouch around the distal end of the dorsal surface of a flake of blue-grey flint. Large hinge fracture on ventral surface.
14. (39) Scraper formed by delicate invasive retouch along part of one side of the dorsal surface of a flake of honey-grey flint.

None of the pieces are particularly diagnostic but the assemblage is probably of Neolithic/Early Bronze Age date.

FIRED CLAY

Daub

Large quantities of daub were found in the destruction level of the timber building, much of it showing evidence of keying. The bulk of this material was very fragmentary but two larger sections survived. One of these (Fig. 7, No. 9), *c.* 270 mm. by 230 mm., clearly retained the impression of two bands of chevron pattern 110 mm. wide. Both had been produced by the same roller, although not 'in phase'. It appears that the pattern repeats at an interval of 148 mm., which would indicate a roller diameter of 47 mm.

A larger piece of daub, badly fragmented by root action, showed four parallel bands of chevron pattern partly overlain at one side, and approximately at right angles, by a single band of chevrons.

Chevron pattern keying on daub has been recorded from Boudiccan destruction levels at Verulamium (Frere 1972) and Colchester (Crummy 1984). At the latter the excavator believes that the patterns were designed to be seen. The writer believes that this was also the case at Fishbourne.

Tiles

Imbrices

The roof of the Period II building was covered, at least in part, by clay tegulae and imbrices. Fortunately 23 of the latter had survived largely intact. Although this is a relatively small sample, nevertheless it is clear that they were of four distinct sizes. The majority, 18, had an average length of 370 mm. with widths across the base of the arch of 170 mm. and 120 mm. Three tiles grouped around the smaller dimensions of length 313 mm. and widths 142 mm. and 113 mm., whilst a single large example had a length of 430 mm. and widths of 195 mm. and 140 mm. In all cases the tiles were approximately 15 mm. thick. One broken imbrex tile was clearly much more massive than the remainder. Although only 290 mm. long it was 30 mm. thick with estimated widths at each end of 255 mm. and 220 mm.

Flue tiles (Fig. 7)

Numerous fragments of flue tile were recovered from which it is possible to recognize the following types:

1. Voussoir tile, probably made by cutting a full-size box tile in half with an angled cut producing a tile 225 mm. wide with a height ranging from 160 mm. to 180 mm. and a depth of *c.* 115 mm.; cf. Chilgrove (Down 1979). Decorated by diagonal and vertical combed lines within a combed border. (M11)
2. Side of box tile *c.* 115 mm. wide with combed pattern similar to No. 1 above. (M11)
3. Box tile with combined arc and wave pattern combing. (M3)
4. Box tile with overlapping arcs of combing separated by a central combed band. The triangular cut side of this and other similar fragments suggests that it is a serrated flue tile of the type recognized by Down at Upmarden (Down 1979, 175). However, due to the position of the fractures it could also be interpreted as the edges of two apex-to-apex cut-out triangles, a type also seen at Chilgrove I (Down 1979, 175). (N12)
5. Box tile with a coarser version of the combed decoration on No. 1 above and with the triangular cut side. One undrawn fragment suggests that square or apex-to-apex triangular cut-outs were also used. (LE3)
6. Box tile with all-over interlaced diagonal combing. (C28)
7. Box tile fragment with wave pattern combing. A wedge-shaped brick with similar combing comes from Chichester (Pilmer 1978). (L3)
8. Box tile fragment possibly from the upper corner of a centrally divided box tile showing traces of a semicircular cutaway. (A similar complete example comes from Angmering and is on display in Barbican House Museum, Lewes.) The tile is roller-stamped, possibly Lowther's Group 5 (diamond and lattice), and is similar to a small fragment from Southwick villa (Rudling 1985). The pattern bears similarities to Lowther's Die 46 (cf. Fishbourne: Cunliffe 1971), and also to Johnston and Williams' Die 48, but it is not produced by either die (E. Black pers. comm.). (SE 3)

Pilae tiles

Pilae tile 45 mm. thick × 200 mm. square. One face bears an indistinct animal footprint. (not illustrated)

Pilae tile 45 mm. thick × 220 mm. wide and of unknown length. (not illustrated)

Tegulae mammatae

Mammae tile (3) 35 mm. thick but of unknown length and width, with applied mamma in one corner approximately 60 mm. from each edge. (not illustrated)

Pipes

Cylindrical water pipe fragment 210 mm. diameter with a bore of 100 mm. diameter with traces of a socket 145 mm. diameter. Similar pipes were used in the garden of the Flavian Palace to provide water for fountains and basins. Some were later re-used. This is almost certainly from where this example came. (S7) (not illustrated)

Samian Pottery (by G. Dannell)

The plain Samian ware

Eighty-eight sherds of plain Samian ware were recovered during the excavation. Of these 13 were of Southern Gaulish manufacture. The majority, 62, came from the Central Gaulish potteries, with nine of these from Martres de Veyre. Two were from East Gaulish vessels whilst two more may represent the work of the Pulborough potter.

Forms present include Curle 11, 18, 18R, 18/31, 27, 30, 31, 31R, 33, 35/36, 37, 38, 43, 45 and 79.

The decorated Samian ware (Fig. 8)

1. (240) Form 37. Probably by the Donnaveys workshop; for the rosette and trees cf. Stanfield & Simpson (1985), fig. 11.13 and pl. 49.584. *c.* A.D. 100–20, Martres de Veyre. (N3)
2. (1195) Form 37. Probably the ovolo of DRVSVS 1., Rogers's B37 (Rogers 1974). *c.* A.D. 100–20, Martres de Veyre. (P7)
3. (1075) Form 37. The spiral is Rogers's 532, used by Potters X–9 and X–10. To the left there is a small putto, D.254; cf. Stanfield & Simpson (1958), pl. 31.367. *c.* A.D. 100–20, Martres de Veyre. (TE 14)
4. (765) Form 37. Rogers's G395, used by DRVSVS 1. *c.* A.D. 100–20, Martres de Veyre. (TE 12)
5. (883) Form 37. Rogers's ovolo B208, and the most likely potter is DOCILLIS. *c.* A.D. 130–55, Lezoux. (SE3)
6. (1294). Form 37. Putto, D.255, on a Hadrianic–Antonine piece. *c.* A.D. 135–60, Lezoux. (TE4)
7. (1433) Form 37. An early bowl in the CINNAMVS style; his ovolo, cf. Rogers's B12, and rosette C53. *c.* A.D. 140–60, Lezoux. (T10)

Samian Potters' Stamps (Fig. 8) (by Brenda Dickinson)

(Entries below list in order: small find number, potter (iii, etc.), die, form, reading, pottery of origin, context; a: stamp attested at the pottery in question; b: not attested at the pottery in question, but the potter known to have worked there.)

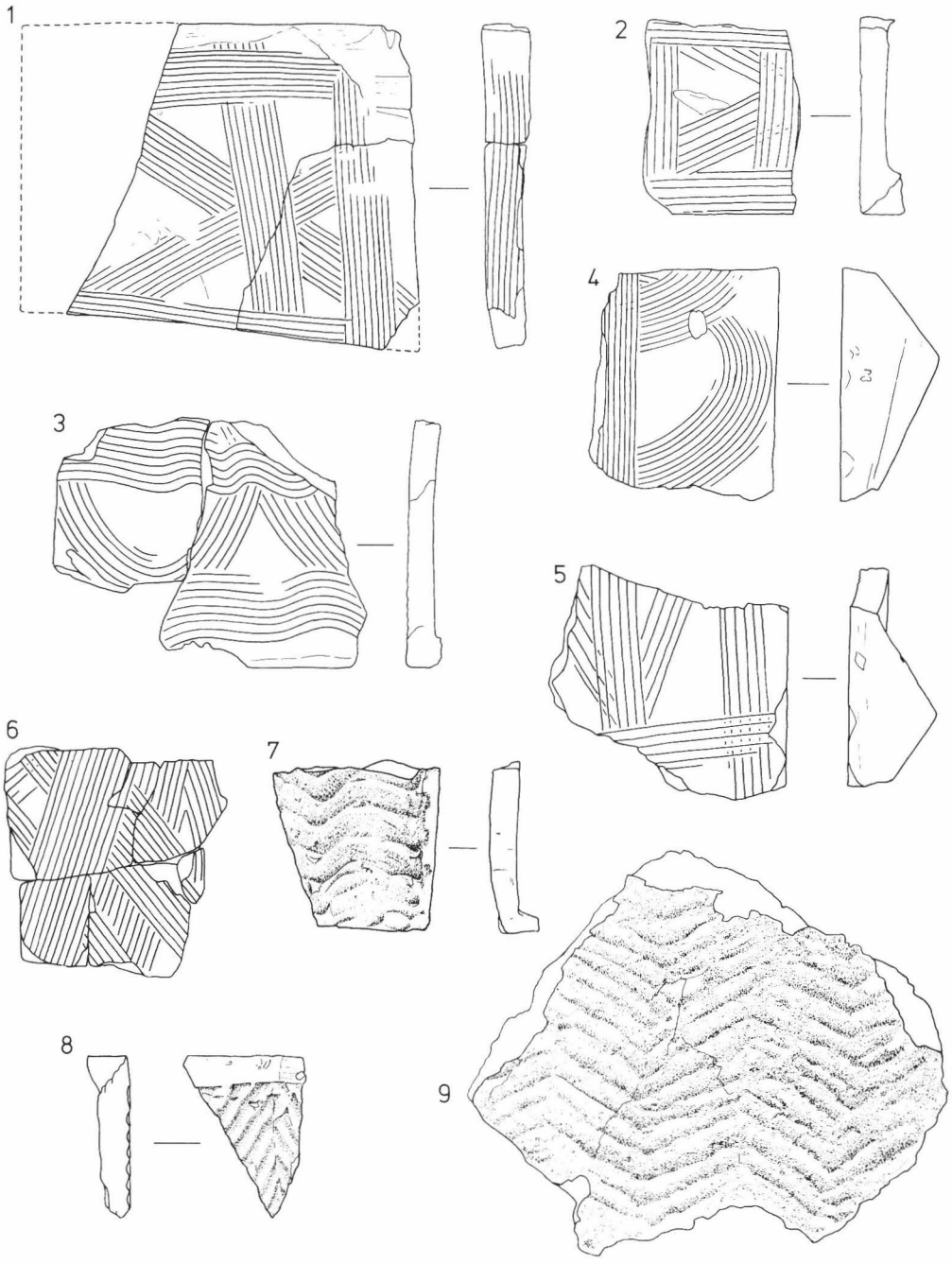


Fig. 7. Flue tiles and impressed daub ($\times \frac{1}{4}$).

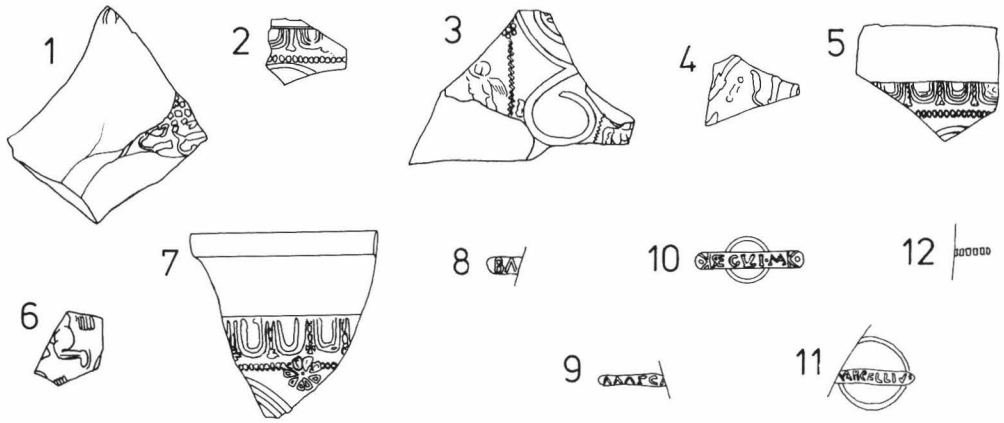


Fig. 8. Figured Samian and Samian stamps ($\times \frac{1}{2}$).

8. (1420) Banvillus 2c 18/31 BA [NVILLIM].
Banvillus is known to have worked at Les Martres de Veyre, but some of his vessels are clearly in Lezoux fabric. The Fishbourne piece is one of these, and comes from a die which is not attested at either pottery, though a dish from Clausentum with the same stamp is probably also from Lezoux. His wares are noted from Scotland and occur in early Antonine contexts at Alcester and Castleford. *c.* A.D. 130–55. (RE36)
9. (1358) Mascellio i 4b 31R MASCI [ILLIO] Lezoux. a A stamp noted from Catterick, Halton Chesters and Wallsend. It was commonly used on Form 31R and there is one example on Form 79R. One of his other stamps is in the late Antonine Samian from Pudding Pan Rock. *c.* A.D. 160–200. (RE3)
10. (1419) Regulus 3a 33 · ЯЯEGVLI · MAK · Lezoux. b (RD6)
11. (1386) Marcellus iii 11a 33[MARCELLIVS Lezoux. b A stamp used mainly on Forms 18/31 and 27. It occurs at Corbridge, Maryport and Rhineland forts. The lettering is consistent with other stamps of Marcellus, and so the intrusive I is certainly a mistake of the die-cutter. *c.* A.D. 130–50. Certainly illiterate. Antonine. (RE17)
12. (1231) Form 3L, burnt, Central Gaulish. The stamp]IIIII or IIIII[, is almost certainly illiterate. Antonine. (SE2)

Pottery (other than Samian)

Approximately 25 kg. of pottery was recovered from the excavations. With the exception of five body sherds of Iron Age pottery (not illustrated) from the disturbed upper levels and a small quantity of post-medieval sherds from two later disturbances it was all of the 1st to 4th centuries A.D. in date. Much of it was of limited archaeological significance owing to the severe disturbance to the upper levels of the site and was only of value in observing general trends of occupation density and duration. The significant stratified deposits were as follows: a pit (T10), salvaged from beneath a baulk at the termination of the excavation; the destruction material of the Period I timber building (M18, M29, M36, N3, N21, N22, N23, ME 17/17a, NC 36/37); the fill of the hypocaust pit (L11, M11, M12); and finally a rubbish deposit (C4) which accumulated outside the south-west corner of the building in the depression caused by subsidence of an earlier gully (C37) and robber trench (C39).

Pit T10 (Fig. 9)

1. Everted-rim jar. Hard, sandy fabric fired grey-buff.
2. Everted-rim jar. Hard, sandy fabric with large flint grits, fired black/buff. Slight burnishing under rim.
3. Shallow bowl with everted rim. Hard, fine sandy fabric fired grey/buff.
4. Straight-sided bowl with thick horizontal rim. Hard, very fine, sandy fabric fired dark grey. Burnished inside and out.
5. Straight-sided dish. Hard, sandy fabric fired dark grey. Burnished on inside.
6. Amphora neck. Soft, sandy fabric fired orange-buff. Imitation Rhodian type. Its small and delicate form suggest a 1st–century date (D. Peacock pers. comm.).
7. Narrow-necked jar with simple everted rim. Hard, fine, sandy fabric fired grey-buff with external silver-grey slip.
8. Jug. Very hard, coarse, sandy fabric fired grey-brown/orange with light grey core. Outside of neck shows traces of vertical burnishing. cf. Fishbourne Type 131, found in 1st-century context (Cunliffe 1971).
9. Narrow-necked jar with square everted rim. Cordon below neck and incised groove around upper body. Hard, fine sandy fabric fired mid-grey.
10. Mortarium. Soft, sandy fabric fired pale brownish-cream, moderate amount of tiny quartz, probably flint, and black inclusions with rare feldspar and orange-brown inclusions. Trituration grit includes opaque quartz, red-brown fragments and probably flint. Southern England manufacture, perhaps Wiggonholt *c.* 130–80 A.D. (K. Hartley pers. comm.).

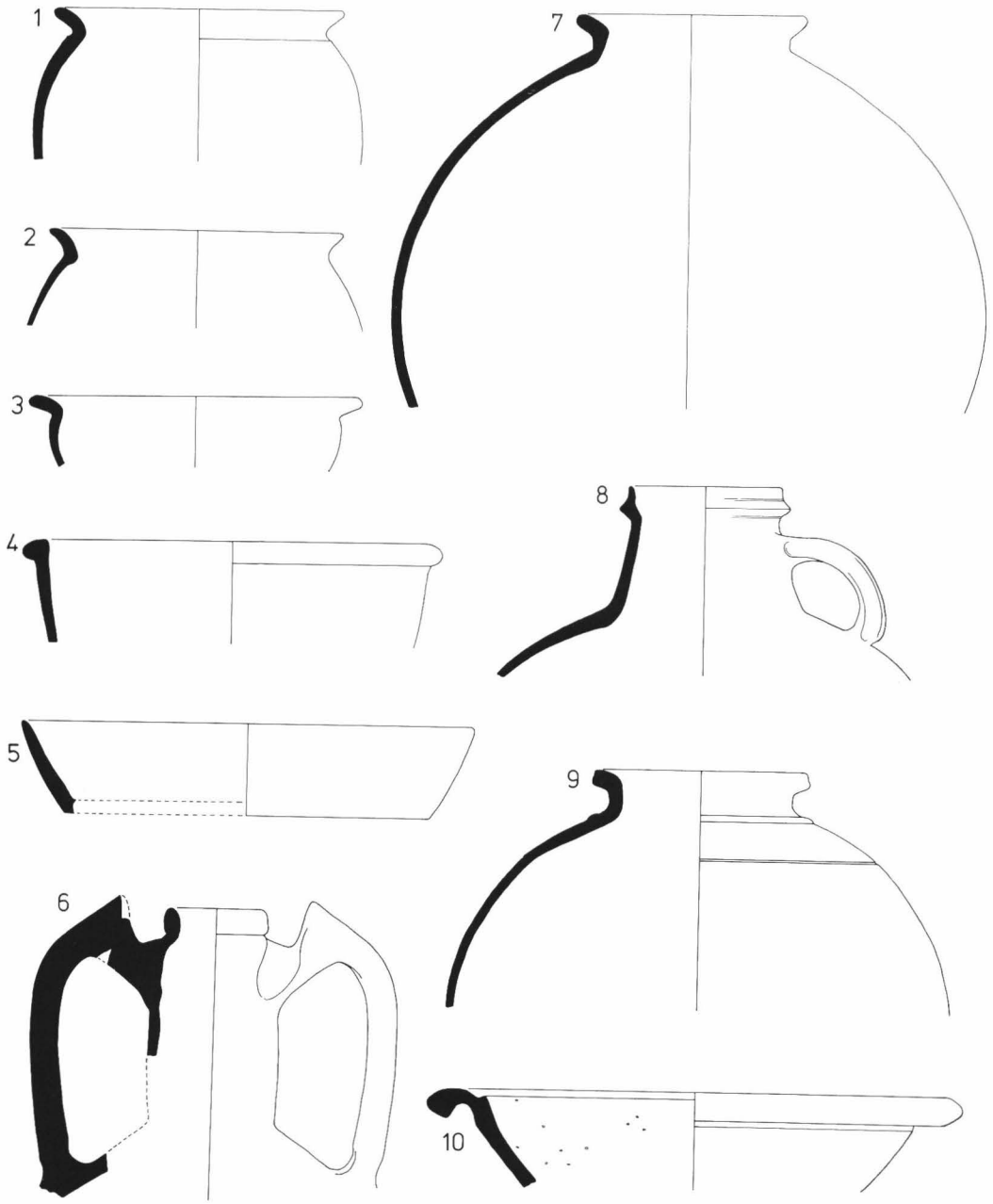


Fig. 9. Roman pottery: Pit T10 ($\times \frac{1}{4}$).

11. Jar base. 125 mm. diameter. Sandy fabric with coarse flint and grog filler. Fired black on surface with buff core. Traces of crude lattice decoration on body. (not illustrated)

Period I destruction level (Fig. 10)

12. Carinated bowl with reeded rim. Hard, fine, sandy fabric fired grey-buff. Coarse horizontal burnishing above carination and single vertical burnished lines below. A composite of Fishbourne Forms 209 and 210. Early 2nd century A.D. (ME11)
13. Carinated bowl with reeded rim. Hard, sandy fabric fired dark grey. Horizontal burnishing on upper body. (NE 37)
14. Carinated bowl. Hard, sandy fabric re-oxidized bright orange-red. Vertical lattice decoration on body. cf. Fishbourne Type 209 where it was found in a Trajanic-Hadrianic context. (M18)
15. Carinated bowl. Hard, coarse, sandy fabric fired dark orange-red and grey. Plus two variants. (P36)
16. Carinated bowl. Hard, sandy fabric fired light grey. Burnishing between neck and shoulder with two vertical burnished lines below shoulder. cf. Fishbourne Type 204, where it occured in 2nd century levels, but without basal perforations. (RE37)
17. Bowl with carination and cordons. Hard, sandy fabric, re-oxidized bright orange-red. (P36)
18. Beaded-rim bowl. Hard, sandy fabric with buff core and black surface, burnished on outside. (R36)
19. Beaded-rim bowl. Very hard, sandy fabric fired buff with dark grey slip. (R36)
20. Beaded-rim bowl. Hard, sandy fabric fired dark grey/red. (R36)
21. Bowl with horizontal rim. Hard, sandy fabric fired grey-buff. (P36)
22. Bowl with horizontal rim. Hard sandy fabric fired grey-buff. (M27)
23. Shallow bowl with out-beaded rim. Fine, hard, sandy fabric fired light grey. (ND37)
24. Shallow bowl with horizontal rim. Hard, fine sandy fabric re-oxidized bright orange-red. Vertical lattice decoration burnished on outside. (M22 and N36)
25. Straight-sided bowl with horizontal rim. Hard fabric with sandy surface fired mid-grey. cf. Fishbourne Type 213 where they were found in an early to mid 2nd-century context. (P36) One minor variant, not illustrated. (R19)
26. Necked jar. Hard, fine sandy fabric with a buff core and dark grey surface. Burnished inside and out. (RE36) Two minor variants not illustrated. (M18 and PE17)
27. Necked jar. Hard, very fine, sandy fabric fired mid-grey. (NE37)
28. Necked jar. Hard, fine, sandy fabric with buff core and black surface. Burnished on outside and on inside of rim. (RD22)
29. Everted-rim jar. Fine, hard, sandy fabric fired dark grey. Burnished on outside and on inside of rim. Similar types occur at Fishbourne from the early 2nd century. (RE37) One similar form without burnishing, not illustrated. (RE37)
30. Everted-rim jar. Very fine, hard, micaceous, sandy fabric with grey-buff core and dark grey surface. Outer surface burnished above zone of vertical lattice decoration. (RE36)
31. Everted-rim jar. Fine, hard, sandy fabric with a red-buff core and black surface. Zone of crude horizontal burnishing above a central zone of vertical lattice decoration. (P36) Minor variant without burnished decoration, not illustrated. (RE37)
32. Bag-shaped rough-cast beaker base. Cream fabric with dark grey colour-coat. cf. Fishbourne Type 266 where they occured in a 1st- to late 2nd-century context. (ND22)
33. Poppyhead beaker body sherd. Hard, very fine, sandy fabric fired mid-grey with whitish-grey external slip. Five vertical rows of barbotine dots beneath horizontal groove. The type is common between the late 1st and mid 2nd centuries. (P36) (not illustrated)

Hypocaust pit fill (Fig. 11)

34. Everted-rim jar. Hard, sandy fabric fired light grey. (M11) Nine other minor variants in similar fabric (L11, L13, M11) including one with internal white slip. (not illustrated)
35. Everted-rim jar. Hard, fine, sandy fabric, fired black. (L11)
36. Everted-rim jar. Hard, sandy fabric fired dark grey, with internal slip fired buff/orange. (M11)
37. Narrow-mouthed jar with heavy square rim. Hard, fine sandy fabric fired dark grey, with whitish slip over the rim. (L13) Two other minor variants in same fabric with slip, one with a small raised cordon at base of neck. (L13) (not illustrated)
38. Lid-seated jar. Hard, sandy fabric with rough lumpy surface, fired yellow-buff/dark grey. cf. Porchester Type 151 (Cunliffe 1975). (M11)
39. Flange-bowl with high bead. Hard, sandy fabric fired dark grey. cf. Porchester Type 85. (L11)
40. Flange-bowl with high bead. Hard, sandy fabric fired buff, with grey/black slip on inside and on rim. (L11)
41. Carinated bowl with external beading at carination. Very fine, hard, sandy fabric fired creamy white with two concentric bands of orange paint on inside and on beading.
42. Base of bowl. Hard, fine, sandy fabric fired creamy white. Minute traces of yellow-brown paint on inside.
43. Two-handled dish with simple rim. Black-burnished fabric (B). cf. Porchester 117.1. (L12)
44. Straight-sided dish with beaded rim. Hard, fine, sandy fabric, fired dark grey, burnished inside and out. cf. Porchester Castle Type 109–10. (M11)
45. Flagon rim in a soft very fine sandy ware fired pinkish-cream with orange-brown paint. ?New Forest ware. (L11)
46. Neck of flange in a very hard fine sandy ware fired black, with a burnished outer surface. (L11)
47. Colour-coated beaker with incised grooves in a medium hard, very fine, sandy fabric fired orange-pink with a metallic, black/brown colour coat inside and out. (L11) (not illustrated)

Rubbish deposit (C4) (Fig. 11)

48. Everted-rim jar. Hard sandy fabric fired mid-grey with a light grey slip.
49. Everted-rim jar with compressed rim undercut by a

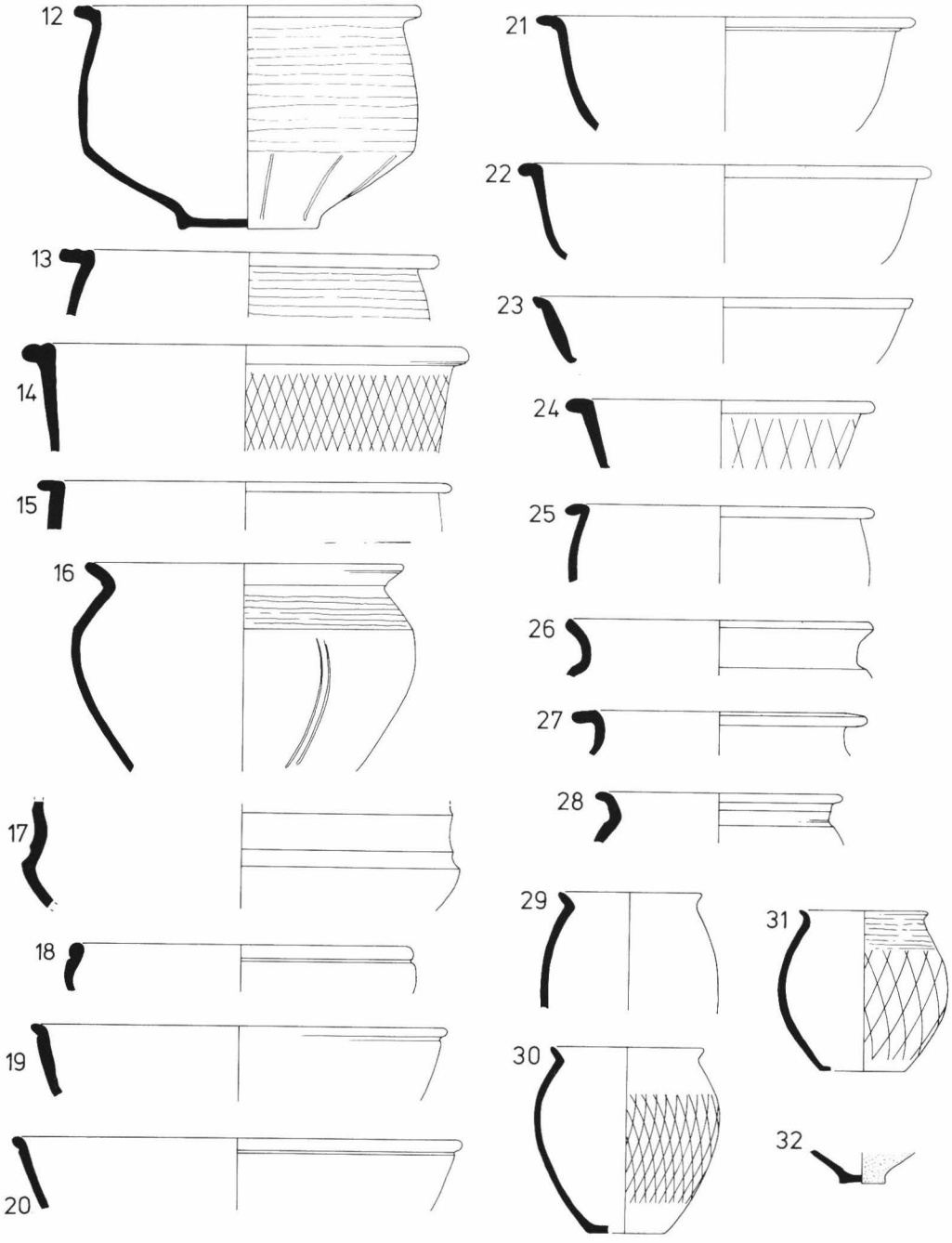


Fig. 10. Roman pottery: Period I destruction level ($\times \frac{1}{4}$).

square groove. Hard, fine, sandy fabric fired mid-grey with light grey slip.

50. Everted-rim with high shoulder. Medium hard, sandy fabric fired grey-buff with a mid-grey slip.
51. Everted-rim jar with hooked rim and high square shoulder. Hard, fine, sandy fabric fired grey-buff.
52. Necked jar with cordon below neck. Very hard, fine, sandy fabric fired light grey. Burnished on outside and upper surface of rim.
53. Flange-bowl with short stubby flange. Softish, very fine, sandy fabric fired black on the surface with red-brown core. Burnished inside and out.
54. Flange-bowl with long hooked flange. Soft, fine, sandy fabric fired dark grey. Burnished inside and out.
55. Flange-bowl with high, hooked flange. Hard, very fine, sandy fabric fired dark grey. Burnished inside and on upper surface of flange.
56. Hemispherical bowl with internal flange. Hard, fine, sandy fabric fired creamy-white. Decorated inside with chocolate-brown paint. New Forest kilns. cf. Fishbourne Type 347 where it is found in a late 3rd- to early 4th-century context.
57. Hemispherical bowl with internal flange. Hard, sandy fabric fired buff.
58. Straight-sided dish. Hard, sandy fabric fired black. Burnished inside and out with crude burnished linear decoration on outside.
59. Straight-sided dish. Hard, fine, sandy fabric fired dark grey. Burnished inside and out with curvilinear burnished decoration on outside.
60. Globular bottle. Very hard fine fabric fired grey with a purple-black colour coat with white painted decoration. New Forest kilns.
61. Large storage jar with internal finger impressions. Very hard, coarse, sandy fabric fired light grey. cf. Fishbourne Type 391. (not illustrated)

THE WALL PLASTER

One hundred and thirty-eight fragments (660 g.), none larger than 1600 sq. mm., were recovered from the excavation. The size of the fragments makes it difficult to conceive of the original design, but the following colours and decorations were recognized:

a. Deep red, probably from a dado (78 frags.).
b. Red splashes and spots on a background toning from pinkish-white through cream to buff. One piece clearly shows a dusty-pink border (38 frags.). A similar decoration, although on a deeper pink background, occurs on the west wall of Room N12 in the Flavian Palace (Cunliffe 1971).
c. Dusty-pink line on cream background, probably the border of (b) above (4 frags.).
d. Ochre.
e. Ochre with red, white or black spots, or all three, probably an attempt at marbling (7 frags.).
f. Parallel black and white stripes on a deep red background.
g. Cream, possibly background for (b) above.
h. Ochre spots on a pink background (1 frag.).
j. Unpainted with an ochre spot (1 frag.).
k. Unpainted (2 frags.).

All the above are painted on a flint-gritted creamy-white plaster up to 25 mm. thick. The surface of both the red and the ochre fragments is very smooth but the red on pink shows a slightly reeded surface. One fragment displays a distinct concave curve in one plane. A fragment of unpainted plaster demonstrates a concavity in two planes and may be from the top of a small apsidal recess.

All the fragments recovered came from the lower levels of the post pads, the wall footings or the robber pits through the wall footings. No traces were found associated with either the timber building or the later occupation of the masonry building. The suggestion is therefore that this material was brought onto the site from outside, probably incorporated with the mortar material, at the time of the construction of the masonry building.

THE GLASS (Fig. 12) (by P. Glover)

In total fragmentary pieces of 62 vessels were recovered from the excavation. These were classified by colour into the following groups: common green glass, 41; colourless glass, 19; yellow glass, 2. Of the above material, fragmentary pieces of 14 vessels merit further comment.

Vessels: Blown, Decorated

Linear-cut, colourless

1. (762) Fragment of rim; colourless. Rim outsplayed. Blown; wheel-cut. Fine horizontal wheel-cut line at rim. Blown. (TE 12)
2. (29) Fragment of vessel wall; colourless. Extensive surface pitting. Blown; wheel-cut. Narrow horizontal wheel-cut line, with incised horizontal line 2 mm. above. Blown. (R3) (not illustrated)

Ribbed, coloured and colourless

3. (441) Fragment of vessel rim; pale bluish-green. Surface strain-marks. Beaded ridge 5 mm. below rim. Blown. (SE3)

Vessels: Blown, Undecorated

Bowls and cups

4. (1321) Fragment of bowl; pale bluish-green. Dulled on outside with some surface striation. Pronounced basal curve. Blown. (LE16)
5. (879) Fragment of rim; pale bluish-green. Outbent, flattened tubular rim, folded inward and downward; concave side, tapering downward. Blown. (SE3)
6. (1347) Fragment of rim; pale bluish-green. Numerous surface striations, some surface pitting. Rounded rim. Blown. (RE8) (not illustrated)
7. (1333) Fragment of body and base of vessel; colourless. Pitting on outside. Vertical side joined to vase in right-angled curve; base flattened. Blown. (RE36) (not illustrated)
8. (22) Fragment of base-ring of bowl or cup; bluish-green. Dulled on outside, with crazed surface. Tubular, pushed-in base-ring; bottom concave with pointed kick.

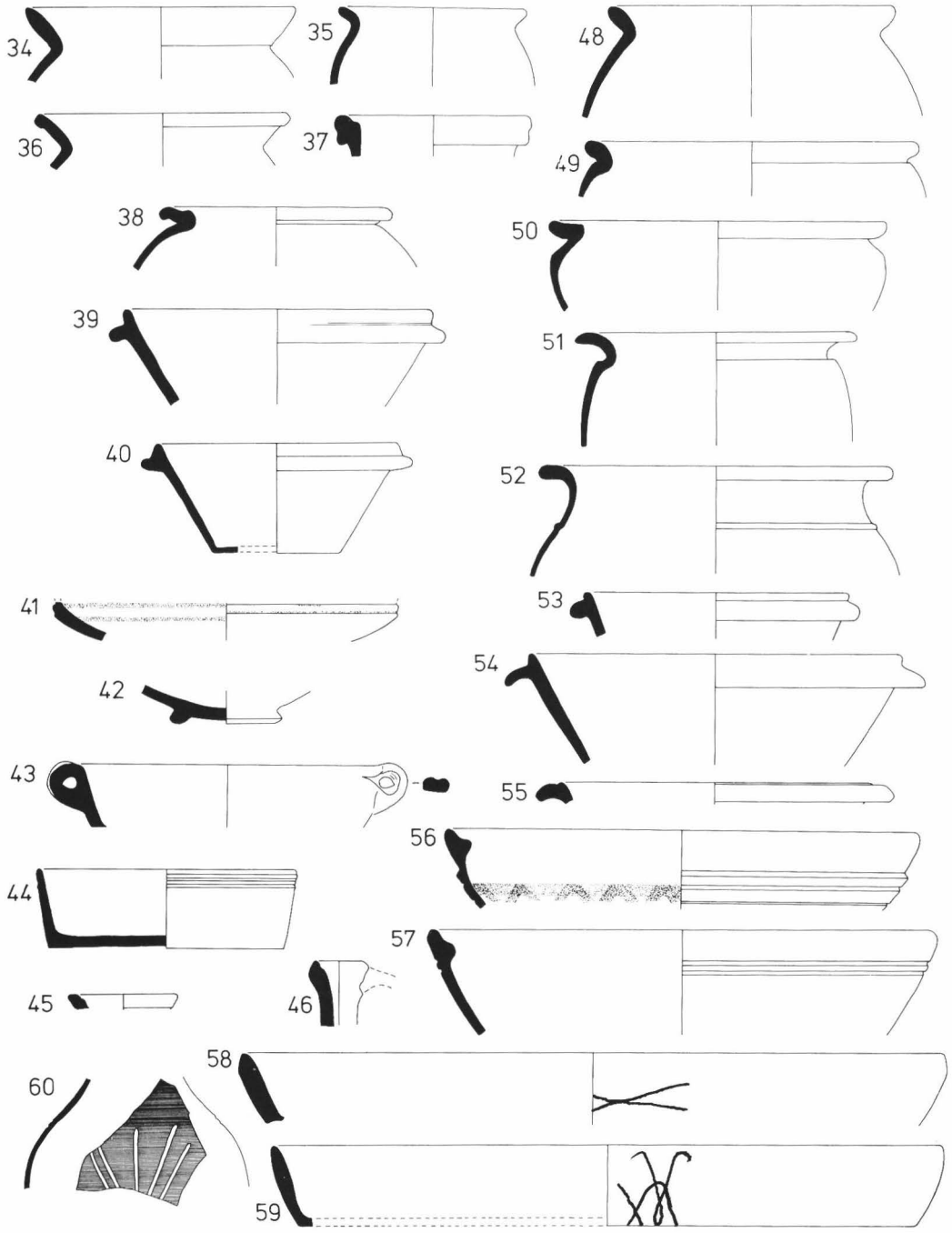


Fig. 11. Roman pottery: hypocaust fill and rubbish deposit outside the south-west corner of the Period II building ($\times \frac{1}{4}$).

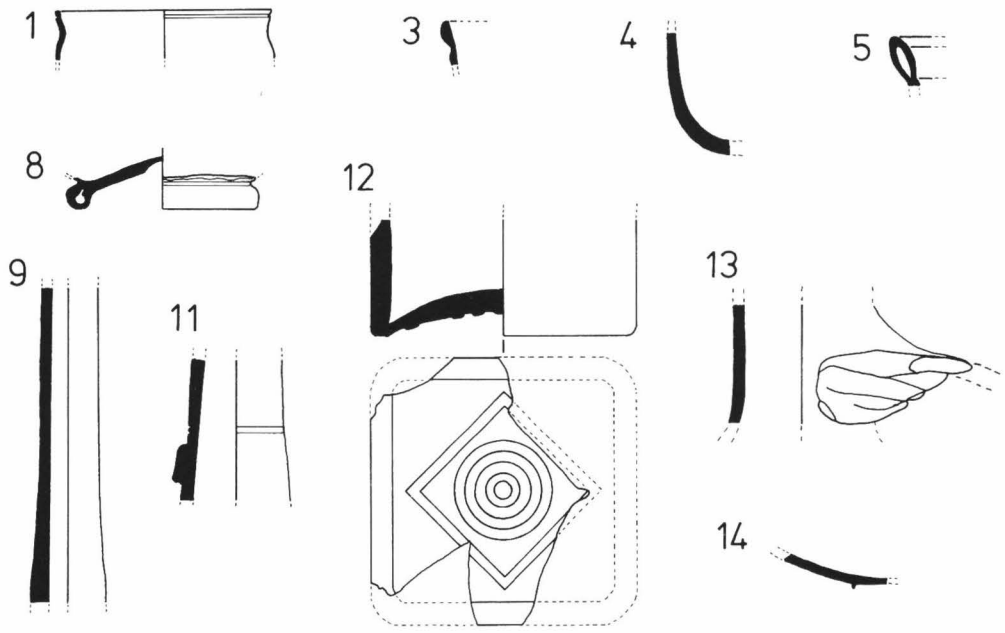


Fig. 12. The glass (× ½).

The whole body is irregularly broken off. Diameter of base-ring 51 mm. Blown. (C4)

9. (271) Fragment of jug neck; pale bluish-green. Dulled on outside with some vertical striations. Slightly tapering, cylindrical in section. Blown. (T2)
10. (270) Fragment of upper part of body and corner of prismatic bottle; pale bluish-green. Dulled on outside with numerous striations. Body nearly square in horizontal section. Blown into a four-sided body mould. (C4) (not illustrated)
11. (158) Fragment of bottle neck and handle attachment; pale bluish-green. Dulled on outside. Slightly tapering, cylindrical in section. Two shallow wheel-cut grooves 2 mm. apart, 5 mm. above handle attachment. Blown. (RE3)
12. (296) Fragments of lower part of body, and base of prismatic bottle; pale bluish-green. Dulled on outside with some surface striations. Body square in horizontal section, base flattened and slightly concave. On underside, a relief design; rhomboid around two concentric circles, with central dot. Blown into four-sided body mould. Height as extant 31 mm., width of sides *c.* 72 mm. (A6)
13. (193) Fragment of neck and handle of prismatic bottle; pale bluish-green. Dulled on outside with some surface striations and pitting. Cylindrical neck; handle drawn on. Internal diameter of neck *c.* 31 mm. (C32)

Vessels: Cast

Colourless

14. (695) Fragment of body and base of vessel; colourless. Some surface striations and moderate surface pitting. Lower part of body wall sloping to a low base-ring. Cast and wheel-polished. (TE4)

METAL

Iron (Fig. 13)

Approximately 24 kg. of iron artefacts were recovered during the excavation of which *c.* 90% consisted of iron nails. Of the remainder, those which were not corroded beyond recognition have been illustrated:

1. (1236a) Flat iron bar with a slightly curved cross-section. (LE16)
2. (1236b) Flat iron bar similar to No. 1 above but with a slight lateral curve. It is probable that these two objects belong together. (LE16)
3. (160) Key from a slide lock with shouldered shank and suspension hole. (P7)
4. (660) Key from slide lock with tapered shank and suspension hole. (TE12)
5. (481) Ring attatchment. (CE3)
6. (289) Hinge loop. (S12)
7. (1431) Ladle. (T10)
8. (178) Joiner's dogs. (N32)
9. (34) Joiner's dogs or cleat. (N3)
10. (1411) **L**-shaped bar. (RE37)
11. (179) Bracket or fitting. (N32)

Non-Ferrous Metal Objects (Fig. 14)

1. (1434) Bronze wire finger-ring with looped snake-head

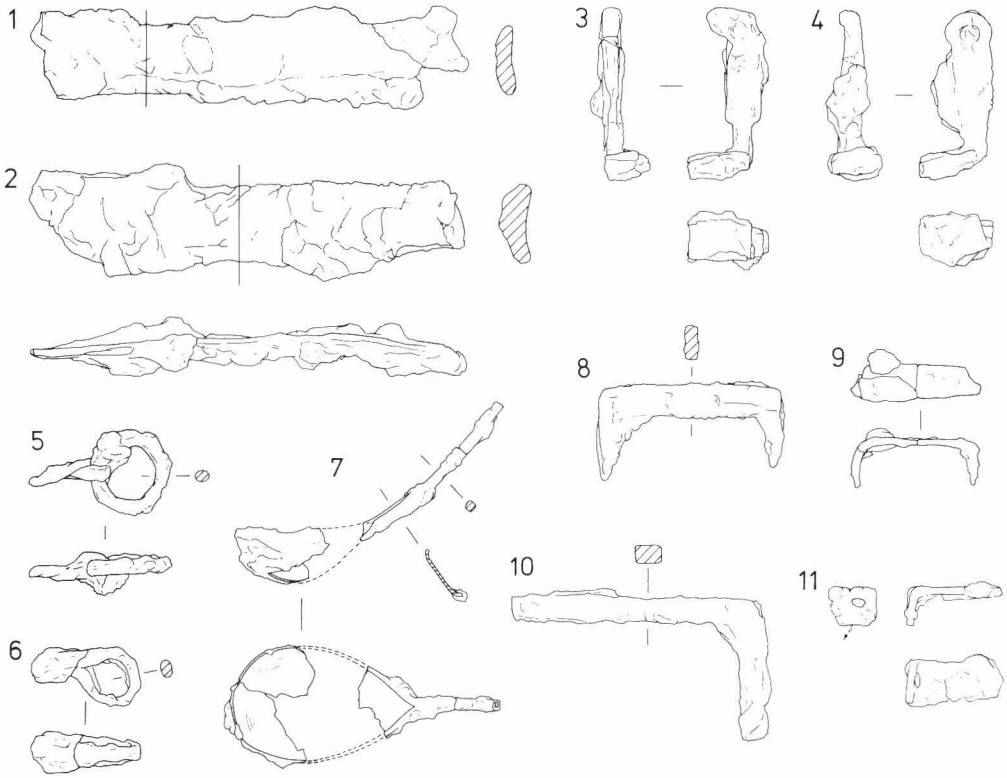


Fig. 13. The iron artefacts ($\times \frac{1}{4}$).

terminals. (T10)

2. (1356) Cast bronze ring with single flat facet. Its small internal diameter suggests a mount rather than a finger-ring. (RE19)
3. (1398) Bronze armlet fragment with incised transverse grooves in two groups separated by an incised cross on the terminal. A similar decoration is to be seen on an armlet from Colchester (Crummy 1983, fig. 44, 1684). (C47)
4. (1400) Bronze disc brooch 23 mm. diameter with mammiform central boss and upcurved edge. Pin missing. There is no trace of enamelling. (PE17)
5. (1255) Simple curved bow of a bronze bow brooch. Severe corrosion prevents closer classification. (ME3)
6. (559) Foot of a bronze bow brooch decorated with horizontal and vertical mouldings. Vestigial traces of catchplate on rear. (ME3)
7. (564) Bronze knife handle with dot in square decoration on cylindrical surface. The square-sectioned blade end of the handle is bifurcated, sandwiching the remains of an iron blade 8 mm. wide × 1 mm. thick retained by an iron rivet. (N20)
8. (192) Part of a bronze lock bolt with triangular cut-outs. (R19)
9. (267) Bronze convex-headed stud. (P7)
10. (1375) Bronze flat-headed stud. (RD7)
11. (1271) Bronze disc perforated by a nail hole. (40)
12. (268) Fragment of swaged bronze plate. (N14)
13. (738) Fragment of 3-mm.-thick bronze casting with smooth outer concave surface and rough impression of core on inner surface *c.* 20 mm. × 20 mm. (ME3) (not illustrated)
14. Bronze nail and stud fragments. (R3, P7, M22, NE3, TE5) (not illustrated)
15. (9) Bronze plate 26 mm. × 17 mm. × 0.3 mm. (C4) (not illustrated)
16. (28) Lead sheet with one straight sheared edge and a curved and slightly swaged cut-out. Average thickness 0.7 mm. (R2)
17. Rectangular sheet of lead 25 mm. × 20 mm. × 0.3 mm. with two scribed lines running widthways across one face near one end. (N3) (not illustrated)

The Coins (by R. Lintott)

Sixty Roman coins were recovered from the excavation. The saline conditions had severely corroded the majority, but 22 remained identifiable and are listed in Table 1 with their contexts.

BONE

Bone Artefacts (Fig. 14)

1. (77) Bone pin with spherical head and slightly swollen

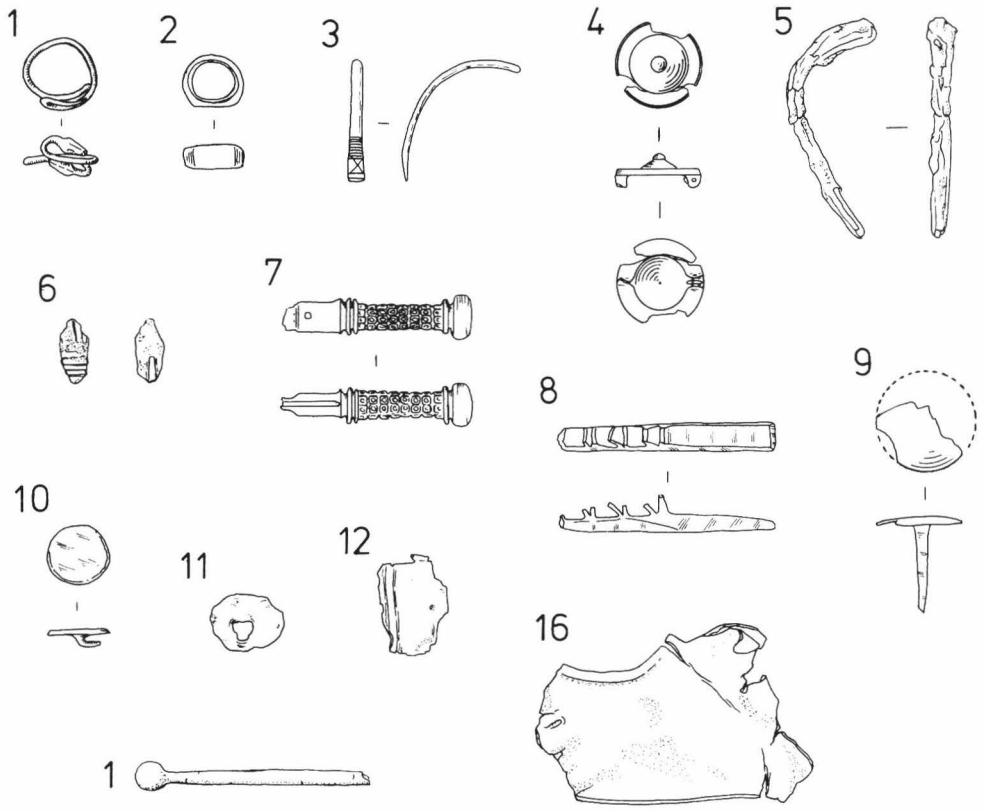


Fig. 14. Non-ferrous metal objects and bone artefact ($\times \frac{1}{2}$).

shank. Tip broken off. Crummy's Type 3 (Crummy 1979). *c.* 200 A.D. to early 5th century. (T7)

2. (141) Bone pin shank. (C28) (not illustrated)
3. (1343) Bone pin shank fragment. (ME11) (not illustrated)

Animal Remains (by J. French)

The animal remains comprise mainly those of Horse, Cattle, Sheep and Pig, together with a small antler tine (possibly Red Deer), one carnassial tooth (most likely Dog), and a few small mammal and bird bones.

In excess of 500 bones or bone fragments were examined, but many bones of food animals had been mutilated making positive identification or accurate measurement impracticable. Two notable exceptions were from Contexts N38 and PE3 where in each case the remains were most likely those of a single sheep; especially the former where most parts of the skeleton were represented. This animal appeared to have been slightly larger than others from this site but Harcourt (1974) notes that some specimens rather bigger than those usually found do occur on Roman sites.

Although only a limited number of measurements were possible, those made indicate that the domestic animals were typical of the period, namely: small Horse of about 13–14 hands, small Ox and small slender Sheep. No measurement of Pig could be made.

Although a valid analysis of age structure was not possible, nevertheless in the case of the cattle there were more remains of mature or old animals than young ones. In the sheep they were divided fairly equally between young and mature animals. The relatively small sample does not justify a 'minimum number' table; but from counts of bones, bone fragments and teeth, the relative abundance of the domestic animals would appear to be Cattle, Sheep, Pig and Horse in that order.

Archive

The finds and excavation archive are housed at the Roman Palace and Museum, Fishbourne.

Acknowledgements

The author is indebted to the owners of the land, Messrs. R. and E. Scarterfield, for generously allowing access to the site for two seasons.

TABLE 1
The Coins

Find No.	*Denomination*	*Emperor and Date*	*Reverse Type*	*Mint Mark*	*Date of Coin*	*Ref. No.*	*Notes*	*Context*
1435	Æ Den	Galba 68–9	SPQR OBCS in oak wreath	Rome	68–9	RIC 20		T10
143	Æ Den	Vespasian 69–79	PONTIF MAXIM(Vespasian seated)	Rome	late 73	RIC 65		N3
18	Æ Ses	Lucius Verus 161–9	Aurelius and Verus clasping hands		161	RIC 1278		L3
1145	Æ Ant	Solonina? wife of Gallienus						SE12
126	Æ Ant Br	Victorinus 268–70					barbarous copy	N4
1112	Æ Ant	Claudius II Gothicus 268–70	Consecratio (large altar)		*c.* 270	RIC 256 or 257		RE9
35	Æ Ant Br	Tetricus I type						M3
72	Æ Ant	Tetricus I 270–3			270–3			N4
74	Æ Ant	Tetricus I 270–3	SPES PUBLICA?		270–3			C4
163	Æ Ant	Tetricus I 270–3	VITUS AUGG		270–3			L11
1090	Æ Ant	Tetricus I 270–3			270–3		fragment	SE17
961	Æ Ant	Tetricus? 270–3			*c.* 270			TE14
1	Æ Ant	Tetricus II 270–3	sacrificial implements		270–3			C3
237	Æ Ant	Tetricus II 270–3			270–3			N14
495	Æ Ant	Tetricus II? 270–3						C3
965	Æ Ant	Tetricus II 270–3			270–3			TE2
1068	Æ Ant	Carausius 287–93	PAX AUG.	no mint mark	287–93			RE17
1267	Æ 4	Constantinopolis	Victory on prow	$\frac{1}{\text{PLG}}$ Lyons	332	RIC 259		LE3
412	Æ 3	Constantinopolis	Victory on prow	$\frac{1}{\text{TR·P}}$ Trier	332–3	RIC 543		NE4
73	Æ 4	Theodora? 2nd wife of Constantius I			337–40		badly corroded but 4th cent.	P3
720	Æ 3	Valentinian I or Valens	Victory advancing left		*c.* 364–78			TE12
967	Æ 3	Valentinian I or Valens	Valentinian or Valens		*c.* 364–78			RE2

He also records his gratitude to the Manpower Services Commission who provided a Community Programme for the second season, the West Sussex County Council Archaeological Officer for organizing the latter, Mrs. Tricia Borne for her supervision of it and James Kenny for additional assistance. He would also like to thank the volunteers who worked on the site: local residents, including Mr. T. Beaumont, whose sharp eyesight led to the discovery of the site, students from Chichester Boys High School, but most of all members of the South Hampshire Archaeological Rescue Group under the dedicated leadership of Mr. Burt Holmes. Thanks are also due to all those who submitted specialist reports (whose names appear in the text), Ms. A. Bone for valuable advice on the pottery, Ernest Black for comments on the stamped tile, K. Hartley for examining the mortarium fragment and Mrs. J. Lockwood who typed the script. Finally he would like to acknowledge the invaluable encouragement provided by his wife, who with his children suffered two seasons of disrupted Sundays.

Author: D. J. Rudkin, Director, The Roman Palace and Museum, Fishbourne.

References

Crummy, N. 1979 'A Chronology of Romano-British Bone Pins', *Britannia*, **10**, 157.

—— 1983 *Colchester Archaeological Report*, **2**, 23. Colchester.

Crummy, P. 1984 *Colchester Archaeological Report*, **3**. Colchester.

Cunliffe, B. W. 1971 *Excavations at Fishbourne 1961–1969*, **1–2**. Reports of Research Committee of Soc. of Antiq., London, **26–7**.

—— 1975 *Excavations at Portchester Castle*, **1**, *Roman*. Reports of Research Committee of Soc. of Antiq., London, **32**.

Down, A. 1979 *Chichester Excavations*, **4**. Chichester.

Frere, S. S. 1972 *Verulamium Excavations*, **1**, 160. Reports of Research Committee of Soc. of Antiq., London, **27**.

Gallois, R. W. 1965 *British Regional Geology: The Wealden District*. London: H.M.S.O.

Harcourt, R. A. 1974 'The Animal Bones', in D. S. Neal, *The Excavation of the Roman Villa in Gadebridge Park, Hemel Hempstead*. Reports of Research Committee of Soc. of Antiq., London, **31**.

Liddell, M. D. 1931 'North Warnborough, Hants', *Jnl. of Roman Studies*, **21**, 242.

Moray-Williams, A. 1909 'The Romano-British Establishment at Stroud, nr. Petersfield, Hants', *Arch. Jnl.* **66**, 33.

Morris, P. 1979 *Agricultural Buildings in Roman Britain*. British Arch. Reports, **70**.

Neal, D. S. 1982 'Romano-British Villas—One or Two Storied', in *Structural Reconstruction: Approaches to the Interpretation of the Excavated Remains of Buildings* (ed. P. J. Drury). British Arch. Reports, **110**.

Osborne White, H. J. 1921 *A Short Account of the Geology of the Isle of Wight*. London: H.M.S.O.

Pilmer, J. G. 1978 'Patterned Flue Tiles from Chichester', Report housed in Chichester District Museum to accompany *Chichester Excavations*, **3**.

Rogers, G. B. 1974 *Poteries Sigillées de la Gaule Centrale*, **I**, *Les Motifs Non Figurés*, 28th Supplement to *Gallia*. Paris.

Rudling, D. 1985 'Excavations on the Site of the Southwick Roman Villa, 1965 and 1981', *Suss. Arch. Coll.* **123**, 82.

Stanfield, J. & Simpson G. 1958 *Central Gaulish Potters*. London.

This research was supported by a grant from the Sussex Archaeological Society's Margary Research Fund. The Society is grateful to the Council for British Archaeology for a generous grant towards the cost of publishing the article.

Sussex Archaeological Collections **124** (1986), 79–95.

EXCAVATIONS IN FLETCHER'S CROFT, STEYNING, 1967-8

by Jane Evans, B.A., F.M.A.

Steyning was a burh *by 1024–30 according to the evidence of the Saxon coin mint. Archaeologically, no evidence of the 11th-century town had been found by 1967 when an opportunity occurred to mount a rescue excavation in a shallow valley running south from the imposing Norman church. The excavations, although yielding some 10th-century material including a coin of Edgar, were predominantly of 12th-century material lying on the upper slope of the valley. The lack of conclusive evidence of early house plans suggested the site was on the fringe of the town, in the backyards of plots whose ditched boundaries may have dated back to an earlier field system. In the discussion of the site, ideas are put forward about the location of the early town and of the port.*

INTRODUCTION

In 1967 proposals were put forward to level Fletcher's Croft and create a new town car park for Steyning. Worthing Museum applied to Chanctonbury Rural District Council for permission to excavate in advance of the work, since a pipeline dug through the field some years previously had produced early medieval sherds. Permission was readily given, preliminary weekend work gave positive results and in August 1967 the then Ministry of Public Building and Works asked Worthing Museum to conduct a rescue excavation on its behalf.

The site (Fig. 3) lay some 90 metres south of the 1962 excavations by K. J. Barton in Cuthman's Field opposite the church (Barton 1986). Since most of the field was destined for public open space with minimal surface disturbance, no further excavation took place there except for a machine-cut trench through the field boundary separating Cuthman's Field from Fletcher's Croft (at Y on Fig. 3).

The aim of the dig was to find evidence of the 9th-, 10th- and 11th-century settlement to qualify the supposition that there was a town at Steyning at that date. In the event, most of the archaeological evidence found was of 12th-century date, difficult to interpret and overlain by later medieval material.

Steyning (Fig. 1) is situated at about 15 metres O.D. at the foot of the north scarp face of the South Downs close to a gap where the river Adur, draining from the once forested Weald, breaks through the downs on its way to the sea nearly five miles beyond. It is at a point where routes converge to cross the wide valley which, at some time in the past, used to be filled with water, at least at high tide. A prehistoric route along the top of the downs descends in two places, by terrace-ways north of Pepperscoombe Farm and also south of Pepperscoombe from Steyning Round Hill; both tracks meet a route along the foot of the downs which runs eastwards from Washington through Wiston, Charlton Court, Steyning, and on to King's Barn at the very edge of the valley. A Roman road, usually known as the Greensand Way, lay just over a mile to the north, crossing the valley near Wyckham Manor. Romano-British material has been found near King's Barn and at Highfield Barn just east of Steyning Round Hill (see West Sussex County Council archaeological sites and monuments record). It was in a quarry at the latter place that a single, probably Saxon, burial was found. Place

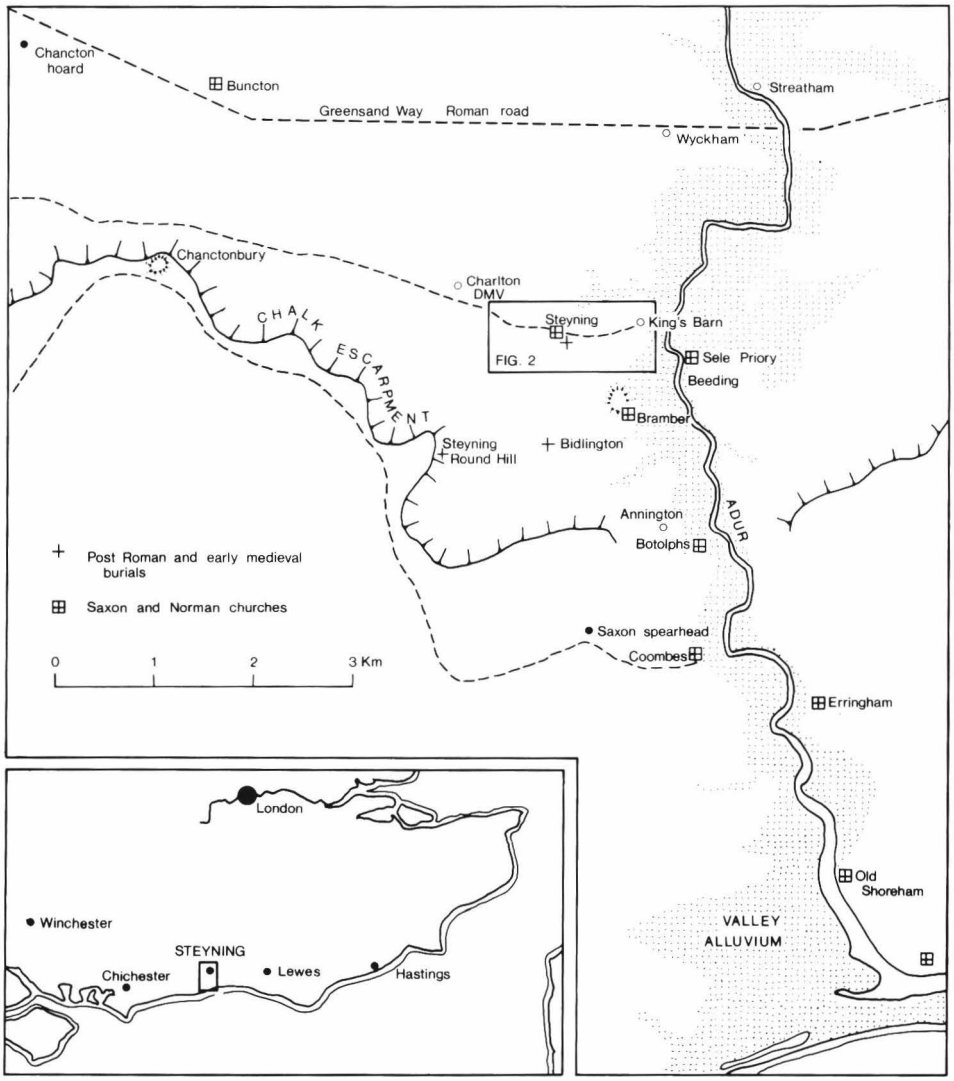


Fig. 1. Location map of Steyning, West Sussex. The early west-east routes are marked.

names with the *-ingas* ending are found on the edge of the downs throughout Sussex and represent districts settled when the first expansions took place following the initial colonization whose primary settlements are indicated by *hām* names (Dodgson 1978).

GEOLOGY (by Con Ainsworth)

The site lies in a shallow valley cut into the chalk marl of the zone of *Schloenbachia varians* which is the zone at the base of the Lower Chalk and rests on the Upper Greensand, the first of the Selbornian Beds. A medieval well excavated in the course of the Cuthman's Field excavation passed through the Lower Chalk marls into the Upper Greensand at the base of the well. The excavations in both Cuthman's Field and Fletcher's Croft exhibited the same features of the *varians* marls in which soft laminated marl

and marlstone alternate. It was noted that the surface of the marlstone where exposed exhibited typical spheroidal exfoliations. Most of the archaeological features are cut into the marl which rapidly weathers to a uniform yellow or fawn colour, which tends to obscure archaeological features which would normally be visible as colour differences. Along the foot of the chalk escarpment the marls are extensively cultivated, and in former times were often quarries for agricultural purposes, the abandoned quarries now being overgrown with timber.

HISTORICAL BACKGROUND (see Fig. 2)

According to tradition, it was at Steyning that St. Cuthman finished his journeying with his elderly mother and founded a church of wood or stone in the late 8th or early 9th century. What is known of St. Cuthman was published by Cox (1932–3), who put forward the theory that Cuthman's journey 'from the west' was from Chidham near Bosham, a reasonable journey of 25 miles from a spot with known early Christian associations. Steyning was sufficiently important for King Ethelwulf (King Alfred's father) to have been buried there in A.D. 858, although the body was later moved to Winchester. Ethelwulf, and others of the royal house of Wessex, held estates in the area which may account for the occurrence of the name King's Barn. The King's Barn estate was held by the king in 1066. Archaeological evidence from these centuries is virtually non-existent in Steyning itself, with the exception of a pre-Conquest grave slab now in the church porch. Several churches nearby, for example, Botolphs and Buncton, exhibit pre-Conquest stonework and at Chancton Farm less than four miles from Steyning a hoard of about 3,000 coins was found, hidden in the unstable days of 1066 (Head 1867).

Steyning was not listed in the Burghal Hidage, a defence system drawn up by Edward the Elder between A.D. 911 and 919, incorporating any towns situated in strategic positions, for example, in river valleys. Either by 1018 or, more probably, some time between 1024 and 1030 (Stewart 1978) a Saxon mint was set up in Steyning, apparently taking over from one in the old earthwork at Cissbury. The form of the name which appears on coins is Staen- or Stenige. The names of eight moneyers are known who worked there at various intervals throughout the rest of the 12th century, the busiest period being *c.* 1040–60 (Dudley 1978). Steyning was therefore a place of some importance at the time the King granted it to the Abbot of Fécamp in *c.* 1047. Shortly before the Conquest it was revoked from Fécamp, although it was restored by William I soon after 1066 (Hudson 1980b).

In 1066 the borough of Steyning had 118 houses of substance and was one of the largest places in Sussex (Hudson 1980a). By 1086 the figure had risen to 123 and the population was probably about 600 (Hill 1978). The increase is surprising because an event had occurred which was to change the whole outlook of Steyning, namely the building of Bramber Castle by William de Braose, in course of construction, or completed, by 1073 (Barton & Holden 1977). De Braose attempted to assert his superiority over Fécamp Abbey until Fécamp's rights were ratified by a charter of 1086. Steyning's continuing growth and prosperity must be put down to the influence of Fécamp which, in 1086, was wealthier in its English possessions than any other foreign religious house and made thereby a big contribution to the building up of an Anglo-Norman culture after the Conquest. Even so the precise location of the early 11th-century town was unknown at the time of the excavations. There are documentary references from 1086 to 1103 to St Cuthman's parish and St Cuthman's port but the significance of the use of these names is not clear (Hudson 1980b).

Hudson (1980a), quoting earlier writers, states that the port was 'sited apparently on an inlet which then stretched up to the church'. The present writer considers this was not the case and would place the site of the port near King's Barn where an old meander bed indicates the river channel ran at one time. Beach pebbles noticed

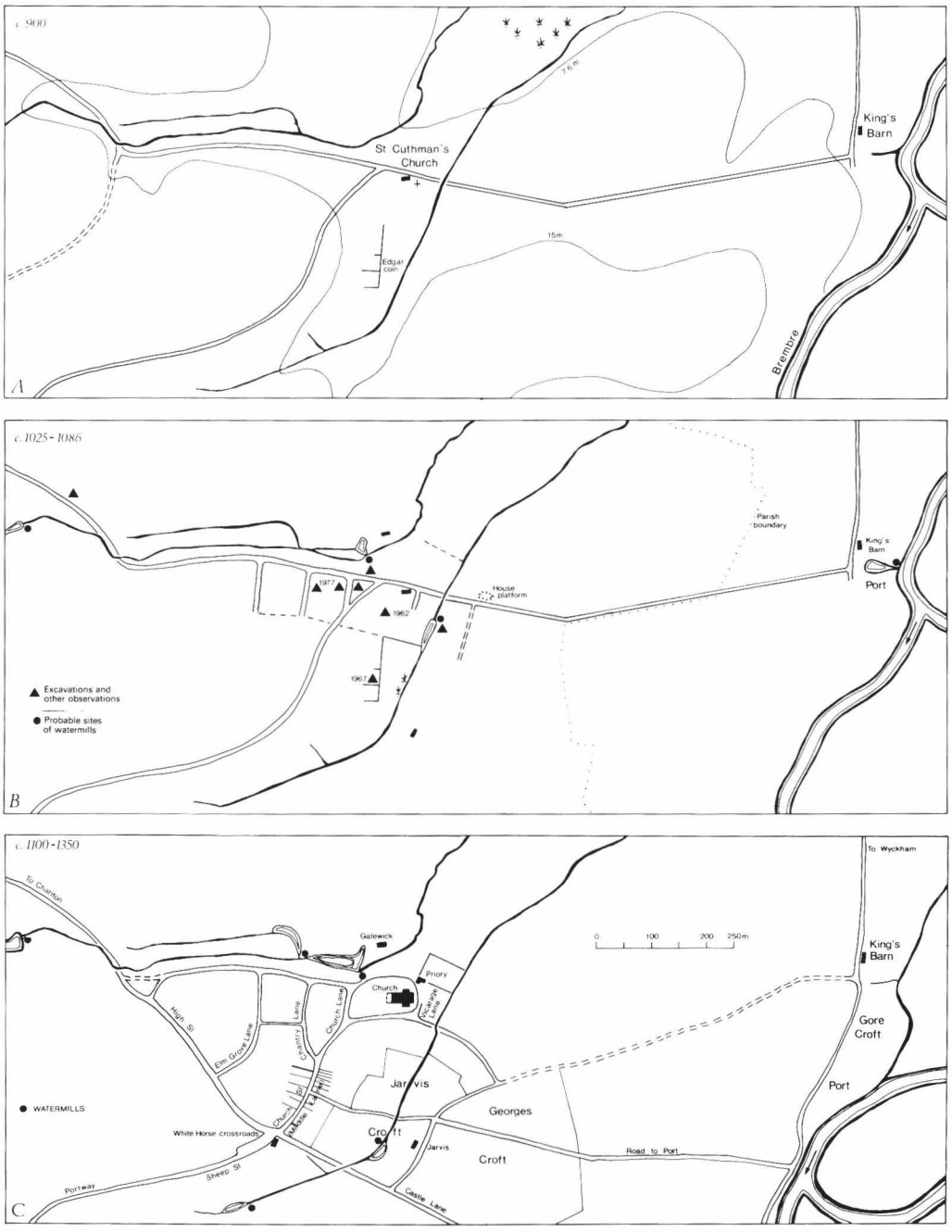


Fig. 2. Steyning: suggested development of town plan. A. *c.* A.D. 900. The establishment of St. Cuthman's church at a junction of two early routes. B. *c.* A.D. 1025–86. The *burh* and Domesday Steyning, with port at King's Barn. C. *c.* A.D. 1100–1350. The new town, with site of port shifted a short distance down river.

here by Mitchell (1947) may have been brought as ballast to provide hard standing for ships. Such a site would be far more convenient for shipping than attempting to traverse a twisting course up the side valley during the limited periods of high water. From King's Barn, traffic could travel directly up or down river, or across it. This idea of the port's location, a possible layout for the 11th-century town and the town's subsequent shift in focus has been developed in some detail, drawing on field evidence, such as house platforms and other earthworks, sunken lanes, field names, old parish boundaries and random finds (unpublished MS. in author's possession). A summary is included below (see Interpretation of Site) which might suffice to indicate possible lines for future research into early Steyning.

THE EXCAVATIONS

The area to be investigated measured some 61 metres by 61 metres, a field on the side of a shallow east-facing valley sloping from 12·8 metres to 8·5 metres O.D. Most of the upper slope was stripped, also much of the area alongside the School Lane twitten (a pathway running 'betwixt and between') which marked the south boundary of the field. As there was some 0·6 metre of overburden to natural, a

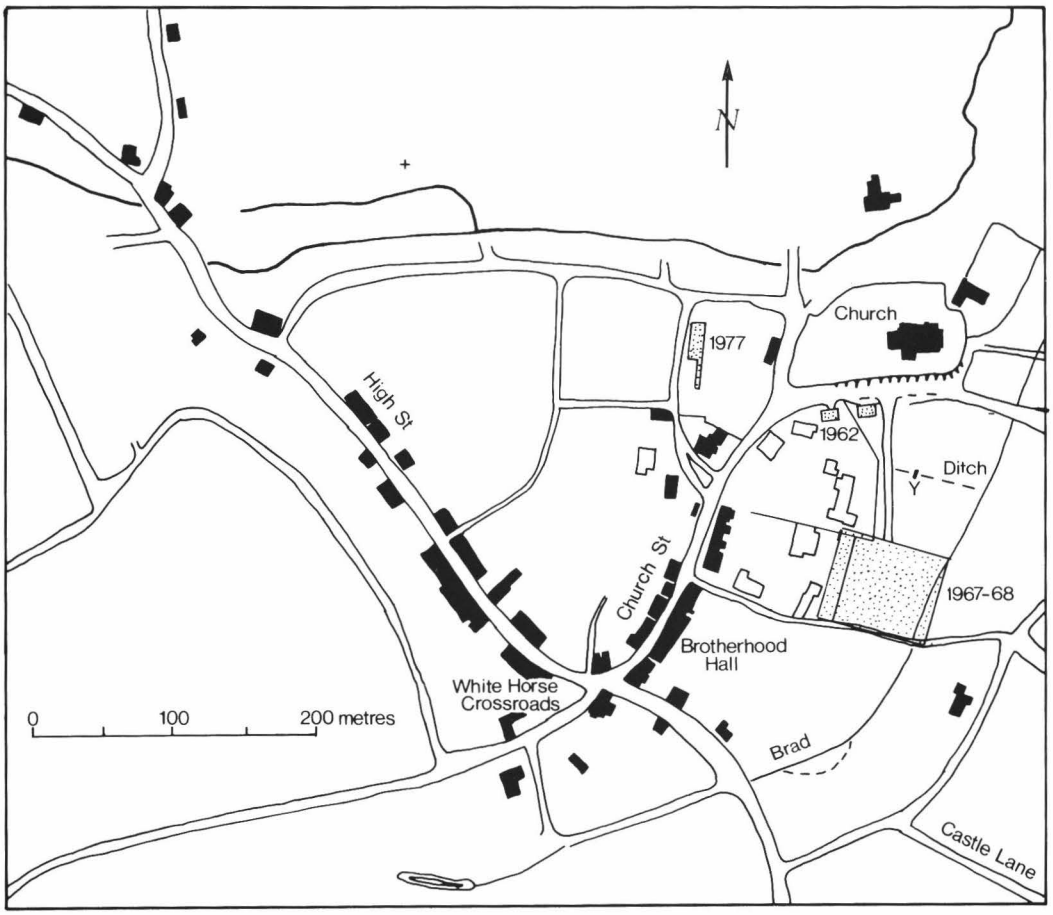


Fig. 3. Steyning: locations of excavations in 1962, 1967–8 and 1977. Solid black shading indicates surviving medieval buildings.

machine was used in the later stages of the dig to open up new areas in the middle and south parts of the field and to shift dumps. The layout of the excavations is shown on Fig. 4.

Several factors soon became apparent. One of the original intentions was to strip the bottom (east) of the field where the wide valley floor of today's tiny river Brad looked, at first view, attractive for settlement and for the siting of public buildings. Excavation soon proved it consisted of a metre or more of water-laid deposits and silt containing rubbish from the 12th to the 19th centuries. The valley may have held a permanent marsh or at least suffered heavy periodic flooding. A watermill of unknown date was situated some 70 metres upstream, the pond but not the buildings being marked on a map of the town of 1791. It might be expected that a mill would control the flow of water down river, so this valley bottom may have been the site of a pond for yet another mill nearer the church. Evidence for this is suggested by the 'dog-leg' in the course of the stream on the tithe map where it crosses the road near the vicarage. The gentle slope of the side of the valley had no recognizable house platforms. Excavation produced a preponderance of 12th-century ceramics. The dominant feature revealed was an early medieval ditch running almost due north-south across the slope at about 11·9 metres O.D. On the uphill or west side of this ditch in the northern half of the site lay most of the area of early medieval activity which consisted of areas of cobbles, pits, a gully and two east-west ditches.

The late medieval (14th/15th-century) areas of occupation, mainly comprising cobbled yards, lay more to the south, orientated to the twitten and extending further down the slope towards the valley floor. These cobbles contained the occasional fragment of Roman tile and Romano-British pottery, including Samian. Similar fragments were also found in Chantry Croft in 1977 (Freke 1979). Although such finds only constitute 'field scatter' it seems likely there is an as yet undiscovered Roman site near Church Street in the centre of Steyning. At present the nearest Roman finds recorded come from Newham Lane and the King's Barn area.

Post-medieval finds were rare, limited to one pit and some heavy cobbling. Although there were several coins and tokens of 17th-century date, the numbers were insufficient to suggest the ground was ever used for fairs. In modern times the field has been criss-crossed by at least six pipelines of various public services. Locals related that nine horses were buried there by a local vet and the excavations seemed to locate most of these.

The Early Medieval Area (Fig. 5)

The considerable amount of pottery and food debris together with a complex of features indicated the presence of some sort of occupation in the 10th and certainly in the 11th and 12th centuries, although probably not continuous. The most important small finds were of 10th-century date and included a coin of Edgar (deposited A.D. 965–75) and two pieces of Pingsdorf-type pottery; a pair of decorated tweezers and an arrowhead were probably of this date. Unfortunately, the lack of hearths and of possible post-holes made the detection of houses difficult, although daub occurred in places and the scatter of nails could indicate thatched roofs. The prevailing features are shown on Fig. 5 and are described as follows.

a. *The North-South Ditch*

This is likely to have had a long life and in one section showed evidence of several recuts. It was **V**- to **U**-shaped and averaged a metre across and 0·36 metre deep into natural. As it ran across the slope it had no function for drainage purposes. It presumably was a boundary and at its north end is in line with a chain-link fence, beech hedge and lynchet-like break of slope which extends north for another 50 metres. This line is shown as a hedge on the 1791 map. At a point 30·5 metres south from the north limit of the site, it ran into and made a right angle with the East-West Ditch. It did not immediately continue to the south, perhaps indicating an entrance here to the lower field, yet the same alignment is

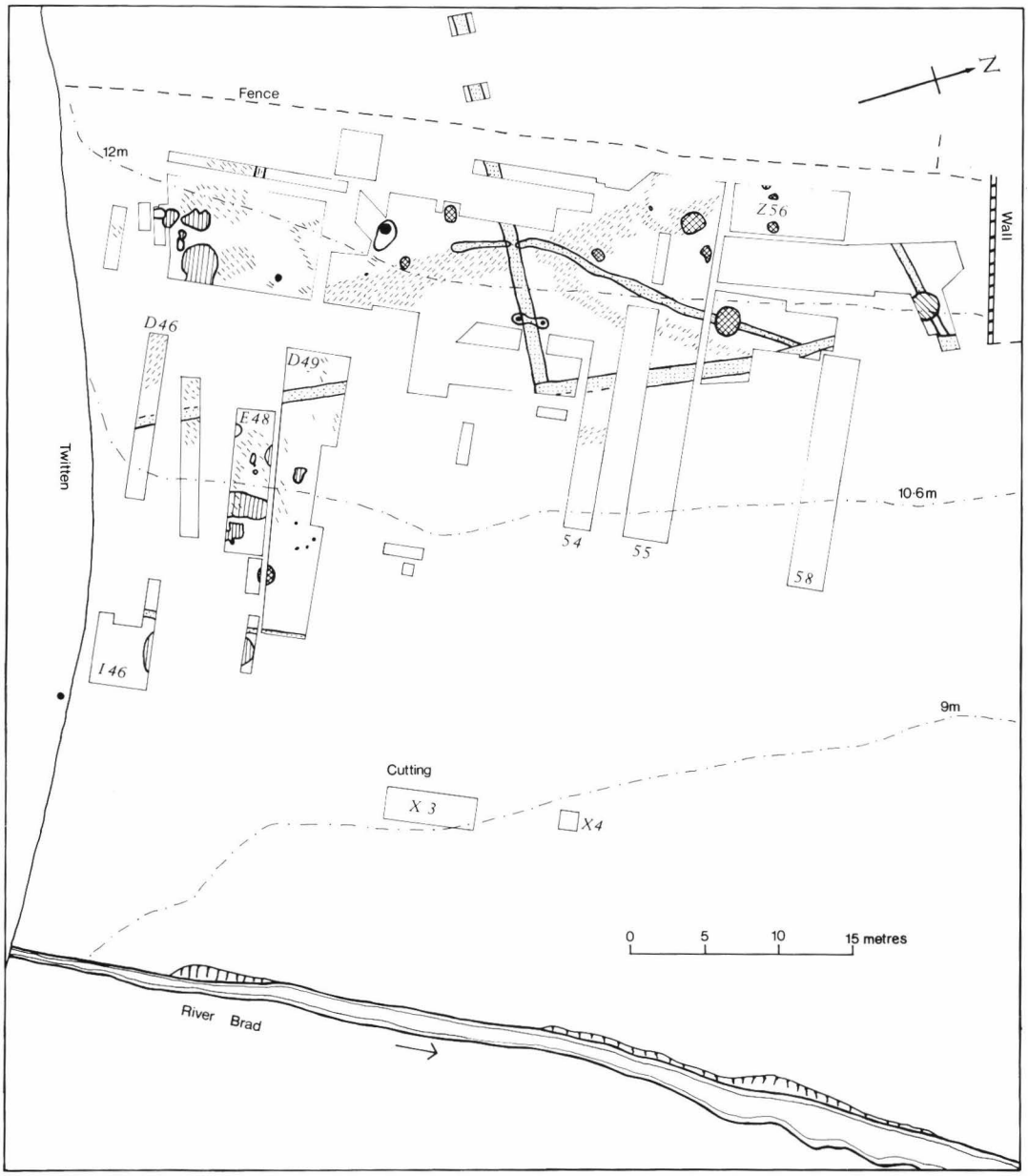


Fig. 4. Extent of excavations.

resumed further south and continues towards the twitten. Overall the line persists for at least 112 metres.

The fill comprised dark silt along the bottom of the ditch with virtually no finds, the exceptions being a horseshoe nail and an 11th/12th-century pottery handle (SF160). Most of the fill was a brown soil containing a small quantity of pottery fragments dated 1080–1180 (and one tiny sherd of Samian), shell debris

(snails, winkles, oysters) and animal bones and teeth. A bronze belt-end (SF101) and a small lump of iron occurred in the fill and an iron strap-end (SF106) was on the lip of the ditch. A 13th-century spout (SF145) overlay the ditch.

b. *The main East-West Ditch*

This ditch formed a right angle with the North-South Ditch, which cuts across it, and ran in a very straight line in a westerly direction. It was excavated for 11 metres and sampled in the adjacent garden at a point 25·3 metres from the junction. Although it ran down the slope it did not serve any purpose for drainage as it did not extend east of the North-South Ditch. Its dimensions were similar to those of the North-South Ditch though it tended to be more U-shaped. The contents were also broadly similar and 12th-century in date, including a fragment of French painted ware.

c. *Gully*

A flat-bottomed gully took an irregular course south-south-west to north-north-east for 12·5 metres, forming with the two main ditches the third side of a right-angled triangle. It averaged a depth of 0·32 metre from the cobbles and a width at the top of 0·56 metre and at the bottom of 0·35 metre. The fill was very black and contained considerable amounts of charcoal, pottery, daub, bone and shells. This feature was the richest on the site and the material was concentrated in the top 10 cm. Below, the texture of the fill was much more of a clayey consistency with lumps of natural chalk, some charcoal and tiny fragments of daub. The pottery was of developed Saxo-Norman type and included a saucer lamp and spouted sgraffito ware (Fig. 7, Nos. 2–3: microfiche, p. 70) and also a rim fragment of 10th-century Rhenish ware. A more or less complete pot had been dropped full of mussel shells. Small finds included several pieces of iron, also a bodkin and half a spindle whorl (Fig. 9, Nos. 11, 14: microfiche, p. 74). The bones

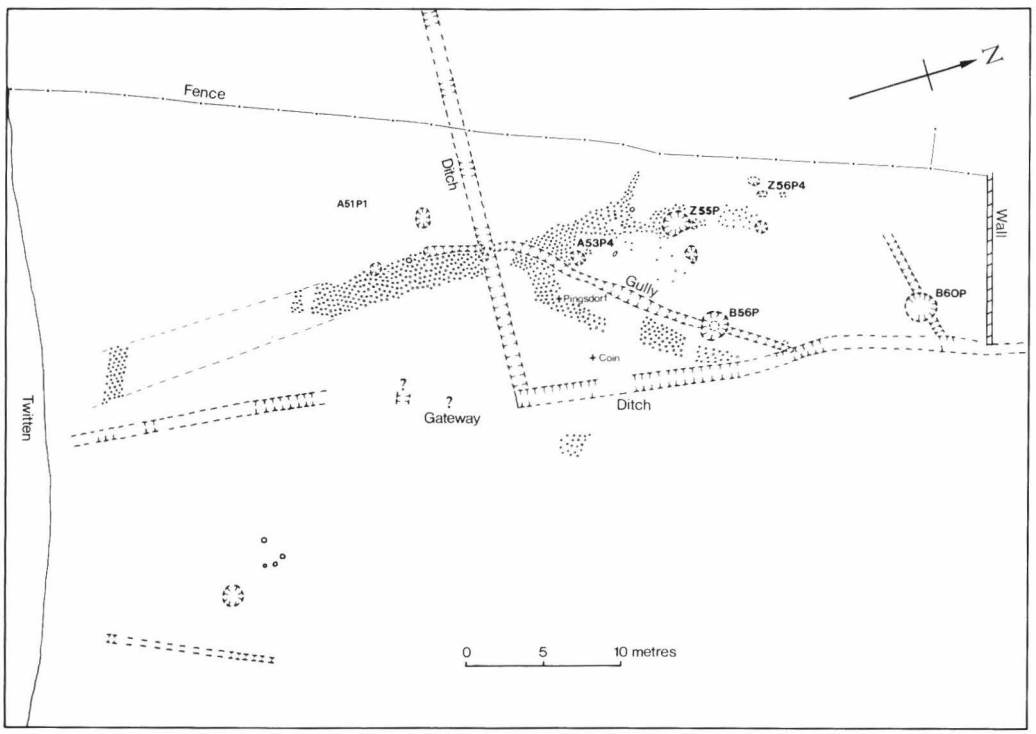


Fig. 5. Plan of early medieval features.

included a sheep's skull and there were also some dog coprolites. At both of its ends the character of the gully changed and became a shallower feature.

d. *Minor east-west ditch at north of site*

This feature was discovered near the end of excavation. It was a small ditch only about 0·6 metre wide. The North-South Ditch cut across it and it was not quite parallel to the main East-West Ditch. The datable contents were few and appeared to be early medieval. They included two very small fragments of Samian.

e. *Main pits*

Five pits contained pieces of side-lug pots of 11th/12th-century date (Fig. 7, No. 1: microfiche, p. 70). Some of these may have been from the same vessels. The pits were:

Z55P: diameter 1·5 metres, depth 0·43 metre. The cobbles ran over the top and had sunk into it. Other pottery included a piece of imported red painted ware and a curious object, perhaps part of the pedestal of a pillar-type lamp, or an article of industrial use (Fig. 9, No. 18: microfiche, p. 74).

B60P: similar dimensions.

B56P: similar diameter, depth 0·76 metre. This pit seemed to be of two periods and chalk blocks at the bottom may have been packing of an earlier post-hole. There was a large amount of charcoal at the bottom and on one side.

A/ZP2 and Z56P4: shallow pits, depth *c.* 0·24 metre.

The remaining small pits in the area of Z56 contained small amounts of early medieval pottery, as well as bones, as also did A51P1. The only other pit of note was the **D**-shaped pit (A53P4) which had vertical sides and a depth of 0·76 metre. It contained very little pottery but some charcoal, daub, bone and snail shells. It also contained two pieces of a similar object to that found in Z55P. It seemed to be of the same period as the Gully and was cut through the cobbles.

f. *Areas of cobbles*

These were a characteristic feature of the whole of the site, appearing variously as heavy, fine or all types in between, densely or sparsely laid. Flint constituted the dominant component, with some lumps of chalk, and the occasional piece of ironstone and greensand. No Roman tile was included (by contrast with the late medieval cobbles further south). Layers of cobbles ran into each other, some overlay pits, and in some cases pits were cut through the cobbles. Despite drawing them in detail, no distinctive patterns emerged. The lowest layer of cobbles seemed to be a trackway *c.* 2·4 metres wide running across the slope from the south to the East-West Ditch. North of this it separated into two lines. In this area, either side of the East-West Ditch, there were extraordinary amounts of animal bones (including pig jaws and sheep's horns) and shells (mainly cockles and winkles) lying on the cobbles. No housewife would have allowed so much food debris to accumulate on the floor of a house; it is reasonable to assume that these cobbles were the floors of animal yards which acted also as middens. Layers of manure would have served to protect the bones and prevent marks of attrition.

g. *Early medieval features to the east of the North-South Ditch*

An area of sparse but well-graded flint cobbles was found just to the east of the ditch in the centre of the site. Further down the slope to the south-east there were two small pits or post-holes, and a small ditch running north-east/south-west. This is not parallel with the main North-South Ditch but could still be part of the same field or boundary system.

Late Medieval Areas (Fig. 6)

After the 12th century occupation died out and the area was deserted for a time, any ceramic evidence being missing from the record. Thereafter there were some late 13th-century and a predominance of 14th-century West Sussex ware types with some early 15th-century material.

The late medieval areas were confined to the southern half of the site, running in an **L**-shape along the top of the slope and then down the slope parallel to the School Lane twitten. The

northern limit more or less coincided with the line of the East-West Ditch. Although a good deal of evidence of occupation was found, the features were not sealed stratigraphically and it was difficult to distinguish individual buildings or the sequence of events. A further difficulty was the degree of disturbance encountered from numerous pipe trenches and modern pits. Each cutting made seemed to land on a pipe trench with the exception of Cutting 48 measuring 10·7 × 2·6 metres. In the upper south-west corner an area 19·4 × 6·7 metres was stripped and this was merely beset by bad weather problems.

In summary, the occupation revealed indicated the existence of dwellings, probably of the artisan class, including a smithy. The structural evidence related only to clay or beaten chalk floors and a few ovens and hearths. Apart from one short section of chalk walling, stray fragments of daub suggested the walls were of wattle and daub resting directly on the floor. There were several random post-holes which could not be directly linked with any building plans. No slate, tile or Horsham stone was found, so roofing must have been of thatch. However, a number of fragments of chimney pot (over 30 pieces, from about ten or more different pots) implied the domestic nature of most of the buildings as did some fragments of quern. Before excavation no house platforms were detectable (by contrast with the 1962 site). The fact that two pieces of joining chimney pot were found 10 metres apart may mean that the buildings fell empty and were left to decay, with tumble creeping down the slope, rather than that they were purposely demolished in the 15th/16th century.

Some of the salient features will now be described in more detail, starting from the top or north end of the **L**-shape (see Fig. 6). Part of the East-West Ditch was re-used in the 14th century, its scalloped north edge suggesting the existence of a palisade fence at this date. At its west end, a large sarsen stone set in its side marked a post-hole with a beam slot running 5·5 metres away south, alongside cobbles which were laid on top of the early medieval cobbles. The dating of this beam slot was a vexed problem; it was thought at first to belong to the early medieval period as it contained an amount of early medieval pottery. However, it also produced two small sherds of green-glazed pottery amongst the food debris and 12th-century sherds. Unfortunately, there appeared to be no pair to this beam slot. Eastwards, at 4·9 metres a massive double post-hole lay astride the East-West Ditch cutting through the side of a smaller post-hole (which may have been the pair to the sarsen post-hole). It spanned nearly 3 metres and each hole was 1·32 metres in depth from present ground level. The post was in the south hole, where some chalk and flint packing remained, and the support occupied the north hole. The fill contained a few fragments of West Sussex ware, part of a Purbeck marble mortar, a schist hone and two large rivets (see Fig. 9, Nos. 16–17 and Fig. 8, No. 12: microfiche, pp. 72, 74), bone and shell. The posts to be supported were either very tall or short heavy ones, perhaps to take a footbridge strong enough to support the weight of horses. Late medieval occupation north of the East-West Ditch was confined to a confused patch, disturbed by manure heaps abutting on the palisade of the ditch. Just to the south-east the ground had been dug to provide clay for the ovens.

Moving south from the beam slot at 4·2 metres lay a large clay oven. This had been repaired several times and was still in use in the 15th century. A handful of carbonized peas trapped in a pocket of clay attested to its domestic nature. Amongst the debris was a fragment of slip-decorated floor tile from the church or priory.

A section of recognizable chalk walling to the east of the oven maybe was continued further south in Cutting AB46–8 where there was a scatter of chalk blocks. Most of the area of AB46–8 was taken up with heavy cobbling, consisting of flint, chalk, greensand, some ironstone and re-used Roman tile with large amounts of animal bone and oyster shells, probably the backyards of houses which fronted onto

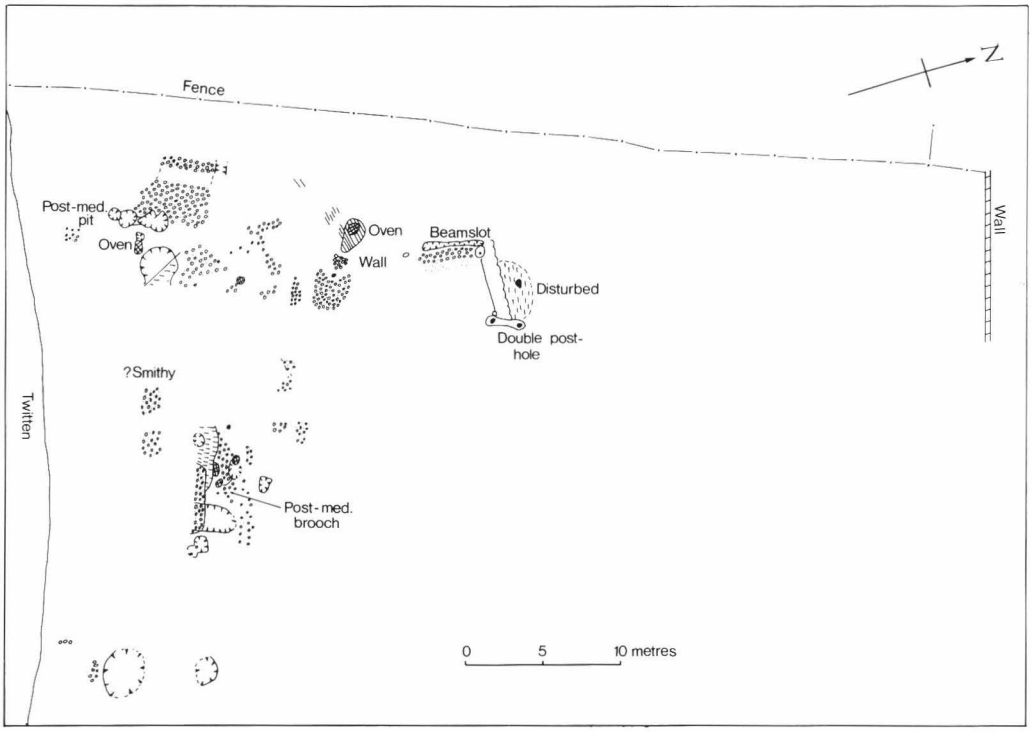


Fig. 6. Plan of late medieval features and post-medieval pit.

the twitten.

Near the south of the cutting was a small 14th-century oven and associated pits. A pathway of graded cobbles led to the twitten. The cobbles overlay a large stone-lined pit containing late West Sussex ware. Just to the east a large ashy depression disappeared into the baulk. This may have been associated with a smithy since some ironwork, including nails and a horseshoe, was found at the west end of Cutting 47 where the line of the North-South Ditch had been obliterated by later activities.

Further east down the slope a trodden chalk floor and small stake holes suggest the presence of byres. The chalk floor overlay a pond-like area in which were found the best examples of West Sussex ware and chimney pot fragments.

Post-Medieval

16th/17th centuries

Ceramic evidence for this period was sparse with a notable exception of the contents of a pit in the upper south-west corner, dated by an imported Raren vase to *c.* 1500. Presumably the house to which this pit belonged lay further west up the twitten.

There are series of very heavy cobbles here, and the mass of oyster shell debris might lead one to suppose it was the site of a fish market. Coins on the cobbles included a Nuremburg token and a Charles II farthing. A rubble yard also lay down the slope to the east, where the bronze bauble was found (Fig. 9, No. 7: microfiche, p. 74).

Recent

At the bottom of the slope, close to the twitten, Cutting 146 revealed a 19th-century ditch or pit containing rubbish.

INTERPRETATION OF SITE (Fig. 2)

The two main ditches, the North-South Ditch and East-West Ditch, make a right angle at

their junction and must be related to each other. Presumably they represent an early form of land allotment, demarcating areas of different ownership. From the size of the areas so demarcated, it seems likely that they are field boundaries, perhaps laid out beyond the area of primary settlement around the early church. If the East-West Ditch were continued to Church Street its distance would be 125 metres, and it would not make a right angle with the street. However, existing plots on Church Street are aligned at right angles to the street, as is School Lane. The twitten or path bounding the south side of the dig is parallel to the East-West Ditch and could well mark the line of another ditched boundary. Where the twitten runs into School Lane, it makes a distinct bend to account for the change of alignment. It seems, therefore, that the early ditched boundaries are overlain by later plots along Church Street which may have been established in the 12th century.

It is just possible that the ditches are remnants of a field system laid out in late Romano-British times comparable with that discovered at Ringmer Road, West Tarring (Lewis 1960). There, two rectangular fields 73·2 metres by 18·3 metres were found at 10·7 metres O.D. on clay subsoil. There is no real evidence as to the date the Steyning ditches were dug. Presumably they remained fairly clean whilst farming was under way with only natural silting taking place. The finding of a coin of Edgar, deposited *c.* A.D. 965–75, may be a clue as, from its position, it could have remained concealed in the tail of the bank formed by the original upcast of the ditch. In addition, the occurrence of several fragments of Pingsdorf, a small amount of 10th-century coarse ware, the tweezers and arrowhead, suggest that there was a 10th-century dwelling hereabouts. In any event, it seems the ditches must be early as it would have been difficult to lay out boundaries once the area was occupied.

To account for the apparent lack of early 11th-century material, the writer has developed the following argument concerning the location of the early town. This is based on the supposition that a river crossing or landing place, which later became St. Cuthman's port and the port of Steyning, was sited at King's Barn, where a deep-water channel in the tidal estuary swung close to the side of the main valley. From here, an east-west road ran towards the present church, passing to the north of it, then along Tanyard Lane and Mouse Lane.

The original 9th-century wooden or stone church may have lain a little to the east of the chancel of the present day church. When the early town was established, in the late 10th or early 11th century, a grid pattern of streets was laid out from this main east-west axis, their antiquity first recognized by Cox and Duke (1954). Westmost is Elm Grove Lane (formerly Newman's Lane and Back Lane), next is Chantry Lane, then Church Lane. East of the church is Vicarage Lane, which cut through a possible late Saxon burial ground (five skeletons reported in 1938). Another road, it is now suggested, lay just to the west of South Down House, and the eastern limit may have coincided with the slight change of alignment near the old railway station, the evidence being all destroyed at the time the railway was constructed. Finds of early medieval pottery have been reported from the churchyard, Church Lane cottages, Chantry Croft (Freke 1979) Highland Croft (Cox & Duke 1954) and Alfred Close.

With regard to the northern and southern limits of the town, it is reasonable to suppose that marshy land furnished a natural boundary on the northern side, although the moat ditch at the Old Priory may be the remnant of an artificial boundary; the presence of Gatewick may be significant but is an unknown factor. On the southern side there can still be seen a slight ditch running through what is now a public open space between the church and the car park. At the time of the 1967 excavations this old hedge boundary was sectioned by mechanical excavator at a point 24·7 metres east of the school fence. The trench revealed a U-shaped ditch 1·5 metres wide and 1·2 metres deep from ground level. The fill consisted of a deep layer of natural silting, then

dark soil with fragments of daub, bone and charcoal. In the upper part was a shallow V-shaped recut. Unfortunately no dating material was found, nor was the remnant of any wall or bank detected. At the time the possible implications of the ditch were not appreciated, otherwise the trench could have been extended to check whether there was any sign of an intramural street making a circuit of the town inside the boundary (Hill 1978). This ditch has not been noticed elsewhere, but perhaps the old footway from Chantry Green to Elm Grove Lane could represent part of such a street. The extent of the town as outlined above, covering about 18 a. (570 × 130 metres) would be a reasonable size to accommodate all the functions of the borough—the market, mint, properties of the rich burgesses and the abbot's men.

When, after the Conquest and probably whilst Bramber Castle was being built, a new road was laid out to link Bramber to Steyning, it aimed for a short cut both to the Portway (the road over the downs running into Church Street) and to the old east-west road (Tanyard Lane) which ran at the foot of the downs. De Braose's intention, Hudson (1980b) says, in respect of the timber-built Bramber causeway, was 'to direct east-west traffic away from Steyning'. He was also pushing the limits of Bramber borough as far as he could towards Steyning. In the event, he caused a general shift in the location of the town of Steyning. The new road, now called Castle Lane, when extended along its original line, became what is today the High Street of Steyning.

During the late 11th and early 12th centuries the Church Street/High Street crossroads became sufficiently important to provide a focus for a new market place and to draw occupation along Church Street away from the early town around the church itself. This move released space for the rebuilding of the Norman church, which took place from 1080 to 1160.

Some settlement apparently moved into the fields (the site of the 1967 excavations), and a cobbled trackway took a diagonal course across the fields in the direction of what was perhaps already a mill on the river Brad. Occupation in the form of rubbish pits and cobbled yards spread across the area, the backs of plots where animals and middens were to be found, rather than dwellings, as there were no wells and no hearths. The ditches, perhaps protected by hedges, remained open but gradually filled, the fill including pottery of the period 1080–1180. The northern half of the site was then deserted and the land was not again ploughed, or the cobbles would have been destroyed.

About this time in the 12th century, the field evidence suggests that a road linking Church Street to the main river valley was laid out alongside the edge of one of the old field boundaries (now School Lane twitten). There was the odd pocket of occupation alongside it in the 13th century and the North-South Ditch was filled and levelled so that the field was henceforth treated as one unit. Indeed, it was probably all one unit with land to the south before the road was laid out, as will be shown below in the discussion on the name of the field. The obliteration of the North-South Ditch must have been a deliberate action by a new landowner (perhaps one of the Gervays family) as, beyond the site to the north, the line of the North-South Ditch still remains in use as a boundary today, at least 900 years later.

As the plots along Church Street (also called Middle Lane) filled up, occupation then spread along what is known today as High Street. Sheep Pen Lane became the sheep market and the name Le Schepenstrete is recorded in 1271.

At what date The Stone House was built, a place of obvious importance, being the only medieval building of stone apart from the church which survives in the town, is not known. Its position firmly at the crossroads of Church Street and High Street suggests it was maybe the bailiff's house and its outline on the map supports the probability that the High Street originally ran in a straight line to the Jarvis Lane/Castle Lane junction.

Meanwhile there were changes taking place

in the river valley. It is postulated that the meander called the Great des Deniers loop had become the main tidal channel, a channel which swung against the west side of the valley further south than King's Barn itself. Wharfs were constructed and a more direct road link was laid out in a straight line towards the new medieval town centre. This is the line followed by Castle Way, Holland Road, School Lane and so into Church Street. But perhaps these wharfs only had a life of a hundred years. The great bridge at Bramber (Holden 1975) was aggravating the silting up of the valley and storms and submergence in the 14th and 15th centuries led ultimately to the embanking of the river. It is generally believed that the port had gone out of use by the mid 14th century.

It was at this time that a line of medieval houses with West Sussex ware chimneys first appeared fronting onto the road at Fletcher's Croft and it is just possible that the people here had moved from the deserted port settlement up the road to the edge of the town of Steyning. In due course these houses fell into ruin and there was some irregular occupation on the site in the 15th century and again in the 16th century when it was limited to the westernmost corner.

It is in the 17th century that there is the first definite link, in written terms, with the site. In 1674 one 'John Fletcher, gent.', held a messuage at 42 High Street. This, according to Cox and Duke (1954), is the Fletcher associated with the current name of the field Fletcher's Croft. (Was he any relation to George Fletcher of Tarring, two tokens of whose dated 1659 and 1667 were found on the site of the 1962 excavations?). On the tithe map of 1840 Fletcher's Mead spans the river Brad and includes the large field north of the twitten between the Brad and Jarvis Lane. Since Fletcher's Croft, or Mead, was a new name in the 17th century, the question arises as to what was the name of the field before that date. Bearing in mind the size of Georges Croft (successfully identified by Cox as the Barrack Field, on the east side of Jarvis Lane, and sometimes in the plural form due to the track passing through the middle of it), it seems likely that Gervays or Garveys or Jarvis Croft, a name which occurs not infrequently through the centuries, was of a similar size and close to the farm called Jarvis.

By 1840 the field name of Jarvis is limited to two small fields south of the twitten, on either side of the Brad, both owned by Richard Gates who, it should be noted, also owned Fletcher's Mead. Cox quotes from the churchwardens' account book which in 1544 refers to Garveys Croft as lying between Jarvis and the church. It seems quite possible that the original Gervays Croft included all of Fletcher's Croft. If this is so, it is easier to trace the documentary history for the land on the site of the excavation, especially as Gervays Croft always seems to have been associated with the farm house of Jarvis. In 1255 a Robert Gervays is mentioned and in 1329 another Robert Gervays was paying tax. One Hugh Quecche, at his death in 1404, owned Gervises and La Nash as well as part of Wyckham manor.

It was in the early 15th century that a Steyning guild, known as the Brotherhood of the Holy Trinity, came into existence. Its 'lodge' was built in 1417, the building now well known as the Grammar School in Church Street. Many notable local persons gave or bequeathed property to it, one being John Gore in a will of 1424 (probably the same man whose name appears in Gore's Croft close to the river at King's Barn). The Jarvis lands, including 'Garveys fielde' and 'Georgys Croft,' were amongst those which came into the Brotherhood's possession at some time and they are listed in the inventory of the Brotherhood's possessions drawn up in 1548 at the Dissolution. At this time the widow Lewkenor is listed in the chantry records as a tenant of Jervis Crofts. Richard Farnfold of Gatewick held Georges Croft as a tenant in 1544 and it is presumed that he acquired Jarvis at the Dissolution when the lands were leased and subsequently sold and the Guild's buildings converted to a school. It might be expected that the Dissolution would be reflec-

ted in the archaeological record when there was, no doubt, a change of use of ancillary buildings associated with the 'lodge'. In fact, occupation on the site of the excavation had virtually ceased by the mid 16th century.

The house Jarvis is itemized in Richard Farnfold's will of 1609 and thereafter descended in his family, being occupied in 1639 by Lawrence Davenport, rector of Bramber, who was suffering from the damp situation of the rectory at Botolphs. Thomas Farnfold disposed of all his property in 1647, which may coincide with the time at which Gervays or Jarvis Croft was divided and the name Fletcher first attached to a part of it.

To conclude, in the light of the hypothesis outlined above suggesting a location for the 11th-century town, followed by a movement of the town centre in about 1100, the nature of the findings from the 1967–8 excavations begins to make some sense. The site lay well outside the 11th-century borough of Steyning, being more than 150 metres from the church. It was at its busiest in the 12th century with occupation related to the shift towards the Church Street/High Street crossroads. Later occupation was sporadic and even the fact that it was on the road to the new port *c.* 1200 did little to encourage settlement, until the port ceased to function *c.* 1350, when people moved up here to the edge of the town. Thereafter, occupation was sporadic until the dissolution of the Brotherhood in 1548, after which date the land soon reverted to pasture.

THE FINDS

Full finds reports are on microfiche (pp. 68–92) with summaries of the principal contents given below.

The Local Pottery (by K. J. Barton)

This comprises material which falls into four components that constitute the standard forms of medieval wares in this part of Sussex. The earliest is of A.D. 1000–1200 whilst the latest belongs to the late medieval period. Two chimney pot fragments are illustrated from the 30 found.

The Imported Pottery

A number of pieces of imported pottery were found throughout the site. Amongst them in the early medieval cobble layer there were two small decorated fragments of 10th-century Pingsdorf ware. A plain fragment of rim of Rhenish ware, 10th-century, came from the Gully. Two small pieces of French painted ware of 12th-century date were identified, one from Pit Z55P and the other from below the cobbles. In the late medieval layers in the south-west corner of the site there was a fragment of South-Western French green-glazed jug, associated with late 14th- and 15th-century fabrics such as painted ware and devolved West Sussex ware. In the early 16th-century pit there was a base of a Raren stoneware jar.

Iron Objects

Some 90 items were recovered, not counting ordinary nails (*c.* 35). Many of these were indeterminate pieces of bar or fragmentary plates with a concentration in the area of H49L2 and D47L3, where slag was also found, indicative of a smithy.

Bronze Objects

Some 13 items were recovered, including a pair of tweezers with unusual decoration from an early medieval context.

Coins and Tokens

Of the 15 items recovered only one was early and this was a Saxon penny of Edgar (959–75) struck at Winchester.

Edgar penny (by Marion Archibald)
Edgar (959–75)
Penny of BMC type III (CC)
Mint: Winchester. Moneyer: Wulfsige
Obv.: +EADGARRE+ANGLORV: around small central cross
Rev.: +VVLFSIGE Mō PINTONIA around small central cross (P denotes 'wen')
Weight: 1·29 g. (19·9 gr.) Die axis: 0°

Until the discovery of this coin, Wulfsige was not known as a moneyer for the reign. He is not recorded in the last, Reform, type of Edgar, nor for his successors Edward the Martyr and Aethelred II at Winchester. He is also absent from the issues of Edgar's predecessor, Eadwig, but the name occurs on coins without mint signature for Edred (946–55), although the moneyer responsible may have been a different person. The mint signature is an unusually full one. The obverse die has not been found among the rare coins of this sub-group of class III at the mint which has small neat lettering and consequently has room for a long form of the king's title. These coins are however possibly only fortuitously scarce in modern cabinets because most of the large hoards of the period have been found in the north and west of the country where local coins of a different type predominate. The issue of this coin cannot be dated precisely within the reign but it was probably struck around the middle period and certainly before the Reform of the coinage which is usually placed in the year 973. All previous issues were then recoined and so, abnormal survivals apart, this coin is most

likely to have been deposited some time within the decade *c.* 965–75.

The discovery of a coin struck at Winchester at Steyning conforms to the pattern that outside the main commercial centres isolated coin finds tend to have been struck at a mint in the same part of the country. This is not necessarily the immediately local mint. In the case of Steyning, there was no mint there as far as we know in Edgar's reign (the earliest recorded coins are of Cnut), and the nearest mint at the time was at Chichester where output was on a smaller scale than at Winchester which was one of the most important mints in the kingdom. (No mint-signed coins of Lewes of Edgar's pre-Reform types are known although it produced mint-signed coins earlier for Athelstan and later in the Reform type of Edgar. Lewes is, however, at least a potential mint in type III).

Glass Objects

A total of 21 items were recovered but none were of particular significance.

Bone Objects

Only two items of worked bone were recovered: a bodkin and a flat piece which may have been the handle of a comb.

Stone Objects

These include two hones, two spindle whorls, part of a Purbeck marble mortar, and fragments of sandstone and Mayen lava quernstones.

Clay Objects

Only two items were recovered: a crucible fragment and a cylindrical object which may be part of a pillar lamp.

Building Materials

No dressed stone, slate or roof tile was recovered but finds included daub and part of a 14th-century slip-decorated floor tile.

Miscellaneous Finds

These included several pieces of iron slag and charcoal.

Mollusca (by June E. Chatfield, Ph.D.)

Nearly all the molluscs available for study were comparatively large ones that had been collected by the excavators, although a few additional examples of small land snails were obtained extracted from mud in some unwashed material. The molluscs fall into two categories, the marine species that were brought to the site by man, presumably for food, and the land snails that were living on the site.

Animal Bones (by J. Ridout Sharpe, B.Sc., A.R.C.S., Dip. Archaeol.)

A total of 1,862 animal bones and teeth were recovered. The bones were generally well preserved, although fragmentary. The context of this material shows that most of it was midden material. Its study throws light on the animal economy of the period and indicates that slaughtering and butchery took place locally, probably in Steyning itself.

Contents of Microfiche

The local pottery (by K. J. Barton) (pp. 69–70)
Iron objects (pp. 69, 71–3)
Bronze objects (pp. 73–5)
Coins and tokens (pp. 75–6)
Glass objects (pp. 76–7)
Bone objects (p. 77)
Stone objects (pp. 77–8)
Clay objects (p. 78)
Building materials (p. 79)
Miscellaneous finds (p. 79)
Mollusca (pp. 79–81)
The animal bones (by J. Ridout Sharpe) (pp. 81–91)
References (pp. 91–2)

Acknowledgements

The excavation received a grant from the then Ministry of Public Building and Works, the rest of the cost being borne by Worthing Museum, and I am obliged to Mr L. M. Bickerton and the Worthing Museum Committee for providing facilities. Chanctonbury Rural District Council willingly gave permission for the dig to take place on their land and Mrs. Gunning of Fletcher's Croft kindly allowed a small investigation in her garden. Most of the work was done by volunteers, many being members of the Museum Correspondents' Corps, notably Con Ainsworth, Hilda Bell, Christal Browne, John Friar, Tony Huxley (surveyor), Stan Jepson, Major Roper, Stuart Rose and Les Suggars. Week-end work continued despite bad weather conditions through much of the winter of 1967–8, useful labour on Sundays coming from men of Ford Open Prison, thanks to the co-operation of the governor, Mr. Dennett. I am grateful for encouragement given at the time by J. G. Hurst and K. J. Barton. My thanks also go to those mentioned in the text who have contributed specialist reports, also to Graham Morgan

(for X-rays), to Dr. T. P. Hudson who gave help with the historical section, although not necessarily agreeing with the views expressed here, to Eric Holden for commenting on the text, particularly where the river valley was concerned, to George Porter for notes about the mechanics of the Adur in recent times, and to Mark Gardiner. The finds and site records are deposited at Worthing Museum.

Author: Jane Evans, Woodspring Museum, Burlington Street, Weston-super-Mare, Avon BS23 1PR.

References

Barton, K. J. 1986 'Excavations at Cuthman's Field, Church Street, Steyning, 1962', *Suss. Arch. Coll.* **124**, 97–108.

Barton, K. J. & Holden, E. W. 1977 'Excavations at Bramber Castle 1966–7', *Arch. Jnl.* **134**, 11–79.

Cox, E. W. 1932–3 'St. Cuthman: What is Known of Him?', *Suss. N. & Q.* **4**, 204–7.

Cox, E. W. & Duke, F. 1954 *In and Around Steyning.*

Dodgson, J. M. 1978 'Place-Names in Sussex: the Material for a New Look', in *The South Saxons* (ed. P. Brandon).

Dudley, C. 1978 'Saxon and Medieval Mints and Moneyers in Sussex', in *Archaeology in Sussex to A.D. 1500* (ed. P. L. Drewett). C.B.A. Research Reports, **29**, 70–7.

Freke, D. J. 1979 'Excavations in Tanyard Lane, Steyning, 1977', *Suss. Arch. Coll.* **117**, 135–50.

Head, B. V. 1867 *Numismatic Chronicle*, 63–126.

Hill, D. 1978 'The Origins of the Saxon Towns', in *The South Saxons* (ed. P. Brandon), 174–89.

Holden, E. W. 1975 'New Evidence Relating to Bramber Bridge', *Suss. Arch. Coll.* **113**, 104–17.

Hudson, T. P. 1980a 'Steyning', in *Victoria County History, Sussex*, **6**(1), 220–35.

—— 1980b 'The Origins of Steyning and Bramber', *Southern Hist.* **2**, 11–29.

Lewis, G. 1960 'Some Recent Discoveries in West Sussex', *Suss. Arch. Coll.* **98**, 21.

Mitchell, G. 1947 'St. Cuthman's Port', *Suss. County Mag.* **21**, 127.

Stewart, I. 1978 'Sussex Mints', in *The South Saxons* (ed. P. Brandon), 89–137.

The Society is grateful to the Historic Buildings and Monuments Commission for a generous grant towards the cost of publishing this article.

Sussex Archaeological Collections **124** (1986), 97–108.

EXCAVATIONS AT CUTHMAN'S FIELD, CHURCH STREET, STEYNING, 1962

by K. J. Barton

The result of the excavations revealed two distinct phases of building and occupation ranging from the 10th to the 15th century and from the 15th to the 18th century.

INTRODUCTION

The site was located nearly opposite the tower of St. Andrew's church, Steyning (N.G.R. TQ 17881135) (Fig. 1). Area 2 was one of a series of four house platforms lying end on to Church Street. These platforms were to be destroyed in building the extensions to Steyning Grammar School and have now completely vanished. Just south of the gate entrance to the field, now the entrance to the public library car park (Area 1), an attempt was made to dig another platform. This proved to be much less rewarding but the results will be discussed here. Time, funds and the removal of the front quarter of the buildings during the widening of Church Street to take extra traffic to the railway station restricted further activities. The site was excavated at weekends during the summer of 1962. Many volunteers assisted at the site; the consistent helpers were Mr. and Mrs. E. W. Holden, Con Ainsworth, John Friar and Emma Berwick. The material finds are deposited at Worthing Museum.

AREA 2 (Figs. 2–5)

This was a complex site comprising many structures, pits, gullies and two wells. As with the rest of the site all this material was on Lower Chalk which had been uncovered by the various builders so that no natural soil deposits remained. This area has two periods of occupation marked by settlement of an ephemeral nature and subsequently by a large timber-framed building.

Period 1 (Fig. 2) was indicated by two wells, 14 pits and a *Grubenhaus*. The pits contained a range of pottery products which date from the late 11th century through to 1450. Not all the pits were filled with pottery and of those that were the bulk contained Saxo-Norman wares. The two wells both cut pits as did the *Grubenhaus*. These three features are later than most of the others. The wells were not bottomed as time did not permit, but both were sampled and each contained late medieval ware. Well 2 contained half of a 'Painted ware' dish in its upper levels. This well lay directly underneath the foundation of the Period 2 house. The *Grubenhaus* had been damaged by the middle of it being dug through for a lime-slaking pit during the early part of the 15th century. Remaining after this damage and the truncation caused when the road was widened was a round-cornered shallow rectangular depression cobbled in one corner. The cobbles were reddened as if fire had been made on them. Set around the periphery of this hole was a series of substantial post-holes. This structure can be readily paralleled by a similar one found at Goring-by-Sea where the substantial remains of a rectangular hut with a sunken floor was excavated and found to have a long period of occupation. The pottery there was dated to the 14th century (Barton 1965). Although no such date can be offered for this example it was seen to cut Pit 16 which contained

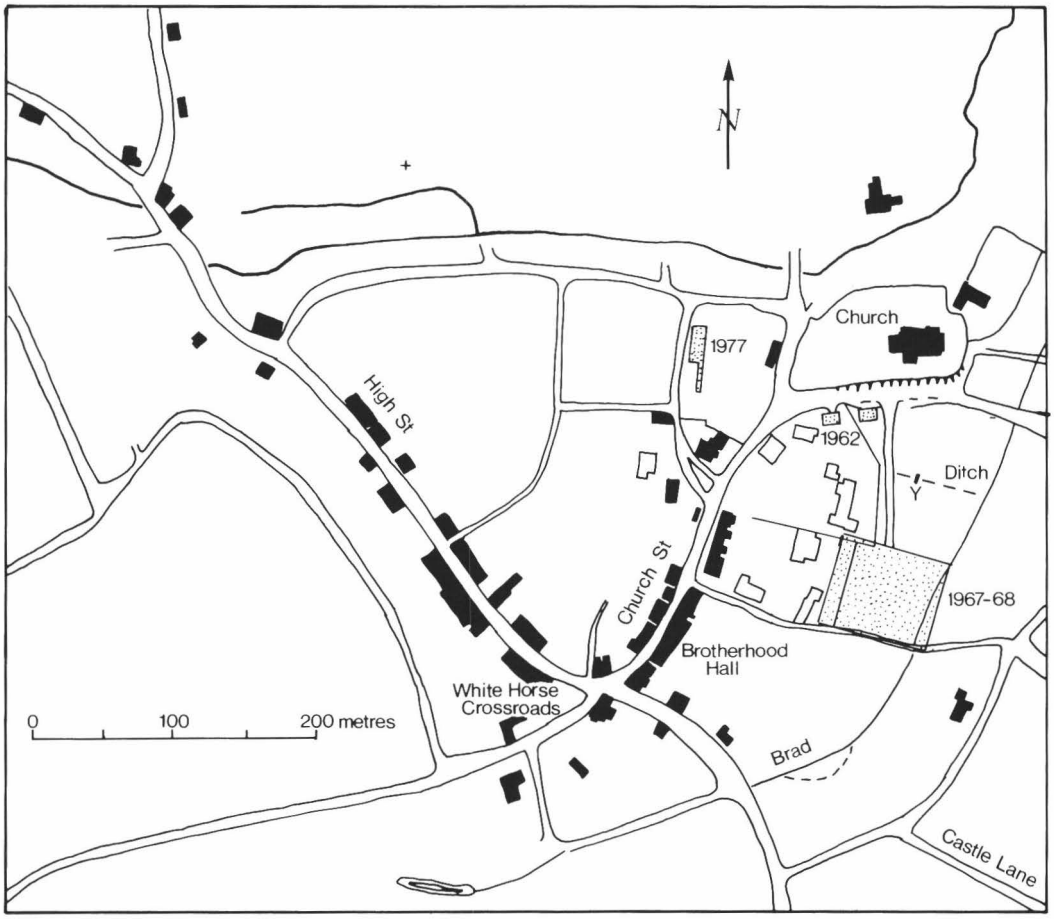


Fig. 1. Location of excavations in 1962. Solid black shading indicates surviving medieval buildings. (Sites excavated in 1967–8 and 1977 are also shown.)

12th-century pottery. It is therefore of 12th-century or later date, but probably of 13th- or 14th-century date. The incidence of two such huts now confirms them as being a class hitherto unrecognized as late as this. The *Grubenhaus* proper is known from Sussex from the 5th century at Bishopstone (Bell 1977) till at least the 9th century at Old Erringham (Holden 1976). There does not appear to be a classification for these structures and the term *Grubenhaus* is really a misnomer in this case.

Nothing more can be said of this first period except that the area occupied by the building had obviously been built on and contained some sort of structure for some time prior to the building of the hut as is indicated by the distribution of the rubbish pits. These pits are either round or rectangular. The shape is not an indication of date, but I think the purpose is indicated: the rectangular examples are cesspits. No. 24 had had timbers in the corners.

During Period 2 (Figs. 3–5) the whole platform was taken up by a building and its ancillary features. This building was principally of timber construction standing either on a stone sill or directly on the ground. This is indicated in the drawings with parallel lines used to distinguish wooden frames. Once again the full extent

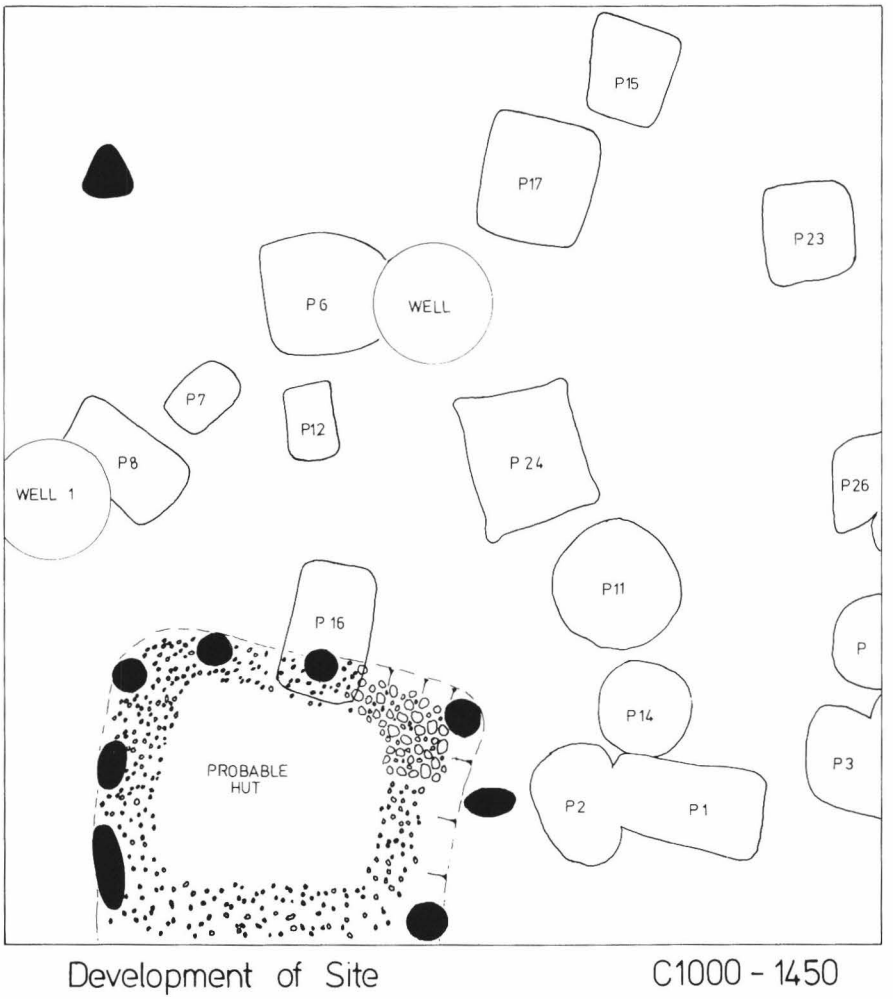


Fig. 2. Area 2. Period 1: 1000–1450.

of this building is not known as the front had been lost through the widening of the road. Throughout the period of occupation the buildings had spread beyond the confines of the platform. The principal building has a date range based on pottery, coins and jettons from *c.* 1450 to *c.* 1720. It has three main phases of development (Figs. 3–5).

The first stage (Fig. 3) is one of rapid development in two phases. All that remained of the initial phase is the fireplace to the south of Room 4, probably Room 3 and the room to the south. All the structures saving the fireplaces in the initial phase of construction are of timber. In many cases only the rectangular clay and chalk floors remained as the timber beams had been laid straight on the surface of the ground. In the second phase there is a considerable modification to the building. A new wing is carried over a range of rubbish pits to the east and enclosed by an entrance way to make a winged structure of E-shape. This comprises Room 4 as the link to a much larger room (Room 5). Room 4 has a great fireplace at its east end and at one time had a

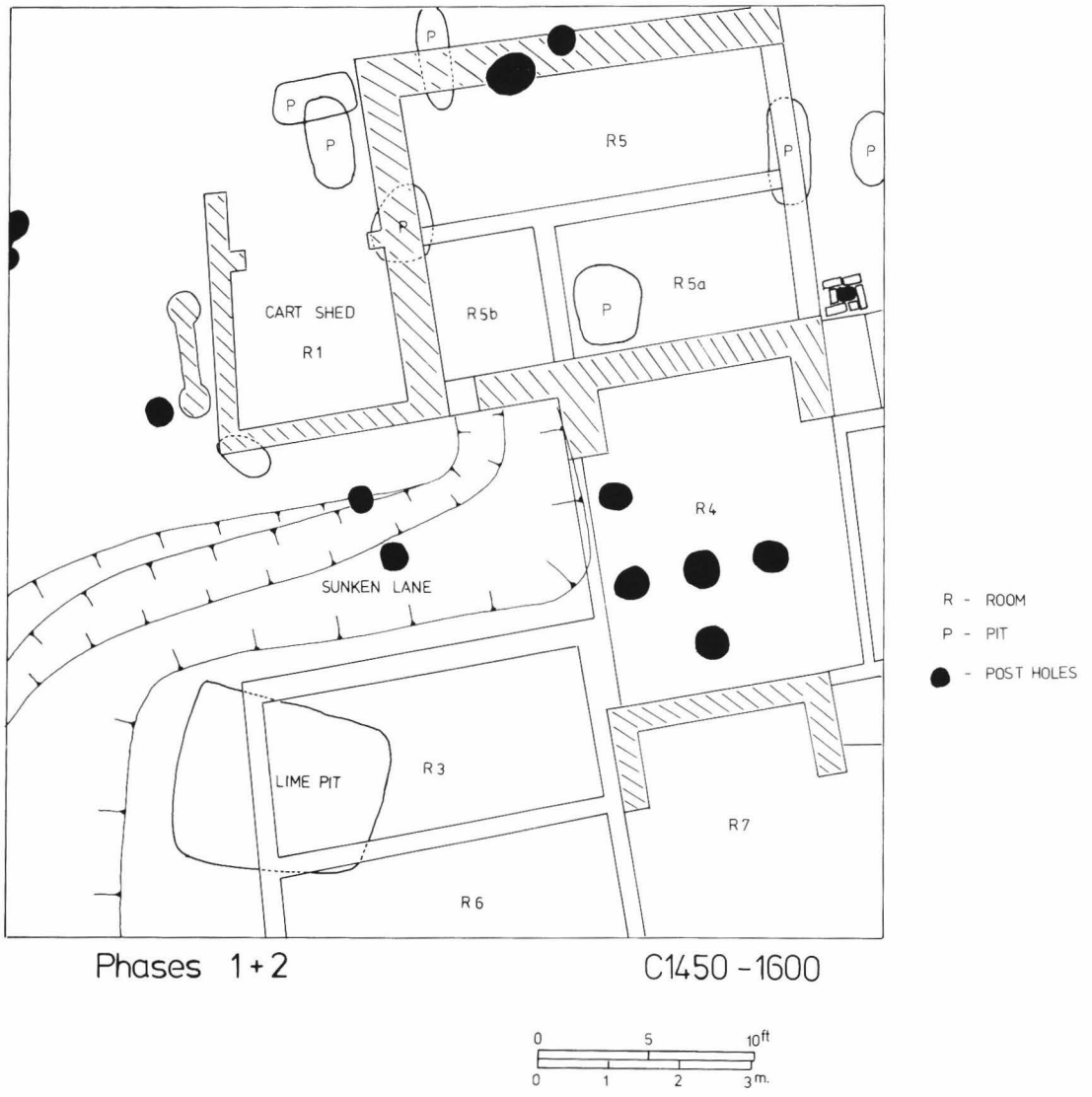


Fig. 3. Area 2. Period 2, Phases 1 and 2: 1450–1600.

partition based on five posts making a rectangular subdivision to the room. Room 5 was also subdivided with ?stud and plaster walls. Leaning against the north wall of Room 5 was an open-ended structure with two beam-support blocks set inside about three quarters of the way along. Such a building can only have been a cartshed. Between the two large wings now newly formed was a lane or way which also had a gully running from the entrance to the east wing. This gully was probably wet all the time and, judging from the material that came from it, noisome. A small footbridge was raised over it at some time. The dating of this first phase can only be related to material found and if we take the lane as a tertiary feature and consider that the *lower* levels

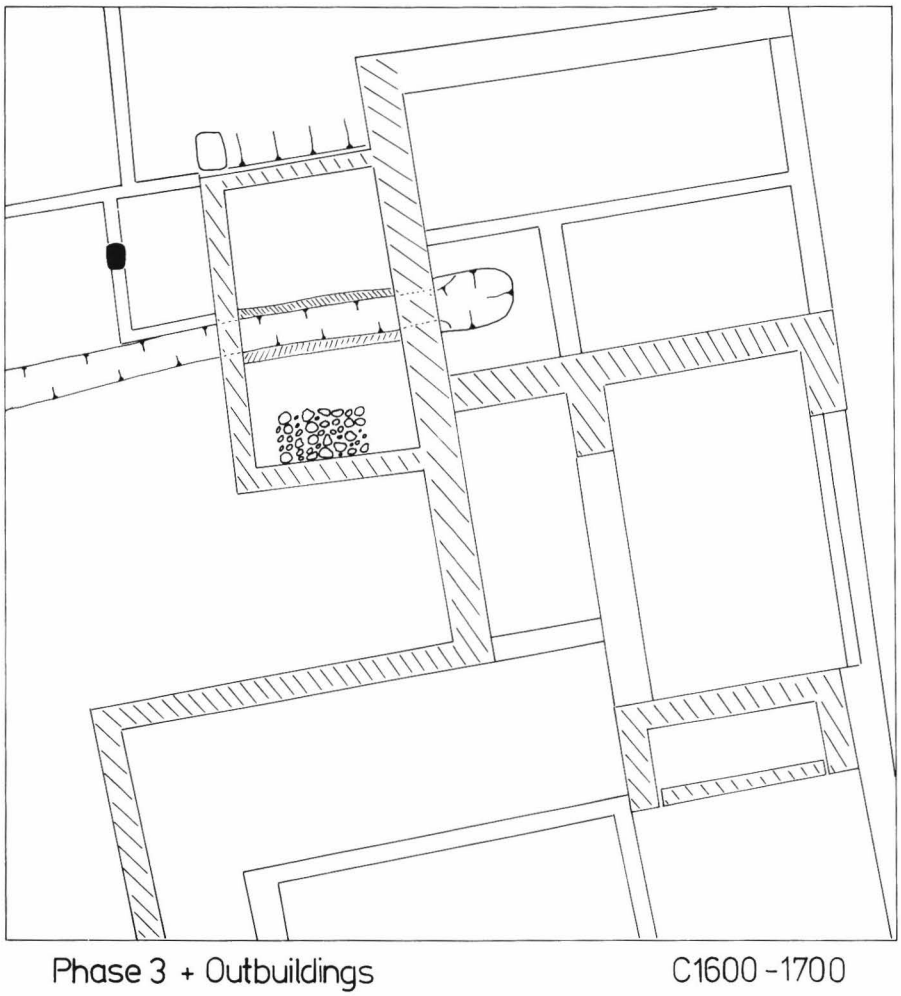


Fig. 4. Area 2. Period 2, Phase 3: outbuildings *c.* 1600–1700.

of its filling contained 'Painted ware' we see that the second phase of building was completed before 1500–50.

Phase 3 (Fig. 4) runs generally through the whole of the 17th century when there appears to be a general tidying up and consolidating of the building. The sunken lane was filled in and covered with a layer of gravel and fine flints. The north wall of Room 5 was extended to meet Room 3 and the whole of the north wall structures then rebuilt on stone sills. The cartshed (Room 1) was demolished and a neat rectangular room was built with an open drain through the middle and a hearth at the west end. The entrance room was converted into a ?latrine complete with a drain leading into Room 1. Room 3 lost its east wall which was extended to make a passage around Room 6. The fireplace in Room 7 was sealed up with stone in this phase. The land to the south of the building was converted to a yard and at the east end of this yard was a patch of well-laid Greensand pitching. At the north side a series of buildings had been laid out abutting Room 1.

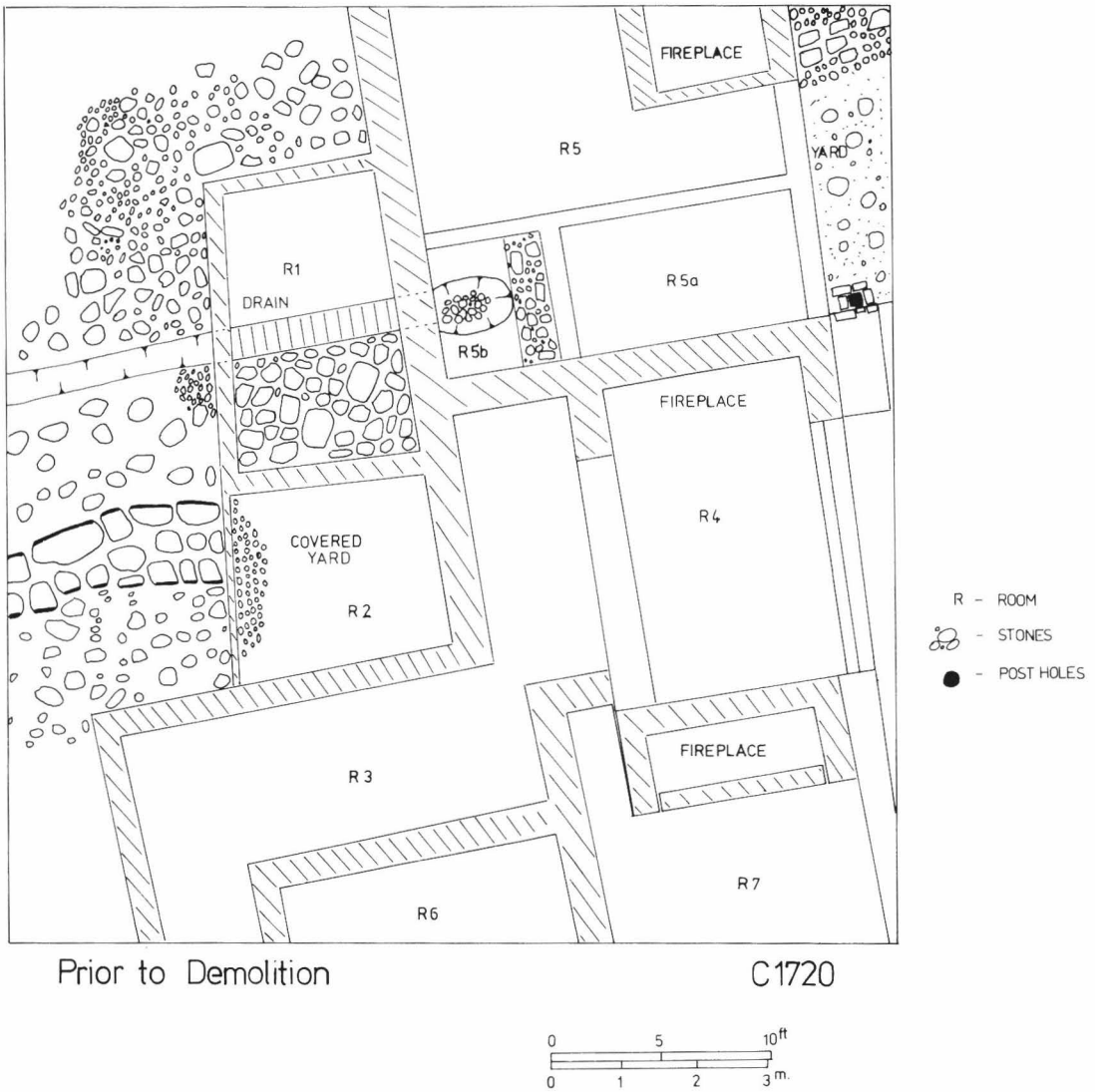


Fig. 5. Area 2. Period 2, Phase 4: prior to demolition *c.* 1720.

Phase 4 (Fig. 5) is the state of the house plan at the period of demolition (dated by pottery found in the upper levels). By this time the whole building had been lengthened and the rear wall extended beyond the area of excavation. The extended Room 5 was brought into some industrial usage and had a brick fireplace built against one wall. The ?latrine, Room 5B, had a stone floor set in front of the sump. In Room 1 the drain was lined and capped with bricks and the east end of the room floored with stone. The open space between Rooms 1 and 3 was covered with a roof but remained open at the front area which was lightly cobbled; the rest was an earth floor. This was approached by a path laid of large stones. The buildings in the yard had been

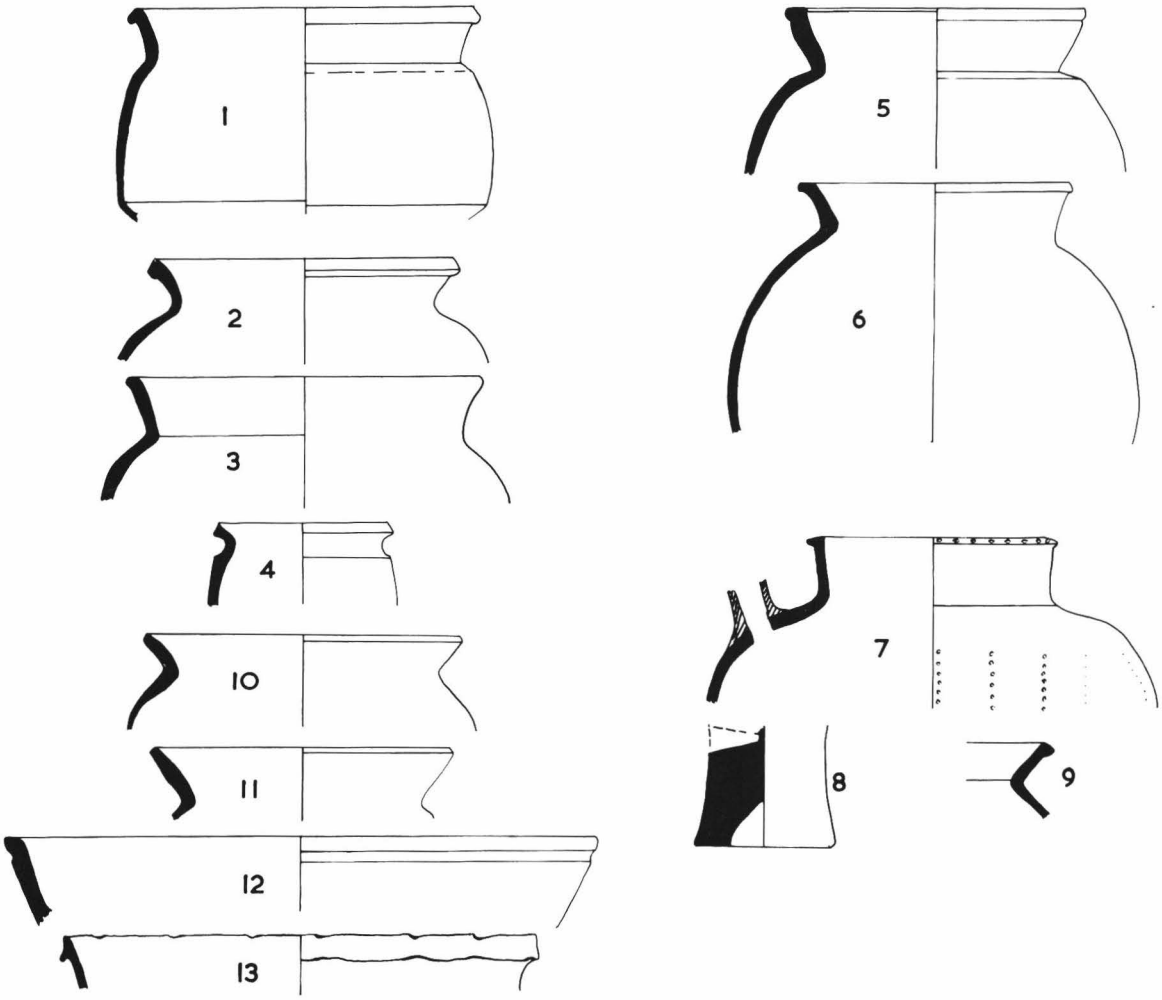


Fig. 6. Pottery: Nos. 1–13 ($\times \frac{1}{4}$).

swept away. The fireplace in Room 7 was bricked up and what can only be construed as a supporting wall probably for a stairway was awkwardly inserted through Room 6 and into Room 3.

The history of this structure stretches over between 200 and 270 years. It has a history of flimsiness and poor construction. The number of actual reconstructions, temporary additions and restorations in this space of time is considerable and is all that can be seen from the ground plan; the rest must be conjectured. Whatever the reason this building was totally and professionally demolished, the tiles, timbers and stonework removed, the site cleared to floor level and then probably covered with topsoil fairly soon afterwards, for if not the chalk floors with their tell-tale timber marks would not have been so clearly defined if left to weather and grow weeds. It is probably the spreading of this soil over the house site that exaggerated the platforms, which probably originated through soil erosion as a result of hill wash after ploughing or through

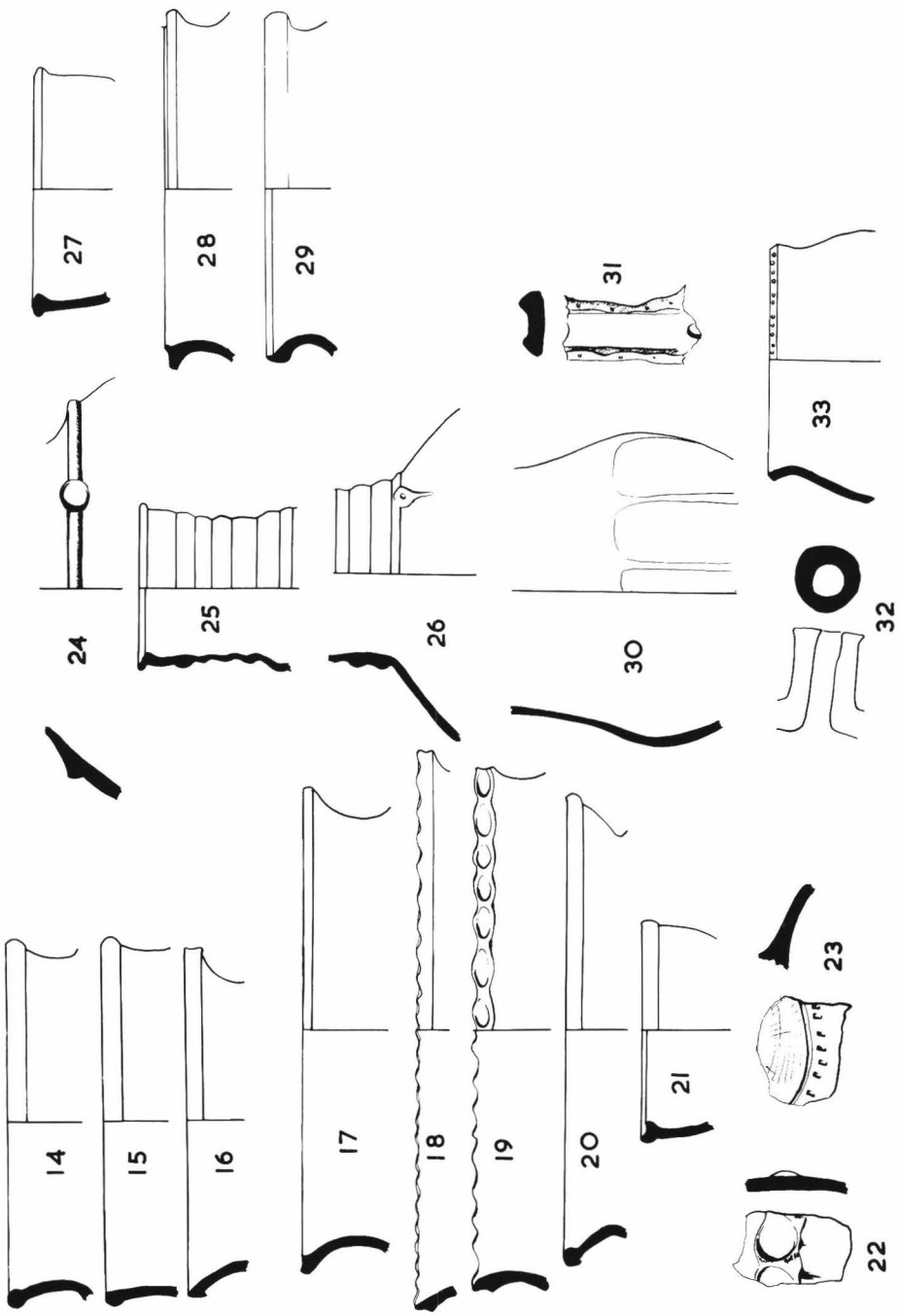


Fig. 7. Pottery: Nos. 14–33 (×¼).

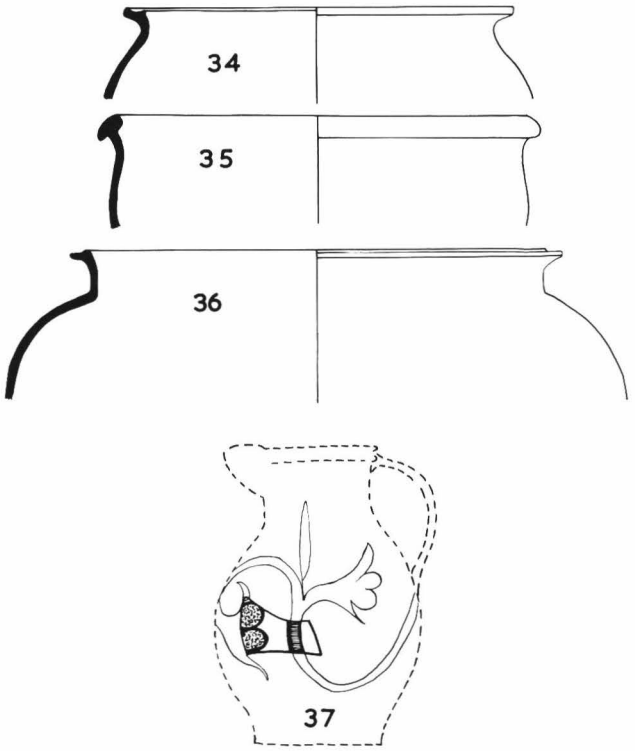


Fig. 8. Pottery: Nos. 34–7 ($\times \frac{1}{4}$).

cattle sheltering against the eastern wall, thus breaking up the soil which would then erode away.

AREA 1

Area 1 lay due east of Area 2. It was only sampled. A large part comprised a yard of flint cobble laid into the virgin chalk; this was dated to the 17th century. Against this yard, between it and the edge of Church Street, was a clay floor of 16th-century date which overlay a large 15th-century pit. There were traces of a 15th-century building in some of the cuttings and this building overlay a pit of 11th-century date and a well. The well was excavated to a depth of 11 metres (36 ft.) revealing little in the way of finds. It had obviously been kept clean then filled rapidly with tipped soil and some domestic rubbish in the 13th century. Noticeable was the incidence of two floors on the inside of the building which were made up entirely of carefully laid oyster shell, the concave section uppermost. It would seem that the sequence of events here is similar to that at Area 2.

THE POTTERY (Figs. 7–10)

The pottery catalogue is on microfiche (pp. 94–6). Those items illustrated here form the core of the ceramics discovered. They catalogue the changes in type from the 11th century to the 18th century A.D. and for the first time we see published the sequence of ceramic development for this region.

There is no substantial evidence for a date prior to the 11th century although the primary date for the wares concerned is not known. However the contents of Pit 3 and Pit 1 (Nos. 1–6) can be paralleled readily at Bramber, Winchester, Portchester and Chichester. At these places they are shown to be 11th-century in date extending certainly into the 12th century. Within the early years of that century

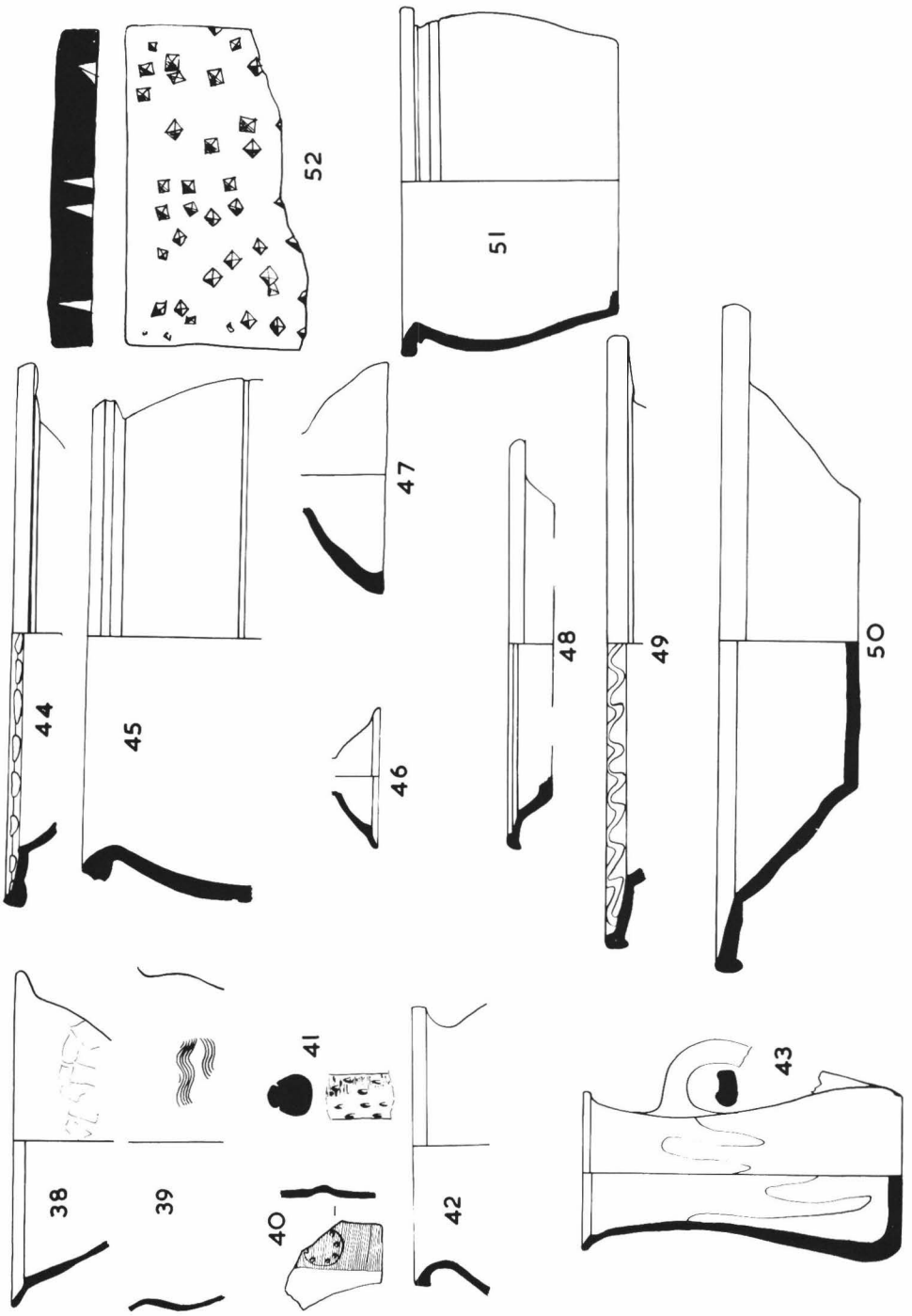


Fig. 9. Pottery: Nos. 38–51; oven tile No. 52 ($\times \frac{1}{4}$).

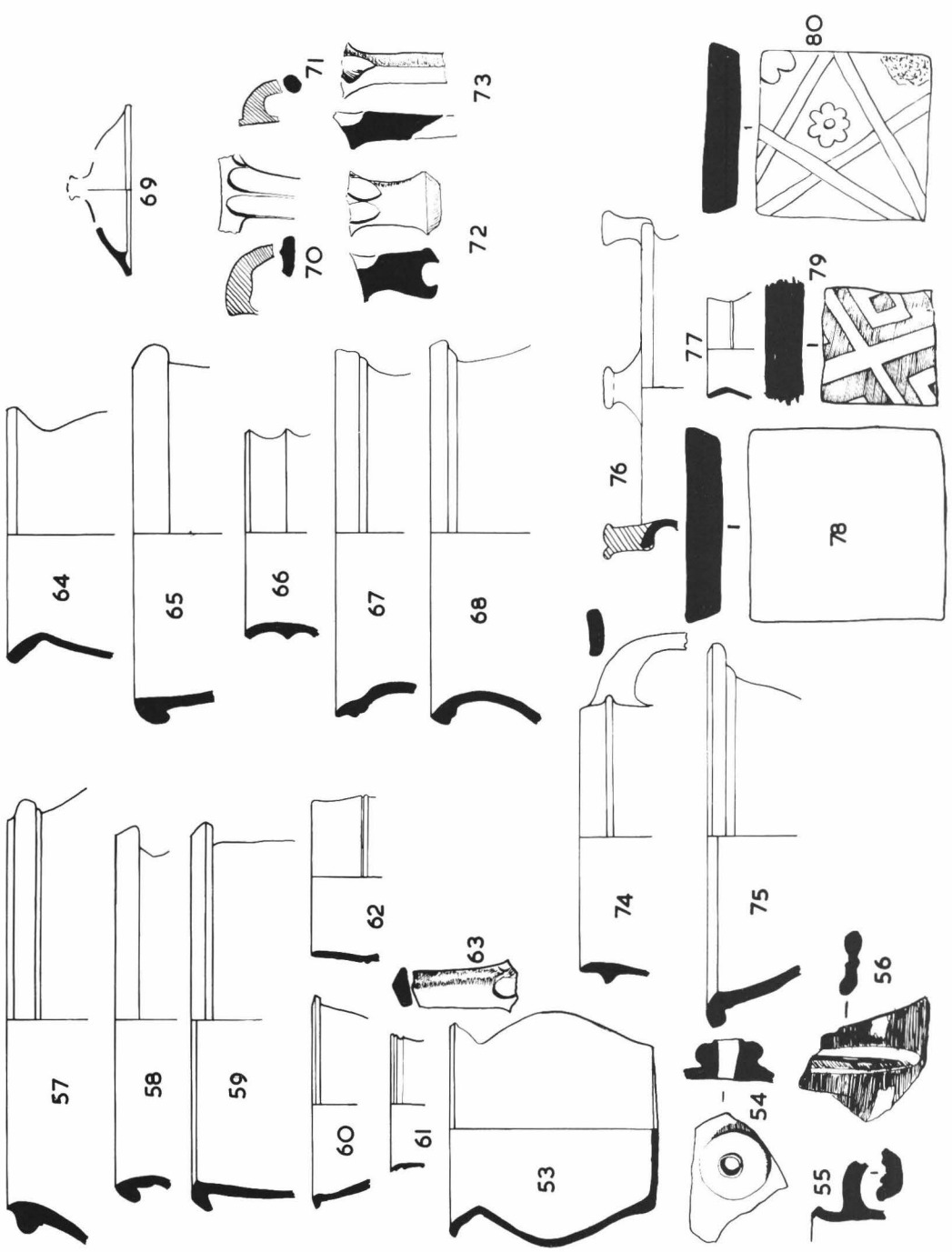


Fig. 10. Pottery: Nos. 53–77; floor tiles Nos. 78–80 ($\times\frac{1}{4}$).

oxidized wares developed, of which the examples from Pits 15, 16 and 17 (Nos. 14–23) illustrate the forms, and the crimped tops of Nos. 18 and 19 and the large thumbed strap of No. 22 are typical examples. Studies of similar wares in Chichester have shown that such oxidized wares certainly go on into the middle of the 13th century where they are replaced gradually by jugs and sandy wares. Such a combination occurs in the wares from Pits 12 and 2 (Nos. 24–29). The jugs with high rilled necks and wide bases are forerunners of West Sussex wares. There is still the occurrence of flint tempering in coarse wares. It is a phase of transition, as can be seen in the cooking pots Nos. 27–29 which contain a mixture of sand and flint tempering. The six examples from Pit 21 (Nos. 31–6) mark the wares of the 14th century together with an example of a coarse, hand-made, red, sandy jug (No. 30). The three cooking pots Nos. 34–6 are of a form which extend into the 15th century and are commonly found with West Sussex wares. One fragment of a South-Western polychrome jug adds lustre to the 14th-century section. The end of the true medieval forms is seen in the group Nos. 38–42. The principal characteristics are a fine hard buff sandy fabric, and the incidence of small bowls (Nos. 38–9) and small cooking pots (No. 42). In some cases this ware has white decorations. It heralds the coming of the Black and White painted wares.

As has been shown in the report there is a division of occupation at the end of the 15th century. The Black and White wares that mark this transition are Nos. 43 and 53–6. The second group bears all the standard hallmarks of this type: small cooking pots (No. 53), spigots (No. 54) and slashed handles (No. 56). The jug, No. 43, is a non-standard form and lies nearer to the late medieval forms than the 'Painted wares'. These wares devolve into plain lead-glazed wares best exemplified by Nos. 50 and 51 although these late 16th-century wares are poorly represented.

The 17th century is however represented by Nos. 44–9 with the two good examples of local slip wares. It is the end of the 17th century and the 18th century which provided the largest group of types Nos. 57 to 77, which are subdivided according to glaze colour and form as the fabric is all the same. The terminal date for the deposits is *c.* 1720.

MEDIEVAL ROOFING SLATE (by E. W. Holden)

The amount of slate submitted for examination was small, which may indicate that little slate was used or that the slate was removed from the site during the various rebuildings. The slates were divided into three groups on the basis of their physical characteristics. It is probable that all the slates originated in the West Country. A full report is on microfiche (pp. 96–8).

Contents of Microfiche

Pottery catalogue: Area 2 (pp. 94–6)
Medieval roofing slate (by E. W. Holden) (pp. 96–8)

Author: K. J. Barton, Hampshire County Museum Service, Chilcomb House, Chilcombe Lane, Bar End, Winchester, Hampshire S023 8RD.

References

Barton, K. J. 1965 'Worthing Museum Notes for 1963', *Suss. Arch. Coll.* **103**, 83–93.

Bell, M. G. 1977 'Excavations at Bishopstone', *Suss. Arch. Coll.* **115**.

Holden, E. W. 1976 'Excavations at Old Erringham, Shoreham, West Sussex, I. Saxon Weaving Hut', *Suss. Arch. Coll.* **114**, 306–21.

The Society is grateful to the Historic Buildings and Monuments Commission for a generous grant towards the cost of publishing this article.

Sussex Archaeological Collections **124** (1986), 109–18.

THE EXCAVATION OF A SAXON SUNKEN BUILDING AT NORTH MARDEN, WEST SUSSEX, 1982

by Peter Drewett, Barbara Holgate, Sally Foster and Harvey Ellerby

During the excavation of a Neolithic oval barrow a single Saxon building was located and a rubbish deposit containing Middle Saxon pottery was found in the upper levels of the barrow's ditch.

INTRODUCTION

The oval barrow at North Marden (SU 801156) was first noticed on an air photograph taken by the Royal Commission on Historical Monuments in 1976 (Fig. 1). As the barrow was being extensively eroded by ploughing it was excavated in 1982 (Drewett forthcoming). During the excavation a single Saxon building was located to the north-east of the barrow. This building was associated with a rubbish deposit

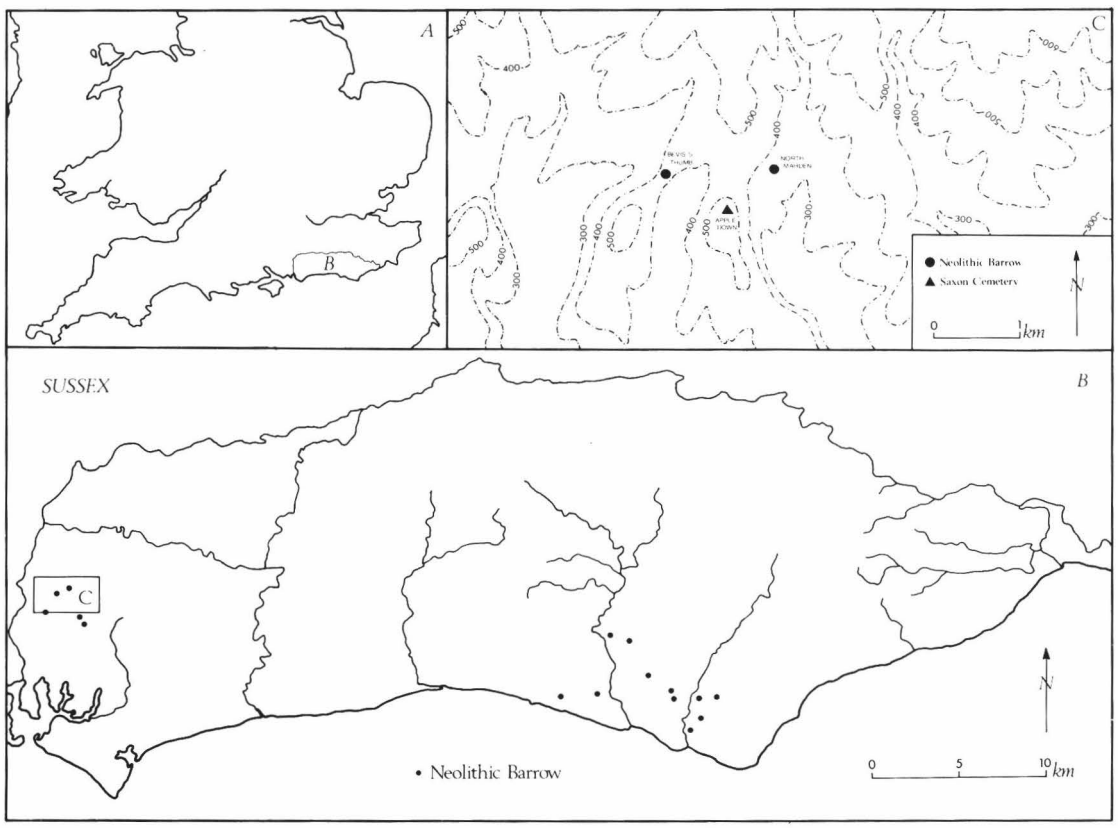


Fig. 1. North Marden, 1982. Location of barrow.

containing Middle Saxon pottery found in the upper silts of the barrow's ditch in its south-east corner. The excavation was funded by the Department of the Environment and supervised in the field by P. L. Drewett. This report has, however, been largely prepared by three students from the Medieval Archaeology Department of University College London. The finds have been deposited in Chichester District Museum.

THE EXCAVATION (by Barbara Holgate)

In the area of excavation north-east of the barrow a sub-rectangular, vertically cut pit was found with two post-holes cut into it, one at each end (Fig. 2). The pit was 2·5 metres wide by 2·7 metres long and the base varied in depth from 15 to 20 cm. from the top of the cut to the floor. The post-hole at the east end measured 25 cm. in diameter and 30 cm. in depth, and the one to the west measured 40 cm. in diameter and 25 cm. in depth (Fig. 3). There was no evidence for any packing in either post-hole. On the floor of the pit 28 stake-holes were found measuring between 3 cm. and 7 cm. in diameter and between 28 cm. and 7 cm. in depth. They were in no specific arrangement around the floor of the pit (Fig. 4).

The pit fill was fairly consistent throughout, though becoming finer towards the bottom of the pit and the post-holes. It was of a light grey-brown silt loam that was fairly compact and contained some large pieces of chalk rubble and pea-grit. The lower layer of the fill, nearest to the floor, was more friable in consistency and less gritty.

The interpretation of this pit is that it was a typical two-posted Saxon sunken building of a fairly small size and construction. The lack of evidence found within the area of the building was such that the function of the stake-holes found in its floor is indeterminate other than that they might possibly have aided with the support of the superstructure.

The finds in the sunken building consisted of two whetstones, and two spindle whorls, only one of which was complete. Several pottery sherds were found in the fill, though they were of no help in the interpretation as they ranged in date from the Neolithic to the Saxon period. Some flint flakes and a piece of *Bos* bone were also found.

The fill of the sunken building probably silted in gradually and was then later disturbed by ploughing, thus introducing the two slightly different layers with the larger chalk rubble pieces in the upper layer.

Little can really be said about the date of this building without further structural evidence in the surrounding area. In one post-hole, only Saxon pottery was found. This may suggest a Middle Saxon date for the building. During the excavation of the south-western corner of the barrow (Fig. 5) a small deposit of Middle Saxon pottery was found where it had been dumped on the inner lip of the barrow's ditch. It is likely that this represents a rubbish deposit broadly contemporary with, if not directly derived from, the sunken building.

POTTERY (by Sally Foster)

The sherds were divided into 14 fabrics according to their temper and colour. They were all handmade, undecorated and, with the exception of Fabric 4, softly fired, probably in a clamp. No whole pots were found and it is impossible to elucidate the form of the vessel unless otherwise indicated below. In the following descriptions the width of the fabric is either very thin (5 mm. or less), thin (6–7 mm.), medium (8–9 mm.) or thick (10 mm. or more). Numerals preceding descriptions of the individual sherds refer to Fig. 6.

Fabric 1: Buff outside and red core. Very thin and filled with abundant coarse sand.

Fabric 2: Underneath calcareous deposit a brown homogeneous fabric filled with fine sand. Very thin. Possibly Roman.

Fabric 3: Brown/buff ware tempered with large amounts of coarse sand and a small quantity of organic material. Very thin to thin.

Fabric 4: Buff outside and black core. Very hard-fired and tempered with large amounts of coarse sand and some organic material. Thick to medium. Possibly Roman.

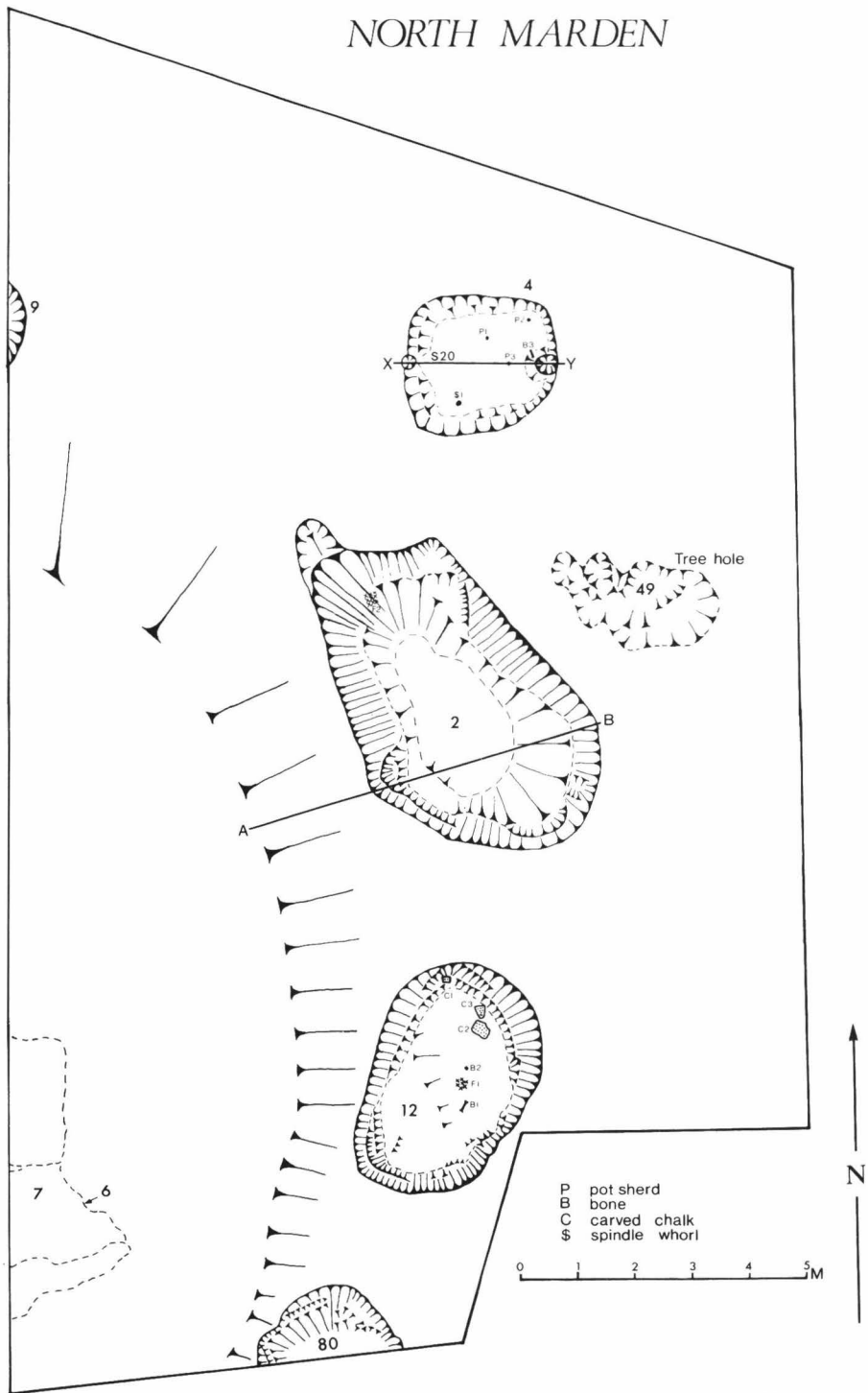


Fig. 2. North Marden, 1982. Neolithic pits and Saxon building (4) at eastern end of barrow.

NORTH MARDEN 1982

PLAN & SECTION OF SAXON HUT

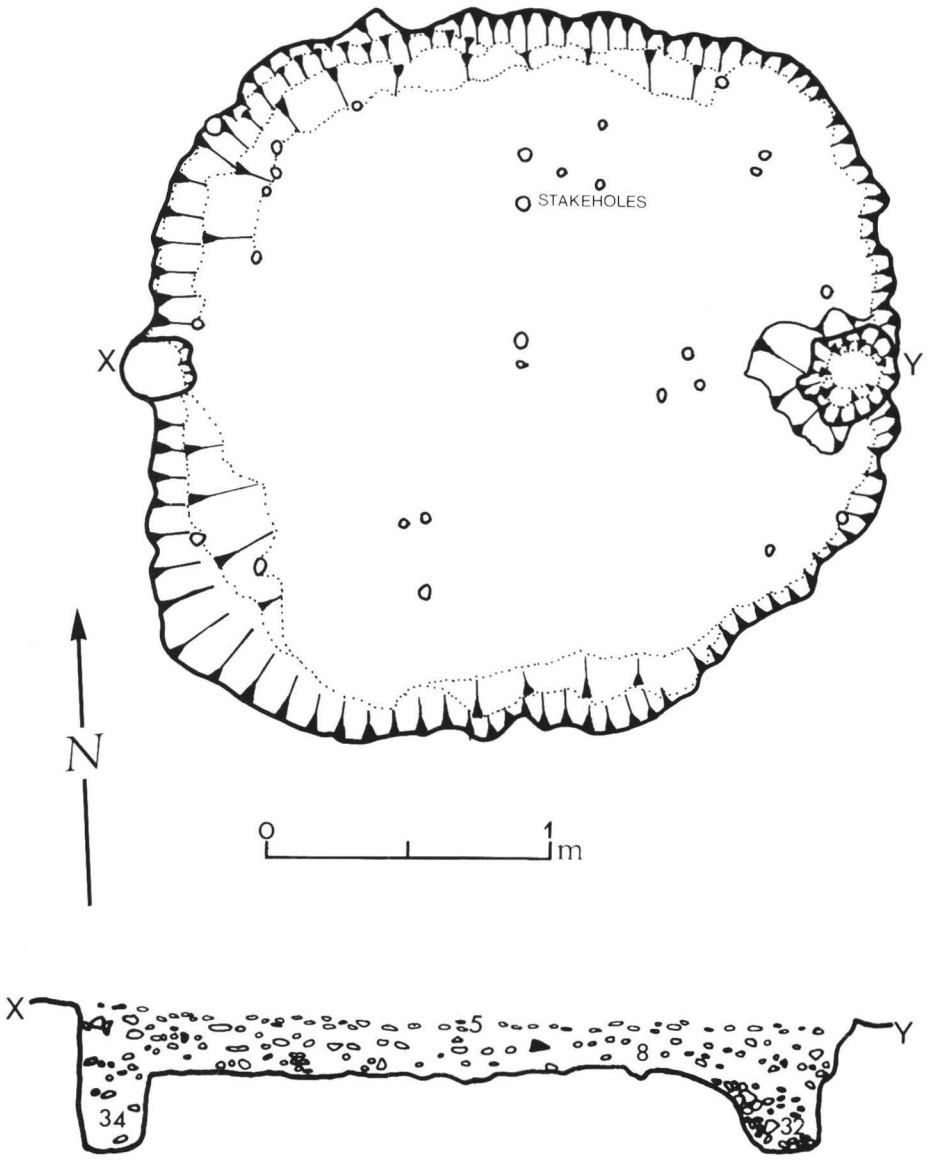


Fig. 3. North Marden, 1982. Plan and section of Saxon building.

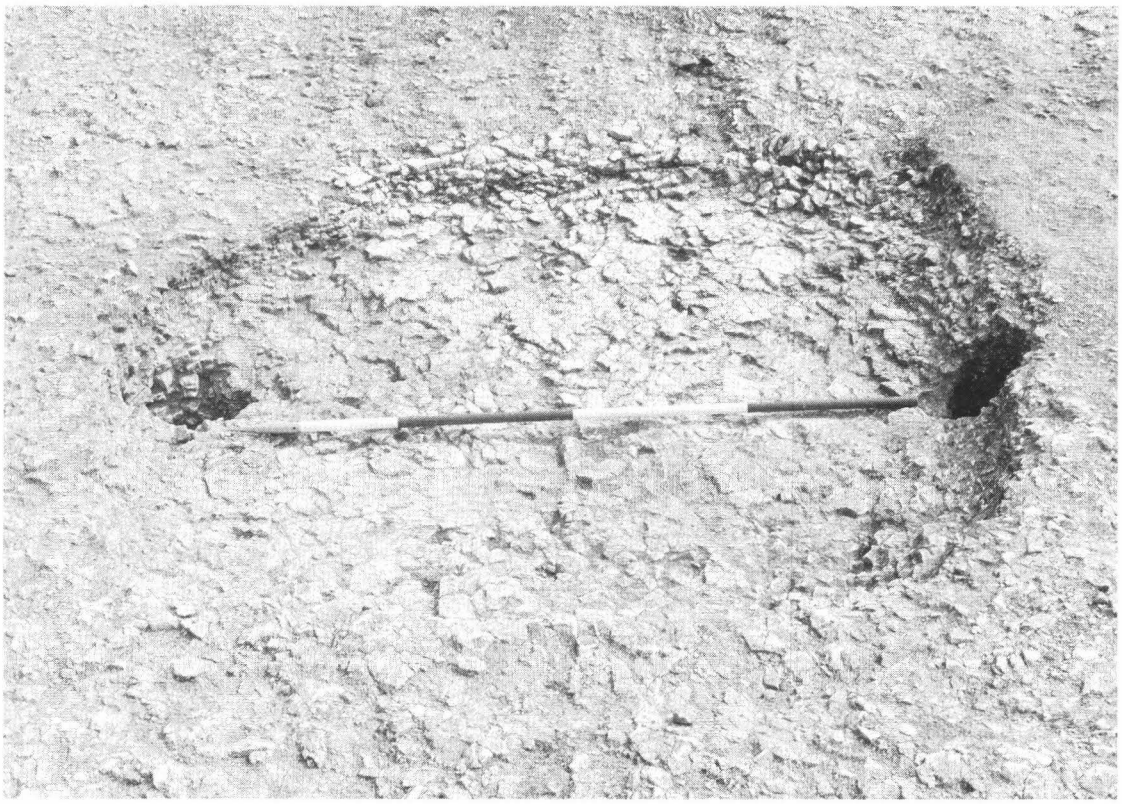


Fig. 4. North Marden, 1982. Saxon sunken building. Scale 2 metres. (Photo. P. Drewett)

Fabric 5: Thin buff-coloured ware tempered with large amounts of finely crushed flint, some fine sand and a very small quantity of organic material.
Fabric 6: Brown/buff-coloured ware filled with coarse sand, a small amount of organic material and (?) iron ore.
1. Base of medium-sized flat-bottomed vessel, possibly a bowl or cooking pot.
Fabric 7: Red outside and black/grey inside. Thick to medium-thick. Tempered with large amounts of coarse flint and a scatter of coarse sand.
Fabric 8: Buff medium-thick ware tempered with crushed flint and a scatter of fine sand.
Fabric 9: Buff medium-thick ware tempered with fairly coarse flint, a scatter of fine sand and a few grains of iron ore.
Fabric 10: Fine, smooth ware tempered with fairly large amounts of coarse sand and relatively large amounts of mica. Fairly thin.
2. Piece of shoulder carination.
3. Base of fairly flat-bottomed vessel.
Fabric 11: Brown/buff ware filled with fairly large amounts of coarse quartzite and a scatter of sand. Very thin to thin.
Fabric 12: Red/buff exterior and grey/buff interior filled with fairly large amounts of quartzite, small amounts of mica and flint. Thick to medium-thick.
Fabric 13: Buff exterior and grey interior. Thin to thick filled with coarse quartzite and scatters of fine mica and sand.
Fabric 14: Red exterior, black core and grey/black interior. A large number of thin to thick sherds filled with a large amount of coarse quartzite, a scatter of organic material and possibly flint with its adhering cortex. This fabric includes three different rims which must therefore represent the remains of at least three vessels, and a neck from another vessel. The remaining sherds suggest that the vessels had gently curving sides and either flat or sagging bases. No basal angles were found.
4. Rim of a large (?) cooking pot.
5. A less everted rim, presumably of a vessel similar to above.
6. Rim of virtually straight-mouthed bowl/cooking pot.
7. Neck of cooking pot, deeply everted.
8. Neck of a less everted cooking pot, possibly from the same pot as Sherd 4.

Discussion

Fabrics, 3, 5, 11 and 14 were all found in Context 52 which is the top fill of a ditch; therefore they are likely to have been deposited

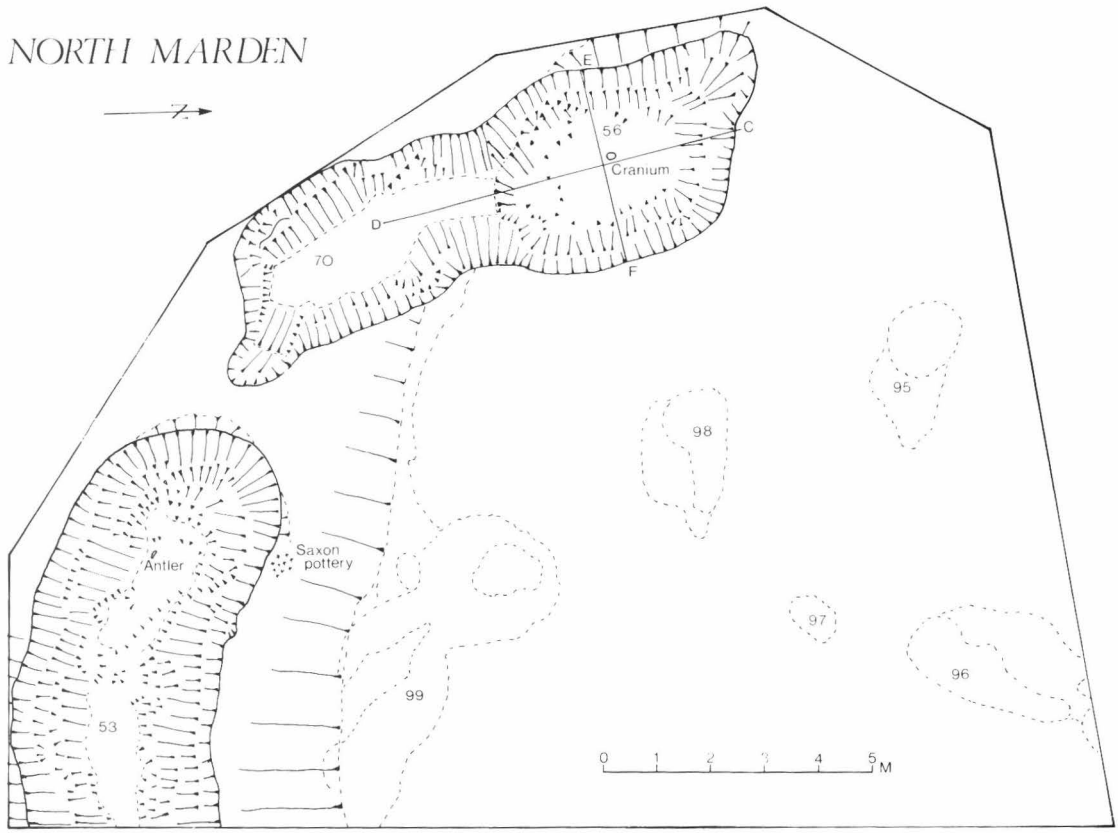


Fig. 5. North Marden, 1982. Plan of western end of barrow. Contexts 95–9 are periglacial features.

there as rubbish. Fabric 14 is very similar to the 'Medmerry-type Ware' (White 1934) in fabric (although it contains no shell) and form, which has been found on various sites in West Sussex and Hampshire, particularly in Chichester (Down 1978; 1981). The Medmerry-type pottery has tentatively been assigned to between the 8th century and the 10th century by the intermediate loom-weights with which it was found. At East Pallant House, Chichester, it is dated to the Late Saxon period but it may be residual. This fabric would fit into Down's Group 1 (Down 1978, 341–3) which is dated *c.* 8th-century to early 10th-century, although he would believe it to be earlier despite the lack of archaeological justification for this (pers. comm.). It is impossible to ascribe a closer date to this fabric. Hodges states that flint- and quartz-tempered ware is the 'only middle Saxon type known from West Sussex sites' (Hodges 1981, 57). Modifying this to include my Fabrics 11 and 14, then either Fabrics 3 and 5, stratified with 11 and 14, are residual or Hodges is wrong. The former is more likely as sand-tempered wares were more common in the Early Saxon period in this area. This deposit suggests that Middle Saxon occupation is to be found in the near vicinity. The rest of the fabrics come from the sunken hut and their main filler tends to be sand, sometimes with a small amount of organic material. This is characteristic of the Early Saxon period. Only sherds of Fabrics 6 and 10 give any indication of form and these are still difficult to date, but fabric similar to 10 has been found on the pagan cemetery at Apple Down, which is as the crow flies less than a mile away from North Marden (Alec Down pers. comm.).

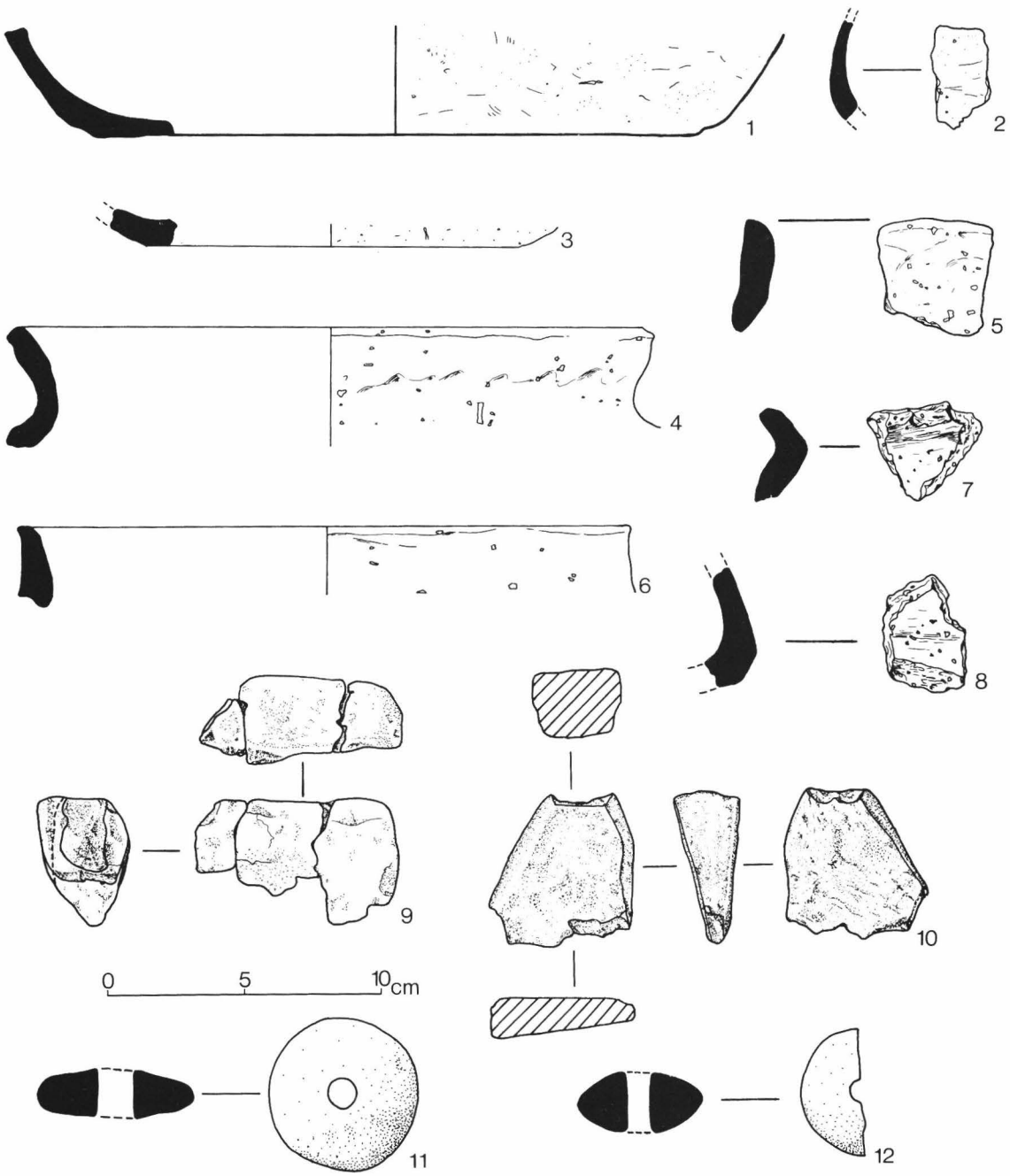


Fig. 6. North Marden, 1982. Saxon pottery, whetstone and spindle whorls.

Down dates the material here to the early 6th century. No 7th-century pottery was found at Apple Down, but as neither the Apple Down nor North Marden pottery assemblages are identical and the North Marden material contains more sand and less organic material, then I prefer to give the North Marden material a slightly later date than the 6th century, especially in view of the fact that Dr. Myres believes that 6th-century material is largely absent from Sussex (Dudley 1981, 88).

OTHER SAXON FINDS

9. Fine and very soft sandstone whetstone (69 g.).
10. Part of a polished whetstone made from a fine-grained sedimentary rock (72 g.).
11. Discoidal clay spindle-whorl tempered with mica and a little fine sand (50 g.).
12. Semi-complete clay spindle-whorl, same fabric as above, but a different form (19 g.).

THE SAXON SUNKEN BUILDING IN ITS REGIONAL CONTEXT (by Harvey Ellerby)

Dated from pottery evidence, the North Marden sunken building has been loosely assigned to the Early and Middle periods of Anglo-Saxon occupation in Britain. Evidence for the very earliest period of occupation in Sussex by the Saxons comes from a reference in the Anglo-Saxon Chronicle, recording the siege of Pevensey by Aella in 491. (Morris (1965) says 471.) This documentary evidence is principally reflected by burials either in barrows or in flat cemeteries, of which all the known examples, except Highdown, are situated between the lower Ouse and Cuckmere rivers. This is an area devoid of many Romano-British villa sites and could represent a controlled settlement of Saxon mercenaries involving the cession of the territory between the two rivers (Welch 1983).

Settlement sites of the Early to Middle period are equally scarce, although the following have all produced evidence of occupation during that period: Bishopstone, Old Erringham, Medmerry, Becket's Barn, Upwaltham, and Chalton just over the county boundary in Hampshire. Of those eight sites, Bishopstone, Old Erringham and Chalton produced plans of buildings similar to that at North Marden, while Becket's Barn and Medmerry produced analogous dating evidence and traces of similar structures.

Bishopstone was undertaken as a rescue excavation first by Thomson then by Bell (1977), and produced three sunken buildings, as well as over 20 timber-framed buildings. Structures Nos. 6, 48 and 50, which were all of the 'simple' two-post-hole variety, produced potsherds and spindle whorls. Structure 48 also had comparable stake-holes. (Bell 1977). The site was dated by a buckle, decorated in the quoit brooch style which, allowing for wear after manufacture, places the site roughly in the late 6th to 7th century.

Chalton, excavated by Addyman (in 1972–3) and Champion (in 1977), produced four sunken buildings amidst over 30 framed structures. Two of the buildings were too large to be compared with the structure at North Marden, though similar to examples at Wijster (Netherlands), but the others, having dimensions of 3·1 × 2·4 metres and 3·0 × 2·1 metres are comparable. Both were shown to have numerous stake-holes and, as at Marden, there was no evidence of a planked floor, like those proposed by West for the sunken buildings found at West Stow (West 1969).

The site at Old Erringham produced a single sunken building, the floor of which was strewn with loom-weights of the intermediate type dated to the 8th to 9th centuries (Holden 1976). Holden cautiously used the loom-weights and an equal-armed copper alloy brooch of the Frankish type, to assign the site to the 8th century (Evison 1966).

Becket's Barn, Pagham, was excavated by Gregory (Gregory 1976). No structures were excavated, but a large quantity of pottery was found and charcoal used to obtain a C14 date of 820 a.d. ± 60. As well as traces of sunken-featured buildings, Thakeham and Medmerry (the latter discovered by cliff erosion) produced similar pottery which, together with intermediate

loom-weights, assigned the sites to the Middle Saxon period.

Despite the fact that the number of excavated buildings is still very small, it is clear that the type of sunken-featured structure discovered at North Marden is common to the majority of those sites. The evidence from such sites as Chalton and Bishopstone shows that these buildings are seldom found singly, thus suggesting that the North Marden building may be part of a nearby settlement, and indeed the various chance finds from the Selsey and Chichester area imply that there are many sites hitherto undiscovered.

The chance finds in the area consist largely of single Middle Saxon burials, such as that at Singleton (Aldsworth pers. comm.) which produced a saucer brooch pierced through to form a pendant, or 6th- to 7th-century cemeteries such as that close by at Snell's Corner, Horndean. In the immediate area is the recently discovered cemetery at Apple Down, excavated by A. Down (Fig. 1). It is situated on a downland spur less than 1 km. from North Marden. From jewellery evidence comprising a button brooch, a disc mount, a gold pommel and a copper alloy buckle, the site has been provisionally dated to the early 7th century onwards.

The distribution map showing North Marden in relation to Sussex and the Hampshire border also highlights the relatively few sites to be found in the scarp-foot zone of the downs. Here, field workers have the problems of the absence of surviving earthworks and the rarity of sherds in the ploughsoil, which are often severely abraded and only recognizable from the fabric. Very few burials or structures have been found in that zone, the exceptions being Medmerry and the pottery from Becket's Barn midden or Pagham churchyard. The thin soils of the South Downs, as opposed to the acid soils and brickearth of the lower scarp zone, have yielded more sites, but the relative lack of sites on the downs west of the Arun to the Hampshire border, including North Marden, might be a reflection of the extensive modern tree cover on this section of the downs. This has made field work difficult and has tended to hide the scatter of settlements which undoubtedly existed here before the mid 8th century (Welch 1983). Welch suggests that selective fieldwork in this area on spur sites, to parallel Bedwin's comments (1978) on the siting of agricultural settlements or farmsteads in the pre-Roman Iron Age, might reveal several new sites of Anglo-Saxon occupation.

Meanwhile, in the absence of any evidence to the contrary and allowing for the inherent problems of using distribution maps, it is possible that the area between the Arun and Portchester was colonized after the early Migration period, and therefore that the Saxon building at North Marden may have been occupied from approximately the second half of the 6th century onwards.

Acknowledgements

For permission to excavate we should particularly like to thank the owner of the site, Mr T. F. Crees of North Marden Farm. For considerable hospitality we should also like to thank the Misses Crees. The principal assistants during the excavation were Andy Croft and Paul Garwood, while Caroline Cartwright supervised the finds. Fred Aldsworth surveyed the site and helped in many other ways. We should also like to thank the Department of the Environment who funded the excavation.

Authors: Peter Drewett, Institute of Archaeology, University of London.
Barbara Holgate, Sally Foster and Harvey Ellerby, Department of Medieval Archaeology, University College London.

References

Bedwin, O. 1978 'Iron Age Sussex—the Downs and Coastal Plain', in *Archaeology in Sussex to A.D. 1500* (ed. P. Drewett). C.B.A. Research Reports, **29**.

Bell, M. 1977 'Excavations at Bishopstone', *Suss. Arch. Coll.* **115**, 1–299.

Down, A. 1978 *Chichester Excavations*, **3**. Chichester: Phillimore.

—— 1981 *Chichester Excavations*, **4**. Chichester: Phillimore.

Drewett, P. L. forthcoming 'The Excavation of a Neolithic Oval Barrow at North Marden, West Sussex, 1982', *Proc. Prehist. Soc.*

Dudley, C. 1981 'Pagan Saxon Pottery in Sussex', *Suss. Arch. Coll.* **118**, 87–94.

Evison, V. I. 1966 'A Caterpillar Brooch from Old Erringham Farm, Shoreham-by-Sea, Sussex', *Medieval Arch.* **10**, 149–51.

Gregory, V. 1976 'Excavations at Becket's Barn, Pagham, West Sussex, 1974', *Suss. Arch. Coll.* **114**, 207–17.

Hodges, R. 1981 'Potters, Pottery and Marketing, A.D. 700–1000', *Suss. Arch. Coll.* **118**, 95–104.

Holden, E. 1976 'Excavations at Old Erringham, Shoreham, West Sussex'. *Suss. Arch. Coll.* **114**, 306–21.

Morris, J. 1965 'Dark Age Dates', in *Britain and Rome* (ed. M. G. Jarrett & B. Dobson), 145–85. Kendal.

Welch, M. 1983 *Early Anglo-Saxon Sussex*. British Arch. Reports, **112**.

West, S. 1969 'The Anglo-Saxon Village at West Stow, an Interim Report on the Excavations 1965–8', *Med. Arch.* **13**, 1–20.

White, G. M. 1934 'A Settlement of the Southern Saxons', *Antiq. Jnl.* **14**, 393–400.

The Society is grateful to the Historic Buildings and Monuments Commission for a generous grant towards the cost of publishing this article.

Sussex Archaeological Collections **124** (1986), 119–28.

BURGAGE TENURE AND TOPOGRAPHY IN LEWES, EAST SUSSEX

by John Houghton

This study considers the sources available for an understanding of land tenure in Lewes over the last 400 years. It suggests that there is a link between rents paid and plot widths, and offers a working hypothesis for understanding the topographical evolution of this ancient borough.

INTRODUCTION

The town of Lewes in East Sussex has never been doubted to be an ancient borough, even though it remained unincorporated until the local government changes of the second half of the 19th century. It is listed in the 'Burghal Hidage', and probably originated as a defensive strong point against coastal raiders during the reign of either King Alfred or his son Edward the Elder.[1] We may, therefore, be able to relate the later system of land tenure in Lewes to early systems of 'burgage tenure'. Until the spread of housing in the 18th century, the layout of the town was by ribbon development along both sides of a ridgeway. This ran from the higher downs on the west towards the crossing of the river Ouse on the east. Another road came down the river valley from the north and climbed to cross the ridgeway at the centre of the town, and thus perhaps created the original focus around which the *burh* evolved. Lack of further development until the last 250 years has meant that the structure of the town and much of its earlier fabric still survive with little change. The visible townscape can thus be the more easily related to documentary sources.

SOURCES

Most of the property in the period for which records survive was freehold, subject only to fealty and a quitrent paid to the lord. Freeholders were under no obligation to present changes in ownership at the borough court. Previous students of property descents in Lewes seem to have ignored borough records on the assumption that they provide information only about a few copyholds scattered about the town. In fact, the court records of the borough of Lewes contain many transactions relating to small pieces of copyhold attached to the freeholds, so that the descent of the freeholds can be deduced from that of the copyholds. Some freehold property in Lewes was also held of manors outside the town, but the descent of this property can also be traced where it was associated with copyhold property held of Lewes borough. One case was found where the ownership of a freehold could be followed for nearly 400 years by copyhold transfers of a small plot of land six feet square on which a privy had been built.

The court books can be supplemented by the rentals and manorial surveys which the borough steward periodically drew up. A rental is a list of all properties, whether freehold or copyhold, held of a given manor or borough at a certain date, and shows the terms on which the properties were held, the quitrent payable and other information. No Lewes borough rental, either comprehensive or partial, is known before a fragment of *c.* 1570, but there are some bailiff's accounts at the Public Record Office starting in the early 15th century. These record only the

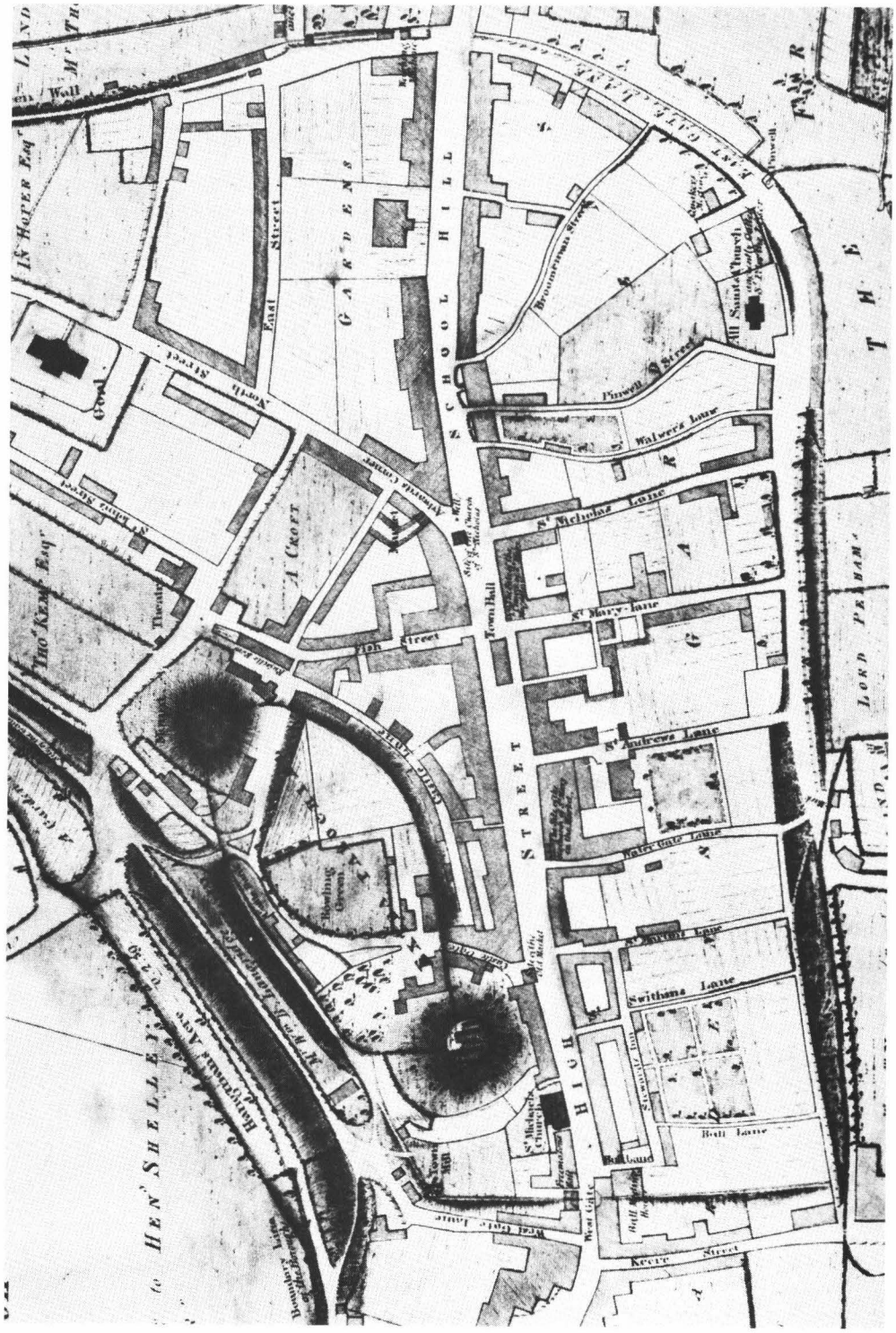


Fig. 1. Lewes in 1799 (from William Figg's map; E.S.R.O., LEW/C2/3/1).

total rents receivable, probably as recorded from some lost rental, and then add new rents and deduct 'decayed' rents to arrive at new totals to be accounted for. Some properties entered as new rents in this way can be identified in later rentals as established rents: for example, a grant to John Horton in 1430 of land outside, and bounded by, the borough wall[2] can be identified with a property 'late Horton's' in the same location and at the same quitrent in 1614,[3] and from there continuously to modern times where it can be seen to be land at the back of nos. 2–3 Keere Street.

A major source for historians of Lewes rape is the document known as the 'Book of John Rowe', compiled by the steward of the Earl of Abergavenny in the early 17th century. Its present whereabouts is not known, but a transcript was published in 1928;[4] unfortunately this can be shown in some places to be inaccurate. It contains much information about Lewes, including a rental for 1624 which is the earliest extant for the whole borough, although the information it contains is clearly not contemporary. As is indicated by the fragment of *c.* 1570[5] referred to above, the book of John Rowe is a compilation or office copy made from documents drawn up at various dates; some persons described as owners can be shown from other sources to have died as much as 24 years before the date of the rental.

Two later rentals were also studied, those for 1683[6] and 1825.[7] A comparison between the four rentals, spanning the period *c.* 1570 to 1825, shows that with minor differences they were all constructed on the same basis, and thus provide four major surveys of most of the property in the town in the 16th, 17th and early 19th centuries. Therefore they comprise a framework within which individual property conveyances can be fitted.

The 1624 rental lists about 168 properties, of which some 40 are described as, or can be seen from the court books to have been, held by copyhold tenure. By 1825 the freeholds had increased slightly to 136, mainly due to more thorough recording, although there may have been some enfranchisement of copyholds. Copyholds had increased substantially to 123, partly by continuing grants from manor waste, but more generally by the division of existing copyholds into several smaller holdings. For this study, details were collated for 224 of the modern High Street properties, and for about 100 more in side streets and other locations.

Other sources which help in the physical location of property, although not describing land tenure, are the 1812 street numbering of Lewes,[8] a list of owners and occupiers of property in 1790 compiled by T. W. Woolgar,[9] and early street directories. Poll books, hearth tax returns[10] and records of pew rents are all helpful once the sequence in which they were constructed can be recognized. In the parish of All Saints, the now lost records of the poor rates are fortunately preserved in Woolgar's transcripts. Lastly, as not a great deal of rebuilding took place between the 1825 rental and the first large-scale (1/500) Ordnance Survey maps of 1874, satisfactory correlations can easily be made between those two sources.

CUSTOMS

The Book of John Rowe also contains a custumal of 1622 which recognizes special provisions for Lewes borough from other manors in the rape. A custumal lists the terms under which property was held, the services that holders were to render to the lord, and other manorial incidents such as fines, reliefs and heriots. Land held of Lewes borough was held by payment of quitrent, fealty and suit of court,[11] but freeholders paid neither relief nor heriot, and copyholders paid no heriot on death or alienation 'because they are within the Borough'.[12]

The 1825 rental has on its first page a list of the terms on which property was held, which reflect some adjustments made in the 200 years since the custumal of 1622. By starting with the 1622 custumal this evolution can be followed, not merely by the changes listed in the 1825 rental, but by the actual occurrence of the

changes during the intervening period as revealed by individual court book entries. Although freeholders paid neither relief nor heriot in 1622, at two periods reliefs are recorded as having been paid on freeholds,[13] and some freeholders seem to have come voluntarily to court to pay a fine and thus record a change of ownership.[14] These may be mere aberrations by an over-zealous steward or, as seems more likely, may represent the emergence into a public record of some process continuing normally in the background, which would have enabled the steward to keep track of the quitrents due and the services to be performed. A case was found in 1619 where a freeholder, Robert Drewe, was distrained to come to court to do his fealty.[15]

Freedom from heriot extended to all property inside the borough boundaries, whether held of Lewes borough or any other manor, as can be seen from the records of the manors of Portslade, Plumpton and Westout.[16] Despite this freedom from heriot, within Lewes borough a so-called heriot begins to appear in 1667, although this may be a legal fiction to try to increase the revenue of the court, since it is paid by the incomer, not the alienating copyholder.[17] This is an interesting development, but a later hand in the 1825 rental queries whether it was lawful. In that rental, copyholds are listed separately from freeholds, and three kinds are found. There are ancient copyholds on which fines at will are paid (usually one year's quitrent). Then there are grants from the waste on which fines 'certain' (i.e. fixed) are paid, usually 6d. Lastly, starting from 1667, new grants from the waste, and earlier copyholds being broken into smaller parcels for redevelopment, were subject to the new 'fine and heriot certain'. One example was also found of the formula 'fine at will and heriot certain'.[18]

Ancient copyholds subject to fines at will were sometimes inconsistently treated. In one example the 1607 fine was 40*s.* for a 6*d.* quitrent, but by 1641 this had risen to £15[19] (although a cash discount of £2 was offered for prompt payment!). In another case, regrant of a forfeited copyhold was made and the fine assessed, being annotated by the steward 'Fine 2s. and no more for that I have seen copies of the time of Henry VII, Henry VIII and Queen Elizabeth in all of which the fine was 6d. and no more but not certain'.[20]

LAYOUT OF RENTALS

All the rentals examined are set out by ecclesiastical parishes, starting on the east with All Saints parish at Lewes bridge. The listings then proceed westwards through the parishes of St. John sub Castro, St. Michael, and then St. Peter and St. Mary Westout (now St. Anne). In the 1624 rental only, the parish of St. Michael is divided into two parts, that within and that outside the borough wall at Westgate. Listing by parishes in this way seems to have been a matter of convenience, since the parish boundaries had no intrinsic significance for manorial or burghal administration, except regarding the aleconners. This can be seen in the 1622 custumal where distresses may be made 'by the inhabitants of the whole borough (tyme beyond all memorye) consisting of four parishes attendant at one Leete'.[21]

In each rental, property is listed in sequence but is entirely omitted if not held of Lewes borough, the rental sequence passing on as though that property did not exist. Properties omitted in this way may have belonged to the Crown, the Church or some outside manor. Probably the 1624 rental did not omit property that had been freed from quitrent, and two cases are listed where the rent is given as nil.[22] The adjective 'out-manor' is used hereafter to describe property which for whatever reason was not held of Lewes borough.

The sequence of listing entries in the 1624 rental starts in each 'outer' parish from the north-east corner property in the High Street, and then goes anti-clockwise along the north side of the High Street as far as the western parish boundary, turning south to cross the street and return eastward along the south side. In the two

'inner' parishes the sequence is reversed, and starts from the south-east property, going westwards to the west boundary, then crossing north to return eastwards. So the two outer parishes were surveyed counter-clockwise, the two inner ones clockwise. The significance (if any) of this does not now appear but the procedure continues largely unchanged to 1825, and still shows in the perverse street numbering of Lewes today. Most properties listed were in the High Street itself, but Fisher Street, St. Mary's Lane (now Station Street), Keere Street and Westgate Street all had some development to list. In such cases the rental turns into the street on reaching it, proceeds to the end, crosses over, and returns by the other side to reach the High Street again. The *c.*1570 rental is arranged differently: while proceeding east to west in each parish, it lists the properties on both sides as it comes to them, alternating between the south and north sides, apparently following the lists of suitors in the court books. The clockwise/anti-clockwise sequence appears for the first time in the 1624 rental, and is followed a year later in a suitors' list of 1625, which suggests that this is an innovation of the steward.[23] The 1683 rental groups all the property of one owner in each parish under his first entry; this innovation did not continue, which is just as well for it is very confusing. The 1825 rental follows the 1624 pattern for freeholds, but extracts and lists copyholds separately, in no clear locational sequence, but with 'fine at will' properties first, 'fine certain' ones second and 'fine and heriot certain' ones last. This gives some idea of the chronology, and helps to establish the original grant date, but it is difficult for the location on the ground. Once the variations are identified, the relationship between the four rentals is very close indeed.

DESCRIPTION OF PROPERTIES

Each entry in all the rentals lists the person liable to pay the quitrent on the property. In most cases he is either the owner or the occupier. Sometimes the occupier is listed first and the owner afterwards. This may be where the owner lives out of town, but the occupier is well known in the town.[24] One or more previous owners are given on the familiar formula 'late X once Y at one time Z'. Some properties are named, either after a previous owner or, more frequently, from a 'sign', e.g. 'the Inne called the White Lyon';[25] the latter may or may not be inns or taverns.

Usually the property is described as a tenement, or a tenement with garden, and occasionally as a 'capital messuage'. There are occasional references to physical objects (many now gone) in the townscape, e.g. 'Near the Market House', 'Next to Broomans Lane' or 'by the bounderstone of the Borough'. These serve more to direct attention to the object itself than to provide a positive location for the property: 'Next to Broomans Lane' can be either east or west of the lane, and in any position along its length.

Reversals, displacements and errors are found in all the rentals, but usually by only one step or property. These may have been caused by careless copying, or by omission and later insertion in the wrong position. Where a discrepancy occurs between the rentals it has been assumed that the majority is correct, but one example found on the wrong side of the road in *c.* 1570 was not adjusted to the right position until 1825.[26]

The central piece of information is the quitrent, used to determine the obligation for fealty, and the sum due to the lord. The quitrents ranged from 1*d.* up to 18*s.* 8*d.*, some ending in halfpennies but the majority being 6*d.* or multiples thereof. The 1683 rental tried to get rid of the halfpence by rounding up to the next whole penny, but without success. The 1624 rental was pessimistic about collecting any quitrent, on the grounds that

> some rents are ancient, some denied, none new, therefore they are difficult to collect; others are completely lost.[27]

The steward in 1624 also had reservations about

some of the quitrents he was listing, e.g. 'pays 10d. but should pay 17½d. so it is said'.[28]

The quitrent was a fixed sum, and the phrase 'none new' in the 1624 rental shows that the system was of some standing and not a recent reorganization. Unless there was some change in the property the quitrent did not change, and therefore helps to identify the same property in different rentals, even where a large property has been broken up into smaller parcels or several small parcels have been engrossed. A High Street property owned by Henry Rose in 1624 then paid 7½*d.*, appears as 'late Rose 7½d.' in 1825, having been numbered 163 in 1812, and can be seen on the 1874 Ordnance Survey map; thus it can be assumed that the property listed in 1624 occupied the same plot as that numbered 163 now. In 1624 what are now nos. 66–74 High Street were one property paying 3*s.* 8*d.*[29] By 1683 4*d.* out of this total had been engrossed into an adjoining plot, and the remainder divided into four plots of 10*d.* each. There had been redistribution again by 1825, only one remaining at 10*d.*, two then at 7½*d.*, and one at 15*d.* The total is still 3*s.* 8*d.* less 4*d.* Throughout all these changes the sequence of owners' names remains intact and thus helps to identify the plot and the progress of its development. This is of value in Lewes, where so many buildings are Tudor with Georgian façades, but standing on medieval undercrofts. The shifts in the distribution of the quitrents can offer clues to the dates when changes were made in the appearance of a property.

CHANGES IN QUITRENT APPORTIONMENT

If a freeholder divided his property he could either divide the quitrent or continue to pay it himself, in which case the newly created separate messuage would be free of quitrent.[30] In Lewes examples of every possible variation can be found. Freeholders often divided their quitrents as they divided their property, but sometimes the full rent remained on the 'rump', leaving the remainder of the property free of any quitrent. Where a rent-free property was created in this way it appears to drop out of the record and is difficult to detect. Some entries in the rentals reconcile easily, throughout the period, and can be confirmed by additional sources where available. Others need more supporting evidence before valid reconciliations can be made. To this end a pro forma was made out for each property fronting the High Street, and all information was summarized there. Once a linked structure for the main rental entries had been achieved, actual conveyances (of which only the barest outline, abuttals and the source were noted on the pro forma) could be used to place the property in the correct position relative to its neighbours. Some properties had such a clear succession of information, and were so obviously of a date where the plot-head building could be dated to before the earliest rental available, that these became 'markers', reducing the possibility of error considerably.

One problem which this method overcame was the concept of the 'capital messuage', which at least in Lewes was a principal building which paid not only its own quitrent, but those of a number of other properties in the same ownership. The capital messuage accounted for the total sum to be paid.[31] Where this was found, growth of the total quitrent from one rental to another was matched by the disappearance of a quitrent of the same value from some other property in the same ownership.

Although quitrents are clear enough in the rentals, only very occasionally are they mentioned in conveyances, and then only where a division of the property involves restating the division of the quitrent. In 1720 a property was divided in moieties, and thereafter the profits and the quitrent liability were also in moieties.[32] Notice of a public auction of the properties of J. C. Pelham in 1840, comprising the White Hart Hotel and other buildings in the town, lists the quitrents for each property to be sold separately although up to that time the White Hart Hotel had acted as the capital messuage.[33]

ESTABLISHING THE BASIS OF QUITRENT VALUES

It will have been seen that the rentals were not strictly concerned with the properties themselves, but with the accountability of owners or occupiers for the manorial incidents, particularly quitrent and fealty, the latter requiring service at the borough or barony court. No source was found which defined the size of a standard plot in Lewes, and no explanation was found of the method by which quitrent was calculated; the name 'burgage', moreover, is never used to describe the plots, though that is what they were. However, the practice of dividing the quitrent as the messuage was divided suggests that in some way the sum payable was related to the size of the property.

There is no evidence for plot depth in Lewes. The distance between the High Street and Stewards Inn Lane, a typical medieval 'back lane' running parallel with it, perhaps suggests that plots were laid out 100 ft. deep. Stewards Inn Lane, however, covers too small a part of the town to be the basis of a conclusion, though there is documentary evidence for other, now lost, back lanes in Lewes. Without any indication of the depth of burgages, it is not certain whether plot depths actually varied, or whether variations result from forward encroachment. However, it is possible to postulate a fixed frontage, since there is evidence to suggest that side boundaries have considerable survival power.

The actual modern built-up frontage between various side lanes was measured, and the quitrent total available for that frontage was calculated, to give a quitrent yield per foot of frontage. In many cases, the known presence of 'out-manor' properties had to be allowed for, and in some cases it was difficult to establish a correct set of figures. Linear feet, and pence at 240 to the pound sterling, have been used throughout, but fractions of pence have been expressed by decimals. Table 1 shows the results. On either side of School Hill (that part of the High Street that drops down to the river crossing) the probable general value of one foot of frontage was 0·3*d.*, while in the upper part of the town, the market place area between St. Mary's Lane and Castlegate has a probable value of 0·6*d.*, twice that on School Hill. Beyond St. Swithun's Lane, it reverts again to 0·3*d.* The quitrent totals include some halfpence elements. These occur most often where there is a bend or curve in the alignment of the High Street, where a plot thus formed less than a rectangle, and an abatement of $\frac{1}{2}d.$ seems to have been allowed. In a plot on the inside of a bend, the rear boundary would be narrower than the front, while opposite, on the outside of the bend, the reverse would be the case. In the 'premium' zone, the abatement is doubled at 1*d.* Abatements also occur in plots flanking side streets where a side street made a plot narrower. This may suggest that when the plots were laid out they related to a pre-existing street pattern.

On the south side of School Hill a continuous run of properties is listed in the 1624 rental (the longest complete run found anywhere) and remains virtually unchanged until it can be related directly to the street numbering of 1812, the 1825 rental, and the 1874 Ordnance Survey map, on which the actual properties and their quitrents can be recognized. While there are some variations on the plot heads, as small portions of frontages were exchanged between properties, the pattern of the plot-side boundaries shows clearly that the plot widths were 20 ft. or thereabouts for each 6*d.* of quitrent, and, as the majority of the quitrents in this section were 6*d.*, the majority of the plots were 20 ft. wide. The holding of Richard Daby, where several plots had been engrossed, had a quitrent expressed as 1*s.* $11\frac{1}{2}d.$ plus 3*d.*, representing four 20-ft. plots and one 10-ft. plot, one of the plots being not quite rectangular and thus enjoying a $\frac{1}{2}d.$ abatement.

LEWES AND OTHER MEDIEVAL TOWNS

Many medieval English towns were planned or replanned on regular lines using standard plot dimensions. It is apparent from the studies of

TABLE 1
Relation of Quitrents to Frontages

Location	*Measured distance (feet)*	*Total quitrent (d.)*	*Rent per foot (d.)*	*Rounded rent per foot*[1]	*Adjusted frontage*[2]
School Hill					
N. side A	175	52·5	0·3	0·3	175
B	100	36	0·36	0·3	120
C	190	57	0·3	0·3	190
S. side A1	110	68	0·618	0·6	113
A2	283	85	0·3	0·3	283
B	117	39	0·33	0·3	130
C	156	28	0·18	?	?
High Street, S. side					
St. Nicholas's to St. Mary's Lane	135	144	1·07	?	?
St. Mary's to St. Andrew's Lane	200	122·5	0·61	0·6	204·2
St. Andrew's to Watergate Lane	80	52	0·65	0·6	86·7
Watergate to St. Martin's Lane	120	76	0·63	0·6	126·7
St. Martin's to St. Swithun's Lane	140	87	0·62	0·6	145
St. Swithun's to Bull Lane	115	54·5	0·47	0·6 or 0·3	90 181
High Street, N. side					
Pipe Passage up to but not including St. Michael's	62	36	0·58	0·6	62
St. Michael's (east boundary) to Castlegate	198	60	0·303	0·3	200
Castlegate to County Hall (old), W. side	360	214	0·594	0·6	356

Notes
[1] i.e. rent per foot rounded to the nearest consistent single decimal.
[2] calculated by dividing total quitrent by rounded rent per foot.

others that 'burgages are the basic "cells" in any analysis of medieval town plans'.[34] In most towns for which studies have been published, it can be seen that the initial plot pattern has been a remarkably stable element.[35] Even after recent and in some cases savage demolition and rebuilding of town centres, although the plot-head buildings have been swept away and frontage divisions lost, the integrity of the old property boundaries has often been preserved in the back land or plot-tail land, or can be confirmed by excavations, as at Winchester and York; at York plot boundaries have been found to have survived unchanged since the 10th century.[36] Even so, there is no 'standard' or fixed size for a burgage applying over wide areas, and the size has to be worked out for each town separately. All that may reasonably be claimed is that the

later the foundation of the town, the larger the size of the plot, probably deliberately in order to attract settlement. Plot width may vary from 15 ft. to 70 ft. or more, and while a standard burgage may have a depth to width ratio of about four or five to one, shorter and longer burgages will also be found.[37] The physical limits of the site itself may have a bearing on this.

In southern England a burgage width of 20 ft., if not standard, is certainly not unusual. This dimension is found, for example, in Southampton[38] and Farnham (Surrey).[39] In Chichester, where in Domesday Book quitrents were similar to those in Lewes, averaging 6*d.*, a significant number of plots in the main streets have a 20- or 40-ft. module.[40] Other writers have seen other patterns, and variations are to be expected throughout the country. However, an average plot width for Lewes of half a chain (33 ft.) as suggested by Burtenshaw cannot be verified from ground or map evidence.[41]

Attempts have been made to relate burgage widths to statute linear measure, particularly to the statute perch of $16\frac{1}{2}$ ft. This may work well in those layouts made after the introduction of statute measures, but a 20-ft. module does not seem to relate to any particular standard. In Sussex there is fitful evidence for a unit of measure called a 'pall', and the earlier court books of Lewes borough describe the bounds of certain properties in palls. As with many such local measures a pall can vary, and surviving evidence offers a number of choices.[42] The most likely measure seems to be 6 ft. 9 in., so if Lewes burgages were based on palls the most probable dimension would have been three palls, or 20 ft. 3 in. This is an acceptable margin of error against the calculated figure of 20 ft.

PLOT PATTERN AND URBAN LAYOUT

The principal objective of this paper has been to identify the relationships of quitrents and property frontages, with a view to gaining understanding of the urban layout of Lewes. It is not at present possible to determine when any layout identified by these means was made. W. H. Godfrey suggested that there was an underlying pattern in the layout of Lewes:

> . . . it is curious to find that three equal lengths of 1,000 feet mark the distances between the centre of the East Gate to the beginning of the Market Place, between the same point to the centre of the West Gate, and again from there to the Churchyard wall of St. Annes.[43]

There is a risk in such theories (which must apply equally to this study), when based mainly on large-scale maps, that coincidence of measurement may be more apparent than real. What Godfrey says cannot be verified, for neither the centre of the East Gate (if one ever existed) nor the actual start of the Market Place are known with any certainty, the churchyard wall of St. Anne's is conveniently long enough to soak up inaccuracies, and the line of the High Street is not straight. However, the theory is attractive, and the existence of a regular pattern of secondary lanes running south from the High Street has always suggested some basic plan, from Horsfield's theory of a Roman camp onwards.[44]

If the concept of 20-ft.-wide burgages is applied to the plan of Lewes, a pattern does emerge. On the south side of the High Street there are 300-ft. intervals between the point where the town wall crosses at Westgate, St. Swithun's Lane, Watergate Lane, and the carriageway to the White Hart Hotel car park, which marks the parish boundary of St. Michael and St. John sub Castro, anciently the boundary of St. Andrew and St. Mary in Foro. Beyond that boundary the width of St. John sub Castro parish is known to be 180 ft., for the boundaries still exist, but further east there is no clear evidence. On the south side of the High Street, therefore, from the town wall to the east side of St. John's parish, there is room for three blocks of fifteen 20-ft. wide burgages and one block of nine. If the space of one burgage in each block is occupied by

two lanes each 10 ft. wide, then the pattern is clearer still. Each block is separated by a secondary lane from the next, and each block has a 'spine' lane somewhere near the middle. St. Swithun's Lane, Watergate Lane, and the unnamed lane carrying the parish boundary are not named for churches (there was never a church of St. Swithun), while the spine lanes carry the names of the various parishes: St. Martin, St. Andrew and St. Mary in Foro. Developing this further, east of St. John's parish there are three blocks of 15 burgages, even though there are now no marker lanes. Three parishes (St. Nicholas, St. Sepulchre and Holy Trinity) are known in this area. The odd 3*d.* burgage in Richard Daby's holding on School Hill (see above) now reveals itself as occupying the point where a missing boundary lane, half a burgage wide, should exist.

It is from checking the rentals, and plotting them value for value on maps, that (at least where there is surviving physical evidence) some traces of an underlying town plan of Lewes can be revealed.

Acknowledgements

I would like to record particular thanks to Tim Hudson, John Farrant, Sue Farrant and Christopher Whittick, without whose help and encouragement this paper would probably not have been written.

Author: John Houghton, Briar Lawn, Swanborough, Lewes, East Sussex BN7 3PE

Notes

[1] D. Hill, 'The Burghal Hidage: the Establishment of a Text', *Medieval Arch.* **13** (1969), 83–93.
[2] L. F. Salzman, 'The Borough of Lewes in 1498', *Suss. N. & Q.* **5** (1934), 65–70.
[3] East Sussex Record Office (hereafter E.S.R.O.), SAS/A 89.
[4] *The Book of John Rowe*, ed. W. H. Godfrey (Suss. Rec. Soc. **34**).
[5] Kent Archives Office, U 269/E 184.
[6] E.S.R.O., ADA 49.
[7] E.S.R.O., ADA 165.
[8] MS. in Suss. Arch. Soc. library.
[9] Thomas Woolgar, *Spicilegia* (Suss. Arch. Soc. library).
[10] Public Record Office, E 179/258/18 (microfilm at E.S.R.O., XA 5/2).
[11] *Suss. Rec. Soc.* **34**, 78.
[12] Ibid. 8.
[13] E.S.R.O., ADA 156, f. 42.
[14] E.S.R.O., ADA 158, pp. 7–8 (1721).
[15] E.S.R.O., ADA 156, f. 14v.
[16] *Suss. Rec. Soc.* **34**, 79; E.S.R.O., AMS 5510/3.
[17] E.S.R.O., ADA 156, f. 54.
[18] Suss. Arch. Soc. library, SAT 142.
[19] E.S.R.O., ADA 156, f. 54.
[20] Ibid. f. 44v.
[21] Ibid. f. 11.
[22] *Suss. Rec. Soc.* **34**, 124.
[23] E.S.R.O., ADA 156, f. 20.
[24] *Suss. Rec. Soc.* **34**, 10.
[25] E.S.R.O., ADA 49.
[26] *Suss. Rec. Soc.* **34**, 9. Edward Brooke belongs to the opposite side of the street, and is found correctly located in 1825 in E.S.R.O., ADA 165, p. 7.
[27] *Suss. Rec. Soc.* **34**, 16.
[28] Ibid. 13.
[29] Ibid. 12.
[30] M. de W. Hemmeon, *Burgage Tenure in Medieval England* (1914), 75.
[31] E.S.R.O., RAF 88/1.
[32] E.S.R.O., SAS/C 546.
[33] Documents on display in hotel.
[34] T. R. Slater, 'The Analysis of Burgage Patterns in Medieval Towns', *Area*, **13**(3) (1981), 211–16.
[35] Ibid.
[36] *Medieval Arch.* **21** (1971), 248–9.
[37] M. Aston & T. Rowley, *Landscape Archaeology* (1974), 99.
[38] Colin Platt, *The English Medieval Town* (1976), 52; C. Platt, *Medieval Southampton* (1973), 46.
[39] Nigel Temple, *Farnham* (1973), p. xvii.
[40] Inf. from Mr. R. R. Morgan, Documentary Research Group, Chichester (1982).
[41] D. Burtenshaw, 'The Sussex Gap Towns: a Geographical Analysis' (London Univ. M.A. thesis, 1963). Since this thesis also provides a photograph of Keere Street, described as Watergate Lane and claimed to be the spine road for the parish of St. John sub Castro (where it can never have been), the half-chain theory can perhaps be treated with reserve.
[42] J. H. & S. Farrant, *Aspects of Brighton 1650–1800* (1978), 70, quoting sources.
[43] *The Official Guide to Lewes*, ed. W. H. Godfrey, 2.
[44] T. W. Horsfield, *The History and Antiquities of Lewes* (1824), **1**, 71–4.

Sussex Archaeological Collections **124** (1986), 129–39.

THE BOTANICAL EXAMINATION OF HEDGES IN EAST SUSSEX AS A TOOL IN HISTORICAL RESEARCH*

by Monica Maloney and Eileen Howard

INTRODUCTION

Detailed study of the composition of hedges was first undertaken in the 1960s during nature conservancy work at Monks Wood Experimental Station in Huntingdonshire. Dr. Max Hooper and his colleagues found that hedges in their area varied considerably in the number and type of species present. These differences could not be satisfactorily explained by geographical factors such as climate, soil type and situation. They did however find a correlation between the age of a hedge and the number of species in it; for example, hedges which were known from documentary evidence to be medieval in date tended to be very mixed, whereas 18th-century enclosure hedges usually contained only two or three species. It also appeared that certain shrubs were common in older hedges but were seldom found in those of recent origin. Subsequently, after investigation of groups of hedges of known date in various parts of the country, Dr. Hooper put forward the hypothesis that each woody species in a 30-yd. stretch of hedge represented approximately 100 years of age. He stressed that this was only a rough estimate, and that before attempting to assess the dates of hedges in a particular area a number of hedges of known date should first be examined so that a local chronology could be established.[1]

During the last two decades hedge surveys have been carried out by biologists and historians in various parts of Britain. The basic premise of Hooper's theory has been widely accepted though often with important reservations, as can be seen from the following examples. Alan Willmot, in his survey of hedges at Church Broughton, Derbyshire, in 1980, found that there was 'a highly significant but weak effect of age on number of woody species'. He stipulated that a calibration curve must be made, using at least 50 hedges, before attempting to deduce the age of hedges in a specified area.[2] Dr. R. A. D. Cameron, writing in 1984, acknowledged that there was a 'relationship between age and species richness' though the composition of hedges was influenced by many other factors also.[3]

Unfortunately hedge 'dating' has tended to become a popular pastime; many surveys have been carried out using unsatisfactory methods and ignoring local conditions and history, so that the results have often been unreliable.

COMPOSITION OF HEDGES

In this type of work the term 'woody species' includes all shrubs and trees but excludes climbing or straggling plants such as Bramble *(Rubus sp.)*, Honeysuckle *(Lonicera periclymenum)*, Bryony *(Bryonia dioica)*, Black Bryony *(Tamus communis)* or Traveller's Joy *(Clematis vitalba)*. Many of the commoner hedgerow species occur in most parts of lowland Britain, though there is some variation according to soil type and local climatic conditions. Privet *(Ligustrum vulgare)*, Wayfaring Tree *(Viburnum lantana)* and Dogwood *(Thelacrania sanguineum)* are more abundant on chalk, while Hazel *(Corylus avellana)* and Elm *(Ulmus procera)* require richer soil with less calcium. Ash *(Fraxinus excelsior)* is more suited than Oak *(Quercus robur)* to exposed

* Botanical nomenclature is according to A. R. Clapham, T. G. Tutin & E. F. Warburg, *Flora of the British Isles* (1962).

chalk downland, and most species of Willow *(Salix sp.)* require a damp situation.

The number and type of species present can give some idea of the manner in which the hedge originated as well as indicating its approximate age. E. Pollard has shown that hedges derived from old woodland typically contain Hazel, Field Maple *(Acer campestre)*, Spindle *(Euonymus europaeus)* and Dogwood with a mixture of other woody species, and ground flora such as Dog's Mercury *(Mercurialis perennis)*, Bluebell *(Endymion non-scriptus)*, Primrose *(Primula vulgaris)* and Wood Anemone *(Anemone nemorosa)*.[4] These hedges appear to represent either strips of vegetation preserved by early farmers as field boundaries during piecemeal clearance of woodland or the borders of tracks or pathways in a wooded landscape.

However the majority of hedges at any period were no doubt deliberately planted with one or a mixture of plants to form a stockproof barrier. Hawthorn *(Crataegus sp.)* and Blackthorn *(Prunus spinosa)* have proved to be the most suitable species for this purpose, and one or other, or a combination of the two, form the basis of a high proportion of British hedgerows. Growing with them are a number of species valuable as sources of materials which in medieval times were essential to man, and for which there was often no substitute. Ash and Hazel were managed by coppicing to produce long poles which in the case of Hazel were used for hurdles, thatching spars, wattles and props, while from Ash were made handles for tools and weapons, shafts for carts, wheel rims and hoops. Dogwood provided skewers and goads. Maple was used by cabinet-makers, and the various species of Willow for baskets, carts, weatherboards and later cricket bats. Elder *(Sambucus nigra)* also was used for skewers and in cabinet work and the hard, tough wood of Hornbeam *(Carpinus betulus)* was suitable for cogs and screws.[5] Documentary evidence has shown that timber trees were planted in hedges in the Middle Ages,[6] particularly Oak and Elm. The wood of Oak was always in demand for buildings, ships and furniture, and it also produced the best charcoal for smelting iron, while the bark was used for tanning. Elm wood resists decay in waterlogged conditions and so was suitable for harbour works and watermills as well as water pipes, furniture and coffins.[7]

Hedgerow plants were also an important source of fuel, food and animal fodder. Ash, Elm, Holly and Hornbeam all provided good firewood, and Hornbeam, like Oak, supplied charcoal. Nutritious food was produced in the form of nuts from Hazel and the fruit of Crab Apple *(Malus sylvestris)*, Bullace *(Prunus domestica)*, Blackthorn and various berries. Acorns and the foliage of Oak, Ash, Elm, Hazel, Holly *(Ilex aquifolium)* and Hawthorn were all eaten by domestic animals;[8] to this day sheep can be seen grazing off low branches of Elm in parkland and nibbling young shoots of Hawthorn in hedges. Moreover, according to Culpeper,[9] nearly all the common shrubs and trees had medicinal properties and might have been welcomed for this purpose also.

Thus the higher number of species in older hedges may be explained by the tendency of man to encourage or introduce useful trees and shrubs, as well as by the process of colonization by other species. The incentive for multiple planting would have decreased as alternative materials became available, so that by the 18th century, the great age of parliamentary enclosure, a quick-growing stockproof hedge would have been the optimum, and for this a monoculture of Hawthorn was found to be the most suitable.[10] Nevertheless the Earl of Haddington, writing in about 1733, described a very different method of hedge construction: '. . . they have Ditches as usual, and plant the hedge a Top with White Thorn, mixt with Maple, Crabs, Hasel, Elder, Oak, Elm and Ash, and on the Banks on each side they set Black Thorn, Bramble and Common Bryar, to keep it close that nothing can pass.' He did not specify the locality where this took place and remarked that 'over most of England they make much use of the Sloe or Black Thorn and Common Brambles'.[11] William

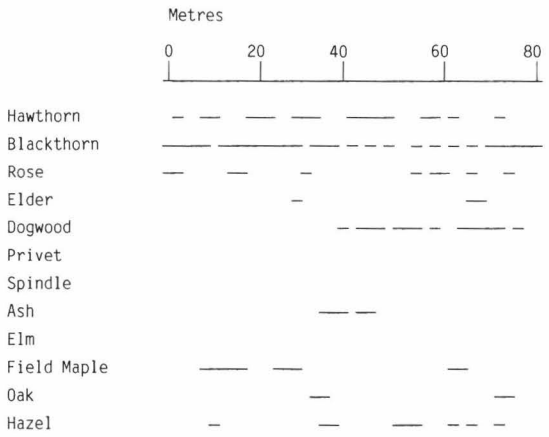


Fig. 1. Hedge on boundary of Norlington open field system, Ringmer. Distribution of species.

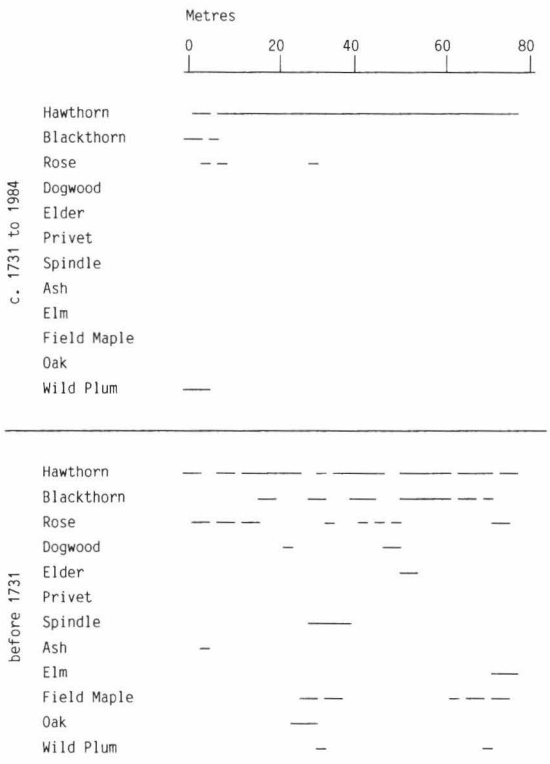


Fig. 2. Hedges on Ringmer/South Malling parish boundary. Distribution of species.

Marshall in 1798 categorically stated that 'modern hedges' were of Hawthorn, both in the 'Western and Eastern Chalk Hills'.[12] Although the method of planting described by Lord Haddington may not have been widely adopted, it is clear that the possibility of multiple planting at any period must always be borne in mind.

First to establish themselves in a new hedge are usually Rose *(Rosa sp.)*, Elder and Ash.[13] Elder in particular quickly fills any gaps, and though the individual plants survive for only about 70 years they are constantly replaced, especially in relatively rich soil. Hedges consisting almost entirely of Hawthorn with one or two of these colonizing species are typical of enclosure fields dating from the 18th or 19th centuries.

The distribution of Spindle is of particular interest. As its name implies the wood was most suitable for spindles, and the plant would have been valued as the raw material for an essential tool in spinning. However, it is known to be the winter host of the eggs of the Bean aphis *(Aphis fabae)*.[14] Spindle is fairly common in older hedges in which there are at least six other species,[15] but it scarcely ever appears in a more recent hedge. Either it is a very poor colonizer, or else it has been avoided or removed by farmers, once its adverse effect on a bean crop was understood.

EAST SUSSEX HEDGES

Groups of hedges in Ringmer, Plumpton and other East Sussex parishes have been examined in detail by the writers of this article since 1979, mainly in areas bordering the Chalk and in the clays and sands of the Low Weald. Whenever possible the history of the hedges has been checked from documentary sources and early maps

Method

A modified version of Hooper's method was used. For hedges containing more than two or three species the woody species visible on a line were counted at each metre for the length of the

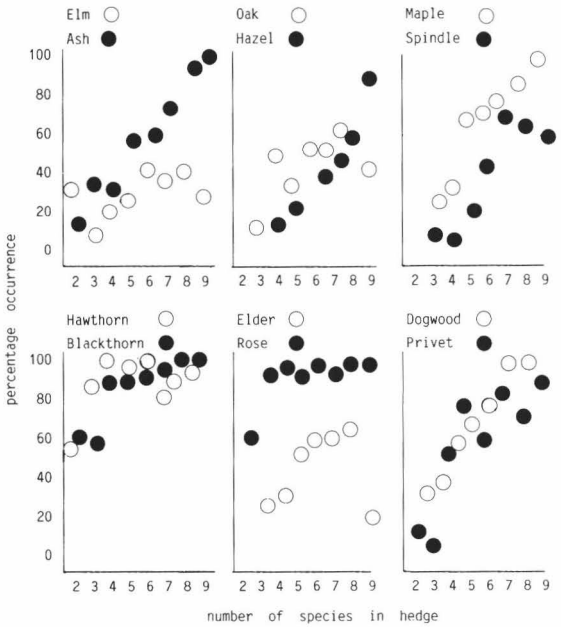


Fig. 3. Relationship between frequency of occurrence of common species and number of species in hedges.

hedge, in accordance with a recognized technique for estimating vegetation. Although time-consuming this method proved more reliable than counting in 30-metre lengths, and made it possible to calculate the frequency and distribution of each species. The length of the hedge was divided by the number of metre counts at which each shrub was present to give the frequency percentage of each species, and it was possible to produce distribution diagrams showing the position of each species in relation to other species growing in the hedge (e.g. Figs. 1, 2). To determine the number of species per 30 metres an average was taken of the number present in five (if possible) 30-metre lengths, omitting 10 metres at each end of the hedge as the corners are often atypical. When only two or three species were present the hedge was not counted at each metre but in 30-metre lengths.

Woodland flora were recorded, also the structure, management, position and general appearance of the hedge, the type of soil and the presence of ditches and banks. Streamside vegetation was not considered to constitute a hedge, nor were edges of woods, unless it was evident that a hedge had been planted outside the wood, or that the wood edge had been managed as a hedge.

After becoming familiar with the diagnostic features of the hedgerow plants it was possible to work at all seasons of the year. In winter identification was principally from the arrangement, colour and shape of buds and twigs, in summer from the shape of the leaves, features of their surfaces and edges, and arrangement of veins. The bark and general outline of the plant were also important in recognition. The most difficult time of the year was late summer/early autumn when hedges were mostly choked with climbing plants and tall ground flora.

Results

Hawthorn, Blackthorn and Rose were the most abundant hedge species (see Table 1). Both Willmot and Pollard had found in the Midland counties that Hawthorn was the dominant hedge component,[16] but in our area the majority of hedges were dominated either by Hawthorn or by Blackthorn, and in many cases the two thorns were present in more or less equal quantities, for example in the hedges between the Potters' fields in Ringmer.[17] The distribution of the two species often suggested dual planting, which might have been intentional or could have been the result of random collection of thorn seedlings from nearby sources. The next most frequent species were Field Maple, Dogwood, Ash, Privet and Elder. Ash, Oak and Elm were frequent as established trees, Oak and Ash also appearing in the sapling stage. Stumps of recently felled Elms and some dead or dying trees were evidence of Dutch Elm disease, but the Elm had by no means been eliminated in the area and it was in fact the dominant species in some hedges. Hazel was common, especially along lanes and tracks and near woodland. Wayfaring Tree and Privet were more frequent on calcareous soils. Spindle was fairly frequent in species-rich hedges but usually

in small quantities. At least four species of Willow were recorded, mainly in damp areas. Sycamore *(Acer pseudoplatanus)*, Hornbeam, Bullace, Crab Apple, Holly, Buckthorn *(Rhamnus catharticus)* and Guelder Rose *(Viburnum opulus)* were not uncommon, and a few other species appeared occasionally. The relationship of the 12 commonest species to the number of species in a hedge is shown in Fig. 3.

Four main types of hedge were observed: (a) mixed, with a high number of species none of which were dominant, and a ground flora of woodland herbs; (b) mixed, with a high number of species of which one or two were dominant; (c) elm-dominated hedges; and (d) species-poor hedges dominated by Hawthorn or Blackthorn with one or more quickly colonizing species (see Table 2). The first type corresponds with the 'woodland relic' hedge type described by Pollard.[18] Typically these contained a mixture of all the woody species locally available, and they were most often found near existing woods or in areas indicated as woodland on old maps. They were usually thick hedges with erratic outlines, in most cases banked or ditched. The majority of the hedges forming field boundaries belonged to the second type. Hawthorn and Blackthorn were the species most often dominant, combined either with each other or with Dogwood or Privet, with smaller proportions of other shrubs. In the Plumpton Agricultural College land it was observed that Blackthorn was more likely than Hawthorn to form the basis of this type of hedge. Although the distribution of Dogwood in some instances suggested deliberate planting, it is doubtful whether it was often used as the basic species of a hedge, as it does not by itself make a good barrier.[19] It spreads very quickly by both suckering and seeding and is a major component of chalk scrub. Wild Privet is very common on calcareous soils, and once present in a hedge it is probably spread by birds eating the berries. It has long been planted in garden hedges and so is associated with habitation, but it is not suitable for a stockproof hedge. Many hedges of the second type contained small amounts of Spindle, and Field Maple was sometimes present in sufficient quantity to suggest that it was part of the original hedge structure. The average number of species per 30 metres varied from five to nine, pointing to a medieval origin. These hedges were usually thick and strong in growth and their shape was often angular or curved. In both the first and the second types there was frequent evidence of former coppicing and laying. Ash was the species most often coppiced, while Hawthorn appears to have been most favoured for laying, though Maple, Blackthorn, Oak, Ash and even Elder had all been managed in this way.

Hedges dominated by Elm were in most instances associated with former or existing dwellings, farms or watermills, where the tree would presumably have been planted for use as timber or fodder for stock. Because of its suckering habit long stretches of Elm in a hedge can derive from a single tree, often to the detriment of other species.

Species-poor hedges included most of those dating from the enclosure of the Broyle in Ringmer in 1767; these were basically Hawthorn or Blackthorn with some Rose and/or Elder, averaging two to three species per 30 metres. High percentages of Hawthorn and Blackthorn with Rose, Privet and Elder were found in some of the internal hedges in Ringmer Park, which was a deer park from medieval times until it was cleared for agriculture in about 1580.[20] The distribution of the two thorn species here suggested dual planting; thus the averages of four to five species per 30 metres appeared consistent with 16th-century enclosure of the fields. Other hedges of this type included a number in Plumpton and Ringmer which were not shown on Yeakell and Gardner's map of 1783 or have since been realigned. All these hedges were straight, not very thick, and usually without ditches or banks.

Certain groups of hedges were considered in relation to their situation or function: first, those beside early tracks or droveways; second, hedges of modern roads; third, those on the line of parish, park or estate boundaries.

Early Tracks and Droveways

A high proportion of the hedges by droveways and early tracks or paths were found to be of the woodland relic type described above. In Ringmer the track known as The Droveway running south-east from Moor Lane to the water meadows by Glynde Reach contained up to 12 species in its hedge-lengths, with averages per 30 metres of from 6·0 to 8·25 (see Table 2), and the possible drove road from Little Norlington to Clay Hill was very similar in composition. A footpath in Ringmer which may be on the old track from Malling to the Archbishop of Canterbury's other medieval manors also had this type of hedge (Table 2). A short section east of Upper Stoneham Farm in the south of the parish was examined as being on the line of a track which I. D. Margary considered was probably a branch to Glynde from the Roman London-Lewes road.[21] There were 11 woody species in this hedge, including Maple and Spindle, with an average of 7·4 per 30 metres. Although this certainly does not prove that the hedge was planted during the Roman occupation it does suggest an early origin. There is presumably an upper limit to the number of species which can be accommodated in a 30-metre length,[22] and it is doubtful whether the one species per 100 years equation is reliable for hedges over 1,000 years old.

Modern Roads (Tables 1 and 3)

Willmot, in his study of hedges in Church Broughton, discussed a tendency for roadside hedges to contain more species than those between fields.[23] In the course of our work in Ringmer and Plumpton 124 roadside hedges were compared with 138 hedges between nearby fields. A similar tendency was observed, though it was not very strong in this area (see Table 1). As regards the frequency of individual species, Hawthorn, Rose and Blackthorn were practically equal in road and field hedges, Elder and Oak were more frequent in field hedges, and the other common species were all more frequent in road hedges. The roadside hedges included 26

TABLE 1
Field and Road Hedges Compared

(a)

		Frequency of species (%)												
	No. of hedges	*Hawthorn*	*Rose*	*Blackthorn*	*Maple*	*Dogwood*	*Ash*	*Privet*	*Elder*	*Oak*	*Spindle*	*Hazel*	*Elm*	*Wayfaring Tree*
Field hedges	138	99	99	94	64	54	57	43	61	59	38	36	26	8
Road hedges	124	100	98	94	77	75	67	79	47	41	39	39	42	18
Total	262	99	98	94	70	64	62	60	54	51	39	38	34	13

(b)

	No. of species in hedge								
	10	*9*	*8*	*7*	*6*	*5*	*4*	*3*	*2*
Field hedges (%)	1	1	10	20	25	20	17	5	1
Road hedges (%)	1	8	10	13	30	23	11	3	1

unmade tracks or bridleways, but the figures varied only marginally when these were omitted from the calculations. Norlington Lane in Ringmer, Plumpton Lane and Streat Lane all appear to follow the lines of early communication routes from the downs to the Weald, and in each case the hedges were richer in species than those of the neighbouring fields. However at Beeches farm in Isfield, on Tunbridge Wells sand, a hedge along a minor road was dominated by Hazel, and the average of species per 30 metres was a little less than in the adjacent field hedges, in which Hazel was also present but in lesser proportions. The area of this survey was too limited to provide sufficient data to show whether the Hazel hedge was likely to have been planted as such, or whether it was a relic of former woodland.

It has been suggested that colonization could be accelerated in roadside hedges by the movement of animals and man along the roads, and in addition the materials used in road-making might increase the alkalinity and fertility of soil near the hedges. These factors may have some influence, but the composition of roadside hedges, as of field hedges, is no doubt strongly affected by their age and origin.

Examination of hedges of both major and minor roads has shown that former realignments, indicated on maps of various dates, could often be detected from changes in the composition of the hedges. Some stretches of the A 26 in Ringmer had mixed hedges with eight or more species and averages of six or more per 30 metres, alternating with lengths of pure Hawthorn (or in one case Snowberry *(Symphoricarpus albus)*, an introduced species) where the hedges appeared to have been removed and replanted during road improvements. In Bishops Lane in Ringmer, Field Maple had been found in only one section of a hedge, and subsequent study of maps showed that the remainder of this hedge had been realigned between 1840 and 1873.[24] In Neaves Lane, Ringmer, a marked contrast was found between the hedges of the southern and northern sections, the former being mostly rich in species, sometimes of the woodland relic type, while those to the north near the Ringmer-Laughton road were mainly of Hawthorn and Privet with small amounts of colonizing species (Table 3). Before the Broyle enclosure of 1767 the road appears to have terminated near Ashton Green on the boundary of the Broyle, so the northern section is only about 200 years old. A high proportion of Dogwood in one short stretch probably derives from the vegetation of the Broyle before its enclosure.

Parish Boundaries

Hedges on the lines of parish boundaries were found to be extremely variable in composition. The most constant feature was a bank, which might bear a poor straggling hedge, one of pure Hawthorn, a mixed hedge with the maximum number of species for the area, or no hedge at all. The bank could often be traced through woods and across fields. Part of the boundary of Ringmer Park was also the parish boundary, according to the modern map, yet the hedge was almost entirely of Hawthorn, with no bank or ditch. It was found that this section of the boundary with South Malling was apparently altered between 1702 and 1731,[25] and the earlier boundary was further south along hedges which had a high number of species (see Fig. 2). (This parish boundary was altered again in 1984.)

On downland slopes, for example between Plumpton and Streat, Iford and Rodmell, and Rodmell and Kingston, the boundary consisted of a high bank colonized by Elder and occasional trees rather than a planted hedge. A notable exception, however, was part of the boundary between Ringmer and Glynde which ascends a track, sunken in places, leading from the Ringmer-Glynde road near Glyndebourne mill to the remains of a settlement below Saxon Down. Dr. John Kay considers this to be the site of the medieval settlement called Wyke.[26] The track, known locally as Weeks Lane or Week Lane, is bordered for much of its length by high banks topped by hedges which have partly colonized the banks. The total of woody species

TABLE 2
Types of Hedge

Type	Location	Field no. (tithe map)	Aspect of hedge	Soil type	On map dated	Length in metres	Average no. of species per 30 metres	Frequency of metre counts (%)																Total species	Comments
								Ash	*Blackthorn*	*Dogwood*	*Elder*	*Elm*	*Gorse*	*Hawthorn*	*Hybrid Hawthorn*	*Hazel*	*Holly*	*Hornbeam*	*Maple*	*Oak*	*Privet*	*Rose*	*Spindle*	*Sycamore*	*Wayfaring Tree*		
A	Ashton, Ringmer	784	NE.	Gault clay	1783	150	8·5	0·5	28	43	—	—	—	83	—	41	3	3	18	—	29	32	11	—	2	12	drove road; woodland flora; bank
A	Broyle, Ringmer	140	NNW.	Weald clay	1783	154	7·4	—	43	—	8	—	5	90	6·5	1	2	—	9	4	—	44	5	1	—	12	possible medieval footpath
B	Plumpton College	338	N.	Gault clay	1700	116	7·0	8	91	—	7	—	—	22	—	—	—	—	25	28	2	52	7	—	—	9	footpath in 1879; bank
B	Ashton, Ringmer	860	W.	Chalk	1873	99	5·6	10	—	—	16	12	—	93	—	—	—	—	2	—	83	23	1	—	—	8	near Oldhouse Farm; bank
C	Plashett, Ringmer	311	E.	Weald clay	1783	73	2·0	—	1	—	—	90	—	59	—	—	—	—	—	—	—	5	—	—	—	4	track to farm
D	Broyle, Ringmer	97	NW.	Weald clay	1840	—	—	—	*	—	—	—	—	*	—	—	—	—	—	—	—	*	—	—	—	3	Broyle enclosure hedge; bank

* = present

TABLE 3
Roadside Hedges

Location	*Road*	*Field no. (tithe map)*	*Aspect of hedge*	*Soil type*	*On map dated*	*Length in metres*	*Average no. of species per 30 metres*	*Frequency of metre counts (%)*																*Total species*	*Comments*
								Ash	*Blackthorn*	*Crab Apple*	*Dogwood*	*Elder*	*Elm*	*Hawthorn*	*Hazel*	*Holly*	*Maple*	*Oak*	*Privet*	*Rose*	*Spindle*	*Sycamore*	*Wayfaring Tree*		
Ringmer	Neaves Lane	382	W.	Lower Greensand	1783	125	2·7	—	3	2	—	—	—	47	—	—	—	—	23	6	—	—	—	5	Broyle enclosure; many gaps
Ringmer	Norlington Lane	490	NW.	Lower Greensand	1840	139	6·6	14	13	—	21·5	3	—	10	75	—	2	7	2	6	3·5	—	—	11	
Streat	Streat Lane	8	W.	Chalk/clay	1783	222	10	23	65	—	72	2	—	21	49	0·5	47	—	46	56	4	0·5	18	13	bank
Isfield	Buckham Hill	*	W.	Tunbridge Wells sand	1875	150	5	—	40	—	—	—	—	70	100	50	—	10	—	70	—	10	—	7	
Ringmer	A 26	530	NW. (SW. part)	Lower Greensand	1783	74	2·5	—	—	—	—	12	—	100	—	—	—	—	—	3	—	—	—	3	realigned; bank
Ringmer	A 26	530	NW. (NE. part)	Lower Greensand	1783	57	5·5	7	91	—	23	26	—	7	86	—	—	—	—	3·5	—	—	—	7	hazel laid; woodland flora; bank

*[N.G.R. TQ 455265]

present in one long stretch was 14, and sections on both sides of the track had averages per 30 metres of 10·4. Here we have hedges unusually rich in species, with Maple and Spindle as indicators of age, on the line of a parish boundary and bordering a track leading to an ancient settlement. This track was very likely an old drove road; in fact the sheep and cattle grazing in 1985 on the site of Wyke were presumably driven to their pasture along Week Lane.

Other Boundaries

The position of former open field systems can sometimes be deduced from the shape and composition of hedges. Zig-zag boundaries are seen by R. Muir to be 'picking a way between old furlong blocks', and curved ones often 'tracing the shapes of open field strips'.[27] The hedges on the boundaries would be older than those planted when the land was enclosed. In Ringmer part of the southern border of the Norlington open field system consisted of a rather erratic line of species-rich hedges (see Fig. 1).[28]

Medieval deer parks were usually curved in outline and were surrounded by a ditch and bank but not necessarily a hedge; thus any hedge now present might be of much later origin than the bank on which it grows. Nevertheless a woodland relic type hedge on a curving enclosure bank would strongly indicate a deer park boundary. Several sections of the boundary of Ringmer Park had species-rich hedges, but most of these were either along roads or associated with woodland, and some of the hedges had been removed or realigned. In places the bank and ditch were still present.[29] More conspicuous was the boundary of the Broyle in Ringmer, many stretches of which consisted of double hedges or shaws, usually banked, with mature trees and a high number of species including Maple and Spindle.

Faulkners Farm, Hartfield

C. F. Tebbutt found the hedge-dating technique of value in his investigations of the deserted medieval farm settlement at Faulkners Farm in 1980. The number of species in the hedges between fields suggested a 13th- to 14th-century date, and he also deduced, from the state of the hedges, that the land had continued in use even after the abandonment of the settlement, arguing that the hedges if neglected for a long period would have degenerated into scrub.[30] Examination of hedges was also used by G. Hewlett in tracing the settlement history of Chelsham in Surrey.[31]

CONCLUSIONS

The evolution of a hedge is a very slow process, the mechanics of which are not fully understood, but the influence of man and the relative longevity of different species are no doubt important factors. It is not possible by botanical examination to specify how or at what precise date a hedge originated, but old hedges do tend to contain more species, which have a patchy distribution, and the hedge shape is frequently curved or angular. Hedges up to 300 years old, whose date can more often be checked by reference to maps or documents, are usually straight in outline and low in species number. The number of species in a hedge is not strongly affected by geology. Evidence of changes in agricultural practice and use of land can sometimes be traced by detailed examination of hedges, and it is suggested that in medieval times a hedge was not only considered as a stockproof barrier but also as a source of essential raw materials, and this could have some bearing on the fact that older hedges have a higher variety of species.

Hedges are still being uprooted, though to a lesser extent than in the early post-war period; their site is sometimes indicated by a ridge or a line of trees across a field, but more often they have disappeared without trace. Some of the hedges examined in Ringmer since 1979 have already been removed, and it is hoped that the detailed records of their position and botanical content may, like archaeological site reports, be of value to future historians.

Authors: Monica Maloney, 1 Fitzjohn's Road, Lewes, East Sussex BN7 1PP.
Eileen Howard, The Wharf, Piddinghoe, Newhaven, East Sussex.

Notes

[1] E. Pollard, M. D. Hooper & N. W. Moore, *Hedges* (1974), 76–80.
[2] A. Willmot, 'The Woody Species of Hedges with Specific Reference to Age in Church Broughton Parish, Derbyshire', *Jnl. of Ecology*, **68** (1980), 269–85.
[3] R. A. D. Cameron, 'The Biology and History of Hedges: Exploring the Connections', *Biologist*, **31**(4) (1984), 203–8.
[4] E. Pollard, 'Woodland Relic Hedges in Huntingdon and Peterborough', *Jnl. of Ecology*, **61**(2) (1973), 343–52.
[5] H. L. Edlin, *British Woodland Trees* (1944).
[6] O. Rackham, *Trees and Woodland in the British Landscape* (1976), 168–70.
[7] Edlin, *British Woodland Trees*.
[8] M. Spray, 'Holly as a Fodder in England', *Agricultural Hist. Rev.* **29**(2) (1981), 97–110.
[9] *Culpeper's Complete Herbal* (various edns.).
[10] British Trust for Conservation Volunteers, *Hedging* (1975), 45.
[11] Thomas, Earl of Haddington, *Forest Trees* (*c.* 1733), ed. M. L. Anderson (Edinburgh, 1953), 63–4.
[12] William Marshall, *The Rural Economy of the Southern Counties* (1798), **2**, 315–16, 399–401.
[13] Pollard *& al., Hedges*, 99.
[14] British Trust for Conservation Volunteers, *Hedging*, 11.
[15] M. D. Hooper, *Hedges and Local History* (1971), 9.
[16] *Jnl. of Ecology*, **68**, 269–85; *Jnl. of Ecology*, **61**(2), 343–52.
[17] E. M. Howard & M. Maloney, 'Hedge Dating and the Potters' Fields at Ringmer', *Ringmer Hist.* **1** (1982).
[18] *Jnl. of Ecology*, **61**(2), 343–52.
[19] Pollard *& al., Hedges*, 74.
[20] M. Maloney, 'Ringmer Park–the Last 400 Years', *Ringmer Hist.* **2** (1983), 45.
[21] I. D. Margary, *Roman Ways in the Weald* (1968 edn.), 109.
[22] *Jnl. of Ecology*, **68**, 284.
[23] Ibid. 280.
[24] *Ringmer Hist.* **1**, 63.
[25] East Sussex Record Office, PAR 461/1/1/6; T. Woolgar, 'Spicilegia' (*c.* 1800), **2** (MS. volume in Sussex Arch. Soc. library), 446.
[26] J. Kay, 'The Deserted Medieval Settlement of Wyke', *Ringmer Hist.* **3** (1984), 45–58.
[27] R. Muir, *Shell Guide to Reading the Landscape* (1981), 109.
[28] *Ringmer Hist.* **1**, 59.
[29] E. M. Howard, 'Ringmer Park–the Hedges', *Ringmer Hist.* **2** (1983).
[30] C. F. Tebbutt, 'A Deserted Medieval Farm Settlement at Faulkners Farm, Hartfield', *Suss. Arch. Coll.* **119** (1981), 107–16.
[31] G. Hewlett, 'Stages in the Settlement of a Downland Parish: a Study of the Hedges of Chelsham', *Surrey Arch. Coll.* **72** (1980), 91–6.

Sussex Archaeological Collections **124** (1986), 141–55.

MEDIEVAL CHOIR STALLS IN CHICHESTER: A RE-ASSESSMENT

by Charles Tracy

ST. MARY'S HOSPITAL

The accepted dating on historical evidence of the chapel at St. Mary's Hospital, Chichester to the early 1290s[1] can be supported by stylistic analysis. The window tracery shows a knowledge of the 'court' style of Edward I's reign exemplified, for instance, in the Bishop of Ely's chapel at Holborn of *c.* 1285.[2] One of the tracery patterns at Chichester, consisting of paired lights with trefoil heads, pierced trefoils above, and topped by an oculus, is similar to the side windows at St. Etheldreda's, Holborn, except that in London the oculus is sexfoiled while at Chichester it is quatrefoiled. The tracery of the east window at Chichester is ambitious, and the design of the triple sedilia and piscina classically *rayonnant*. The pattern of the side windows at Holborn is also found in the Chapter House at Wells, which must have been designed in the mid 1290s.[3]

A charter established by Dean Thomas of Lichfield (1232–48) shows that the constitution of St. Mary's Hospital was originally twelve inmates (brothers and sisters) forming an independent endowed community supervised by a prior or warden. The charter did not provide for a resident priest. The support of a chaplain to be present at all canonical hours and to celebrate the hospital's commemoration masses was founded by a separate land grant to the hospital during the tenure of Dean Thomas. The donation stipulates that during the services he was to sit next to the prior.[4]

These stalls provide 18 lateral and six returned seats with the original desks still *in situ* (Fig. 1). The standards are rather thin (2 in.) and the capping comparatively high (41½ in.), but the design of the seating is aesthetically very successful. The divisions have plain elbows with, for the most part, a scroll below the capping, although in some cases on the south side a variant of foliage on a loop device is substituted. The treatment of the seat capping on the north and south-west seat junctions differs, the capping on the north side describing a wave, and that on the south, a hollowed-out profile. The misericords, many of which are missing, are a mixture of figural and foliage carving.[5] Four consist entirely of foliage, three of which abandon altogether the supporter device. The stall ends consist of rectangular planks fronted by moulded columns on bases and crowned with crenellation. The desk ends of the south returned stalls have an unusual device on top of them, like a pair of affronted scrolls, which, to judge by the damaged surface on the inside of the semicircle, may have enclosed tracery. On the north desk end is a raised semicircular extension with clinging foliage on the shoulder. The desks have holes at intervals possibly used to hold candles. On either side of the choir entrance are plain screens with a wave profile on the top.

The backing to the stalls consists of plain panelling, to which is applied an arcade of flattened trilobe form with a trefoil in the spandrels. Curiously, the last three eastern bays on the north side have arcading consisting of plain ogee arches. The arcade is supported throughout by moulded columns resting on tall bases. At the west end of the stalls the junction with the cross screen is effected at the top by means of a change of direction. The back panelling and architrave above swing in at an angle of about 30 degrees to meet the screen. The furniture has been the subject of radical restoration

Fig. 1. St. Mary's Hospital, Chichester. General view of choir stalls from south-east.

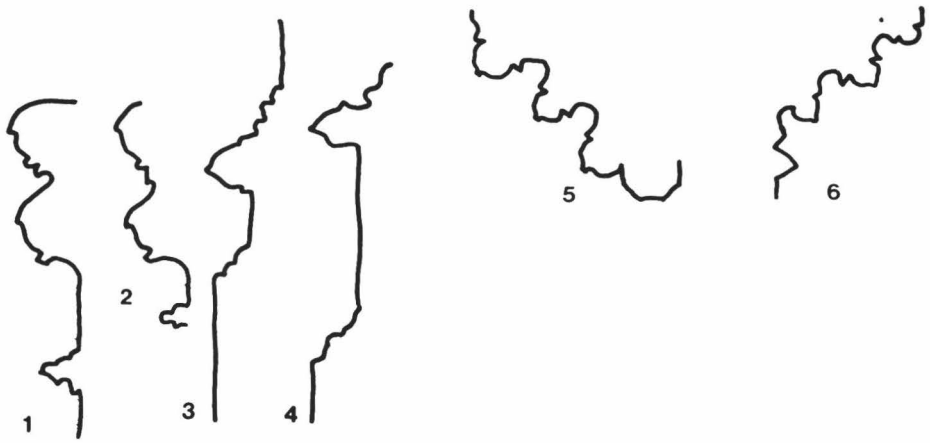


Fig. 2. St. Mary's Hospital, Chichester. Mouldings on the choir stalls. Key: 1, uprights behind stalls: top part; 2, uprights of cross screen: top part; 3, uprights behind stalls: base; 4, uprights of cross screen: base; 5, cornice of cross screen; 6, cornice of stall backing. (Drawings are not to the same scale.) (Nos. 1–4: after H. Goodall, *Architectural Association Sketch Book*, **12** (1879–80), 10; Nos. 5–6: after F. T. Dollman, *Examples of Ancient Domestic Archiecture* (1858), pl. 23.)

probably in the 19th century. The original seat rail and the back panelling above capping level have been entirely replaced. Also, the arcading in front of the back panels has been raised all round by about 2 in.

The style and workmanship of the cross screen is all of a piece with the choir stalls. The bases and capitals of the columns should be compared with those on the back panelling of the stalls and the stall ends (Fig. 2, Nos. 1–4). The moulding of the cornices on the back panelling and cross screen both have an extra 'skin' or 'drip-mould' on the front plane. The tracery of the cross screen is very unusual. It consists essentially of two lights per bay, with two minor columns inserted into each (Fig. 3). The crowns of the two trefoil arches which were originally intended are filled with a diamond motif, from which hangs the springing of the sub-arches. The effect is not as ugly as it might be although it is a pity that the designer did not abandon the idea of a trefoil arch altogether in favour of an ogee. With its facetting, piercing and changes of direction, this screen is a *tour de force* of carpentry. The crockets, like the foliage on the misericords, are carved very close to the surface. They give the appearance of having been sliced in two, and it has been suggested that they were mutilated in this way to allow the pinnacles to be inserted.[6] The pinnacles are particularly interesting. They are flanked by little columns, between which are two facets meeting on the diagonal (Fig.4). At the top is a little ogee arch. The finials consist of deeply undercut foliage, which gives the impression of vigorous growth. The pendant scrolls below the architrave are probably a 17th-century addition.

Since there are no other choir stalls in England of a similar date to those at the hospital, we must fall back on contemporary stone furniture, miniaturized architecture and architectural sculpture for the purposes of stylistic comparison. The three-quarter hollow mouldings found on the cornice of the screen and stalls suggest a link with East Anglia[7] (Fig. 2, Nos. 5–6). The ogee form is prominent on the arcading of the stalls and on the returned screen, and, in the particular depressed form found at the east end of the north lateral stalls, appeared for the first time on John of Battle's Eleanor Cross at Hardingstone (Northampton), begun in 1291,[8] and on the exterior elevation of St. Stephen's Chapel, Westminster.[9] Both these monuments were the product of court patronage although John of Battle worked in a much more flamboyant style than Michael of Canterbury or Roger of Crundale.[10]

The way that the crockets lie flat against the gables on the returned screen at St. Mary's Hospital, Chichester, is echoed on the Hardingstone cross, and at St. Etheldreda's and Wells Cathedral (Chapter House). Roger of Crundale's crockets on the tombs of Aveline of Lancaster and Queen Eleanor at Westminster Abbey[11] are more prominent, as are those on Michael of Canterbury's monument to Archbishop Peckham (d. 1292) at Canterbury.[12] The veined and crinkly leaves of the finials at Chichester are formed to resemble a plant on the point of bursting into flower. This type can be seen on the gables and pinnacles of the Hardingstone cross as well as the long serpentine leaves climbing up the shafts of the pinnacles (Fig. 5). This last feature can also be paralleled at Wells. The treatment of crockets and finials is typically found in stained glass at this time, as at Merton College, Oxford, of 1290–5.[13] The type of annulet at the base of the finials at Chichester also can be seen at Hardingstone, on the Eleanor tomb and in the stained glass at Merton College. The lions on the misericords at Chichester (Fig. 6) resemble in some respects those at the feet of Queen Eleanor (Fig. 7). Two of them share a very characteristic cup-shaped ear and, in one case, the stick-like claws. The Chichester lions have the same serious expression with wide flat noses and, in one case, a bulbous and deeply-parted upper lip. The ruffs are treated in the same conventional way although less naturalistically at Chichester, and the skins of the two-bodied lion and the dragon are absolutely smooth as at Westminster.

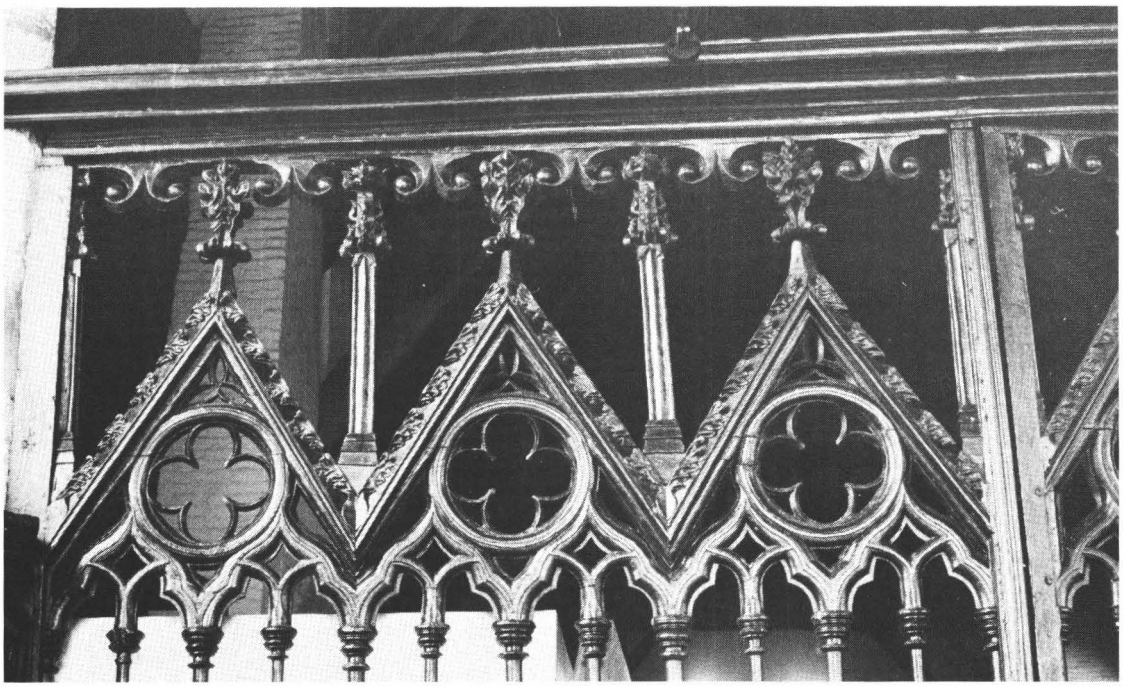


Fig. 3. St. Mary's Hospital, Chichester. South-west side of cross screen.

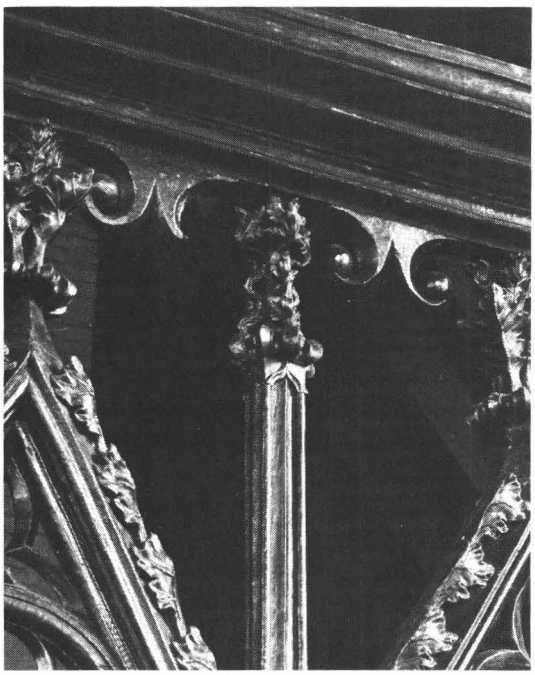


Fig. 4. St. Mary's Hospital, Chichester. Pinnacles and finial of cross screen.

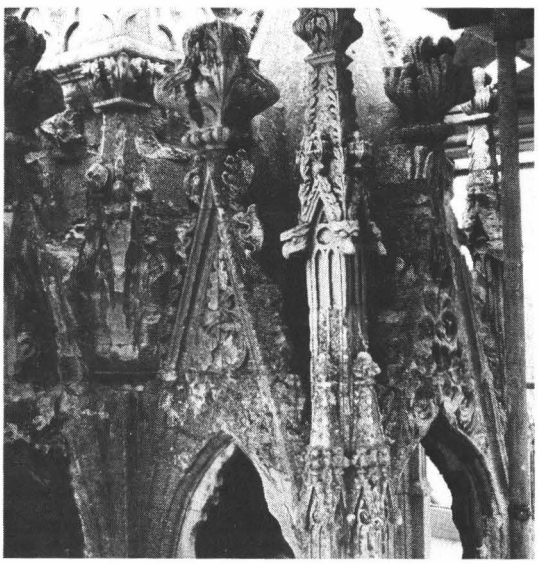
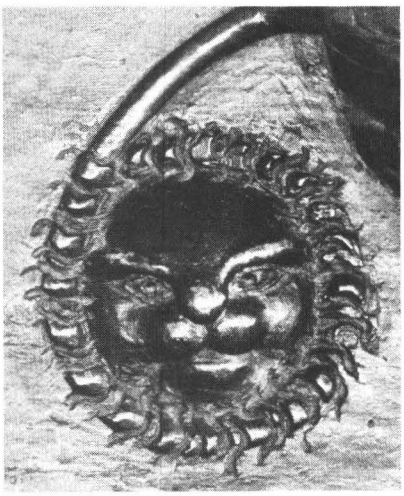


Fig. 5. Hardingstone Cross. Detail of gables on second tier. (Conway Library, Courtauld Institute of Art)



Figs. 6, a and b. St. Mary's Hospital, Chichester. Lion misericord supporters with incised and curly ruff.

Fig. 7. Westminster Abbey. Queen Eleanor tomb. Detail of lions.

As at Hardingstone and on the St. Frideswide shrine at Christ Church, Oxford (probably made prior to the translation in 1289)[14] most of the carving is on one plane. A very characteristic feature is the way the foliage gives the appearance of being applied to the surface as if blown by the wind, as on several of the seat divisions and at the east end of the cornice above the main range of stalls on the north side (Fig. 8). We are reminded of the way the leaves blow back against an adjacent member of the arcading of the Eleanor tomb (Fig. 9). A comparison of the flat, metallic handling of the foliage carving on the misericords (Fig. 10) with that on the chapel's stone furniture indicates that the wooden furnishings were coeval with the rest and designed to be *en suite* with them. For an external comparison with the misericord foliage we could do worse than adduce the sculpture on the St. Frideswide shrine.

Fig. 8. St. Mary's Hospital, Chichester. Cornice termination at east end of north range of choir stalls.

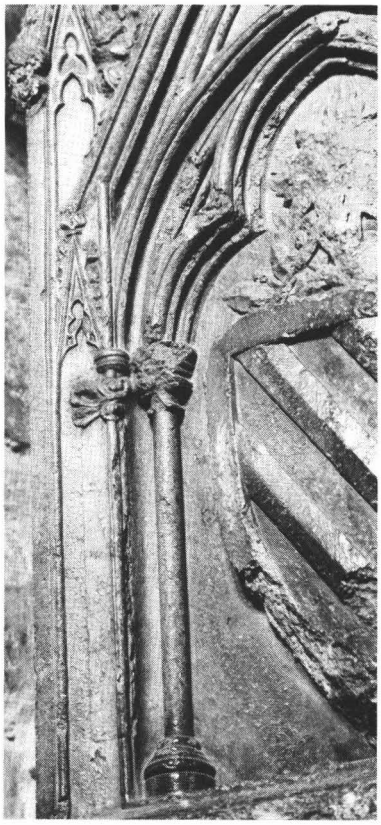


Fig. 9. Westminster Abbey. Detail of north side of Eleanor tomb.

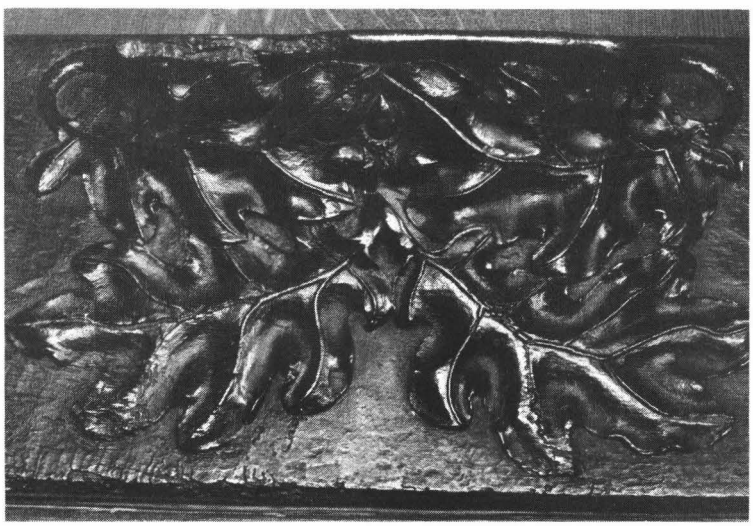


Fig. 10. St. Mary's Hospital, Chichester. Oak leaf misericord.

It is unlikely that a team of craftsmen of the calibre required to make the hospital's stalls could have been assembled entirely from local resources. The evidence cited above suggests that the master carpenter, at least, must have come from London or, at any rate, an ambience cognizant of the latest styles of miniaturized architecture of the early 1290s.

CHICHESTER CATHEDRAL

The dating of the choir furniture in the cathedral at Chichester is much more problematical. Francis Bond, whose dating of English choir stalls is usually very reliable, puts it much too late, whilst others have tried to make it nearly contemporaneous with the St. Mary's Hospital furniture,[15] which is premature.

Close links between two important examples of early 14th-century furniture can be found in the moulding profiles (Fig. 11). The rib profiles on the bishop's throne, of before 1317, at Exeter and on the Chichester Cathedral choir stalls (Nos. 1 and 2) are quite similar. The shape of the Chichester ribs (No. 2) also resembles a string course (No. 3) and the tracery in the gable tympanum (No. 4) on the Winchester Cathedral choir stalls of 1308 onwards. The 'cut-out' quadrant on top of the capital carrying the traceried front at Chichester (No. 6) again brings to mind the Winchester string-course moulding (No. 3). Finally, both Chichester and Winchester have very similar three-scroll capitals (Nos. 6 and 7). These parallels may be no more than general practice for furniture making at this period and, certainly, the three-scroll capital was very common at this time.[16] Nonetheless, the moulding evidence firmly ties the Chichester Cathedral furniture into the second decade of the 14th century. It also provides valuable corroboration for the following rather laborious dating arguments which are based mainly on an analysis of contemporary decorative sculpture.

The style of the cathedral woodwork (Fig. 12) goes back ultimately to the 13th-century 'double-screen' type choir stalls of *c.* 1255 at

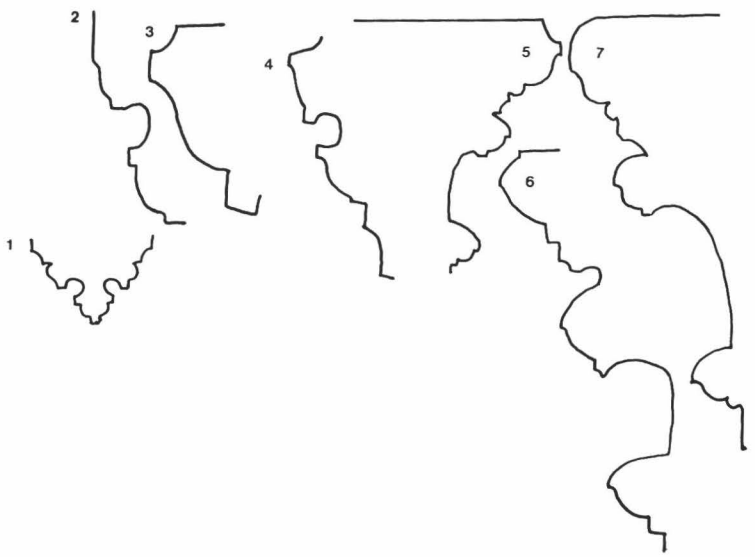


Fig. 11. Mouldings on the choir stalls at Chichester and Winchester Cathedrals, and on the bishop's throne at Exeter Cathedral. Key: 1, Exeter Cathedral: bishop's throne, canopy rib; 2, Chichester Cathedral: ribs of choir stalls coving; 3, Winchester Cathedral: part of string-course, choir stalls, south side; 4, Winchester Cathedral: mouldings of tracery in gable tympanum; 5, Chichester Cathedral: capital carrying traceried front; 6, Winchester Cathedral: three-scroll capital; 7, Chichester Cathedral: capital carrying traceried front. (Drawings not to same scale.) (Nos. 1, 3, 4, 6: after Dr. R. K. Morris, courtesy of Warwick Archive of Moulding Drawings; Nos. 2, 5, 7: after G. G. Scott junior, *Spring Gardens Sketch Book*, **2**.)

Westminster Abbey.[17] There, as at Chichester, the columns of the uprights supported an echelon of arches flanked by mullions and topped by a cornice. The straight-gabled seats for the dignitaries at Chichester recall the side gables of the tomb of Edmund Crouchback (d. 1296) at Westminster Abbey, although there are many differences in detail. The theme of flat buttresses flanking columns, also found here, reminds us of the Winchester Cathedral choir stalls[18] and the Exeter bishop's throne.[19]

The furniture was soundly constructed, and there is little evidence of structural failure. The standards are thick ($2\frac{1}{4}$ in.), and the capping is little undercut. The seats are somewhat narrow (24 in.) and shallow (13 in.) with low elbows, and the capping is comparatively low also. The returned stalls and all the sub-stalls have disappeared during the course of the monument's chequered history. The painted frieze above the architrave was probably added in the 16th century. Although the stalls have been heavily restored, it is likely that the architectural details are authentic. The coving above the ordinary seats is made of thin sheets of plywood bent to shape. This is modern work, but coving made from small pieces of wood bent to shape could have been provided in the first place.[20] The ceiling of the dignitaries' seats consists of quadripartite vaults, which provide the required individuality. The applied tracery on the backs of the main seats consists of ogee arches with trefoils in the spandrels. All of it is modern work, but T. King's and Carter's watercolour of the interior of the choir before the collapse of the tower in 1861 all show the same tracery at the back of the lateral stalls.[21] The tracery at the back of the dignitaries' stalls is genuine and consists of a pair

Fig. 12. Chichester Cathedral. View of north-west side of choir stalls.

of inscribed quatrefoils, under which is a cusped and flattened ogee arch of a similar profile to the applied tracery in the north-east corner of the stalls at St. Mary's Hospital.

Throughout the stalls in the centre of the capping between the front and back uprights is a plugged mortise. This is probably associated with the central column of the stall ends and a similar column may have been placed in the centre of the capping throughout the stalls. The slot is only small (diameter $\frac{7}{8}$ in.) and was probably for a light dividing screen between the seats. It would appear that the provision of dignitaries' stalls at the east end was an afterthought because the flanking buttresses slice off the standard elbows as they do at Winchester. But, as at Winchester, the style of the renovation work indicates that the additions were probably in unbroken sequence with the main stalls. The number of back stalls at the cathedral was probably 48, with an unknown number of sub-stalls.[22]

As at Winchester there are sculpted male heads of early 14th-century type with the hair rolled to the side and female heads wearing coifs with the hair built up at the sides. But the style of carving in both places is very different, the Chichester work being much less naturalistic, bolder and less refined. The scale of the crockets on the straight gables particularly is much greater than at Winchester. For the most part the dogs' heads on the gablets at Chichester are very different from those at Winchester (Figs. 13–14) which resemble quite closely the ones on the Crouchback tomb. Here there is not usually a quiff on the forehead, the eye sockets are not so deeply hollowed out and, in many cases, the hair stands up in vertical ribs.

Bond points out that the head-dress of the woman used as a misericord supporter, with her hair in ringlets (Fig. 15),[23] is the same as that on a 'weeper' on the tomb of John of Eltham (*c.* 1339) at Westminster Abbey.[24] We find ringlets and a similar head-dress as far back as the west front at Wells in the 1230s, and the hair-style can be seen in the early 14th century, for instance, on a label-stop on the south aisle sedilia at Winchelsea (Fig. 16), of *c.* 1312–24.[25] The Eltham tomb also has a female head with coif and built-up hair exactly as found on the Winchester choir stalls. At Winchelsea an Atlas figure wears a head-dress typical of a sort common at Chichester, that is, the closely-fitting pointed hood, which falls in loose folds around the neck and shoulders (Fig. 17). The peak of the hood tips forward or to one side, as can be seen on the misericord of the man dancing with the dog[26] and the centaur playing the tambourine on the misericords at Chichester Cathedral.[27] The other centaur at Chichester with left hand on his flank[28] has his hair in ringlets and is similar in style to the Winchelsea Atlas figure (Fig. 18). Some of the label-stops on the chantry tombs in the north aisle at Winchelsea are close to the style of the Chichester misericord heads (Fig. 19).

It is worth pointing out, in this context, another very similar head in the south corner of the Winchester Cathedral feretory screen (Fig. 20). This was probably made some time between 1310 and 1315.[29] The dogs' heads on the gablets of the piscina and sedilia in the chancel and on the chantry tombs in the north aisle at Winchelsea (Fig. 21) are similar to those on the Chichester Cathedral choir stalls. The gables of the north aisle chantry tombs at Winchelsea also have similar over-scale crockets to those above the dignitaries' seats at Chichester. Finally, the foliage carving under the bowl of the piscina in the south aisle at Winchelsea is very close to some of that at Chichester (Figs. 22–3). The dating of the stone furniture at Winchelsea is problematical[30] but it should, most likely, be assigned to the 1320s.[31]

Bond gives 1335 as an approximate date for the Chichester cathedral stalls.[32] He acknowledges that the head-dress already discussed is typical of *c.* 1320 but claims that many of the other misericords are 'of a later character'.[33] Like the historians of the 13th-century Exeter Cathedral choir stalls, he suggests that the misericords were worked on over a very long period of time (*c.* 1320–40). It is most unlikely, however,

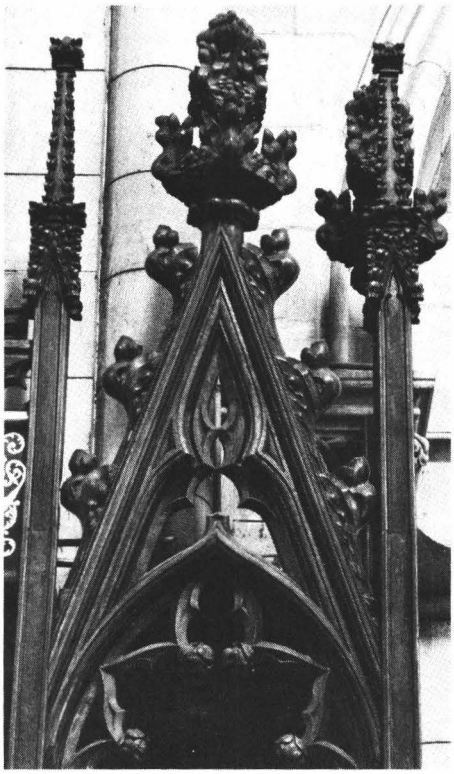


Fig. 13. Chichester Cathedral. Detail of gable over dignitary's stall.

Fig. 14. Winchester Cathedral. Choir stall buttress detail.

that the making of a set of choir stalls would have been spread out over such a long period. It is worth noting that the double-bodied lion on the misericord at Chichester (Fig. 24) is close in style to the lion of early 14th-century origins amongst the misericords belonging to Bishop Stapledon's choir stalls at Exeter Cathedral (Fig. 25).[34] The style of the foliage carving on the misericords at Chichester can be matched closely with the roof-bosses (Figs. 26–7) and capitals in the eastern part of the Lady Chapel.[35] Willis reminds us that the Chichester Cathedral Lady Chapel was completed during the episcopate of Bishop Gilbert of St. Leofard (1288–1304).[36] Another indication of a comparatively early date for the Chichester furniture is the proximity of the foliage carving to that on the Winchester Cathedral feretory screen.[37] In both monuments the stalks of the foliage are treated in a characteristic way with metallic-looking new growth pushing out of a fleshy stem.

Unfortunately, none of the above evidence can give us a precise dating for the Chichester Cathedral furniture. It can only suggest that it was made some time between *c.* 1305 and *c.* 1320. In the final analysis, the most convincing analogy must be in the same medium at Winchester Cathedral and, in particular, the work of the refurbishment of the stalls there, of *c.* 1315.[38] In this case the comparison of buttresses is really quite close and suggests, until any better evidence emerges, a similar date for the Chichester stalls. We should, therefore, attribute the patronage of the cathedral choir stalls to Bishop John Langton (1305–37) who was well connected in both ecclesiastical and government circles. He was

made Lord Chancellor in 1302 and again in 1308 and held many ecclesiastical posts including those of archdeacon of Canterbury, treasurer of Wells, and canon of York and Lincoln.[39] He contributed liberally to the improvement of his cathedral. He almost certainly erected the south windows and wall in the south transept at a cost of £310.[40] At his death he bequeathed £100 to the general fabric, together with all ecclesiastical furniture, relics, jewels and other ornaments. Inheriting a High Gothic east end and recently completed Lady Chapel, he seems to have concentrated his resources on improving the lighting in the south transept and refurnishing the choir. It is certainly likely that, on taking up office, he would have considered the introduction of new choir stalls a project that was long overdue.

Acknowledgements

I would like to record my thanks to the Deans of Chichester, Winchester and Exeter Cathedrals for giving me access to the buildings discussed and for allowing me to take photographs with which to illustrate this paper. On the same account my thanks are also due to the Vicar at Winchelsea. I am greatly indebted to Dr. Richard Morris for suggesting moulding comparisons for the Chichester Cathedral furniture and to Julian Munby for various helpful suggestions. The fieldwork was paid for by the University of London's Central Research Fund.

Author: Charles Tracy, 9 Bath House, Bath Terrace, London SE1 6PU.

Notes

[1] The construction of the existing infirmary hall and chapel can probably be associated with the royal authority in 1290 for a public footpath across its property to be closed: *Calendar of Patent Rolls, 1281–92,* 356. For an account of the early history of the hospital see George Shiffner, 'On the Hospital of St. Mary, in Chichester', *Suss. Arch. Coll.* **2** (1849), 1–6. For a recent survey of the hospital, see Walter Horn & Ernest Born, *The Plan of St. Gall* (Berkeley, 1979), **2**, 91–5, etc.

[2] See Jean Bony, *The English Decorated Style* (1979), 12.

[3] Peter Draper, 'The Sequence of Dating of the Decorated Work at Wells', *British Arch. Assoc. Conference Transactions, 1978,* 19. Draper proposes a *terminus ante quem* of 1307.

[4] See Horn & Born, **2**, 92.

[5] Fourteen misericords survive, one of which has never been carved.

[6] Council for the Care of Churches library, F. A. Crallan's manuscript notes and sketches.

[7] Richard Morris gives examples of three-quarter hollow mouldings with fillets at Lichfield (*c.* 1265 onwards), Lincoln (1265 onwards) and Southwell (1280s). See Richard K. Morris, 'The Development of Later Gothic Mouldings in England *c.* 1250–1400, Part I', *Architectural Hist.* **21** (1978), 39–43.

[8] See Lawrence Stone, *Sculpture in Britain: The Middle Ages* (1955), 144. Illustrated in Bony, *English Decorated Style,* pl. 127.

[9] See Maurice Hastings, *St. Stephen's Chapel and its Place in the Development of the Perpendicular Style in England* (1955), 66.

[10] See Stone, *Sculpture in Britain,* 142.

[11] See Christopher Wilson, 'The Origins of the Perpendicular Style and its Development to circa 1366' (London Univ. Ph.D. thesis, 1979), 81.

[12] Ibid. 82.

[13] Jennifer Sherwood & Nikolaus Pevsner, *Oxfordshire* (1974), 160; *Royal Commission on Historical Monuments, Oxford* (1939), pls. 145, 148.

[14] Sherwood & Pevsner, *Oxfordshire,* 120; see *Royal Commission on Historical Monuments, Oxford,* pl. 96.

[15] G. L. Remnant & F. W. Steer, *Misericords in St. Mary's Hospital, Chichester* (Chichester Papers, **28**, 1962). They claim that the same carver was responsible for some misericords in both groups. Yet each set seems stylistically absolutely distinct. Apart from the blind tracery at the east end of the north side at St. Mary's Hospital, there are few resemblances between the two stall-sets in Chichester. In several cases the supporters of the misericords at St. Mary's merge into the main carving while at the cathedral they are always distinct and usually pushed up to the top of the bracket. The dissimilarity in the carving styles between the two sets is striking. In contrast to their 1962 position, Remnant and Steer placed the cathedral stalls 'from *c.* 1330' in their paper written a year earlier: G. L. Remnant & F. W. Steer, *Misericords in Chichester Cathedral* (Chichester Papers, **22**, 1961), 2. Godfrey and Blore in *Victoria County History, Sussex,* **3** (1935), 127 dated them to *c.* 1330.

[16] I am very grateful to Dr. Richard Morris for pointing out these parallels and allowing me to reproduce his mouldings for the Winchester Cathedral choir stalls and the Exeter Cathedral bishop's throne. See notes 18–19.

Fig. 15. Chichester Cathedral. Misericord support of veiled female with hair in ringlets.

Fig. 16. Winchelsea parish church. Label-stop on south aisle sedilia.

Fig. 17. Winchelsea parish church. Atlas corbel figure. (Conway Library, Courtauld Institute of Art)

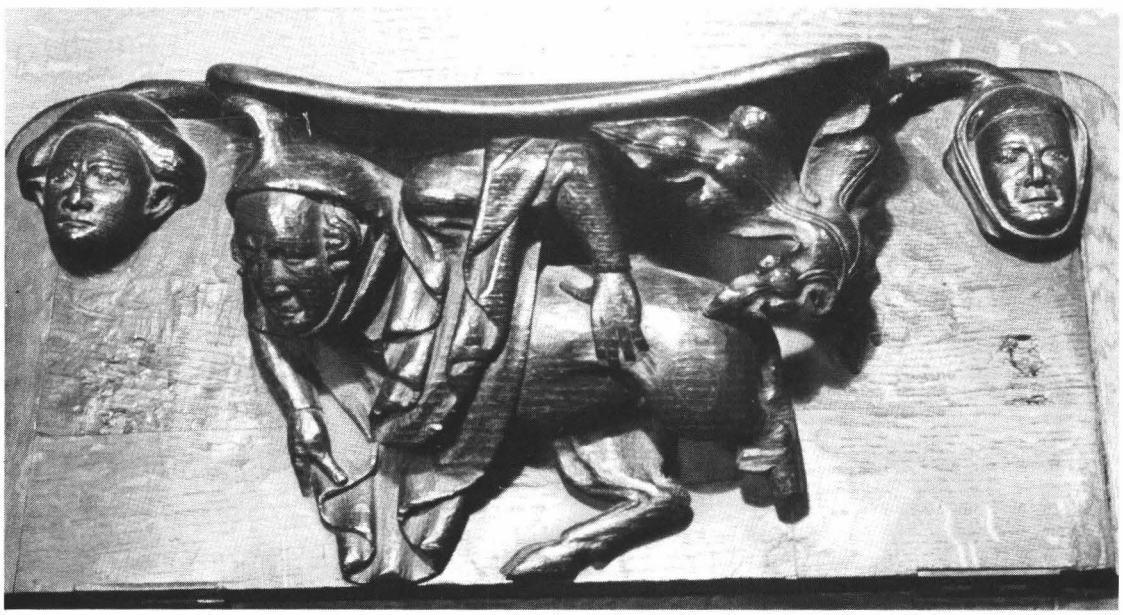


Fig. 18. Chichester Cathedral. Misericord of centaur with hair in ringlets. (National Monuments Record)

[17] In 1252 orders were given to prepare timber for the monks' stalls: *Close Rolls, 1251–2*, 280. It has been suggested that the choir at Westminster Abbey cannot have been ready for use before 1269 but it is unlikely that the choir stalls can have been made more than a few years after the timber was ordered. See *The History of the King's Works*, ed. H. M. Colvin, **1** (1963), 419. The choir stalls were discarded by the Dean and Chapter in the 18th century. Their form can be

Fig. 19. Winchelsea parish church. Label-stop from chantry tomb in north aisle.

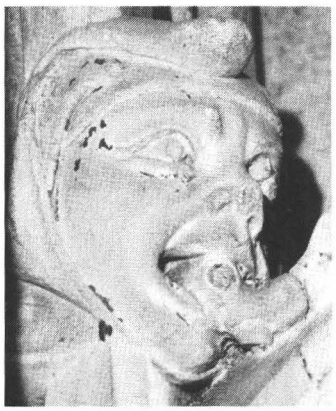


Fig. 20. Winchester Cathedral. Head in south-east corner of feretory screen.

Fig. 21. Winchelsea parish church. Detail of pinnacle on north aisle tomb.

made out in the early 18th-century painting of the choir now in the abbey museum and by the reconstruction in W. R. Lethaby, *Westminster Abbey and the King's Craftsmen* (1906), 272.

[18] There were two distinct but clearly related campaigns in the making of the choir stalls at Winchester Cathedral. The original stalls were erected, and presumably designed, by William Lyngwode, a Norfolk master carver, whose continued residence at Winchester was requested by the furniture's patron, Bishop Woodlock, in the summer of 1308 in a surviving letter to Bishop Salmon of Norwich. A short time after this the stalls must have started to show the symptoms of imminent collapse which still can be seen today. A programme of renovation was put in hand by the same team of workmen who had made the original furniture and the work cannot have been finally completed much later than *c.* 1315. For a full discussion of the Winchester Cathedral choir stalls see C. W. Tracy, 'English Gothic Choir-Stalls to *c.* 1400' (London Univ. Ph.D. thesis, 1984), 87–119.

[19] Erected in 1317, the Exeter bishop's throne was probably designed some six years earlier. For a discussion of this monument see Tracy, 'English Gothic Choir-Stalls to *c.* 1400', 124–9.

[20] Vaulting cells of thin triangular sections of wood bent to shape are found at Winchester Cathedral. These are, again, modern replacements but the technique of bending wood under heat and pressure is predicated by the surviving construction. I have consulted Mr. Cecil Hewett on this point and, in his opinion, the technique was quite possibly

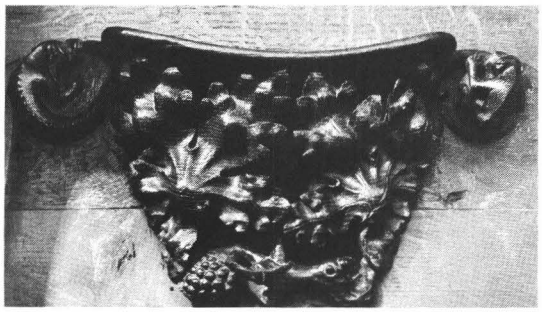


Fig. 22. Chichester Cathedral. Foliage misericord.

Fig. 23. Winchelsea parish church. Piscina in south aisle. Foliage carving on bowl.

Fig. 24. Chichester Cathedral. Double-bodied lion misericord.

Fig. 25. Exeter Cathedral. Misericord with lion fighting a dragon.

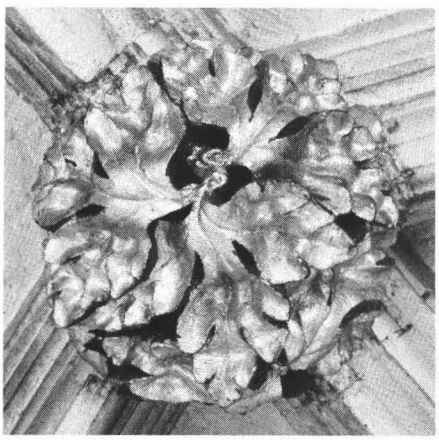


Fig. 26. Chichester Cathedral. Roof-boss in Lady Chapel.

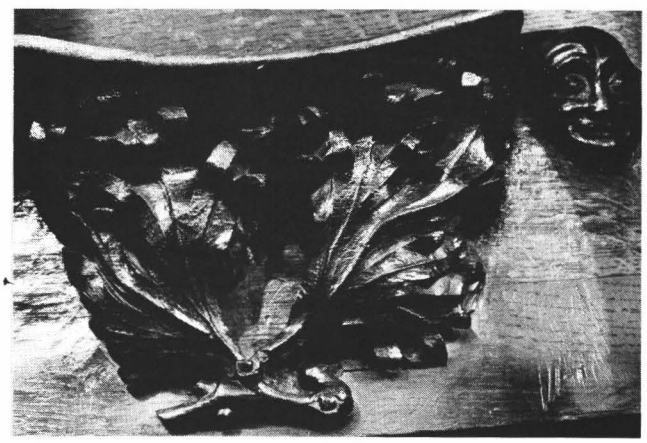


Fig. 27. Chichester Cathedral. Foliage misericord.

used.

[21] Two versions of the same view by T. King in the West Sussex Record Office and Chichester Cathedral Library and a view looking east by Carter, dated 1853, in 'Bishop Bell's room' at the cathedral.

[22] The number of lateral stalls (18) has not changed since before the collapse of the central tower. In addition, there were 8 returned stalls and special seats for the treasurer and chancellor at the east end.

[23] South side No. 8.

[24] Francis Bond, *Wood Carvings in English Churches*, **1**, *Misericords* (1910), 221. There survives a letter from Edward III the contents of which suggest that the tomb of John of Eltham had not been erected before August 1339. See Stone, *Sculpture in Britain*, 162.

[25] See notes 30–1.

[26] North side No. 20.

[27] South side No. 11.

[28] North side No. 9.

[29] The feretory screen at Winchester was probably inserted into the eastern presbytery arcade *c.* 1315. It may have been designed by Thomas of Witney with whose stone furniture at Exeter Cathedral it has stylistic links. The figure corbels on the west side of the arcade are reminiscent of William Lyngwode's carving in wood on the choir stalls. Lyngwode had, almost certainly, returned to his native Norfolk by September 1310 and, therefore, the arcade is unlikely to have been erected much later. See John Harvey, *English Mediaeval Architects* (1984 edn.), 191. For a discussion of the dating of this work see Georgina Russell, 'Decorated Tracery in Winchester Cathedral', *British Arch. Assoc. Conference Transactions, 1980*, 94. The chronology of the 14th-century rebuilding at the junction of choir and retrochoir at Winchester has been minutely examined in an article by Frank Woodman, 'The Retrochoir of Winchester Cathedral: A New Interpretation', *Jnl. of British Arch. Assoc.* **136** (1983), 87–97.

[30] Coldstream proposes that the tombs were inserted after the east end was built. See I. N. Coldstream, 'The Development of Flowing Tracery in Yorkshire, 1300–1370' (London Univ. Ph.D. thesis, 1973), 106. Stephen Alard founded a chantry in the church in 1312: William D. Cooper, 'Notices of Winchelsea in and after the Fifteenth Century', *Suss. Arch. Coll.* **8** (1856), 212.

[31] Gee discusses the two monuments in the south aisle. She suggests that the earlier, on the east side, is of the 1320s. She proposes that the other monument is a little later in date and made by the same workshop responsible for the three memorials in the north aisle. From their style the latter, of course, cannot be connected with Stephen Alard's chantry of 1312. See Loveday Lewes Gee, '"Ciborium" Tombs in England 1290–1330', *Jnl. of British Arch. Assoc.* **132** (1979), 38–40.

[32] Francis Bond, *Wood Carvings in English Churches*, **1**, *Stalls and Tabernacle Work*; **2**, *Bishops' Thrones and Chancel Chairs* (1910), 29.

[33] Francis Bond, *Wood Carvings in English Churches*, **1**, *Misericords* (1910), 20, 221.

[34] These stalls were made by John of Glaston for Bishop Stapledon in 1309–10. See *The Accounts of the Fabric of Exeter Cathedral, 1279–1353, Part I: 1279–1326*, ed. Audrey M. Erskine (Devon and Cornwall Rec. Soc. new series, **24**), 49, and my article, 'The Early Fourteenth-Century Choir-Stalls at Exeter Cathedral', *Burlington Mag.* Feb. 1986, 99–103.

[35] The tracery in the Lady Chapel windows is evidently later in style than at St. Mary's Hospital.

[36] R. Willis, *The Architectural History of Chichester Cathedral* (Chichester, 1861), 4.

[37] See note 29 above.

[38] See note 18.

[39] A. B. Emden, *Biographical Register of the University of Oxford to A. D. 1500* (1961), **2**, 1099–1100.

[40] In the 'Catalogue of Bishops' (Liber E, ff. 169–72 in the West Sussex Record Office), probably written by Bishop William Reed (1369–85), 'the wall and window on the south side' is described as belonging to the chapter house. It has sometimes been speculated that the chapter house was the room over the sacristy but the Latin may mean that the south transept was the chapter house. The 'Catalogue' is translated in *The Chartulary of the High Church of Chichester*, ed. W. D. Peckham (Suss. Rec. Soc. **46**), 275–9.

Sussex Archaeological Collections **124** (1986), 157–77.

EPIDEMIC MORTALITY IN 16TH-CENTURY RYE

by Graham J. Mayhew, B.A., D.Phil.

Rye, the largest and wealthiest town in Sussex in the 16th century, was a major south-coast port. It was the only town of its size and importance in the south-east with a single parish church. The parish registers survive from 1538 and reveal the town to have been, in common with other major towns of the period, ravaged on numerous occasions by plague and other epidemics. This article analyses the nature and incidence of epidemic disease in Rye, its impact on the different age groups and social classes in the town and the measures taken by the authorities to prevent its spread, relating the experience of Rye to a growing body of research on epidemic disease in English towns in the early modern period.

INTRODUCTION

The impact of epidemic disease on local communities has become a subject of increasing debate amongst English urban and social historians. The publication of J. F. D. Shrewsbury's *A History of Bubonic Plague in the British Isles* (1971), with its detailed catalogue of plague outbreaks throughout England in the 16th and 17th centuries and controversial views on the transmission of the disease, marked a considerable advance on Charles Creighton's work of nearly a century earlier.[1] More recently the Cambridge Group's *The Plague Reconsidered* (1977) has brought together current medical views on the nature of the disease and its most likely course, with local studies of the progress of the plague in Bristol, Eyam and Colyton.[2] F. J. Fisher's article on 'Influenza and Inflation in Tudor England' (1965) has demonstrated convincingly the almost universal impact of the influenza epidemic of the late 1550s in contrast to the more localized outbreaks of bubonic plague, and has argued powerfully for the relationship between dearth, high food prices and high epidemic mortality in the early modern period.[3] Other recent studies such as those by Hollingsworth and Palliser[4] have explored more specific instances of epidemic outbreaks, analysing the age structure of victims and corporate responses to crisis mortality.

As far as Sussex is concerned, C. E. Brent's 'Devastating Epidemic in the Countryside of Eastern Sussex between Harvest Years 1558 and 1640' is the sole serious contribution to the subject.[5] Brent concluded, on the basis of a detailed aggregative analysis of surviving parish registers, that, apart from the influenza epidemic of 1558, epidemics tended to be spasmodic in occurrence and only marginally related to plague, which was essentially an urban disease. Only in Hastings, Brighton, Lewes and Rye is there any conclusive evidence of major outbreaks recurring.[6] Of these towns Rye alone, with major mortality crises in 1544 (436 burials), 1563 (769), July 1579–October 1580 (813) and January 1596–June 1597 (510) and lesser crises in 1540, 1556–60 inclusive, 1579 and 1590, exhibits the characteristic tendencies among the larger provincial towns towards continuously high mortality rates resulting from regular, cyclical recurrences, in particular of bubonic plague, but also of other endemic diseases such as typhus and dysentery. Indeed, in only one decade between 1541 and 1640 did recorded baptisms overtake burials in the Rye parish registers, whilst in the unhealthy decade 1551–60 burials were almost 60 per cent higher than baptisms. Nor is this an isolated occurrence. Although entries for a

number of years are missing, it is clear from those surviving that similar proportions would hold true for the 1560s and 1570s, the 1580s alone providing a respite with roughly equal numbers of baptisms and burials, before burials again soared in the 1590s to a level 50 per cent higher than baptisms. It was not until the 17th century, when economic decline had halved the town's population, that burial rates fell permanently to a level approximately equal to baptisms. Throughout the 16th century, Rye's population can only have been maintained by consistently high levels of immigration into the town, mainly from surrounding parishes.[7]

However, bare totals provide only a very rough guide to the impact of epidemics. As Brent concluded, the full impact of epidemic mortality 'should be judged, not by the numbers killed, but by the age-groups in a community which are eroded, since the destruction of the young and the old would generate less trauma than the elimination of vigorous adults'.[8] It is towards the exploration of these questions, of the age and social structure of the victims of these epidemics in Rye, and of the geographical distribution of the major outbreaks by ward and the communal response, that this article is directed, providing an opportunity for comparisons and contrasts with the findings of other similar studies elsewhere.

TOWARDS A GENERAL CHRONOLOGY

Rye was unusual among towns of its size in having only one parish church, the registers of which survive (with minor gaps) from 1538. The town was assessed as having a population of 2,468 persons in 1565. The Corporation claimed a population of some 5,000 in 1574, falling to around 3,000 in 1580 and a mere 1,500 in 1625.[9] These figures can be regarded only as indicative, but whatever the exact figures (and the substantial variations should serve as a warning against placing too much store on exactitude), it is clear from other sources such as the chamberlains' accounts, that Rye reached the zenith of its economic wealth and activity in the 1570s and early 1580s, followed by a sharp decline in the early 1590s resulting in widespread defaults on rents due to the Corporation and substantial reductions in income from levies on trading activities which more than halved corporate income by 1600.[10] The severest epidemics were when the population was greatest, indicating a close relationship between high population density and overcrowding, and the outbreak of epidemic disease—a correlation noted, particularly in the case of London, in such indicators of official government thinking as royal proclamations forbidding (largely unsuccessfully) the growing subdivision of properties into multiple tenements.[11] A somewhat similar situation must have existed in Rye, since the government survey of ports and coastal towns made in 1565 listed Rye as having 530 households, at a time when the town was still emerging from a decade of epidemic mortality levels, whereas a town cesse in January 1576 listed 439 ratepayers (excluding possibly as many as another 40 per cent too poor to pay), but only 407 houses, indicating a substantial degree of multiple occupation. In Baddings ward, for example, the second poorest of Rye's six wards, 100 persons were rated for 75 houses. The absence of the very poor indicates that the real situation was far worse.[12]

Table 1 indicates the main trends in Rye's population, in particular the peaks in baptisms in the late 1540s and 1550s, followed by substantial decline after the epidemic crises of the late 1550s and early 1560s, leading to a recovery by the mid 1570s. From then on, the figures suggest relative stability of population until 1595, after which there is an obvious and substantial period of sustained decline. The peaks in burials indicate graphically the impact of regularly recurring epidemics, while the peaks in marriages show the remarriages of bereaved partners in the years immediately following major epidemic outbreaks.

In addition to the evidence of the burial totals themselves, other documentary sources indicate the presence of the 'sweating sickness' in

TABLE 1
Annual Levels of Baptisms, Marriages and Burials in Rye 1539–1603

Year	*C*	*M*	*B*	*Year*	*C*	*M*	*B*
1539	92	24	86	1572		52	163
1540	84	43	208	1573[3]	26	30	91
1541	97	46	147	1574	107	36	110
1542	114	37	93	1575	142	32	98
1543	96	47	121	1576	110	48	101
1544	126	47	440	1577	125	34	94
1545	112	46	143	1578	109	21	95
1546	87	34	131	1579	109	31	271
1547	64	28	56	1580	93	82	556
1548	114	44	120	1581	112	46	53
1549	140	46	95	1582[4]	106	42	101
1550	110	44	91	1583[4]	60	25	43
1551	86	31	78	1584	68	26	53
1552	108	30	89	1585	124	30	99
1553	121	43	120	1586	100	20	70
1554	126	42	122	1587	95	28	126
1555	138	20	106	1588	111	42	122
1556	134	38	188	1589	98	27	79
1557	92	35	266	1590	86	50	233
1558	106	46	331	1591	107	29	96
1559	75	61	257	1592	101	49	178
1560	134	73	219	1593	108	39	124
1561	133	56	140	1594	96	47	76
1562	100	37	127	1595	103	32	71
1563	116	50	769	1596[5]	81	25	422
1564	99	91	81	1597	68	23	138
1565[1]	116	37	110	1598	69	19	73
1566[1]	49	19		1599	76	21	42
1567	79	35		1600	77	18	57
1568[2]	89	24	62	1601	72	30	39
1569[3]	45	26	57	1602	80	24	51
1570[3]		43	163	1603	93	33	86
1571		52	113				

Notes
[1] entries missing CM Oct. 1565–April 1566, B Nov. 1565–July 1568.
[2] " C May–Aug., M March–Sept.
[3] " C June 1569–Nov. 1573, B Sept. 1569–March 1570.
[4] " C 25 Nov. 1582–10 March 1583.
[5] " C 24 Oct. to end Dec.

Source: E.S.R.O., PAR 467/1/1/1–2.

the town in the spring of 1517; some form of epidemic among the troops embarking for France from Rye and Dover in September 1543, although there is little evidence of this from the Rye registers; and the presence of plague in Rye occasioning the issuing of regulations confining infected households indoors in 1563, 1579–80, 1596–7, 1598 and 1625, while, according to

Shrewsbury, plague outbreaks at Rye and Dover in 1577 led to government instructions allowing French prisoners of war to leave the towns that summer. Finally, in January 1590 diseased soldiers returning from France began yet another (unspecified) epidemic, possibly of typhus. At least three epidemics, therefore, were triggered off by returning soldiers: in 1544 by those returning from Henry VIII's Boulogne expedition of the previous autumn; in 1563 by those returning from plague-infected Le Havre; and in 1590 following English intervention in support of the protestant Henri IV in Normandy.[13] However, given the regular almost cyclical recurrences of plague in Rye between 1563 and 1598, it is not impossible that this disease was endemic in the town during this period, as in London.

The problems of identification of particular diseases in the early modern period are considerable. Nevertheless, it is generally accepted that a peak of burials in the summer or early autumn, decreasing with the onset of colder weather, is a strong indication of the presence of bubonic plague, since the fleas which carry the disease are most active at 15–20°C and 90–95 per cent humidity and become far less so at lower temperatures, although winter outbreaks of plague cannot be entirely ruled out. Outbreaks can also recur, as infected fleas can, apparently, survive up to a year in the dust on the floor of a house, and the plague bacillus may survive for years if kept in the dark and at a near constant temperature, for example in rodents' burrows.[14]

Of the seven most serious mortality crises in 16th-century Rye, the epidemics of 1540, 1544, 1563, 1579–80 and 1596–7 all fit the classic plague profile of peak mortality in late summer or autumn, tailing off in the winter months, although in the case of the 1579–80 outbreak the progress of the disease suffered only a temporary check in the winter months, before returning in greater force in the following spring. The 1590 epidemic provides a similarly clearly defined peak, but during the colder months of January and February, dying out completely by the end of April, which suggests the presence of a disease other than plague, in this case possibly typhus.[15] The crisis years 1556–60, however, provide a striking contrast, with much more even burial rates throughout the year, but with a noticeable rise during the winter months, confirming the

TABLE 2
Monthly Mortality Rates during the Years of Crisis Mortality in Tudor Rye

Year	*Month*											
	Jan.	*Feb.*	*March*	*April*	*May*	*June*	*July*	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*
1540	8	5	5	4	7	10	6	13	25	61	39	25
1544	9	6	8	17	30	30	92	127	54	34	15	18
1556	4	9	7	4	13	10	12	5	19	58	21	16
1557	16	11	7	19	18	21	27	23	19	40	39	26
1558	23	22	18	17	22	19	26	20	35	42	53	34
1559	35	30	21	32	23	10	7	10	28	22	17	22
1560	29	24	21	27	39	18	10	6	11	12	7	15
1563	8	15	17	20	13	19	26	103	294	169	58	27
1579	8	1	6	10	12	10	22	23	28	65	47	40
1580	24	39	63	68	111	51	39	65	59	24	5	10
1590	29	73	42	22	7	10	5	4	9	13	7	12
1596	15	4	5	9	3	18	16	14	30	96	114	96
1597	29	19	13	10	8	14	6	6	7	10	7	8

Source: E.S.R.O., PAR 467/1/1/1–2.

traditional interpretation of recurrent influenza epidemics during the late 1550s, although the high burial peak in October 1556 may indicate the presence of plague during this year. The figures are set out in Table 2.

The 1563 plague outbreak, with its staggering peak of 290 burials in September, was easily the most devastating in the suddenness of its impact. For eight consecutive weeks burials averaged more than six per day, culminating in a peak of 17 burials on 27 September and 90 during that week. The total of burials for the year (769) perhaps accounted for rather more than 30 per cent of Rye's total population, given as 2,468 in 1565, figures comparable to the 30 per cent mortality given by Palliser for York in 1604 and the 25 per cent ascribed by Shrewsbury to London in 1563.[16] However, in terms of cumulative totals, it was more than equalled by the epidemic of 1579–80, which, while less swift in its devastating progress, accounted in total for 813 victims over an 18-month period. Even more devastating in total were the late 1550s, throughout which burial rates were at least twice and sometimes three times as high as in more normal years, accounting for 1,259 victims, equivalent to rather more than 50 per cent of Rye's 1565 population within a mere six years (i.e. an annual mortality rate of over eight per cent compared to four per cent in the control years 1574–8). Coming on top of these years of continuing crisis, the 1563 plague outbreak must have been especially traumatic. One indication of the impact of these recurrent crises on Rye's population can be seen among the ruling elite. Between August 1557 and August 1559 eight of Rye's 13 Jurats died and had to be replaced, a further four more following by the close of 1563.[17]

The parish registers, by their breakdown of burials into such categories as householders, servants, widows, single men and strangers, as well as children and parents, provide further indications of the impact of these recurring epidemic outbreaks. The results, as set out in Table 3, while by no means conclusive, provide evidence of the more obvious trends.

The figures provide interesting comparisons with the results of studies of other towns. In particular, there is a powerful imbalance between mortality rates for adults of the two sexes, most noticeably during the plagues of 1544 and 1563 and the epidemic of 1590, and to a lesser extent during the 1550s and in 1579–80 and 1596–7. This compares with similar findings commented upon by Hollingsworth in London and is in striking contrast to Bradley's findings in the more spread-out township of Eyam in Derbyshire and Schofield's figures for the market town of Colyton in Devon.[18] In 1590 the deaths of 40 soldiers account for the imbalance, whilst in 1544 and in the 1550s the high numbers of aliens and strangers buried suggest that the epidemics of these years caught many visiting traders and seamen in the town. However, the same is clearly not true of 1563, where the residual imbalance, after discounting aliens and strangers, is still of the order of two to one. A partial answer is indicated by the figures for single men and male servants as compared with female servants. A town of the size of Rye clearly provided opportunities for upward social mobility through trading and apprenticeships which attracted substantial numbers of younger sons hoping to advance themselves through service. In addition, there was always a large temporary population of visitors, almost entirely male, engaged in trading activities connected with Rye's position as a major south-coast port. Similar reasons could account for the imbalance of males in London in contrast to the smaller market town of Colyton, where most visitors would probably come and go on the same day for markets, and Eyam, where there would be few if any such visitors.

A second, equally interesting, comparison is with Hollingsworth's suggestion that children were possibly more susceptible than adults to plague. Again the Rye figures seem to bear out a close comparison with London, in particular in 1586–7, where the ratio in Rye was three children to two adults, and to a lesser extent in 1563 and

TABLE 3
Victims During Major Epidemic Outbreaks from Rye Burial Registers

Category	*Years*							
	Control years 1574–8[1]	*1540*	*1544*	*1556 –60*	*1563*	*1579 –80*	*1590*	*1596 –7*
Child M	125	48	88	281	180	189	30	154
Child F	114	40	99	256	180	205	32	139
Maid[2]	3	9	10	35	33	7	5	7
Lad/boy[3]		3	8	23	18	5	1	6
Unspecified	7	1		1		24	5	1
Total child M	125	51	96	304	198	194	31	160
Total child F	117	49	109	291	213	212	37	146
Total children	249	101	205	596	411	430	73	307
Servant M	17	6	55	72	61	66	11	19
Servant F	11	5	29	32	45	40	2	20
Young/single M	4			5	23	6	2	2
Householder M[4]	60			125	90	60	20	63
Wife	81	9	15	155	51	94	39	45
Widow	32	14	2	77	12	24	16	25
Old M[5]	14			64	8	32	15	8
Other M	17	35	65	16	17	29	7	14
Other F	4	19	20	4	2	3	1	1
Stranger/ alien M	18	15	41	104	44	22	45[6]	4
Stranger/ alien F	1	4	4	9	5	7	1	2
Total adult M	130	56	161	386	243	215	100	110
Total adult F	129	51	70	277	115	168	59	93
Total adults	259	107	231	663	358	383	159	203
Total M	255	107	257	690	441	409	131	270
Total F	246	100	179	568	328	380	96	239
Total children and adults	508	208	436	1,259	769	813	232	510

Notes

[1] The years 1574–8 were chosen as a control because their average annual burial totals of 102 most closely approximated to the norm for non-crisis years, and, occurring a decade from the last major recorded crisis (1563), they were unlikely to be seriously distorted by preceding high burial totals.

[2] Includes poor maidens.

[3] Includes poor lads.

[4] Includes poor householders (male).

[5] Includes poor.

[6] Includes 40 soldiers.

Source: E.S.R.O., PAR 467/1/1/1–2.

1579–80. If servants were to be equally divided between children and adults (their ages falling mainly between 14 and 24, with a preponderance in the late teens), a similar ratio would apply in the latter two epidemics.[19] This is in noticeable contrast with the figures for the control years 1574–8 and the period of the influenza epidemics (1556–60) where the proportions of children and adults are not significantly different.

However, such findings, whilst interesting in themselves, provide only very general insights into the impact of epidemics on the population of Rye during these years. To discover more clearly what was happening and in particular to provide answers to such questions as the relative wealth or age of victims, a more refined analysis was required. Accordingly, burials of victims of the 1563, 1579–80 and 1596–7 plagues and of the 1556–60 influenza epidemics were card-indexed and checked against baptism indexes and the town rating assessments for 1554, 1558, 1563, 1576, 1581 and 1596. The results are examined below.

A PROFILE OF PLAGUE AND INFLUENZA VICTIMS BY WEALTH AND WARD

A formal ward structure was only introduced in Rye in 1573. Before that date wards for rating purposes varied to some degree with each assessment. As these variations are slight, the pre-1573 assessments can be arranged so as to be comparable to later assessments.

Table 4 gives two complementary indications of a ward's relative social position. A general indication is provided by the mean household rating assessment (obtained by dividing the total assessment for the ward by the number of individuals assessed). However, this masks important differences in the percentages of the social groups within wards with a similar mean assessment. For example, Strandgate and Landgate wards in 1576 both had a mean household assessment of 9*s*., but the former contained a far smaller percentage of the poorer sort (16 per cent) as compared with the latter (36 per cent)—a factor which may well go some way towards explaining the rather higher burial rate in Landgate ward.

Both measures place Middlestreet and Market wards at the apex of the social pyramid. These were the wards at the top of the hill on which the town was built, situated around the church and the Court House, the former consisting of present-day East Street, Market Street and Lion Street and the latter comprising the larger houses on the west side of the churchyard, West Street and Mermaid Street. These were where the majority of Rye's Jurats lived (nine out of 12 in 1558, nine out of 13 in 1576). Strandgate and Landgate wards were more mixed, the former consisting of the western half of the High Street together with the properties on the Strand quay under the West Cliff, and the latter consisting of the remainder of the High Street as far as the Landgate, together with the poorer lanes leading from the High Street to the town wall and the houses outside the Landgate on the Playden road. However, a distinct process of gentrification was taking place along the High Street. By 1596, five of Rye's 12 jurats were living here, compared to six in Middlestreet and Market wards and one in Baddings. Twenty years earlier there had only been two Jurats here, both in Strandgate.

The two remaining wards, Baddings and Watchbell, were notably poorer. Baddings ward consisted of a mixture of properties in present-day Watchbell Street plus poorer ones in alleyways running south to the cliff and around Baddings Tower, near a common privy. Watchbell ward began at the Watchbell on the south-west corner of the town and included the poorer fishermen's cottages on the West Cliff, assessed until 1573 with Baddings and Middlestreet wards, plus the Wish, until 1573 a separate ward comprising all the properties outside the town wall from the Strandgate to the Landgate—a low-lying area especially susceptible to flooding.[20]

Table 5 sets out the numbers of victims of

TABLE 4
Rye Wards 1558–96: Wealth and Social Structure[1]

Ward	Total number of households				Average rate per household[2]				1558			1563			1567			1569		
	1558	1563	1576	1596	1558	1563	1576	1596	Poorer	Middle	Wealthier	Poorer	Middle	Wealthier	Poorer	Middle	Wealthier	Poorer	Middle	Wealthier
									%	%	%	%	%	%	%	%	%	%	%	%
Middlestreet	62	65	64	64	8*s.* 7*d.*	10*s.* 4*d.*	11*s.*10*d.*	15*s.*10*d.*	24	37	39	22	46	32	17	33	50	23	34	42
Market	55	70	44	54	7*s.*11*d.*	8*s.* 4*d.*	14*s.*10*d.*	11*s.* 8*d.*	24	27	49	29	39	33	7	41	52	30	39	31
Strandgate[3]	105	72	64	63	4*s.* 6*d.*	9*s.* 2*d.*	9*s.* 0*d.*	10*s.* 0*d.*	29	50	22	11	43	46	16	37	47	37	30	33
Landgate[3]			75	90			9*s.* 0*d.*	8*s.*11*d.*							36	28	36	41	23	36
Baddings	85	85	95	65	5*s.* 0*d.*	6*s.* 5*d.*	5*s.* 2*d.*	2*s.*10*d.*	33	39	28	20	49	31	41	36	23	54	28	18
Wish/ Watchbell[4]	40	31	77	84	2*s.* 1*d.*	4*s.* 6*d.*	3*s.* 6*d.*	4*s.* 8*d.*	53	45	2	29	48	23	57	29	14	48	31	21

Notes

[1] Rates varied according to the town's needs. The poorer sort, defined as those on the minimum assessment, comprised those assessed at up to £2 in goods, who paid 12*d.* in 1558 and 8*d.* in 1596. The middle sort are taken to be those above the minimum, but paying 5*s.* or less (i.e. assessed at £10 or under in lands). The wealthier sort are taken to be those worth over £10.

[2] The rate actually levied, but excluding ratepayers living outside the town.

[3] The present-day High Street, then known as the Longer Street; it was only divided into two wards (Strandgate and Landgate) in 1573.

[4] Watchbell ward was created in 1573 to include the Wish plus the poorer, tightly packed fishermen's cottages on the West Cliff, previously assessed with Baddings and Middlestreet wards.

Sources: E.S.R.O., PAR 467/1/1/1–2; RYE 1/1–6.

TABLE 5
Rye Epidemic Victims by Ward and Wealth[1]

Ward	Total number of households				Victims												Average number of victims per household			
					1556–60				1563				1579–80				1596–7							
	1556–60	1563	1579–80	1596–7	Poorer	Middle	Wealthier	Total	Poorer	Middle	Wealthier	Total	Poorer	Middle	Wealthier	Total	Poorer	Middle	Wealthier	Total	1556–60	1563	1579–80	1596–7
Middlestreet	62	65	64	64	13	35	31	79	17	32	23	72	9	18	19	46	15	13	10	38	1·27	1·11	0·72	0·59
Market	55	70	44	54	10	18	48	76	18	21	17	56	4	14	7	25	8	7	4	19	1·38	0·80	0·57	0·35
Strandgate[2]	105	72	64	63	54	74	50	178	9	39	25	73	10	22	13	45	6	8	5	19	1·70	1·07	0·70	0·30
Landgate[2]			75	90									32	19	17	68	24	10	13	47			0·91	0·52
Baddings	85	85	95	65	51	45	36	132	17	37	31	85	49	36	14	99	20	11	5	36	1·55	1·00	1·04	0·55
Wish/ Watchbell[3]	40	31	77	84	16	28	3	47	15	23	2	40	73	19	10	102	43	21	22	86	1·18	1·29	1·32	1·02

Notes
[1] See Table 4, n. 1.
[2] See Table 4, n. 3.
[3] See Table 4, n. 4.
Sources: as for Table 4.

major epidemics identified as coming from a particular ward and gives their social status. The percentages of those identified vary remarkably little: 45 per cent in the years 1556–60 and in 1563, 47 per cent in 1596–7, and 51 per cent in 1579–80 of total recorded burials for the relevant period, excluding aliens, strangers and those who cannot with certainty be assigned to a particular household. Even allowing for such factors as a high transient element in Rye's population, poor widows living in other households and the existence of extended families, it is clear that considerable numbers of Rye families simply do not appear on any rating assessment. In an attempt to discover the scale of this non-registration, the numbers of those listed in the burial registers as householders were compared with those actually appearing in rating assessments. The results are shown in Table 6. On average, at least one third of Rye's householders appear not to have qualified for inclusion on the cesses. The bulk of this hidden third of householders must have been made up of the very poor. In 1563, for example, of ten householders described in the burial registers as 'poor', only one appeared in that year's cesse, compared to 42 of the 80 described simply as 'householders'. Widows, too, were heavily under-represented in the cesses, accounting for only three per cent of those assessed in 1563 (10) and similar proportions in 1558 (15 out of 323) and 1576 (13 out of 419). The hidden poor also accounted for a disproportionate share of total burials, perhaps as high as 55 per cent in the years 1556–60 and in 1563, 49 per cent in 1579–80 and 53 per cent in 1596–7.[21]

Table 5 provides general confirmation of this interpretation of the figures. During each of the three plague epidemics, burial rates among those included on the cesses were considerably higher among poorer families than among the wealthy: in 1563 and 1596–7 by a factor of 3:2, in 1579–80 by more than 2:1. However, the influenza epidemic provides a notable exception to this trend, with rather higher burial rates among the wealthy, bearing out contemporary comments, cited by Fisher, that mortality during the late 1550s was exceptionally high among the wealthier sort, who tended to escape the visitations of disease such as the plague.[22]

There could, however, be wide variations in levels of mortality among households of a particular social class in different wards. In 1596–7, for instance, there were only six burials recorded from 23 poor households in Strandgate ward compared with 15 burials from 15 poor households in Middlestreet ward. Similarly, in the years 1556–60 among the wealthier sort there were 52 burials from 28 households in the Lower Street compared with 25 burials from 24 households in Middle Street. In general, it was the wealthier wards which had the lowest mortality levels. Even in the years 1556–60, Middlestreet and Market wards had the second and third lowest levels of mortality after the smaller, relatively isolated Wish.

Market ward, in particular, had consistently

TABLE 6
Proportions of Householders from Burial Registers Listed in Cesses

Year(s)	*Number of householders buried*	*Percentage of householders buried listed in cesses*	*Percentage not listed*	*Number of households in cesses*
1556–60	125	57	43	347
1563	90	48	52	323
1579–80	60	66	33	419
1596–7	63	72	28	420

low mortality rates, running at considerably less than half those in the much poorer Watchbell ward in 1579–80 and barely one third of those of Watchbell ward in 1596–7. Indeed, except during the influenza epidemic, Watchbell ward consistently recorded the highest mortality rates during epidemics of any ward in the town. In 1590, for example, exactly half (22) of identified burials during the epidemic at the beginning of that year came from that ward, compared to five each from Landgate and Strandgate and four each from the remaining three wards.[23]

The effect on whole communities could be enormous. In Watchbell ward during the 1596–7 plague, for example, 45 out of 84 households were affected: 23 suffered one fatality, 11 suffered two, 7 suffered three, 2 suffered four and 2 suffered six. In one group of 25 households only seven were unaffected: in two of the affected households both husband and wife, together with two and four children respectively, were wiped out; in three more the husband was the victim, together with, in one case, five children, and, in another, two; and in a further three it was the wife who died. In Market ward, by way of contrast, only 12 households out of 54 were affected, accounting for just 19 fatalities between them. In a town as compact as Rye, these differences between the wealthier and the poorer areas are remarkable.

Although less sudden in its visitation than plague, the recurring influenza epidemics of the late 1550s, by a process of more gradual attrition, had an equally devastating effect. In Lower Street, for example, 70 of 105 households listed in 1558 suffered at least one fatality. In one group of 12 households, every one was affected; in another group, 12 out of 13 households suffered. In all, 17 adult male householders and a further four widows, i.e. one in five of those listed, died in these years, together with 18 wives; in three cases husbands suffered bereavement twice. Not surprisingly, such inexplicable suffering could only be regarded as an act of God; in just the same way, a prolonged period of 'unseasonable weather . . . threatening no small miseries and calamaties to fall upon us' was considered a 'token of [his] great displeasure' at 'our loose life and neglecting to do our duties as we ought', for which the surest remedy lay in public prayer and fasting until it should please God to stay his hand.[24]

During the late 1550s recurring mortality crises affected 64 per cent of the households listed in the 1558 cesse. The nature of the epidemic was such that the average mortality among households affected was rather less than in the plague years. Only some 19.3 per cent of these households recorded three or more burials in the period 1556–60, compared to 28.4 per cent in 1563 and 20.4 per cent in 1579–80. On the other hand, during plague years a rather lower proportion of households seem to have been affected. Only 52 per cent of households listed in the 1563 cesse suffered any fatality that year, and the figure was down to 42.5 per cent in 1579–80 and 35 per cent during the rather less severe plague of 1596–7. Plague, then, hit a smaller number of households, but was responsible for a rather higher level of mortality per household among those it struck.

Again, there is a clear correlation between poverty and high levels of mortality per household. Of the 42 households in the 1576 cesse with three or more fatalities during the 1579–80 plague, for example, 19 were of the poorer sort, 16 of the middle sort and only seven of the wealthier sort. Even more strikingly, of the 21 households suffering four or more fatalities that year, 13 were of the poorer sort, six of the middle sort and only two were from the wealthier class, which actually made up slightly more than one third (145) of the 419 households on the 1576 cesse. Much the same picture emerges from the figures for 1596–7, where, of 25 households listed in the 1596 cesse for which three or more burials were recorded, nine were of the poorer sort, 11 of the middle sort and only five of the wealthier sort. Similarly when only those households experiencing four or more fatalities are considered, the proportion of the wealthier sort falls still further, in this case to only one household

out of ten, compared to five of the poorer sort and four of the middle sort.

Table 7 sets out actual numbers of burials per household for the four main epidemic periods. It seems that in about half the households concerned only one person died. However, if only those in the cesse are considered, the proportion of single deaths falls to a mere 30 per cent (1563: 26 per cent; 1596–7: 34 per cent). In 1563 most of the households which paid rates had three or more recorded burials (54 per cent), although this proportion fell somewhat in 1579–80 (41 per cent) and in 1596–7 (36 per cent). Approximately two thirds of households with three or more recorded burials appear in the cesses (64 per cent in the years 1556–60, 68 per cent in 1596–7), reinforcing the likelihood that around one third of Rye's households at any one time fell below the minimum level of assessment.

Not all those who were excluded from the cesses were necessarily poor, however. In October 1580, for example, a Mr. Pattrick and his wife, clearly individuals of some standing (since only Jurats and persons of a similar dignity merited the title 'Mr.'), were both buried. Neither appeared on either the rating assessment for 1576 or that for 1579. Similarly, in October 1596 John Prescott, the vicar of Rye, and his wife were buried on successive days, followed within a month by their three children, all dead of the

TABLE 7
Numbers of Burials per Household during Major Epidemics

	1	*2*	*3*	*4*	*5*	*6*	*7*
1556–60							
Households in cesse	108	73	29	22	11	4	1
Households not in cesse	452	84	26	10	0	1	0
Total households	560	157	55	32	11	5	1
1563							
Households in cesse	84	37	25	14	8	1	
Households not in cesse	300	46	14	1	3	0	
Total households	384	83	39	15	11	1	
1579–80							
Households in cesse	110	54	21	14	4	3	
Households not in cesse	260	39	16	8	4	0	
Total households	370	93	37	22	8	3	
1596–7							
Households in cesse	86	36	15	6	2	2	
Households not in cesse	177	20	9	0	1	2	
Total households	263	56	24	6	3	4	

Sources: E.S.R.O., PAR 467/1/1/1–2; RYE 1/1–6.

plague. Again, there is no entry for the vicar in the 1596 cesse, drawn up in March of that year, although Prescott had been in the town since his induction on 19 January 1592, and a predecessor, John Browne, who died during the influenza outbreak of 1558, had been assessed to pay 20*s.* in 1554.[25]

The deaths of two of Rye's vicars during epidemics highlights the fact that certain groups within the town, by the nature of their occupations, were more at risk than others during epidemic outbreaks. One easily identifiable such group were servants living in, who tended to live in close proximity to one another, usually in upper-storey garrets, and in times of necessity would be the members of the household most likely to be sent out into the town for provisions, when they would be at greatest risk of infection. Such certainly seems the likeliest explanation for the fate of numerous servants in the late 1550s including five from the household of John Colbrand's widow, a brewer in Lower Street, four from the house of Thomas Hamon, a carpenter, five doors away, and three each from the households of Christopher Scales and William Ferall in Middle Street. There are many other examples from these years and during later plague epidemics. For instance, it is hardly likely to be coincidental that Mathew Flory, the French surgeon, who was employed by the Corporation to tend the sick during the 1579–80 plague outbreak, lost a servant at the height of the epidemic,[26] or that in February 1590 the persons in whose houses the infected soldiers were lodged and the women who tended them began to die at the rate of four or five a day.[27]

THE AGE STRUCTURE OF EPIDEMIC VICTIMS

Unfortunately, the parish registers for Rye do not give age at burial, so it has not been possible to construct absolute totals for particular age groups as Hollingsworth was able to do

TABLE 8
The Age Structure of the Younger Victims during Epidemics

Age at burial	*Control years 1574–8*		*Years of burial*							
			1556–60		*1563*		*1579–80*		*1596–7*	
	no.	*%*	*no.*	*%*	*no.*	*%*	*no.*	*%*	*no.*	*%*
Under 1 year	91	59·5	120	32·5	51	18·9	43	16·5	28	13·0
1–4	34	22·2	141	38·2	79	29·3	77	29·7	72	33·3
5–9	17	11·1	63	17·1	59	21·9	74[1]	28·5	64	29·7
10–13	2	1·3	14	3·8	39	14·4	32[1]	12·3	28	13·0
14–21	9	5·9	31	8·4	42	15·6	34	13·1	24	11·1
Total	153		369		270		260		216	
Sample[2]	61%		61·5%		66%		63%		67%	

Notes
[1] Estimates based on actual figures for those aged 5 and 6 plus children of parents whose other children were born immediately before and after the period June 1569 to November 1573 for which baptism entries are missing.
[2] The percentage of those buried described as son or daughter of particular parents whose baptism was found in the registers. It must be borne in mind that such burials represented only approximately one half of total burials in any one year, the remainder being made up of adults.
Source: E.S.R.O., PAR 467/1/1/1–2.

for St. Botolph's without Bishopsgate in London during the 1603 plague. Instead, recourse has had to be made to the baptism registers in order to calculate approximate ages, which have been taken from the date of baptism. Such a method in a town like Rye with high immigration levels inevitably leads to a progressive under-representation of older children and, in particular, of adults, fewer of whom were likely to have been born in the town. However, it is still possible to observe the *relative* changes in proportions of victims of particular age groups during the major periods of epidemic mortality.

Table 8 sets out the results of this analysis. Once again, the years 1574–8 have been taken as a control, being years during which no observable epidemic was active in the town.[28] Approximately 80 per cent of burials located for young people aged up to 21 years occurred among those up to four years, with infant mortality (i.e. those aged under one year) accounting for about 60 per cent of the total.[29] A further 11 per cent of burials were of children under ten and a further reduced percentage of 7.2 of older children and adolescents up to the age of 21.

The late 1550s, covering a period of five years, inevitably contain a substantial bias towards high mortality levels among infants and the very young, those aged up to four years accounting for some 70 per cent of such burials. However, the proportions between infants and young children are notably different, the total numbers of infant burials rising by only one quarter (from 91 to 120), whereas burials in the one- to four-year-old age group have almost quadrupled. Similar fourfold increases in burial totals among the succeeding two age groups, together with a rather lower proportionate increase among those aged 14–21, suggest that influenza took a greater toll amongst the weaker, younger children.

All this is in striking contrast with the figures for the plague years, when the proportions of those aged up to four years fell to a remarkably constant 46 to 48 per cent of burials among young people. The percentage of infants in particular is down considerably from the 60 per cent of the 'normal' years to between 13 per cent (1596–7) and 18.9 per cent (1563), although, of course, in absolute terms the numbers of infant burials increased during the plague years. It was simply that they increased at a far lower rate than burials among the older age groups. Among those aged from five to nine years, for instance, burial rates more than doubled, from 11.1 per cent in the control years to 21.9 per cent in 1563 and 29.7 per cent in 1596–7. Increases among the older age groups were also substantial, up from a mere 1.3 per cent to an average 13 per cent among 10- to 13-year-olds, a tenfold increase, and from 5.9 per cent to an average 13.3 per cent among those aged 14–21. Overall, mortality among the older children and adolescents (those aged from 10 to 21 years) increased more than threefold, from 7.2 per cent in the control years to between 24.1 per cent (1596–7) and 30 per cent (1563) in plague years.

These results are remarkably similar to those achieved by Hollingsworth in St. Botolph's, London, where the proportion of burials among the five- to 14-year age group more than trebled in the plague year 1603, and rose by only a slightly lower ratio among the 15- to 24-year age group.[30] They are also in notable contrast with the influenza epidemics of the years 1556–60 in Rye, when the percentage share of burials among the older children and adolescents rose by only two thirds, from 7.2 per cent in normal years to 12.2 per cent. In the late 1550s, for example, burials among adolescents aged between 14 and 21 years (31) reached only a quarter of the figure for infant burials (120), whereas in 1563 the comparable figures were 42 and 51. Similar figures apply to the 1579–80 and 1596–7 plagues.

The impact of such epidemics on the already high levels of child and infant mortality was considerable. As Table 9 indicates, the average infant mortality rate between 1574 and 1577 was 15.9 per cent. The effect of plague in 1579 was to raise this still further to 26.7 per cent. Among younger children aged between one and four years the effect was even more dramatic, raising

TABLE 9
The Impact of Plague on Infant and Child Mortality

Age at burial	*Year of baptism*					
	1574	*1575*	*1576*	*1577*	*1578*	*1579*
Under 1 year	19	22	16	21	10	**29**
1	5	5	3	4	**15**	**11**
2	1	2	0	**7**	**8**	0
3	1	**7**	**6**	**8**	0	0
4	1	**19**	**8**	0	2	0
5	**10**	**5**	0	0	0	0
6	**3**	1	1	0	1	0
Total baptized	107	142	110	125	109	109
Infant mortality	17·8%	15·5%	14·5%	16·8%	9·2%	**26·7%**
Child (1–4) mortality	7·5%	**23·2%**	**15·5%**	**15·2%**	**22·9%**	10·1%

Note
The years for which figures are shown in bold are those of epidemics.
Source: E.S.R.O., PAR 467/1/1/1–2.

burial rates from a mere 7.5 per cent in 1574 to levels two or three times higher among year groups affected by plague. The table graphically illustrates the effect of plague, cutting a swathe through whole generations of young children. Of the 80 children born in 1574 who had survived beyond their fourth birthday, for instance, a further ten died in the first year of plague (i.e. some 12.5 per cent) Of those children born in 1575, some 60 (42.3 per cent) were dead before their sixth birthday. Of the 109 children born in 1579, 39 (35.8 per cent) died before their second birthday. It needs to be remembered too that such occurrences were by no means rare events in 16th-century Rye. In every decade from the 1540s to the 1590s there was at least one major epidemic outbreak, together with, on several occasions, a number of lesser ones. In such a context of recurrent epidemics high mortality rates, rather than being the exception, became the norm, and few children born in Rye in the 16th century can have lived through their childhood without passing through at least one, and more probably several, major visitations of epidemic disease.

PLAGUE OUTBREAKS AND PREVENTIVE MEASURES

Epidemic disease, and plague in particular, hit communities such as Rye with appalling suddenness. Within a matter of days in 1563, for example, the burial rate had soared from between two and five per week to weekly totals of 13, 17, then (after a week's respite) 33, 51 and so upwards to a final peak of 90 at the end of September. In the face of such sudden visitations, towns such as Rye adopted crisis measures to attempt to stem the spread of the epidemic. In 1518 London and Oxford ordered the marking of all infected houses with bundles of straw hanging from the windows and required those emerging

from them to carry white rods. In 1538 York coupled similar measures with a special rate for the relief of victims, the earliest example of such a rate, more than 60 years before Parliament formally authorized such measures, and in 1543 the Privy Council encouraged those suffering from plague to stay indoors. By 1550, York was marking the houses of the infected with red crosses, and in 1552 occupants of houses infected were ordered to remain indoors for 12 consecutive weeks, with the doors and windows of the houses kept shut for the first six weeks. Under the same regulations four men were paid 20*d.* a week to live separately and to bury the victims, and orders were made to stop pigs scavenging in the streets.[31]

Such measures were adopted on an *ad hoc* basis in times of crisis, and the thinking behind them is clear: to isolate the infected and prevent any animals that might carry the disease from wandering abroad. In Rye a similar series of measures was adopted. In July 1563 houses visited with the plague were ordered to be marked with the sign of the cross. No member of an infected household was to go out of his house on pain of a 40*s.* fine, and each house was to have a vessel of fresh water at its door, which was to be changed every two days and so 'kept sweet and clean'.[32] In September 1579 these regulations were extended to include the appointment of two women to view the dead bodies, the killing of any dogs found wandering in the streets, and the engagement of Matthew Flory, a resident French religious exile, to prepare medicines, and of three women to wash and tend the sick and their clothes and 'sack' the dead. Seventeen special overseers were appointed (three for each ward except Watchbell which was assigned two) to see the orders observed, and a special rate varying between 6*d.* and 3*s.* 4*d.* was levied monthly on the 152 wealthiest householders to provide for the needy and pay the wages of those whom the town had specially employed. At the same time the high mortality evidently affected the price of wood, since it was further ordered in December 1579 that no-one below the level of Mayor, Jurat or common councilman or their wives was to be coffined except by special licence. At the end of January the tax for the relief of the poorer infected households was revived, and a widow woman appointed to visit them and deliver whatever they needed to their doors. Finally, the following March, after a brief lull in burials due to the colder weather, the regulations and rate were once again introduced.[33]

In July 1596, when similar measures were again needed, the two women viewing the bodies were to be paid 4*d.* per examination, and again dogs, on this occasion together with hogs, roaming in the street were to be killed. In September it was reported that the plague 'as yet is very little dispersed by reason the infected persons are for the most part shut up into their dwelling houses and are not permitted to range abroad to the spoil of others', for which reason a small weekly tax was levied for the relief of the poorer plague victims. However, by October it was felt prudent to retain the services of 'Mr George' who 'professeth physicke' to continue his ministrations for a further year. At the same time it was necessary to tighten the measures against members of infected households who, if found wandering in the streets, were to be shut up in the Landgate (on former occasions used as a wartime prison for captured French seamen), there to be provided for until it could be seen they were clear of infection. Similar orders to ensure that the houses of plague victims were shut up were reissued in August 1598. The parish registers record only 27 plague burials in that year, so it seems that these measures were successful on this occasion in preventing the further spread of the disease.[34]

However, though it was clearly understood that plague might be spread by human or animal agents, and that cleanliness and hygiene were important, little was known about the real nature of the disease, as is clear from the suggested remedies in a book of medicines possessed by Philip Frith, a 'practitioner of physicke' in Rye in the 1650s and 1660s. Among the recommended cures in it was the taking of dragon water and

treacle 'to bring it out' and the drinking of powdered ivy berries 'from the north side of the tree' in white wine, although the additional recommendations 'to sponge your clothes with vinegar' and to keep a patient warm in bed, regularly changing his clothes and bed linen when he sweated, suggest some degree of basic nursing care. Other remedies in the same book include charms against witches and bewitched cattle, indicating the continuing links between medicine, superstition and magic, a connection reinforced in Rye by the witchcraft trial of Susan Swapper and Anne Taylor in 1607, which reveals powerful undercurrents of folk medicine and superstition amongst the local community.[35]

Primitive though medical knowledge was in the 16th century, it is not impossible that the measures adopted by urban authorities to combat the spread of plague enjoyed some success. The year 1598 is a case in point. On that occasion the infection seems to have been restricted to a mere 16 households and 27 victims, by far the larger proportion of whom (ten victims in four households) came, somewhat unusually, from Market ward. A similar degree of success may have attended the efforts of the Corporation in August 1625, when they were able to record that wild reports of plague raging in the town were exaggerated. Some 16 houses were affected and in the eight weeks since the plague began 40 people only had died:

> The houses infected are only in two places, at the Landgate altogether, and likewise in the Watchbell Street near unto the Gungarden altogether. And whereas one died in the Butchery (i.e. Market Street), that household removed into the Watchbell Street: so that all other places in the towne else, we praise God, are clear.

In this case the claims of the Corporation appear fully justified from the evidence of the parish register, which records a total of 70 plague deaths (indicated by a 'p') from June 1625 until an isolated burial in January 1626, some 40 occurring before late August.[36] It was the last such outbreak recorded.

During the three great plagues in Rye however, such measures proved largely ineffective. In 1563, the first entry in the parish register after the words 'the tyme of plague', on 2 June, records the burial of a soldier from Le Havre. Burials from various locations in the town then follow, with, up to 1 August, some two thirds of those identified coming from Baddings ward. The plague then seems to have spread to Market ward, and from thence to Lower Street and Middle Street which it reached on 6 August, only finally coming to the relatively isolated Wish on 16 August. From then on it raged relatively evenly across the whole town.[37] An equally rapid diffusion seems to have occurred in 1579, whilst in 1596 the differentiation of plague burials (313 out of a total of 435 between 16 July 1596 and 17 June 1597) by the letter 'p' in the parish register enables a rather more precise chronology of the spread of the disease to be compiled.[38] On this occasion the first plague death was from Strandgate ward and the second, some 13 days later on 29 July, further along the High Street in Landgate ward. At first the progress of the disease was slow. August was not noticeably worse than in many other years, with a total of 13 burials. Eight of these were apparently due to plague, the first five being confined to Landgate and Strandgate wards from whence the disease reached Watchbell ward by 10 August. The next six plague burials up to 17 September were all in Watchbell ward. Next day came the first burial from Middlestreet ward, followed three days later by one from Baddings ward. In the first half of October, all but one of the plague burials identified from the cesses came from Watchbell and Baddings wards (12 and five respectively). It was not until 18 October, more than three months after the plague began, that the first recorded victim from Market ward was buried. Even then the disease seems to have been slow in spreading. Of the seven plague burials recorded from Market ward by the end of October four of the first five were from one household, and two

others, at the end of the month, from another, the vicarage. All but a handful of the other October burials were from Watchbell and Baddings wards, and it is not until mid November that the heavy preponderance of burials from Watchbell ward in particular finally disappears. From then on until the disease finally disappeared, there is no discernible geographical pattern among the plague victims.[39] On this occasion, at least, then, the observable spread of the disease from the High Street wards into the relatively poorer, more populous Watchbell and Baddings wards and only somewhat belatedly into the wealthier Middlestreet and Market wards, provides a rationale for the town authorities' attempts at controlling the disease by quarantining the households of those infected.

Plague also presented another major problem to the Corporation. In 1625 the Mayor and Jurats complained that fears of the plague spreading into the surrounding countryside had led to the placing of the town under a virtual state of siege, with those appointed to keep watch in surrounding parishes obstructing the passage of townsmen who were not infected and threatening countrymen going to the town to trade that they would not be allowed to return. Even the Rye ferry was stopped, the local ferryman refusing to transport anyone from the town across to East Guldeford, lest they spread the disease into Kent. More seriously, the town was growing short of basic foodstuffs, a promised weekly Saturday market 'at the town's end' having virtually failed to materialize.[40] A similar shortage of basic necessities in the spring of 1597 led to the seizure by the Corporation of 20 qr. of barley bound for London in a small barque which had happened to enter the harbour, 'to be converted into bread for the relief of our poor distressed inhabitants'.[41]

On other occasions, dearth preceded rather than accompanied epidemic disease. In October and November 1555, for example, the town had to obtain licence to ship 600 qr. of wheat, 500 qr. of barley and 700 qr. of malt from Chichester, Poole and Hull to relieve the 'great want and scarcity of all kind of grain there', following what must have been a disastrous local harvest in the year which preceded the beginning of six years of continuous epidemic beginning in the summer of 1556. The following year the situation was clearly no better and the town had to send into East Anglia for supplies of butter, cheese and grain.[42]

Dearth and high food prices also preceded two of Rye's three worst plague epidemics, with the inevitable effect of weakening the resistance of the poorer among the population. In 1579 plague was preceded by a decade of grain shortages, exacerbated by a sharply increased population occasioned by the influx of protestant refugees from the French Wars of Religion. By January 1580 the town was again short of provisions and sent for 250 qr. of wheat to Kings Lynn.[43] Similarly, in 1596 plague followed three successive poor harvests and the importation of substantial quantities of grain of all types in 1594, 1595 and 1596.[44]

But if dearth and high prices adversely affected the ability of the community to withstand the ravages of epidemic disease, there is also some reason to suggest that the policy of shutting in infected households had considerable detrimental effect, as has been argued for Eyam.[45] The essence of the rat-flea theory is that there is a time-lapse of between 13 and 19 days from the first infection of a rat until the human victim succumbs, based on a timescale of two to five days before the death of the rat, a further three days before the fleas attack man, a three-day incubation period before the disease becomes apparent and an illness of around five days before the victim finally dies. If, therefore, there is a gap of some 15 days between plague deaths in a particular household, this argues for the disease spreading, not through human infection, but via the activities of this flea, passing from the dead rodent first to one human carrier and then, when that person also dies, to another, so accounting for the time-lapse. Subsequent deaths within approximately three days would imply the same infective source. Those at around

15 days would imply secondary infection on the lines suggested above. It would therefore considerably increase the chances of dying from the plague for healthy members of an infected household to have to remain inside their dwelling house for long periods of time after the infection of the first victim.[46]

At Eyam, Bradley found that almost exactly half the 59 families for which more than one burial was recorded suffered a second fatality within eight to 15 days, together with a high level of fatality within one to three days. At Colyton the peak was reached at 11 days.[47] At Rye the figures varied slightly between the three major plagues, but averaged 22.4 per cent for a subsequent burial within three days, and 41.5 per cent for subsequent burials within the 12–20 day period, with peaks at 12 and 15 days (1563), 12 and 14 days (1579–80) and 12 days (1596–7).[48] Bradley dismisses those burials (10 per cent) which took place above a 30–day period as probably having no connection with previous fatalities within that particular household. However, a surprisingly high proportion of households recorded burials with a greater time-lapse than 30 days during each of the major epidemics in Rye. In 1596, when plague burials are differentiated, there were at least 18 instances of this type (12 per cent) which seems rather too high to dismiss quite so easily. In 1579, for example, the household of one Symond Gogle suffered four burials between 25 May and 4 December, occuring at almost exact two-month intervals. In 1580 the household of Davie Foster recorded five burials at monthly intervals between 18 February and 1 May. It seems unlikely that these were entirely unconnected. Whatever the final outcome of this debate, however, it is obvious that, once infected, households might remain at risk for periods of at least one month and probably longer. No doubt this was why towns such as York imposed such lengthy periods of quarantine on the households of plague victims.

CONCLUSION

The experience of Rye broadly confirms the general results of research on urban plagues and epidemics elsewhere. In particular the evidence from Rye reinforces the view that at its worst plague might account for mortality rates of up to 30 per cent in an early modern urban environment. More importantly the figures for Rye demonstrate clearly the considerable differences between influenza and plague in their incidence amongst the different age groups and social classes, in their seasonality and in their very different impacts on a community, the former much more evenly spread, the latter often extremely localized, sometimes to a handful of households. Perhaps most noticeable are the striking similarities between the three major plague outbreaks in all their main features, from such common characteristics as the late summer surge in weekly burial totals to the close similarities in the average time-lapses between deaths within infected households. Equally, the preventive measures taken by Rye Corporation broadly parallel measures taken elsewhere by much larger towns. Finally, the evidence from Rye provides firm grounds for linking the spread of major epidemic disease with the return of wounded soldiers from military expeditions to the Continent. It may be that other south coast towns were similarly affected. It would be interesting to see if the experience of such towns as Dover or Portsmouth bore out a common pattern, or, indeed, whether such a link could be established with the ports on the other side of the Channel. Only further research will prove conclusively whether Rye's experience was unusual or commonplace. The indications are that it was the latter. Sixteenth-century towns were not places for weaklings.

Acknowledgements

I would like to thank Dr. Claire Cross and Dr. Paul Slack for their comments.

Author: Graham J. Mayhew, 29 West Street, Lewes, East Sussex.

Notes

[1] C. Creighton, *History of Epidemics in Britain* (2 vols., 1891–4).

[2] *The Plague Reconsidered: A New Look at its Origins and Effects in 16th and 17th Century England (Local Population Studies,* Supplement, 1977).

[3] F. J. Fisher, 'Influenza and Inflation in Tudor England', *Econ. Hist. Rev.* 2nd series, **18** (1985), 120–9.

[4] M. F. & T. H. Hollingsworth, 'Plague Mortality Rates by Age and Sex in the Parish of St Botolph's without Bishopsgate, London, 1603', *Population Studies,* **25** (1971), 131–46; D. Palliser, 'Epidemics in Tudor York', *Northern Hist.* **8** (1973), 45–63.

[5] C. E. Brent, 'Devastating Epidemic in the Countryside of Eastern Sussex between Harvest Years 1558 and 1640', *Local Population Studies,* **14** (1975), 42–8.

[6] *Local Population Studies,* **14**, 47–8; C. E. Brent, 'Employment, Land Tenure and Population in Eastern Sussex, 1540–1640' (Suss. Univ. D. Phil. thesis, 1973), 276.

[7] East Sussex Record Office (hereafter E.S.R.O.), PAR 467/1/1/1–2. The figures for 1551–60 were baptisms 1,193, burials 1,814, and for 1591–1600 baptisms 874, burials 1,255. The evidence from Rye Jurats' wills suggests that most came from surrounding Kent or Sussex parishes such as Brenzett, Brede or Hawkhurst, or other Cinque Ports, e.g. Lydd.

[8] *Local Population Studies,* **14**, 48.

[9] Public Record Office (hereafter P.R.O.), SP 12/38/28; E.S.R.O., RYE 47/7/68; 47/22/10; 47/101/22. (Rye Corporation MSS. are referred to hereafter simply as RYE.) Unfortunately the uncertainty of the population estimates renders impossible the calculation of burial rates per thousand for the later epidemics.

[10] See my forthcoming *Tudor Rye*, to be published by the Univ. of Sussex Centre for Continuing Education.

[11] *Tudor Royal Proclamations,* ed. P. L. Hughes & J. F. Larkin (1964), **2**, no. 649 ('Proclamation Prohibiting Further Building or Subdividing of Houses in London 1580'). The proclamation was reissued in 1602.

[12] P.R.O., SP 12/38/28; RYE 1/4, ff. 228–32.

[13] J. F. D. Shrewsbury, *A History of Bubonic Plague in the British Isles* (1971), 232, 234; *Letters and Papers of Henry VIII,* **19**(2), no. 253; RYE 1/3, f. 153; 1/4, f. 309; 1/6, ff. 66, 83, 87–8, 249; 47/101/22; 47/39/21–2; 60/5, f. 40v.

[14] *The Plague Reconsidered,* especially J.-N. Biraben, 'Current Medical and Epidemiological Views on Plague'.

[15] *The Plague Reconsidered,* 39, 52, 99–100 provides comparable evidence on the impact of typhus and the observable differences between its presence and that of bubonic plague.

[16] *Northern Hist.* **8**, 56; Shrewsbury, *History of Bubonic Plague,* 192.

[17] Evidence from E.S.R.O., PAR 467/1/1/1 (Rye parish register) and RYE 1/1–3 (Rye Corporation assembly minute books).

[18] *Population Studies,* **25**, 134–5; L. Bradley, 'The Most Famous of All English Plagues', in *The Plague Reconsidered,* 67 ff.; R. Schofield, 'An Anatomy of an Epidemic: Colyton, November 1645 to November 1646', in *ibid.* 108.

[19] *Population Studies,* **25**, 131–5.

[20] The boundaries of the wards are given in RYE 1/4, ff. 158v.–159.

[21] The figures are based on the percentage of those burials which were not strangers, aliens or otherwise unidentifiable. However, in some case close relatives with the same surname will presumably have been living in assessed households, and others could easily have moved into streets and died or moved out again between cesses. It seems unlikely, though, that such factors could account for more than a small percentage of the total.

[22] *Econ. Hist. Rev.* 2nd series, **18**, 125–6.

[23] After discounting those who were strangers, servants where no master is given, or otherwise unidentifiable, a total of 106 victims was left, 44 of whom were located from the 1596 cesse, a rather lower proportion than during the four major epidemics, but explicable in terms of the 6-year interval before the nearest available cesse. A high proportion of the exceptionally large number of strangers recorded were, of course, the 40 referred to above.

[24] RYE 1/4, f. 121.

[25] E.S.R.O., PAR 467/1/1/1–2; RYE 1/1, f. 24. It is interesting to note that at a time when plague burials were marked with a 'p' in the parish registers there is no 'p' after John Prescott's name, although there is one the following day for his wife, indicating presumably a degree of deference to his status.

[26] For Flory's appointment see RYE 1/4, f. 310.

[27] RYE 47/39/21.

[28] See Table 3, n. 1.

[29] It must be remembered that on any one occasion the total number of burials of children was only half of all burials. The percentages given would therefore need to be reduced by such an amount to give a true picture of the actual proportion of the total number of plague burials represented by these age groups.

[30] *Population Studies,* **25**, 134–5.

[31] *Northern Hist.* **8**, 58–9; J. Youings, *Sixteenth-Century England* (1984), 142.

[32] RYE 1/3, f. 51.

[33] RYE 1/4, ff. 309–12, 315v., 320, 323; Hist. MSS. Com. 31, *13th Report,* Appendix 4, Rye Corporation, p. 67.

[34] RYE 1/6, ff. 66, 83, 87–8, 249.

[35] E.S.R.O., FRE 606/6, f. 53v.; RYE 13/1–27.

[36] RYE 47/101/22. The Rye chamberlains' accounts record payments to John Leny for 'killing dogs and otherwise' (17 October 1596) and to Gabriel Gibbons, blacksmith, for three locks, seven hasps and staples 'that were imployed to locke in infected persons' (19 October 1596): RYE 60/10, f. 51v.

[37] E.S.R.O., PAR 467/1/1/1; RYE 1/3, ff. 43–8.

[38] E.S.R.O., PAR 467/1/1/2: the volume is not foliated.

[39] E.S.R.O., PAR 467/1/1/2; RYE 1/6, ff. 31–43.

[40] RYE 47/101/22.

[41] Hist. MSS. Com. 31, *13th Report,* Appendix 4, p. 114.

[42] RYE 1/1, ff. 40v.–41; 1/2, f. 2v.

[43] Hist. MSS. Com. 31, *13th Report,* Appendix 4, p. 68.

[44] Brent, 'Employment, Land Tenure and Population in Eastern Sussex', 277.

[45] *The Plague Reconsidered,* 67 ff.

[46] For a discussion of conflicting views on the subject see *The Plague Reconsidered,* esp. 26 ff., 67 ff.

[47] *The Plague Reconsidered,* 75–89, 108.

[48] The actual figures were 45 for days 0–3 and 78 for days 12–20 out of a total of 186 families with a subsequent burial within a 30-day period (1563); 37 for days 0–3 and 69 for days 12–20 out of 103 such cases (1579–80); and 23 for days 0–3 and 49 for days 12–20 out of a total of 116 in 1596–7. The percentages of subsequent burials within the 30-day period ranged from 75.3 and 74.1 in 1596–7 and 1563 respectively to 62.3 in 1579–80. A high proportion of those burials which fell outside the 30-day period were made up of infants dying shortly after childbirth, burials falling outside the period of the epidemic, and other such circumstances largely unrelated to a particular epidemic.

The Society is grateful to the Wellcome Trust for a generous grant towards the cost of publishing this article.

Sussex Archaeological Collections **124** (1986), 179–91.

THE GHASTLY WAR-FLAME: FIRE BEACONS IN SUSSEX UNTIL THE MID 17TH CENTURY

by Frank Kitchen

'For swift to east and swift to west
The ghastly war-flame spread;
High on St. Michael's Mount it shone,
It shone on Beachy Head.'

(Lord Macaulay, *The Armada*)

INTRODUCTION

During the late Middle Ages and 16th century, the coast of Sussex could be a dangerous area in which to live. Piracy was endemic and the periodic outbreak of wars with France or other continental powers often led to destructive raids on the coastal towns. One such raid is graphically illustrated in the well known drawing of the French attack on Brighton in 1514[1] (Fig. 1). Edward Hall in his *Chronicle* of 1548 described how

> Prior Jhon, great capitayne of the French nauy . . . or the watch could him esaye, he sett fyer on the towne . . . then the watche fyred the bekyne, and people began to gather, which seynge, prior John sowned his trompett, to call his men aborde . . .

A generation later a similar incident occurred in 1545 when 'came twelve score of French ships'[2] that landed to burn Brighton again. Holinshed in his *Chronicle* told how, once again,

> the beacons were fired, and the inhabitants thereabouts came downe so thicke that the Frenchmen were driuen to flie with losse of diuerse of their numbers; so that they did little hurt there.

The fleet moved off westwards to the Spithead and the battle in which the Mary Rose was lost. It then returned along the coast of Sussex and on 25 July sailed 'into Seeford bay and at ten o'clock landed men there'.[3] Holinshed continued, telling how Sir Nicholas Pelham, who had himself received orders as to the placing and watching of beacons,[4] 'and others, with such power as was raised upon the sudden tooke them up by the waie and quickly distressed them'. As in 1514, the beacon system played a key part in limiting the ravaging of the Sussex coast. Throughout the later Middle Ages and until the mid 17th century, fire beacons had a pivotal role in the defence of the realm against incursions of enemies, whether from across the border from Scotland or across the seas.[5]

A brief description of the use of fire beacons was given in the first volume of *Archaeologia* in 1750,[6] but since then very little has been published.[7] Historians have tended to concentrate on the naval aspects of, for example, Elizabethan defence. Standard works such as Mattingly's *The Defeat of the Spanish Armada* give but the briefest passing mention of the beacons, even though they were the keystone of the nation's defence system, as they had been for the preceding 300 years.

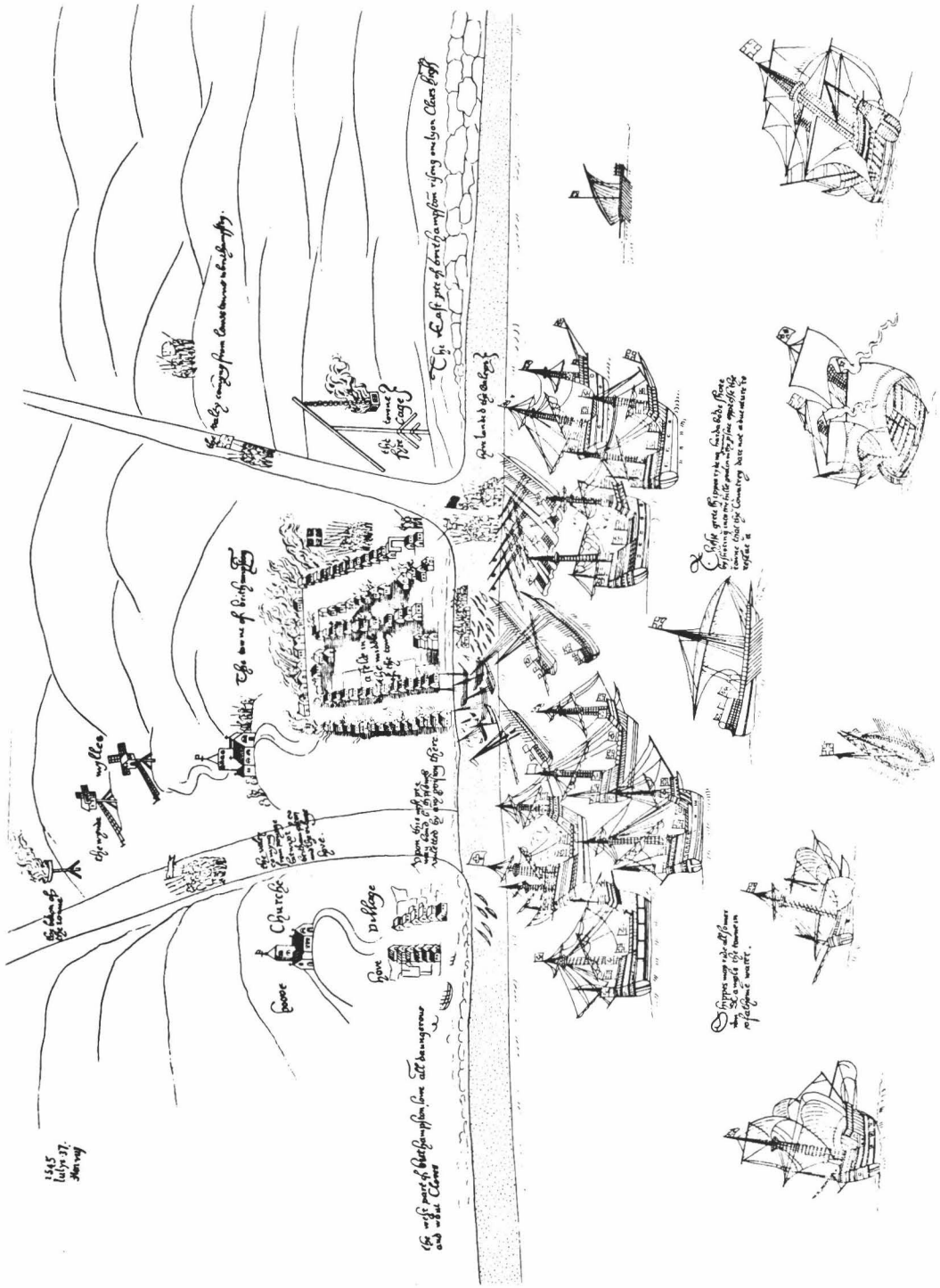


Fig. 1. The French attack on Brighton in 1514. (After British Library, Cott. MS. Aug. I, i, 18)

THE ORIGIN OF THE ENGLISH FIRE BEACON SYSTEM

The concept of passing simple messages or warnings across country from hilltop to hilltop by fire signals is an obvious one and its use in antiquity was well established. From Old Testament Palestine to the Byzantine Empire, fire signals formed part of the defence and administrative arrangements of many states including Greece, Persia and Rome. The many signal stations about the walls and coast of Roman Britain probably used fire to pass their warnings, perhaps using the sophisticated signalling system of torches described by Polybius at the end of the 2nd century B.C., whereby warnings could be coded: 'ship', 'cavalry have entered the country', and so forth.[8] Carvings on Trajan's Column show what appears to be such a system in use, together with large 'haycock' bonfires alongside the signal towers, perhaps for use as 'crash alarms' when the subtlety of the semaphore was unnecessary.

The origin of the fire beacon system in England is obscure. There is no clear mention of such tactics in chronicles or national records until the 14th century. Although beacons were in use in the 'Viking' world,[9] there is no substantial evidence to support the often repeated assertion that beacons were used in Saxon England.[10]

Yet when in 1324, during the contest between Edward II and his Queen, an inquisition was held on the Isle of Wight, the *signum per ignem* (fire signals) and watch ordered at 31 sites on the island were described as being used 'of old'.[11] This order was followed by a flurry of others to erect fire signals, 'with watchmen and sentinals in all proper stations', being sent to the sheriffs of nearly every county in England including Sussex.[12]

Further orders issued in 1337 and 1338 detailed that the fire signals should be made

> as well upon the hills distant from the sea as in other places near the sea coast, and as often in such places as shall seem to (the sheriffs) expedient, and as was formerly wont to be done . . . and lighted as often as danger shall threaten.

The beacons were to be guarded by 'four, five or six men at arms or armed men'.[13]

Orders for fire signals followed at intervals during the middle years of the century until the troubled 1370s when Edward III sent forth many detailed instructions. In 1372 the sheriffs of Sussex, Kent and Surrey were ordered to array their forces and 'without delay to make ready the signals called 'Bekynes' and other signals and watches upon the coast'. Those not complying were to be arrested and imprisoned.[14] For the first time in the rolls this old Saxon word for 'sign' or 'standard' was used for the fire signals; it very soon became the usual word. By the late 1370s the word and concept were sufficiently familiar for Langland to use 'bekene' figuratively.[15] But however widespread and useful the system they were, and remained, an English stratagem. Froissart felt it necessary to explain the beacons in some detail for his continental audience.[16]

The use of beacons soon settled into a routine. By 1388 an order, sent not only to the sheriffs but, in Sussex, to a number of prominent men (the Constable of Pevensey Castle, the county's Members of Parliament and the Abbot of Battle), all members of a class which a later order conveniently entitled 'lieges',[17] required the setting up of 'bekyns' in the 'usual places'.[18] As well as the fire signals, the warning system included a number of other elements. Restrictions were placed upon the ringing of church bells: within seven leagues of the coast, only one bell was to be rung for services and the full peal reserved for the invasion warning. Furthermore, once the beacons had been fired,

> as soon as they shall spy the enemies' ships coming with sail or oars . . . therewith (the watch) to make all the noise they may with shouting to warn the country round to come . . . armed in their best array.[19]

Polydore Vergil described how in the time of Richard III 'thinhabytantes about the seacostes place' on seeing the fire beacons

> with showtes through towne and fielde geave notice thereof . . . Thus ys the fame thereof caryed spedyly to all villages and townes and both country and towne arme themselves agaynst thenemy.[20]

THE BEACON SYSTEM IN THE 16TH CENTURY

Beacon orders were issued at intervals throughout the 15th century but never in sufficient profusion to point to a defence crisis like those of the previous century. Few orders were issued during Henry VIII's reign although the system continued, for in 1490 the beacons were again ordered 'in all the usual places'.[21] And although no orders have survived from the first 25 years of Henry VIII's reign, the drawing of the 1514 raid on Brighton (Fig. 1) shows that they were still in use. Furthermore, when in 1534 Thomas Cromwell issued beacon instructions, they were for the 'repair of beacons',[22] and a survey of the Dorset coast made in 1533 is illustrated with flaming beacons.[23] However, when the beacons flared in 1536 it was not as a response to foreign invasion but during the Pilgrimage of Grace. Both rebels and government used the beacons to confuse, warn and gather forces. Nine hundred men were gathered following the firing of a single beacon in 1537.[24]

Following Henry's break with Rome, when invasion of the south coast was feared, the beacons were once again repaired, although Cromwell reported to his royal master that many sheriffs were negligent in their duty.[25] From March 1539 the beacons were set and watch kept during a frenzy of defence activity: even women and children were pressed into service to dig trenches and bulwarks at Harwich. Special attention was paid to the south coast and, as the French ambassador reported to his masters,

> five or six ships do nothing but circle round the kingdom in order to explore and correspond if need be by fires with those who watch by night . . . No foreign vessel could show itself without the whole country being warned.[26]

Special care was taken to avoid the disruption that premature firing of the beacons would cause. Sir Thomas Cheyney, Lord Warden of the Cinque Ports, watching an Imperial fleet at anchor in the Downs off Thanet, noted that 'the firing of the beacons, I think, would be a great trouble to all the realm'.[27] The flagship of the fleet had the Imperial arms painted on the stern, with crossed keys—the Papal arms—painted on one side and the Burgundian arms on the other. Sir Thomas wrote to the King:

> They seem marvellous warlike and I like them the worse for the cross-keys, but I shall light no beacons till I know more. If they land I trust you shall hear of some broken pates.[28]

After the scares of 1539 and 1540, Sir Thomas's caution was made the subject of official orders: 'as enemies may make a face of landing when they mind it or not, order is to be given not to be over hasty in firing of beacons'.[29] In October 1544 the Privy Council issued detailed instructions in an attempt to refine the warning system:

> Two beacons to be set together from the Downs (off Thanet) to the Isle of Wight, in such places as shall be thought meet, and watchmen appointed to them with orders to fire the one if they see at least ten sail of enemies. The country shall not move upon sight of one fire in one place, but when two fires are made they shall repair to the coast; and the watchmen shall not fire both unless they see the enemies land.[30]

In the following January the scheme was

elaborated still further.[31] These new instructions, reissued in 1546, carefully described how the system was to be worked. Sets of three beacons were to be placed 'alongest the see cost'. Inland, 'uppon certeyn hylls next unto those places', were to be placed sets of two beacons, and 'within the body of the shere' were to be set single beacons to communicate with 'thynner parte of the shere'. Watch was to be kept by 'a number of wyse and vygylant persons', the beacon to be lit only by a man of 'dyscretion'. The firing of the beacons in each set formed a simple code to direct the relieving forces to the point of danger.[32] The number of ships that would 'trip' the warning system varied: sometimes, as in the above order, it was 'at least ten of sail'; in other times it was as few as two. The strategy was not to halt the invader on the shore; rather, as it was explained to a French officer in 1557, the enemy

> cannot come ashore without likelihood of great loss in the landing, and when he is landed, he must come to the sault the first day; and after that if he pay it, he must look to fight every day, and to have battle offered to him without end.[33]

This seems to have been no empty boast. For example, while Sir Nicholas Pelham dealt with the French landing at Seaford in 1545 on the Saturday and the Sussex beacons summoned the forces of the county, a letter was sent to the Justices of the Peace of the county of Kent: 'Hast, hast, post hast, for thy lyff, hast.'[34] The letter reached the Kent authorities by ten o'clock in the evening on that day; they fired their beacons and marched to Sussex. They received the news that they were not needed at Uckfield, which they had reached by Sunday night.[35]

Behind these neighbouring forces would have marched others. In the same month, albeit on a false alarm, the firing of the Oxfordshire beacons set the Worcestershire forces marching towards Portsmouth. In three days they had reached Newbury.[36] Such prompt reactions were the chief value of the system, and the shire authorities were normally told to be ready at an hour's warning. In 1588 it was planned that 16,000 men would converge on any point on the Sussex coast following the firing of the beacons.[37] In 1545 the Imperial ambassador warned Charles V that

> by means of the beacons the English say that they can anywhere muster 25,000 or 30,000 men in two hours and they are confident in their strength and delighted to see their enemy near.[38]

In 1556 Philip II of Spain had received similar information during Mary's war with France (1556–8).[39] These years brought forth a spate of beacon orders following a lull since 1549. The early years of Elizabeth's reign, despite pirates and her problematical relationships with France and Spain, seem to have provoked little beacon watching except for a flurry from 1567 to 1574. In the latter year there was a thorough review of past beacon regulations.[40]

However, from 1579, as England slid towards open war with Spain, the Council ordered the beacons watched every year. In 1587 they ordered the shire authorities to survey the defences of the coastal counties. Sir Thomas Palmer and Walter Covert, the Deputy Lieutenants for Sussex, reported on present ordnance and made recommendations for strengthening the defences. Their survey map marked the beacons along the coast of the county (see below). The beacon watch continued through the climax of 1588 until the end of Elizabeth's reign.

THE DECLINE OF THE BEACON SYSTEM

During the first quarter of the 17th century, with King James declaring himself at peace with all the world, the beacons for the most part stayed unwatched. In 1625 the war with Spain was renewed, and during the following four years order after order was issued by the Privy Council. The Lord Lieutenant of Sussex, the Earl of Arundel and Surrey, was told in 1628:

> The occasions are more apparent and more frequent than that wee shall neede to mencion them why all provident care should bee used for the securing of the Coasts . . . although we have written at other tymes to the same effecte yet wee have thought fitt at this tyme to renew our directions unto you for the carefull watching and looking to the Beacons on that Coast of Sussex which wee doe seriously recommend unto your Lordshipp and withall if you find any person refractory to bynd them over to answer their contempts before us.[41]

The implication that the beacon watch was not being taken as urgently as during previous conflicts is confirmed by many of the state papers. The instructions sent to the counties in May 1628 began with a long prolegomenon:

> The present state of Christendome . . . is motive inough to all men in all places too bee prepared and have all things in readines for defence, yet . . . these tymes require more than ordinary care . . . [42]

Orders sent to the Sussex Deputy Lieutenants in May 1625 contained detailed itemized instructions—a further suggestion that the system needed revivification. Now only two beacons were to be 'sett up in ye place accustomed . . . in such distance asunder that they may perfectly shewe two fires a farr of'. Each beacon was to be watched by a number of 'discreetest householders' and not to be fired 'but by the assignment of the said five persons or the most parte of them'. The beacons were not to be lit unless 'the nombre of shipps be above two like greate shipps of warr', and the threatening force looked greater than the immediately available local forces were likely to be able to deal with. Then both the beacons were to be fired at the sites nearest the landing, but elsewhere only one, and thus, as in the days of Henry VIII, direct the relieving forces to the invasion site. Two years later it was ordered that at least half of the watch should be armed with muskets. The Lord Lieutenant was distressed at the neglect of the beacons 'since my comeinge into the country . . . not withstandeing his Majesty's express commands in these dangerous tymes'.[43]

In times when threat was declared from London but no danger materialized on the coasts beacon watching must have been a tedious occupation and a duty of low status. Despite the orders stressing the importance of the task, the Lord Lieutenant complained that the watchers of the beacons

> dwell farr remote from the same and are many times unfitt for it, in regarde of theire years, wont of experience in the use of theire weapons, and other imperfections.

He ordered that six 'able and sufficient men' with muskets and bills attend the beacons, and those whose duty it was would have to pay the cost. Even this was unacceptable to many. In 1627 the Council were told that 'divers persons' refused to pay such a levy and the Council demanded names in order to make examples.[44] Complaints about the cost of the beacons were becoming more frequent. In 1639 a village in Hampshire petitioned that their beacon had been built 'time out of mind' with wood from the forest of West Bere, but that the present owner, Sir William Waller, was preventing this: another symptom of the growing unrest with the king's government that was to lead to the great mid-century conflict. [45] As these troubled years approached, the northern counties increasingly became the recipients of beacon orders, although the south coast beacons were made ready in 1640. But the greatest hours of the 'ghastly war-flame' were over, and except for very occasional proclamations during the last years of the century, the beacon system fell into disuse.

THE NATURE OF THE BEACONS AND WATCH

The season of beacon watch varied, natur-

ally enough, according to the international situation. Although the watch was generally called in spring and discharged in September or October, on occasion it was called as late as December, and on other occasions stood down as early as April. In 1545 it was called in January, and in 1590 and 1591 the watch continued throughout the winter.[46] The Privy Council was well aware of what it was asking when

> the nights do wax cold and of great length, whereby the watching of the beacons is very tedious and troublesome to the country.[47]

In 1598 the Council told the Lord Lieutenant of Sussex to stand down the watch in November, understanding the 'great trouble and charge of the inhabitants . . . in regard of the coldnesse of the weather.'[48]

The beacons themselves until the reign of Edward III were simply large bonfires, and doubtless on occasions were so in later times.[49] The Napoleonic beacon at Hollingbury Castle above Brighton was built on a tumulus inside the camp.[50] This was a widespread practice and has been noted in Warwickshire and Somerset.[51] The bonfire beacon was replaced by a more permanent structure: a tall oak post, rigidly supported, and with a ladder or rungs on the post itself to give access to a barrel of pitch or tar-soaked flax mounted at the top.[52] Such a beacon is shown on the drawing of the 1514 raid on Brighton (Fig. 1) on a hill to the north of the town: 'the bekon of the towne.' Also shown on the drawing, by the sea front, marked as the 'towne fyre cage' was an alternative form of beacon: the swape or lever light. This worked on the same principle as the ancient water-raising shaduf to lift a fire basket. The swape was the normal form for medieval 'lighthouse' beacons; the ease with which it could be recharged enabled it to burn for long periods. Doubtless Brighton's 'fyre cage' was a sea beacon for leading ships (the regulations in force in 1514 required only one beacon), but in times of danger it and other towns' sea beacons would probably be ignited. The Brighton beacon reputedly burnt 'strombolo', a highly inflammable substance, impregnated with sulphur, picked up from the sea shore.[53] It seems likely that other places used the fuel most readily available locally. Lydd in Kent used broom, and wood could always be found.

A further style of beacon, a late development, intermediate between the laddered post and the swape, was constructed as a gibbet with a fire basket hung from the arm. The basket was probably lowerable for recharging. John Ogilby's *Britannia* published in 1675 showed as landmarks several such beacons in Sussex (see below).

The large bonfire beacons would have been visible over considerable distances. Observers of Queen Victoria's Jubilee beacons in 1897 reported that 'the light of a beacon fire in the distance is unlike any other . . . '. They were described as standing out 'like solemn red eyes opened in the dark face' of the distant hills. Sightings over huge distances were reported.[54] Even so, the 16th-century beacon system did not require any exceptional conditions of visibility. A map of the beacons in Kent made in 1596 by William Lambarde was added to a new edition of his *Perambulation of Kent*. This 'carde' showed an average distance between sites of $7\frac{1}{2}$ miles (12 km.). Some sites were as little as a mile and a half (2·5 km.) apart, and the maximum separation was some 20 miles (32·5 km.). The system had evolved over many generations and doubtless medieval and Tudor authorities were satisfied that the system was not impeded by lack of visibility. If such conditions were to occur, as noted above, church bells and the general clamour could augment the beacon's alarm as well as mounted men known as hobblers. These were stationed ready to take 'the warning to the other beacons in the country, lest by weather they cannot kindle fire'.[55] Even then, the beacon sites remained the nerve centres of the alarm system.

BEACON SITES IN SUSSEX

The actual siting of the individual beacons

was left to the discretion of 'those whom the King can best trust',[56] usually the Justices of the Peace, 'as often in such manner as shall seem to you expedient', or in 'all proper stations'.[57] The watchers on the hills, on duty night and day,[58] were supervised by the Justices or other 'gentlemen of the neighbourhood': 'discreet men'.[59] The supervising gentlemen were to visit each beacon in turn every night.

By 1635, in an effort to avoid false firings, instructions were in force requiring that the beacons were not to be lit except by the order of one of the overseers.[60] Here we probably see the reason for the decline of the beacons. Its great virtue was speed of spreading alarm, but because of the widespread confusion caused by false firings, measures had to be taken to prevent this happening. Such measures corrupted the speed of spreading the alarm and so made the system pointless.

How the alarm was passed across country is illustrated by Lambarde's 'carde'. A line of beacons perambulated the coast, connecting all the vulnerable landing places. This line continued along the Thames estuary and via Shooter's Hill to London. From the coast, a web of interlocking sight lines worked inland to alert the body of the shire, crossing the North Downs to join the estuary line. This web connected with four sites in Sussex (see below).

Fig. 2 is an attempt to reconstruct a 'carde' of beacon sites for Sussex. A variety of sources have been used. The distribution of sites compares well with Lambarde's map although it cannot be assumed that all the sites were in use at one time. For example, although no beacon was shown at Queenborough in Kent on Lambarde's 1596 map, one was certainly there in 1600. In 1602 the Privy Council noted that there were 17 beacons in the Kent lathe of St. Augustine, but the 'carde' shows only 13.[61] The system, at any one moment, was evolving. But while it cannot be assumed that any beacon site was permanent, the constraining factors of geography did not change and doubtless most sites, once found effective, remained in use for a period.

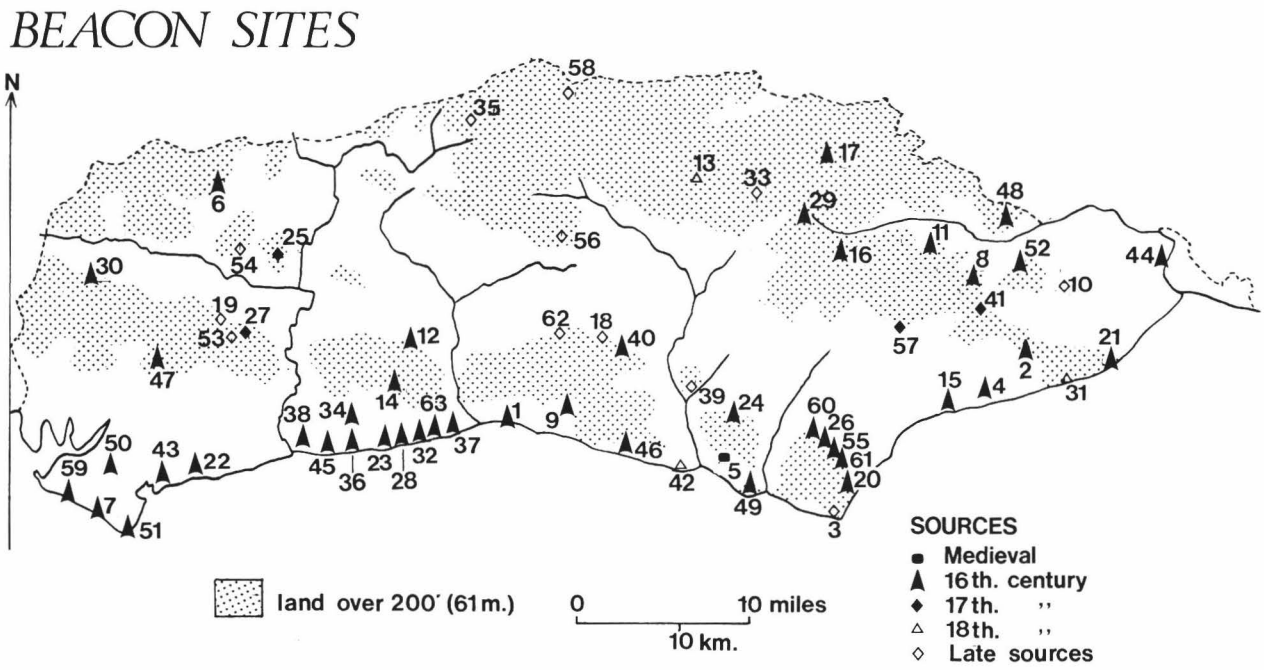


Fig. 2. Beacon sites in Sussex.

Lambarde suggests, by referring to the arrangements 'in our shyre',[62] that each county used its own methods for the administration of the beacons, and a number of different strategies can be seen. In the 16th century, at Eltham in Kent, the parish accounts met the cost; in 1630 some beacon watchers in Suffolk had to petition the Privy Council for back wages owed by the Deputy Lieutenant, presumably to be paid from a 'beaconage' tax levied on the county. The Council wrote sternly to the county:

> We cannot but fynde it strange that in a publique service and that so necessary so little regard is taken that poore men cannot receive satisfaction without complainte.[63]

At other places beacons were even privately financed.[64] In the final years of the beacons it was noted that 'Anciently (the beacons) were repaired by certain Tithings or Towns'.[65] Certainly chartered corporations such as the Cinque Ports were responsible for the beacons within their jurisdiction.

A suggestion as to the administration of the beacons in Sussex can be seen in the records of Rye Corporation. In July 1574 a meeting was held to settle a controversy

> between the hundred of Gestlynge and Gostrowe concerning the watch at Farelyght beacons in the said hundred of Gestlynge . . .

Agreement was reached whereby Gostrow should pay to the hundred of Guestling

> every third night ten pence and so after that rate during all and singuler tymes of watchinge there . . . provyded always, that the payment shall cease and be voide whensoever any severall and distinct beacons and beacon watche or beacones watches shalbe commanded by warrant from the Lord Levetenant, Hight Commissioner or Justices of Peace . . . to be kept within eache and every of the said hundreds.[66]

The correlation of beacon sites to hundreds is close although not perfect (see below). A number of sites doubtless remain to be located and multiple sites in some hundreds probably show locations used in different periods. It must be noted, however, that three of the western Sussex hundreds—Brightford, Poling and Manhood—are shown with four, six and four beacon sites respectively in the same authoritative contemporary source, the 1587 survey of the Sussex defences (see below).[67]

But whatever the local county organization, from the full systematizing of the beacons in the reign of Henry VIII until the mid 17th century, a period during which the south coast of England several times faced the prospect of dreadful invasion, all that the central authorities needed to do was to add a brief 'and the beacons to be watched' to the tail of the instructions they sent in enormous numbers to the local commanders to secure the defence of the realm.

Author: Frank Kitchen, 18 Tower Road, Brighton, East Sussex BN2 2GR.

APPENDIX

BEACON SITES IN SUSSEX

Sources

A W. Lambarde, *A Perambulation of Kent* (1596 edn.).

B M. A. Lower, *Survey of the Sussex Coast made in 1587 . . .* (1870).

C J. Norden, *Map of Sussex* (1595), probably based on a personal survey made in 1594. Norden marked the 'Beaukens' as landmarks.

D J. Ogilby, *Britannia* (1675). Most 17th-century Sussex county maps were reworkings of Norden's via Speed's map. *Britannia* was a set of road maps made following a new survey; it marked several roadside beacons.

(Several detailed surveys of the county were made during

the 18th century, but they showed no 'beacon' place names not revealed in earlier sources until the Ordnance Survey of 1793–1810. However, the international situation that motivated the Survey also re-activated, in part, the use of beacons. Sites used for beacons in the Napoleonic period are marked*.)

	Earliest source	*Elevation (figures in metres)*	*Comment*	*Hundred*
1. Aldrington	1587 B	by coast	Ogilby showed a beacon north of the Brighton to New Shoreham road.	Fishersgate
2. Baldslow	1595 C	139	Noted by Defoe in his *Tour* of 1724.[68]	Baldslow
3. Beachy Head	1816	122	'Beacon Furlong' shown on an estate map.[69] Eastbourne Hundred had a well attested beacon site (No. 20) and this was probably an early 'lighthouse'.	Eastbourne
4. Bexhill	1595 C	36	Not shown on B.	Bexhill
5. Bishopstone	1374[70]	73	Not shown on B. Beacon Hill.	Flexborough
6. Blackdown	1595 C	280		Rotherbridge
7. Bracklesham	1587 B	by coast		Manhood
8. Brightling*	1596 A	197	Horsfield in 1835 mentioned 'Brown's Burh' as the site of the beacon. An estate map of 1834 marked 'Beacon Field' by the obelisk on the highest point of the down.[71]	Netherfield
9. Brighton*	1514	178	Hollingbury. See above. Also shown on B.	Whalesborne
10. Broad Oak	20th century	77	'Beacon House'. Only located site in the Hundred. See above.	Gostrow
11. Burwash	1586	175	The misfiring of 'Burrish' beacon in 1586 was mentioned by Holinshed.[72] Shown by Norden.	Hawksborough
12. Chanctonbury Ring*	1587 B	250	Also shown by Norden.	Steyning
13. Chelwood Beacon	1724	162	Place name used on Budgen's map of Sussex.	Rushmonden
14. Cissbury Ring	1587 B	185		Brightford
15. Cooding Down	1587 B	39		Ninfield
16. Cross in Hand	1584[73]	172	'Beaden Doune'. Shown by Norden.	Shiplake
17. Crowborough*	1596 A	240	Norden showed the beacon about 3 miles north-west of 'Crowborohill'; Budgen's map of 1724 showed a gibbet-style beacon on the summit of Crowborough Hill by the traditional 'Beaconstone'.	Rotherfield
18. Ditchling Beacon*	1st edn. Ordnance Survey 1" map	248	Early sources call the height 'Ditchling Castle' and there is no evidence that it was used before the Napoleonic Wars, yet it is the only located site in the Hundred.	Streat
19. Duncton Beacon	1st edn. Ordnance Survey 1" map	208	Horsfield shortly after the end of the Napoleonic Wars says of this site 'anciently a beacon'.[74] Although only 2 miles north of No. 27, Duncton is not visible from St. Roche's Hill (No. 47), nor No. 27 from Blackdown (No. 6). Nos. 47, 27, 19 and 6 form a communicating line.	Rotherbridge
20. Eastbourne*	1587 B	170	The Peak. The Napoleonic beacon was at 'Jevington Windmill'.	Eastbourne
21. Fairlight	1574	185	See the 'Red Lion' agreement above. Also shown in A, B and C.	Guestling
22. Felpham	1587 B	by coast		Avisford
23. Ferring	1587 B	by coast		Poling
24. Firle Beacon*	1587 B	252	Probably made on a barrow.[75]	Totnore
25. Flexham	1650	151	Shown on an estate map: a fire basket topping a post and ladder.[76]	Rotherbridge
26. Folkington	1595 C	200	A lower shoulder of Wilmington Hill (61); these two were probably alternative sites.	Longbridge
27. Glatting	1608	245	A flaming bonfire beacon was marked on an estate map.[77] Yeakell and Gardner's map of 1778 marks	Rotherbridge

	Earliest source	*Elevation (figures in metres)*	*Comment*	*Hundred*
			'Glatting Beacon'.	
28. Goring	1587 B	by coast		Poling
29. Hardley Beacon	1595 C	138	Hadlow Down.[78]	Loxfield Dorset
30. Harting Beacon	1595 C	242		Dumpford
31. Hastings*	1749[79]	101	Shown on a number of 18th-century manuscript maps on the inland slope of East Hill.	Liberty of Hastings
32. Helne Mill	1587 B	by coast		Brightford
33. Heron's Ghyll	20th century	92	Although no earlier source has been located it is the only site in the Hundred.	Loxfield Dorset
34. Highdown	1587 B	82	The beacons are shown beside the mill.[80]	Poling
35. Holmbush*	1st edn. Ordnance Survey 1″ map	146	'Beacon Lodge'.	Buttinghill
36. Kingston	1587 B	by coast	Kingston by Ferring.	Poling
37. Lancing	1587 B	by coast		Brightford
38. Littlehampton	1587 B	by coast		Poling
39. Mount Caburn	1863[81]	150	Only located site in the Hundred.	Ringmer
40. Mount Harry*	1595 C	195	The 1st edition of the Ordnance Survey 1″ map showed 'Lewes Beacon' ½ mile east of the Mount.	Swanborough
41. Netherfield	1639	146	A poorly drawn gibbet-style beacon shown on an estate map.[82]	Netherfield
42. Newhaven	1720 D	77		Holmestrow
43. Pagham	1587 B	by coast		Aldwick
44. Playden	1596 A	55	Horsfield recorded the tradition that a tar-barrel beacon used to be placed in an oak tree by the church.[83]	Goldspur
45. Preston	1587 B			Poling
46. Rottingdean	1587 B			Younsmere
47. St. Roche's Hill* (The Trundle)	1586	216	A beacon here was misfired during agrarian unrest over rising prices and was mentioned during the subsequent enquiry.[84]	Westbourne
48. Salehurst	1595 C	87	'Beaconfield' mentioned in 17th-century manor records.[85] Silver Hill.	Henhurst
49. Seaford	1587 B	87	Seaford Head.	Liberty of Seaford
50. Selsey	1587 B	by coast	'Beacon House' noted in 1911.[86]	Manhood
51. Sidlesham	1587 B	6		Manhood
52. Stapley Beacon	1595 C	110	Budgen's map (1724) marked 'Beacon Windmill' ½ mile north of Sedlescombe.	Staple
53. Teglease Beacon	1911	257	Place name used in 1911. Both this and No. 56 were called 'Beacon' by Rawnsley in his account of the coronation beacons of that year. Ninety-eight beacons were lit in Sussex; Rawnsley used 'Beacon' as the place name of eight. All except these two are attested in earlier sources.[87] Teglease is the hill that prevents intervisibility between Nos. 19 and 47.	Eastbourne
54. Upperton*	1st edn. Ordnance Survey 1″ map	130		Dumpford
55. Wannock	1587 B	186	See No. 61.	
56. Warninglid	1911	108	See No. 53.	Buttinghill
57. Wartling	1617	57	The parish register records a death by drowning in a well near the beacon.	Foxearle

	Earliest source	*Elevation (figures in metres)*	*Comment*	*Hundred*
58. West Hoathly*	1835	173	Horsfield mentioned Selsfield Common as 'anciently' the site of a beacon.[88] All the other sites mentioned by Horsfield—Nos. 8, 19, 40, 44 and 57—are confirmed by earlier sources.	Buttinghill
59. West Wittering	1587 B	by coast	This beacon could have signalled to beacons on Hayling Island and thence to Southsea Castle and Portsmouth.[89]	Manhood
60. Willingdon	1587 B	193	The topography of the Deputy Lieutenant's survey is uncertain here but an estate map of 1630 showed the two beacons at Willingdon and Wannock on the adjoining Coombe Hill and Babylon Down.[90] They probably made a single set of beacons.	Willingdon
61. Wilmington	1587 B	214	'Aldern Hall'. Also shown by Norden. See No. 26.	Longbridge
62. Wolstonbury	1897	92	A traditional site although not recorded before 1897.[91] It is the only located site in the Hundred.	Poynings
63. Worthing	1587 B	by coast		Brightford

Notes

[1] British Library, Cott. MS. Aug. I, i, 18; *Archaeologia*, **24** (1832), 298; T. W. Horsfield, *The History, Antiquities and Topography of the County of Sussex*, **1** (1835), 118.

[2] *Letters and Papers of Henry VIII* (hereafter *L. & P.*), **20**(1), 1245.

[3] *L. & P.* **20**(1), 1245.

[4] East Sussex Record Office (hereafter E.S.R.O.), LC 2/182.

[5] The use of fire beacons was re-introduced to a limited extent during the Napoleonic Wars; see G. C. Guilbert, 'A Napoleonic Fire Beacon on Moel Y Gaer, Clwyd', *Post-Medieval Arch.* **9** (1975), 190–9.

[6] J. Ward, 'Some Observations on the Antiquity and Use of Beacons', *Archaeologia*, **1** (1750), 1–9.

[7] H. T. White, 'The Beacon System in Hampshire', *Proc. Hampshire Field Club*, **10** (1930), 252–78; H. T. White, 'The Beacon System in Kent', *Archaeologia Cantiana*, **46** (1934), 77–96; P. Russell, 'Fire Beacons in Devon', *Reports and Transactions of Devonshire Assoc.* **87** (1953), 250–302; P. Russell, 'White's Schedule of the Dorset Beacons', *Proc. of Dorset Natural Hist. and Arch. Soc.* **81** (1959), 103–6.

[8] Y. Garlan, *War in Ancient Society* (1975), 150–1.

[9] Sturluson, *Heimskringla* (trans. S. Lang) (Everyman edn., 1930), **1**(2), 99–100; *Orkneyinga* (trans. H. Palsson & P. Edwards) (Penguin edn., 1978), 123–9.

[10] Ward, in *Archaeologia*, **1**, 1–9, and W. Camden, *Britannia* (1695), 127, in stating a Saxon origin for fire beacons appear to have amplified the cautious 'seemeth' of W. Lambarde, *A Perambulation of Kent* (1576), 64. This assertion has been repeated as recently as 1981: D. Hill, *An Atlas of Anglo-Saxon England* (1981), 92.

[11] R. Worsley, *The History of the Isle of Wight* (1781), App. vii.

[12] *Calendar of Patent Rolls (hereafter Cal. P.R.), 1324–7*, 216–18.

[13] *Calendar of Close Rolls* (hereafter *Cal. C.R.*), *1337–9*, 179.

[14] *Cal. P.R. 1369–74*, 456.

[15] W. Langland, *Piers Plowman*, passus xvii, lines 265–6.

[16] Jean Froissart, *Chronicles*, trans. C.S. Brereton (Penguin edn., 1968), 307.

[17] *Cal. C.R. 1413–19*, 346.

[18] *Cal. P.R. 1385–9*, 547.

[19] *Cal. C.R. 1377–81*, 77.

[20] Polydore Virgil, *History*, ed. Sir H. Ellis (1844), 213–14.

[21] *Cal. P.R. 1485–94*, 348.

[22] *L. & P.* **7**, 420.

[23] *L. & P.* **21**(2), 22; B.L. Cott. MS. Aug. I, i, 33.

[24] *L. & P.* **13**(1), 578.

[25] *L. & P.* **14**(1), 538.

[26] *L. & P.* **14**(1), 770.

[27] *L. & P.* **14**(1), 691.

[28] Public Record Office (hereafter P.R.O.), SP 1/150, ff. 106–7. Crown copyright is reserved in quotations from documents in the Public Record Office.

[29] *L. & P.* **19**(1), 890.

[30] P.R.O., SP 1/194, f. 106.

[31] P.R.O., SP 1/197, f. 79.

[32] E.S.R.O., SAS/CP 182. Text printed in *Suss. N. & Q.* **1** (1927), 82–4, 116–18.

[33] *Calendar of State Papers* (hereafter *Cal. S.P.*) *Foreign*, 1547–53, 335.

[34] *L. & P.* **20**(1), 1245.

[35] *L. & P.* **20**(1), 1297.

[36] *L. & P.* **19**(1), 1330.

[37] Lindsay Boynton, *The Elizabethan Militia: 1558–1638* (1971), 146.

[38] *L. & P.* **20**(1), 971.

[39] George Rainsford, 'Ritratto d'Inghilterra' (1556), ed. P.S. Donaldson, *Camden Miscellany*, **27** (1979), 104–5.

[40] P.R.O., SP 12/93, f. 18.

[41] *Acts of the Privy Council* (hereafter *A.P.C.*), *1586–7*, 766.

[42] *A.P.C. 1627–8*, 470.

[43] E.S.R.O., LCD/EW 1. Text printed in E.S. Cunliffe, 'Book concerning the Deputy Lieutenantship', *Suss. Arch. Coll.* **40** (1896), 1–37.

[44] *Cal. S.P. Domestic, 1627–8*, 47.

[45] *Cal. S.P. Domestic, 1639,* 215.
[46] *A.P.C. 1598–9,* 288; *A.P.C. 1571–5,* 61; *A.P.C. 1580,* 449; *L. & P.* **20**(1), 52.
[47] Hist. MSS. Com. 9, *Salisbury,* **5**, 238.
[48] *A.P.C. 1598–9,* 288.
[49] *Archaeologia,* **1**, 6.
[50] R. Sicklemore, *An Epitome of Brighton* (1815), 117.
[51] *Archaeologia,* **1,** 6; L.V. Grinsell, 'Somerset Barrows', *Proc. of Somerset Natural Hist. and Arch. Soc.* **113** (1969), App.
[52] Froissart, *Chronicles,* 307: M.J. Swanton, 'A Fragmentary Life of St. Mildred', *Archaeologia Cantiana,* **91** (1957), 15–25; *L. & P.* **11**, 1148.
[53] O. Sitwell & M. Barton, *Brighton* (1935), 32.
[54] *The Times,* 24 June 1897; A.S. Cooke, *Off the Beaten Track in Sussex* (1911), 258–9; *N. & Q.* second series, **4** (1857), 476.
[55] *Cal. C.R. 1369–74,* 436; *Harleian Miscellany,* **5** (1810), 251; Camden, *Britannia* (1695), 127.
[56] *L. & P.* **14**(1), 400.
[57] *Cal. P.R. 1324–7,* 216.
[58] *L. & P.* **14**(1), 661.
[59] Hist. MSS. Com. 9, *Salisbury,* **22**, 297.
[60] *Cal. S.P. Domestic, 1635,* 133.
[61] *Cal. S.P. Domestic, 1598–1601,* 429; *Cal. S.P. Domestic, 1601–3,* 193.
[62] Lambarde, *Perambulation of Kent* (1576), 64.
[63] *A.P.C. 1629–30,* 377.
[64] F.W. Brooks, 'Supplementary Stiffkey Papers', *Camden Miscellany,* **15** (1936), p. xii.
[65] Hist. MSS. Com. 38, *Buckinghamshire,* 281.
[66] Hist. MSS. Com. 31, *Rye,* 34; my thanks are due to Dr. Mayhew of East Sussex Record Office for this reference.
[67] The 31 Isle of Wight beacons ordered in 1324 were in two hundreds; in the 16th century the island had three beacons.
[68] D. Defoe, *A Tour through the Whole Island of Great Britain* (1724) (Penguin edn.), 125.
[69] E.S.R.O., GIL 30.
[70] A. Mawer & F.M. Stenton, *The Place-Names of Sussex,* **2** (1930), 365.
[71] Horsfield, *History of Sussex,* **1,** 118; E.S.R.O., Acc 2452/41.
[72] R. Holinshed, *Chronicles* (1808 edn.), **4**, 901.
[73] Mawer & Stenton, *Place-Names of Sussex,* **2**, 407.
[74] Horsfield, *History of Sussex,* **2**, 170.
[75] A.H. Allcroft, *Downland Pathways* (1922), 44.
[76] West Sussex Record Office (hereafter W.S.R.O.), Mitford MS. 1000.
[77] W.S.R.O., PHA 3570.
[78] O. S. Map 6″, Suss. XXVIII (1910 edn.) shows 'South Beacon' a little to the south of the highest point of the down.
[79] E.S.R.O., SAY 1415, 2747; B.L. Maps, K. Top. 42. 11. Tab (photocopy in Suss. Arch. Soc. library).
[80] Such a juxtaposition in Lancashire caused the Privy Council concern in 1627 when they received complaints that the miller's light showed 'in remote places as if the beacon were on fire': *Cal. S.P. Domestic, 1627–8,* 232.
[81] M.A. Lower, 'The Rivers of Sussex', *Suss. Arch. Coll.* **15** (1863), 148.
[82] E.S.R.O., ASH 4377.
[83] Horsfield, *History of Sussex,* **1**, 505.
[84] J.D. Jones, 'The Hampshire Beacon Plot of 1586', *Proc. of Hampshire Field Club,* **25** (1968), 105 ff.
[85] *Suss. Rec. Soc.* **53**, 88–90.
[86] E. Heron-Allen, *Selsey Bill: Historic and Prehistoric* (1911), 254.
[87] H.D. Rawnsley, *The Coronation Bonfires* (1911), 55.
[88] Horsfield, *History of Sussex,* **1**, 263.
[89] British Library, Add. MS. 16371a (map of Portsmouth area by La Favelure, 1600); E.S. Washington, *Portsmouth in the Age of the Armada* (1972), 5.
[90] E.S.R.O., Acc 1414.
[91] Devon Record Office, papers of H.T. White. A beacon was made here during Queen Victoria's Diamond Jubilee celebrations: Cooke, *Off the Beaten Track,* 257.

Sussex Archaeological Collections **124** (1986), 193–212.

WEST GRINSTEAD: A CENTRE OF CATHOLICISM IN SUSSEX, 1671–1814

by Timothy J. McCann

INTRODUCTION

Travellers who turn off the A 24 along the B 2135 to Partridge Green, are often surprised by the complex of ecclesiastical buildings to be found at the extreme south-east of the present West Grinstead Park. Here, apparently in the middle of nowhere, they will discover a substantial Catholic church, standing between a delightful timber-framed house, with a later Georgian façade, known as 'Priest's House' (Fig. 1), and a large adjacent building, which began as a priory of Dominican nuns, became a community home and is now a private school for Arab children. The simple explanation for the existence of this Catholic enclave is that most of the buildings are the result of the energy and dedication of a French priest, Mgr. Jean-Marie Denis, who served the mission at West Grinstead from 1863 to 1900.

When Mgr. Denis arrived at West Grinstead, the mission consisted of a small meadow of 1 a. leased out for £4 a year; the Priest's House, which housed a small chapel seating about 60 people in two rooms on the first floor; two small gardens, and a small schoolroom behind the house. The extent of the mission district was between 12 and 20 miles, and it was bounded by

> a line which runs on the north from Rudgwick to Slinfold, Horsham, Nuthurst, Plummer's Plain, Handcross, Whiteman's Green and Cuckfield to Lindfield;

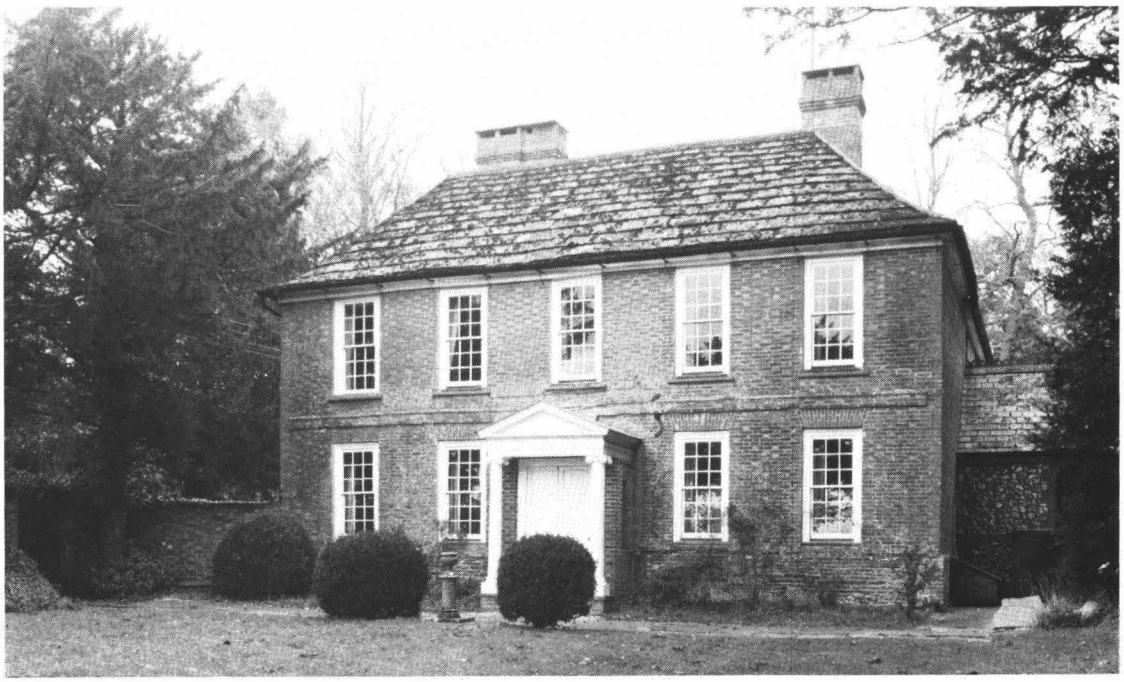


Fig. 1. Priest's House, West Grinstead, the centre of the mission since 1754.

> on the east from Lindfield by the High Road through Wivelsfield [to] Ditchling; on the south from Ditchling above Keymer and below Hurstpierpoint, [via] Henfield to Eaton's Wharf, and thence in a southerly and westerly direction above Wiston Park, Washington, Sullington, by Billingshurst to Rudgwick.[1]

To serve this extensive community, Mgr. Denis reopened the school in 1863 in the small schoolroom; in 1869 he founded the Priory of St. Dominic with an orphanage administered by the Dominican Sisters; in 1875 he built the present church; and shortly afterwards he established the shrine of Our Lady of Consolation, which soon became a centre of pilgrimage, and, from 1880 until the establishment of the Diocese of Arundel and Brighton in 1965, was host to an annual pilgrimage from the Diocese of Southwark.

For the original explanation of the existence of this Catholic centre in West Grinstead, however, it is necessary to discover why there was a mission in the area for Mgr. Denis to serve. At the Elizabethan settlement of religion in 1558, the Catholic hierarchy, with one exception, refused to accept the new religion and were deprived of their sees. England was formally severed from papal jurisdiction, the new Prayer Book was imposed, and any other rite forbidden. Several hundred of the clergy were deprived of their livings or resigned their cures, but for the first few years of the reign few Catholics were actually recusants. Many of the deprived clergy simply retreated into the houses of the Catholic gentry, becoming their chaplains, and starting the process of seigneurial Catholicism whereby the Catholic squire and his estate rather than the parish church became the focus of parish life. After 1570, however, the situation changed. By then the political context had altered with the flight of Mary Queen of Scots to England in 1568; the revolt of the Northern Earls; the Papal Bull excommunicating Queen Elizabeth in 1570; and the Ridolfi plot. Henceforth Catholics were more actively persecuted: the penalty for hearing mass was imprisonment; the penalty for non-attendance at the parish church, hitherto 12*d.* a week, was a fine of £20 a month, with the forfeiture of all goods and two thirds of real property if the fine could not be paid; and the penalty for the treason of being a priest was often death. At the same time, Catholicism itself was changing, transformed by the new attitude created by the Council of Trent.

This Counter-Reformation Catholicism was to make great demands on the English Catholics, but it also inspired greater loyalties. English Catholics, while being persecuted by the regime, began gaining converts in England from those whose religious aspirations could not be satisfied within the Elizabethan Church. Cardinal Allen founded the English College at Douai in 1568, and daughter colleges were founded at Rome, Valladolid, Seville, Lisbon and Paris; their purpose, to train young men to work as secular priests in England. The religious orders founded their own seminaries on the Continent, and, within ten years, a steady flow of priests was sent back to minister to the English Catholics.

THE CARYLL FAMILY

The Caryll family is a classic example of seigneurial Catholicism, providing a safe haven for their Catholic tenants, and access to the sacramental life through their chaplains; as patrons first of Benedictine monks, then Jesuits, later Franciscan friars, and finally of secular priests at West Grinstead, it was the 'onlie begetter' of the Catholic community in the parish.

The Carylls[2] were an old Sussex family that had refounded its fortunes through the law and the tenure of Crown offices, and later through the Sussex iron industry. Sir John Caryll had been Attorney General to King Henry VII; his son Sir John Caryll was Attorney General to the Duchy of Lancaster, and inherited his father's stewardship of the Rape of Bramber. As Attorney for the Court of First Fruits and Tenths in 1539, the younger Sir John administered revenues confiscated from the Catholic Church by King Henry VIII, though he refused to subscribe to the Prayer Book of 1549, and

ensured that much of the church lands, in Sussex at least, remained in Catholic hands. Sir John's son, Edward Caryll of Harting, entered the Inner Temple and was Sheriff of Sussex and Surrey in 1571, although he never took the Oath of Supremacy.

The Caryll family was linked by marriage to almost all the other prominent Catholic families in Sussex, such as the Gages of Firle and Bentley in Framfield, the Shelleys of Michelgrove in Clapham and Warminghurst, and the Brownes of Cowdray in Midhurst, as well as to others outside the county, such as the Cottons of Warblington in Hampshire, the Bedingfields of Norfolk and the Molyneux of Lancashire. In the reign of Queen Elizabeth they afford an outstanding and well documented example of a Catholic family maintaining its influence. The family was also wealthy; Edward Caryll's lands were assessed at 400 marks per year in 1577,[3] and his nephew, John Caryll, was said to be worth 1,000 marks a year at the same date.

The first homes of the Caryll family in Sussex were at Warnham and at Shipley, where their presence at Bentons ensured a sizeable Catholic community in the parish.[4] In the 1590s the family extended its landholdings by purchasing a considerable estate based on Ladyholt in Harting. They seem to have acquired the manor of West Grinstead by 1638, for in that year the manorial chapel in West Grinstead church was said to belong to 'the old Lady Caryll'[5]—Margaret, the wife of Sir Thomas Caryll of Shipley. From her the manor passed to her daughter Philippa Caryll and Philippa's husband Henry Parker, Lord Morley and Monteagle, and from them descended through the family with the manor of Knepp in Shipley. The Caryll family now had a substantial estate at West Grinstead, Shipley and Washington to match the Ladyholt estate on the Hampshire border.

It was the family custom for the West Grinstead estate, however, to be the home of the younger son, while the elder son usually chose to live at Ladyholt, and it was to be several times sequestered, i.e. confiscated, for recusancy. It was sequestered in the 1640s and 1650s;[6] and although John Caryll evidently held the manor in 1671 when he established his fund for the Catholic mission at West Grinstead, the manor house was occupied by his younger son Richard, who lived at West Grinstead from at least 1664[7] until his death in 1701. However, when in 1711 his elder brother John, who lived at Ladyholt, died without heirs, both Ladyholt and West Grinstead descended to Richard's son, John Caryll, the playwright and friend of Alexander Pope.[8] In 1715 the manor house at West Grinstead was again sequestered for recusancy,[9] and, as a result, John Caryll went to live at Ladyholt, where he remained until his death in 1736. It was not until 1736 that the sequestered property was restored to the family,[10] when John Baptist Caryll, the last of his line, succeeded his grandfather, his own father having predeceased him in 1718.

THE FOUNDATION OF THE MISSION

In spite of a local tradition that suggests that West Grinstead was a centre of Catholicism unbroken from the Elizabethan settlement,[11] there is no documentary evidence to support the suggestion, and there is no evidence of a significant recusant presence in the parish of West Grinstead before the arrival of the Caryll family in the 17th century. One James Bull was repeatedly presented for not coming to church, for being a recusant and for standing excommunicate, both by the churchwardens and the Assizes in the 1620s,[12] but not one single recusant from West Grinstead was presented to the Assizes between 1559 and 1597.[13] The 1642 Protestation against the Catholic religion was signed by 174 adult males from the parish, and by both churchwardens and both overseers, but none refused to take it,[14] and in 1676 the churchwardens presented that 'we have no Dissenters in our parish. We have none that refuse to receive communion.'[15]

The Old Brotherhood was established in 1623 as the Chapter of the secular clergy who

acted as a central authority in the absence of a Catholic bishop. A document in the Old Brotherhood Archives, now at Westminster, records the first Caryll bequest relating to the Catholics of West Grinstead. On 30 May 1649 the document recorded that the Chapter

> received the day and yeare above wrighten of Dame Margaret Caryll of West Grinstead the summe of two hundred and fifty pounds for and in consideration of a perpetuall obligation, of saying foure trentualls of masses yearly and for ever, wherof one hundred of the said masses are to be say'd for herone soule, the other twenty masses for the soules of her husbande Sir Thomas Carrell, her mother, her daughter, the Lady Mollinau, which obligations shall be faythfully performed. This I say received by me. John Jennyngs.[16]

The bequest was accepted by the Chapter on the following day,[17] and it was recorded later that John Jennings would perform the obligations for the remainder of his life.[18] There is some evidence that John Jennings became Lady Mary Caryll's chaplain, and was thus the first missioner at West Grinstead; certainly he was Archdeacon of Sussex, and thus the senior of the secular priests working in the county, from 1657 to 1667, and left bequests to various Sussex priests and to Viscountess Montague of Cowdray in his will of 1678.[19]

The provision by John Caryll in 1671 of a priest specifically to serve West Grinstead marked the formal start of the West Grinstead mission, and led to the appointment of the first chaplain of the mission whose successors serve West Grinstead today. On 1 October 1671 John Caryll raised a mortgage on the manor of Lodsworth to provide £1,000, £600 of which was given to Humphrey Waring, the Dean of the Chapter of Secular Clergy, to support three priests, of whom one was to live at West Grinstead and serve the locality, while the other two were to act as 'riding missionaries' in Sussex and Hampshire.[20] The Caryll family reserved to themselves the right of nomination. The first beneficiaries of the Caryll endowment were Serenus Cressy, who was to have £12 a year being one third of the interest on £600 for life, and George Middleton and John Ward, the 'riding missionaries', who were to share the other two thirds.[21]

THE EARLIEST MISSIONERS

Serenus Cressy, the first recipient of John Caryll's endowment, was one of the most famous English Catholics of his time. A member of Lucius Falkland's literary circle at Great Tew (Oxon.), he made a public recantation of his errors before the Roman Inquisition in 1646,[22] and joined the Benedictine order at St. Gregory's, Douai, in 1649. His most famous work, his *Exomolgesis*, is an account of the motives for his conversion, and he also edited the works of the English mystics, Julian of Norwich and Augustine Baker. He was chaplain to the English Benedictine nuns at Paris from 1631 to 1652, and Sub-Prior at St. Laurence's, Dieulouard, 1652, and at St. Gregory's, Douai, 1653 to 1660, before coming back to England as chaplain to the Dowager Queen Henrietta at Somerset House.[23] There is some evidence of his being at West Grinstead between 1666 and his death in 1674.[24]

Dom Gilbert Dolan suggested that Cressy was succeeded in his work at West Grinstead by Robert Prendal from 1674 to 1682,[25] but the next chaplain to serve the mission for whom definite evidence can be found was a member of the family and another Benedictine monk. Peter Alexis Caryll was the second son of John Caryll and Catherine Petre, and brother of John Caryll of Ladyholt and Richard Caryll of West Grinstead. Caryll was professed at St. Gregory's, Douai, in 1654, held office as confessor to the Benedictine nuns at Brussels from 1661 to 1669, and returned to his monastery at St. Gregory's as Prior between 1673 and 1675.[26] Eventually he came home to West Grinstead to take charge of the family mission, and died there on 29 October 1686. He was buried in the parish church on 31 October and was recorded in the Church of England registers as 'Peter Caryll died worth nothing'.[27]

Peter Alexis Caryll was succeeded by Thomas Churchill, who had been unanimously

elected Archdeacon of Sussex by his Catholic brethren in 1683.[28] Churchill, who was born in 1628, entered Douai in 1646, was ordained at Cambrai in 1653, and went on the English mission almost immediately. In his autobiography[29] he makes clear that he was working in Sussex as early as 1665, and that he served in Jamaica in the reign of King James II. In a letter to Bishop Leyburn, Vicar Apostolic of England and Wales, Churchill stated that he received £5 a year for serving West Grinstead.[30] A document among the Old Brotherhood Archives records that

> ther having been a fund of ten pounds per annum settled for a clergyman who should helpe ye poor[31] about Grinstead in Sussex, and Mr. Churchill who perform'd yt obligation having been forced by ye persecution, to be absent for some years, twas put to the vote whither Mr. Churchill should be oblig'd to refund ye said pension for ye years he was absent.[32]

It was resolved that the question should be settled between Churchill and the priest who actually served the mission, and it is clear that Peter Alexis Caryll had served at West Grinstead during Churchill's long absences.

Thomas Churchill did not die until 1705, but by then he had lived abroad for many years. In that same year, the first entry was made in the surviving West Grinstead Catholic register,[33] recording the baptism on 5 November of Mary Paoli. The officiating priest signed the register as Peter Jones, but he has not been identified, and it was to be another 70 years before the register was kept regularly.

THE JESUIT MISSION

By the time a regular list of chaplains can be identified, the West Grinstead mission seems to have been served by the Society of Jesus. Ignatius Staffurd was the first Jesuit known to have served there. Most Catholic priests adopted an alias for reasons of security on entering an English College abroad, and Staffurd was also known as Thorpe. He was born in 1632, became a Jesuit in 1672, and served the mission in Wales before coming to West Grinstead from 1710 to 1711.[34] His personal register has survived and has been published;[35] it includes some West Grinstead names in its pages.

Ignatius Staffurd was succeeded by another member of the Caryll family. Charles Caryll was the third son of Peter Caryll of Shipley and Mary Tufton. He was a nephew of the Benedictine Peter Alexis Caryll, and a cousin of the Jesuit Richard Caryll, who, under the alias of Paul Kelly, was the family's other chaplain at Ladyholt. Charles Caryll, who was born in 1685, and who became a Jesuit in 1704, was probably at West Grinstead from 1714 to 1716,[36] immediately after his ordination to the priesthood. He served later in Staffordshire and at Staplehill in Dorset. The next Jesuit priest who is known to us is John Hodges alias Massey,[37] who was listed as 'a gentleman by the name of Massey' in a return of recusants at West Grinstead in 1727.[38] He served the mission from then until 1734, and was succeeded by a number of other Jesuit priests whose chaplaincies only lasted for short periods. Anthony Bedingfield[39] was at West Grinstead in 1733 and 1734. The English Province accounts record the payment to Philip Carteret of 8*s*. for his expenses to West Grinstead in March 1735/6.[40] Fr. Carteret later moved to Slindon, another mission in the county that was served by the Jesuit fathers, as chaplain to the Kempe family.[41] Another volume of Province accounts shows Lady Mary Caryll being paid 6 gns. for Fr. Felix Bartlett in July 1736.[42] Not until the arrival of Fr. Henry Hoghton in 1736 did the West Grinstead mission have a long-serving pastor.

In 1736 John Caryll, the squire of Ladyholt and friend of Pope, died, and was succeeded by John Baptist Caryll, his grandson (Fig. 2). John's widow, Elizabeth Caryll, moved to West Grinstead with her daughter Catherine, leaving Ladyholt to the young heir. Her arrival at West Grinstead coincided with the start of the chaplaincy of Henry Hoghton. Henry Hoghton, alias More, was born in Cheshire in 1710, and was educated at St. Omer and Valladolid before being ordained in 1735.[43] His earliest letter to

Fig. 2. John Baptist Caryll, 1718–88. (Portrait at Priest's House, West Grinstead)

John Baptist Caryll from West Grinstead was dated 20 February 1736/7,[44] and he remained the priest of the mission until his death in 1750.

THE SALE OF WEST GRINSTEAD HOUSE

The mission was threatened by the financial collapse of the Caryll estates, brought on partly by the penalties the family suffered for its religion. The continual financial burdens enacted against Catholics under the Penal Laws, and the inability of Catholics to increase their wealth and position by office holding, had brought the family estates to the brink of collapse. It is estimated that their debts totalled over £30,000 between 1746 and 1762.[45] In December 1744 Fr. Hoghton wrote to John Baptist Caryll:

> it has been lately very great concern to me, to hear of the bad state of your affairs, and tho I am forbid by my rules to meddle with temporal affairs, and indeed by my own inclination neither inquisitive, nor desirous of any such thing: yet I can't help hearing what is talk'd of in all company's, nor can I hear it (but) with the utmost concern.[46]

He urged Caryll to sell enough of his estates, starting with the outmost parts, to pay his creditors, and to go into lodgings for a time to save the expense of running Ladyholt.

The sale of outlying parts of the estate and some of the family's French investments did not cover John Baptist Caryll's debts, and he decided to sell West Grinstead House after a number of judgments were obtained against him in the courts of King's Bench and Common Pleas. He entered into negotiations with the Burrell family, and asked Henry Hoghton to break the news to the family at West Grinstead.

> You will easily imagine yt it was no small grief to all concerned and your grandmother could not refrain from some tears. Notwithstanding she desires me to assure you yt she is much obliged to you for being mindful of her staying here as long as she lives,

Fr. Hoghton wrote to Caryll in an undated letter. John Baptist Caryll and Merrik Burrell apparently agreed terms for the sale of West Grinstead manor and estate subject to Elizabeth Caryll being able to live in West Grinstead House until her death, but clearly future provision would have to be found for the chaplain and the chapel once the house was sold. Fr. Hoghton's letter continued:

> as to the school and chapel in case of a sale, I don't know how it can possibly subsist there not being as I know of (and I think I know them all) one House upon ye Knep estate proper for such a use, besides ye Difficulty there will be of setting such a thing in a parish where it never was before and not under ye immediate

> eye of a powerful Patron to protect it. It has been often looked at with an evil eye where it now is and had it not been for ye influence of your most worthy Familly upon ye Parson and Parish I imagine it could not have subsisted so long as it has done. Wt will then become of it when left in a place where you have no Mansion House, and consequently where your presence can not be so frequent as it has been? Ye consequences of this are much to be feared. But if neccessity obliges you to it, I hope you will in time think of making a proper provision, and not endangering the loss of both.[47]

John Baptist Caryll sold West Grinstead House to Merrik Burrell on 5 December 1749,[48] but, as agreed, Elizabeth Caryll continued to occupy the house, and she continued to hold courts as lady of the manor of Knepp until her death.[49] Fr. Hoghton died before the estate changed hands, and he was buried at West Grinstead on 11 July 1750.[50] He was succeeded by Francis Short, a young Jesuit of 32, who had been ordained four years earlier, and who was to serve the mission for the next four years.[51] John Baptist Caryll's grandmother died in 1754, and with the death of Elizabeth Caryll, West Grinstead House finally passed into the hands of the Burrell family.[52] On 14 May 1754 Catherine Caryll, who had shared the house with her mother, described the break-up of the Chapel:

> Mr. Burrell I suppose will buy the best Church stuff. Tabernacle steps &c. shall be pack'd up ready for ye sending for as you propos'd when here, and all the books belonging to the house in the P(rivate) Closet shall be put into one of the Garretts lock'd up, ye Closett being soon to be lay'd open as ye other wing of the side has been . . .. I have sent by Mr. L. the two Cruetts you bought, wch have never been used since poor Mr. Houghton's time, and the lid of one of them broke.[53]

EDWARD CARYLL AND THE CHAPEL AT HIGHDEN

When John Baptist Caryll sold West Grinstead House to Merrik Burrell, the chapel was closed and the priest had to find somewhere else to live. Edward Caryll, uncle to John Baptist Caryll, lost his wife at this time and was left a childless widower. He purchased a house at Highden in Washington, now Windlesham House School, for himself and for his sister Catherine, who had been made homeless by the sale of West Grinstead. It seems clear that Edward Caryll regarded Francis Short as his own chaplain after John Baptist Caryll had disposed of West Grinstead, and that he established a chapel in his own house at Highden. Francis Short lived with him at Highden but continued to look after the spiritual welfare of the mission around West Grinstead. His letters to John Baptist Caryll are few, and date from the end of his stay. On 5 April 1754 he wrote from Highden:

> As to the things that belong to the Chappell, we beg to know what house at Grinstead you would have 'em sent to, & fix on for a Chappell, for if you intend to keep one there, a Chalice, Ciborium, Vestments and the like, will be wanted. As to myself, being, as far as I understand, otherwise dispos'd of by my Superiors, I can assist the Poor People no longer than Easter Week, so hope you'll be so good as to take that affair to heart, it being high time to think of giving them some assistance in these their abandoned circumstances.[54]

Edward Caryll was determined to do something about the situation, for as Highden was well away from the Catholic community at West Grinstead, he felt some responsibility for serving the people of the old mission. On 9 April 1754, he wrote to his nephew, John Baptist Caryll, from Highden:

> since Mr. Short wrote to you, I have determined to stay here at this place, which I more willingly acquaint you soon of, as it may make you the more easy to the Poor People at Grinstead . . .. I make no doubt but you will contribute something towards the Priest, I mean his salary, for I shall give him his board &c.[55]

On 14 May 1754 he again wrote from Highden, and gave the first news of the end of the Jesuit mission after some 50 years:

> Mr. Short is ordered away by the good Fathers, and is order'd or rather named for Slindon, before I could have been provided of one [56] . . .. I have apply'd to the Good Friers for one, and have had a very civil genteel letter from the Provincial which I will shew you when we meet; or rather when you come hither. I hope that it will not be long before I shall be supplied with one, will not enlarge on this subject, I imagine you understand me.[57]

Slindon, near Chichester in the western half of the county, had been a mission served by the Jesuits since the 1680s,[58] and Edward Caryll revealed the reason for Fr. Short's new posting in the same letter. 'Poor Mr. Norris,' he wrote of the Jesuit chaplain at Slindon, 'is dead, and is to be buried this day at Slindon'.

Edward Caryll clearly knew the Franciscans before he offered the mission to them. Among the books in the Franciscan library at Forest Gate, is a breviary printed in Antwerp in 1668, which is inscribed:

> ex dono D(omi)ni Eduardi Caryll die Aprilis Vicesima 1749. Hic Liber assignatus est ad usum Fr. Anthony a S^to^ Bonaventura Provinciae Angliae Fratrum Minorum.[59]

Soon after the chapel at West Grinstead was broken up, Edward Caryll completed negotiations with the Franciscans to replace the Jesuits as chaplains and to replace the chapel. He wrote to his nephew on 16 June 1754:

> I have had a very civil letter from the Superior of the Fryars, who will supply me with one as soon as possible, and as I find that Mr. Short stays here 'till that time, though we did hear that he was order'd to Slindon, and to be ready at a call, yet we do not hear, nor can conceive the meaning, but as for myself, who am the least curious, or political in these affairs in the world, I can very well wait and with christian patience when my honest good man comes. I assure you very faithfully that I never kept him, and indeed to own an humble truth never once thought of him or any of his Brethren, this is between you and I.[60]

PRIEST'S HOUSE, WEST GRINSTEAD

Priest's House, West Grinstead (Fig. 1), is usually described as 'the oldest continuously occupied presbytery in England', and it is stated to have been the site of a chapel either since the Reformation, or since John Caryll's endowment of the mission in 1671. The evidence of the documents makes it clear that the first West Grinstead chapel was in West Grinstead House: at the other major Catholic missions in the county—at Cowdray, Ladyholt, Burton and Slindon—the chapel was always in the house; after all, that was where the priest was resident and where he was most likely to be safe and private to exercise his ministry. There was certainly a chapel in West Grinstead House (Fig. 3) when the Carylls sold the house to Merrik Burrell in 1754. It is most unlikely that the family supported another house with another chapel only a few hundred yards from the family home. The present 'secret chapel' (Fig. 4) in the attic of Priest's House is the successor to the chapel in West Grinstead House, and was the centre of the mission from 1754 until the building of the church in 1875. Its location in the house has changed. Both in 1851 and 1863 it was situated on the first floor, in order to accommodate the congregation, and it probably remained there until the church was built. At that point the chapel was moved to the attic, but it is not known whether this was a return to its original site in the 18th century, or a move to a fresh location.

Granville Squiers suggested in 1934 that there were at least three priest holes in the building. He wrote that:

> one hide is between the mantelpiece and the ceiling of the dining-room . . .. It was necessary to climb inside the chimney as high as the ceiling and then drop down through an aperture. Another was in the chimney of the room above and could be got at through the fireplace of that room. The entrance to this hide some way up the flue, can still be seen with the aid of a spotlight torch. Yet another was close to the chimney of the room above, but under the roof. It was accessible from the attic or from a small room underneath. It was perhaps also accessible through the flues, but this is uncertain.[61]

The only physical evidence that survives for the existence of these priest holes is some spaces around the central chimney of the house, which are the result of the insertion of a brick chimney-breast with four flues in the middle of an existing timber-framed house when it was enlarged in the 18th century. The enlargement of the house possibly took place when West Grinstead House was lost to the Caryll family. There is no documentary evidence. But then why should there be priest holes at West Grinstead, and why at Priest's House, when there is no evidence to suggest that the house was in Catholic hands between 1580 and 1610, the period during which

priest holes were constructed, and no evidence that there were then any priests in West Grinstead to hide?

Priest's House probably first became associated with the Catholic mission at West Grinstead after West Grinstead House had been sold and the missioner and the chapel had moved to Highden. In spite of his problems with Fr. Short and the Jesuits and the imminent arrival of his first Franciscan chaplain at Highden, Edward Caryll wrote to his nephew on 18 August 1754 with a suggestion about establishing a new chapel at West Grinstead:

> Give me leave to put you in mind of one thing, which is, that if you think it convenient (which I believe you will) to buy Phill Millenton's house where his mother now lives, for ye sake of ye Poor People they are so many invalides of both sexes that they cannot come hither, it will make a chapell of ease and be very convenient to him who I expect every day; and indeed do expect to hear every post. 'Tis not enough to say, I will (if it pleases God) but we must try and do all we can to help these Poor People, for if a cup of cold water has its effect, what will the other amount to? I cannot do this and ye other, viz., of keeping one here his sallery etc., and then to maintain one at Grinstead, or in the precincts: this is above my strength.[62]

By October nothing had been settled, and on 26 October Edward Caryll wrote again:

> I expect my Frier here against All Saints, he is just come from Douay, never was in the mission, and am well inform'd will answer every way. We will talk about his

Fig. 3. West Grinstead House, the seat of the Caryll family and the centre of the mission between 1671 and 1754. (By permission of the British Library)

> pension &c.; and (I) will put you to the least charge as possible: though I am at some myself, as you musts needs imagine.[63]

A month later Edward Caryll reported that the furnishings of the old West Grinstead chapel had been sent to Slindon,[64] and on 14 December 1754 he wrote his final word on the Jesuit mission in a letter to John Baptist Caryll:

> And one more thing, which is, that if you can spare to send me an indifferent alb, when you send for these things, here, I can scarce make mine hold out, 'till I can get another: a surplice I have but one, and if I am not mistaken Short carryed one from hence to Grinstead, and perhaps has carryed that away too with him, as he has several other things, which I am credibly informed, and I inform you of one, of the desk, or priedieu: to be short I am very glad I got rid of him and them, and so be it. I imagine that you thoroughly understand me, verbum sat sapienti.[65]

Fr. Short stayed at Slindon for only one year before moving again to the Jesuit mission at Soberton in Hampshire, where he died on 9 November 1755.

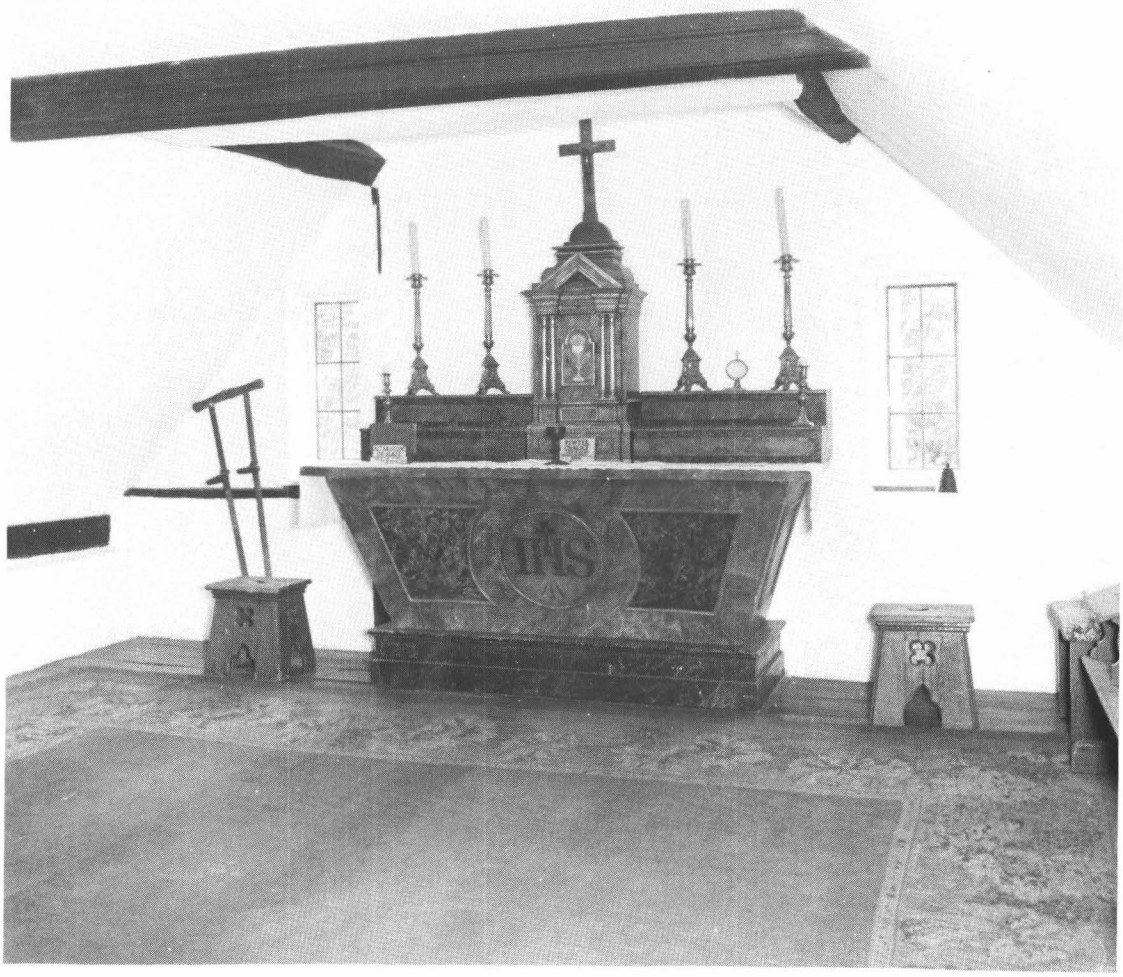


Fig. 4. The 'secret chapel' at Priest's House, West Grinstead.

THE FRANCISCAN MISSION

Fr. Placid Payne alias Duvivier was the first Franciscan to be appointed to serve the mission, and he and his confrères remained as chaplains until 1815. Presumably Edward Caryll and John Baptist Caryll had reached an agreement about financing the mission, because although Fr. Payne seems to have spent some of his time living at Highden with Edward Caryll, he petitioned his Franciscan superiors for help in furnishing the Priest's House, and was allowed £18 for the purpose, provided he submitted an account and a list of purchases to the Procurator of the English Province of Friars Minor.[66] Unfortunately the account has not survived. There is a persistent tradition at West Grinstead that Priest's House was enlarged and the stone was brought from the old chapel at West Grinstead House. The date for the enlargement is variously given as 1630 and 1671, when John Caryll's endowment was made. The architectural evidence does not support such a belief and there is no documentary evidence. However, there is often a germ of truth in persistent traditions, and it is possible that, when the mission was centred on Priest's House after 1754, some stones were used from West Grinstead House. Catherine Caryll, when describing the break-up of the old chapel in the house in 1754, mentioned that the closet was 'soon to be lay'd open as ye other wing of the side had been'.[67]

Edward Caryll suggested in letters at the beginning of the 1760s that two chapels were still in use at that time—one at West Grinstead and one at Highden. Fr. Felix Englefield's notebook[68] includes a list of 'Residences of our Gentlemen in 1758', which places Fr. Hoghton at West Grinstead, and Placid Payne at Highden as chaplain to Edward Caryll. Although Henry Hoghton had been dead for several years, it suggests that the two missions were regarded as separate at the time. It is clear, however, from an acrimonious exchange between Fr. Payne and John Baptist Caryll at the time of the latter's second marriage in 1761, that the precise financial arrangements for supporting the two chapels were still not decided. Fr. Payne wrote:

> if you look on my living at West Grinstead partly at yr. cost as a very great favour you will pardon me Sir if I am of a very different sentiment: for I certainly had a right to a maintenance (God knows it was a poor one enough) but from whom was I to acquire it? unless from the person who before Mr. Houghton went thither own'd himself obliged to procure a priest for those poor people, if he was able. Did you not say Sir these very words in the parlour at Highden? you was obliged to your Uncle for drawing that thorn out of your foot! It is true since that time you have altered your mind.[69]

It seems that Fr. Payne did not devote his time exclusively to the West Grinstead mission, though he seems to have supplied a priest to take his place when he was away. Edward Caryll told his nephew on 2 July 1760:

> I found Mr. Payne here (at Highden), not my old man, one may suppose before Sunday then it is to be hoped that he has done jaunting, at least for some considerable time. I am obliged to Mr. Payne his coming to my little family and his staying here, which is a great help to them.[70]

But although he was grateful to Fr. Payne, he clearly was exasperated by his temporary replacement. On 21 July 1760 he complained to John Baptist Caryll:

> Mr. Beaumont going into your country without acquainting me (as he is always in a vaste hurry) gave me no time or even notice of his going without desiring him to give my compliments . . . one would swear he never lived in a gentleman's family, nor do I think is hardly so himself.[71]

EDWARD CARYLL'S NEW ENDOWMENT OF THE MISSION

During Placid Payne's time on the mission, Edward Caryll made a new endowment to safeguard the future of the Catholics in the area, since he and his nephew had failed to agree since the sale of the West Grinstead estates. John Baptist Caryll, who was a spendthrift, seems to have avoided all responsibility for the Catholics in West Grinstead after he sold his house in the parish. Bishop Challoner, Vicar Apostolic of the London District and head of the Church in England, was obliged to remind him on several

occasions to honour the 'pious intentions' of his ancestors.[72] By contrast, Edward Caryll was most active in promoting the Church's interest. Fr. Felix Englefield recorded that

> Mr. Edward Caryll made a foundation at this time for one of ours to serve the Poor Catholics at West Grinstead, wch place formerly belonged to yt noble family, and for which he gave the sum of thirteen hundred pounds; wch gift and donation was accepted by our Chapter in July 1758. And in which in gratitude for so great a charity it was order'd that at his death there should be a solemn High Mass and Dirge with all ye Masses of the day performed at Douay[73] and 500 Masses discharged by our missionaries as the R(everend) F(ather) Provincial for the time being should appoint. That this anniversary should be kept and a weekly Mass performed by the incumbent, as well as nine anniversaries for his relations wch will be specified in the proper places of obligation.[74]

He added a note that Edward Caryll was to have the use of the money during his lifetime, and that £100 of it should be used for the purchase of the mission place in case it should be sold.

The Franciscan Chapter register records that at a Chapter held in London on 16 July 1758, the Friars were given permission to accept the legacy offered by 'nobili Domino Eduardo Caryll pro fundatione sustentationis missionarii ex nostris patribus pro Vico West Grinstead'.[75] As a result of the promises of masses recorded in Felix Englefield's notebook, the priest at West Grinstead was obliged to say 62 masses annually. These masses were one every week for Edward Caryll the benefactor and founder of the new mission and one extra mass, and one mass a year on the anniversaries of John Caryll and Elizabeth Caryll, his father and mother; Catherine Caryll, his wife; John Caryll junior, Henry Caryll and Richard Caryll, his brothers; and Nathaniel, Ralph and Rebecca Pigott, relatives of his wife.[76] In 1776 this obligation was reduced to 30 masses a year. Edward Caryll's endowment was an unusual one: missions were usually endowed at houses of the Catholic gentry and aristocracy, but his foundation was restricted to the poor Catholics in the neighbourhood of West Grinstead.[77]

In 1763 Edward Caryll sold his house at Highden and went to live at Compton near his nephew at Ladyholt. Fr. Payne's period of chaplaincy also came to an end, and it seems that the chapel at Highden was closed down at this date. Edward Caryll wrote from Highden to John Baptist Caryll on 11 July 1763:

> I can not let Mr. Payne go from hence with troubling you with these few lines, which are, how shall we dispose of these old goods that are in the house; I believe that it will be better to get rid of them all at once, to have a faithful appraiser that understands the affair. I may with some difficulty find out such an one . . .. As for the Chapel furniture I shall dispose of them to Grinstead, what belongs to me, and I may presume that you will do the same.[78]

THE FRANCISCAN MISSION CONTINUED

John Baptist Caryll clearly still made some financial contribution to the mission, because when Placid Payne left West Grinstead, Fr. Baker, the Franciscan Provincial, introduced his successor to him, writing:

> I take the liberty to address this to you with my most humble Respects and should have done it sooner as also to return you my grateful acknowledgements for your generous and charitable contribution towards our gentlemen who serve the Congregation at West Grinstead. This I confess I ought to have done before now, but hope my desire to fix a good gentleman who should not be removed *(sic)*. I am sensible of the convenience of not having one fixed, and as Mr. Beaumont was only sent there to supply for a time, am glad I can now inform you that I have sent, I believe, a very proper person, a gentleman who is very capable, and one very desirous to discharge as he ought the Duties of his state and to help his neighbour especially the poor. He has been many years in the mission. His name is Dixon and lately lived with Lord Montague.[79] I sent to him to repair to West Grinstead and to serve the people there, as I have good reason to believe he will be very acceptable to that Congregation, I hope this my sending him there will meet with your approbation.[80]

Armed with this glowing reference, Fr. Paul Dixon remained chaplain to the congregation at West Grinstead for the next five years. During his chaplaincy John Baptist Caryll was finally forced by his ever increasing debts to sell Ladyholt and the remainder of his Sussex estates in 1767. For a short time he lived at Brockhampton

in Havant, before travelling abroad, where he died in 1788. John Baptist Caryll was the last of the line in Sussex, and his departure abroad meant the end of the family connection with the West Grinstead mission. The family archives close with his death, and a vital source for the history of the mission comes to an end.

Anselm Copley followed Paul Dixon at West Grinstead in 1768. The Franciscan Procurator's book records that he received £21 half yearly in 1773 for serving the mission.[81] It also reveals that he received £4 in July 1774 for the repair of a wall at Priest's House, and £2 in September 1744 for a maid. Something of the life of the mission led by Anselm Copley and his Franciscan successors can be gleaned from the diary of John Baker of Horsham, written in a curious mixture of English, shorthand and foreign languages.[82] Baker, a wealthy merchant, though not himself a Catholic, encouraged his Catholic wife to practise her religion, and to keep Catholic servants, and he recorded precious details of the human side of the West Grinstead mission. From the diary we learn that Fr. Anselm Copley was often a sick man. Baker recorded on 6 September 1772:

> uxor showed me the size and shape (in bread) of a prodigious large stone Mr. Copley voided there this week, as he did another considerable One.[83]

Mrs. Martin, the Bakers' housekeeper, often took food parcels to Fr. Copley when he was sick. On 2 July 1774:

> Mrs. Martin seule to W. Grinstead: carried Mr. Copley 2 bottles Rum, a chicken and about 6 pounds of barrel sugar.[84]

On 11 December 1774:

> Mrs. Martin in chariot to Mr. Copley's, Mrs. Peters with her (but Mr. Copley too bad to say prayers as she knew) carried him 2 bottles Madeira wine, 2 of rum and (blank). Mrs. Martin came back before three, said Mr. Copley had dropsy.[85]

The two women had clearly travelled to West Grinstead in the hope of hearing mass: prayers being the 18th-century Catholic word for the sacrifice which was still against the law, which provided penalties both for the celebrant and the congregation. Again on 10 February 1775 John Baker recorded, 'Mrs. Martin went at 8 to Mr. Copley's (prêtre from Reigate là)[86] Mr. Copley very ill in bed'.[87]

In spite of his poor health, Fr. Copley is recorded as saying mass regularly at West Grinstead, which several of John Baker's servants attended each week. He gave extreme unction to Mrs. Baker on 18 March 1774,[88] and often engaged in religious argument with non-Catholics. He was on terms of social equality with John Baker, who recorded travelling to West Grinstead in a 'chariot' on 12 April 1774 to walk with Fr. Copley in his garden at Priest's House, and, when he left, he lent Copley 'last mo(nths) 2 Reviews and Gent. and London Magazines'.[89]

In June 1776 Fr. Copley was summoned back to St. Bonaventure's Friary at Douai, presumably because of his health, but not before he had introduced his successor to the Bakers. The Diary records on 20 June 1776:

> afternoon came Mr. Copley and the new priest Mr. Fleet (a native of London—has been some years on the mission in Lancashire) to supply his place;

and, on the following day: 'Mr. Copley in stage today to London in order to go to his College at Douai'.[90] Anselm Copley did not enjoy a long retirement, and died at St. Bonaventure's in the following year.

William Fleet was a man of very different character, and his stay at West Grinstead was short. At first he was welcomed by the Baker family, and John Baker's diary records several visits the priest made to Mrs. Martin. He also took part in games with Baker, playing bowls on 6 August 1776 and several games of draughts on the following day. But his argumentative nature soon gave offence, and he was recalled to London by his Franciscan superiors. Again the diary tells the story. On 6 August John Baker wrote that 'Mr. Fleet came (to the Assizes at Horsham)

to hear some trials; said was never at court in his life',[91] but six weeks later he added, 'Mrs. Martin said Mr. Fleet had given some offence at Assizes by saying he could not see for ladies high heads'.[92] However, it was probably his argument with the local Methodist minister that caused his removal. On 3 September John Baker wrote:

> Charles told me Mr. Fleet chez nous on Domingo, sent for to London ou to go on lundi, fears shall be forced to go abroad to a nunnery which he has no gusto—will try to revenir . . .. Mrs. Martin told me of a fracas between Mr. (Fleet) and Mann, the Methodist preacher,[93] and others, last Sunday night, at Methodists meeting, and their going to Sir Charles Eversfield for a warrant. Mr. Fleet went away to London about ii last monday, having lodged here the night before. Our Charles Lewis was with him at the Methodist's meeting on Sunday evening when the thing happened.[94]

After the excitement caused by William Fleet's short chaplaincy, the mission settled down again under John Bonaventure Pelling. Like his predecessors he soon made himself known to the Bakers.

> Hearing somebody knock at the door near 5pm., I went and opened it and found it was a man who asked for Mrs. Martin; I suspected it was one come to supply Mr. Fleet's place, and it was so, Mr. Pilling, just come from Douay, where he has been for 25 years,[95]

the diarist recorded on 10 September 1776. Within a month Fr. Pelling had brought down his sister from Preston to keep house with him at Priest's House, and soon he and his sister were entertaining the Bakers' higher servants after Sunday mass, or being received at Horsham. John Baker lent the Franciscan the four volumes of Chesterfield's letters, and partnered him in rubbers of whist against his neighbours the Woodwards, while Mrs. Martin took to West Grinstead the familiar food parcels, this time of

> two bottles red and one white currant wine, two china pots of currant jelly—to keep pots, one pot green apricocks and one pot of preserved do.[96]

Fr. John Pelling was succeeded by William Knight, who signed the West Grinstead registers between 1778 and 1784. While at West Grinstead he also said mass on the first Sunday of each month at Roffey near Horsham, and for this he received an allowance from the Weston Fund paid half-yearly by Mr. Winter Taylor of St. James's Street.[97] He was described as 'now resident at West Grinstead' in July 1781, when he received a bequest of £50 under the will of Martha Bullock, one of his parishioners.[98] Fr. Knight was appointed Martha Bullock's sole heir and executor, and was bequeathed the sole profit and emolument under the will during his natural life. Like John Pelling, William Knight went on to become Provincial of his order in England,[99] and was succeeded by Fr. Thomas Cotterell, a Birmingham friar, who signed the registers between 1781 and 1812. In 1796 Fr. Bernard Collingridge described his address as being 'Cotterell, West Grinstead, Horsham'.[100]

The last Franciscan chaplain at West Grinstead was Fr. Charles McDonnell, who served the mission from 1812 to 1814. Among the Franciscan archives are letters to Fr. McDonnell at West Grinstead from Bernard Collingridge, Vicar Apostolic of the Western District, enclosing a decree from Propaganda in Rome appointing him coadjutor to the Vicar Apostolic with the likelihood of succession, and from his brother, Daniel McDonnell, a priest at the London Road chapel in St. George's Fields, promising the visit of

> some great Personage at so attractive a place as West Grinstead. It is now ascertained beyond doubt that the illustrious Daniel McDonnell intends honouring your neighbourhood and particularly yourself and mansion with a visit very early in the ensuing week. He may be expected to alight at the Burrell Hotel.[101]

Charles McDonnell refused the mitre, and joined his brother at St. George's, and with his departure the Franciscan chaplaincy at West Grinstead came to an end.

THE SCHOOL

In 1727 the rector of West Grinstead presented amongst other papists in the parish 'Mrs. Hay (as they call her) Schoolm(istres)s to Popish

children'.[102] Mrs. Hayes, as she was usually called, was financed by the Caryll family to teach the Catholic children of the parish, as Fr. Henry Hoghton made clear in an undated letter to John Baptist Caryll reminding him of his responsibilities. He wrote:

> I hope you will think of helping Madame Hayes, the pious schoolmistress, who spends her life teaching the poor children of West Grinstead and has always been with the Caryll family. Her needs are very great. For 2 years she has received nothing and if there was not enough in the house for 2 or 3 she could not live.[103]

Mrs. Hayes may have received some financial support from Lady Petre, the benefactress of the Catholic schools in Essex, and a close relative of the Carylls; Miss Mary Kinoulty discovered an entry in the Caryll family accounts dated 4 August 1733 reading 'To Mrs. Hays. Lady Petre's Ch: End L. day 02:10:00'.[104]

In spite of these two sources of income, Mrs. Hayes was regularly in debt as a result of John Baptist Caryll's failure to pay her regular salary. In 1754, Fr. Francis Short reminded him that

> Mrs. Hayes's salary becomes due on Lady Day. As she now depends entirely on your goodness and charity, she hopes you will be so good as to send her an order for the money, to prevent the many miseries she must otherwise necessarily fall into. The rent of the house she is in, & in which she still continues to teach, is five and forty shillings a year, the Cheapest to be come at; and if not paid when due, Mrs. Hopkins will infallibly turn her out of Doors.[105]

When Fr. Short's letter had received no reply after a month, Elizabeth Hayes wrote to John Baptist Caryll herself requesting the payment of her salary of £10 per annum.[106] A few months later Catherine Caryll reported Mrs. Hayes's sudden death to her brother:

> The cause of my writing to you now is to acquaint you with poor Mrs. Hayes's death, of which Mr. Payne brought me the melancholy account of last thursday at his return from Grinstead.[107]

Mrs. Hayes's death did not mark the end of the school, however, and Catherine Caryll recommended

> her poor servant Kitty Flutter who had lived with her many years, on very small wages . . . & indeed latterly since she (Mrs. Hayes) grew so infirm ye cheif support of the School, w(hi)ch they all say she is capable enough of.[108]

Her brother evidently agreed to the suggestion, because in December 1754 Catherine Caryll wrote to say that she had

> told Kitty Flutter w(ha)t you was pleased to mention about her keeping on the school on the same footing that Mrs. (Hayes) had it before.[109]

The change of teacher did not mean that John Baptist Caryll was any more forthcoming with the salary. Kitty Flutter wrote in 1758 to say that her salary was two years overdue and that she was 'in great Neccessity';[110] Edward Caryll wrote on her behalf in February 1758 to ask if his nephew would 'be pleased to continue her allowance, her time is almost out';[111] and Kitty Flutter wrote again in March 1759 to claim her £10 salary.[112] No more was heard of the school after this date, and it seems likely that it closed before the last of the Carylls left England for France in 1767.

West Grinstead Catholics, in spite of the irregular history of their school, were not cut off from the mainstream of Catholic education. Blaise Morey, who was born in West Grinstead in 1744, was at Sedgley Park School near Wolverhampton in 1763, the very year of its foundation by Bishop Challoner,[113] and continued his education at the English College at Douai[114] until his ordination to the priesthood. At some later date a school was built behind the Priest's House for the Catholic children of the mission, but again it did not prosper. Mgr. Denis described it as

> a small building at the back of the house, of which the extent is 21 yards square. The school room . . . receives light through a large window and a half glass door. The floor is made with stone, and its ceiling with a ventilator in the middle is quite new . . .. Not a farthing is given for the school.[115]

It was not in use when he arrived in the parish in 1863, but he soon reopened it.

THE FINANCES OF THE MISSION

Serenus Cressy, the first chaplain at West Grinstead to benefit from John Caryll's endowment of 1671, received an income of £12 a year from the £600 invested with the Chapter. The usual remuneration for a domestic chaplain in the first half of the 18th century was £20 per annum. The Caryll family accounts show that their chaplains Henry Molyneux, S.J., at Ladyholt and John Massey at West Grinstead received the standard salary in 1726 and 1727.[116] This income was certainly supplemented by ex-gratia payments for charity and the supply of all requisites for the chapel by the family. The Jesuit Province accounts show that Fr. Henry Hoghton received an annual payment of £3 from his superiors on 14 December each year.[117] He also received financial help from his congregation: in the will of John Pierce of West Grinstead, for example, he was left 3 gns., 'his silver spurs, the housing and holster caps'.[118]

Fr. Felix Englefield calculated the income of the mission in the 1750s, as being

> at present about £32 all by the subscription of different persons, but at Edward Caryll's death there will be the interest of £1200 or £1300.[119]

After Edward Caryll's new endowment in 1758, the Franciscan missionaries seem to have received an income of £42 a year. The Procurator's book records that Fr. Anselm Copley received £21 half-yearly in 1773,[120] and Fr. John Pelling revealed that 'I was paid £2 to liquidate Fleet's debts from his £21 half yearly salary', in 1776.[121] By the end of the century the income of the mission had increased, and the Procurator's book reveals that

> by balancing these accounts it will appear that Mr. Cottrell received from the beginning of (17)94 to the end of (17)95 the sum of £139, while during the above period his salary was only for the two years £129.[122]

However, the income of the mission was not sufficient to prevent at least two of the Franciscans from leaving debts at West Grinstead. Fr. Anselm Copley left a debt of £10 10*s.* in 1776 after three years at the mission,[123] and his successor William Fleet accumulated a debt of £21 during his stay there of only two and a half months.[124]

The endowment of the mission was increased in 1808 by a bequest in the will of Richard Batchelor, whose family filled the West Grinstead registers during the period of the Franciscan chaplaincy. The second clause of his will reads:

> I give and bequeath towards the support and maintenance of the Roman Catholic Chapel in the parish of West Grinstead aforesaid the sum of two hundred pounds to be placed out at interest on such security as my executors shall think proper, the interest arising from the same to be paid half yearly to the Priest of the aforesaid Chapel on condition that twenty masses be annually discharged for the repose of my soul.[125]

By 1814 the income of the West Grinstead mission was £80 a year.[126] When Mgr. Denis took over in 1863 he found that

> the chief income of the West Grinstead mission is a hundred and ten pounds a year, of which £42 comes from a foundation made by Edward Caryll; £9 from another foundation made by Richard Batchelor; £30 are given by Mr. Heathcote; and the rest is supplied by his Lordship the Revd. Doctor Grant.[127]

THE CONGREGATION

There are no records of any West Grinstead Catholics being presented for recusancy in the early part of the 17th century, and as late as 1676 the rector of West Grinstead was able to report that there were no people in the parish who refused to receive communion. The provision of a priest to serve the mission by John Caryll in 1671 soon transformed the situation. Sixteen recusants were listed in the parish in 1685,[128] and Bishop Bowers' visitation of 1724 listed 14 papist families out of about 106.[129] Three years later John Woodford, a later rector of West Grinstead, returned a detailed list of the Catholic congregation to the diocesan authorities.[130] He listed 52 Catholics: 28 adults and 24 children in 18 households, including Fr. John Massey, the Jesuit chaplain of the mission, and Elizabeth

Hayes, the Catholic schoolmistress. Bishop Challoner visited Sussex three times. In 1741 he found '150 Catholics, two-thirds of whom were communicants',[131] at West Grinstead, but he was recording the congregation of the whole mission rather than the number of Catholics in the Church of England parish. In 1749 he found 140 Catholics,[132] and in 1753 110.[133]

The Carylls had left West Grinstead before the next estimate of the size of the congregation was made, but, contrary to expectation, the removal of their Catholic patron did not cause numbers to decrease. The 1767 House of Lords returns[134] still recorded 30 papists in West Grinstead, of whom 11 were adult males, 12 females and 7 children, and the 1773 returns in the Westminster Diocesan Archives with the figures provided for Bishop Challoner's report to Rome by his coadjutor, James Talbot,[135] give a total of 100 Catholics for the mission. Eight years later a return of recusants in West Grinstead[136] lists 42 Catholics out of a population of 417.

In both 1767 and 1780 half of the Catholic population of the main mission area lived in West Grinstead parish. Most of the rest lived in adjoining parishes; 45 per cent in 1767 and 38 per cent in 1780. Some fluctuations took place within these parishes. Shipley, for example, with its long tradition of recusancy, had the second largest Catholic population in 1767, but was overtaken by Nuthurst in 1780. Numbers were so small, however, that the removal of a few families from a parish could account for the change. At any rate the overall pattern remained constant. The outlying parishes of Henfield, Steyning and Washington accounted for only six and a half per cent of the mission population in 1767, and five and a half per cent in 1780. The most distant parish, Washington, in spite of being the site of the former chapel at Highden until 1763, had apparently lost its sole Catholic inhabitant by 1780, although it was only five miles away from the centre of the mission.[137]

Fr. Charles McDonnell, writing to Bishop Poynter in 1814, gave the size of the congregation as '43, none of whom were of gentry rank'.[138] The 1851 Religious Census shows that the average attendance at the chapel at Priest's House for the Sunday morning mass was 55, and 35 for the evening service.[139] Mgr. Denis in 1863 wrote:

> it is impossible to say how many inhabitants are within the limits of this mission, but I should think that they may be about 20,000, and of this number there may be a hundred Catholics.[140]

The figures given for the mission congregation by Bishops Challoner, Talbot and Poynter are supported by the numbers confirmed at West Grinstead at various times. Bishop Challoner confirmed 41 in 1741;[141] Bishop Talbot 24 in 1784; Bishop Douglas 33 in 1805; and Bishop Poynter confirmed two West Grinstead people at Brighton in September 1823 and 19 at Horsham four weeks later.[142] As the bishops also confirmed people at the other main Catholic centres in the county, the numbers from the West Grinstead mission were not increased by the presence of other Catholics from outside the mission. It seems clear that the congregation at West Grinstead was smaller only than that at Midhurst and Easebourne among Catholic communities in Sussex, being larger than those at Arundel, Burton, Ladyholt and Slindon, and considerably more numerous than those at Horsham and Treyford.

MGR. DENIS AND WEST GRINSTEAD CHURCH

West Grinstead is one of only five Catholic communities in Sussex that have survived from the 18th century. It is important as being the only such survivor in the county east of the river Arun. It is unique in having survived without any powerful Catholic patron to support it after 1754. The other Caryll family mission in Harting did not survive the sale of Ladyholt in 1767 and the death of Thomas Hunt, the last chaplain, in 1770. From the departure of the Franciscans in 1814 down to the present day, the mission and later the Catholic parish of West Grinstead has been served by the secular clergy. But it is entirely

due to the devoted labour of successive Benedictine, Jesuit and Franciscan missionaries, and to the benefactions of John Caryll in 1671 and Edward Caryll in 1758, that there was a Catholic community in West Grinstead to welcome Mgr. Denis in 1863. When he built the present church of Our Lady of Consolation and St. Francis at West Grinstead in 1875, Mgr. Denis fulfilled the work of the Carylls, the priests who had served the mission, and the Catholics of the area who had kept their faith alive since penal times. And it is thanks to the great revival of Catholicism in the parish encouraged by Mgr. Denis that there are such fine ecclesiastical buildings to welcome the traveller on the B 2135.[143]

Author: Timothy J. McCann, West Sussex Record Office, County Hall, Chichester, West Sussex.

Notes

Extracts from manuscripts in the British Library Department of Manuscripts are quoted by permission of the British Library Board. The following abbreviations are used: A.A.W.: Archives of the Archdiocese of Westminster, Archbishop's House, Westminster; A.D.A.B.: Archives of the Diocese of Arundel and Brighton, Bishop's House, Hove; A.E.P.O.F.M.: Archives of the English Province of the Order of Friars Minor, Forest Gate, London; A.E.P.S.J.: Archives of the English Province of the Society of Jesus, Farm Street, London; B.L.: British Library; H.L.R.O.: House of Lords Record Office; P.R.O.: Public Record Office; W.S.R.O.: West Sussex Record Office.

[1] A.D.A.B., Southwark Visitation, 1863/4, West Grinstead.

[2] For the Caryll family, see Max de Trenqualéon, *West Grinstead et les Caryll* (2 vols. 1893); Irene Hernaman, *West Grinstead and our Sussex Forefathers* (1924); Ann Parry, *The Carylls of Harting: A Study in Loyalty* (Harting, 1976).

[3] W.S.R.O., Ep. I/37/1, and P.R.O., SP 12/117/15, printed in *Miscellanea XIII* (Catholic Rec. Soc. **22**), 81.

[4] At least 8 Catholics in the 1620s (W.S.R.O., Ep. I/15/1, of 1624–8); 40 in 1676 (*Suss. Arch. Coll.* **45** (1902), 147); 18 in 1685 (Hist. MSS. Com. 38, *Round*, 275); 5 families in 1724 (W.S.R.O., Ep. I/26/3, p.17); and 16 in 1767 (H.L.R.O., Main Papers, 21 Dec. 1767).

[5] B.L., Add. MS. 39368, f. 731.

[6] *Suss. Arch. Coll.* **19** (1867), 112–13; *Calendar of the Committee for Compounding*, **3**, pp. 2278–9, 2282.

[7] P.R.O., E 179/258/14, ff. 23–4.

[8] See Howard Erskine Hill, 'John Caryll, 2nd Baron Caryll of Durford, 1667–1736', in *The Social Milieu of Alexander Pope* (1975), 42–102.

[9] W.S.R.O., Ep I/37/3.

[10] Hernaman, *West Grinstead*, 79.

[11] See for example, Hernaman, *West Grinstead;* H.C. Fincham, *The Pilgrims Guide to the Shrine of Our Lady of Consolation at West Grinstead* (1961); Margaret Clifton, *The Church of Our Lady of Consolation and St. Francis West Grinstead: A Short History of the Church and Mission* (1975).

[12] W.S.R.O., Ep. I/15/1, of 1626; *Suss. Rec. Soc.* **49**, 26, 67, 95, 103, 112; J.S. Cockburn, *Calendar of Assize Records, Sussex Indictments, James I* (1975).

[13] J.S. Cockburn, *Calendar of Assize Records, Sussex Indictments, Elizabeth I* (1975).

[14] *West Sussex Protestation Returns, 1641–1642*, ed. R. Garraway Rice (Suss. Rec. Soc. **5**), 90–1.

[15] W.S.R.O., Ep. I/22/1 (1676).

[16] A.A.W., Old Brotherhood Archives, IV/5.

[17] A.A.W., Old Brotherhood Archives, IV/6.

[18] A.A.W., Old Brotherhood Archives, IV/8.

[19] P.R.O., PROB 11/357, f. 77, of 15 July 1678.

[20] A.A.W., Old Brotherhood Archives, IV/6.

[21] The mission at Havant in Hampshire is the other surviving result of John Caryll's benefaction. See Robert E. Scantlebury, *The Registers and Records of Brockhampton (Havant): Hampshire Registers III* (Catholic Rec. Soc. **44**), 2.

[22] Anthony A'Wood, *Athenae* (1691), **2**, 385–8.

[23] David Lunn, *The English Benedictines, 1540–1688* (1980), 131–3.

[24] Douai Abbey, Woolhampton, Berks., Weldon MSS. vol. I, f. 437.

[25] Gilbert Dolan, 'The English Benedictine Missions: Missions in Kent and Sussex', *Downside Review*, **19** (1900), 164–71.

[26] H. Norbert Birt, *Obit Book of the English Benedictines from 1600 to 1912* (1913), 57.

[27] W.S.R.O., Par. 95/1/1/3, f. 37.

[28] A.A.W., Old Brotherhood Archives, Consult Minutes, pp. 184–5.

[29] A.A.W., Epis. Var. I, f. 117, printed in *Catholicon*, **4**, 198–201.

[30] A.A.W., A. 38/4.

[31] The term 'poor people' was used to mean the Catholics of West Grinstead, poor being used in its secondary meaning of 'deserving of pity'.

[32] A.A.W., Old Brotherhood Archives, Consult Minutes, p. 212.

[33] The original registers of West Grinstead are preserved at Priest's House, West Grinstead. A transcript of the register up to 1837 by the present writer is W.S.R.O., MP 2280.

[34] T.G. Holt, *The English Jesuits, 1650–1829* (Catholic Rec. Soc. **70**), 235.

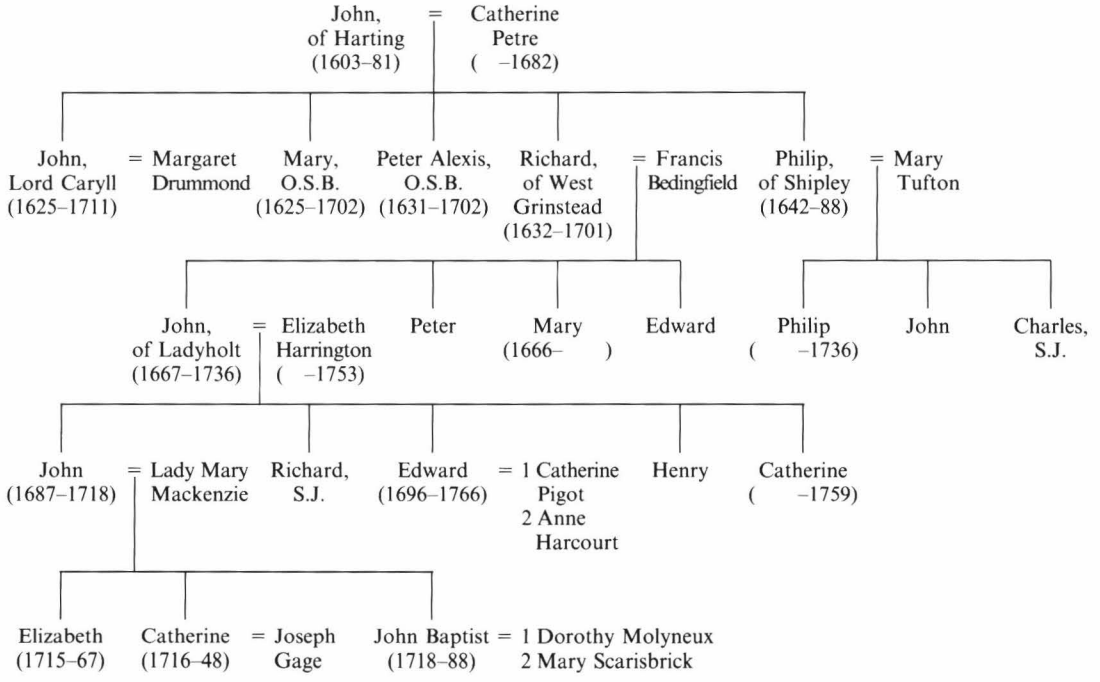
[35] See F.A. Crisp, *The Catholic Registers of the City of Worcester* (1887).
[36] Holt, 54.
[37] Holt, 160.
[38] W.S.R.O., Ep. I/37/3.
[39] Holt, 29.
[40] A.E.P.S.J., English Province Accounts, 1729–65, p. 91.
[41] See M.G. Costello, *St. Richards Slindon* (1953).
[42] A.E.P.S.J., English Province Accounts, 1730–5.
[43] Holt, 123.
[44] B.L., Add. MS. 28229, f. 81.
[45] H.D. Gordon, *A History of Harting* (1877), 201.
[46] B.L., Add. MS. 28230, f. 270.
[47] B.L., Add. MS. 28231, f. 118.
[48] W.S.R.O., Burrell MSS., calendar of deeds.
[49] W.S.R.O., Add. MS. 13891.
[50] W.S.R.O., Par. 95/1/1/4, f. 135.
[51] Holt, 228.
[52] The Harting parish register records that 'Mrs. Caryll, widow of Mr. John Caryll' was buried on 25 Oct. 1753: W.S.R.O., Par. 98/1/1/3, f. 15.
[53] B.L., Add. MS. 28231, f. 219.
[54] B.L., Add. MS. 28231, f. 203.
[55] B.L., Add. MS. 28231, f. 206.
[56] A priest.
[57] B.L., Add. MS. 28231, f. 217.
[58] See F.J.A. Skeet (ed.), 'Catholic Registers of Slindon, Sussex, 1698–1840' in *Miscellanea VI* (Catholic Rec. Soc. **7**), 353–87.
[59] A.E.P.O.F.M. I am extremely grateful to Fr. Justin McLoughlin, O.F.M., for drawing my attention to many of the Franciscan sources.
[60] B.L., Add. MS. 28231, f. 219.
[61] Granville Squiers, *Secret Hiding Places* (1934), 253–4.
[62] B.L., Add. MS. 28231, f. 247.
[63] B.L., Add. MS. 28231, f. 279.
[64] B.L., Add. MS. 28231, f. 291.
[65] B.L., Add. MS. 28231, f. 303.
[66] A.E.P.O.F.M., Procurator's Book, Register 5A.
[67] B.L., Add. MS. 28231, f. 219.
[68] A.E.P.O.F.M., RS 1, p. 172.
[69] B.L., Add. MS. 28234, f. 412.
[70] B.L., Add. MS. 28235, f. 1.
[71] B.L., Add. MS. 28235, f. 30.
[72] For Bishop Challoner's letters to John Baptist Caryll, 1757–63, see B.L., Add. MSS. 28232, ff. 91, 99; 28234, f. 264; 28235, f. 154.
[73] St. Bonaventure's, the Franciscan House at Douai.
[74] A.E.P.O.F.M., Registrum Particularium Quae acciderunt tempore Provincialitus Fr. Felix Englefield, 1755–8, RS 1, p. 78.
[75] A.E.P.O.F.M., Chapter Register IB, pp. 73–4.
[76] A.E.P.O.F.M., RS 1, p. 149.
[77] See Justin McLoughlin, 'The Friars and West Grinstead', *Southwark Record,* **31** (1957), 8–11.
[78] B.L., Add. MS. 28235, f. 126.
[79] Anthony Browne, 6th Viscount Montague. See H. Willaert, *History of an Old Catholic Mission: Cowdray—Easebourne—Midhurst* (1928).
[80] B.L., Add. MS. 28234, f. 410.
[81] A.E.P.O.F.M., 5A, p. 44.
[82] *Diary of John Baker,* ed. Philip Yorke (1931) (hereafter Baker).
[83] Baker, 243.
[84] Baker, 290.
[85] Wilfrid Scawen Blunt, 'Mr. John Baker's Horsham Diary', *Suss. Arch. Coll.* **52** (1909), 71.
[86] An unidentified priest, probably the chaplain to Mrs. Melior Mary Weston, a relative of the Carylls, whose family had succeeded the Copleys at Roffey near Horsham and at Gatton near Reigate.
[87] Baker, 302.
[88] Baker, 276.
[89] Baker, 280.
[90] Baker, 357.
[91] Baker, 361.
[92] Baker, 367.
[93] Mann was a Petworth tallow-chandler who had moved to Horsham in 1773 and opened his house to visiting preachers. See Horsham Museum MS. 307; Hilary & John Vickers, *Methodism in a Cathedral City* (Chichester, 1977), 1.
[94] Baker, 366.
[95] Baker, 367.
[96] Baker, 383.
[97] A.E.P.O.F.M., 5A, p. 184.
[98] A.E.P.O.F.M.
[99] See Dominic Bellenger, *English and Welsh Priests, 1558–1800* (1984), 245.
[100] A.E.P.O.F.M.
[101] A.E.P.O.F.M.
[102] W.S.R.O., Ep. I/37/3.
[103] B.L., Add. MS. 28231, f. 118.
[104] B.L., Add. MS. 28241, f. 132.
[105] B.L., Add. MS. 28231, f. 203.
[106] B.L., Add. MS. 28231, f. 216.
[107] B.L., Add. MS. 28231, f. 255.
[108] B.L., Add. MS. 28231, f. 255.
[109] B.L., Add. MS. 28231, f. 258.
[110] B.L., Add. MS. 28231, f. 294.
[111] B.L., Add. MS. 28232, f. 179.
[112] B.L., Add. MS. 28232, f. 82.
[113] Godfrey Anstruther, *The Seminary Priests,* **4,** *1716–1800* (1977), 193.
[114] Mary K. Kinoulty, 'A Social Study of Roman Catholicism in West Sussex in the Eighteenth Century' (Univ. of Wales M.A. thesis, 1982), 239 (copy in W.S.R.O., Add. MS. 34673).
[115] A.D.A.B., Southwark Visitation, 1863/4, West Grinstead.
[116] B.L., Add. MS. 28240, ff. 162–4.
[117] A.E.P.S.J., English Province Accounts, 1729–65, f. 94.
[118] W.S.R.O., STC I/38, f. 336.
[119] A.E.P.O.F.M., RS 1, p. 148.
[120] A.E.P.O.F.M., 5A, p. 44.
[121] A.E.P.O.F.M., 5A, p. 251.
[122] A.E.P.O.F.M., Procurator's Book, 1779–96, 5B, p. 45.
[123] A.E.P.O.F.M., 5A, p. 45.
[124] A.E.P.O.F.M., 5A, p. 251.
[125] W.S.R.O., STC I/47, f. 124.
[126] A.A.W., London Clergy Misc. 1812–16 (Poynter) III c. 19.

[127] A.D.A.B., Southwark Visitation, 1863/4, West Grinstead.
[128] Hist. MSS. Com. 38, *Round,* 274–5.
[129] W.S.R.O., Ep. I/26/3, f. 9.
[130] W.S.R.O., Ep. I/37/3.
[131] A.A.W., A. 40, no. 41.
[132] A.A.W., A. 40, no. 117.
[133] A.A.W., A. 40, no. 93.
[134] H.L.R.O., Main Papers, 21 Dec. 1767 (Diocese of Chichester).
[135] A.A.W., A. 41, no. 132.
[136] H.L.R.O., Main Papers, 5 March 1781 (Diocese of Chichester).
[137] Kinoulty, 27.
[138] A.A.W., London Clergy Misc. 1812–16 (Poynter) III c. Misc.
[139] P.R.O., HO 129/87/1/1/2.
[140] A.D.A.B., Southwark Visitation, 1863/4, West Grinstead.
[141] A.A.W, A. 40, no. 117.
[142] W.S.R.O., MP 2280.
[143] I am grateful to Mrs. Eleanor Holmes, Dr. Tim Hudson and Mrs. Alison McCann for many helpful comments on earlier drafts of this article, and to Geoffrey Holt, S.J., Miss Mary Kinoulty, Justin McLoughlin, O.F.M., and Geoffrey Scott, O.S.B., for bringing documents to my attention.

APPENDIX 1
A LIST OF PRIESTS WHO SERVED THE MISSION AT WEST GRINSTEAD, 1671–1814.

1671–4	Serenus CRESSY, O.S.B.
1674–82	Robert PRENDAL, O.S.B.
1682–6	Peter Alexis CARYLL, O.S.B.
1686–1704	Thomas CHURCHILL
1705	Peter JONES
1710–11	Ignatius STAFFURD, S.J.
1714–16	Charles CARYLL, S.J.
1727–33	John HODGES alias MASSEY, S.J.
1733–4	Anthony BEDINGFIELD, S.J.
1735	Philip CARTERET, S.J.
1736	Felix BARTLET, S.J.
1736–50	Henry HOGHTON, S.J.
1750–4	Francis SHORT, S.J.
1755–63	Placid PAYNE, O.F.M.
1763–8	Paul DIXON, O.F.M.
1768–76	Anselm COPLEY, O.F.M.
1776	William FLEET, O.F.M.
1776–8	John PELLING, O.F.M.
1778–84	William KNIGHT, O.F.M.
1784–1812	Thomas COTTERELL, O.F.M.
1812–14	Charles MCDONNELL, O.F.M.

APPENDIX 2
THE CARYLL FAMILY (an abbreviated pedigree showing the relationships between the members of the family associated with the West Grinstead mission)



Sussex Archaeological Collections **124** (1986), 213–26.

THE DRAINAGE OF BRIGHTON: SEWERAGE AND OUTFALL PROVISION AS AN ISSUE IN A FAMOUS SEASIDE RESORT *c.* 1840–80

by Sue Farrant

INTRODUCTION

By 1840 the standard of public health in Britain's larger towns was of sufficient concern for a government enquiry to be mounted under the direction of Edwin Chadwick. Most of the reports to the enquiry were about our rapidly expanding industrial towns, and London was also regarded as having a serious problem. Brighton, Britain's largest, most prestigious, and wealthiest seaside resort was also included because the town had mortality and contagious disease rates which were comparable with the industrial towns. The report on Brighton, by G. S. Jenks, recommended that the town should adopt a Board of Health, but it decided not to and it also ignored the recommendation that a sewerage system should be installed.[1] These decisions ultimately contributed to a public debate within and beyond the town from *c.* 1858 to 1869 which probably resulted in other resorts undertaking more capital investment in the provision of sewers and an outfall than they would have otherwise.

The spectre of the adverse publicity which Brighton endured from the sharp pen of the *Lancet* was cited during debates by some of the seaside town councils along the Sussex coast as a warning of what might happen if the sewerage system was not sufficient to cope with the town's effluent and the outfall was not located so as to avoid contamination of the beaches by untreated sewage. In 1882 the *Lancet* claimed that its campaign against Brighton had made other resorts more conscientious.[2] Brighton did not install a complete sewerage system and an outfall which prevented sewage being deposited upon the town's beaches until 1874, most other rapidly expanding resorts having begun theirs in the mid to late 1860s when the controversy over Brighton's decision not to was being aired in the national press. This, based in London, regarded Brighton as the city's lungs and its well-being as of considerable public interest.[3]

The debate about installation centred upon issues which are recognizable today, such as the return on investment in infrastructure in terms of direct and indirect economic, social, political and environmental benefits, and the increased rates which would result. It was uncertain that full-scale modernization was necessary when the traditional system of cesspits was apparently adequate for many people and avoided municipal responsibility for sanitation with administrative, recurrent and capital cost requirements. The divisions in Brighton's town council from the late 1850s to 1870 over the issue were not unique; similar battles were fought in other resorts and industrial towns.[4]

THE ORIGINS OF THE PROBLEM

Brighton's rapid development as a seaside resort from the 1750s took place with little regulation. The parish within which the former fishing town stood was run by a vestry until 1773 when Commissioners who were responsible for lighting, cleansing and draining the town, with limited control over building and public nuisances, were set up.[5] Townsfolk were expected to supply themselves with water from wells and to make sanitary provision by cutting cesspits into the town's bedrock, and they were responsible for emptying their pits. From 1773 the expanding town was built largely upon chalk, a porous

rock, and the practice of building small terraced houses at high densities with little yards to the rear for wells and cesspits was established by 1780 and continued into the 1880s. The cesspits when full were noxious and opening them was unpleasant. It was not uncommon for two men to take two or three nights to fill two wagon loads with the contents, tramping through the house to do so, for few houses had rear exits from their yards because the yards of the terrace to the rear backed on to them.[6] The risk of contamination of water was increased by the use of cesspits for the rubbish from abattoirs and from other food-producing establishments.

Not until the 1790s did the Commissioners slowly develop a drainage system to cope with run-off from the roads.[7] The first sewer was jointly paid for by the Prince of Wales and the Duke of Marlborough, both of whom were anxious to remove the unpleasant accumulation of dank water on the bottom of the valley called the Steine which spoilt the view from their houses and made the area damp. The wooden drain's outfall is still visible just west of the Palace Pier. Subsequently the Commissioners built a few short sewers which also debouched onto the beach. By 1810 the owners of houses were illicitly linking their properties to the sewers and using them instead of cesspits. By the 1820s developers were building sewers which outflowed onto the beach on the town's western frontage where the town is low-lying and stained the chalk cliffs on which the town's eastern suburbs stand.[8] In March 1838 the Commissioners, in response to complaints about the unpleasant smell and appearance of sewage on the beaches, considered that a drainage system for the whole town should be devised, and between 1838 and 1840 they built an intercepting sewer. The first part along the East Cliff was constructed in 1839 and the second, along the town's frontage from its boundary with Hove eastwards along King's Road, was completed in 1840–1.[9] A. B. Granville, who had commented unfavourably on the sight and the smell of sewage on the beach, thought that the completion of the intercepting sewer would greatly improve the situation; but in March 1840 the Directors of the Chain Pier wrote to complain about the drains from the houses along the Marine Parade, which discharged sewage onto the beach above high-water mark rather than into the sea below low-water mark. That they noted an agreement of only two years previously which insisted on the latter suggests that the East Cliff sewer was either very short or ineffectual, for the area which the Directors were unhappy about was between the Old Steine and Rock Gardens, and so close to the town centre.[10]

The drainage outlets, the sewerage system, street cleansing, the living conditions of the poor, the mortality statistics and the standard of hygiene of the abattoirs were amongst the topics covered by Dr. Jenks in 1840 when he wrote his report on the health of the town for Edwin Chadwick's *Enquiry into the Sanitary Condition of the Labouring Population of Great Britain.*[11] Then Brighton was by far the largest seaside resort in Britain, but considerably smaller than major industrial towns such as Birmingham and Leeds; however, the health report made it clear that this resort was not exempt from the issues which were common to that group. Jenks regarded Brighton's drainage as seriously defective; the number of cesspits was of particular concern, with the attendant risk that adjacent wells would be polluted.[12] Jenks identified specific areas as being overcrowded and unhygienic to the degree that they threatened the public health of the rest of the town because they acted as reservoirs for infectious diseases.[13] Most of the areas had only been standing between 20 and 40 years and yet they were slums in the 1820s when the town's watch regarded them with suspicion and only ventured in when necessary and then in pairs.[14] Jenks identified adequate drainage and piped water supplies for these areas as crucial to the well-being of the town as a whole.[15] In order to preserve its reputation as a resort, Jenks said that the town had to do what it could to reduce the health risks which were associated with these slum areas, which harboured many infectious

diseases such as measles, whooping cough, scarlatina and inflammatory infections of the lungs.[16]

Jenks recommended that the town should establish a Board of Health and that its responsibilities should include the inspection of provisions.[17] The Commissioners were unable to deal with nuisances (such as overflowing cesspits) unless a petition was presented by a ratepayer, and Jenks considered this to be a handicap because people tried to avoid making an official complaint until the problem had become severe. To protect the town's health, the construction of housing for the working classes should be controlled by a building Act which would ensure that the supply of ventilation, water, sewerage and drainage was adequate. Cesspits should not be allowed near wells or springs and should be emptied more often. Noxious and offensive trades should be removed beyond the town's boundaries.[18]

Jenks's recommendation that the town should have a Board of Health was not acted upon, and this decision was to affect the town's national reputation particularly in the late 1850s and to result in political battles within the Council before a proper sewerage system and outfall was built. Little progress was made between 1840 and 1849, when Edward Cresy wrote an even more detailed report on the sanitary state of Brighton. He noted that the Commissioners had been sufficiently moved by Jenks's criticism to build an additional six miles of sewers in the main resort areas, but they had designated as the main outfall the Albion outfall opposite the Albion Hotel; thus untreated sewage flowed out onto the shingle beach right in front of one of the town's major hotels and beside the fashionable King's Road promenade. The pipe from the outfall was supposed to discharge the sewage into the sea 200 ft. from the shore, but leaked. The water around the outlet was contaminated with sewage, and as the prevailing wind was south-westerly both the sewage and its nauseating smell were blown onshore. Cresy pointed out that most of the connections from houses to the sewerage system were illegal, because the terms of the Commissioners' Act of 1825 did not permit sewerage connections from the town's houses into the streets' sewers, which were still legally only storm- and street-water drains.[19] He repeated Jenks's recommendations and also suggested that there should be public toilets, washing facilities for the poor and a pumping station to conduct sewage to agricultural land.[20]

SEWAGE DISPOSAL BECOMES A POLITICAL ISSUE

In the late 1850s two pressure groups concerned about drainage emerged, residents of the town's eastern suburbs who felt that their area, which was developing more slowly than western Brighton, was not receiving adequate attention, and residents of western Brighton who regarded themselves as in the fashionable and expanding area which needed more attention. The latter claim was partly sustained by the area's rapid expansion in a north-westerly direction and by the growth of Palmeira and Cliftonville to the west in Hove. The transformation of this formerly rural parish into a large middle-class suburban town added to Brighton's need to resolve its sewerage and outfall problem, for more beach outfalls were constructed in Hove, from which the easterly flowing current in the English Channel conveyed effluent onto Brighton's beaches. As the *Brighton Herald* noted, both factions in Brighton agreed on one point, that the town needed a better system and outfall, but neither wanted an outfall in front of their area; the Albion outfall at the mouth of the Steine was preferable. The Council's wish to avoid offending influential residents in the town's fashionable eastern and western suburbs, combined with the belief that neither cesspits nor seafront outfalls were detrimental to health, resulted in piecemeal extensions to the sewerage system.[21]

During the 1850s a few townsfolk lobbied the Council to improve the disposal of sewage.

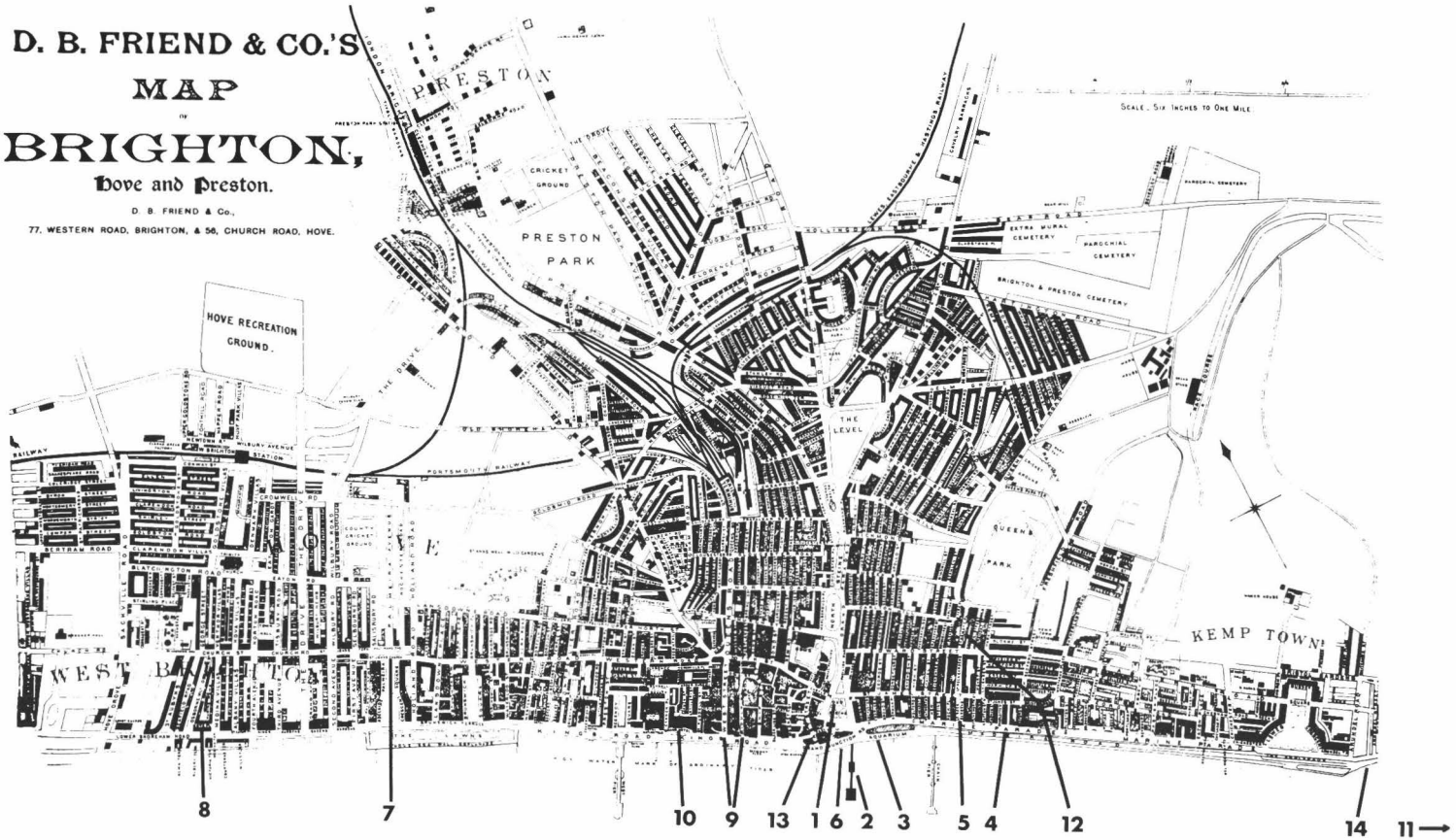


Fig. 1. Brighton in *c.* 1894, showing places mentioned in text. Key: 1, Old Steine; 2, Palace Pier; 3, beginning of East Cliff (extended to Kemp Town); 4, Marine Parade; 5, Rock Gardens; 6, Albion outfall; 7, Palmeira; 8, Cliftonville; 9, Middle Street and West Street; 10, Grand Hotel; 11, Rottingdean, Telscombe, Portobello; 12, Egremont Street; 13, Brills Baths; 14, Black Rock.

The most dogged was M. B. Tennant, who owned eight lodging houses in Middle Street and in West Street, which was on the seafront in the town centre. He did not claim any specialist knowledge, but studied the subject and recommended the collection of sewage in containers in which it could be treated before being sold for fertilizer to farmers. He collected evidence to demonstrate that something had to be done to prevent the loss of regular visitors which he claimed was largely due to the contamination of the beaches. The Council was unreceptive.[22]

Piecemeal work continued but in 1857 the Council proposed only to repair the Albion outfall which leaked and had lost 90 ft., in spite of requests for improvement which would provide more sewers and an outfall to remove sewage from the town without spoiling the beach. However, Cllr. Lamb suggested that experts should be consulted and that the town should cleanse the sea and beaches and improve the drainage rather than spend a lot of money on the Royal Pavilion.[23] In response to public pressure and further comments by councillors, the Council decided to review their decision and to ask the Works Committee for a new recommendation, but only for a new outfall at the Albion outlet. Mr. Lockwood, the borough's engineer and surveyor, recommended that a long iron pipe which conveyed the sewage into the sea even at low water (which the existing one failed to do), costing £3,500, should be installed. The Council was faced with spending the largest sum they had ever spent upon an outfall, and some councillors argued that this was the time to consider alternative schemes because the two other town outfalls at Western Street and Black Rock were also in disrepair and might also need quite a lot of money spent on them. At the end of 1859 the Council decided to commission reports upon the town's drainage, meaning by this both the outfalls and the sewers.[24] Two engineers, Mr. R. Rawlinson and Mr. Hawksley, were asked to report, and Tennant published his own ideas and circulated them. By now the local and national press were interested in the issue, and the *Brighton Guardian*, the *Lancet*, the *Builder* and the *Times* were amongst those who were to comment upon subsequent events.

The engineers' reports were first discussed in 1859. Rawlinson's intercepting sewer was to run from east to west, collecting the sewage from Brighton and Hove and conveying it to an outfall at Shoreham. A problem with Rawlinson's plan, noted by some critics, was that the outfall was to the west of the town and the current along the English Channel runs from west to east and so the sewage would have been deposited upon the town's beaches. This scheme was the most expensive; his estimate of £122,930 was regarded by the *Builder* as far too low, £151,000 seeming more realistic. Hawksley suggested that the existing outfall should be extended; his estimate was also thought to be too low by the *Builder*. At the same time Tennant published his report and sent it to the Council and to the press; he recommended that as the town was a seaside resort the coast should be kept clear of sewage by collecting it in deodorizing containers and selling it to local farmers. The *Builder* thought that expenditure on any of the schemes was wasteful and that a better one should be sought; however, the Council's own proposal to extend the Albion outfall pipe was also a waste of money.[25]

By 1861 the lack of a decision about an outfall was causing concern amongst councillors, and the lack of sewers in parts of Brighton was being increasingly regarded as a risk to public health by them and by other residents. Meanwhile the Works Committee continued to permit connections, and builders and residents wrote to ask for connections and to complain when their roads lacked a sewer. Cesspits were still being made, and in some instances the Council was paying for them to be emptied and deepened.[26]

Not until December 1861 was Lockwood asked to report formally on the three schemes, and this was partly an attempt to pacify the small but increasingly active drainage scheme group on the Council. Councillor Friend put forward a motion which asked that Lockwood should bring forward an eastern outfall scheme to the

next Council meeting, the intention being that it should run along the foot of the sea wall from the Albion.[27] Lockwood's report stated that he was in favour of the whole town being drained and regarded cesspits as dangerous. As liquid sewage could not be disposed of around Brighton due to the porous rock, which meant that it would be a health risk because it would permeate into the rock from which the town drew its water, Tennant's scheme was not appropriate. He regarded Rawlinson's western outfall as expensive, nor was his alternative of an eastern outfall better, for the outfall problem was not sufficiently serious to warrant such expense.

Lockwood favoured Hawksley's outfall which, he maintained, was similar to his original scheme of 1858 but less effective. As the Council wanted a cheaper scheme than Hawksley's, he recommended adding a 30 ft. length of drain to the town's existing Albion outfall which would then become the storm drain. This would be used only when the new pipe, which the Council now wanted to be 24 in. rather than 36 in. in diameter and 550 ft. rather than 750 ft. long, was fully charged. Valves could be installed to control access to the storm-water outfall. Ideally, Lockwood would have preferred a pipe which was 1,000 ft. long, which would have been 18 ft. below the lowest water mark of the tide. He noted that such a pipe, when allied to a storm-water outfall, would have coped with the rapid run-off which occurred in this hilly town on rainy days. On dry days, when the sewage was less diluted by rain, it would still deposit the sewage sufficiently far out into the sea to prevent health risks.

In 1862 eminent townspeople, anxious about the Council's failure to invest in substantial improvements to the sewerage system and the outfalls, began to develop a pressure group in response to an offer by Sir Francis Goldsmid to pay for the commissioning of another report by engineers. By that date Goldsmid's estate, in the parish of Hove just to the west of Brunswick Town, was being developed. It is likely that he was finding the drainage system for the Brunswick Estate and for Cliftonville which debouched onto the beach at Hove a handicap to the development of high-class housing in Palmeira Crescent and Square. The 'Grand Hotel Committee', as they became known because the group met at the Grand from 1864, accepted Sir Francis's offer. Mr. McClean and Mr. Wright (a former borough engineer at Brighton) recommended that an intercepting sewer costing £30,000 should be built for both Brighton and the parish of Hove with an outfall beyond Rottingdean to allow for the eastwards drift of the sea currents.[28]

Prevarication by the Council in 1862 confused the national press which had continued to watch progress at Brighton, for in June the *Times* praised the decision to build an intercepting sewer and suggested that there should be provision made along its course for pumping sewage onto farmland. Concern about the welfare of Londoners was a primary consideration: 'We, who like all other toiling denizens of the great metropolis have a personal interest in the salubrity of this beautiful watering place rejoice in the decision.' The final choice of Lockwood's plan attracted criticism from two journals which also regarded Brighton as London's seaside playground.[29]

The most damning report in 1862 was that by the *Lancet*, which critically reviewed the town's drainage and outfall system and the large number of cesspits which were regarded as a major hazard to the health of visitors and residents, particularly because of the town's situation upon a porous bedrock. Tests conducted by the *Lancet's* own experts showed that sewage infiltrated through the chalk and contaminated wells. There were still only $8\frac{1}{4}$ miles of sewers and drains, whereas Rawlinson had calculated in 1859 (when the town was smaller) that 40 miles were required. Only a quarter of the town's domestic sewage was discharged into the sea via the existing system, and even this caused pollution of the beach, particularly at the Old Steine (the Albion outfall). There, the lack of tanks to contain the sewage meant that at low

tide it flowed out close to the shore and smelt appallingly. The *Lancet* supported the use of either Rawlinson's or McClean and Wright's plans, claiming that analysis of the sea water at the Albion outfall showed that it was unsafe for bathers; it also noted that bathers and fisherman complained of the odour and of the unpleasant appearance of the water.[30] The Council rejected the *Lancet's* claims that the town's drainage was a threat to its visitors, but nevertheless the combination of its criticisms and those of the local people seems to have resulted in extensions to the sewerage system. The *Builder* supported the *Lancet's* criticisms and forecast loss of business if improvements were not done.[31]

The report by McClean and Wright was presented to the Council, which ignored it and after prevarication commissioned a modified scheme from Lockwood, which he now estimated would cost about £7,000, considerably less than Hawksley's scheme, the most popular with the Council. A trench for the pipe had to be dredged in order that the angle of the slope to the outfall was sufficient for sewage to run out. One dredger was shipwrecked on its way from Shoreham harbour to the Albion outfall and the technicalities of laying the pipes slowed progress further. Not until 1863 was the contract complete; the work was believed to be a unique piece of engineering due to the outlet's length of a third of a mile.[32]

The adverse publicity which the town's failure to improve its sewerage system and outfall attracted spurred other resorts along the south coast to attend to theirs. In Hastings the question whether to lengthen the culverts at the Priory and at Warrior Square was debated in 1863, and discussion at the Council included mention of Brighton. As in Brighton there was a group of councillors who did not believe that sewage was a nuisance, and they alleged that Mr. Rawlinson's visit to Hastings caused unnecessary panic. Finally a compromise was reached, but some councillors voiced concern about the future prospects and asked that an engineer should be consulted, particularly now that public opinion was against sewage disposal being in front of resorts. That Rawlinson had apparently solved Worthing's drainage problems and so helped to improve the town's reputation did not impress the majority of Hastings councillors, who felt that Hastings did not, and would not, have a problem and who accepted minor improvements.[33]

The councillors of Hastings made their decision just a few months before there broke out at Eastbourne an epidemic of scarlet fever which was associated with the need to improve the sewerage system. Here, the lack of an adequate water supply was also identified as a culprit. The *Builder* pointed out that the epidemic was probably introduced into the town by invalids, but the imperfect drainage probably contributed to its spread. Ponds of putrefying water and uncleansed pigsties near the site of the present Cavendish Hotel and elsewhere were thought to have been contributors to the problem. Sandgate (Kent), Southsea (Hants.) and Brighton also had outbreaks that year, and the same warning to attend to their sewerage and water supply was issued. The Eastbourne drainage board attempted to remedy the problem, but went bankrupt and had to be helped financially by the Duke of Devonshire. By 1867 the work, to the design of Messrs. McClean, was being supervised by G. A. Wallis who was an agent of the Devonshire estate and an engineer. By 1868 Eastbourne's system was regarded as effective, and it undoubtedly contributed to the town's reputation and growth in the later 1860s and early 1870s.[34] By September 1866 Hastings Borough Council had decided to have a more sophisticated drainage system designed by the borough surveyor.[35] St. Leonards (adjacent to Hastings) adopted a scheme from Sir Joseph Bazalgette, but only after he found a contractor from London who would undertake the scheme for less than any of the estimates which were received.[36] Meanwhile, at Worthing the drainage system was completed by 1866 to the designs of G. A. Dean, who was architect and surveyor to the Heene and West Worthing Companies.[37]

During the later 1860s the minutes of

Brighton's Works Committee continued to demonstrate the failings of cesspits. Several actions against owners of insanitary cesspits were taken. In Egremont Street the privies (cesspits) of four houses had to be emptied and then cemented inside in order to stop leakage into the Park Dairy. Such risks were of the type on which the *Lancet* had remarked in 1862. Some additional sewers were built and when, in 1868, the *Lancet* reviewed progress at Brighton it acknowledged that a decline in the rate of mortality suggested that the well-being of the town had improved. However, there were 100,000 people in the town, and between 10,000 and 12,000 cesspits were still the main and unsatisfactory form of drainage, described as a hotbed of subterranean decay. The journal reminded the town that:

> the immediate evils may, indeed, be masked by the pure and balmy breezes of the sea, and forgotten under the influence of a bright and cloudless sky but the Augean stable is not the less real because it is out of sight, and the liquid filth cannot fail to contaminate the wells, saturate the foundations of the houses and spread its baneful influence over the inhabitants at large.[38]

Residents assumed that there would always be visitors from London due to the town's proximity, but the *Lancet* warned that unless the town's drainage was improved visitors would soon be prepared to travel farther to frequent a safer town, and the likelihood of this was increasing with the improvements which had been made in other resorts along the south coast.[39] The *Lancet's* review of sanitary progress revealed that the town still had less than 4,000 of its 14,000 houses linked to the sewers, of which there were 12 miles, whereas between 40 and 50 miles of streets existed. The extensions to the system which were in progress as the journal went to press would add another 13 miles, but the healthiness of houses with a sewerage connection was still threatened by the surrounding majority which had none. Both the contamination of drinking water (still mainly from wells) and of the sea water were reasons for the need for a sewerage system. Due to the contamination of Brighton's sea frontage, Brills Baths were installing a pump house at Cliftonville in Hove in order to obtain uncontaminated water for the salt-water baths and for the private houses to which Brills pumped sea water. The sea was tainted not only by the liquid sewage, but also by the rotting animals which were dumped in the sewers and then washed out to sea and back onto the beach. The *Lancet's* concern about the well-being of Brighton was echoed in *Building News* and in the *Brighton Guardian*, but rebutted by the *Brighton Herald*.[40]

The *Times* introduced a theme into the debate by identifying the need for co-operation between Brighton and Hove, stating that central government should not permit two authorities (the Corporation and the Hove Commissioners) independent jurisdiction in such a small area. The *Times* noted that by 1868 Hove's major outfall (from the Brunswick Estate) was 447 ft. long, and discharged its sewage near to Brighton's eastern sewer which in turn was only 60 yd. from the bathing 'boxes'. Co-operation between the two bodies was necessary in order to provide a single and lower outfall. *Building News* supported the *Times*.[41] Local pressure for co-operation was evident by 1869, which suggests that the national papers must have had local prompters. From 1869 debates about outfalls included the issue of whether or not Hove should be involved.

In 1868, perhaps in response to the *Lancet*, a contract for constructing sewers which would connect 6,000 more houses was made, but neither were the existing sewers used effectively nor the outfalls improved. The *Times* reiterated the *Lancet's* view that a proper system and outfall were priorities about which the town could and should afford to be particularly generous. Without such action the town's reputation would suffer. The *Brighton Guardian* supported the *Lancet's* view that expenditure upon prom-

enades, assembly rooms and a good workhouse was undermined by the lack of a sewerage system, and recommended that money be borrowed in order that the system could be enlarged and an intercepting sewer built with an outfall at Rottingdean.[42]

The majority of Brighton's Council agreed with Alderman Cox who thought that the *Lancet's* report was reckless, but Alderman Alger considered that public opinion in the town was shifting towards support for the *Lancet's* view. Alderman Ireland pointed out that the *Lancet* was influential, and said that no matter how effective an outfall which debouched in front of the town was, it would now be condemned by visitors. To refute the *Lancet's* claim that the existing position of the outfall threatened the health of bathers, the council had effluent from the outfall tested by the eminent. Dr. Lethaby. A diver was sent to collect samples from the environs of the outfall and further samples were collected from the beach. Lethaby claimed that the effluent was not the culprit, but that the private drains which oozed onto the beach should be stopped up and fishermen discouraged from dropping putrid bait on the beach.[43]

In 1869 the season was said to be dull, allegedly because of the salvoes from the *Lancet*. The enterprise of the regional railway company's new traffic manager, who provided a variety of excursions into the countryside and to other resorts, failed to boost visitor numbers. Yet the carriage count which was annually undertaken by the police in October for ten minutes within the half hour after 4 p.m. on King's Road by West Street was higher than in previous years. The count was probably on a sunny day in the interest of publicity, for the count was published with that in mind.[44] Existing prestigious facilities were improved; Brills Baths were redesigned by George Gilbert Scott in an Italianate style, which suggests that they continued to be profitable.[45]

The *Lancet's* report created concern amongst townspeople just as the earlier one of 1862 had done. By July 1869 McClean and Wright's scheme had been resurrected by Somers Clarke, Dr. Carter and others, who met again at the Grand Hotel and then handed both the correspondence with the engineers and a copy of their plan to the Council, which was not receptive. Evershed and others decided to promote a company to provide sewers and an outfall for the town. He consulted Sir Joseph Bazalgette, the famous designer of the greatly admired sewerage system for London.[46]

During 1869 the pressure from the ratepayers and the Grand Hotel Committee combined with other criticism to increase the number of councillors who were in favour of an integrated plan. In April 1869 another attempt to get the Council to change its ideas was made, when Cllrs. Taafe and Abbey put separate notices of motions onto the Council's agenda for their April meeting. Taafe wanted a standing committee to be appointed to consider the issue and to obtain professional advice. Abbey wanted an enquiry into the town's drainage into the sea, a less sophisticated motion which would probably have resulted in an instruction to the Works Committee to review the situation again. However, neither was discussed and both the *Lancet* and the *Brighton Guardian* condemned the Council for deciding by a majority of 26 to 13 to spend only £7,000 and simply to extend the existing Albion outfall to 2,000 ft. in length. The decision was described as suicidal, particularly as the surveyor now recommended an intercepting sewer with a western outfall.[47] In an attempt to pacify the medical men upon whom Brighton's reputation depended, the Council's General Purposes Committee suggested that the British Medical Association should be invited to the town; but nothing was done.[48] The chairman of the London, Brighton and South Coast Railway was amongst at least 50 influential people who wrote to the council in support of an intercepting sewer. He claimed that receipts on the line to London were falling due to visitors' concern about Brighton's sewage disposal.[49]

A SCHEME IS SELECTED

By the end of 1869 the pressure upon the Council by the press and the Grand Hotel Committee had forced it to shift its public stance and to consider co-operation with Hove, in spite of some opposition from ratepayers, some of whom had letters published in the *Brighton Herald* expressing their belief that such a joint venture would result in Brighton bearing most of the cost and the responsibilities, and Hove's residents and builders achieving the greater benefit. By mid 1869 Sir John Hawkshaw had been considered as an engineer who might produce a favourable report on the town's drainage, and in the autumn the Council decided to ask him to act. He held a public meeting which he described as being only for people with knowledge which might be of help. At the meeting he pointed out that he was concerned solely with issues of design and not with any political implications. Those who attempted to broaden the meeting's brief in order to provide an opportunity to air such views were quickly brought to order.[50] In his report, Hawkshaw said that he did agree with Hawksley's and Lethaby's view that the long Albion outfall was adequate, but he did not regard it as more than that. He recommended that the town's reputation and health would be improved by an intercepting sewer which had an outfall east of Rottingdean at what is still called Portobello and which began on Hove's western boundary.[51] There was opposition to the £80,000 project from councillors. Members of the General Purposes Committee regarded it as expensive and the ventilation system which he recommended as a luxury. Hawkshaw responded by saying that even if the ventilation system was omitted, the scheme was both workable and an improvement on the town's present system. Others criticized it as being an elongated cesspit wherein gases would gather due to its gentle gradient and lack of pumps.[52] At October's Council meeting Hawkshaw's plan was rejected by 22 to 20. Cox and Lamb were held responsible by the *Brighton Guardian* for the defeat of the scheme because they voted against it. Both men claimed that although they were supporters of the scheme, they voted against it in order to ensure that concerns which they had about the scheme were clarified before it went ahead.[53] The chairmen of the London, Brighton and South Coast Railway and of the Grand Hotel Committee wrote to support adoption of the scheme because they thought that the town's future as a resort would otherwise be in doubt.[54]

After the scheme's rejection, the *Brighton Guardian* correctly predicted that the next local election would be fought over the issue, and listed new candidates who were standing in the town's wards because they were in favour of an intercepting sewer. Almost immediately after the election had been held, a special meeting of the Council was called (in November 1869) to vote upon the issue. The motion was put simply: should they support Hawkshaw's scheme, obtaining the necessary Act of Parliament and seeking co-operation with the Brunswick Square and Town Commissioners, with the West Hove Improvement Commissioners and with the authorities of the parish of Rottingdean, all of whom would select their own commissioners for the new Sewerage Board? After some debate the motion in favour, proposed by Mr. Hallett and seconded by J. C. Burrows, was carried by 24 to 14.[55] Soon there was criticism by the *Brighton Guardian* of the slowness with which the Act of Parliament set up the Intercepting Sewers Board which would supervise the construction and operation of the intercepting sewer. The elliptical, seven-mile-long sewer was to start at Hove's western boundary. Brighton was to have 16 commissioners and contribute £61,000 and Hove seven commissioners and contribute £19,000. One disgruntled ratepayer claimed that the joint scheme cost Brighton an extra £21,000 because of the greater overall size of the sewer, which resulted from co-operation with Hove.[56] Before the tenders went out, the Council considered shortening the intercepting sewer by having its outfall at Roedean, thus saving three miles of construction costs. However, the Council was forthrightly reminded by the Town Clerk

that agreement with landowners in Rottingdean had been reached on condition that the sewer went to Portobello and that changing the plans would jeopardize both their goodwill and the Council's public image.[57]

By July 1870 candidates for the new Sewerage Board were being sought and several councillors (e.g. Martin, Lutley and Parson) declined to stand; the Mayor said he would serve if elected but would not volunteer. The members included local builders, brewers and shopkeepers, e.g. Hallet, Ireland, Burrows and Duddell. Tenders were sought in the autumn of 1870, and it was alleged that the successful contractors, Airds, were friends of Hawkshaw, who vigorously denied that.[58] The Council also decided to attend to the main drainage within the town, but in 1871 £170,000 was still required to complete it and the Council's borrowing powers were exhausted, so an extension of powers was successfully sought.[59] Meanwhile the contract for the intercepting sewer proceeded on time and to cost. Nevertheless the Sewerage Board became an issue in ward elections in 1872 when it was attacked as being ruinous.[60]

Hawkshaw gave written reports monthly to the Board which informed them what was spent and the time-scale. Councillors alleged that insufficient information was given and suggested that site visits be made. After Cllr. Brigden asked how the Board's members could assess the quality of the work the idea was not developed further.[61] By August 1873 the project was almost complete, but in October it was decided that the outfall should be extended by 150 ft. to increase the angle of fall to overcome the accumulation of gases in the sewer during high tides when the level of sewage rose. There also was a debate about whether the system was efficiently ventilated in both Brighton and Hove. Action for Brighton was deferred, for it was decided that as there were 500 ventilators for the 57 miles of sewers including the intercepting sewer, that was adequate. In Hove the Commissioners reviewed the situation for their 13 miles of sewers and then decided to defer a decision.

In February 1874 members of the Board decided to visit the works which were nearing completion; the sewer was in operation as far as the Albion outfall.[62] Members of the Board examined the sewer and penstock chamber at Portobello and other sections east of Rottingdean where powerful springs and fissures in the rock were causing great difficulties for the bricklayers. Workers disliked the isolated and damp and dangerous site, and many contracted rheumatism from the damp conditions. By February 1874 the construction of this sewer had cost three lives and three broken legs and arms. By July, the whole sewer and the cottages and boardroom at Portobello had been completed and maintenance staff appointed, and Sir John Hawkshaw had completed his reports on the completed scheme and its future maintenance to the Council and to the Sewerage Board. When the Council debated whether there should be a ceremony to mark the completion of the work, the Mayor thought that unless Sir John Hawkshaw was able to state that it was a major benefit to the town's reputation (and publicity could thus be derived from it) there was no point. Nothing was done.

The Sewerage Board now recommended that all houses should be connected to the sewerage system in order for the town to benefit fully from the existence of the new outfall. Even in 1874 there were claims that the look of the seafront was improving due to the new outfall removing the effluent.[63] The Council now increased its efforts to improve Brighton's image. The water company was purchased and its activities extended; the Improvements Committee purchased and cleared some areas of gross overcrowding, and streets were widened, macadamized and paved. A campaign to link houses to the now widespread sewerage system and to ensure that the connections were also properly ventilated began.[64]

By the late 1870s, much of the parish of Hove had been built on or was soon to be so, and this put additional strains onto that parish's own sewers and onto the intercepting sewer. There

were complaints that parts of this resort smelt due to sewer ventilation. Bailey Denton was asked to report and he claimed that water leaked into the intercepting sewer from the surrounding bedrock because the sewer was not watertight, and consequently it was overfull, the possibility of leakages having been overlooked by the engineer when designing it. The additional liquid meant that sewage moved slowly and the system was fuller than it should be; consequently gas was displaced from the sewers into houses. A rapid increase in the volume of sewage due to run-off during a storm made the smell worse. Pumping at high tide was recommended, for the furnace which had been added at Roedean to provide air circulation as far west as the Steine was not sufficient to create air circulation in the greatly enlarged sewerage network west and north of the Steine. Then, after complaints, Sir Joseph Bazalgette was asked by Brighton Council to report on the ventilation of Brighton. He said that most of the time the ventilation was adequate, but recommended that additional storm outlets should be built at Roedean and at Hove to stop the intercepting sewer from becoming overcharged. The odour from ventilators which opened onto the road surfaces in the town was identified as the greatest cause of complaints, and Bazalgette recommended modifications to them and the addition of tall pipe vents along the intercepting sewer which would be in the same style as the street lamps. He recommended that air pipes should be compulsory for all houses.[65]

The *Lancet* now became involved, noting that Bazalgette's report suggested only modest modifications, whereas Bailey Denton thought that the whole system needed more attention. Bazalgette's ideas were described as palliatives, and Denton, writing in the *Lancet*, advocated that the sewage should not be allowed to accumulate in the sewers at high tide, but that it should be pumped to a height which would allow an outflow all the time, thus preventing the build-up of gas (the system being a gravity flow one). Storm outfalls at Hove and Portobello, as recommended by Bazalgette, would, he claimed, undermine the whole purpose of the outfall at Portobello by permitting sewage onto the beach.[66] The Council was both angry and concerned about the *Lancet's* involvement. Its indictment of the sewerage system and of Bazalgette's report were noted in the national and local press. As the *Daily Telegraph* sympathetically remarked, the timing was malevolent because it was just at the beginning of the public's holiday season which ran from July to November. That the *Lancet* should attack the report of an eminent engineer was also noted with surprise. The *Pall Mall Gazette*, the *London Daily News* and the *Engineer* also sympathized. The *Times*, the *Sussex Evening Times* and the *London Standard* all sided with the *Lancet*.

Due to the extensive press coverage the Town Council decided to react sharply and publicly by instructing its solicitors to warn the *Lancet* that its damaging claims must be retracted or a court case would result. A special town meeting was called at which the Council justified its action and asked participants to guarantee the costs of advertisements to refute the *Lancet's* claims and of a possible court case in which the *Lancet* would be sued for libel.[67] The controversy rumbled on, Rawlinson, whose scheme had been rejected in 1859, joining in to support the *Lancet* in its criticisms. The main consequence of the debate was that Dr. Richardson, who had written about Brighton in the *Lancet* and elsewhere, and who was a friend of John Cordy Burrows, a former Mayor, was asked to compile a report. He made it clear that his was an independent one, although it was addressed to the Council and published in the *Lancet*. As Richardson had been a doughty critic of Brighton's cesspits and had regarded the town as in need of sanitary reform, a favourable report from him on progress since the 1860s would be seen as a real compliment to the town's endeavours.[68]

Richardson's report reviewed several indicators of the standard of public health such as the rate of mortality and contagious diseases in boarding schools, institutions for sick children

and hospitals. These he assessed as good. He pointed out that these rates were both affected by the number of visitors to the town who were already ill and came to convalesce or who were already, but unknowingly, carrying disease. He did identify an increase in the mortality from zymotic diseases in 1881, after a decade when the town's death rate from them had been below the average for 20 other large towns. The rise in 1881 was due to a long period of reduced mortality which, Richardson believed, resulted in reduced resistance and consequent vulnerability. In addition, pollution of milk by a dairyman had resulted in a minor epidemic of typhoid in the vicinity of London Road. Richardson did not consider the sewerage system to be the cause of any health problems, but regarded as the biggest threat to Brighton's reputation the quality of life in the many overcrowded backstreets which needed improvement to reduce the epidemic and mortality rates. The smells which caused complaints were not from the sewers but from refuse in the dustbins and streets left by careless people. Like Jenks and Cresy, he reiterated the need to view public health as more than a question of sewerage and outfalls. To demonstrate the need for a broader perspective he indicated the degree to which his recommendations would reduce the mortality rate: for example, more baths and washhouses in poor areas, combined with the removal of abattoirs and dairy cattle from them, would reduce mortality by 1 per 1,000. Improvement in the quality of housing in these areas would reduce mortality by 2 per 1,000.[69]

CONCLUSION

The provision of an outfall and an adequate sewerage system became an issue of national importance due to Brighton's role as London's seaside resort. The national journals and newspapers which commented on this matter were all published in London. Their interest and the fear of its deleterious impact on the town's reputation helped to push the Council towards improvements and to co-operation with Hove. The sums required were undoubtedly enormous to a council whose members' limited horizons resulted from the fact that most of their businesses provided services which did not require large amounts of capital. The most prosperous men included builders, the owner of a brewery, doctors and the headmaster of Brighton College, rather than the wealthy industrialists who in this period often led town councils in the Midlands and the north of England, who were more used to capital investment. In Brighton the few capital-intensive businesses were largely funded and controlled by Londoners, the railway company and the Grand Hotel being two examples.

Having been forced to accept responsibility for this crucial aspect of the town's infrastructure, the Council then accepted responsibility for improving other facets such as water and power and in doing so joined the growing band of councils which acquired a multiplicity of such responsibilities in the late 19th century. Undoubtedly the decision to improve the outfall and sewerage systems facilitated Brighton and Hove's rapid expansion after 1874.

Acknowledgements

I would like to thank P. Berry, H. Keaveny, J. Lank and L. Parker for help and information.

Author: Sue Farrant, Department of Humanities, Brighton Polytechnic.

Notes

[1] G. S. Jenks, *Report to the Poor Law Commissioners on the Sanitary State of Brighton and on the General Causes and Prevention of Fever* (1840).

[2] *Lancet*, 4 Nov. 1882, p. 674; *Builder*, 22 Aug. 1863.

[3] J. Walton, *The English Seaside Resort* (1983), 112–14, 120, 152, 154.

[4] R. Woods & J. Woodward, *Urban Disease and Mortality in*

19th Century England (1984), 126 (Bradford and Halifax), 174 (Manchester); J. Garrard, *Leadership and Power in Victorian Industrial Towns* (1983), 142–8; Walton, *The English Seaside Resort*.

[5] S. Farrant, *Georgian Brighton* (Univ. of Sussex Centre for Continuing Education, 1981), 48–53.

[6] *Building News*, 25 Sept. 1868, p. 651; *Brighton Guardian* (hereafter *Guardian*), 6 May 1869.

[7] A. Dale, *Brighton Town and Brighton People* (1976), 95–6.

[8] A. Dale, *Fashionable Brighton* (1967) 195–7.

[9] A. B. Granville, *Spas of England* (1841), 560.

[10] Ibid. 561; Dale, *Fashionable Brighton*, 195.

[11] Jenks, *Report on Brighton*.

[12] Ibid. 64

[13] Ibid. 63–4.

[14] A. Dale, 'Not So Fashionable Brighton', *Suss. County Mag.* **28** (1954), 233–9, based on the night constable's book, 1822–3.

[15] Jenks, *Report on Brighton*, 86.

[16] Ibid. 61.

[17] Ibid. 86.

[18] Ibid.

[19] Ibid. 78–9; E. Cresy, *Report to the General Board of Health* (1849), 17, 21, 26, 34.

[20] Cresy, *Report*, 26, 38–9.

[21] *Brighton and Hove Herald* (hereafter *Herald*), 24 July 1858.

[22] M. B. Tennant, *Town Drainage* (Brighton, 1859), unpaginated; Dale, *Fashionable Brighton*, 149–60; *Guardian*, 20 May 1874, p. 5.

[23] *Herald*, 24 July 1858; 31 Dec. 1859.

[24] *Herald*, 31 Dec. 1859.

[25] *Herald*, 31 Dec. 1859; East Sussex Record Office (hereafter E.S.R.O.), DB/B50/7 (21 Nov. 1861); *Builder*, 24 Dec. 1859, pp. 833–4; 7 Jan. 1860, p. 14.

[26] E.S.R.O., DB/B50/7 (14, 21 Nov. 1861).

[27] E.S.R.O., DB/B50/7 (4, 11 Dec. 1861).

[28] *Builder*, 11 June 1862, p. 429.

[29] *Times*, 17 June 1862, p. 14; *Lancet*, 11 Oct. 1862; *Builder*, Oct. 1862.

[30] *Lancet*, 11 Oct. 1862, p. 397.

[31] *Builder*, Oct. 1862.

[32] *Builder*, 5 Sept. 1862, p. 638; 16 July 1864, p. 531; 10 Sept. 1864, p. 674.

[33] *Builder*, 22 Aug. 1863.

[34] D. Cannadine, *Lords and Landlords* (Leicester, 1982), 245; *Builder*, 22 June 1867, p. 453.

[35] *Builder*, 15 Sept. 1866, p. 691.

[36] *Builder*, 15 Sept. 1866, p. 691; 3 Nov. 1866.

[37] *Builder*, 1 Dec. 1866, p. 891; 15 Dec. 1866, p. 927.

[38] E.S.R.O., DB/B50/13 (14 Nov. 1867); *Lancet*, 19 Sept. 1868, pp. 372–3.

[39] *Lancet*, 19 Sept. 1868, p. 382.

[40] *Building News*, 23 Nov. 1866, p. 773; *Lancet*, 19 Sept. 1868, p. 382.

[41] *Times*, 18 Sept. 1868, p. 8; *Building News*, 29 Sept. 1868, p. 651.

[42] *Guardian*, 28 April 1869, p. 5; 5 May 1869, p. 5; 12 May 1869, p. 5; 15 May 1869, p. 5; 26 June 1869.

[43] E.S.R.O., DB/B50/14 (26 May 1869, p. 5).

[44] *Guardian*, 14 July 1869, p. 5; 4 Aug. 1869, p. 5; *Times*, 1 Nov. 1870.

[45] *Guardian*, 4 June 1869, p. 5.

[46] *Guardian*, 6 Jan. 1869, p. 6; 10 Feb. 1869, p. 5; 12 May 1869, pp. 5–6; 17 July 1869, p. 5; E.S.R.O., DB/B50/14 (8 June 1869).

[47] E.S.R.O., DB/B50/14 (8 June 1869); *Guardian*, 21 April 1869, p. 5.

[48] E.S.R.O., DB/B50/14 (8 June 1869).

[49] *Guardian*, 13 Oct. 1869, p. 6.

[50] *Herald*, 5, 19 Feb., 5 Mar., 22 Oct. 1879; *Guardian*, 21 July 1869, p. 6.

[51] *Herald*, 17 July 1869; 19 Feb., 22 Oct. 1870.

[52] E.S.R.O., DB/B50/15 (4 Nov. 1869); *Guardian*, 6 Oct. 1869, p. 5.

[53] *Guardian*, 13 Oct. 1869, p. 5; 27 Oct. 1869, p. 5.

[54] *Guardian*, 3 Nov. 1869, p. 5; E.S.R.O., DB/B50/14 (19 May 1869, Works Committee).

[55] *Guardian*, 20 Oct. 1869, p. 5.

[56] *Guardian*, 10 Nov. 1869, p. 6; 19 Feb. 1870, p. 5; 5 March 1870, p. 5.

[57] *Herald*, 23 July 1870; E.S.R.O, DB/B50/15 (1 Sept. 1870).

[58] *Herald*, 23 July, 26 Nov., 10 Dec. 1870; E.S.R.O., DB/B50/15 (9, 16 Sept. 1870).

[59] *Herald*, 21 Jan., 20 May, 1 July 1871.

[60] *Guardian*, 21 Oct. 1872, p. 5.

[61] *Herald*, 5 April 1873.

[62] *Herald*, 9, 10 Aug., 11 Oct., 8 Nov. 1873; *Guardian*, 27 May 1874, p. 7; 24 June 1874, p. 7.

[63] E.S.R.O., DB/B70/13 (29 April 1868); *Guardian*, 8 July 1874, p. 8; 15 July 1874, p. 7; *Herald*, 9 Aug. 1873.

[64] *Herald*, 10 Aug., 8 Nov. 1873; *Kelly's Dir. Suss.* (1872–1875 edns.), introduction; *Guardian*, 8 July 1874, p. 6.

[65] *Lancet*, 5 Aug. 1882, p. 196; *Passing Notes*, 19 June 1880, p. 11; Sir J. Bazalgette, *Report to the Mayor and Corporation of Brighton* (1882), 10.

[66] *Lancet*, 5 Aug. 1882, p. 197; 4 Nov. 1882, pp. 747–66; *Guardian*, 12 July 1882, p. 5.

[67] *Guardian*, 26 Feb. 1882, p. 5; 2 June 1882, p. 9; 5 July 1882, p. 5; 17 July 1882, p. 5.

[68] *Guardian*, 19 July 1882, p. 5 (quoting *Lancet*, 15 July 1882).

[69] *Lancet*, 4 Nov. 1882, pp. 747–51, 753, 756, 758.

Sussex Archaeological Collections **124** (1986), 227–41.

A GOOD READ: THE EAST SUSSEX BOOKHAWKING ASSOCIATION, 1855–88

by Sheila R. Haines

In these days of bookshops, bookstalls, and supermarket shelves carrying a surfeit of books, magazines and newspapers, it is difficult to imagine the relative famine of reading matter in the countryside a century ago. The work that the East Sussex Bookhawking Association did in the second half of the 19th century is an interesting example of local initiative in education, moral improvement and self-help. The organizers of the E.S.B.H.A. were paternalistic and possibly patronizing, but they did help to spread the word and the book in rural Sussex. The history of the Association is investigated using inter alia *the reports and publications of the Church of England Bookhawking Union, local newspapers and intermittent reports of annual general meetings. There were at one time 60 or more Church of England bookhawking associations scattered throughout the country.*

FOUNDATION

On Thursday 9 August 1855 a group of some 30 East Sussex clergy and laymen 'with local influence' met at the White Hart Hotel in Lewes to set up the East Sussex Bookhawking Association, a Church of England institution that was to sponsor the work of two bookhawkers in the East Sussex countryside for the next 30 years. Viscount Gage took the chair and the meeting organized a committee of half lay and half clerical members, eight in the first year, increased to 16 in 1856. Five of the lay committee members in 1856 were magistrates in various parts of East Sussex, and a sixth, W. Barber, was the Registrar of Births and Deaths at Eastbourne, and Clerk of Eastbourne Union workhouse. Barber lived in Willingdon, as did the Revd. Thomas Lowe who was elected Secretary of the Association. Lowe was to remain Secretary throughout the life of the E.S.B.H.A., and his hard work and interest in education and literature were probably important factors contributing to the comparative success and longevity of this Association. The other seven clergy members were H.B. Churton from Hastings, W.A. Fitzhugh from Street, F.R. Hepburn from Chailey, H. Hoare from Framfield, W. Jackson from Bodle Street Green, J. Ley from Waldron and J. Scobell from Southover, Lewes.[1]

By the time the E.S.B.H.A. was established there were between 25 and 30 other associations in the country, including the one in West Sussex set up in the previous year. Bookhawking, or colportage, had an honoured place in protestant history from its earliest days, and during the first half of the 19th century the Church of England publishing house, the Society for Promoting Christian Knowledge, and the interdenominational evangelical Religious Tract Society, in common with other smaller societies, increasingly encouraged the sale of Bibles, books and tracts by street hawkers. They were, however, reluctant to employ hawkers themselves. The Revd. Thomas Keble, brother of the famous John, was reputed to have privately sponsored a bookhawker in his parish of Bisley (Surrey) in the 1840s.[2] The first Church of England Bookhawking Association was set up in south Hampshire in 1851 by Archdeacon Wigram, later to become Bishop of Rochester.

What spurred these Bookhawking Associations into action in the 1850s? An enthusiastic spokesman for the E.S.B.H.A. in its early days was the Revd. I. Richard Burnet, the chaplain to the Lewes Gaol. He was a staunch advocate of education as a means of moral improvement, and encouraged the teaching of reading and writing in prison to young offenders. A railway navvy sent to Lewes Gaol for fighting reported:

> We was all very happy and comfortable there, though we were kept rather short of victuals . . . it was there that I got hold of most of my scholarship, I learned to read from the turnkey—a very nice man. He come and stand by my cell door and help me to a word whenever I asked him, and a church parson used to preach to us every morning of the week—and very good it was! It did me a deal of good going to prison that time—it learned me to be a scholar and a better man.[3]

It was not only that literacy had moral virtue, elevating mind and spirit, but reading in particular was a very desirable, home-based, physically passive occupation. This ideal is potently suggested in a picture printed in the first issue (1861) of *The Cottager in Town and Country,* a magazine produced by the Religious Tract Society specifically for the newly literate poor. A father is shown reading as part of the family group, and the family as a whole is improving the evening hour; father is not drinking or gambling at the public house, nor indulging in possibly inflammatory or illegal activity.

Burnet also spoke of the shortage of reading material in Sussex villages and hamlets. Men and lads who learned to read in Lewes Gaol had problems finding material to read when they left.[4] Bookshops were not to be found outside the towns, and those in town did not attract 'the person in a greasy suit, a fustian jacket or a smock frock', as an article in *The Times* on 23 October 1856 was to put it. Literate ex-prisoners were, however, a small group compared to the numbers of children learning to read in the church-sponsored parochial and National schools springing up in the East Sussex villages by the middle of the 19th century. A new generation of rural children had at least a few years of elementary education in which they learned to read and write to some degree—an educational provision that was to be enhanced by the introduction of some secular rate-funded elementary education in the 1870s. Such children offered a new market for reading matter.

The Public Libraries Act of 1850 had enabled the setting up of public libraries in urban areas, but it was another 40 years before Brighton, Eastbourne and Hastings set up their public libraries, and the county library system enabling the provision of libraries in rural areas did not come into effect until after the Great War; many Sussex villages had no public library until a hundred years after the 1850 Act. The clergy initiated parish reading rooms and lending libraries in some villages. It is difficult to find out how many of these there were in the 1850s, but a few references and records remain. The Lewes Deanery Committee of the S.P.C.K. sponsored parochial lending libraries in the 1820s to 'convey useful and practical knowledge to the lower orders of society'.[5] The books were to be kept in the local parsonage or vestry and were to be issued and returned before or after service. There is mention of an S.P.C.K. parochial lending library in Pett in 1849.[6] The Revd. C.W. Cass, a member of the E.S.B.H.A. in 1856, was a typical representative of the new active clergyman to be found in the mid 19th century. During his incumbency from 1852 to 1862 at St. Pancras, Arlington, he swept like a new broom through this isolated and neglected parish: stepping up the number of confirmations from five in 1851 to 25 in 1853; starting a clothing club in 1852; reviving the Sunday school and initiating a day school; and forming a lending library in 1855. The S.P.C.K. gave him a grant of £2 worth of books, and Cass said he added some more books at his own expense.[7]

By the 1860s Lowe was commended for having a reading room in Willingdon 'well

Fig. 1. Bookhawking. (From *The British Workman*, Sept. 1859)

supplied with wholesome literature'.[8] George Meek, one of his parishioners as a child in the late 1870s, remembered Lowe with warm affection, for he lent the village boys copies of *The Boys' Own Paper* and other magazines and took a great interest in their reading and welfare.[9] *Kelly's Directory of Sussex* for 1867 records that Hurstpierpoint, Wadhurst and Uckfield all had village libraries and reading rooms: Uckfield's library was said to contain 14,000 volumes. By the end of the century Frant had a reading room with a wide choice of books on popular science, natural history, history and literature—a great widening of scope from the S.P.C.K. libraries of the 1820s which consisted wholly of books of a theological and moral cast.[10] There is also extant a copy of the rules of Ripe and Chalvington reading room. There is no date, and judging from the subscription of 8*d.* a month it is probably 20th-century. Nevertheless, the rules as to membership and the strictures against misconduct, bad language, and gambling are much the same as those drawn up for earlier reading rooms, and the use of the National school in the evening was certainly widespread.[11] It would need a good degree of leisure, energy and commitment on the part of weary men and women to spur them into trudging perhaps several miles over bad roads, footpaths and fields to a village reading room on a winter's evening, and children could scarcely do so. The hawkers would carry books to these people, although, as the E.S.B.H.A. was anxious to point out, the hawkers would not undermine the work of parish reading rooms, for people who bought from them might be tempted to patronize a reading room or lending library at a later date.

The traditional bringer of books to the farmhouse, hamlet and village was the peddler, and although the E.S.B.H.A. was concerned about the lack of books it was equally concerned about the content of those that were available. At best they were labelled trash, and at worst they were condemned as immoral, irreligious or seditious. A glimpse of such stock is given in a letter written by a Sussex clergyman to the Religious Tract Society in 1846.[12] When he encountered peddlers in the Sussex lanes he bought up their stock of 'foolish and improper ballads, song, dream and fortune telling books'—the hawker's stock in trade since the days of Autolycus—and sent the men to Bowmers of Hastings where they were stocked at his expense with tracts, wholesome books for children and other desirable literature. This local concern was highlighted by an article in *The Times* of 23 October 1856 in support of the bookhawking movement. The article quoted a figure of 29 million immoral and infidel publications published annually, a rising figure in the overall rising production of books and periodicals in the 19th century spurred by new markets, new papermaking and printing techniques and a reduction in the taxes on newsprint and paper.

As well as the trash spoken of in the letter to the R.T.S. the sale of immoral literature exercised the writer in *The Times* and the E.S.B.H.A. Burnet spoke darkly, if obliquely, of the pornography, 'the worse than trash', that common hawkers concealed under the bootlaces and pins.[13] This classification of immoral also extended to the last dying speeches of murderers; flash song books; scurrilous ballads and parodies about the Royal Family and the Church; and weekly penny dreadfuls glorifying vice, crime, seduction and superstition; all of which enjoyed great sales in town and country. George Meek described the penny dreadfuls on sale in the Eastbourne area in the 1870s as an unmixed evil. He spent his penny on the respectable *Young Folks,* but he was also introduced to freethinking and socialist books by a strong radical and atheist friend, a shoemaker who had been a colporteur, or hawker, of such books in the past. In later life George became a freethinker himself and an early member of the infant Labour party.[14]

The increasingly widespread promotion of socialist and secular thought by the press, popular speakers, and public meetings was another challenge to the Church of England and the Establishment by the mid 19th century. The

Hastings branch of the S.P.C.K. especially welcomed the formation of the E.S.B.H.A. as an answer to the spread of the 'falsehoods and fallacies of *The Reasoner* and any other infidel publications'; it stressed the need for

> a body of trained and paid agents . . . men who should be acquainted with the leading objections of free thinkers to revealed religion and with the answers to them: who should be prepared to enter the meetings of the secularists and reply to their speakers: and to mix in private with the deceived and clear away the errors by which they are bewildered.[15]

The Reasoner was established by George Jacob Holyoake the Chartist and selfstyled secularist. He won £50 for five prize essays on Charity, Truth, Knowledge, Science and Progression, and used the money as capital to finance his paper. *The Reasoner* ran for 15 years and was influential in discussing controversial theological, moral and social issues. Holyoake and the E.S.B.H.A. were united over one issue, the attack on superstition. The E.S.B.H.A. attacked the old dream and fortune-telling books not only because they were trash, but because they proffered alternatives to the authority and actions of God, and furthermore because in an increasingly scientific age they should be recognized as nonsense. Holyoake, of course, included religion in his classification of superstition.

The enemy, however, was not only outside, but could, from the E.S.B.H.A.'s point of view, be found inside the religious circle as well. In 1850 the Roman Catholic church had re-established its hierarchy in Great Britain. The religious census of 1851 had confirmed the strength of the nonconformist dissenting population in England and Wales; roughly half of the people who had gone to a place of Christian worship on Census Sunday had been nonconformists. Although these figures were certainly not applicable to rural Sussex where the Church of England worshippers outnumbered the nonconformists three to one, East Sussex had always had a tradition of dissent and the presence and strength of the chapel was an irritant and a challenge to many of the rural clergy. Another source of anxiety was the Mormons, who were strenuously missionizing in Sussex in the 1850s, and whose message, and promise of a new life in an earthly New Jerusalem at Salt Lake City, was especially attractive to the poor and underprivileged. The S.P.C.K. was appealed to by its town missionary in Brighton in 1857 for a grant of literature to counteract Mormon propaganda.[16] The resurgence of Roman Catholicism, the statistical evidence of growing nonconformist strength and the advent of the Mormons were all recent events that challenged the authority of the Church of England as much as the infidel, and these issues were probably as much in the minds of the men who met at the White Hart as problems of literacy and book supply.

THE WORK[17]

The Association set to work by funding from donations one hawker, Mr. Freeman, from Hastings. He was equipped with a handcart which weighed 5 cwt. when it was laden with a stock of books, maps and prints; £70 or £80 was needed to hire a hawker and set him up with a cart and stock. A foot peddler also needed a licence of £2 from July to July. When next year the E.S.B.H.A. supplied a pony cart the licence increased to £4 for a pony under 13 hands. The E.S.B.H.A. had useful connections in that another of its lay committee members was Mr. Rock Junior, also from Hastings. Rock and Son were carriage makers in Stratford Place, and they made leather back-packs for £2, handcarts for £5, and horsedrawn hawkers' carts for around £10–£12. A standard bookhawker's cart was described in a specification given to the Bookhawking Union by Messrs. H. & A. Holmes of Derby:

> To build a new enclosed Truck, the body to

> be 3 ft. 6 in. long and 2 ft. 2 in. wide, outside measure; the inside divided into compartments and four drawers the whole length padded with green baize, the drawer at the top for prints; the top shelf moveable, and a space 12 in. above ditto; a door to the hind end with a brass lock, a pair of fixed shafts suitable for a donkey; a hinged leg to the hind part, and a strap to hold up ditto: hung upon a pair of long side springs with scroll irons, full 1 in. cranked common axle, wheels 3 ft. 4 in. high, with $1\frac{3}{8}$ in. tyres; the whole painted claret, relieved with fine lines of red, and once varnished, and the sides lettered to order; complete for cash . . . £13.0.0.[18]

It is presumed the hinged leg refers to the cart and not to the donkey! This cart seems very small, and one does not know whether the hawker managed to ride on it or had to walk.

The choice of a suitable hawker exercised many bookhawking associations, for he would be working very much on his own and had to be trustworthy, diligent, strong and a practising member of the Church of England. Mr. Freeman, who started work in October 1855, was described after his first nine months as being an 'honest and very fairly efficient agent', in the first annual report of the E.S.B.H.A. Unfortunately, he had been ill for three weeks at Christmas 'in consequence of exposure to the very severe weather', and again in the spring for six weeks 'suffering from the effects of sleeping in a damp bed'.[19] Nevertheless, in the seven months he had worked he had visited about half the East Sussex parishes and had sold a total of 3,606 books, maps, prints and almanacs. Heartened by his qualified success the committee decided to employ two hawkers from August 1856 and to lighten their load by equipping them with pony carts; the West Sussex Bookhawking Association provided their hawker with a donkey cart in the same year. Mr. Freeman was not employed for a second time; the name of one of the new hawkers was, appropriately enough, Mr. Hawkes.

The recommended salary for a bookhawker in the 1850s was a guinea a week, plus an allowance of four or five shillings a week for the pony or donkey. Lowe maintained that a hawker should be reasonably paid because the work was not easy, and he had to pay for food and lodging as well as possibly maintain a family home. If the hawker was poorly paid he would also be tempted into fraud. Lowe also considered it desirable to give sick pay of 12*s*. a week for a limited period.[20] It was hoped that the clergy of the various parishes would supplement the hawker's pay and the pony's allowance by finding good, cheap lodging in the village for the former, and grazing in his own paddock for the latter.

The E.S.B.H.A. also offered its hawkers a commission of eight to ten per cent value of their sales. Although this practice was followed by other associations, and perhaps helps to account for the good East Sussex sales figures, it was officially frowned upon as it was said to encourage the hawker to look for high sales of more expensive books amongst the wealthier members of the community rather than concentrating his efforts on the poor. Neither the S.P.C.K. nor the R.T.S. wished to upset the booksellers. Burnet had to answer a forceful attack in the *Sussex Advertiser* during August 1855 regretting that clergymen and bishops should set up a 'cheap opposition shop' to undersell and outbid booksellers and publishers.[21] He stressed that the bookhawker's mission was to the poor who would not otherwise see or buy books, and the annual reports of the various associations were always at pains to stress this point. It was suggested that the hawker should be offered a bonus on the amount of literature he sold rather than its value, but there are no records of this scheme being implemented.

In 1858 a national Bookhawking Union was established under the patronage of the Prince Consort. Sixty-two local associations joined the Union and the E.S.B.H.A. was an active member. The Revd. Henry Smith of the West Sussex

Association was treasurer to the Union and remained so when he moved to Firle in 1864. Lowe became a national committee member in the 1860s, and Robert Blencowe spoke at the annual general meeting of the Union in London in 1861. The Union issued helpful guidelines for local work in its papers and reports, printed stock posters, forms and journals for the hawker's use, and established a book depôt in London.

One of the papers published by the Union outlined the bookhawker's ideal working day.[22] He should aim to visit every house in each village on his round at least twice a year. He should send in advance posters to be put in the village, and a letter of introduction to the local vicar or curate asking for co-operation in his work, and help in finding cottage lodging. Sometimes the hawker would make one village his centre for several days, travelling from there to different farms and hamlets each day. He should rise early in his lodging and set a good example by reading his Bible and encouraging family prayers. On his first day in the village he should then visit the local incumbent, who had the power to veto his stock. The E.S.B.H.A. had been greatly exercised over this issue at its inception, fearing that High or Low Church would indulge in aggressive censorship over doctrinal detail. Lowe was happy to report later that this never happened; the hawkers tended to grumble more about apathy on the part of some local clergy than about overpowering zeal.[23]

Until noon the hawker should visit the cottagers' wives and children at home, and the labourers in the fields. From noon onwards he should call first at the farmhouses and then the gentlemen's houses, where the servants would be gathered together at dinner. Later, he could organize a sales evening at the local reading room or school and might perhaps undertake a reading hour. Finally, he should write up his diary of the day's sales, visits, orders, etc. Rainy days, although trying, were recommended as good working weather for him, since people cooped up at home were more likely to be receptive to reading matter. On the other hand, if the labourer could not work he was not paid and his money was likely to be even more scarce than usual. The hawker was also encouraged to leave behind on his departure from the village a depository of books with a willing clergyman or agent who would get $1\frac{1}{2}d.$ in the shilling commission on further sales. The Bookhawking Union recommended that hawkers should go home whenever possible on Saturday evenings to spend Sunday with their families, and should have two weeks holiday a year. This holiday allowance was again relatively generous for the 1850s, but as the hawker was away from home so much it was, perhaps, seen in part as being a necessary contribution to the ideal of happy, stable family life.

There were two hawkers working regularly in East Sussex from 1856 until the 1880s when there was only one. The hawkers visited 140 parishes in East Sussex at least twice every year. They described their area as having a very scattered population, living in small hamlets on the bare downs, or in large Wealden parishes. As a general rule the more remote the area the more welcome the hawkers found, but they reported a cold reception in some isolated areas where they had doors slammed in their faces and the dogs were let loose. Sometimes this was from a general dislike of all hawkers and peddlers, but on other occasions because they were feared as Church of England spies tracing defaulters in the payment of the church rate. The notorious Sussex roads were said to be 'very deep and heavy in winter' and dry and dusty in summer, and the hills were very trying. In 1868 the men had an unfortunate time with their ponies; one was severely gored by a bullock and needed several weeks off work to recuperate, and the other fell down a steep bank and was killed.[24]

A constant refrain in the various annual reports was that although the cottagers were very willing to buy books they were extremely poor; as one hawker said in 1861 'I get money very slowly . . . I find the people as willing as ever but they have no money.' Certain seasons were better than others; after harvest, at hop-picking, and

just before Christmas were good times for sales. Some of the best customers were young working men, and girls and women in service, who had no immediate family claims on their wages. The coastguard men were specifically noted as buying 'very readily'; presumably they had enforced leisure in which they might read.[25] It would have been very pleasing to have even one log book of an East Sussex hawker, but these seem to have disappeared without trace. The annual reports of both the local Association and the national Union do, however, note some specific titles of books that were sold in East Sussex, and the catalogue issued by the Union shows the kind of material from which the E.S.B.H.A. could if it wished draw its stock. A catalogue issued in the 1860s contains just under 500 titles of books and magazines ranging in price from 7*s*.6*d*. for a copy of *Psalm 104th Illustrated* published by Hering, to various series of little books at a farthing each; by far the greater number of books cost 1*s*. or under. The subject matter includes such varied items as *Advantage of Warm Clothing, The Emigrant's Birthday, Infants' Alphabet, Adventures of Mrs Seacole, Songs for Schools, The Swearer's End, Walker's Dictionary* and *The Wide Wide World.*[26]

SALES (see Table 1)

The E.S.B.H.A. was gratified by the steady sale of Bibles and New Testaments. The first book purchased by many of the poor seems to have been a Bible. In many cases they were strenuously encouraged and even subsidized in their purchase by their local clergy, Sunday or day school teacher, but apart from this it was increasingly the sign of a respectable household to have a Bible, read or unread, in the parlour. A family Bible provided a place for a record of births, deaths and marriages, and it could provide stirring reading, and comfort in bad times. A concentration on Bible reading at home and at school certainly helped to produce a generation

TABLE 1
Annual Sales Figures of the East Sussex Bookhawking Association*

Year ending August	*Average receipts per hawker per week*†	*Bibles*	*New Testaments*	*Service/ Prayer Books*	*Books over 1s.*	*Books under 1s.*	*Prints*	*Copybooks*
1856	£3 15*s*.	188	89	143	#	#	963	33
1857	#	205	84	284	1,902	1,234	539	357
1860	#	857	193	1,732	3,906	2,875	1,441	3,095
1861	£8	706	276	1,471	4,869	2,590	830	3,377
1863	#	568	346	1,302	#	#	578	3,000
1864	£7	811	673	2,479	2,635	8,796	832	2,742
1865	£7–£8	751	311	1,110	#	#	795	#
1868	£6–£7	334	225	#	2,521	3,961	747	1,521
1878	£7	161	85	706	1,571	2,525	#	392

* There are no records of systematic sales returns; I have gathered these where I could. The 1856 and 1857 returns are from the annual reports in *Sussex Express*, 2 Aug. 1856 and 4 Aug. 1857. In the 1860s the E.S.B.H.A. sent in annual returns to the Bookhawking Union, but by the 1870s individual figures rarely appear for East Sussex, although there is usually a reference to the numbers of hawkers employed and their average weekly sales figures. Figures for 1878 come from the annual report at East Sussex Record Office, SHR 3706.

† One hawker was employed in the year 1855–6; thereafter there were two until 1878. Numbers of books, prints, etc. sold refer to joint sales when there were two hawkers working.

Not given.

of people who knew the scriptures. The East Sussex hawkers reported that servant girls bought Bibles, as well as other books, as presents for the folks at home. A man gradually bought family Bibles at 8*s.* 8*d.* each for all his children, although he himself could not read. A 'shop boy' saved 6*d.* a week for 38 weeks to buy a Bible with coloured plates for £1, borrowing the last shilling from his mother to make up the deficit when the hawker called. A 'poor old man' bought a Bible with large print for 2*s.* 4*d.* as a gift for his wife.[27] The sale of Prayer Books and service books outstripped that of Bibles, emphasizing that this was indeed a Church of England mission anxious to propagate the practice and doctrine of the Church. Bibles and Prayer Books were favourite choices amongst the donors of Sunday and National school prizes, and it is very probable that hawkers sold a proportion of their stock for this purpose. One example of the promotion of literacy and in particular of the possession of a Bible and Prayer Book is that given by the clergy of Withyham. Between 1837 and 1841 they did a survey of their parishioners noting whether they could read and write and whether they had a Bible and Prayer Book. The clergy sponsored S.P.C.K. sales missions to the village. The prizes given at the boys' school were predominantly Bibles and Prayer Books, although when a prizewinner had already received several copies of each he might be lucky enough to get a book on birds.[28]

Little penny reading books and copybooks especially for the children were favourites with the poor. Many of these books had an educational or religious tone, but they could contain an interesting narrative and pleasing woodcuts. One of the most popular, the hawkers noted, was *The History of a Camel,* one of the many little story books produced by the S.P.C.K. for 1*d.* It had 32 pages, including a small woodcut of a group of camels, and told the life history of a camel called Gamal:

> Have you ever seen a camel? I do not mean a picture of one but a real live camel. They are sometimes brought to England and led along the streets of some large towns; they come from a country which is a long way from England called Arabia. Arabia is a very different country indeed from England. Instead of the pretty green fields, and fine trees, and shady lanes, and running brooks which you see here, the greater part of the country in Arabia is nothing but a great wide desert, covered with sand where there is scarcely any water . . .

Gamal's Arabian owners are very kind to him and are portrayed as good men, if misguided in their religious beliefs. It is the Britisher, Riley, who brings Gamal to England and exploits him for money. *Snakes in the Grass,* published by the S.P.C.K. in 1857, sold for a farthing. It had only eight pages but told in lively style the story of a nutting expedition:

> The green thorny husks of the chestnuts had burst, and the red, orange and white treasures within peeped out. The mulberries showered down thick and fast, and my garden was strewn with the bright scarlet leaves of the cherry in the middle. It was my birthday—I think I was nine years old. Harry and Frank, my two younger brothers, and Charley and Willy Barlow, my greatest friends were playing with me. We had great fun. There was a large branch in the old oak tree on the lawn, on which we all sat in a row, and swung; now up among the acorns and rustling leaves, now down on the soft grass . . .

The moral of the snakes in the grass—the bad temper and fight between two of the boys—is not laboured.

The East Sussex bookhawkers sold thousands of copybooks. Such books could be weapons in the print propaganda war. A letter to the *Morning Herald* in August 1840 had protested about socialist copybooks 'printed for the purpose of conveying the same poisonous

instruction to the rising generation of the infant poor'.[29] Those copybooks used by William Bacon and the Hammond family in West Sussex were probably typical examples of the many that the E.S.B.H.A. hawkers sold in the 1850s and 1860s.[30] Those copybooks contain morally uplifting aphorisms that would certainly have met with the approval of the writer to the *Morning Herald* ('Seditious writings merit exemplary punishment', for example), plus poems, texts and numbers to be copied. Some copybooks and letter writers contained specimens of useful formal and business letters that older, but newly literate writers, might find helpful.

The more expensive books, that is those classified as 1*s.* and over, specifically mentioned by the East Sussex hawkers, included some classics, e.g. *The Pilgrim's Progress, Robinson Crusoe* and *Johnson's Dictionary*. Others were classified as educational and useful and dealt with popular science and useful arts, and during the early days of the E.S.B.H.A. books on the Crimean War were especially popular. The market for these more expensive books was said to be largely among skilled artisans and their families. A hawker reported good sales among the men and boys working in a rope walk in 1862, and a carpenter 'up the country' bought Russell's letters on the war in 1856;[31] Sir William Russell was the notable war correspondent who sent home reports from the Crimea that helped to overturn Aberdeen's government and altered the conduct of the war. Nevertheless, it was a man 'in Ashdown forest with the broommakers' who asked for a Greek grammar,[32] and a porter on the railway bought Lardner's *Museum of Science*. Lardner was a prolific writer on popular scientific and technical subjects. *The Museum of Science and Art* edited by him could be bought as a series of papers at 6*d.* each on subjects ranging from 'The Electric Telegraph' to 'The White Ant'. Other scientific and useful books mentioned were *The Chemistry of Creation, A Reading Book from British History, Pitcairn's Island,* various atlases, and Dick's *The Solar System.* Thomas Dick, a Scottish nonconformist and amateur astronomer, wrote on philosophical, religious and scientific subjects. In his biography of David Livingstone Tim Jeal notes that Dick played a decisive part in the development of the young Livingstone, helping him to reconcile science and religion.[33]

Two bestsellers with all the bookhawking associations were Paxton's *Calendar of Gardening Operations,* and Soyer's *A Shilling Cookery for the People.* As gardening and cookery books they dealt with topics of abiding interest—such books are bestsellers today—and furthermore Paxton and Soyer were both notable men of the 1850s. Joseph Paxton, head gardener to the Duke of Devonshire at Chatsworth, was famous for his part in the design of the Crystal Palace to house the Great Exhibition of 1851, and Alexis Soyer was something of a hero as the result of his mission to the Crimea to overhaul the camp and hospital catering—a laudable expedition on the part of the one-time famous chef of the Reform Club. The S.P.C.K. and other publishers were also producing little books on cookery, home nursing and gardening by the end of the 1860s.

Atlases, maps and almanacs also had steady sales. Interest in the Crimean War and the wars in India and Africa in which Sussex men fought were important factors in educating country people in world geography. Many Sussex families also had members who emigrated. George Meek's parents did so in the 1860s, as he himself was to do later in 1910. Emigration awoke personal interest in the geography of Australia, Canada, New Zealand and the U.S.A. The S.P.C.K. produced 'cottage maps' of Canada, India, Australasia and the West Indies at 3*d.* each, and a selection of atlases and other maps from 1*d.* upwards. Some National schools taught a smattering of geography, and in Sunday school scholars traced Bible history on maps of the Holy Land. Many country churches also supported the work of the various missionary societies that flourished in the 19th century. Visiting preachers and missionaries described their work in China, Africa and the South Seas in talks enlightened by maps of these countries.

Almanacs, like copybooks, were used as ammunition in the literary war. Temperance, religious and rational organizations battled to oust the 'trash' put out by brewers, socialists and Old Moore. The S.P.C.K. and the R.T.S. produced selections of almanacs for different markets. *The Cottager's Penny Almanack* published by the S.P.C.K. contained the Sunday lessons and a scripture text for each Sunday and Holy Day; a description of each month with directions for the kitchen garden or flower garden; hints on practical and useful subjects; the birthdays of the Royal Family; a list of Her Majesty's ministers with historical and explanatory notes; the principal sovereigns of Europe; and Post Office regulations and charges; as well as a calendar.

Amongst the letters following the article in *The Times* in 1856 was one warmly advocating the desirability of bookhawking associations selling prints and pictures.[34] These were to prove very popular purchases; the E.S.B.H.A. sold hundreds each year. The hawkers said that several children would club together to buy a print from them,[35] and if one had very little money certainly S.P.C.K. prints of animals, birds, plants, etc. at three farthings plain or 2*d.* coloured would be a good buy, for many of them were charming. Some children must have been indulged by a willing parent; 'if a child looks on with its father, very likely it'll want pussy, and if the child cries for it, it's almost a sure sale' said a London street seller of prints to Henry Mayhew in the 1850s.[36] The writer of the letter to *The Times* favoured good likenesses of the Queen and Royal Family, views of public buildings, well chosen landscapes, and a judicious selection of scripture prints, which he felt would 'hide many a crack and cheer the cold whitewash or smoke dried face of the cottage wall'. He described with sorrow some of the cottages he visited where 'caricatures of Her Majesty' and 'tawdry and hardly decent prints' looked down on the inhabitants.[37] Shoemakers' and tailors' shops were held to be especially renowned for prints and sheets of ballads and songs of an immoral nature. The Bookhawking Union was pleased to report that hawkers had had great success in the railway navvies' encampments where their old prints and pictures from *The Police News* and other sensational publications were being replaced by pictures and prints of a more refined taste.[38] The R.T.S. as well as the S.P.C.K. produced an increasing selection of prints in the 1860s. Many of these had a desirable message such as 'The best jug to fetch beer in' (a jug with no bottom); other titles such as 'In the Hayfield with Father', 'A Merry Christmas', and 'Welcome Home Again' suggest very strongly the metamorphosis of the 'smoke dried' cottage wall into the Victorian parlour.

It was not only a question of improved taste. Pictures were the traditional means of educating the poor in the doctrine and teaching of the Christian church, and S.P.C.K., R.T.S. and other scripture prints hung in schoolrooms and village halls, and at home produced a lifelong impression on many children's and adults' minds; a good number of people alive today could probably give a fair description of popular prints and pictures they encountered in their youth.

Some hawkers also sold periodicals. Bound volumes of the *Sunday At Home* were being carried by the E.S.B.H.A. hawkers in the 1860s. This magazine, published by the R.T.S., was specifically designed as suitable Sunday reading—it contained no fiction. Its weekday companion *The Leisure Hour* did, and proclaimed itself as 'suitable for parlour and kitchen, working man's fireside, country cottage, travels by steamboat and railway etc.'.[39] In 1862 it ran as a serial *A Life's Secret*, a story written by Mrs. Henry Wood, the author of the recent bestseller *East Lynne*. *A Life's Secret* contained a powerful mixture of drama, suspense, violence and pathos. One problem with periodicals was that the purchaser had to wait a long time for the hawker to call again with the accumulated instalments of a serial, and indeed he might never produce a copy containing a vital episode. A volume containing a year's issues bound into one avoided this problem. Other periodicals

favoured by the Bookhawking Union included *The British Workman* (Partridge), *Band of Hope Review* (Houlston) and *Home Friend* (S.P.C.K.). These would provide a reasonable quantity of material for 1*d.*, usually containing articles of practical and general interest and perhaps a story.

By the 1880s the hawkers' carts also carried boxes of mathematical instruments, writing desks, inkstands, chess sets, and perhaps one of the most important aids to literacy, spectacles at around 2*s.* a pair.

It would be a mistake to assume that all the working men and women of East Sussex were eager, if frustrated, readers who greeted the arrival of the bookhawker with joy. Some certainly did, but the hawkers said that others regretted the falling off in visits from the traditional peddler. Young men in pubs would persist in asking for the old song books that the hawker refused to carry. Other people asked for 'bad' books and they were 'vexed and disappointed' to be offered the sober books of the Church bookhawker although they could sometimes be persuaded to buy *The Wide Wide World* or *Common Objects of the Country*.[40] A vivid little incident was recorded by one of the East Sussex hawkers in July 1871:

> I met with a young man who wanted a Life of Turpin . . . I asked if he wanted to follow the example of such a villain as that . . . a woman standing by said he was to be married next week and ought to buy a different sort of book . . . ;

instead he took *Happy Homes and How to Make Them*.[41]

The E.S.B.H.A. always came high in comparative sales figures with the other associations. On average, the hawkers made sales of £6–£7 a week each; £8 in an exceptionally good week. Nevertheless, the East Sussex Association seldom balanced its books without donations and subscriptions; these usually represented 14 to 16 per cent of its income. Here again East Sussex did relatively well; Durham did better, needing only a nine per cent subsidy, but Devonshire, for example, relied on subscriptions and donations to make up 50 per cent of its income. The various associations had every incentive to keep the price of their stock as low as possible, as the chosen potential customers were the poor. The S.P.C.K., R.T.S., and The Prayer Book and Homily Society all offered special terms to the members of the Bookhawking Union. The S.P.C.K. offered 25 per cent off the price of its publications, and a further 15 per cent reduction for prompt payment. The R.T.S. granted an initial £10 worth at half price and after that 25 per cent off catalogue prices, with another 10 per cent off orders of £5 and over. The Prayer Book Society supplied Prayer Books at cost price and its own publications at 25 per cent reduction.

It is an interesting question why the West Sussex Bookhawking Association never did so well as the East Sussex one. After a hesitant start in 1854, the West Sussex Association kept going until the mid 1870s, but the one hawker they employed consistently made only a little more than half the sales of each of the East Sussex hawkers. Given that he visited around 140 parishes, as did the East Sussex men, was the poor result the fault of the administration or the potential custom? Did the West Sussex Association lack the consistent interest and drive of Thomas Lowe? Were the hawkers perhaps less committed and hard working, did they lack the incentive of a commission, did they carry less attractive stock? When one of the West Sussex hawkers, Henry Grainger, resigned in 1857, he blamed the lack of customers; there were 'no sales'. The new hawker, John Hammond, doubled Henry Grainger's sales from £2 9*s.* a week to £4 18*s.* 2*d.*,[42] but this seems to have been the maximum annual sales figure over the next 20 years. Were the West Sussex village poor more illiterate or even poorer than their brethren in the east of the county, or did they get their books from some other source?

SUCCESS AND DECLINE

In January 1867 the E.S.B.H.A. met to present a testimonial, a silver inkstand, and two candlesticks to Thomas Lowe for his 11 years as Secretary. The Earl of Chichester, as President, said during his speech that his parish of Stanmer profited greatly from the visits of the bookhawkers. Lowe replied, 'with due modesty', that he very much enjoyed the practicalities of the work after the doubts and disputations of the day.[43] He was to continue as Secretary for another 20 years. Mr. T. Martin was one of the hawkers in 1867; he lived in Willingdon. The last available local report is that for 1878.[44] Two of the original lay committee members and five of the clergy were still serving on the committee.

By the late 1870s the sales figures had begun to drop to £5 or £6 a week, and by the 1880s there was only one hawker at work. Lowe died at the end of 1887; nevertheless, the E.S.B.H.A. was still in existence in 1888, when there were only six associations left, and they have their last mention in the *The Church of England Year Book*. The Bookhawking Union's publications appear to cease in 1881.

The 1878 E.S.B.H.A. annual report blamed the agricultural depression for falling sales figures. This may have accelerated the decline; money was scarce, but then it always had been for the poor. The depression did accelerate emigration from the countryside; agricultural workers and servants left the village and the farm to seek work in the town or overseas, and one could postulate that it was the more intelligent and educated—the book buyers and readers—that went. Perhaps some of those left were less willing to buy books from a Church of England bookhawker, as the traditional ties with the Church were weakened by new political and religious allegiances.

There was certainly easier, if not easy, access to books and magazines. The network of branch railway lines that criss-crossed the county now linked many of the erstwhile remote villages to the nearest town. Not only did the trains take passengers and customers to town to the shops and the market but, perhaps more importantly, they brought every day newspapers, periodicals, and cheap books to the village station and shop. There were now many more penny weekly and monthly magazines and little books from which to choose; *Titbits*, for example, was published from 1881, a revolution in mass-directed journalism that offered, as well as snippets of reading matter, competitions with fabulous prizes. Flora Thompson in *Lark Rise to Candleford* describes the impact of *Titbits* and its rival *Answers* on a small country town in Oxfordshire.[45] Publishers were also falling over themselves in the competitive production of cheap classics and new fiction. Lowe commented on the increased availability of good literature in 1878, and cited grocers in Willingdon who were giving away standard works of literature with their goods:[46] a comment amplified by Meek, who describes a scheme whereby his family saved coupons from packets of tea and exchanged them for *Diprose's Annual, Robinson Crusoe* and *The Swiss Family Robinson*.[47] Pictures and prints were also increasingly offered as sales promotions by magazines and other traders.

Coupled with this growth of supply and access came, in some cases, a reactionary counter-swing. Books and magazines as they became more available lost their rarity value and became devalued as marks of status. Everyone now learned to read in school—in theory if not in practice—and there was less sense of awe at the assumed authority of the printed word. Furthermore, one no longer bought a book from a hawker just because it was printed matter that had the intrinsic value of a scarce commodity.

CONCLUSION

How far did the E.S.B.H.A. succeed in its aim to supply the poor country people with good books that would elevate their tastes, sentiments and moral standards? The fact that sales rose steadily in the early days and maintained their level suggests that people were glad to see the hawker and bought more from him when he

returned. The hawkers themselves said that people asked them to be sure to call again. One does not know in any detail how much the books were read and enjoyed, for the customers have left little record of their response and appreciation. Some eager readers, hungry for books, must have been very glad to see the hawker and to have a wider choice of reading matter than that offered by the traditional peddler. The porter who bought Lardner's *Museum of Science* found very different fare from fortune-telling and dream books; although people can quite happily read and enjoy a wide variety of different kinds of material. The important thing is, perhaps, that there was more choice.

Books and nationally produced periodicals undercut the authority of old oral and local lore, for good or ill. New and different standards of family care were offered in cookery books and home nursing books. Many self-help and educational books were bought, one suspects, for the benefit of the children, as indeed many are today. The E.S.B.H.A. may have aimed to better their customers, but the effort was not all on one side, for many poor people wanted to better themselves and their children; they were not passive clay.

One important effect of the spread of books, pictures and maps was the growth of a sense of national identity. The R.T.S. was very keen on the concept of national unity produced by all reading and enjoying the same books. It said of one of its bestsellers, *Jessica's First Prayer*, that it was enjoyed by readers from the Queen down to the poorest inhabitant of the workhouse; 'it is impossible to read this tale with unmoistened eyes or an unsoftened heart.'[48] The whole nation weeping together over one book might share values and tastes and emotions in the same way as with a popular television programme today. With increasing knowledge of the history, geography, and famous people of Great Britain came too a developing sense of nationhood which helped to break parish physical and cultural boundaries, and with this widening of horizons came a sense of the nation and the world. The books on the Crimean War, the maps with large sectors increasingly painted red, the pictures of the Queen, all helped to foster the concept of the Queen, country and empire in village homes.

On the other hand, readers of the hawker's stock did not always react in the hoped-for way. Many 'infidels' of the 19th century attributed their loss of faith in the first instance to critical study of the Bible.[49] Other books unwittingly fed an increasing discontent with their lot in some readers, and dislike of blatant propaganda from partisan upholders of the status quo. Some, like George Meek, educated themselves by a wide variety of reading and rebelled and went away. Many readers must have read purely for amusement and escapism, small interludes in a hard and tiring life, and were not conscious of being elevated in any sense; I think Thomas Lowe would not have minded this.

Author: Sheila R. Haines, 23 Friar Road, Brighton, East Sussex.

Notes

[1] *Sussex Express* (abbreviated hereafter to *S.E.*), 11 Aug. 1855; 2 Aug. 1856.
[2] *Church of England Year Book* (1884), 172.
[3] J. Burnett, *Useful Toil* (1984), 59.
[4] *Sussex Advertiser*, 21 Aug. 1855.
[5] *S.P.C.K. Annual Report* (1820).
[6] East Sussex Record Office (hereafter E.S.R.O.), PAR 236/43/1 (Hastings and District Committee of S.P.C.K. annual report, 1849).
[7] E.S.R.O., PAR 232/7/5 (C.W. Cass, 'An Account of the State of the Parish of Arlington', 1861).
[8] *S.E.* 26 Jan. 1867.
[9] *George Meek Bathchair-Man, By Himself* (1910), 38.
[10] E.S.R.O., PAR 344/26/3/4 (Frant reading room catalogue, n.d.).
[11] E.S.R.O., PAR 236/43/1 (Hastings S.P.C.K. annual report, 1855).
[12] *The Christian Spectator* (1846), 101.
[13] *Sussex Advertiser*, 21 Aug. 1855.

[14] *George Meek Bathchair-Man, By Himself* (1910).
[15] E.S.R.O., PAR 236/43/1 (Hastings S.P.C.K. annual report, 1855).
[16] S.P.C.K., London, minutes of the Lewes Deanery Committee, April 1857.
[17] I have in this section drawn largely on the first annual report of the E.S.B.H.A., to be found in *S.E.* 2 Aug. 1856, and the quarterly papers, circulars and annual reports issued by the Church of England Bookhawking Union, all of which are to be found in the British Library, London.
[18] Church of England Bookhawking Union (hereafter C.E.B.U.), *Suggestions for the Formation and Management of Bookhawking Societies*.
[19] *S.E.* 2 Aug. 1856.
[20] C.E.B.U., *Circular* (Jan. 1864).
[21] *Sussex Advertiser*, 14 Aug. 1855.
[22] H.G. de Bunsen, *The Bookhawker: His Work and His Day* (1859), initially read as a paper at the conference of the Church of England Bookhawking Union at Derby, 21 Sept. 1859.
[23] C.E.B.U., *Circular* (Jan. 1864).
[24] C.E.B.U., *Annual Report* (1861).
[25] C.E.B.U., *Annual Report* (1862, 1864).
[26] C.E.B.U., *Catalogue of Church of England Bookhawking Union* [1860s].
[27] C.E.B.U., *Annual Report* (1860, 1861).
[28] E.S.R.O., PAR 512/7/1 (boys' school rewards at Christmas 1837 and 1838, and books owned by the parishioners of Withyham).
[29] *The Infidel Tradition from Paine to Bradlaugh*, ed. E. Royle (1976), 215.
[30] West Sussex Record Office (hereafter W.S.R.O.), Add. MSS. 19542 (copy book of William James Bacon, 1868), 32669–80 (exercise books of the Hammond family, 1854–64).
[31] *S.E.* 21 Aug. 1857; C.E.B.U., *Annual Report* (1863).
[32] C.E.B.U., *Annual Report* (1863).
[33] T. Jeal, *Livingstone* (1985), 11.
[34] *The Times*, 30 Oct. 1856.
[35] C.E.B.U., *Annual Report* (1862).
[36] H. Mayhew, *London Labour and the London Poor* (1851), **1**, 304.
[37] *The Times*, 30 Oct. 1856.
[38] D.W. Barrett, *Life and Work Amongst the Navvies* (1880), 56.
[39] *Christian Spectator* (1851), 663.
[40] C.E.B.U., *Annual Report* (1861).
[41] C.E.B.U., *Circular* (July 1871).
[42] *S.E.* 22 Aug. 1857.
[43] *S.E.* 26 Jan. 1867.
[44] E.S.R.O., SHR 3706 (report of the E.S.B.H.A., July 1878).
[45] F. Thompson, *Lark Rise to Candleford* (Penguin edn.), 498.
[46] E.S.R.O., SHR 3706 (report of the E.S.B.H.A., July 1878).
[47] *George Meek Bathchair-Man, By Himself* (1910), 30.
[48] *Christian Spectator* (1869), 155.
[49] S. Budd, *Varieties of Unbelief: Atheists and Agnostics in English Society 1850–1960* (1977), 107.

This research was supported by a grant from the Sussex Archaeological Society's Margary Research Fund.

ARCHAEOLOGICAL NOTES

This section of the *Collections* is devoted to short notes on recent archaeological discoveries, reports on small finds, definitive reports on small scale excavations, etc. Those without previous experience in writing up such material for publication should not be deterred from contributing; the editor and members of the editorial board will be happy to assist in the preparation of reports and illustrations.

Prehistoric Sites Threatened by Coastal Erosion between Seaford Head and Beachy Head, East Sussex

In April 1985, the Field Archaeology Unit undertook a survey of prehistoric sites along the rapidly eroding cliff edge between Seaford Head and Beachy Head (Fig. 1A). The average annual cliff fall in 1973 was estimated by the Seven Sisters Warden as being about 0.5 metre (East Sussex County Council archaeological sites and monuments record, TV 59 NW 16). This figure is substantiated by archaeological investigations at the Bronze Age valley bottom enclosure at Belle Tout (Fig. 1B). Toms's survey in 1909 (Toms 1912, 45) recorded the cliff edge *c.* 35 metres further out to sea than its present position; this gives a figure of 0.47 metre per annum for the rate of cliff erosion.

The aim of the survey was to assess the threat posed by coastal erosion to prehistoric sites along the present cliff edge. Of these, one of the barrows and the flint scatter on Baily's Hill, Crowlink (Fig. 1C) are likely to be destroyed in the next five to ten years, but significant archaeological material associated with the sites at South Hill, Limekiln Bottom and Belle Tout could also be destroyed in the next decade. A programme of surface artefact collection survey and excavation should be initiated before time runs out.

The Sites

1. *Seaford Head* (TV 495978; E.S.C.C. sites and monuments record, TV 49 NE 13)

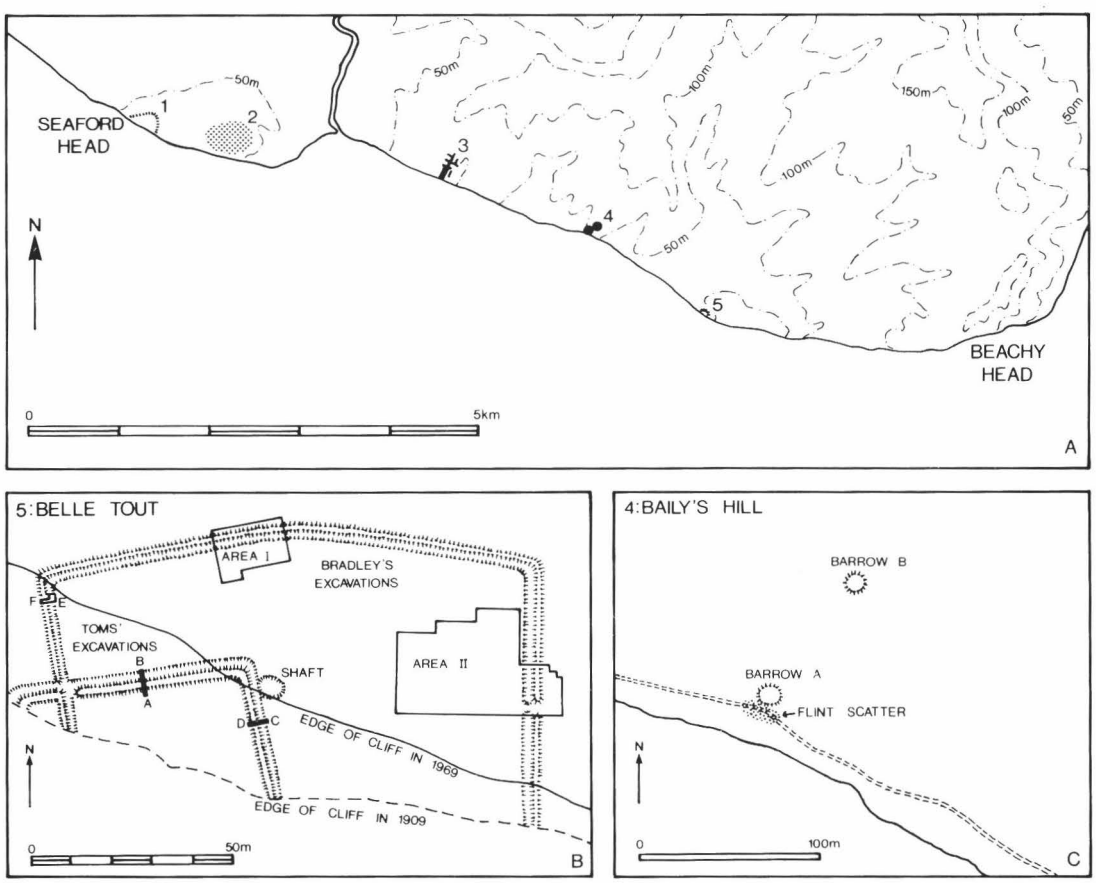


Fig. 1. A: location of survey area; the site numbers refer to the sites listed in the text. B: coastal erosion suffered by Belle Tout enclosures since 1909. C: bowl barrows and flint scatter on Baily's Hill, Crowlink.

Less than half of the circuit of a univallate hill-fort survives on the summit of Seaford Head. Two trenches were excavated across the eastern defences close to the cliff edge in March–April 1983; an early Iron Age date was established for the hill-fort and soil samples were taken from the buried land surface under the bank for pollen analysis (Bedwin 1986).

2. *South Hill* (TV 504975; E.S.C.C. sites and monuments record, TV 59 NW 1)

Mesolithic and Neolithic flint artefacts have been collected from South Hill since the turn of the present century, but a recent systematic surface artefact collection survey conducted by Paul Garwood (Garwood 1985) defined three dense concentrations of Neolithic flint artefacts in the cultivated field adjacent to the cliff edge.

3. *Limekiln Bottom* (TV 530974; E.S.C.C. sites and monuments record, TV 59 NW 10)

A field system consisting of a series of north-south running lynchets lies on the western slope of Limekiln Bottom. Most of the site is ploughed annually and Beaker and Iron Age pottery has been collected from the surface (Swaffer 1964). Two lynchets have already been truncated by coastal erosion and a further two lie within 5 metres of the cliff edge.

4. *Baily's Hill, Crowlink* (TV 545966; E.S.C.C. sites and monuments record, TV 59 NW 16)

Two bowl barrows (Fig. 1C: Barrow A is *c.* 15 metres in diameter and 0.5 metre high, with a depression in the centre; Barrow B is *c.* 12 metres in diameter and 0.5 metre high with no indication of previous disturbance) are situated on the crest of Baily's Hill. Barrow A is about 10 metres from the cliff edge, but a deflation surface created by human and wind erosion is about to encroach on the barrow. Twenty-nine humanly-struck flints were collected from the deflation surface (Fig. 1C); these are listed in Table 1. The flint used includes good quality nodular flint with a thick, unabraded cortex and beach pebble flint; both were probably collected from cliff falls and the beach close to the site. Technologically, all pieces (excluding the axe-thinning flake) were struck off cores using hard hammers; no attempt was made to prepare the platform before detaching flakes, and butts are all over 0.5 cm. in width. A late Neolithic or Bronze Age date is likely for this flint assemblage, which might represent domestic activity before the barrow was constructed.

TABLE 1
Flint Assemblage Found Adjacent to Barrow A, Baily's Hill, Crowlink

Flakes	26
Axe-thinning flake	1
Core (single platform flake core)	1
Piercer	1
Total	29

5. *Belle Tout* (TV 557956; E.S.C.C. sites and monuments record, TV 59 NE 24)

About a third of a rectangular valley bottom enclosure with a ditch and external bank still survives, but Toms's survey in 1909 shows that this enclosure overlies an earlier, smaller enclosure. One of Toms's trenches (Toms 1912, 50–3: Fig. 1B, Section E–F) located a dump of flintwork, marine mollusca and domesticated Beaker pottery within the secondary silts of the ditch. Bradley's excavations produced material of early Neolithic and Bronze Age date (Bradley 1970; 1982). The shaft in the centre collapsed into the sea in 1984.

Acknowledgements

Robert Middleton helped with the survey and Dr. Andrew Woodcock provided access to the E.S.C.C. sites and monuments record; I am grateful to them both.

Author: **Robin Holgate, Institute of Archaeology, University of London.**

References

Bedwin, O. 1986 'Excavations at Seaford Head, East Sussex, 1983', *Suss. Arch. Coll.* **124**, 25–33.

Bradley, R. 1970 'The Excavation of a Beaker Settlement at Belle Tout, East Sussex, England', *Proc. Prehist. Soc.* **36**, 312–79.

—— 1982 'Belle Tout—Revision and Reassessment', in P. Drewett, *The Archaeology of Bullock Down, Eastbourne, East Sussex: the Development of a Landscape*. Suss. Arch. Coll. Monograph, **1**.

Garwood, P. 1985 'The Cuckmere Valley Project Fieldwalking Programme, 1982–3', *Bulletin of Inst. Arch. Univ. London*, **21/2**, 49–68.

Swaffer, S. F. 1964 'A Late Iron Age Site, East of Cuckmere Haven', *Suss. N. & Q.* **16**, 102.

Toms, H. S. 1912 'Excavations at the Beltout Valley Entrenchments', *Suss. Arch. Coll.* **55**, 41–55.

Excavations at Lordington, Stoughton, West Sussex, 1984

The site was first noticed by Mrs. D. Francis, of Lordington House, during the very dry summer of 1976 when parch marks were visible in the field to the north of the house (centred at SU 782101). A plan of the marks was made by Fred Aldsworth and in 1978 a trial excavation was undertaken to determine whether or not the marks indicated a site of archaeological interest (Aldsworth 1979). A ditch, 1.2 metres wide and 0.9 metre deep, was located, which produced a flint flake and fragments of a cow horn. Some time later it was discovered that the site had also been photographed from the air in 1976 for the National Monuments Record (photograph number SU 7810/1/286; Fig. 2) and this showed detail that had not been visible on the ground.

A composite plan using the two sources of evidence (Fig. 3) indicates that the site comprises two enclosures and a series of linear ditches extending to the north. The larger of the enclosures, A (centred at SU 78241016), is subrectangular measuring about 90 × 70 metres with entrances at both the north and south ends. The smaller enclosure, B (centred at SU 78201004), is also rectangular and measures about 40 × 20 metres. A series of parallel-running bands of dark soil, lying perpendicular to the direction of slope, are also visible

on the aerial photograph. Certainly one of these bands appears to be associated with one of the earthwork remains of the shrunken medieval village in the field to the south of the enclosures.

Further excavations were carried out in September 1984 by the Field Archaeology Unit as part of its 'Plough Damage Assessment' project to establish the date of archaeological deposits on the site and assess the degree of plough damage to these deposits. The excavations were funded by the Historic Buildings and Monuments Commission.

Enclosure A

A surface collection survey of Enclosure A and its immediate environs, walking transects spaced at 20-metre intervals and divided into 20-metre units after the field had been ploughed and left to weather, produced humanly-struck flint and one fragment of possibly medieval pottery. Trenches A and B sampled the enclosure ditch on its north and east sides and Trench E sampled the interior. Trenches A, C and D investigated the relationship between the linear ditches and the enclosure. The enclosure ditch is *c.* 1 metre deep and varies in

Fig. 2. Oblique aerial photograph of the enclosures north of Lordington. West to the top. (National Monuments Record: Crown Copyright reserved)

LORDINGTON

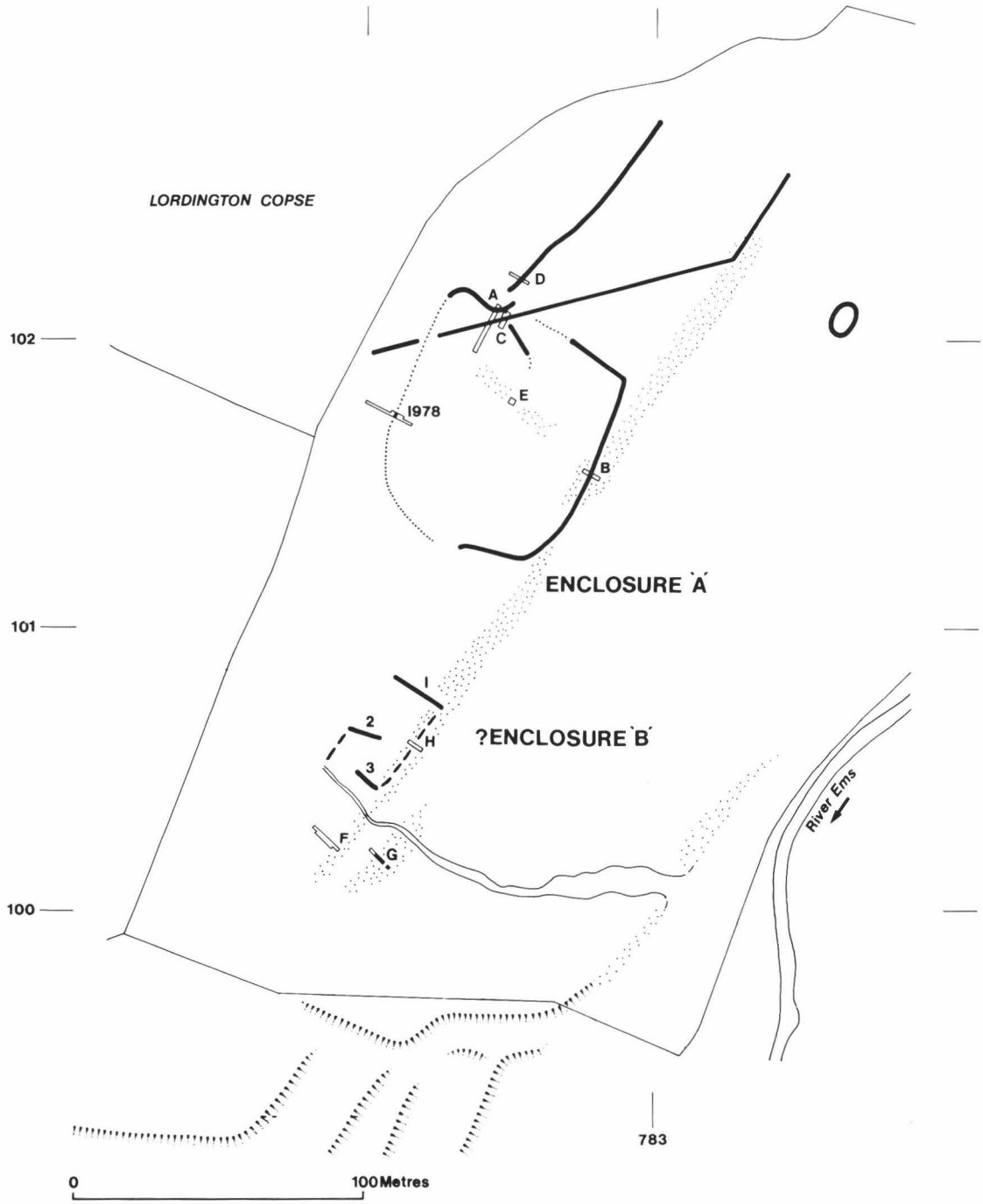


Fig. 3. Lordington. General site plan. Solid lines indicate features visible on the aerial photograph and on the ground in 1976; dotted lines indicate features visible on the ground in 1976. (By F. G. Aldsworth)

width between 1.5 and 2 metres; it appears to have silted up naturally (Fig. 4). There were no traces of an associated bank or internal features, but the ditch (8) in Trench B cut an earlier pit (24). Finds from the enclosure ditch included late Iron Age and Romano-British pottery, animal bone, charcoal and humanly-struck flint; the pit did not produce any datable material.

Trenches A, C and D showed that Ditches 3 and 20 are not attached to the enclosure ditch, but otherwise failed to demonstrate the relationship between these features. It is unlikely, though, that Ditch 3 is contemporary with the enclosure as it passes through the north entrance, but whether both ditches are earlier or later in date than the enclosure remains unsolved. Both ditches probably silted up naturally. Apart from a fragment of burnt clay in Ditch 3, the only finds were small quantities of late Iron Age and Romano-British pottery, animal bone, charcoal and humanly-struck flint in Ditch 20.

Enclosure B and the Lynchets

Trench H was intended to sample Enclosure B, but there was no sign of a ditch. Instead, a positive lynchet was encountered, corresponding with one of the dark bands visible on the aerial photograph. Trenches F and G were excavated to obtain further sections of the lynchets at this part of the site. The lynchet build-up (Layers 30 and 31) in Trench H produced Romano-British pottery and tile, and humanly-struck flint. The modern ploughsoil in Trenches F, G and H also included late Iron Age, medieval and post-medieval pottery.

The Pottery and Tile Fragments (by D. R. Rudling)

Introduction

The excavations and surface survey yielded only 98 fragments of pottery, tile and burnt clay. All of these fragments were sorted into groups on the basis of a visual assessment of the fabric (Table 1). The pottery includes examples of the late Iron Age, Romano-British, medieval and post-medieval periods; but most of the sherds are fairly small and abraded, and none are of particular use for close dating purposes.

Fabric types

1. Medium-fine flint-tempered wares. Probably late Iron Age (3rd–1st centuries B.C.).
2. Sand- and grog-tempered wares. ?Late Iron Age.
3. Sand-tempered grey/black wares, sometimes with added flint. Wheel-thrown and sometimes burnished. Such wares occur during the late Iron Age, as at Copse Farm, Oving (S. Hamilton pers. comm.; Bedwin & Holgate 1985); but also continue into the Romano-British period, as at the Cattle Market site, Chichester (A. Down pers. comm.).
4. Fine orange ware. ?Oxfordshire ware (late 3rd/4th century).
5. Sand-tempered grey wares. Romano-British.
6. Sand-tempered oxidized wares, sometimes with added flint (fine–coarse). Often thick-walled vessels. Romano-British.
7. Sand-tempered grey-buff wares, sometimes with occasional medium flint inclusions. ?Medieval.
8. Sand-tempered oxidized wares. ?Medieval.
9. Fine orange ware with external mottled green glaze. Medieval.
10. Hard sand-tempered grey ware with partial external mottled green glaze. Late medieval.
11. Fine orange ware with orange glaze. 17th/18th century.
12. Fine orange ware. 18th century onwards.
13. Burnt clay/daub.

TABLE 1
Summary of Pottery, Tile and Daub Fragments

	Fabric types															
Context	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*Total*
A/1	1				1				1		1				4	8
A/6													1			1
A/13					1	1										2
A/14	1				1	1										3
B/1					2			1			1				11	15
B/2	1			2	3		1			1					4	12
B/9			30													30
B10		1	1													2
C/1								1							2	3
D/1								1							2	3
D/21	2	2			1								2			7
F/1	1											1				3
G/1					2		1									3
H/30	1				2									1		4
H/31						1								1		2
Surface survey:																
B5								1								1
Total	7	3	31	2	13	3	2	4	1	1	2	1	3	2	23	98

LORDINGTON 1984

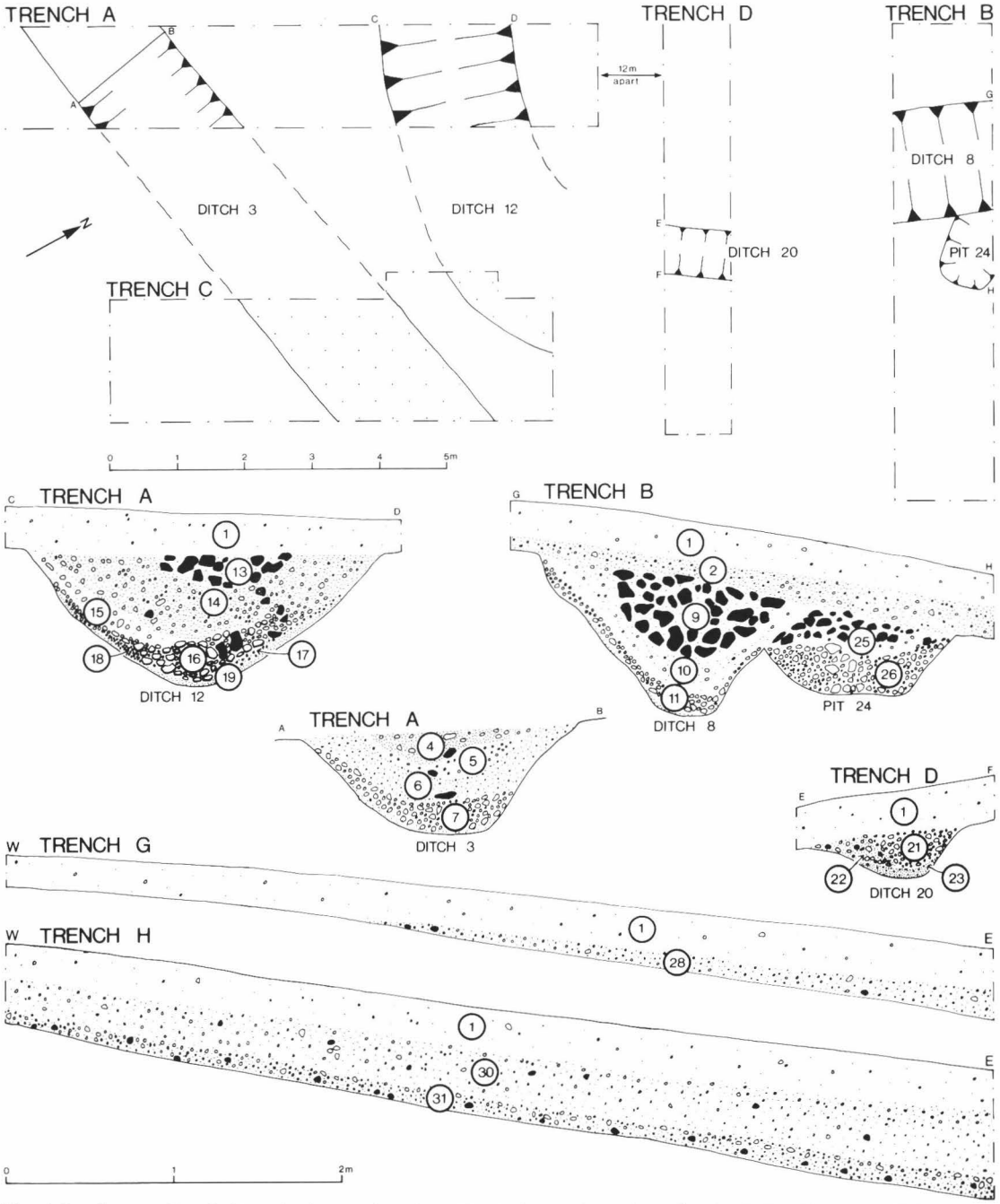


Fig. 4. Lordington. Detailed trench plans and sections. Key to layers: 1, modern ploughsoil; 2, colluvium; 4, light orange-brown silt loam; 5, cream silt loam; 6, light brown silt loam; 7, cream-brown silt loam; 9 and 13, orange-brown silt loam; 10 and 14, dark orange-brown silt loam; 11, light brown silt loam; 15, light orange-brown silt loam; 16, chalk rubble; 17, grey-brown silt loam; 18, cream silt; 19, orange-brown silt; 21, dark grey-brown silt loam; 22, orange-brown silt loam; 23, cream silt loam; 25, orange-brown silt loam; 26, light orange-brown silt loam; 28 and 30, orange-brown silt loam; 31, light orange-brown clay silt.

14. Romano-British tile (including a fragment of combed box-flue tile).
15. Post-medieval roofing tile.

Discussion

Enclosure A (Trenches A–E): The excavations in this area revealed four ditches (3, 12, 8 and 20) and one pit (24). Of these features only Ditches 12, 8 and 20 yielded any pottery (the sum total being a mere 42 sherds) and unfortunately none of this came from the primary silts of the ditches. Layers 13 and 14 in Ditch 12 produced five sherds (1 of Fabric 1; 2 of Fabric 5; 2 of Fabric 6) which indicate a possible Romano-British date for these ditch fills. Thirty-two sherds (1 of Fabric 2; 31 of Fabric 3) were recovered from Layers 9 and 10 in Ditch 8. Of the 30 sherds from layer 9, 27 are from the same vessel (a jar) but this is not closely datable (see above: late Iron Age/early Romano-British). Ditch 20 produced five sherds (2 of Fabric 1; 2 of Fabric 2; 1 of Fabric 5) from Layer 21. These again indicate a possible late Iron Age/Romano-British date. Thus, pottery finds from the upper ditch fills are all consistent with a late Iron Age/Romano-British date for the enclosure. The other pottery finds from the ploughsoil (Layer 1) and colluvium (Layer 2) in the area of the enclosure include further sherds of late Iron Age/Romano-British date and also examples dated to the medieval and post-medieval periods.

The lynchets (Trenches F–H): Only Trench H (Contexts 30 and 31) produced any pottery finds from the lynchet build-up. These included four sherds (1 of Fabric 1; 2 of Fabric 5; 1 of Fabric 6) and two fragments of Romano-British tile. Of the sherds, one (Fabric 5) is from a late Romano-British necked jar, and another (Fabric 6) is an unidentified mortarium sherd (bead rim and down-turned flange: ?4th century). Of the tile fragments, one is from a box-flue tile with combed decoration (eight-toothed comb). Other finds from the general vicinity of the lynchets (Trenches F–H, Layer 1) range in date from late Iron Age/Romano-British to medieval/post-medieval.

The Flint

A total of 202 flints were recovered during the excavations and surface survey. These are summarized in Table 2. Most pieces are hard hammer-struck, with wide butts and no traces of platform preparation. A post-3rd-millennium B.C. date is likely for the assemblage. Most pieces are abraded and are probably earlier in date than the construction of the enclosure and formation of the lynchets. A few pieces from Layers 9, 10 and 26 were unabraded and could be associated with the use of the enclosure.

The Animal Bones (by Mark Beech)

Traces of animal bone were extremely sparse and only occurred within four contexts. These were as follows: (1) within the ploughsoil of Trench D; (2) within the ploughsoil of Trench G; (3) within the primary ditch fill (Layer 11) of Ditch 8; and (4) within the primary ditch fill (Layer 23) of Ditch 20. A total of 17 fragments were represented, only 7 of these being identifiable to species. Cow, Pig and Sheep or Goat were represented in the primary silts of Ditch 8, and a large artiodactyl, probably Cow, was present in the ploughsoil of Trench G.

TABLE 2
The Flint Assemblage

Context	*Flakes*	*Blades*	*Core*	*Scrapers*	*Total*	*Fire-fractured flint*
A/1	22	4		1	27	3
A/13	2				2	4
A/14	3				3	66
A/16	9				9	70
B/1	15	1			16	7
B/2	7				7	1
B/9	8				8	11
B/10	4	1			5	6
B/26	1				1	
C/1	14	1			15	6
D/1	21	1			22	
D/2	3				3	2
D/21	1				1	40
D/22						4
E/1	1	1			2	1
E/2	1				1	1
F/1	13			1	14	16
G/1	12				12	8
G/2	3			1	4	6
H/30	9				9	3
Surface survey	37	2	1	1	41	34
Total	186	11	1	4	202	289

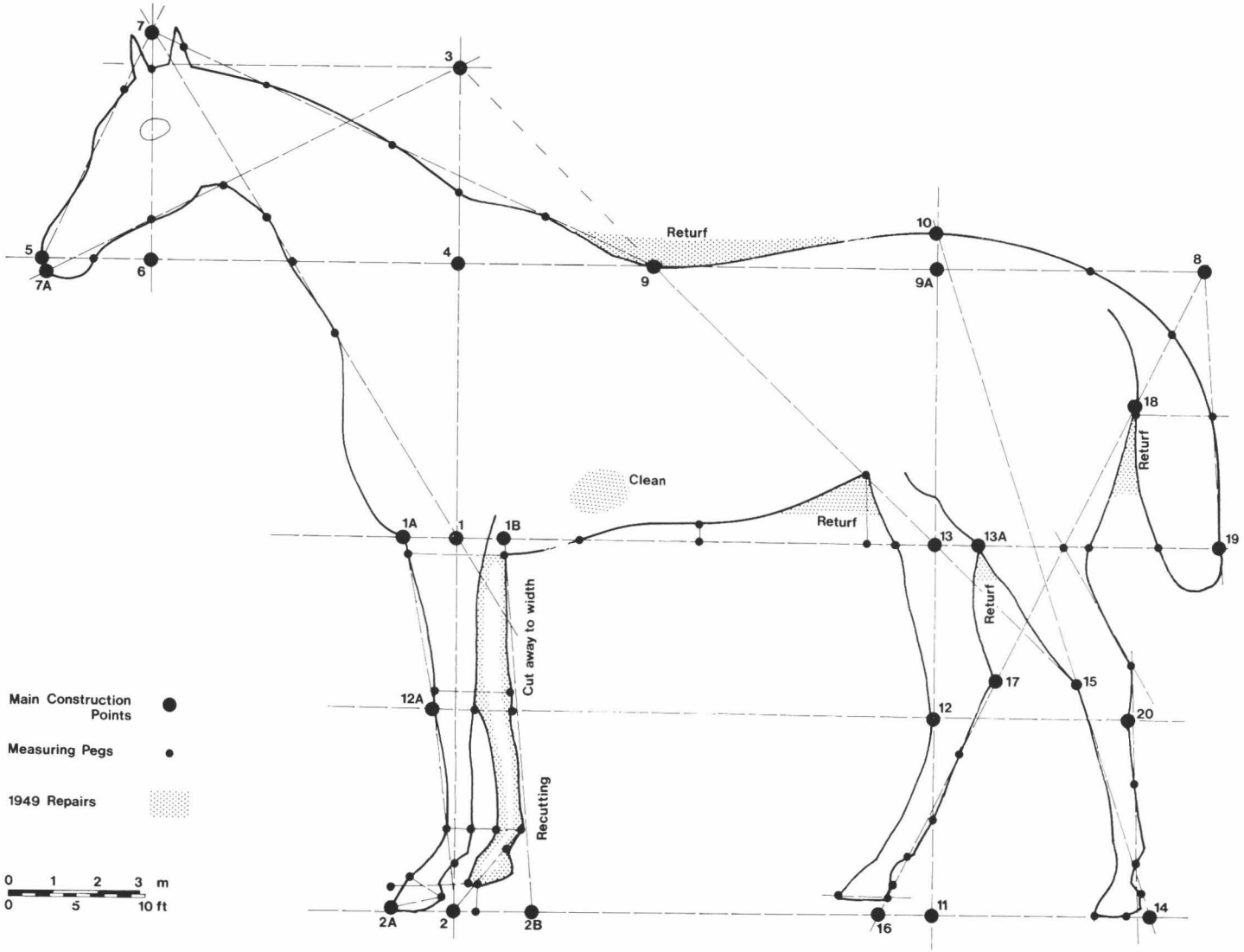


Fig. 5. The White Horse near Litlington. (By James Lancaster, based on J. T. Ade's plan of 1924)

Obviously with such sparse data, and with much of the material originating from the upper disturbed levels of the site, little more can be said with regard to the faunal remains. It seems unlikely that the scarcity of animal bone can be solely attributed to elements of poor retrieval in excavation, bearing in mind the consistent general paucity of other forms of artefactual data on the site. It would appear that poor preservation factors, including plough damage, have effectively limited the survival of faunal material on the site. Such meagre evidence as we do have cannot provide us with any definitive conclusions as regards the possible utilization of the site.

Charcoal, Marine Molluscs and Geological Material (by Caroline Cartwright)

Charcoal

Trench A, Ditch 12, Layer 16: 6 g. *Quercus* sp. (oak) charcoal.
Trench D, Ditch 20, Layer 21: 3 g. *Leguminosae* charcoal.

Marine molluscs

Trench B, ploughsoil: 1 small fragment *Ostrea edulis* (oyster) shell.

Geological material

Trench A, ploughsoil: 1 small fragment of thick green-grey roofing slate. Trench B, ploughsoil: 2 fragments of thick green-grey roofing slate; 2 small fragments of Horsham stone. Trench D, ploughsoil: 1 small rounded flint (beach?) pebble; 1 fragment (575 g.) Wealden sandstone, possibly from a quern.

Discussion

The excavations sampled Enclosure A, but failed to confirm the presence of a second enclosure to the south. Instead, two positive lynchets were revealed. This, however, does not mean that Enclosure B does not exist, merely that the 1984 excavations failed to locate it. Although pottery was recovered from the upper ditch fills and one of the lynchets, the absence of pottery from the primary ditch silts makes it difficult to date the site with precision. If the association of late Iron Age/Romano-British pottery with the secondary ditch silts is genuine, then this would suggest a late Iron Age/Romano-British date for Enclosure A. All this material may, of course, be residual, indicating a post-Romano-British date. The paucity of domestic debris and the provision of two entrances perhaps suggest that the enclosure was used to corral animals.

The lynchets could be of any date from late Iron Age to post-medieval. If the layer of colluvium in Trench B, which overlay Ditch 8 and Pit 24, is part of the lynchet sampled by Trench H (as suggested by the aerial photograph: Fig. 2), then this would indicate a post-Romano-British date for this part of the lynchet system. Certainly, the association of the lynchet with the shrunken medieval village is an attractive proposition, but one that cannot be proved using the limited evidence from these excavations.

Acknowledgements

I am grateful to Mr. John Veltom, of Sindles Farm, and Messrs. Lawes and Elms, of Aldsworth Manor Farm, for permission to excavate. I also wish to thank Fred Aldsworth for his help and advice at all stages in the excavation and preparation of this report; David Rudling, Mark Beech and Caroline Cartwright for specialist reports; and the Air Photograph Unit, National Monuments Record, for permission to publish the photograph reproduced here. Finally, I must thank the Historic Buildings and Monuments Commission for funding the excavation and post-excavation work; thanks are due in particular to Roger Thomas for his advice. The finds and site archive have been deposited at Chichester District Museum (accession no. 6084).

Author: **Robin Holgate, Institute of Archaeology, University of London.**

References

Aldsworth, F. G. 1979 'A Probable Iron Age Farmstead Site at Lordington, Stoughton', *Suss. Arch. Coll.* **117**, 252–4.
Bedwin, O. & Holgate, R. 1985 'Excavations at Copse Farm, Oving, West Sussex', *Proc. Prehist. Soc.* **51**, 215–45.

The Society is grateful to the Historic Buildings and Monuments Commission for a generous grant towards the cost of publishing this Note.

Mesolithic Flintwork from Hollycombe, Linch, West Sussex

Twenty-four Mesolithic flints were collected by H. G. and E. W. Holden on the Lower Greensand near Hollycombe (SU 853294) in May 1979. These included 11 flakes, 2 bladelets, 10 bladelet fragments and one miscellaneous retouched flake fragment. The flint used is grey in colour and is of good quality for flaking. With the exception of one flake, all pieces were detached from cores using a soft hammer and are therefore likely to be Mesolithic in date. The flints have been deposited at Chichester District Museum.

Author: **Robin Holgate, Institute of Archaeology, University of London.**

The White Horse near Litlington: A Further Note

In an earlier note it was stated that the plan prepared by J. T. Ade, who designed and made the Litlington horse in 1924, had been destroyed.[1] The plan, however, has recently come to light in the Sussex Archaeological Society's library, together with further correspondence about the making of the horse; the plan has been redrawn as Fig. 5.

In a letter to Mrs. A. L. Ade, Stephen Bovis, who helped with the work, says that the inspiration and model was another famous white horse much admired by Ade.[2] There are in fact two possibilities. The Kilburn horse in Yorkshire is the closer parallel but the better known Westbury white horse also offers similarities.[3] Bovis's letter indicates that the Litlington horse was first laid out in the House Field at Ade's farm, Grove Hill at Hellingly, using a system of ropes and pegs. Ropes forming the main construction lines were staked out as indicated on the drawing and pegs were attached at measured intervals to mark the outline of the horse. This apparatus allowed the quick transfer of the design onto the hillside. The original drawing is minutely annotated to give the distance between each peg and

the next. A curious and presumably improvised unit of measurement, a 'stick' of 35 in., is used and measurements are expressed in sticks and inches. Some areas such as the feet are measured in great detail while the ears, chest and tip of the tail are bypassed by the construction lines. The eye appears to be an embellishment to the plan only, the scale of the horse on the ground being too small for a turf eye to survive, although the much larger Kilburn and Westbury horses both have eyes. The plan is also marked with details of the repairs to the horse which Ade undertook in 1949.

The figure as seen today[4] is beginning to diverge from Ade's original plan particularly in the area of the legs. These are now of differing length, one foreleg is raised and the hooves are in different alignments. In this context the experience of the East Sussex County Council which has been engaged in maintaining the figure almost continuously over the past ten years is interesting and demonstrates that it is figures marked out in outline only, such as the Uffington horse and the Cerne and Wilmington giants, all figures of some antiquity, which have the best chance of survival. Paul Millmore, South Downs Conservation Officer for the East Sussex County Council, reports that a large expanse of bare chalk sited on a steep slope like the Litlington horse is extremely prone to erosion. Debris accumulates in the stomach and tip of the tail and grasses over, a process discernible in a comparison of Ade's plan and Marples's drawing executed 12 years later in 1936.[5] The legs themselves act as channels for water running off the figure above and tend to straighten, elongate and splay out to form deltas at the hooves. A rabbit warren in this area compounds the problem. It was in an attempt to give greater definition to the legs in 1983 that the raised foreleg was introduced. This undertaking was directed by means of a two-way radio link between workers on the hill and observers below in the valley. The figure is now edged with boards to help preserve it in its present form.

Author: **Fiona Marsden, Barbican House, High Street, Lewes.**

Notes

[1] F. Marsden, 'The White Horse near Litlington, East Sussex', *Suss. Arch. Coll.* **122**, 222–3.

[2] Letter in Suss. Arch. Soc. library; extracts appear in *Suss. Life*, Nov. 1980, 9.

[3] M. Marples, *White Horses and Other Hill Figures* (1949), 74, 131.

[4] Photograph in *Evening Argus*, 26 Sept. 1985.

[5] Marples, 128.

A Possible Barrow at Lewes, TQ 40791047

During excavations for the construction of a swimming pool at 'New Place', Gundreda Road (TQ 40791047) (Fig. 6,a), the writer observed two ditch profiles sectioned by this work. Conditions were far from ideal but an attempt was made to record, describe and photograph the features and to recover artefacts to secure a date.

The site lies at about 52 metres O.D. on the Upper/Middle Chalk which forms part of a larger spur extending from the main downland dip slope. This area is almost devoid of previous archaeological finds, and only a few artefacts were recovered when the land was built on in the early part of this century.

The two ditch sections revealed were 4.2 metres apart and were both *c.* 1 metre wide and *c.* 0.4 metre deep. They are severely truncated by earlier building works and sealed by the deposition of chalk rubble 'hard-core' for the construction of tennis courts at no. 2 De Warrenne Road.

The ditch sections were both of a smiliar nature containing a decalcified strong brown (7.5YR 5/6) silty loam with rare small chalk pieces. The basal silty clay layer was slightly more clacareous and dark brown in colour (7.5YR 4/4) with small charcoal flecks. The similarity in shape and fill of the two ditch profiles (and the lack of other profiles in the builders' excavation) leads the writer to believe that they probably belong to the same, possibly circular, structure (Fig. 6,b).

Eleven sherds of pottery were indiscriminately recovered from the ditch and can be divided into two groups. Five sherds, weighing 26.7 g., of Iron Age unburnished sandy ware, Hamilton's Fabric 3a (Hamilton 1977), were recovered: 2 were totally reduced and the others oxidized, 1 only on the exterior surfaces and 2 on one face. They are well-fired sandy wares with medium to small flint-grit tempering with occasional calcined flint inclusions. This fabric appears in the early Iron Age but does occur throughout the period. The second group of 6 sherds, weighing 48.3 g., belong to Hamilton's Fabric 5. These are well-fired soapy wares; 3 sherds were dark grey/soot black in colour and 3 others wholly oxidized to orange. They are predominantly grog-tempered with medium to small grog pieces and contain some iron inclusions. The surfaces are pitted probably as a result of combustion of organic matter or slaking carbonates Hamilton 1977, 91). This group produced a rim and base (Fig. 6, iii, iv). Fabric 5 is typical of the later Iron Age, though it does continue through the Romano-British period as Green's Cooking Pot Fabric (Green 1977) or East Sussex ware.

The fabric and form of the sherds are similar to local material from Iron Age contexts at, for example, Bishopstone (Bell 1977), Caburn (Curwen & Curwen 1927) and Bullock Down (Bedwin 1982), and also from Norton Hill (Allen 1981; 1982).

Discussion

Although the artefactual evidence indicates a late Iron Age date, the nature of the feature is more reminiscent of a barrow whose mound and upper portion of the ditch have been truncated. Moreover it would be surprising to note an Iron Age site of such a nature in view of the apparent lack of Iron Age ring ditches, and their like, in south-east England (Cunliffe 1975; Bedwin 1978). The ditch profile is very similar in size and form to that of a Bronze Age barrow at Rottingdean (Bell 1974). Indeed many of the Bronze Age ring ditches on the Thames gravels contained a large range of pottery postdating the use of the monument (Bradley 1978, 98, fig. 4). If we are dealing with a Bronze Age barrow then it is possible that cultivation practices in later periods resulted in the incorporation of sherds relating to Iron Age manuring and settlement activities into the ditches. It must also be remembered that only two sections were briefly available for examination and the conditions were far from conducive to collecting pottery.

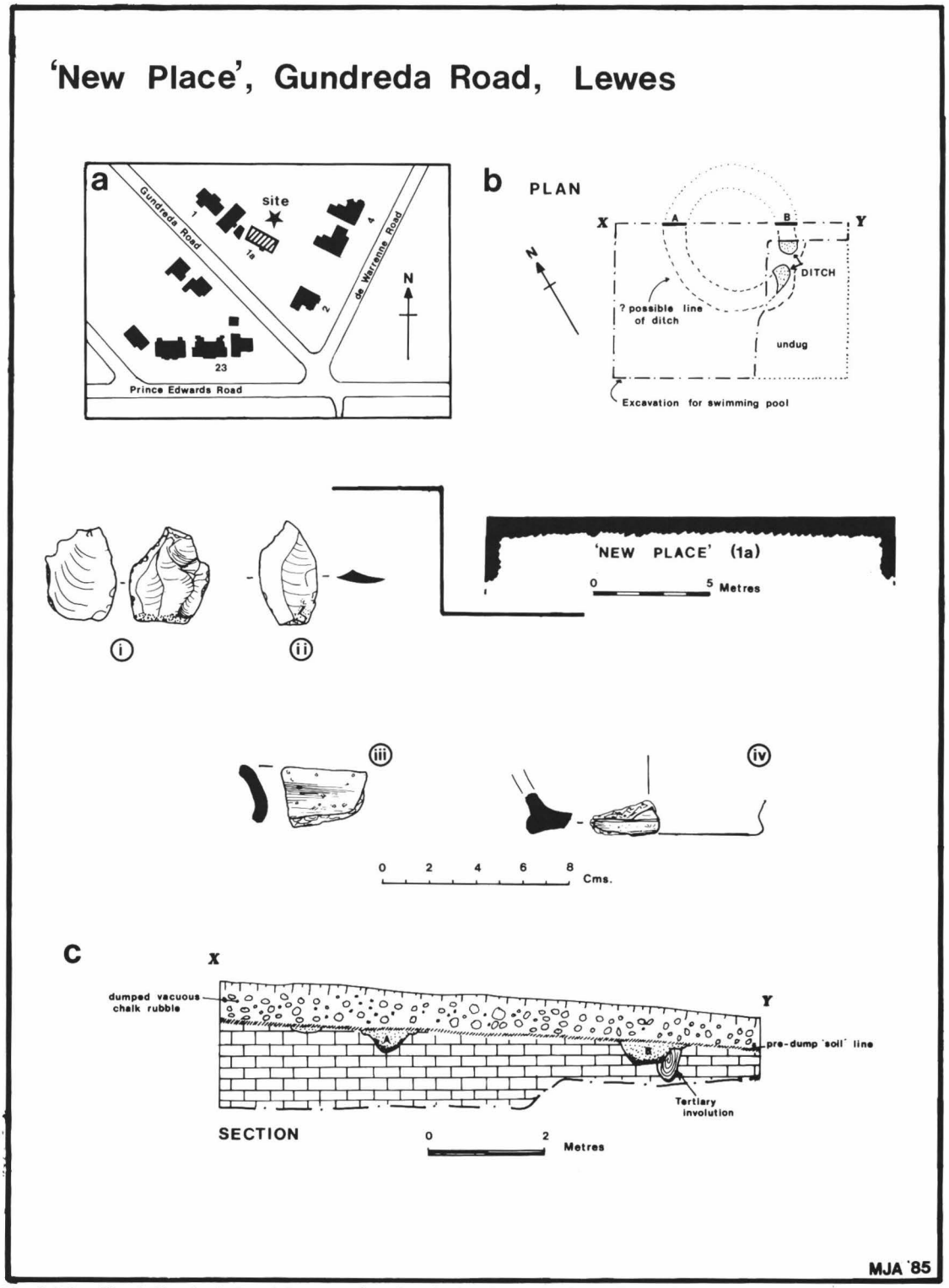


Fig. 6. 'New Place', Gundreda Road, Lewes: a. location; b. site plan; c. section; i, ii, struck flakes; iii, iv, rim and base of Iron Age pottery Fabric 5.

Conclusion

The feature suggests a circular monument, perhaps a barrow, which may be of the Bronze Age or Iron Age period. The artefacts are deposited in Barbican House Museum, Lewes (cat. no. 1985. 23).

Acknowledgements

I would like to thank Mr. C. Byerley, the owner, for permission to examine the site, David Gregory and Barbara Allen for helping with the recording, and Sue Hamilton for commenting on the pottery and on a previous draft of the script.

Author: **M. J. Allen, Department of Archaeology, University of Southampton.**

References

Allen, M. J. 1981 'Report of a Fieldwalk at Norton Hill, TQ 466017', *Lewes Arch. Group Newsletter,* **59**.

——1982 'Results of Environmental Work at Norton Hill (TQ 466017)', *Lewes Arch. Group Newsletter,* **61**.

Bedwin, O. 1978 'Iron Age Sussex—the Downs and the Coastal Plain', in P. L. Drewett (ed.), *Archaeology in Sussex to A. D. 1500.* C.B.A. Research Reports, **29**.

——1982 'The Pre-Roman Iron Age on Bullock Down', in P. Drewett, *The Archaeology of Bullock Down, Eastbourne, East Sussex: the Development of a Landscape.* Suss. Arch. Soc. Monograph, **1**, 73–96.

Bell, M. G. 1974 'A Suspected Barrow at Rottingdean', *Suss. Arch. Coll.* **112**, 156–7.

——1977 'Excavations at Bishopstone', *Suss. Arch. Coll.* **115**.

Bradley, R. 1978 'Colonization and Land Use in the Late Neolithic and Early Bronze Age', in *Man's Impact on the Landscape: the Lowland Zone* (ed. J. G. Evans & S. Limbrey). C.B.A. Research Reports, **21**, 95–103.

Cunliffe, B. 1975 *Iron Age Communities in Britain.*

Curwen, E. & Curwen, E. C. 1927 'Excavations in the Caburn, near Lewes', *Suss. Arch. Coll.* **68**, 1–57.

Green, C. M. 1977 'The Roman Pottery', in M. G. Bell, *Suss. Arch. Coll.* **115**, 152–78.

Hamilton, S. 1977 'The Iron Age Pottery', in M. G. Bell, *Suss. Arch. Coll.* **115**, 83–117.

Excavations in Seaford, 1985

Building work starting in 1937 between Corsica Road and Steyne Road in Seaford (TV 489986: stippled area in Fig. 7B) produced pottery, metalwork, quernstone fragments, fire-fractured flint and animal bones ranging in date from the early Neolithic to medieval periods (Smith 1939). The majority of the finds were of late Iron Age or Romano-British date and are interpreted as the remains of a settlement site positioned on the spur extending north-westwards from Seaford Head, overlooking the former estuary of the river Ouse to the west. Smith wrote that 'the site occupies an area of about 3 acres, but it may have extended farther to the south and east and this may be proved at a later date' (Smith 1939, 249). The opportunity to investigate whether the site extended to the east came in early summer 1985 when proposals to develop an adjacent plot of land (at TV 49069861) were passed by the Lewes District Council. The Field Archaeology Unit carried out sample excavations in early July 1985 (Fig. 7C) with the specific objectives of locating and recording the extent and character of archaeological deposits on the site.

In recent years the site has been given over to allotments, and topsoil disturbance (including, in places, terracing) has been considerable, thus restricting the area available for excavation. Six trenches were dug: Trench A was 2.4 metres by 1 metre in size, while the others were 1 metre by 1 metre (Fig. 7, C and D). In all trenches the topsoil (Context 1) overlay a layer of disturbed subsoil (Context 2); below this, Woolwich Beds sand was encountered (Context 4). No archaeological features were located and only a few artefacts were recovered. Most of these came from the disturbed topsoil and subsoil layers in Trenches A–D and included pottery, flint, metalwork and animal bone.

Pottery

Of the 26 sherds recovered, 23 are Romano-British, 1 is medieval and 2 are post-medieval. David Rudling kindly examined the pottery and this report is based on his identifications and comments. Most of the Romano-British sherds came from Trenches A–C; further details of provenance are given in Table 1. The Romano-British sherds date mainly from the 2nd to 4th centuries A.D., though East Sussex grog-tempered wares have a currency from *c.* 50 B.C. to at least A.D. 400. All the sherds are fairly abraded and probably derive from the nearby Romano-British settlement or cemetery.

Flint

Ten humanly-struck flints (9 flakes and 1 blade) and 27 pieces of fire-fractured flint were found. All the fire-fractured flint came from Trenches A–D. The flakes are mostly hard hammer-struck and could be of any date from the Neolithic period onwards.

Metalwork

The 8 pieces of metalwork recovered, including 3 nails and 3 miscellaneous fragments, are all relatively modern.

Animal Bone

Nine fragments of bone were found. These were examined by Gloria Polizzotti Greis and proved to be relatively modern.

Discussion

Although badly disturbed, the site yielded a few artefacts. The thin spread of Romano-British pottery and fire-fractured flint in the western part of the site probably marks the easternmost limit of the late Iron Age/Romano-British settlement located in the 1930s (Smith 1939) and probably results from this activity rather than the Romano-British cemetery that lies 400 metres to the east (Price 1882).

Acknowledgements

I wish to thank Dr. Andrew Woodcock for drawing the Field Unit's attention to this site and for his help in negotiating permission to work on the site; and Mr. R. Hopkins of the Lewes District Council for granting permission to excavate. I am also grateful to Greg Woolf, Niall Donald and Gloria Polizzotti Greis for their work on site; and to David Rudling

TABLE 1
The Pottery Assemblage

Context	*East Sussex (grog-tempered) ware*	*Romano-British fine ware*	*Samian*	*Mortarium*	*Medieval*	*Post-Medieval*	*Total*
Surface near Trenches A–C	2			1[1]		1	4
A1	1		1				2
A2	1						1
A3	?1						1
B1	2	1					3
C2		9[2]	1[3]				10
D1	2						2
D2	1				1		2
E1						1	1
E4	?1						1
Totals	11	10	2	1	1	2	27

Notes

[1] Footring sherd of Oxfordshire colour-coated mortarium; *c.* late 3rd/4th century A.D.
[2] These included a grey ware sherd with black slip and rouletted decoration (?beaker) and three red colour-coated ware sherds (?Oxford/Pevensey ware).
[3] Footring/base from a Dragendorff 18/31 R; Central Gaulish; ?2nd century A.D.

and Gloria Polizzotti Greis for examining the pottery and animal bone respectively.

Author: **Robin Holgate, Institute of Archaeology, University of London.**

Note

The finds, context information and archive (containing further details of the flint, metalwork and animal bone) have been deposited in Barbican House Museum, Lewes (accession no. 1985. 27).

References

Price, J. E. 1982 'On Excavations in the Camp, the Tumulus, and Romano-British Cemetery, Seaford, Sussex', *Suss. Arch. Coll.* **32**, 167–200.
Smith, V. G. 1939 'Iron Age and Romano-British Site at Seaford', *Suss. Arch. Coll.* **80**, 293–305.

The Chichester Entrenchments at the Richmond Arms Hotel, Goodwood, West Sussex

The Chichester Entrenchments (Fig. 8A) have been sectioned previously in four places (Bedwin 1984, 63). In three cases, a late Iron Age or an early post-Conquest date is proposed (Murray 1956; Bradley 1971; Bedwin & Orton 1984), while a medieval date is suggested for the short stretch running south of Halnaker Park (Bedwin 1982; Bedwin & Orton 1984, 70).

In November 1984, construction work began on extensions to the back of the Richmond Arms Hotel (Fig. 8B: SU 89250840), part of which was due to truncate the bank associated with the ditch running immediately north of the hotel. The opportunity was taken to record the section (Fig. 8C) and take soil samples from the buried land surface for land snail and pollen analysis. In the end, the buried land surface and subsoil (Coombe gravel) proved not to be conducive to the preservation of either land snails or pollen, and no further analysis of the soil samples collected from the site was undertaken.

The bank had been damaged slightly by previous building work, but appears to be a simple, unrevetted dump of material derived from the ditch. The upper layers of the ditch, to a depth of *c.* 1.2 metres, were terraced into, but no artefacts were recovered. Surveillance of the subsoil surface south of the bank and ditch also failed to produce any artefacts or other features that could have been associated with the bank and ditch.

Acknowledgements

I am grateful to Fred Aldsworth and Mr. D. Morgan Evans for drawing the Field Archaeology Unit's attention to the Richmond Arms Hotel redevelopment work.

Author: **Robin Holgate, Institute of Archaeology, University of London.**

References

Bedwin, O. 1982 'Excavations at the Devil's Ditch, Boxgrove, West Sussex 1981', *Suss. Arch. Coll.* **120**, 37–43.

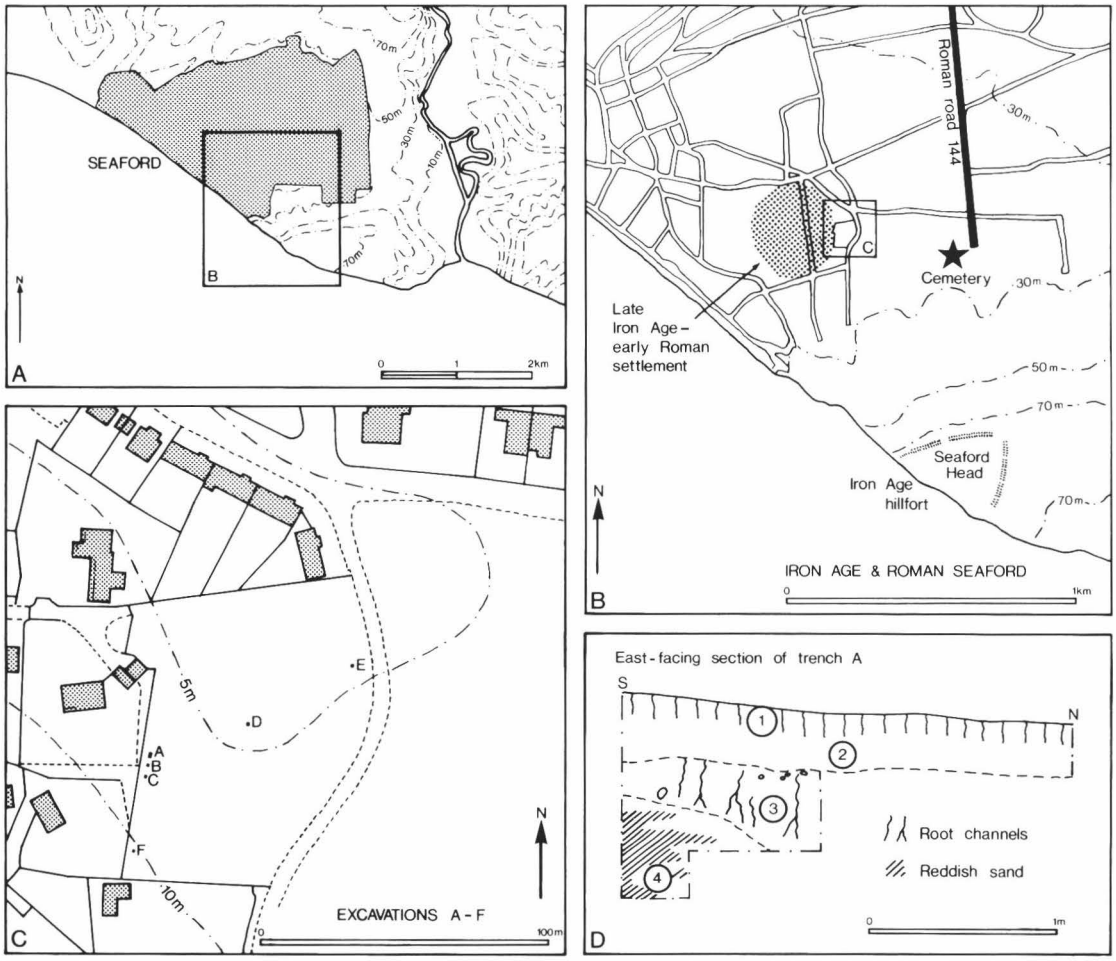


Fig. 7. A–C, location maps of excavations; D, section of Trench A: 1, mid-brown loam topsoil; 2, yellow-brown sandy loam disturbed subsoil horizon; 3, light orange-brown sand subsoil; 4, yellow sand (Woolwich Beds).

Bedwin, O. & Orton, C. 1984 'The Excavation of the Eastern Terminal of the Devil's Ditch (Chichester Dykes), Boxgrove, West Sussex, 1982', *Suss. Arch. Coll.* **122**, 63–74.

Bradley, R. J. 1971 'A Field Survey of the Chichester Entrenchments', in B. W. Cunliffe, *Excavations at Fishbourne*. Reports of Research Committee of Soc. of Antiq., London, **26**.

Murray, K. M. E. 1956 'The Chichester Earthworks', in A. E. Wilson, 'The Beginnings of Roman Chichester', *Suss. Arch. Coll.* **94**, 139–43.

Two More Hoards of Roman Coins from Westmeston, East Sussex

During 1985 two separate hoards of Roman coins were discovered on the northern scarp of the downs at Westmeston.

The first hoard, of 9 silver denarii, was found by Mr. L. Gaston at TQ 340130, only some 50 metres to the north of where he found a hoard of 61 antoniniani in 1984 (Rudling 1985). The denarii were found scattered over an area measuring approximately 17.5 × 19.5 metres, and there was no trace of a container. The composition of the hoard is as follows: 1 × Vitellius; 1 × Vespasian; 2 × Domitian; 3 × Trajan; and 2 × Hadrian. The latest coins (i.e. the two of Hadrian) show only slight signs of wear and the hoard is likely to have been buried by *c.* A.D. 140. At a coroner's court at Eastbourne on 23 May 1985 the hoard was declared treasure trove, but it was subsequently returned to the finder. A barbarous radiate of Tetricus I and a follis of Constantine I were also found in the vicinity of the hoard of denarii.

The second hoard, of 12 antoniniani, was found by Mr. G. Richardson at TQ 345130. These coins are in much better condition than those found by Mr. Gaston in 1984, and the group consists of:

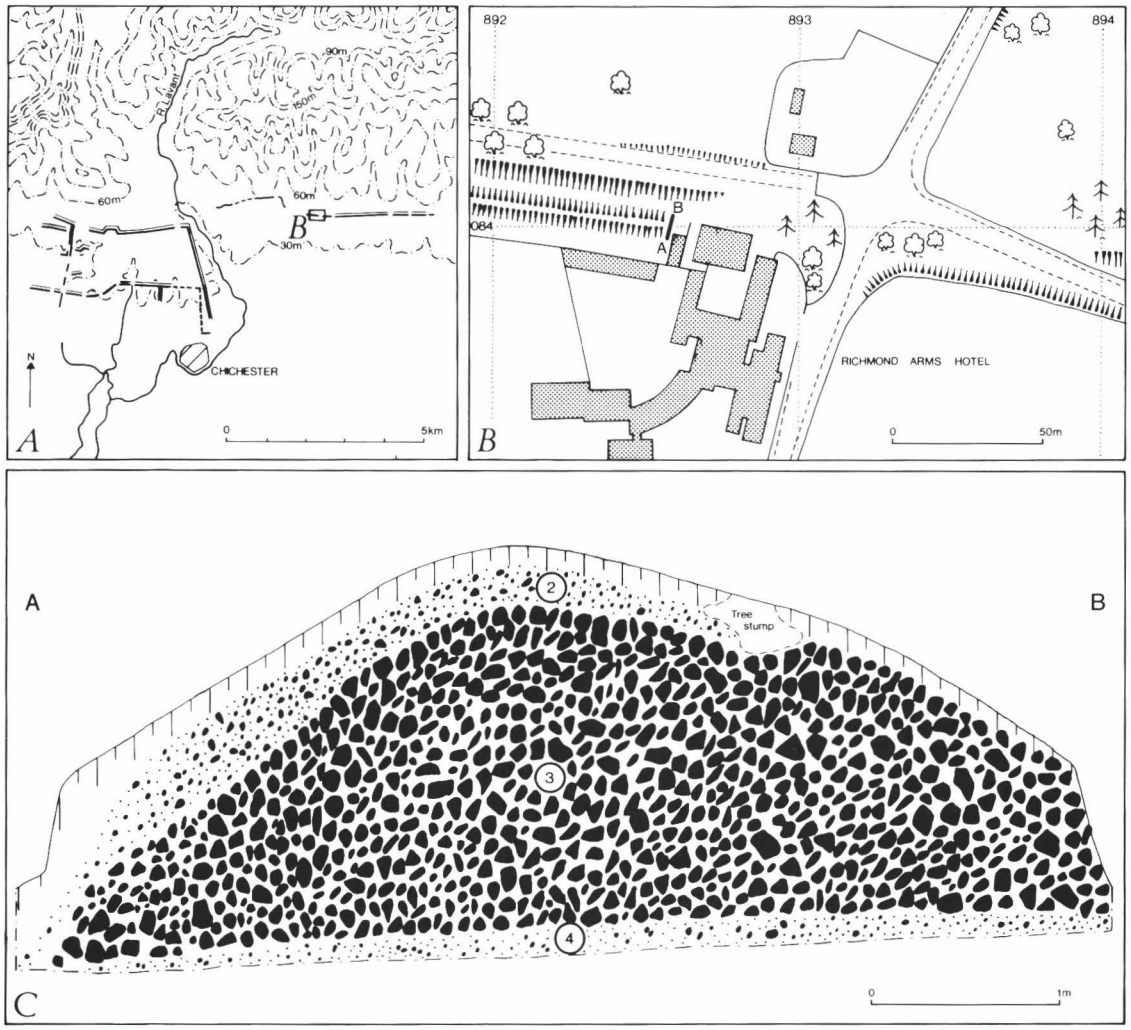


Fig. 8. A and B, location of the section across the bank exposed at the Richmond Arms Hotel; C, section of the bank: 2, light orange-brown clay silt; 3, dark orange-brown clay with large flint nodules; 4, buried land surface: light orange-brown clay silt.

a. Central Empire—7 coins: 2 × Gallienus; 1 × Salonina; 3 × Claudius II; and 1 × Probus.
b. Gallic Empire—5 coins: 2 × Postumus; 1 × Victorinus; 1 × barbarous issue of Victorinus; and 1 × barbarous issue of Tetricus I. The hoard is dated by the coin of Probus and the barbarous Gallic Empire issues to *c.* 270–80 A.D.

More detailed reports about the two hoards have been submitted to the Department of Coins and Medals, British Museum, for inclusion in a future volume of *Coin Hoards from Roman Britain.*

Author: **David Rudling, Institute of Archaeology, University of London.**

Reference

Rudling, D. R. 1985 'A Hoard of Antoniniani from Westmeston, East Sussex', *Suss. Arch. Coll.* **123**, 259.

A Henry I Penny Found at Falmer

During 1985 the Sussex Archaeological Society purchased a silver penny of Henry I (Fig. 9) which had been found at Falmer by Mr. J. Masters. The penny is of the annulets type (North 1980, no. 857) and is an issue of the moneyer Snirwold of Winchester.

Obverse: +HN RIEXN, crowned bust facing, annulets by neck.
Reverse: SNIRWOLD ON PN, cross fleury with annulet centre; in each angle, 3 pellets on a pile which rests on the inner circle.

The moneyer's name, Snirwold, is not listed in the Cumulative Index (Smart 1981) of Vols. 1–20 of the *Sylloge of Coins of the British Isles;* but a similar name, Snirwood, is listed by North (1980) as a moneyer of Winchester.

Acknowledgements

I would like to thank Miss M. Archibald of the British Museum for examining the coin, and Mr. J. Chase of Barbican House Museum, Lewes, who photograhped it.

Author: **David Rudling, Institute of Archaeology, University of London.**

References

North, J. J. 1980 *English Hammered Coinage.*
Smart, V. 1981 *Cumulative Index of Vols. 1–20, Sylloge of Coins of the British Isles,* **28**.

Fig. 9.

A Medieval Tripod Pitcher from Riverpark Farm, Lodsworth, West Sussex

The vessel illustrated here (Fig. 10) was found in June 1984 by A.B. whilst following the course of the river Lickfold at Riverpark Farm (TR 944249) in search of pools suitable for fishing. The river is on the eastern boundary of the farm and is little more than a stream. The pitcher was lying on its side in the shallows at the foot of a steep bank and it is possible that the current may have moved it from the original point of deposition to a short distance downstream. It is complete except for the spout, which can only be conjectured.

The earliest reference to Riverpark Farm known to the writers is Ayling's estate map of 1625 of the lands of Francis, 3rd Viscount Montague,[1] but the present house, part of which was standing when the map was made, is probably much older. There are earlier foundations showing beneath the front lawn, and the pond at the rear of the present farmhouse is shown on Ayling's map as being 13 a. in extent. It could well have originally been a millpond and may pre-date the farmhouse. There is also evidence for a moat extending on two sides of the house.

The Vessel

The fabric of the pitcher is fine and sandy, with a pale grey core oxidized to a greenish-buff on the exterior. It is decorated with white-painted bands below a sparse green glaze which covers only the neck and shoulders. The strap handle has a central ridge and is folded over and impressed on the edges and stabbed with a sharp tool. The neck is lightly grooved. The pitcher is in the late West Sussex ware tradition and falls within the category of Barton's 'paint under glaze' wares[2] which he dates between the mid 14th and mid 15th centuries. The grooving around the neck and the type of strap handle are similar to the late 13th-century wares produced at the Orchard Street kilns in Chichester,[3] but the fabric and the paint under glaze decoration suggest a later date for manufacture. It is possible that the vessel was made in one of the Graffham kilns only a few miles from Lodsworth, where there was a thriving pottery industry operating from the 14th century up to the 18th, but although painted wares, glazed and unglazed, were produced in large numbers and marketed in Chichester and the other market towns in the neighbourhood this is the first example of a paint under glaze tripod pitcher that has come to light in such a complete state.
Height: 380 mm.; girth 340 mm.; British Museum ref. no. 1985, 1–2. 1.

Acknowledgement

The pitcher has been presented by A.B. to the British Museum and the authors wish to express their thanks to Mr. John Cherry, Deputy Keeper of the Department of Medieval and Later Antiquities, for making it available for study and for kindly arranging for it to be drawn.

Authors: **Ann Bott, 312 Richmond Road, Kingston-on-Thames; Alec Down, c/o Planning Department, Chichester District Council.**

Notes

[1] West Sussex Record Office, Cowdray MS. 1639.

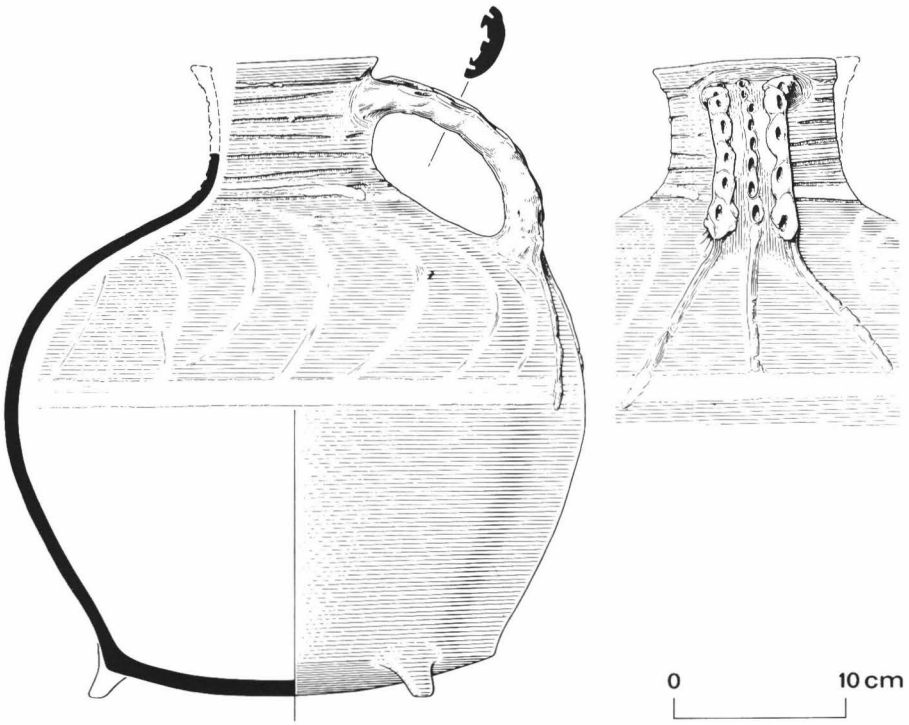


Fig. 10.

[2] For a tentative chronological framework for the development of West Sussex medieval jugs, see B. Cunliffe, 'Manor Farm, Chalton, Hants', in *Post-Medieval Arch.* **7** (1973), 45–7.

[3] K. J. Barton, in A. Down & M. Rule, *Chichester Excavations*, **1** (1971), 157–64.

HISTORICAL NOTES

This section of the *Collections* is devoted to short notes on aspects of local history. Those without previous experience in writing up such material for publication should not be deterred from contributing; the editor and members of the editorial board will be happy to assist in the preparation of reports and illustrations.

A Saxon Boundary in Warminghurst

> . . . to Benna's hill, thence to the old Christ's cross, from the cross to the shining pool . . .

So in part runs one of the two 10th-century charters[1] for the Anglo-Saxon estate of Washington, dated 963 A.D., a century before the Norman Conquest, and itself no doubt preserving place names already some generations old.

Why is the *old* Christ's cross referred to? It was a preaching cross, perhaps, or the remembered site of one, and there was a lake nearby. These are significant landmarks for a 10th-century estate that might well be identified with the medieval parish of Washington; it is often the case that parish boundaries followed earlier estate alignments, sometimes going back to Roman times. Some of the other landmarks described in the charters seem to correspond with certain natural features lying along the eastern side of Washington parish. How satisfying it would be if we could identify the old Christ's cross and the shining pool on the *western* side, where two places named in the charters are identifiable with certainty, Ramsdean and Biggen Holt, both extant place names on the Washington parish boundary just north of Findon.

Mawer and Stenton[2] take the view that Benna's hill may be identified with the circular knoll at the north-west corner of Washington parish at TQ 111149 and that the old Christ's cross stood near Mutton's Farm where Washington parish boundary turns sharply to the south-east. But there is another possibility. Suppose that the Saxon estate of 936 included not only Washington but also Ashington and Warminghurst.[3] The boundary would then run due north from Benna's hill and would be roughly parallel with the eastern boundary about $1\frac{1}{2}$ miles away. This alignment, running as straight as any crow could fly for well over a mile, is the present parish boundary between Ashington and Thakeham (the former Warminghurst—Thakeham boundary), and for part of this distance it is visible on the ground as a bank and ditch and a belt of trees. It has in fact all the attributes of a Saxon boundary. In part it also delimits the western side of the medieval park of Warminghurst, but since, relative to the park, the ditch lay *outside* the bank it seems older than the emparking; it would be usual for a park pale to be constructed with the ditch *inside* the bank so that deer could enter but not leave.

This alignment continues due north, past Oldhouse Copse, of which it forms the eastern boundary, and east of Thakeham Place, to St. Mary's Well, a significant site which shares its dedication with nearby Thakeham church. The lie of the land around this natural spring and the extent of the present swampy area suggest that this was once a lake of several acres. Have we not here the shining pool of the charter of 963, also mentioned in the earlier charter of 947, situated as it is right on the Warminghurst—Thakeham boundary?

Mawer and Stenton suggest that the shining pool is to be identified with Ashington mill pond. But if there was a mill here in the 10th century (and the Saxons called the stream that flowed and still flows from it the *geoc burna*, the helpful stream, presumably because it did some work for them), it seems unlikely to have been situated right on the boundary of the estate. On the other hand the earlier charter of 947 does not mention the old Christ's cross and describes the boundary as running from Benna's hill to the shining pool. The reason is clear; this alignment is a straight line if the shining pool is St. Mary's Well, and there is no need for an intermediate landmark.

There is another interesting consequence of this conjecture. If one walks the footpath along the ridge that forms the southern boundary of what once was Warminghurst Park there comes a point where the bank and ditch and belt of trees that marks its western edge is prominently visible, a bold diagonal stroke across the landscape. This intersects the ridge which runs south-west from Manor House Buildings and which formed the northern boundary of the park, and the point of intersection (TQ 113166) is interesting, lying as it does right on the parish boundary, with the open valley to the south and gently declining ground to the north, and rather more than half way from Benna's hill to St. Mary's Well. It is a site eminently suitable, one might think, for a preaching cross. And then one turns the eye to the east and there, 600 yd. away on the same ridge, shows the spire of Warminghurst church; was this the site of the *new* Christ's cross, afterwards replaced by the 12th-century building which survives today?

In corroboration, the 6-in. Ordnance Survey map in its first edition (Fig. 1) shows this spot as the intersection of five alignments, the parish boundary to north and south, a track and hedge to the east, a hedge alignment to the west, and a footpath running north-west to the corner of Oldhouse Copse. If indeed this is the site of the old Christ's cross, remembered as a significant spot in the 10th century, we may be looking at a preaching station from a time much earlier, possibly even from the conversion of the pagan Saxons in the 7th century.

Author: **Michael Bevan, 12 Charmandean Road, Worthing.**

Notes

[1] *Suss. Arch. Coll.* **88** (1949), 66–8, 97–9. See also *West Suss. Archives Soc. Newsletter*, **12–13** (1978).

[2] *The Place-Names of Sussex*, ed. A. Mawer & F. M. Stenton (Eng. Place-Name Soc.), **1**, 240–1.

[3] For Ashington see *Victoria County History, Sussex*, **6**(2), 63–73.

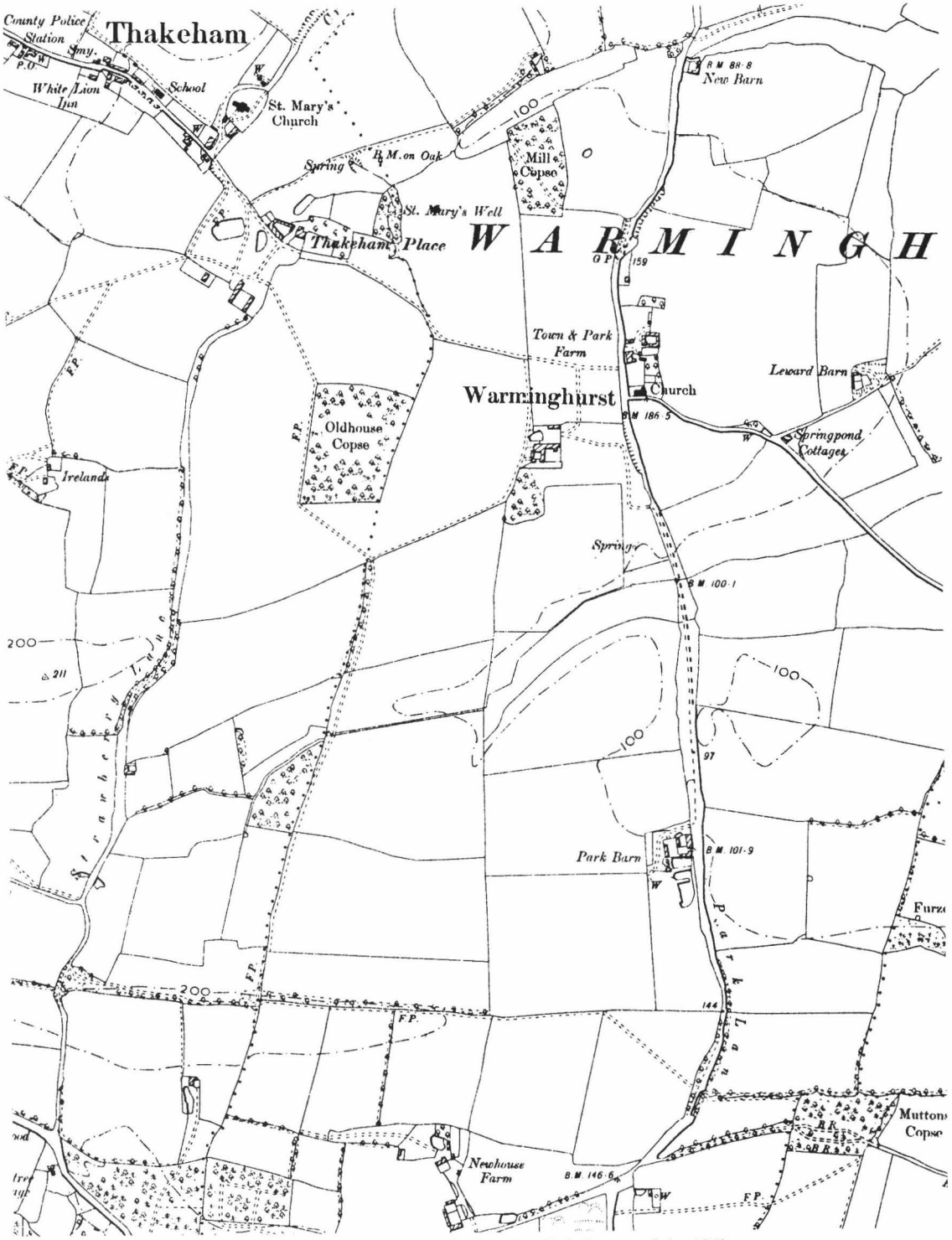


Fig. 1. Warminghurst, from the 1st edn. 6″ O.S. map of the 1870s.

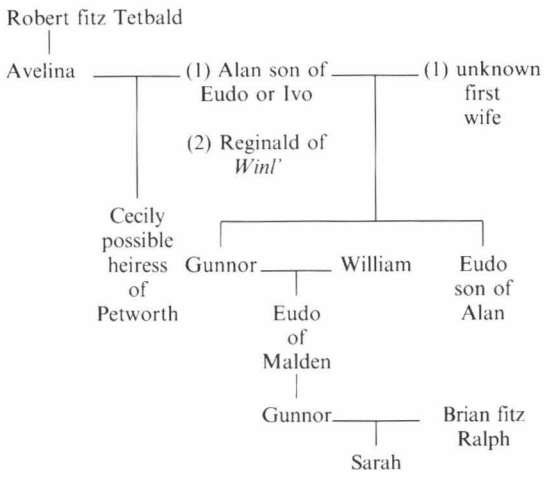
The Early Descent of the Honour of Petworth

In 1927 L. F. Salzman published what has become the standard account of the early history of the honour of Petworth.[1] A re-examination of the evidence, however, has suggested that the genealogy he proposed can be amended to explain Eudo fitz Alan's failure to succeed to the honour and to clarify later litigation on the descent of the lordship.

Robert fitz Tetbald, the Domesday tenant under Earl Roger of Montgomery, died in 1087 and thereafter the family's connection with England was broken. His son, Hugh, had approved his father's English gifts to the monastery of Saint Martin of Sées in Normandy, but his later career kept him in the duchy.[2] Instead, 12th- and 13th-century records suggest that Robert fitz Tetbald was succeeded by one Alan fitz Ivo or Eudo. In particular, a confirmation of Bishop Seffrid of Chichester shows Alan in possession of property from fitz Tetbald's fief, during the reign of Henry I, and mentions Alan's wife and son, Avelina and Eudo.[3] No relationship between fitz Tetbald and Alan could be inferred, however, but for confirmation of Alan's gifts to Lewes Priory made by one Reginald of *Winl'*, with the express permission of his wife, Avelina.[4] In this act Reginald refers to Alan as his predecessor, thus implying that Avelina was the widow of Alan and that both Alan and Reginald held the honour *iure uxoris*. Avelina, therefore, may well have been the heiress of fitz Tetbald, perhaps his daughter or more likely his granddaughter.

Alan's son, Eudo, appears never to have held the honour. He is not mentioned in Reginald's confirmation, though he was still alive in 1139/40, when he witnessed a charter of William d'Aubigny, Earl of Lincoln, in company with Reginald.[5] It therefore seems likely that he was not the son of Avelina, but of an unknown first wife of Alan. This conjecture is given some support by the wording of Bishop Seffrid's confirmation, where Eudo is described as *filius ejus* not *filius eorum*. It is possible that Alan and Avelina had a child, for the pipe roll of 1129/30 mentions an heiress, Cecily, daughter of Alan, son of Eudo, whose marriage and dower were in the hands of Mainer of *Waipreda* (Guêprei, Orne). If Cecily were indeed her mother's heiress, she must have died soon after 1130, for the honour of Petworth is next found in the hands of the tenant-in-chief, Queen Adeliza, who before her death in 1151 granted it to her brother, Joscelin of Louvain.[6]

Although Joscelin's descendants, the Percies, continued to hold it, a legal agreement of the 1190s suggests that there were other claimants to the honour. In that decade a concord was drawn up in which Brian fitz Ralph and his wife, Gunnor, acknowledged the superior claims of Henry Percy to the lordship.[7] The records of 13th-century lawsuits enable us to reconstruct Brian and Gunnor's claim.[8] Details of Gunnor's parentage were given in a dispute in 1206 concerning the advowson of Malden in Surrey, which Eudo of Malden had granted to Merton Priory. She was the daughter and heiress of this Eudo, who was himself the son of William. Eudo's maternal grandfather, Alan, had held Cocking in the time of Henry I, according to another plea which concerned the advowson of that manor. Gunnor's descent from this Alan, who must be identical with fitz Tetbald's successor, would have formed the basis of her claim to the honour of Petworth.



Salzman's genealogy of the family must, therefore, be revised. Gunnor cannot have been the daughter of William and sister of Eudo of Malden as Salzman suggested, for the Curia regis rolls report that *pater ipsius Gunnore* was Eudo.[9] Salzman seems to have misinterpreted the reports of an even later legal agreement in which Gunnor's daughter, Sarah, secured the manor of Cocking.[10] Sarah's rights were based on descent from Gunnor of Malden, whom Salzman took to be Sarah's mother, the wife of Brian fitz Ralph. However, it has already been demonstrated that Gunnor was the daughter of Eudo, son of William, and as such was unlikely to have had a brother calling himself Eudo fitz Alan. Gunnor of Malden was, in fact, a much more distant relation of Sarah, her great-grandmother. This Gunnor was indeed the sister of Eudo fitz Alan and the daughter of Alan who held Cocking in the time of Henry I. She must have married her husband, William, in the first half of the 12th century and named her son after his uncle, Eudo fitz Alan.

Gunnor, wife of William, and Eudo, son of Alan, were probably the children of Alan's first marriage and thus would have had no claim on their stepmother Avelina's lands. Yet, some two generations later, when the honour had been regranted to the Percies, Gunnor's granddaughter and her husband, Brian fitz Ralph, could easily concoct a claim that Avelina was the mother of the older Gunnor and they could reinforce that claim by naming one of their own daughters Avelina. It is even possible that the dubious charter, discussed by Salzman, for which no original survives, was fabricated at this time in support of the view that Avelina was the mother of Eudo fitz Alan.[11]

Author: **Kathleen Thompson, 43 St. Andrew's Road, Brincliffe, Sheffield.**

Notes

[1] L. F. Salzman, 'On the Early History of the Honor of Petworth', *Suss. Arch. Coll.* **68** (1927), 60–6.

[2] *Calendar of Documents Preserved in France*, ed. J. H. Round (1899), no. 655; Sées, Episcopal Archives, Livre blanc de Saint-Martin de Sées, f. 101/119v. For the

subsequent career of Hugh, ibid. f. 54/63; Ordericus Vitalis, *Ecclesiastical History*, ed. M. Chibnall (1969–81), **6**, 170; *Recueil des Actes des Comtes de Pontieu*, ed. C. Brunel (Paris, 1930), no. 15.

[3] Cocking, Sussex, was held by Alan in the time of Henry I: *Abbreviatio Placitorum*, ed. G. Rose & W. Illingworth (1811), 62. Before 1121 Alan gave Lewes the churches of Sutton and Hardham: *Chartulary of the Priory of Saint Pancras of Lewes*, ed. L. F. Salzman (Suss. Rec. Soc. **40**), 115. The date is provided by the confirmation of Ralph, Archbishop of Canterbury: *Ancient Charters*, ed. J. H. Round, **1** (Pipe Roll Soc. **10**), no. 8. See *Acta of the Bishops of Chichester, 1075–1207*, ed. H. Mayr-Harting (Canterbury and York Soc. **56**), no. 17, for the act mentioning Avelina and Eudo.

[4] *Suss. Rec. Soc.* **40**, 116.

[5] *Facsimiles of Royal and other Charters in the British Museum*, **1**, ed. G. F. Warner & H. J. Ellis (1903), no. 14.

[6] *Pipe Roll, 31 Henry I*, ed. J. Hunter (1833, repr. 1929), 43. On Mainer, Ordericus Vitalis, *Ecclesiastical History*, **2**, 32, where Dr. Chibnall translates *Waiprato* as Guêprei (Orne, canton Trun). Several of Roger of Montgomery's Domesday tenants came from the area between the Dives and Orne rivers. See *Percy Chartulary*, ed. M. T. Martin (Surtees Soc. **117**), no. 914, for the grant to Joscelin.

[7] *Surtees Soc.* **117**, no. 974.

[8] *Curia Regis Rolls*, **4** (1929), 126; *Abbreviatio Placitorum*, 62.

[9] *Curia Regis Rolls*, **4**, 149.

[10] *An Abstract of Feet of Fines Relating to the County of Sussex*, comp. L. F. Salzman, **1** (Suss. Rec. Soc. **2**), no. 357.

[11] *Suss. Rec. Soc.* **2**, no. 356; *Suss. Rec. Soc.* **40**, 84.

The Bramber—Beeding Causeway

My paper on Bramber Bridge expressed doubt as to the manner in which the estuary was crossed between Bramber and Beeding before the building of a stone bridge on the Bramber side (Holden 1976). Subsequently, Dr. T. P. Hudson (1980) suggested on good evidence that the word usually translated as 'bridge' (*pons*) alternatively could be 'causeway'. It is known that a causeway on wooden piles which may date to the late 11th century exists below Bramber village street. Dr. Hudson postulates that this may have continued further east, perhaps even to the Beeding side of the estuary, with which view I concur.

To construct such a causeway on piles across tidal waters at any time would not be an easy task, but that such a feat was possible in the 11th century receives strong support from a recent publication (Crummy *& al.* 1982). A ½-mile-long causeway known as the Strood crosses the sea, linking Mersea Island with the mainland. A water-main trench exposed wooden piles very similar in length and shape to those at Bramber, except that they were of oak and not beech. Scientific methods have dated these piles very closely to A.D. 684–702, which demonstrates that a substantial causeway on piles was well within the capabilities of the Anglo-Saxons.

Author: **E. W. Holden, 93 Penlands Vale, Steyning.**

References

Crummy, P., Hillam, J & Crossen, C. 1982 'Mersea Island: The Anglo-Saxon Causeway', *Essex Arch. and Hist.* **14**, 77–86.

Holden, E. W. 1976 'New Evidence relating to Bramber Bridge', *Suss. Arch. Coll.* **113**, 104–17.

Hudson, T. P. 1980 *Victoria County History, Sussex*, **6**(1), 203.

Hexagonal Heavenly Cities at Clayton and Plumpton

Pevsner, writing of the 12th-century (if not earlier)[1] wall paintings at Clayton, said that 'characteristic . . . are . . . the low architectural screens round groups, as though they were play-pens seen from above.' One such is the Heavenly City in the upper tier of paintings on the north nave wall. He applied the same remark to the paintings at Plumpton, some four miles east of Clayton, where only a part of the Heavenly City survives, referring to '. . . the Heavenly Jerusalem, an enclosure of low arcading, as at Clayton.'[2]

The Clayton paintings were uncovered in 1895 by C. E. Kempe[3] and were first published by C. E. Keyser in *Sussex Archaeological Collections*, **40** (1896); they were again mentioned soon afterwards.[4] Since then much has been written about them. They were considered in great detail and with a wealth of erudition by Dr. Audrey Baker in 1942, and, after further conservation had taken place, in 1963–5, again by her in no less detail in 1970. Indeed, in the latter article Dr. Baker herself described the number of artistic parallels cited by her as 'bewildering'.[5] The paintings were described by Professor E. W. Tristram in 1944; he dated them as *c.* 1150.[6] They were dealt with more summarily by Miss M. Rickert in 1954,[7] while a special note, referring to still more authorities, was contributed to the church guidebook in 1966 by Mrs. E. Baker, 'under the eye' of whom their conservation in the mid 1960s was carried out; she mentioned that Talbot Rice had dated the paintings as early as *c.* 1080.[8]

The literature on the somewhat later wall paintings at Plumpton is more limited. Of historical interest is the Revd. C. H. Campion's article, with illustrations, in *Sussex Archaeological Collections*, **20** (1868),[9] dealing with paintings later destroyed. Other paintings were discovered and conserved by Dr. E. Clive Rouse as recently as 1955–8.[10] Reference may also be made to Dr. Baker's article of 1970,[11] and to Pevsner.[12]

Most recent is the definitive study by D. Park of the wall paintings in all the churches of the 'Lewes Group', which includes both those now under consideration.[13]

As to the Heavenly City at Clayton with which this paper is concerned, Tristram said 'the Heavenly Jerusalem or Paradise is a city of six sides, girt with lofty walls, masonried and arcaded, with towers standing at the angles. Inside the walls the city is, as it were, cloistered, and the ground, where three small figures stand in adoration, is painted green.'[14] Dr. Baker mentioned that St. Peter's key can be seen hanging within the City at Clayton, and deduced from the 'cross nimbus' of the central figure at Plumpton that he was intended for Christ, and therefore that the central figure at Clayton might be similarly identified.[15] Park merely described both Heavenly Cities as 'polygonal', and, as to the figures within them, considered those at Clayton to be

'simply representative figures of the Blessed', though he thought that 'a Majesty is . . . represented within the very damaged Heaven at Plumpton.'[16] Pevsner was quoted in the opening paragraph of this paper. It may be of interest to add that the arcading in the Heavenly City at Clayton is a motif which appears throughout the scheme as a whole, and, most curiously, as the four tiers of arcading which comprise Christ's throne in the Majesty. Dr. Rouse considers that the hexagonal building or cloister at Plumpton shows definitely Christ in the centre, not in majesty, but giving the keys to St. Peter (destroyed by a Victorian window) and the book, which alone survives, to St. Paul (destroyed by a Victorian chancel arch).[17]

To the best of the present writer's knowledge, no other English medieval wall paintings represent the Heavenly City as six-sided, but, though no such paintings can have had so much written about them as those at Clayton, he has been unable to trace any speculation by previous writers regarding the reason for the choice of this number of sides. In trying to find a source for this concept one's first thought is to resort to the Book of Revelation, but 21. 16 makes it clear that the Heavenly Jerusalem was cubic, since it says 'the length and the breadth and the height of [the city] are equal'. And though Tristram, Dr. Baker, and Park are agreed that there is an English precedent for a Heavenly City in the form of a hexagon in the Last Judgement page of the early 11th-century *Liber Vitae* of the New Minster, Winchester,[18] this does not of itself throw any new light on the reason for choosing the six-sided form.[19] Among continental parallels, they might have instanced the hexagonal City of the Mice in the wall painting of *c.* 1160–3 showing the Battle of the Cats and the Mice in the Johanneskapelle at Pürgg in Styria, but this was doubtless assumed to be satirical in intention and consequently irrelevant.[20]

In these circumstances one turns naturally to Émile Mâle, who, writing on French religious art of (admittedly) the 13th century, said that one of its characteristics was 'to obey the rules of a sort of sacred mathematics . . . in which numbers had an extraordinary importance.' He added 'the science of numbers was the science of the universe; figures contained the secret of the world.' He also referred to a reasoned medieval belief in the virtue of numbers, which the Middle Ages never doubted were endowed with a secret power. St. Augustine, he said, even considered numbers to be the thoughts of God, each of them having a providential significance. This reference to the Saint helps to resolve the difficulty caused by the fact that Mâle's book deals with the 13th century, whereas Clayton's paintings were not later than the 12th. St. Augustine's dates were 354–430, so that doctrine on the Christian significance of numbers was clearly well developed several centuries before the paintings were made.

To give but one example of how Mâle illustrated the detailed working of these theories, reference may be made to his treatment of the number 12, described as the number representing the Universal Church, Christ having chosen that number of Apostles. This conclusion was arrived at by recalling that 12 was the product of three multiplied by four, three being the number of the Trinity, and thus representing spiritual matters, while four was the number of the elements, and so the symbol of the material ones. Mâle summarized the effect of this 'sacred mathematics' as follows: 'To multiply three by four is, in the mystical sense, to penetrate the things of the spirit, to announce to the world the truths of the Faith, and to establish the Universal Church of which the Apostles are the symbol.' He went on to deal with other numbers in similar detail, notably seven, 'which the Fathers of the Church have declared to be mysterious beyond everything else', a sentiment which will be shared by all who have noted the recurrent references to it in Revelation, but these elaborations need not be summarized here, since he did not include in them the number six with which this article is concerned.[21] It therefore becomes necessary to consult others.

Ferguson, in a book dealing with signs and symbols in Christian art, describes six as being 'the number of creation and perfection, symbolising divine power, majesty, wisdom, love, mercy, and justice.'[22] Réau, in his work on the iconography of Christian art, refers to six as the 'symbol of perfection, the six days of Creation, and the Six Works of Mercy.'[23] He is thus in agreement with Ferguson on six being the number of perfection (though neither of them explains why), and elucidates the reason for it being the number of creation. His reference to the Six Works of Mercy are to the number of those specified by Christ in Matthew 25; the usual number of such Works in English medieval wall paintings, as at (in Sussex) Arundel and Trotton, is however seven, the extra one being the burial of the dead, which derives from the Book of Tobit.

The explanation of six being the number of perfection is given by G. B. Ladner in a paper dealing with nimbi, namely 'the tradition of the six being a *numerus perfectus*, the sum, as well as the product, of the numbers 1, 2, and 3, can be traced back to antiquity and persisted throughout the middle ages.'[24] In a later paper dealing specifically with hexagonal nimbi, he quoted further examples of the attributes of the number six from the 13th-century Franciscan theologian St. Bonaventure, who, though later than the paintings, followed in some respects St. Anselm (*c.* 1033–1109), and who referred to the six degrees of sanctity and humility, and the six perfections corresponding with the beatitudes enumerated in the Sermon on the Mount.[25]

These views on the exalted significance to the medieval mind of the number six may well provide the reason for it being chosen for the number of sides of the Heavenly Cities at Clayton and Plumpton.

Author: **John Edwards, 85 Jack Straw's Lane, Oxford.**

Notes

[1] E. Baker, 'The Wall Paintings of Clayton Church, Sussex', in *Guide to the Church of St. John the Baptist, Clayton* (1966), 12.

[2] I. Nairn & N. Pevsner, *Buildings of England: Sussex* (1965), 473–4, 583–4.

[3] Ibid. 474.

[4] C. E. Keyser, 'Mural Paintings at the Church of Clayton', *Suss. Arch. Coll.* **40** (1896), 210–15; ibid. **43** (1900), 231.

[5] A. Baker, 'A Group of Wall Paintings in Sussex', *Walpole Soc.* **31** (1942–3), 1–45; A. Baker, 'The Wall Paintings in the Church of St. John the Baptist, Clayton', *Suss. Arch. Coll.* **108** (1970), 58–81, esp. 79.

[6] E. W. Tristram, *English Medieval Wall Painting: the 12th*

Century (1944), esp. 28–9, 113–15.
[7] M. Rickert, *Painting in Britain: the Middle Ages* (1954), 76.
[8] E. Baker, *Clayton Church Guide*, 12.
[9] C. H. Campion, 'Mural Paintings in Plumpton Church', *Suss. Arch. Coll.* **20** (1868), 198–202.
[10] E. Clive Rouse, 'Wall Paintings in St. Michael's Church, Plumpton', *Suss. N. & Q.* **14** (1954–7), 187–9.
[11] *Suss. Arch. Coll.* **108**, 68, 73.
[12] Nairn & Pevsner, *Sussex*, 583–4.
[13] D. Park, 'The "Lewes Group" of Wall Paintings in Sussex', *Anglo-Norman Studies*, **6**, ed. R. Allen Brown (1984), 201–37.
[14] Tristram, *Medieval Wall Painting*, 114.
[15] *Suss. Arch. Coll.* **108**, 62, 68.
[16] *Anglo-Norman Studies*, **6**, 213.
[17] Inf. from Dr. E. Clive Rouse.
[18] British Library, Stowe MS. 944.
[19] See, for example, *Anglo-Norman Studies*, **6**, 213.
[20] O. Demus, *Romanesque Mural Painting* (1970), 629–30 and pl. 293.
[21] E. Mâle, *L'Art Religieux du XIII Siècle en France* (Paris, 1948), 5, 9–14 (rough translations by the present writer).
[22] G. Ferguson, *Signs and Symbols in Christian Art* (1972), 154.
[23] L. Réau, *Iconographie de l'Art Chrétien*, **1** (Paris, 1955), 68.
[24] G. B. Ladner, 'The So-Called Square Nimbus', *Medieval Studies*, **3** (1941), 43–4.
[25] G. B. Ladner, 'An Additional Note on Hexagonal Nimbi', *Medieval Studies*, **4** (1942), 82–3.

A Recusant Hoard from Midhurst

In 1863, under the heading 'Midhurst: Interesting Discovery of Relics', the *West Sussex Gazette* reported that

> in altering a smoky chimney a few days ago, in one of Mr. Othen's houses, the workmen discovered a small recess which had been cut into the brickwork and built up. In this recess was a small box, which on being touched instantly crumbled to pieces. A will, several letters, three necklaces made with wooden beads, a small portrait of Our Saviour, with talc instead of glass in front, and a cross, were also found in the recess. One of the letters was addressed "to my much esteemed friend Mr. John Talbot, D. D. at Midhurst". It is in a good state of preservation and can easily be deciphered. The date is 1634. The papers are moth-eaten. The recess appears to have been cut expressly to receive the box. The house in which this interesting discovery was made is a very old one, and has lately been altered and renovated.[1]

In the 1861 Census for Midhurst Thomas Othen, Louisa Othen, his wife, and their three daughters are shown as occupying a house on the east side of North Street, and Thomas Othen is described as a plumber and glazier employing seven men and a boy.[2] However, since the newspaper describes Othen as having several houses, we cannot be certain that the hoard was found in the house in North Street. Louisa Othen died on 12 August 1864,[3] and Thomas Othen on 13 February 1866,[4] and Louisa Othen, their eldest daughter, is described as head of the household in the 1871 Census.[5]

Alfred J. Horwood described the hoard, in a report published by the Historical Manuscripts Commission in 1872, as 'The Manuscripts of Miss Othen of Midhurst'.[6] He wrote that the box contained 'religious pictures, rosaries, a small marble slab, a piece of silk embroidered with the sacred monogram, a number of wax medals, bearing the impression of the Agnus Dei, and some letters and papers of 1633–1637'. He classified the letters of John Talbot as being mere business letters of a man who was certainly steward to Thomas, Lord Arundel, and most likely a steward to Viscount Montague, and dismissed them as of no importance. However, he printed two of the items from the hoard. The first was the testamentary disposition of John Arismendy of London, dated 1634, by which he bequeathed £10 per annum arising from his lands in Battle to Mr. Drury and Mr. Lane of River Park in Tillington for 'the maintenance of a good man to administer the sacraments to the poore Catholikes of Midhurst, with obligation to say two masses every weeke for my soule and my lords ancestours'. The other was a letter of news, from which the signature is missing, concerning 'a strict proclamation to come out for putting of penall laws against recusants in execution'.

After 1872 the hoard disappeared without trace. In 1944 the Historical Manuscripts Commission appealed for information about the whereabouts of the collection,[7] but without success. The present writer made a number of attempts to find the papers after 1967. In the summer of 1984 the Revd. E. Basil Bridger, a retired clergyman living in Exeter, placed a small group of papers on temporary deposit in the Devon Record Office, and wrote to the West Sussex Record Office offering to place them in Chichester on permanent loan. On arrival in Chichester, the papers were immediately identified as the missing manuscripts of Miss Othen, when the first piece of paper examined proved to be the will of John Arismendy. Mr. Bridger, whose family is related to the Othens, probably inherited the manuscript part of the hoard from a descendant of John Othen, who took over the family plumbing business in Midhurst in the late 1860s.[8]

The papers, which arrived in Chichester in an extremely fragile condition, have now been expertly repaired by Pat Rossiter. They consist of John Arismendy's will;[9] 23 letters addressed to John Talbot, the steward of Francis Browne, 3rd Viscount Montague at Cowdray and Battle Abbey, 1633–7;[10] a few miscellaneous letters and legal notes of the same date; and copious fragments of two Catholic books printed on the Continent.

Both books are extremely rare, but unfortunately are too fragile to be handled. However, a sufficient number of whole pages has survived to enable both to be identified.[11] The first is Gaspare Loarte, *Instructions and aduertisements, how to meditate the misteries of the rosarie of the most holy virgin Mary . . . newly translated into English. Wher vnto is annexed briefe meditations for the seuen euenings and mornings of the weeke*. It was printed at Rouen by Cardin Hamillon in 1613,[12] and only five other copies are known to exist.[13] The second is Robert Bellarmine, *An ample declaration of the Christian doctrine. Composed . . . By the ordonnance of our holie father the pope, Clement the 8. And*

translated into English by R[ichard] H[adock]. doctor of diuinity. It was printed at St. Omer by John Heigham in 1624.[14] Only four copies of this catechism are known to have survived.[15]

The hoard must have been hidden some time after 1637, but we can only speculate on the reasons that induced the owners of the house to seal the box in their chimney. Perhaps they were frightened by the arrest of John Arismendy,[16] or, more likely, by the general uncertainty of the years 1640–2, and the renewal of persecution under the Puritan Long Parliament. Whatever the reason, the Othens' chimney is not the only one in Midhurst to have revealed hidden papers. William Lily's *Short Introduction to Grammar generally to be used* (1603) and an early 17th-century commonplace book of John Hames[17] were discovered behind a chimney in Elizabeth House, Midhurst, in 1948, when the house was being altered to accommodate the National Provinicial Bank.

Author: **Timothy J. McCann, West Sussex Record Office.**

Notes

[1] *West Sussex Gazette*, 12 Feb. 1863.
[2] W(est) S(ussex) R(ecord) O(ffice), MF 521.
[3] W.S.R.O., Par. 138/1/5/2, p. 26.
[4] W.S.R.O., Par. 138/1/5/2, p. 30.
[5] W.S.R.O., MF 416.
[6] Hist. MSS. Com. 2, *3rd Report*, Othen, 277.
[7] *Suss. N. & Q.* **10** (1944), 22.
[8] John Othen is described as a plumber and glazier of North Street, Midhurst, in *Kelly's Dir. Sussex* (1866) and in a lease of 1867: W.S.R.O., Cowdray MS. 1801.
[9] W.S.R.O., Add. MS. 34657.
[10] W.S.R.O., Add. MS. 34658.
[11] I am grateful to Anthony Allison of the British Library, T. F. Price and the Librarian of Dulwich College, London, and Dom Terence Richardson, O.S.B., Archivist and Librarian at Ampleforth, for identifying the books.
[12] W.S.R.O., Add. MS. 34662.
[13] A. F. Allison & D. M. Rogers, *A Catalogue of Catholic Books in English Printed Abroad or Secretly in England, 1558–1640* (1956), no. 470.
[14] W.S.R.O., Add. MS. 34663.
[15] Allison & Rogers, no. 92.
[16] For his examination, upon arrest on suspicion of treasonable correspondence with Catholics, see Public Record Office, SP 16/244, 17, 19, 20 and 22 Aug. 1633 and 10 Feb. 1634.
[17] W.S.R.O., Add. MSS. 14874–5.

A Short-Lived Charity of 17th-Century Chichester

Documents recently catalogued at the West Sussex Record Office[1] give details of the establishment of an annual charity at Chichester in the early 17th century, the existence of which was hitherto unknown.[2] By deeds of 1601 and 1611, Thomas Collins, a wealthy merchant of the city gave annuities to be distributed to the poor of Chichester.

Thomas Collins was not a native of the city. He had been born in *c.*1536 at Kingsworthy in Hampshire.[3] He had come to Chichester when he was about 32, and became a citizen and merchant of the city. He married, probably in 1570, Agnes Breares,[4] and had at least four children, two sons and two daughters.

By the deed of 1601[5] Collins granted to the Mayor and Steward of the city and their successors an annuity of 20*s*., to be paid out of one of his properties on the east side of North Street, Chichester; 18*s*. of the annuity was to be distributed on St. Mark's day (25 April), between the hours of 6 and 9 a.m., to 36 poor people who lived within the city walls. This number was to include all the people to whom Collins had been giving relief during his lifetime, providing they continued to live within the walls and to be of good and honest life. The other 2*s*. of the annuity were to go to the Mayor and Steward for their trouble.

In 1611[6] Collins gave another annuity to the city. It was payable out of another property in North Street, which had been assigned to Collins the day before he gave the annuity, by his son-in-law Daniel Allen.[7] This time Collins had a separate document drawn up, detailing the arrangements for the distribution of the money.[8]

The annuity was to be received and distributed by Collins himself while he lived, and then successively by his sons Thomas and James. After their deaths the Steward of the city was to be responsible. Twelve shillings of the annuity was to be distributed on Sts. Simon and Jude's day (28 October) between 8 and 9 a.m. It was to be divided between 18 poor inhabitants of the city. The Mayor and whoever distributed the money were to share 1*s*. 4*d*. between them for their trouble.

Each year the distributor was to show a list of recipients and the order concerning the distribution to the Mayor. All those to whom Collins was already giving a yearly charity of 8*d*. were to remain on the list after his death, provided they remained eligible. Vacant places were to be filled by nominations by the Steward with the Mayor's consent. The most difficult condition was the last: that all new recipients were to be near kin to Thomas Collins. The order is endorsed with a note that Collins made the first distribution himself that year.

In his will, made in March 1617,[9] Collins added to his instructions for his charitable donations. Once people had been included in the list of recipients they were not to be removed 'unless for theft or such like crime'. If there were any vacancies in the list by death, preference was to be given to nominations by his own children of poor people who were relatives of him or his wife. He also charged his overseers with the task of reminding the old Steward of the city, each time a new Steward was appointed, to pass on the list of poor recipients and the orders for the distribution.

By the time he made his will Thomas Collins's wife had died and he was living with his daughter Agnes Allen. He described himself in his will as 'old and dark yet . . .whole and in health of body.' He was in fact about 80 years old. He gave precise instructions for his burial in the Cathedral churchyard, 2 ft. to the north of his late wife's tomb. A tomb 3 ft. high was to be erected over his grave, 'of like stuff or better' than that over his wife's, and his name was to be engraved on the side.

His monetary bequests totalled over £170 and he went

into great detail about the disposition of his possessions, such as his oak bedsteddle and feather beds, his furniture, plate, and linen. Among the bequests was one of 20*s*. to the poor of Kingsworthy, his native village. He also left £4 to be distributed among the poor of Chichester on the day of his burial or the following day.

In the absence of any Stewards' accounts for the relevant period,[10] it is not possible to say how long the charity which he established in Chichester survived. His son and grandson, both named Thomas, were prominent merchants in the city, and both served terms as Mayor.[11] It seems unlikely that they would allow the family charity to lapse. When Thomas the grandson made his will in 1684,[12] he still owned the two properties in North Street from which the annuities came, so it is possible that the charity survived at least until his death. It may be that no relatives of these wealthy merchants were sufficiently poor to need this charity. What is certain is that no documentary references have been found to the charity other than those described.

Author: **Alison McCann, West Sussex Record Office.**

Notes

[1] W(est) S(ussex) R(ecord) O(ffice), Add. MSS. 34784–8.
[2] It is not mentioned in *Victoria Country History, Sussex*, **3**, 166–9, which deals with charities in the city of Chichester.
[3] W.S.R.O., Ep. III/5/1, f. 6.
[4] W.S.R.O., Par. 44/1/1/1, f. 50.
[5] W.S.R.O., Add. MS. 34784.
[6] W.S.R.O., Add. MS. 34787.
[7] W.S.R.O., Par. 41/1/1/1, f. 13 (marriage of Daniel Allen and Agnes Collins).
[8] W.S.R.O., Add. MS. 34788.
[9] W.S.R.O., STD I/3, f. 149.
[10] Stewards' accounts survive only for 1667, 1668, 1671 and 1672: W.S.R.O., Chichester City Archives, AF1 and AF2. These are accounts of receipts from city properties and of expenditure on behalf of the city. A number of bills and receipts survive from the years 1669–1732: ibid. AG1.
[11] Thomas the son was Mayor in 1619 and 1631, Thomas the grandson in 1646.
[12] W.S.R.O., STD II/ Box 5, 1687/8.

Napoleonic Barracks in Sussex

During the Revolutionary and Napoleonic Wars against France (1793–1815, with a short-lived peace in 1802–3) Sussex was frequently in serious danger of invasion from the Continent.[1] Thousands of soldiers, both regulars and militia, were drafted into the county to stop the French landing or to prevent them getting far inland, and barracks were built in all the major Sussex towns and at many points along the coast. While a few continued to exist as barracks for many years, notably at Chichester and at Brighton (Preston Barracks), most were either temporary conversions of existing buildings or quickly erected structures, often on sites available only for the duration of the wars, which were dismantled and the materials sold off once the danger was over. Consequently most barracks have vanished without trace and few local people realize they ever existed.

Barracks in England are a phenomenon of the wars of 1793–1815; there were very few before 1793, and none in Sussex. At the beginning of the wars soldiers were either accommodated in tented camps, mostly on the coast, for instance at Brighton, Bexhill, Eastbourne and Seaford, or billeted in licensed premises. However, camps were impracticable except in summer and the huge numbers involved made billeting an intolerable burden on innkeepers, so barracks quickly began to appear. Some were situated as near as possible to the spot where the enemy might land, as at Shoreham (built 1793), East Blatchington (near Seaford) (1794), and Preston (Brighton) (1796), and others at strategically placed points inland, notably at Lewes and Horsham, both built in 1796.[2] Further important barracks were built in 1798 at Silverhill (near Salehurst), Bexhill and Battle.[3]

By 1800, fears of invasion having receded, many of the Sussex barracks were empty, but when in 1803 Napoleon again threatened Sussex they were reoccupied and many new ones soon built, on a larger scale than ever before, notably at Chichester, Hailsham, Lewes, Pevensey, Langney Point (near Eastbourne),[4] Hastings,[5] Bexhill,[6] and Steyning,[7] to accommodate the *c.* 20,000 soldiers now stationed in Sussex.[8]

As the threat of invasion lessened again after 1805 some Sussex barracks were turned into military hospitals: for instance, in 1808 there were over 400 men at Selsey, Bognor and Aldwick barracks who had contracted ophthalmia at the Cape of Good Hope or in the Mediterranean.[9] After 1815, and in some cases before, most barracks were dismantled, the materials often being sold off as at Selsey in 1812, where timber, slates and other building materials were auctioned.[10]

Barracks in Sussex were usually built of wood on brick foundations or wooden sills, often using prefabricated wooden sections made up by the Corps of Artificers at Woolwich and brought round by water. They were often weatherboarded and had tiled, slated or thatched roofs. A barracks usually consisted of accommodation for officers and men, stables if intended for cavalry, a magazine, a washroom and other outbuildings, all grouped round a central parade ground. At Horsham barracks there were nine two-storey wooden buildings, each with kitchens and living space below, and on the upper floor accommodation in bunks for 60 soldiers sleeping two to a bed.[11] At Lewes the infantry barracks built in 1803 is said to have had 52 small buildings each accommodating 24 men, built of wood and brick and having at a distance 'the appearance of a pleasant and populous village'.[12] In contrast, at a barracks built at Bexhill in 1804 for the King's German Legion officers and men lived in small huts built of mud or turves in a wooden framework, thatched with heather, which proved quite inadequate for winter weather.[13]

Note: The author has compiled a gazetteer of Sussex barracks from 1793 to 1815, including where possible date and method of construction, size and location; copies have been deposited at the West Sussex Record Office and at the Sussex Archaeological Society's library.

Author: **Ann Hudson, 23 Glenwood Avenue, Bognor Regis.**

Notes

[1] See Ann Hudson, 'Volunteer Soldiers in Sussex during the Revolutionary and Napoleonic Wars, 1793–1815', *Suss.*

Arch. Coll. **122**, 165–81.
[2] *S(ussex) W(eekly) A(dvertiser)*, 23 Dec. 1793; 22 Dec. 1794; 4 July, 31 Oct. 1796.
[3] *S.W.A.* 19 March, 28 May 1798.
[4] *S.W.A.* 29 Aug., 31 Oct., 31 Nov. 1803; *H(ampshire) T(elegraph)*, 5 Sept. 1803; *The Times*, 15 Aug. 1803.
[5] [— Stell], *Hastings Guide* (1804), 42.
[6] West Sussex Record Office, RSR 3/1.
[7] *Victoria County History, Sussex*, **6**(1), 221.
[8] Public Record Office, WO 30/57, p. 145.
[9] *H.T.* 10 Oct. 1808.
[10] *H.T.* 17 Aug. 1812.
[11] *S.W.A.* 31 Oct. 1796.
[12] *S.W.A.* 29 Aug. 1803; *H.T.* 10 Oct. 1803; H.R. Attree, *Topography of Brighton* (1808), 45.
[13] [H. Ross-Lewin], *The Life of a Soldier by a Field Officer* (1834), 287–8; Baron C. von Ompteda, *Memoirs* (trans. J. Hill) (1892), 178–80; East Sussex Record Office, ASH 3345.

This research was supported by a grant from the Sussex Archaeological Society's Margary Research Fund.

The Tanyard Buildings, Horsham: A Suggested Chronology

The now dismantled cast-iron tanyard building formerly in Brighton Road, Horsham, has been the subject of a recent examination by Mr. Fred Aldsworth.[1] Other evidence, whilst not conclusive, suggests a different chronology.

The tanyards in Horsham have a long history, as the leather industry was so important to the town's economy with the leather crafts being the single most important craft in the borough during the mid 17th century and later.[2] Although they were usually in local ownership, the London based firm of Samuel Barrow acquired the Brighton Road tanyard *c.* 1875. Samuel Barrow senior had founded a tanning business in Southwark early in the reign of Queen Victoria, and this later became a partnership between Samuel and his two sons, Samuel and Reuben. Eventually in 1891 the partnership was changed into the limited company of Samuel Barrow and Brother Ltd.[3] Other members of the Barrow family were involved in the business and the family comprised the majority of the shareholders. The only other shareholders were Edward Wood and Harry Simpson, both of Leicester. It is not entirely surprising that the last was also managing director of Freeman, Hardy and Willis Ltd. At that date the premises consisted of a warehouse in Weston Street, Southwark, a tannery at Redhill and a warehouse at Leicester. The firm was liquidated in 1917 on its amalgamation with Hepburn, Gale and Partners Ltd. to form Barrow, Hepburn Gale Ltd. which is now part of British Tanners Ltd.[4]

The Redhill tannery had been acquired in 1864 from the Hooper family and it was next to it that the younger Samuel Barrow lived. He became a noted local benefactor and was a prominent Baptist.[5] From the evidence of both the tithe map and a plan of the new tannery in the Hooper family papers,[6] it is apparent that the Redhill tannery was only a site in 1843 and was rebuilt later that year. The width at least of the Horsham building appears to correspond with a building on the aforesaid maps and also on the 1861 tithe map.[7] The later Ordnance Survey maps are not conclusive evidence of the presence, or otherwise, of a particular building as they only record the floor plan, and the Redhill tannery is known to have been rebuilt a number of times in the past hundred years, usually after fires. The only reminder of this tannery is a 19th-century timber-framed barn in Oakdene Road with a far older brick base.

As the company papers point to the cessation of tanning in Southwark in the 1870s, where they retained only an office and warehouse, it is suggested that possibly the building in question was first erected in Redhill in 1843 and then removed to Horsham, probably in the decade after *c.* 1878[8] when they were expanding their tanneries outside London (this was presumably because they were now closer to the supply of raw materials).

Author: **Jeremy Greenwood, 9 Lindsay Drive, Abingdon.**

Notes
[1] F. G. Aldsworth, 'A Prefabricated Cast-Iron Tanyard Building at Brighton Road, Horsham, West Sussex', *Suss. Arch. Coll.* **121** (1983), 173–82.
[2] For example, shoemakers, sadlers, glovers and the like comprised 14.8% of the male heads of households in 1664: occupational analysis of the 1664 hearth tax, P(ublic) R(ecord) O(ffice), E 179/258/14; occupations derived from multiple sources.
[3] P.R.O., BT 31/15170/34587.
[4] Based on an analysis of various Leicester directories; P.R.O., BT 31/15170/34587.
[5] W. Hooper, *Reigate: its Story through the Ages* (1945), 100, 184–5.
[6] Papers in the possession of the Hooper family.
[7] Published as W. Eve, *Eve's Plan of Reigate, 1861.*
[8] *Suss. Arch. Coll.* **121**, 177–8.

(*Fred Aldsworth writes:* The main evidence for the first erection of the building at Redhill is the fact that the tanyard there was rebuilt in 1843, i.e. the year after the components were cast in London. It would therefore seem logical to assume that this was where the structure was first erected. However, if it was first erected at Redhill then it seems most unlikely that it would have been erected in precisely the same form and size as it appeared at Horsham, for at Horsham it comprised a mixture of components probably from more than one building; indeed some of the pieces may have formed part of quite a different type of structure, for example the arcade of a large building like the leather market at Bermondsey. There seems no reason to assume that the portrayal of the building on the 1861 tithe map of Redhill need be any more accurate than its portrayal on the Ordnance Survey maps of the same area.)

INDEX OF PERSONS AND PLACES

Notes: Alphabetization is word-by-word.
References preceded by *M* are to sheets of microfiche.

A

Abbey, Councillor __ 221
Ade, J.T. 250 – 2
Adeliza, Queen 262
Ade's Farm, Grove Hill (Hellingly) 251
Ainsworth, Con, contribution by 80
Airds (contractors) 223
Alan fitz Ivo or Eudo 262
Albert, Prince Consort 232
Alciston, stone implements from *M*20, *M*22
Aldingbourne, stone implement from *M*21
Aldrington
  beacon site 188
  stone implement from *M*13
Aldsworth, Fred 244, 268
Aldwick (Pagham), barracks 267
Alfriston, stone implements from *M*12, *M*21
Alger, Alderman __ 221
Allen, Cardinal 194
Allen, Daniel 266
Allen, M.J., note by 252 – 4
Angmering, stone implements from *M*15, *M*20
Apple Down (North Marden)
  pottery from 114, 116
  Saxon cemetery 117
Archibald, Marion, contribution by 93 – 4, *M*75 – 6
Arismendy, John 265 – 6
Arlington 228
Arundel and Surrey, Earl of 183
Ashington 260
Augustine, Saint 264
Avelina, wife of Alan 262

B

Baily's Hill, Crowlink (Friston), prehistoric site 243 – 4
Baker, __ (wife of John) 205 – 6
Baker, Audrey 263 – 4
Baker, E. 263
Baker, John (diarist) 205 – 6
Baldslow (Hastings), beacon site 188
Balksbury (Hants.), hill-fort 31
Barber, W. 227
Barrow family 268
Barrow, Hepburn Gale Ltd. 268
Barrow, Samuel and Brother Ltd. 268
Bartlett, Felix 197, 212
Barton, K.J.
  article by 97 – 108, *M*94 – 8
  contribution by 93, *M*69 – 70
Batchelor, Richard 208
Battle, John of 143
Battle
  barracks 267
  stone implements from *M*19, *M*22
Bazalgette, Sir Joseph 219, 221, 224
Beachy Head (Eastbourne)
  beacon site 188
  cliffs near 243
  stone implements from *M*23
Beaumont, __ (priest) 203 – 4
Becket's Barn (Pagham), Saxon settlement 116 – 17
Bedingfield family 195
Bedingfield, Anthony 197, 212
Bedwin, Owen, article by 25 – 33
Beech, Mark, contributions by 45, 249, *M*55 – 65
Beeding, Lower, stone implement from *M*19
Beeding, Upper (*see also* King's Barn) 263
Belle Tout (East Dean), prehistoric site 243 – 4
Bevan, Michael, note by 260 – 1
Bexhill
  barracks 267
  beacon site 188
  stone implement from *M*21
Billingshurst, stone implement from *M*15
Binsted, pottery kilns *M*69
Bishopstone
  beacon site 188
  Saxon settlement 116
  stone implement from *M*21
Bisley (Surrey) 227
Blackdown (Lurgashall), beacon site 188
Blatchington, East
  barracks 267
  stone implement from *M*21
Blencowe, Robert 233
Bognor
  barracks 267
  stone implement from *M*24
Bolney, stone implement from *M*20
Bonaventure, Saint 264
Bond, Francis 147, 149
Bone, D.A., contribution by 62 – 4
Bosham, stone implement from *M*17
Botolphs, roofing slates from *M*97
Bott, Ann, note by 258 – 9
Bovis, Stephen 251
Bowers, Thomas, Bishop of Chichester 208
Bowmers of Hastings 230
Bracklesham, beacon site 188
Bradley, L. 161, 175
Bradley, R. 243 – 4
Bramber 91, 263
  bridge 263
  castle 81
  iron objects from *M*69, *M*71
  pottery from *M*69
  stone implements from *M*14, *M*24
Bramdean (Hants.), Iron Age enclosure 48
Braose, William de 81, 91
Breares, Agnes 266
Brede *see* Broad Oak
Brent, C.E. 157 – 8
Brian fitz Ralph 262
Bridger, E. Basil 265
Brigden, Councillor __ 223
Brightford, hundred of 187
Brightling, beacon site 188
Brighton (*see also* Hollingbury) 209
  drainage 213 – 26
  epidemics 213, 215, 219, 225
  fire beacons 182, 185
  French attacks on 179, 185
  Preston barracks 267
  stone implements from *M*13 – 14, *M*20, *M*23
Broad Oak (Brede), beacon site 188

B *continued*

Broadwater, stone implement from *M*15
Brockley Hill (Gr. London), pottery from 45
Browne family 195
Browne, John, vicar of Rye 169
Bull, James 195
Bullock, Martha 206
Burnet, I. Richard 228, 230, 232
Burrell family 198 – 9
Burrell, Merrik 198 – 9, 200
Burrows, J.C. 222 – 4
Burwash, beacon site 188
Buxted, stone implement from *M*15

C

Caburn *see* Mount Caburn
Cameron, R.A.D. 129
Campion, C.H. 263
Canterbury, Michael of 143
Canterbury Cathedral, monument in 143
Carne's Seat (Goodwood), excavations 35 – 49, *M*52 – 67
Carter, Dr. __ 221
Carteret, Philip 197, 212
Cartwright, Caroline, contributions by 48, 251, *M*66, *M*67
Caryll family 194 – 205, 207 – 212
Cass, C.W. 228
Cecily, daughter of Alan 262
Cerne (Dorset) 252
Chadwick, Edwin 213 – 14
Chailey, stone implement from *M*13
Challoner, Richard (Catholic bishop) 203, 207, 209
Chalton (Hants.), Saxon settlement 116
Chalvington *see* Ripe and Chalvington
Chanctonbury Ring
  beacon site 188
  hill-fort 31
Chatfield, June E., contribution by 94, *M*79 – 81
Chelsham (Surrey), hedges 138
Chelwood Beacon, beacon site 188
Cheyney, Sir Thomas 182
Chichester, 5th Earl of 239
Chichester 127
  barracks 267
  Cathedral, choir stalls 147 – 55
  charity 266 – 7
  Entrenchments 255 – 6
  Harbour *see* Fishbourne
  pottery from 44 – 5, 114, *M*69
  pottery kilns 258
  St. Mary's Hospital, choir stalls 141 – 7, 149, 151 – 5
  stone implement from *M*12
Chilgrove, tiles from 59, 64 – 5
Churchill, Thomas 196 – 7, 212
Churton, H.B. 227
Cissbury Ring (Findon), beacon site 188
Clarke, Somers 221
Clayton, wall paintings 263 – 5
Cliftonville (Hove), 215, 218, 220
Cocking, manor of 262
Coldwaltham, stone implements from *M*18
Collingridge, Bernard 206
Collins family 266 – 7
Collins, Thomas 266 – 7
Colyton (Devon), epidemic in 161, 175
Compton 204
Cooding Down, beacon site 188
Copley, Anselm 205, 208, 212
Copse Farm (Oving), pottery from 43 – 4
Cotterell, Thomas 206, 208, 212
Cotton family 195
Covert, Walter 183
Cox, Alderman __ 221 – 2
Crawley, stone implements from *M*12
Cressy, Serenus 196, 208, 212
Cresy, Edward 215
Cromwell, Thomas 182
Cross in Hand (Waldron), beacon site 188
Crowborough, beacon site 188
Crowlink (Friston) *see* Baily's Hill
Crundale, Roger of 143
Cuthman, Saint 81

D

Daby, Richard 125, 128
Dallington, stone implements from *M*16, *M*20
Danebury (Hants.), hill-fort 31
Dannell, G.B., contributions by 45, 65
Davenport, Lawrence 93
Dean, G.A. 219
Dean, East (East Sussex)
  Belle Tout 243 – 4
  stone implements from *M*18, *M*20
Dean, East (West Sussex), stone implement from *M*22
Dean, West (East Sussex), stone implement from *M*18
Dean, West (West Sussex), stone implement from *M*20
Denis, Monsignor Jean-Marie 193 – 4, 207 – 10
Denton, Bailey 224
Devonshire, 7th Duke of 219
Dick, Thomas 236
Dickinson, Brenda, contribution by 65, 67
Ditchling
  Beacon 188
  stone implement from *M*13
Dixon, Paul 204 – 5, 212
Douai (France) 201, 204
  English College 194, 207
  St. Bonaventure's friary 205
  St. Gregory's 196 – 7
Douglas, John (Catholic bishop) 209
Dover (Kent), epidemics in 159 – 60
Down, Alec, note by 258 – 9
Drewe, Robert 122
Drewett, Peter, article by 109 – 18
Duddell, __ 223
Duncton Beacon 188
Durrington, stone implements from *M*15
Duvivier *see* Payne, Placid

E

Earnley, stone implement from *M*17
Eartham, stone implement from *M*22
Easebourne, stone implement from *M*23
East: *compound place names with the first element 'East' are indexed under the second element*
Eastbourne (*see also* Beachy Head)
  barracks, Langney Point 267
  beacon site 188
  drainage 219
  epidemic in 219
  stone implements from *M*12, *M*15 – 16, *M*21 – 4

E *continued*

Edburton, stone implement from *M*13
Edwards, John, note by 263 – 5
Egdean, Flexham 188
Ellerby, Harvey, article by 109 – 18
Eltham (Kent) 187
Englefield, Felix 203 – 4, 208
Erringham, Old (Shoreham), Saxon settlement 116
Ethelwulf, Saxon king 81
Eudo fitz Alan 262
Eudo of Malden 262
Evans, Jane 11
  article by 79 – 95, *M*68 – 92
Eversfield, Sir Charles 206
Evershed, __ 221
Ewhurst, stone implement from *M*15
Exeter, Cathedral, woodwork 147 – 8, 150
Eyam (Derbys.), epidemic in 161, 175

F

Fairlight, beacon sites 187 – 8
Falmer
  coin from 257 – 8
  stone implement from *M*13
Farnfold, Richard 92, 93
Farnfold, Thomas 93
Farnham (Surrey) 127
Farrant, Sue, article by 213 – 26
Fécamp Abbey (France) 81
Felpham, beacon site 188
Ferguson, G. 264
Fernhurst, stone implements from *M*23 – 4
Ferring (*see also* Highdown Hill)
  beacon site 188
  stone implement from *M*20
Findon (*see also* Cissbury Ring), stone implements from *M*15, *M*21
Firle 233
  Beacon 188
  stone implement from *M*15
Fishbourne
  Channel, excavations 51 – 77
  pottery from 45
  Roman Palace 51 – 2, 62, 64 – 5, 71
Fisher, F.J. 157
Fittleworth, stone implements from *M*20, *M*23
Fitzhugh, W.A. 227
Fleet, William 205 – 6, 208, 212
Fletcher, George 92
Fletcher, John 92
Fletcher's Croft *see under* Steyning
Flexham (Egdean), beacon site 188
Flory, Mathew 169, 172
Flutter, Kitty 207
Folkington, beacon site 188
Forest Row, stone implement from *M*18
Foster, Sally, article by 109 – 18
Foxholes Farm (Herts.), Romano-British building 61
Francis, D. 244
Frant
  reading room 230
  stone implement from *M*24
Freeman, __ (bookhawker) 231 – 2
French, J., contribution by 75
Friend, Councillor __ 217
Friston
  Baily's Hill 243 – 4
  Limekiln Bottom 243 – 4
  South Hill 243 – 4
  stone implements from *M*14, *M*17 – 18
Frith, Philip 172
Fulking, stone implements from *M*14, *M*21

G

Gage family 195
Gage, 4th Viscount 227
Garwood, Paul 244
Gaston, L. 256
Gates, Richard 92
George IV (as Prince of Wales) 214
Gervays, Robert 92
Gibbons, Gabriel 176*n*
Glatting (Sutton), beacon site 188 – 9
Glover, P., contribution by 71, 73
Glynde
  hedges 135
  Mount Caburn 189
  stone implement from *M*16
Godfrey, W.H. 127
Godmanchester (Hunts.), Romano-British building 61
Goldsmid, Sir Francis 218
Goodwood *see* Carne's Seat; Chichester, Entrenchments
Gore, John 92
Gorhambury (Herts.), Romano-British building 61
Goring
  beacon site 189
  medieval building 97
Gostrow, hundred of 187
Graffham
  Common, mesolithic site 1 – 8
  pottery kilns 258
  Teglease Beacon 189
Grainger, Henry 238
Grant, Dr. __ 208
Granville, A.B. 214
Great Tew (Oxon.) 196
Greenwood, Jeremy, note by 268
Greis, Gloria Polizzotti 254
Grinstead, West
  Catholicism, centre of 193 – 212
  Catholic church 193, 210
  House 195, 198 – 203
  manor 195
  Priest's House 193, 200 – 3, 205 – 6, 209
  Priory of St. Dominic 193 – 4
  school for Catholic children 206 – 7
Grove Hill (Hellingly), Ade's Farm 251
Guestling, hundred of 187
Gunnor, wife of Brian 262
Gunnor, wife of William 262

H

Haddington, 6th Earl of 130 – 1
Hadlow Down, Hardley Beacon 189
Hailsham
  barracks 267
  stone implement from *M*20
Haines, Sheila R., article by 227 – 41
Hallett, __ 222 – 3

H *continued*

Hamilton, Sue, contribution by 43, *M*53
Hammond, John 238
Hams, South (S. Devon), slate quarries *M*97
Hamsey (*see also* Mount Harry), stone implement from *M*16
Hangleton, mortar from *M*78
Hardingstone (Northants.), Eleanor Cross 143 – 5
Hardley Beacon (Hadlow Down), beacon site 189
Hartfield, Faulkners Farm, hedges 138
Harting (*see also* Harting Beacon; Heath, West; Ladyholt)
  stone implements from *M*13
  Upperton, beacon site 189
Harting Beacon
  beacon site 189
  hill-fort 31
Harwich (Essex) 182
Hassocks, mesolithic site 5
Hastings
  Baldslow, beacon site 188
  barracks 267
  beacon site 189
  drainage 219
  stone implements from *M*13, *M*17, *M*23
Hawkes, __ (bookhawker) 232
Hawkshaw, Sir John 222 – 3
Hawksley, __ 217 – 19, 222
Hayes (Hay), Elizabeth 206 – 9
Heath, West (Harting), round barrow 6
Heathcote, __ 208
Hellingly *see* Grove Hill
Helne Mill, beacon site 189
Henfield 209
  stone implement from *M*22
Hengistbury Head (Dorset), amphorae from 45
Henrietta, Queen 196
Hepburn, F.R. 227
Herons Ghyll, beacon site 189
Hewlett, G. 138
Highden (Washington) 199, 201, 203 – 4, 209
Highdown Hill (Ferring)
  beacon site 189
  pottery from 43
Hoare, H. 227
Hoathly, West, beacon site 190
Hodges, John (*alias* Massey) 197, 208, 212
Hoghton, Henry (*alias* More) 197 – 9, 203, 207 – 8, 212
Holborn (London), St. Etheldreda's church 141, 143
Holden, E.W. 251
  article by 1 – 8
  contribution by 108, *M*96 – 8
  note by 263
Holden, H.G. 251
  article by 1 – 8
Holgate, Barbara, article by 109 – 18
Holgate, R.D.C.
  articles by 1 – 8, 35 – 49, *M*53 – 67
  notes by 243 – 4, 244 – 51, 254 – 6
Hollingbury (Brighton)
  beacon site 185, 188
  hill-fort 31
  stone implements from *M*13, *M*20
Hollingsworth, M.F. and T.H. 157, 161, 170
Hollycombe (Linch), mesolithic flintwork from 251
Holmbush, beacon site 189
Holmes, H. and A. 231
Holyoake, George Jacob 231
Hooper family 268
Hooper, Max 129
Horsham 205 – 6, 209
  barracks 267
  stone implements from *M*12, *M*15, *M*17, *M*24
  tanyard 268
Horton, John 121
Horwood, Alfred H. 265
Houghton, John, article by 119 – 28
Hove
  barrow burial 18
  building development 218, 223
  drainage 215, 218, 220, 222 – 5
  stone implements from *M*12 – 14
Howard, Eileen, article by 129 – 39
Hudson, Ann, note by 267 – 8
Hudson, T.P. 263
Hugh, son of Robert 262
Hunt, Thomas 209
Hurstpierpoint
  library 230
  stone implement from *M*12

I

Icklesham, stone implement from *M*24
Iford, stone implements from *M*16, *M*18, *M*22, *M*24
Ireland, Alderman __ 221, 223
Isfield, hedges 135

J

Jackson, W. 227
Jeal, Tim 236
Jenks, G.S. 213 – 15
Jennings, John 196
Jevington
  beacon site 188
  stone implements from *M*16, *M*19 – 20
  Wannock, beacon site 189
Jones, Peter 197, 212

K

Kay, John 135
Keble, Thomas 227
Kelly, Paul (*alias* Caryll, Richard) 197
Kempe family 197
Kempe, C.E. 263
Kenny, James 35
Kent, fire beacons in 181, 183, 185 – 6
Kilburn (Yorks.) 251 – 2
King's Barn (Upper Beeding) 81 – 3, 90, 92
Kingston Buci
  beacon site 189
  pottery from 43
Kingsworthy (Hants.) 266 – 7
Kitchen, Frank, article by 179 – 92
Knepp, manor of 195, 199
Knight, William 206, 212

L

Ladner, G.B. 264
Ladyholt (Harting) 195, 204, 208 – 9

L *continued*

Lamb, Councillor __ 217, 222
Lambarde, William 185 – 7
Lancing, beacon site 189
Langney Point (Eastbourne), barracks 267
Langton, John, Bishop of Chichester 150 – 1
Lardner, __ 236
Laughton, stone implement from *M*16
Leny, John 176*n*
Lethaby, Dr. __ 221 – 2
Lewes
  barracks 267
  barrow (possible) 252 – 4
  burgage tenure 119 – 28
  stone implements from *M*13, *M*16, *M*24
  White Hart Hotel 227
Lewis, Charles 206
Lewkenor, __ (widow) 92
Ley, J. 227
Lichfield, Thomas of, Dean of Chichester 141
Limekiln Bottom (Friston), prehistoric site 243 – 4
Linch *see* Hollycombe
Lindfield, stone implement from *M*17
Lintott, R., contribution from 74
Litlington
  stone implement from *M*17
  White Horse near 250 – 2
Littlehampton
  beacon site 189
  stone implements from *M*18
Lockwood, __ 217 – 19
Lodsworth
  manor 196
  Riverpark Farm 258 – 9
London (*see also* Holborn), epidemics in 161, 170 – 1
Lordington (Stoughton), excavations 244 – 51
Louvain, Joscelin de 262
Lowe, Thomas 227 – 8, 230, 232 – 3, 239 – 40
Lower Beeding *see* Beeding, Lower
Lurgashall
  Blackdown, beacon site 188
  stone implements from *M*23

M

McCann, Alison, note by 266 – 7
McCann, Timothy J.
  article by 193 – 212
  note by 265 – 6
McClean, __ 218 – 19, 221
McDonnell, Charles 206, 209, 212
McDonnell, Daniel 206
MacPhail, R., contribution by 32
Madehurst, stone implement from *M*21
Mâle, Émile 264
Maloney, Monica, article by 129 – 39
Manhood, hundred of 187
Mann, __ 206, 211*n*
Marden, North (*see also* Apple Down), Saxon building 109 – 18
Maresfield, stone implement from *M*24
Marlborough, 4th Duke of 214
Marples, M. 252
Marsden, Fiona, note by 252
Martin, Mrs. __ 205 – 6
Martin, T. 239
Massey, John *see* Hodges, John
Masters, J. 257
Mayhew, Graham J., article by 157 – 77
Medmerry (Selsey), Saxon settlement 116 – 17
Meek, George 230, 236, 239 – 40
Mersea Island 263
Micheldever Wood (Hants.), Iron Age enclosure 48
Middleton, George 196
Midhurst, recusant hoard from 265 – 6
Molyneux family 195
Molyneux, Henry 208
Monks Wood Experimental Station (Hunts.) 129
Montague, 3rd Viscount 258
Montague, 6th Viscount 204
Montague of Cowdray, Viscountess 196
Montgomery, Earl Roger of 262
More *see* Hoghton, Henry
Morey, Blaise 207
Morley and Monteagle, Henry Parker, Lord 195
Mount Caburn (Glynde), beacon site 189
Mount Harry (Hamsey), beacon site 189
Mountfield, stone implement from *M*21
Muir, R. 138
Mundham, North, stone implement from *M*19

N

Netherfield, beacon site 189
Newhaven
  beacon site 189
  stone implements from *M*17 – 18, *M*21, *M*23
Newtimber, stone implements from *M*13 – 14
North: *compound place names with the first element 'North' are indexed under the second element*
Nuthurst 209

O

Old Erringham *see* Erringham, Old
Othen family 265 – 6
Othen, Thomas 265
Oving *see* Copse Farm
Oxford
  Christ Church Cathedral, woodwork 145
  epidemics in 171
  Merton College, stained glass 143

P

Pagham (*see also* Aldwick; Becket's Barn)
  beacon site 189
  pottery from 117
Palliser, D. 157, 161
Palmer, Sir Thomas 183
Parham, stone implements from *M*17 – 18
Park, D. 263 – 4
Park Street (Herts.), Romano-British building 61
Parker, Henry, Lord Morley and Monteagle 195
Parker, Philippa, née Caryll 195
Patcham, stone implements from *M*12
Pattrick family 168
Paxton, Joseph 236
Payne, Placid (*alias* Duvivier) 203 – 4, 207, 212
Peacehaven, stone implements from *M*14, *M*18 – 19
Pelham, J.C. 124
Pelham, Sir Nicholas 179, 183
Pelling, John 206, 208, 212

P *continued*

Percy family 262
Percy, Henry 262
Peters, Mrs. __ 205
Petre, Lady 207
Pett, lending library 228
Petworth, honour of 262 – 3
Pevensey
  barracks 267
  mortar from *M*78
  roofing slates from *M*97
Pevsner, N. 263
Piddinghoe, stone implement from *M*17
Pierce, John 208
Pigott family 204
Pitt-Rivers, A.H.L.-F. 25
Playden, beacon site 189
Plumpton
  hedges 133 – 5
  stone implements from *M*14
  wall paintings 263 – 5
Poling, hundred of 187
Pollard, E. 130, 132 – 3
Portobello (Rottingdean), sewer 222 – 4
Poynter, William (Catholic bishop) 209
Prendal, Robert 196, 212
Prescott family 168
Prescott, John, vicar of Rye 168 – 9
Preston (West Sussex), beacon site 189
Preston barracks, Brighton 267
Pulborough, stone implements from *M*15, *M*19, *M*22
Pürgg, Styria (Austria), wall painting 264
Pyecombe
  stone implements from *M*16
  Wolstonbury, beacon site 190

Q

Quecche, Hugh 92
Queenborough (Kent), fire beacon 186

R

Rackham, prehistoric site 6
Rawlinson, R. 217 – 19, 224
Réau, L. 264
Redhill (Surrey), tannery 268
Reginald of Winl' 262
Rice, D. Talbot 263
Richardson, Dr. __ 224 – 5
Richardson, G. 256
Ringmer
  hedges 131 – 5, 138
  stone implement from *M*16
Ripe and Chalvington, reading room 230
Riverpark Farm (Lodsworth), pitcher from 258 – 9
Robert fitz Tetbald 262
Robertsbridge, stone implement from *M*17
Rock and Son 231
Rodmell, stone implement from *M*20
Roedean (Rottingdean), sewer 222, 224
Rose, Henry 124
Rottingdean
  beacon site 189
  drainage 221 – 4
Rouse, E. Clive 263 – 4
Rowe, John, Book of 121
Rowlands Castle (Hants.), pottery kilns 45
Rudgwick, stone implements from *M*18, *M*21
Rudkin, D.J., article by 51 – 77
Rudling, D.R. 254
  contributions by 32, 45, 247
  notes by 256 – 8
Rusper, stone implements from *M*12 – 13
Russell, Sir William 236
Rye, epidemic mortality in 157 – 77

S

Saddlescombe (Newtimber), stone implements from *M*13 – 14
St. Leonards, drainage 219
St. Roche's Hill (Singleton), beacon site 189
Salehurst (*see also* Silverhill)
  beacon site 189
  stone implements from *M*17
Salzman, L.F. 262
Sandgate (Kent), epidemic in 219
Sarah, daughter of Gunnor 262
Scaife, R.G., contribution by 31
Scobell, J. 227
Scott, Sir George Gilbert 221
Seaford (*see also* Seaford Head)
  excavations 254 – 5
  French attack on 179, 183
  stone implements from *M*13, *M*15, *M*18 – 19, *M*22, *M*24
Seaford Head
  beacon site 189
  excavations 25 – 33, 244
  hill-fort 243 – 4
Seffrid, Bishop of Chichester 262
Selmeston, prehistoric sites 5 – 6
Selsey (*see also* Medmerry)
  barracks 267
  beacon site 189
  pottery from 43
  stone implements from *M*19
Sharpe, J. Ridout, contribution by 94, *M*81 – 91
Shelley family 195
Shipley 195, 209
Shoreham (*see also* Erringham, Old)
  barracks 267
  roofing slates from *M*97
  stone implements from *M*15, *M*17
Short, Francis 199 – 200, 201, 202, 207, 212
Shrewsbury, J.F.D. 157, 160 – 1
Sidlesham, beacon site 189
Silverhill (Salehurst), barracks 267
Simpson, Harry 268
Singleton
  St. Roche's Hill (Trundle), beacon site 189
  Saxon burial 117
Slaugham, stone implements from *M*19
Slindon 197, 199, 200, 202
Smith, Henry 232
Smith, V.G. 254
Snirwold (moneyer) 257 – 8
Sompting, stone implement from *M*18
South Hams *see* Hams, South
South Hill (Friston), prehistoric site 243 – 4
Southampton 127
Southsea (Hants.), epidemic in 219
Southwick, stone implement from *M*12

S *continued*

Soyer, Alexis 236
Squiers, Granville 200
Staffurd, Ignatius (*alias* Thorpe) 197, 212
Stanmer 239
Stapley Beacon 189
Steyning 79, 209
  barracks 267
  church 81, 91
  Cuthman's Field, excavations 79, 97 – 108, *M*94 – 8
  early communication routes 79
  Fletcher's Croft, excavations 79 – 95, *M*68 – 92
  Grammar School 92
  historical development 79, 81 – 4, 89 – 93
  mint 81
  port 81, 83, 90, 92 – 3
  stone implement from *M*19
Stoughton (*see also* Lordington), stone implements from *M*17 – 18, *M*22
Stow, West (Suffolk), sunken buildings 116
Stroud (Hants.), Romano-British building 59
Surrey, fire beacons 181
Sutton *see* Glatting
Swapper, Susan 173

T

Taafe, Councillor __ 221
Talbot, James (Catholic bishop) 209
Talbot, John 265
Tarring, West, field system 90
Taylor, Anne 173
Taylor, Winter 206
Tebbutt, C.F. 138
Teglease Beacon (Graffham) 189
Tennant, M.B. 217 – 18
Thakeham 260
  Saxon settlement 116 – 17
Thompson, Flora 239
Thompson, Kathleen, note by 262 – 3
Thorpe *see* Staffurd, Ignatius
Toms, H.S. 243 – 4
Tracy, Charles, article by 141 – 55
Tristram, E.W. 263 – 4
Trundle, The, beacon site 189
Twineham, stone implement from *M*14

U

Uckfield, library 230
Uffington (Berks.) 252
Upmarden, tiles from 65
Upper Beeding *see* Beeding, Upper
Upperton (Harting), beacon site 189
Upwaltham, Saxon settlement 116

W

Wadhurst
  library 230
  stone implement from *M*20
Walberton, stone implement from *M*19
Walderton (Stoughton), stone implement from *M*22
Waldron *see* Cross in Hand
Waller, Sir William 184
Wallis, G.A. 219
Wannock (Jevington), beacon site 189
Ward, John 196
Waring, Humphrey 196
Warminghurst
  park 260
  Saxon boundary 260 – 1
Warnborough, North (Hants.), Romano-British building 59
Warnham 195
Warninglid, beacon site 189
Wartling, beacon site 189
Washington (*see also* Highden) 195, 209, 260
  stone implement from *M*16
Wells Cathedral 141, 143, 149
West: *compound place names with the first element 'West' are indexed under the second element*
Westbury (Wilts.) 251 – 2
Westfield, stone implements from *M*17
Westmeston
  coin hoard from 256 – 7
  stone implement from *M*16
Westminster Abbey 143, 145 – 6, 148 – 9, 152*n*
Wight, Isle of, building materials from 62, 64
Wigram, Archdeacon 227
Williams, D.F., contribution by 45
Willingdon 239
  beacon sites, 190
  reading room 228
  stone implement from *M*20
Willis, R. 150
Willmot, Alan 129, 132, 134
Wilmington
  beacon site 190
  Long Man 252
Winchelsea, church 149
Winchester (Hants.)
  Cathedral 147 – 50, 153*n*, 155*n*
  mint 93 – 4
  mortar from *M*78
Winklebury (Hants.), hill-fort 31
Wisborough Green, stone implement from *M*24
Wiston, stone implement from *M*21
Withyham 235
Wittering, West, beacon site 190
Wivelsfield, stone implement from *M*13
Wolstonbury (Pyecombe), beacon site 190
Wood, Edward 268
Woodcock, A.G., article by 9 – 23, *M*1 – 51
Woodford, John 208
Woolgar, T.W. 121
Woolley, A.R., article by 9 – 23, *M*1 – 51
Worthing
  beacon site 190
  drainage 219
  stone implements from *M*15, *M*18, *M*20
Wright, __ 218 – 19, 221
Wulfsige (moneyer) 93
Wyke (Ringmer) 135, 138

Y

Yapton, stone implement from *M*21
York 126
  epidemics in 161, 172, 175