
Proceedings of the Cambridge Antiquarian Society

(incorporating the Cambs and Hunts Archaeological Society)

Volume XCVII
for 2008



Recent Publications of the Cambridge Antiquarian Society

Proceedings XCIV, 2005: Price £12.50 for members, £14.50 for non-members

- Andy Chapman, Simon Carlyle, David Leigh: *Neolithic and Beaker pits and a Bronze Age landscape at Fenstanton, Cambridgeshire*
- Catriona Gibson: *A Romano-British rural site at Eaton Socon, Cambridgeshire*
- Leo Webley: *Evaluation, survey and excavation at Wandlebury Ringwork, Cambridgeshire, 1994-7: Part II, The Iron Age Pottery*
- William Potts: *Quy Water, Little Wilbraham River and the Fleam Dyke*
- Craig Cessford with Alison Dickens: *The Manor of Hintona: the origins and development of Church End, Cherry Hinton*
- Craig Cessford with Alison Dickens: *Castle Hill, Cambridge: excavation of Saxon, medieval and post-medieval deposits, Saxon execution site and a medieval coinhoard*
- Kate Nicholson: *Medieval deposits and a cockpit at St Ives, Cambridgeshire*
- Mary Alexander, Elizabeth Shepherd Popescu: *Excavation of medieval burials associated with St Neots Priory*
- Christopher Taylor: *Chrishall Grange, Fowlmere: a settlement in eight landscapes*
- Anthea Jones: *Letters from Mary Yorke, the wife of the Bishop of Ely 1781-1808*
- Philomena Guillebaud: *The Enclosure of Cambridge St Giles: Cambridge University and the Parliamentary Act of 1802*
- Peter Bryan, Nick Wise: *Cambridge New Town - A Victorian Microcosm*
- Field-Work in Cambridgeshire 2004*; Alison Taylor, Tony Kirby: *Reviews*
- Summaries of 12 March 2005 Spring Conference papers: *Garden History and Archaeology in East Anglia*
- THE CONDUIT: *local history and archaeology organisations and events*

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- Rebecca Casa Hatton and William Wall: *A late Roman cemetery at Durobrivae, Chesterton*
- Phil Andrews: *Romano-British and medieval saltmaking and settlement in Parson Drove, Cambridgeshire*
- David Baxter: *Roman tumuli or medieval industry? Moulton Hills, Bourn, reconsidered*
- Kate Nicholson: *A late Roman Cemetery at Watersmeet, Mill Common, Huntingdon*
- Tim Malim: *A Romano-British temple complex and Anglo-Saxon burials at Gallows Hill, Swaffham Prior*
- James Wright: *An Anglo-Saxon settlement at Cherry Orton Road, Orton Waterville, Peterborough*
- Christopher Taylor: *Landscape History, Observation and Explanation: the missing houses in Cambridgeshire villages*
- Tobit Curteis: *Conservation of early 17th Century allegorical wall paintings in St John's College, Cambridge*
- Robert Walker: *Huntingdonshire Bell Frames*
- Philomena Guillebaud: *Changes in the landscape of west Cambridge after Enclosure 1805-1870*
- Archaeological Notes: Romano-British buildings at Tunbridge Lane, Bottisham TL 5453 6095; Medieval land reclamation and subsequent occupation on High Street, Ramsey TL 2870 8506; Animal carcasses in a Roman ditch, West End, Haddenham, TL 4613 7552*
- Fieldwork in Cambridgeshire 2005; Obituaries*; Anne Holton-Krayenbuhl, Tony Kirby, Alison Taylor: *Reviews*
- Chris Jakes: *Recent Accessions to the Cambridgeshire Collection*

Proceedings XCVI, 2007: Price £12.50 for members, £14.50 for non-members

- Phil Weston, Andrew A. S. Newton and Kate Nicholson: *A Late Bronze Age enclosure at Lynton Way, Sawston, Cambridgeshire*
- Christopher Taylor and Ashley Arbon: *The Chronicle Hills, Whittlesford, Cambridgeshire*
- Christopher Evans, Mark Knight and Leo Webley: *Iron Age settlement and Romanisation on the Isle of Ely: the Hurst Lane Reservoir site*
- Leo Webley: *Prehistoric, Roman and Saxon activity on the Fen hinterland at Parnwell, Peterborough*
- Thomas Woolhouse: *Anglo-Saxon and medieval boundaries and burials at the former Oblic Engineering site, Church Street, Littleton*
- Andrew A. S. Newton: *Mid-Saxon burials at Barnwell Road, Cambridge*
- Paul Spoerry and Mark Hinman: *Early Saxon and medieval remains adjacent to the round moat, Fowlmere*
- Mary Hesse: *The East Fields of Cambridge*
- Craig Cessford with Alison Dickens: *Ely Cathedral and environs: recent investigations*
- Michael Chisholm: *Re-assessing the navigation impact of draining the Fens in the seventeenth century*
- Philomena Guillebaud: *West Cambridge 1870-1914: building the bicycle suburb*
- Elizabeth Shepherd Popescu and Sarah Poppy: *Fieldwork in Cambridgeshire 2006*
- Obituary: David Wilson*; Malcolm Underwood, Paul Spoerry, Debby Banham: *Reviews*
- Chris Jakes: *Recent Accessions to the Cambridgeshire Collection*

**Proceedings of the
Cambridge Antiquarian Society**

(incorporating the Cambs and Hunts Archaeological Society)

**Volume XCVII
for 2008**

Editor Dr. Evelyn Lord
Associate Editor (Archaeology) Professor Stephen Upex

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Cambridge Antiquarian Society

Report for the Year 2007

Membership: 30 members and 6 associates joined, 3 members died, 14 members and 1 associate resigned. 4 new Affiliated Societies joined, 1 Affiliated Society resigned and 1 lapsed. There were 4 new Institutions, 3 cancelled their subscriptions. At the end of the year there were 403 members, 59 Associates and 65 Subscribing Institutions.

Meetings: There were 4 Council meetings and 9 Ordinary meetings, at which the following lectures were given:

Keith Hinde	<i>Sources for research on Fenland pumping engines</i>
Rosamund Faith	<i>Anglo-Saxon farmer – work in progress</i>
Carenza Lewis	<i>Micro-digs, macro-impact – outreach & village test-pit investigations in Cambridgeshire and beyond</i>
Philip Crummy	<i>The Roman circus and other recent discoveries in Colchester</i>
Alison Dickens	<i>The Grand Arcade: excavations in medieval Cambridge</i>
Peter Searby	<i>Jack Overhill & his Cambridge Home Front Diary</i>
John W. Lock	<i>Mapping contention on the Great Ouse at the turn of the 16th century</i>
Andrew Rogerson	<i>50 years of medieval archaeology in East Anglia</i>
Justin Meggitt	<i>Quaker-Muslim encounters in the 17th century</i>

In addition:

Ladds Lecture: Adrian Barlow *Bricks and Water: Huntingdonshire and Fenland architecture*

One-day conference *New Insights into Prehistoric & Roman East Anglia* in March 10th 2007, attended by 180 people.

One-day conference *Recent archaeological work in Cambridgeshire* 24th November 2007, attended by 130 people.

Excursions: 20 people visited Willingham on 7 March to look at the wall paintings in the church; on 21 March Mr Westwood-Bate led a walk around Hildersham. Mr Kirby took 15 people to Bury St Edmunds on 19 May, and a party of 29 to Bletchley Park on 2 June. On 4 July, 28 went to Walsingham on a visit organised by Mr Westwood-Bate, and Mrs Ridout guided 20 people on a walk around the Mill Pond area on 29th September.

Publications: Volume 96 of the *Proceedings* was published in December. A publications policy has been drawn up for the *Proceedings* to aid the editor and provide clarity for contributors. Generous support from both the Cambridgeshire Association for Local History and the Huntingdonshire Local History Society enabled copies of *The Conduit* to be sent to members of all 3 societies as well as being made available in libraries, record offices and archaeological units. As part of a consortium led by the Council for British Archaeology, and the Society of Antiquaries, the Society is involved in a pilot project to make articles from PCAS available on line at <http://archlib.britarch.net>. The Society also participates in a journal exchange programme with 100 institutions in Britain and abroad; journals received are deposited in the Haddon Library.

Representatives: The Society was represented by Mrs Holton-Krayenbuhl on the Cambs Advisory Group on Archives & Local Studies; by Dr Oosthuizen on the Faculty Board; Mr Goldsmith on the University Museum Committee; Dr Allen on Cambridgeshire Record Society; Dr Pickles on the Haddon Library committee; Mr Burn-Murdoch on the Cambs Curators Panel; Mrs Morris on the committee of the Cambridgeshire Association for Local History, and Mr Pritchett on the Council for British Archaeology.

Finance: The financial state of the Society at the end of 2007 continues to be sound. There was a surplus of £3108 from the normal activities during the year. £100 was spent on rebinding the first set of Council minutes and £500 on joining the consortium that will make the *Proceedings* available on line. After allowing for known commitments, the reserves on December 31st 2007 were £19,140; this is within the permitted range set in 2005 and is considered satisfactory.

Other Matters: Grant aid is still being sought to provide an opportunity for Cambridgeshire school pupils to participate in a practical archaeology/local history project. The first awards under the 3-year scheme to provide grant support for small archaeology or local history projects undertaken by voluntary groups or individuals. Grants were given to Active8 Archaeology to go towards the transcribing, repair, duplication and digitisation of the burial map for St Andrew's Church, Cherry Hinton; to the Governors of Bassingbourn Village College for the production of permanent poster boards and a small brochure reviewing the Iron Age archaeology on the College site; to the Barrington Society to help equip a small room provided by the Parish Council for the Society's Archives and to the Cambridge Archaeology Field Group for the purchase of customized OS maps on which to record field walking areas.

Throughout the year, the Society has continued to be represented at archaeological, local history and other events in the county and has continued to act as a sources of information, not only on its own work, collections and publications but also for enquiries relating to local heritage generally.

Governance: The conduct of the Society is governed by the Laws dated 1988 (amended 2003). Management is vested in an elected Council whose members' names are published annually on the membership card/lecture programme.

Cambridge Antiquarian Society Accounts for the Year Ended 31/12/2007

Registered Charity 299211 • Founded 1840

PAYMENTS	
2006	2007
307.85	Lectures - Publishing Programme 323.13
330.28	Expenses 406.83
7172.68	Proceedings Vol XCV Publication
1018.75	Delivery
	Vol XCVI Publication 7851.01
	Delivery (f)
620.46	Conduit 977.77
1541.13 (d)	Conference: March 1021.56 (d)
302.37 (d)	: November 296.79 (d)
951.99 (d)	Excursions 1390.50 (d)
283.36	Mailings: Delivery Charges 530.43 (c)
102.00	Subscriptions (CBA, Rescue, CRSoc) 102.00
100.00	Haddon Library: Conservation 100.00
454.85	Office Expenses, Web Site, Misc 364.45
250.00	Emolument: Registrar 250.00
146.00	Publicity 188.00
206.10	Insurance 209.10
220.00 (e)	From capital, e-Publishing, Binding 600.00 (e)
	Small Grants Scheme 500.00
14007.82	Sub-Total 15111.57
1300.00	Purchase of Investments
15307.82	Total Payments 15111.57

RECEIPTS	
2006	2007
7266.75 (a)	Subscriptions - Members & Societies 6984.41 (a)
862.37	Tax Reclaimed 759.28
00.00	C.U. Archaeology Dept. 900.00
4600.00	Proceedings Vol XCV: Grants
	Vol XCVI: Grants 1280.00 (f)
265.23	Conduit 453.84 (k)
2221.00	Conference - March 1737.30
312.00	- November 369.00
1092.00	Excursions 1416.00
128.28	Sales of Publications 167.10
129.70 (b)	Royalties, Misc 512.40 (b)
863.66	Investment Income (gross) 849.47
834.20	Interest - NSB (gross) 1218.07
19475.19	Sub-Total 16646.87
19475.19	Total Receipts 16646.87
15307.82	less Payments 15111.57
4167.37	Surplus/Deficit 1535.30 (g)
22306.29	Cash Funds Last Year End 26473.66
26473.66	Cash Funds This Year End 28008.96 (h)

Statement of Assets & Liabilities 31/12/2007

Cash Funds: Current A/C	4055.95
: Deposit A/C	<u>23953.01</u>
Total	28008.96 (i)
Investments: Treasury Stock 2008 5%	5330.28
Treasury Stock 2009 4%	3277.54
Treasury Stock 2009 5 3/4%	2495.84
Treasury Stock 2011 4 1/4%	2257.24
Liabilities - Planned Expenditure	8869.00 (j)

C. B. Pritchett, Hon Treasurer

R. E. Seaton I. P. F. A. Hon Auditor

Notes

The presentation of the accounts conforms to guidance provided by the Charity Commission. Comment on some of the entries is given in the following notes:

- a. £195, due in 2005, was received in 2006.
- b. Royalties from use of photographs; the book was reprinted in 2006.
- c. Distribution of the lecture programme required an additional mailing this year.
- d. The cost of mailing details of conferences and excursions has been attributed to the event.
- e. E-publishing £500 and binding £100 are exceptional expenditure – they are not a normal, annual activity.
- f. PCAS was distributed in December. At the year end the invoice for the cost of delivery (est £1418) and £2370 of grant income had not been received.
- g. This figure includes the exceptional cost of e-Publishing and binding (note e); excluding these amounts and adding the net amount owed to the Society (note f), the surplus from the normal activities of the Society in the year 2007 is £3,108.
- h. In 2005 the Council reviewed the policy for the reserves held by the Society and concluded that the cash funds less liabilities (j) should be maintained in the range £10,000 to £20,000; on 31 December 2007 the reserves were £19,140.
- i. Includes Ladd's bequest earmarked for events associated with Huntingdon; with interest the sum is now £869.
- j. Planned expenditure; PCAS Vol XCVII £8000, Ladd's bequest (i) £869.
- k. £21 is outstanding.

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Foreword

The disciplines covered in past issues of the *Proceedings of the Cambridge Antiquarian Society* are many and varied, and this is still evident in this volume. However, the recent rapid expansion of urban domestic and industrial areas, and the pace of road building and gravel extraction needed to fuel these construction programmes has meant that archaeology, stimulated by developer funded excavations, has risen to the fore and to some extent the papers presented within this volume reflect this. There has been an increase in the rapid pace of archaeological research being carried out in Cambridgeshire. It is also expected that this will be the case for the next few years as rapid development continues. This Society has therefore tried to accommodate the mass of new information derived from a wide spectrum of archaeological periods and incorporated the major findings within both past and current volumes of the *Proceedings*. This is not to say that there is not significant work being carried out within other, allied disciplines such as historical or architectural research, although it is fair to say that the number of papers received that cover such areas have decreased in recent years. The editor would in fact welcome more papers from individuals, local societies and organisations who have undertaken research which covers historical, architectural or landscape history topics.

This present volume makes major contributions to our increasing understanding of Cambridgeshire during several periods. The papers, which cover the pre-Roman Iron Age and the growing picture of Iron Age life at Arbury camp, one of Cambridgeshire's most significant field monuments, are particularly important. The Iron Age features again at Dry Drayton and Eaton Socon, and there is a report on a Romano-Saxon farmstead and 12th century dovecote at Boxworth. Of the other purely archaeological papers that on the later developments to Cambridge Castle adds another small piece to the jigsaw of this important site, and links with earlier work carried out by John Alexander. The theme of castles is continued in Dr Liddiard's paper on Castles and Regional Settlement in East Anglia, which is the publication of his CAS conference paper.

The formation and development of the 'English village' still has many mysteries to be resolved, and one of the leading researchers within this field, Christopher Taylor, outlines some new ideas on the formation of two local villages. Michael Chisholm on the other hand, concentrates on one building and provides a fascinating account of the early history and evolution of 'The Old Plough' near Ely.

The broad spectrum of interest which the Society tries to foster through the pages of the *Proceedings* is brought more up to date with the publication of Philomena Guillband's paper on West Cambridgeshire during and between the 1914-1918 and 1939-1945 wars – this follows on from previous papers by this author on West Cambridge at earlier periods.

Finally it is worth drawing attention to the paper by Crummy that examines an interesting Roman zoomorphic handle and adds to the literature published nationally on such finds.

It is worth stating again the aims of the Society, in publishing the *Proceedings*, is to bring to the fore the most recent and up to date results of field work and historical research related to all aspects of the development of the county and its surrounding areas. The editors are keen to receive papers on a range of topics and give encouragement to all individuals or groups working towards similar ends. This is especially true for local societies who are interested in publishing the result of their local projects and submissions/articles/papers would be welcomed.

Evelyn Lord *Editor*
Stephen Upex *Assistant Editor*

*Cover: A zoomorphic Roman handle from
New Street, Godmanchester*

Further Investigations at Arbury Camp, Cambridge: The Eastern Entrance – A Monumental Architecture

Christopher Evans and Mark Knight

With contributions by S. Boreham, C.A.I. French, Q. Mould, E. Simmons, C. Swaysland, M. Taylor, L. Webley and B. Wills

The excavation of the main, eastern entrance of Arbury Camp is outlined. Involving a monumental gateway architecture, plan-reconstruction suggests that it may have actually been pivoted, rather than hinge-hung (the operation of 'Camp'/hillfort entranceways being otherwise little understood). Among the finds recovered from the enclosure's waterlogged ditch circuit was a quantity of fungus and its possible uses are, accordingly, fully considered.

This paper reports the results of a seven week-long excavation in the winter of 2003/04 of the main eastern entranceway of Arbury Camp, a great Iron Age ringwork located on heavy, third-terrace sub-soils along the north side of Cambridge (at c. 12.5m OD; TL 44366142; Fig. 1). Whilst the excavations occurred anticipating development within the immediate area (with the work funded throughout by Gallagher Estates Ltd.), the development plans did not entail any further destruction of the enclosure's circuit and, particularly, its entranceway. Rather, the work arose because previous investigations had demonstrated that the main ditch fills were waterlogged at this point and, therefore, any substantive building in the area could threaten the survival of these deposits.

Because the results and broader context of the first two phases of the site's evaluation fieldwork has already been thoroughly published (Evans & Knight 2002a), there is no need here to rehearse its background and setting at length. Moreover, issues relating, for example, to the enclosure's landscape setting, plan morphology and regional affinities have also already been fully outlined in the 2002 publication and, therefore, need not be repeated here.

In 1990 and 1995 evaluation fieldwork was undertaken at the site (Evans 1991a & b; Knight 1995) previously investigated by McKenny Hughes at the turn of the century (1904 and 1906) and Alexander and Trump in 1970. Radiocarbon dated to the 4th–2nd centuries BC as a result of the recent campaigns, the interior of the enclosure was then sample investigated with no evidence of settlement found. A series of trenches were excavated across its circuit, one of which located the enclosure's entranceway (and

tower-like gate) (Fig. 2; Evans & Knight 2002a: fig. 5 & 14). The basal fills of the ditch terminal proved to be waterlogged and a quantity of what was thought to be contemporary leatherwork was recovered. A most rare and entirely unexpected finding, this material has since been on permanent display within the British Museum. However, based on the recent excavation this is now known to have been misidentified, with the organic material proving to be fungus (see Mould & Wills below). Fieldwalking and ploughsoil test-pitting demonstrated that a late Roman pottery scatter extended across much of the enclosure and seems to continue northeast beyond its circuit.

The summer of 2002 saw another stage of enhanced evaluation fieldwork (Evans & Knight 2002b). The results of this essentially confirmed the earlier findings (or were otherwise negative): the interior of the Camp seems devoid of contemporary settlement. No direct evidence of Romano-British settlement was found within the enclosure or beyond its northeastern perimeter, and it was determined that the finds of this date were all manuring-derived. (The enhanced values of the Romano-British pottery recovered through the evaluation's test-pitting programme all related to the 'volumetric enhancement' of the soils in the deeper berm created by the medieval headland on that side of the enclosure's circuit.) In 2005 further trenching also occurred, subsequent to the main excavation, within the 'Car Zone' plot in the southeastern sector of the Camp (Fig. 1). Although confirming the line of the enclosure's perimeter, its circuit had there been severely truncated through the parking lot construction.

The previous phases of work had demonstrated that, apart from a low density of Romano-British pottery sherds, the upper fills of the enclosure's ditch were essentially sterile. Therefore, during the 2003/04 entranceway excavation we extended a sampling methodology already employed to successful effect on the site (Evans & Knight 2002a): after hand- and spit-excavating two metre-square columns through these deposits (one in each ditch terminal), the upper profile of the ditch was machine-excavated to just above the basal organic fills.

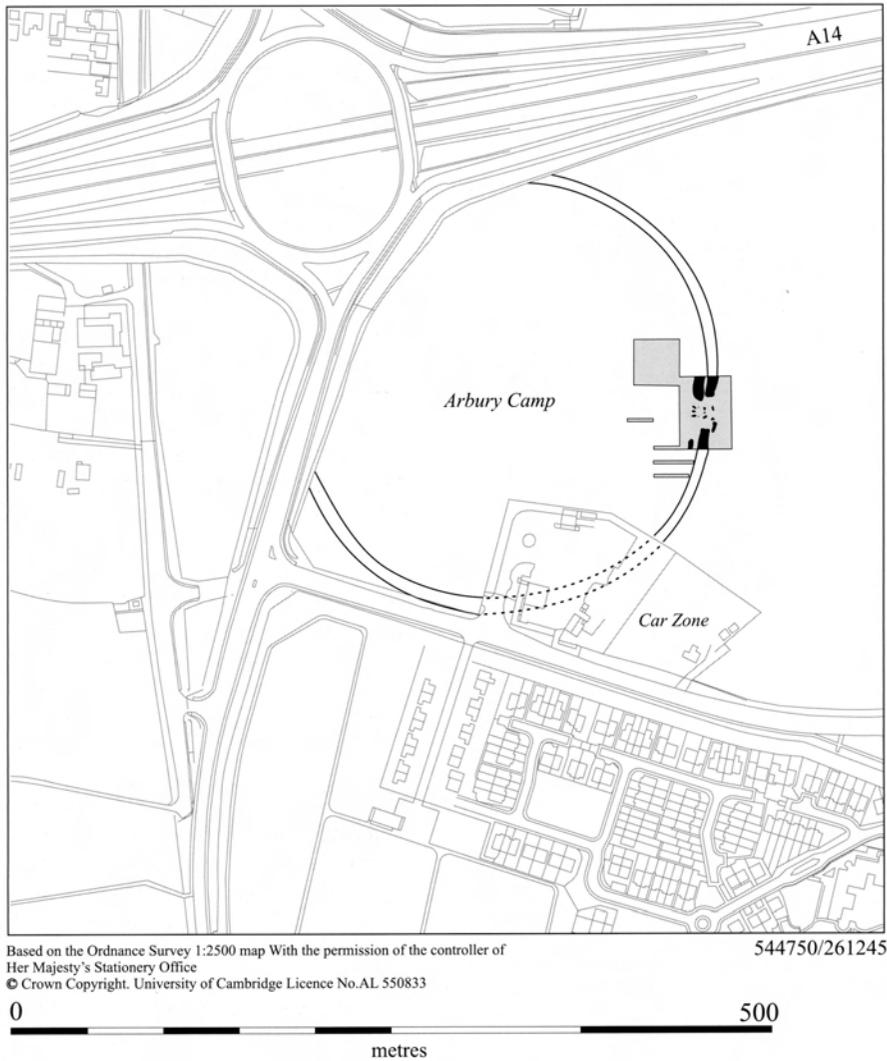


Figure 1. Location, showing enclosure and 2003/04 area of excavation.

In order to maximise section information (interrogated for potential re-cuts, etc.), the ditch was dug in longitudinal half-sectioned segments: first alternative halves and, then, the remainder. In an effort to provide a spatial dimension to any finds from the primary fills, within the staggered segments these were spit-dug in metre squares (Fig. 8). However, because of the high level and intense flow of groundwater, after failed attempts at *in situ* trowel excavation, these deposits were generally dug-out by spade and then hand-sorted (by spit and square) on shovelling boards. Otherwise, the more minor features – including the ‘great’ gateway’s huge postholes – were excavated by a conventional half-section method, though all were eventually dug in their entirety.

Excavation Results

The excavation results cover three main areas: A) Entranceway (c. 1610m²); B) Interior Open Area (c. 900m²); and, C) Interior Trenches (Fig. 2). Areas B and C produced no significant archaeological deposits beyond some natural hollows and foundations/services belonging to recently demolished farm buildings. Area A exposed the entire entranceway of the ring-work. The results, therefore, focused upon the three key components of the entranceway: The Gate, The Bank and The Ditch Terminals. It also includes a description of a Blocking Ditch and a series of charcoal-filled hollows.

The Gate (Figs. 3, 4, 5 & 11)

The gate plan was made up of eight substantial post-pits, the majority of which showed signs of being re-cut. These were arranged in a simple rectangular plan of two front-, three middle- and three rear-posts (Table 1). With the exception of the mid-central post, which was circular, the post-pits

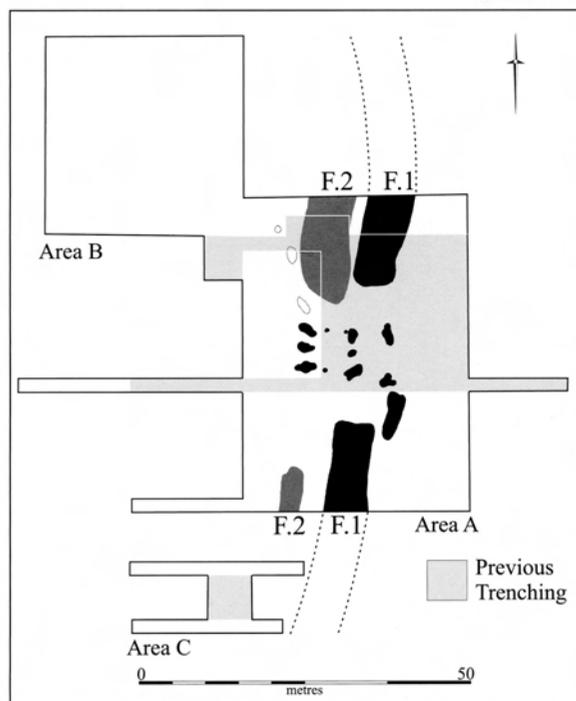
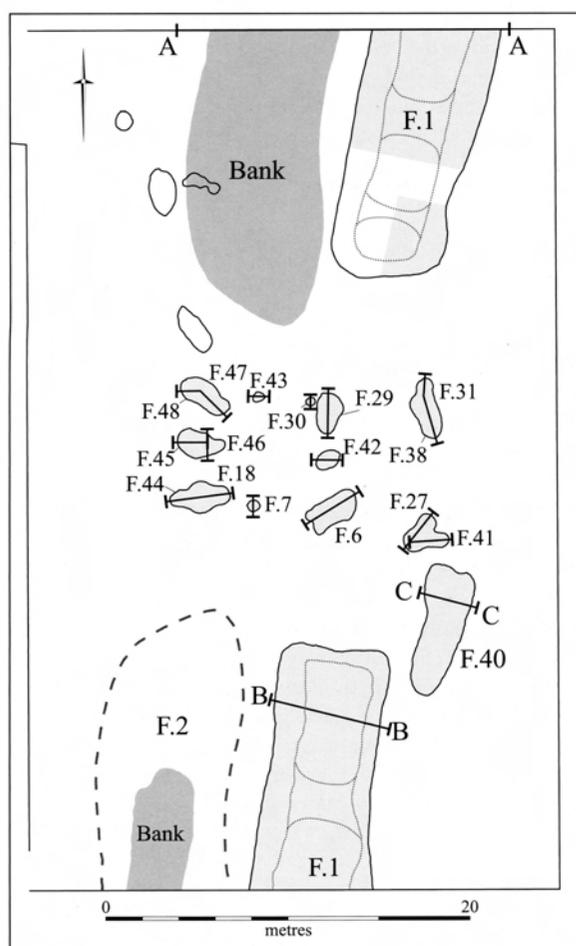


Figure 2. Areas excavated in 2003/04, with earlier-phase trenching indicated.



tended to be 'teardrop' or oval-shaped and either had conjoining post-ramps (one end being vertical whilst the other comprised a c. 45° ramp) or deep steep-sided profiles.

The overall construction measured 13.50m in length, but was wider at its front (8.50m) than at its rear (6.45m). In plan, the gate structure can be separated into front and rear 'boxes' or bays by the middle row of pits. The front box was trapezoidal in shape and measured approximately 7.75 x 5.50m (42.62m²), whereas the rear box was more rectangular and slightly larger, 7.50 x 6.75m (50.62m²). The rear box had three additional ancillary post-pits, two located centrally to its side walls, F. 7 and F. 43, and one situated next to post-pit, F. 30. These were, by comparison, insubstantial (average diameter 0.50m) and all had straightforward profiles (vertical sides and rounded bases). The two front post-pits comprised primary (F. 31 & F. 41) and secondary (F. 27 & F. 38) oval-shaped cuts that were evident by their divergent orientations. Of the middle row (F. 6, F. 29, & F. 42) only the central post displayed any clear indication of being cut twice (F. 28 truncated F. 42), whereas all three of the rear posts had distinctive primary (F. 44, F. 45 & F. 48) and secondary pits (F. 18, F. 46 & F. 47). In every case, the primary pits were distinctive by their gravel or 'sand-rich' fills, as opposed to the clay content of the secondary cuts; none had post-pipes.

The only artefacts associated with a post-pit were a large and partially broken rotary quern stone situated at the base of the primary centre post-pit, F. 42 (Figs. 5 & 11) and an iron ring from its re-cut, F. 28. While the stone appears to have been utilised as a post-pad, having a centrally worn cupmark-like hollow in its upper surface, it could well have had other structural connotations (Fig. 11; see below).

The relationship between primary and secondary post-pits, at the very least, illustrates a two-fold sequence. The re-cutting could imply that the gate was constructed twice in exactly the same position or, alternatively, it could also mean that the primary post-pits relate to the construction phase whereas the secondary pits relate to its demolition. If the latter interpretation is correct, then the orientation or direction of the post 'extraction' or bedding ramps should indicate both the direction and sequence of construction/dismantlement. When plotted, all of the posts' ramps point inwards, as if the gate was erected/demolished in on itself and away from the adjacent earthworks (i.e. the ditch and bank).

The Bank (Figs. 3 & 7)

Earlier phases of excavation had removed sections of the bank (F. 2), including part of the northern bank terminal. The extended area of excavation did, however, expose a previously un-investigated section immediately north of the excavated northern terminal, as well as the truncated remnants of part of the southern bank terminal. The northern section of bank proved to be the best preserved; it stood to a height of 0.42m (including a 0.08–.10m thick buried soil base) and was 6.80m across. The tail of the bank was over-

Figure 3. The Eastern Gateway, main features, including main ditch basal 'segment-lengths' (note whitened portion of F. 1 in north indicates area of 1990 & 1995 excavation; see Fig. 8).

	Primary Post-pits				Secondary Post-pits			
	Feature	Length	Width	Depth	Feature	Length	Width	Depth
Front	31	2.00m	0.75m	0.65m	38	2.42m	1.22m	0.66m
	41	2.20m	0.88m	0.42m	27	2.20m	0.95m	1.03m
Middle	6	2.30m	1.00m	0.60m	n/a	n/a	n/a	n/a
	42	1.00m	1.00m	0.50m	28	0.95m	0.90m	0.29m
	29	1.90m	1.10m	0.49m	n/a	n/a	n/a	n/a
Rear	44	1.90m	0.81m	0.99m	18	2.34m	1.10m	0.95m
	45	1.60m	0.82m	0.72m	46	1.85m	0.72m	0.89m
	48	1.95m	0.82m	1.01m	47	2.35m	1.30m	0.99m

Table 1. Gateway posthole dimensions.

lain by a thick and extensive silty loam 'headland' deposit, whereas its front was overlain by a silty sandy clay 'wedge' that was similar in its composition to elements of the bank.

It was possible to distinguish the upcast bank deposits from the *in situ* buried soil because of a thin and dark 'organic' deposit that capped the old land surface. The diagonal pitch of the bank deposits also contrasted with the broad horizontal character of the buried soil. It was possible to identify two types of material involved in the construction of the bank: re-deposited buried soil (grey in colour and sometimes visible as 'slabs' or turfs) and re-deposited natural (brown-orange in colour and visible as dumps of gravels and clays derived from the adjacent ditch). The basal layer comprised a 0.08m thick band of re-deposited buried soil that occupied a 3.00m wide band at the front of the bank. This was followed by the first deposits derived from the ditch and represents a direct inversion of the natural sequence by piling the normally deeper, 'subterranean' gravels atop of surface clays. Further turf-like layers finished the bank sequence in a series of diagonal bands situated at the tail-end of the earthwork.

As with the majority of features associated with the gate structure, there were no artefacts found within the bank or within its underlying land surface. Similarly, no pre-bank or contemporary features were identified beyond a few irregular hollows, some of which contained charcoal-rich fills. The southern section of bank was badly truncated by late agricultural activity (including brick-built foundations). In plan, the bank survived as a thin veneer of gravel upcast overlying a 'splodge' of buried soil.

The Ditch Terminals (Figs. 3, 6 & 7)

The gate structure occupied the centre of a broad entranceway (21.00m across) that was flanked by two square-ended ditch terminals (F. 1; north & south). In plan, the interval between the two terminals comprised a single central gate structure flanked by two 6.00–6.50m wide 'carriageways' (see below). The two ditch terminals were almost identical in character measuring c. 6.00m across and 1.25m deep, with very broad 'U'-shaped profiles with flat bases. Correspondingly, both also shared very similar depositional sequences, although 'materially' the two terminals did vary somewhat. The base of the northern terminal was divided into rectangular segments (c. 4.00 x 3.50m) by a series of small steps or ledges. The southern terminal had similar but less well-defined basal features (Fig. 3).

The primary deposit within both ditch ends consisted of a dark organic silty clay that was at its thickest towards the terminals, but also occurred within the slightly deeper segmented elements of the base. This deposit yielded the vast majority of artefacts recovered from both lengths of ditch. Above the basal silts, the ditch in-fill included successive edge-erosion deposits that were consistently more concentrated along the bank-side. Secondary and tertiary fills comprised comparatively sterile sequences that increased in their loam content towards the top.

The basal deposits within both sections of ditch were excavated by grid in a metre-square pattern. The southern length produced the bulk of material, although this was partly because much of the northern terminal had already been excavated. Objects included pottery, animal bone, fragments of wood, pieces of 'leather/skin'/fungus (see below), burnt stone, flint and a small part of a rotary quern stone. The distribution of material within the southern section demonstrated a focus towards the terminal, although fragments of wood and bone were distributed throughout (Fig. 8).

The northern ditch portion did not produce any pottery (an attribute consistent with the previous excavation; one sherd previously being found there) and only a few fragments of animal bone (and a single fragment of 'leather'/fungus). A Roman coin was found in the tertiary fill within the northern section. Single metre-square sample columns were excavated down through the upper ditch-fill profiles in both ditch terminals. That in the south proved to be devoid of finds, whereas two large sherds of Roman pottery came from the uppermost fill in the northern length.

Blocking Ditch (Figs. 3, 6 & 7)

Feature 40 was a short length of ditch (7.00 x 2.50m) that cut across part of the main entranceway blocking the southern 'carriageway'. Only c. 0.35m deep, this had a broad flattened profile and, like the main perimeter ditch terminals, had a squared end parallel to the alignment of the gate structure. Its in-fill consisted of a single deposit of silty sandy clay that increased in its gravel content towards its base, and included five fragments of pottery.

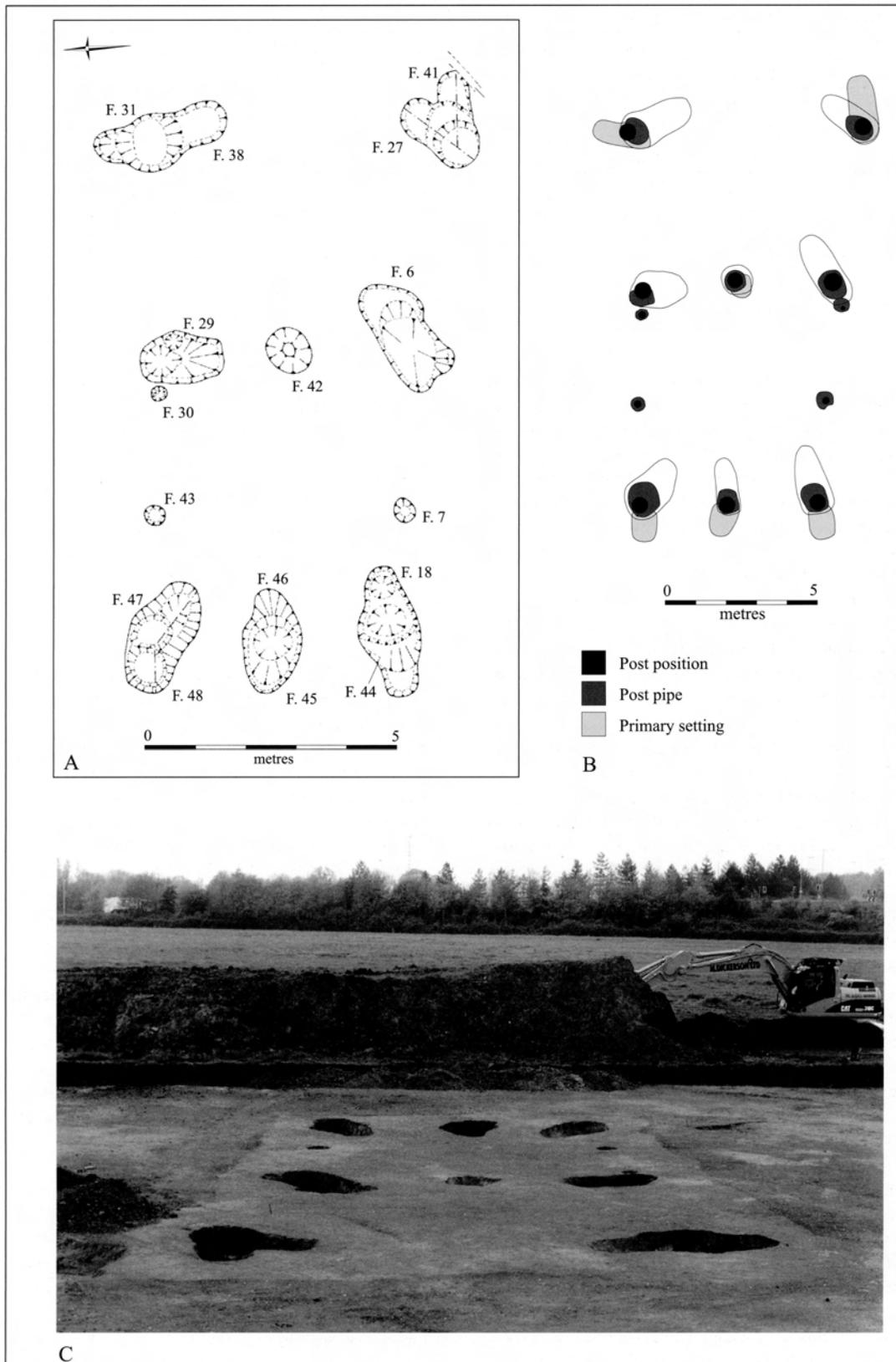


Figure 4. The Gateway: A) base-plan; B) with post positions indicated; C) photograph looking west through entranceway (D. Webb).

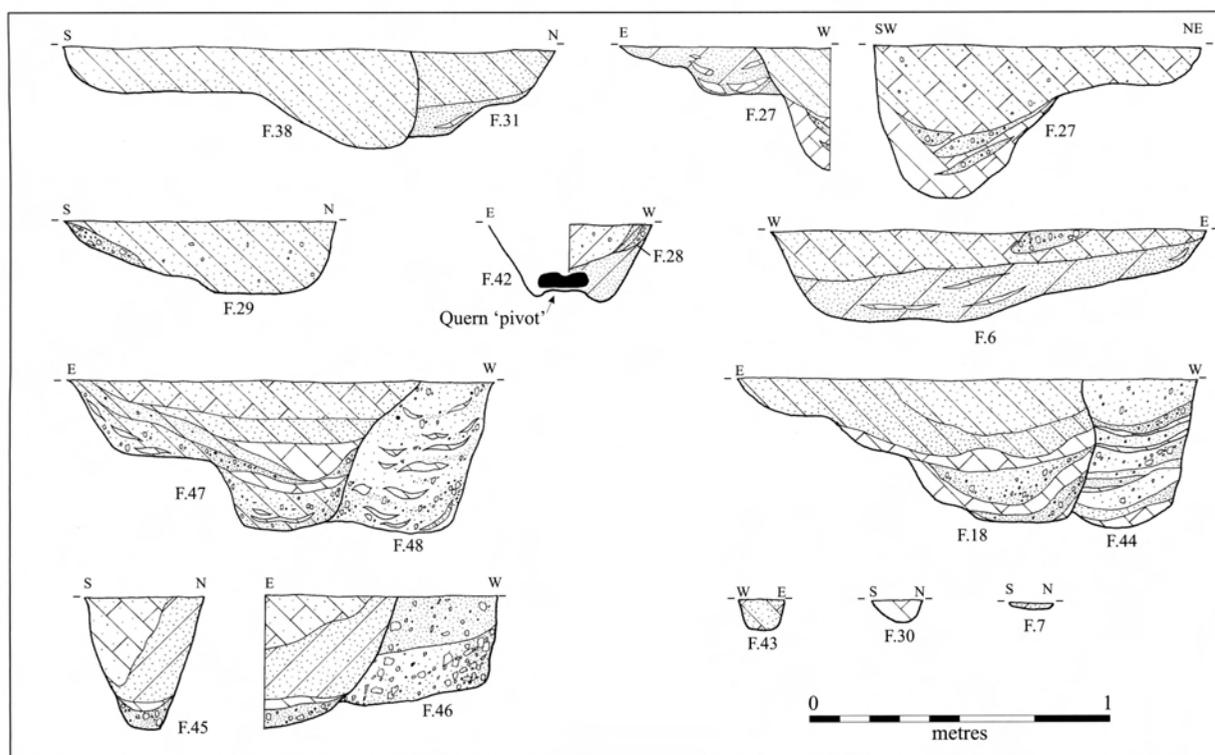


Figure 5. Gateway Sections (see Fig. 3 for location and Fig. 7 for conventions).

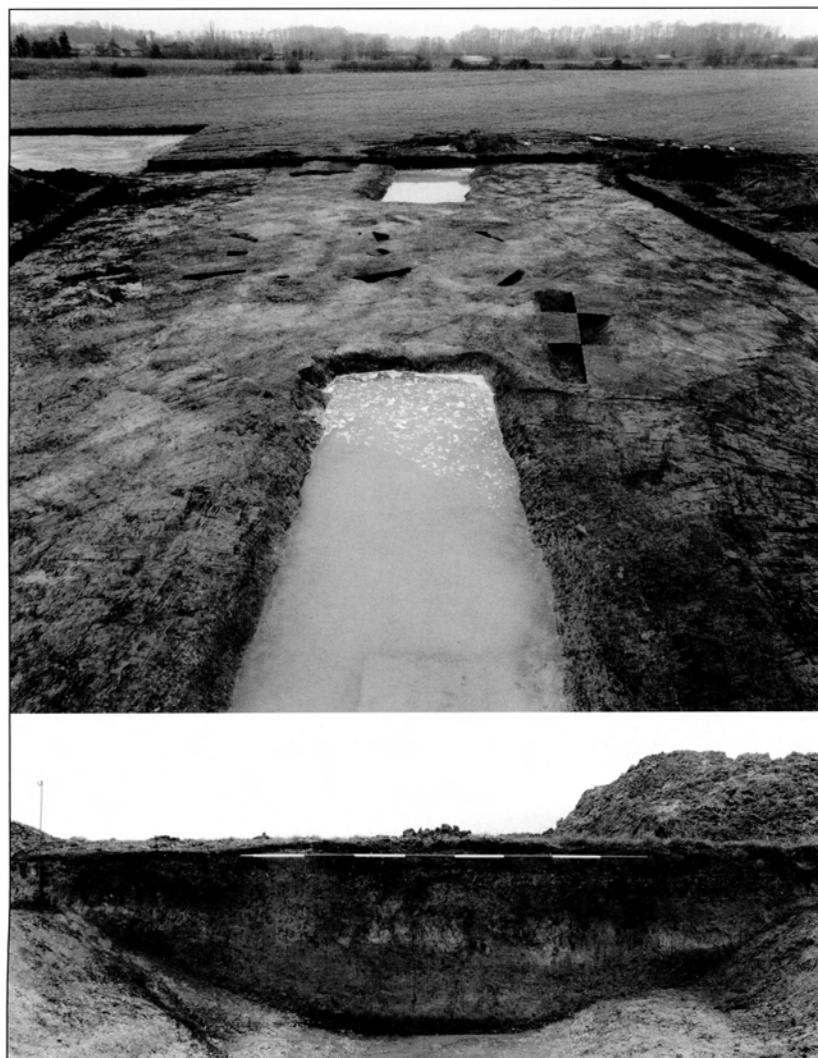


Figure 6. Looking north along water-filled line of the main ditch circuit (top; note 'Blocking Ditch' F. 40 middle-ground right); below, southern edge-of-excavation section of F. 1 ditch (photographs D. Webb).

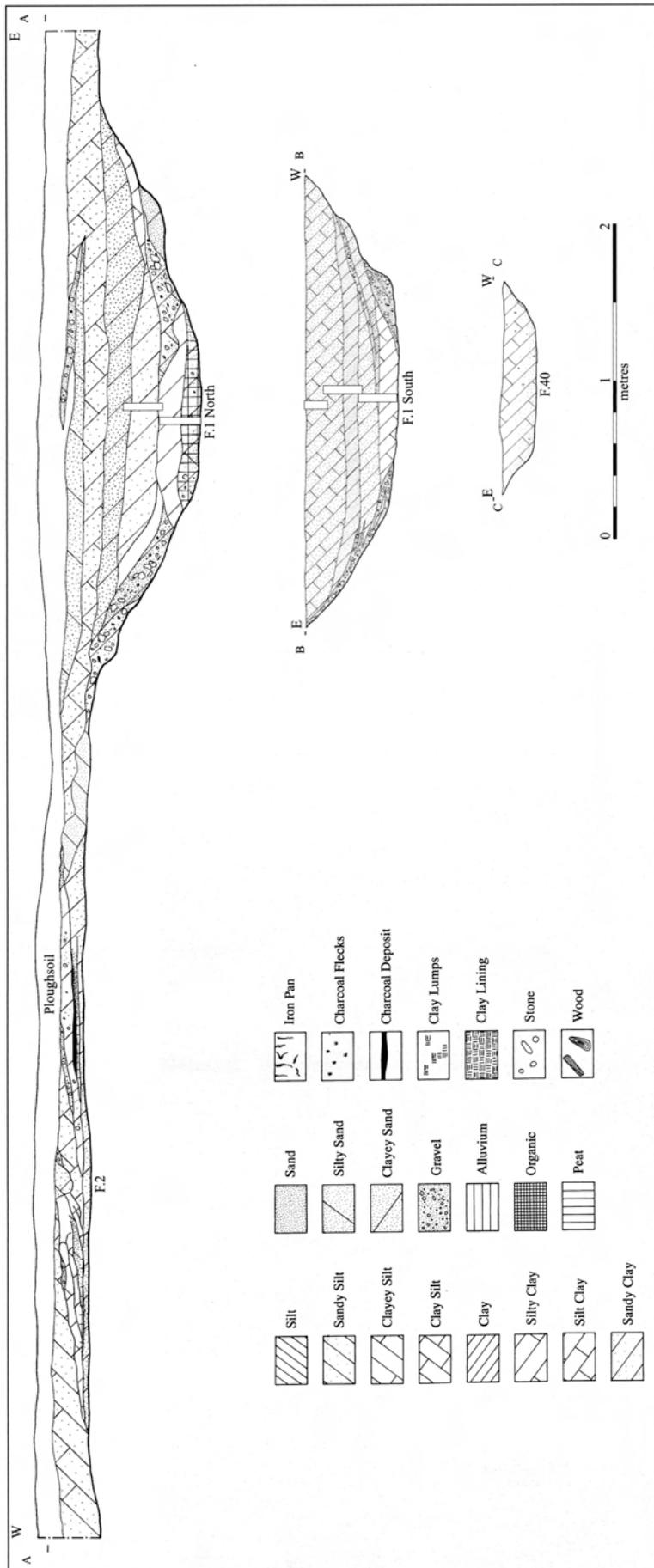


Figure 7. Main Ditch Sections (F. 1 & F. 40; see Fig. 3 for location).

Material Culture

Iron Age Pottery

Leo Webley

In contrast to only two sherds of Iron Age pottery forthcoming from the 1990 and 1995 campaigns (Lucas in Evans & Knight 2002a: 43), a total of 140 sherds (2818g) was recovered from the 2003–04 excavation. The bulk came from the primary fill of the southern ditch terminal, with the remainder from ditch F. 40 nearby (Fig. 8). Aside from some crumbs, only seven vessels are represented, two from F. 40 and five from the ditch terminal, with some of the latter being substantially complete (Fig. 9). Unusually, therefore, this assemblage can be described on a vessel-by-vessel basis:

Southern Circuit Terminal

Vessel 1. Complete profile of a small globular jar (Fig. 9.4); height 10.5cm, rim diameter 10cm, base diameter 8cm, girth diameter 11cm (three sherds, 177g). The rim is slightly everted with an internal bevel. The base is pinched out. Fabric: fairly soft with moderate quartz sand,

moderate medium-very coarse red iron ore/oxide and rare unburnt flint gravel.

Vessel 2. Parts of a large, very fragmented slack-shouldered vessel (Fig. 9.1); base diameter 13cm, rim diameter c. 20cm (56 sherds, 1379g). The rim top has diagonal fingernail impressions, slanting clockwise from the outer to inner edge. The base is pinched out. Chaff impressions to surfaces. Fabric: soft with moderate quartz sand, rare flint gravel and rare medium-very coarse red iron ore/oxide.

Vessel 3. Complete rim and upper body of a slack-shouldered jar (Fig. 9.3); height >10.5cm, rim diameter 12cm (11 sherds, 430g). The rim is upright and rounded. The exterior has extensive burnt residues and has suffered from spalling. Fabric: hard with moderate quartz sand.

Vessel 4. Substantial fragments of the base, body and rim of a slightly ovoid shoulder-less jar (Fig. 9.2). The rim is upright, rounded and slightly tapered on its inner side; the base is simple. Height c. 10–12cm, base diameter 10cm, rim diameter 11cm (48 sherds, 557g). Highly burnished exterior. Traces of burnt residues to interior and exterior. Fabric: hard with very common medium-very coarse burnt flint.

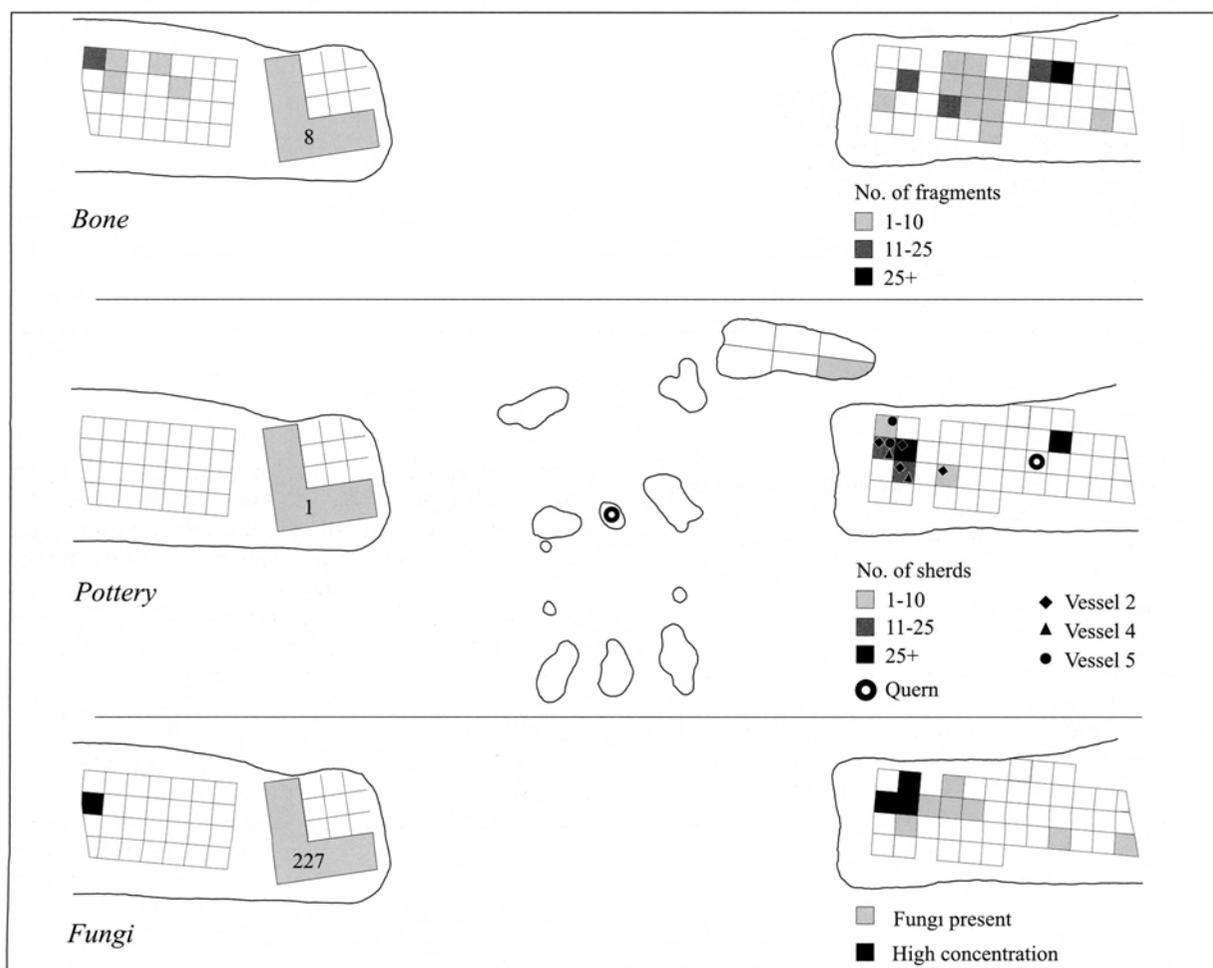


Figure 8. Artefact Distributions, F.1 basal deposits and ditch F. 40 (note for northern F. 1 terminal, toned 'L'-shaped swathe indicates area of 1990 & 1995 excavation cuttings, with their respective finds numbers shown).

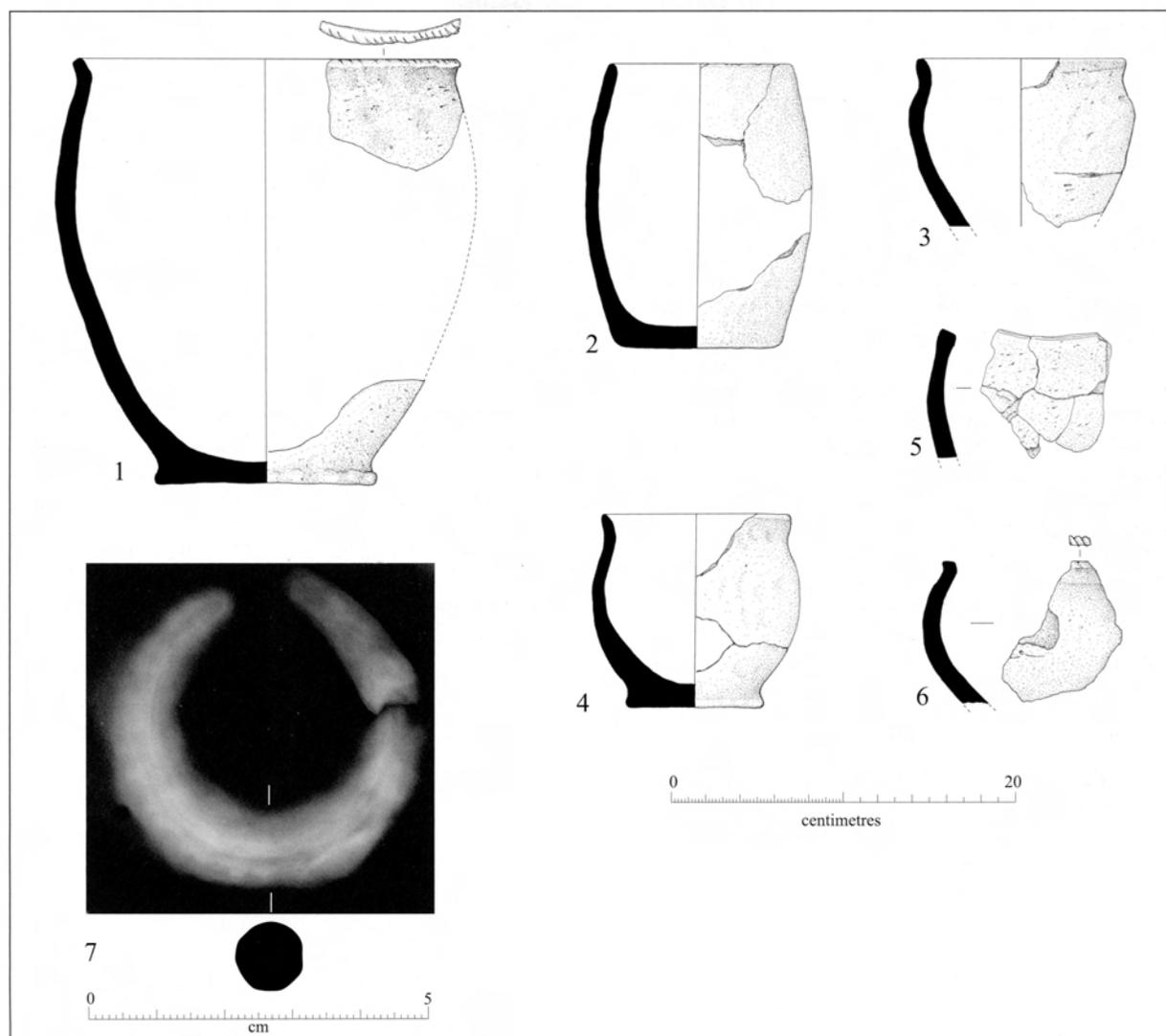


Figure 9. Pottery Drawings (1-6; F. 1 & F. 40) and the F. 28 iron ring (7).

Vessel 5. Parts of the rim and body of a rounded shoulderless vessel with an inwardly projecting flattened rim (Fig. 9.5; dia. 14cm; 17 sherds, 190g). Fabric: fairly soft with moderate voids from vegetable matter; soapy feel.

Crumbs of pottery in a sandy fabric (6g) were also recovered.

Ditch F. 40

Vessel 6: Part of the rim and body of a globular vessel with an upright flattened rim (Fig. 9.6; height >9cm; four sherds, 70g). The rim top has diagonal fingernail impressions, slanting clockwise from the outer to inner edge. Fabric: hard with moderate quartz sand.

Vessel 7: Body sherd with a row of fingertip impressions along the shoulder (9g). Fabric: hard with common medium-very coarse burnt flint.

The pottery from the southern enclosure ditch was found in a fairly tight cluster at the ditch terminal. Sherds from individual vessels either occurred within a single metre-square or in immediately adjacent squares, with the exception of Vessel 2, frag-

ments of which could be found at least 2m apart from each other. The impression gained is that the five vessels were deposited in the ditch terminal soon after breakage and in one coherent episode, rather than being surface refuse that incidentally became incorporated into the ditch fill over an extended period. Admittedly, the edges of many of the sherds are abraded, especially in the case of Vessel 2, but the fairly soft fabrics of these vessels will have played a role in this.

It is unusual to find an Iron Age assemblage of this size with such a restricted range of vessels and relatively high degree of completeness. The concentration of pottery in the southern ditch terminal and the neighbouring F. 40, with a complete absence of pottery from the primary fills of any of the previously investigated parts of the ringwork ditch, is also noteworthy.

This is an important assemblage as it seems to occupy a transitional point in the development of local ceramic styles. The bulk of the assemblage (Vessels

1–3 and 5–6) are in the Middle/late Iron Age tradition, as shown by the sandy fabrics and slack-shouldered forms. The remaining two vessels (4 and 7) show features that link them to the earlier Iron Age tradition. Both are tempered with burnt flint, and the fingertip decoration around the shoulder of Vessel 7 is a feature often found in assemblages of the ‘Early’ part of the period, but almost never in the Middle Iron Age. Though the single sherd that represents Vessel 7 could be residual, the same cannot be said of Vessel 4 of which substantial parts were recovered. Vessel 4 is particularly interesting in that it seems to be transitional in type. While the burnt flint temper and highly burnished black exterior surface are Early Iron Age traits, the simple ovoid form is more akin to the period’s ‘Middle-phase’ vessels. A date for the assemblage around or shortly after the transition from the Early to Middle Iron Age can thus be proposed, i.e. the fourth–third centuries BC. This is compatible with the radiocarbon dates obtained from elsewhere in the ringwork ditch (see below and Evans & Knight 2002a).

Close local comparisons for this assemblage are not easy to find, as most can be categorised more easily as dating either to the earlier or later Iron Age. However, it is worth comparing the material with that from the morphologically similar circular ringwork at Wandlebury, south of Cambridge. Only small amounts of fragmentary pottery have been recovered from the primary ringwork ditch at Wandlebury, which has been described as including sherds of both earlier and later Iron Age character (Hill 2004). While the earlier Iron Age material could well be residual, an alternative interpretation would be that the ring-

work dates to the same transitional period as Arbury. A series of pits inside and outside the Wandlebury ringwork largely contain earlier Iron Age pottery pre-dating the assemblage from Arbury. However, a few pits contain slightly later material, including a sherd with a comparable soft sandy fabric and tapered rim form to Vessel 1 at Arbury (Webley 2005). This may indicate at least some contemporary activity at the two ringworks.

Faunal Remains

Chris Swaysland

A small assemblage of 117 fragments (837g) of animal bone was recovered, the vast majority of it from the southern ditch terminal (Fig. 8). The bone was in a variable state of preservation, with some having evidence of weathering prior to deposition (see Swaysland in Evans & Knight 2005 concerning the methodology of study and Note 4 in Evans & Knight 2002a concerning Serjeantson’s study of the 23 bones recovered from Iron Age contexts during the 1990 season).

All the bones that could be distinguished between sheep and goat were identified as sheep and it is, therefore, assumed that no goats were present. Sheep make up 50% of the sample. One sheep mandible was recovered, this had an age at death of 4–6 years; no epiphyseal sheep ageing data was recovered.

Cattle make up 40% of the assemblage. One cattle mandible was recovered, which had an age at death of 3–6 years; an articulated astragalus and calcaneus from a juvenile animal were also present.

A horse metatarsal was also found; it was broken but, when reconstructed, was found to be mostly present. The



Figure 10. Fungi: left, typical pieces recovered from F.1 basal deposits; right, modern example of the scaly earthball (*Scleroderma verrucosum*).

articular ends showed wear indicating that the bone had been exposed and suffered weathering before being deposited. When measured, it provides a withers (shoulder) estimate of 11.2 hands. By modern standards this would be considered a pony (<14 hands); Maltby (1981) in a review of several Iron Age sites indicates horse withers heights ranging from 10–14 hands.

One bone, a sheep humerus, showed two horizontal, light cutmarks on the anterior face near the distal end, which may be indicative of dismemberment. A sheep tibia showed evidence of carnivore gnawing.

Table 2. Relative species proportions within Iron Age features (involving a restricted suite of skeletal elements and all mandibular teeth, 'POSAC' refers to the methodology used to quantify the assemblage; see Swaysland in Evans & Knight 2005).

Species	POSAC	POSAC %
Sheep	5	50
Cattle	4	40
Horse	1	10

In conclusion, the assemblage is very small so any conclusions must be tentative. All faunal material was recovered from domestic mammals, predominantly sheep and cattle. Horse remains were scant, but indicate an animal of small stature typical of the period.

Iron Age Fungus

Quita Mould and Barbara Wills

During the 1990 excavations an organic-rich deposit was observed in the northern ditch terminal in Trench IV. Investigation of the deposit, described as a waterlogged, dark brown-black 'muck', suggest that it had been produced in reed swamp conditions in 0.30–0.40m of standing water.¹ The deposit was found to contain a small amount of bone, worked wood and 227 fragments of an organic material thought to be leather (Fig. 8; Evans & Knight 2002a: fig. 13). A sample of this organic material was radiocarbon dated to between the 4th and 2nd century BC. Consequently these small organic fragments, though rather unprepossessing in themselves, were of the greatest interest, as leather of this date is rarely recovered.

The pieces were accepted by the British Museum (Registration no. P1990, 12–3) where they were successfully conserved and a selection put on permanent display.² At that time the identification as leather was not doubted and conservators who treated the material described the pieces as 'tanned leather fragments'. Later, in 2000, a preliminary assessment of the material was made by Quita Mould and this was included in the fieldwork summary published in this journal (Evans & Knight 2002a: 42–3). At that time, the conserved material was considered not to be vegetable (oak bark) tanned leather, but most likely to be semi-tanned (oil-tanned) leather. In that publication the hope was expressed that a more extensive investigation of the assemblage would be possible and it is to the credit of all those involved that this has been

achieved and the results (incorporating the 50 more larger such pieces found in 2003/04) presented here.

Examination of the 'fresh' material from the recent excavations suggested it was unlikely to be semi-tanned leather because of the characteristics of the surface. The possibility of it being an internal skin product or viscera was considered. While the thinner 'skin/membrane' observed might suggest the remains of an internal organ, the recovery of larger pieces, clearly showing that the thin membrane was directly associated with a thicker 'pith-like' core, made this interpretation unlikely.

A fungus of some kind was suggested. Re-examination of the earlier 1990 material in the British Museum confirmed our suspicions that it, too, was the same. The differing properties observed initially in separate small pieces in the first-phase assemblage material were, in fact, components of a single material, now seen in the larger, more indicative fragments from the 2003/04 excavations. The occasional elliptical holes seen previously, also occurred on larger, excavation-phase pieces and did not derive from stitching. The apparent 'cut' edges observed earlier material were the result of clean breaks in the thicker membrane (Fig. 10).

As investigation continued it was suspected that all the material was, indeed, some sort of fungus, possibly puffball or a bracket fungus. Three samples from 2003/04 were sent to the Mycology section, The Royal Botanic Gardens, Kew. Dr. B. Spooner confirmed that he had seen similar archaeological material in the past which were usually found to be puffballs, particularly *Handkea utriformis*. His colleague, Dr P. Roberts, was able to identify the sample pieces as being puffball. The puffball may well be *Handkea excipuliformis* (Scop.) Kreisel, the pestle-shaped puffball, a large and common type, but a more exact identification was not possible from the material submitted. The three samples examined were mature and contained abundant spores and capillitium (specialised hyphae). Subsequently, the remaining 2004 material, some sixteen samples, were examined by M. Parslow. These were identified as fragments of fruitbody of larger fungi, all belonging to the genus *Scleroderma*, the earthballs; similar in shape to puffballs but not closely related (Parslow 2005). Despite some variation the material could be identified as one single species, or two closely related taxa. Within the known British species today, they are closest to *S. verrucosum* (Bull.) Pers, scaly earthball: a relatively common and widely distributed species (Fig. 10). A single sample also contained smaller spores possibly from a Lycoperdales fungus, a puffball or a bovist. Other macrofossil fungi from archaeological contexts in Britain subjected to mycological identification are either puffballs or bovists (Spooner & Roberts 2005). Bracket fungus has been noted during excavations at Flag Fen, Peterborough (M. Taylor pers. comm.); the earthballs at Arbury are the first recorded occurrence of such from an archaeological context.

Possible Uses

The following section draws heavily on information provided in an internal report regarding the identification of the Arbury material by Parslow (2005) to Dr Roberts (Mycology Section, the Royal Botanic Gardens, Kew). While it is difficult to establish the number of specimens represented by the fragments retrieved from the 2003/4 excavations, it is estimated that at least seven fruit bodies of earthballs and

more than one puffball were recovered. The three samples of puffball identified were mature and the earthballs appear to have been collected just prior to maturity. When kept in favourable conditions, an immature fungal fruit body will continue to ripen and produce spores. Those picked when too young fail to produce spores and die. Those left undisturbed open at the top, the upper part disintegrates and the spores are dispersed. All the earthballs examined from 2003/04, bar one, had been collected when just sufficiently large to continue the maturing process and produce spores, but prior to complete maturity. This suggested that they had been deliberately collected and had been selected at a particular stage of their development. A wet ditch would be an unusual habitat for puffballs or earthballs to thrive. While it is conceivable that mature puffballs growing in the locality may have blown into the ditch, it is most unlikely that the earthballs had occurred there naturally.

The reason that they had been collected is uncertain. The larger puffballs are considered edible when young, that is immature before they have produced spores, and are gath-

ered for food. While it is unknown whether mature puffball was collected for food in the distant past, it was not eaten in the recent past and would certainly be unpleasant to today's palate. It is unlikely that mature puffball, as that found at Arbury, was eaten. Similarly, earthballs are generally considered to be inedible or lightly toxic (Parslow 2005 quoting Imazeki, *et al.* 1988). It is more likely that the fungi from Arbury had been gathered for another purpose. Traditionally the dry fibrous mass of thread-like hyphae (capillitium), that remains after puffball spores have been expelled, have been used as tinder and as a styptic for wounds (Watling & Seaward 1976: 170–1). It has also been suggested that they were used as insulation (Watling 1975). While earthballs do not have capillitium but generative hyphae, it has been observed that when collected just sufficiently mature to produce spores, as observed in the Arbury examples, the generative hyphae dry and resemble modern expanded polystyrene (Parslow in litt.). It may be that the Arbury fungi had been collected for medicinal uses, for tinder or a packing material rather than as a food source.

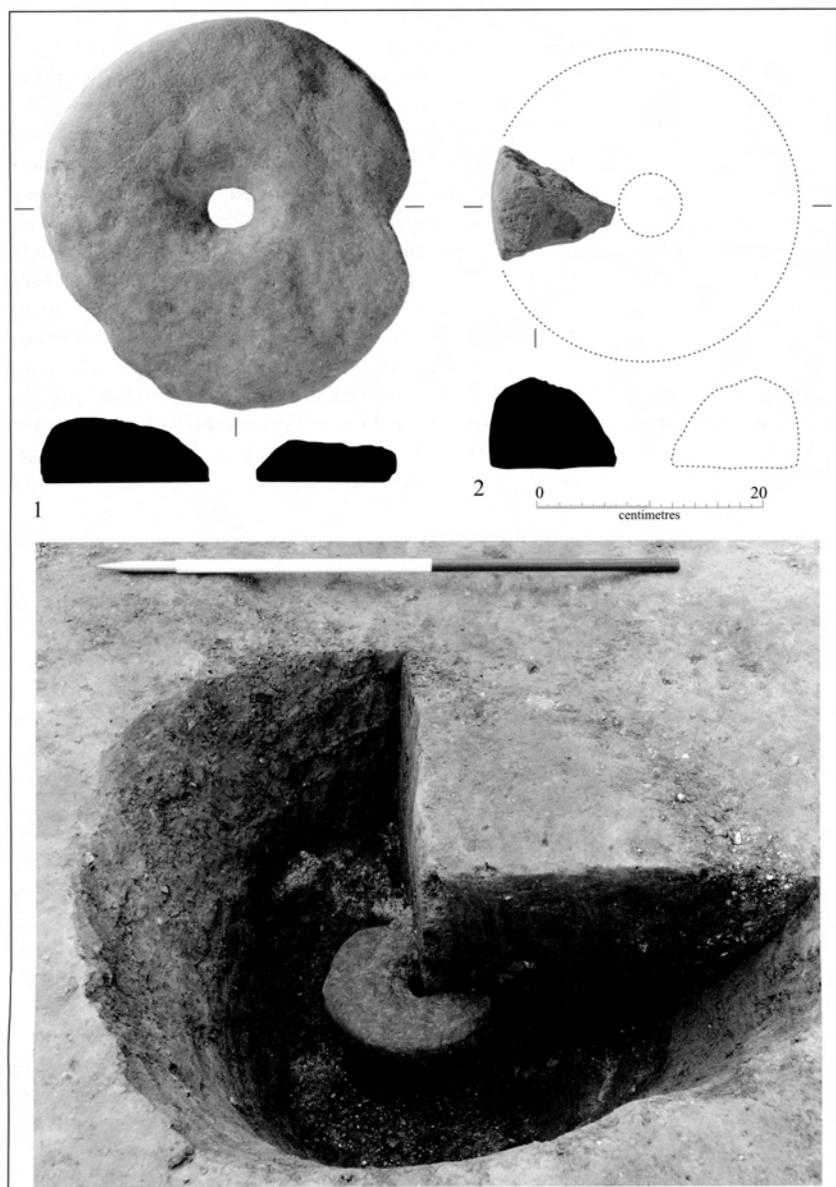


Figure 11. The Quernstone 'Pivot' (bottom; F. 42) with details of recovered quernstones above (1 & 2; photographs, D. Webb).

Macrofungal material has been recovered from a small, but increasing, number of archaeological contexts, principally of Iron Age and Roman date (Watling & Seaward 1976: 165–6). The majority has been found to be species of puffball. As far as we are aware, Arbury is the first site from which earthballs have been recorded. Macrofungal material from waterlogged contexts is difficult to recognise. At Arbury, the material was first considered to be a semi-tanned leather or skin product, but recovery of a larger sample allowed its true identity as fungus to be determined. It is most likely that other small fragments of organic material from waterlogged Iron Age contexts have been similarly misidentified previously. It is of interest here, that a fragment of organic material from a waterlogged context at Haddenham, Cambs, previously described as possibly being of hide (Evans & Serjeantson 1988), was identified as an immature fruit body of the Mosaic Puffball *Handkea utriformis* (Bull.) Kreisel (Parslow 2005) during this study.

The Waterlogged Wood

Maisie Taylor

Fifteen pieces were recorded from the 1990 evaluation: three pieces of roundwood and a number of tiny, disintegrating twigs, six woodchips (one off roundwood) plus three pieces of fairly thick bark; all the wood chips were very thin, often 1mm or less, and often fragmentary (Taylor in Evans & Knight 2002a: 41–2). Much of the wood from the 2003/04 season was also in very poor condition, although one or two pieces were slightly better preserved. It included nine pieces of roundwood, seven pieces of roundwood debris, 13 woodchips, with the remainder being fragments of bark with some other debris, probably woodchips, and roundwood which was too decayed for analysis.

Roundwood and roundwood debris

Much of the roundwood and roundwood debris is from coppiced material, although the 1990 material is much more twiggy. Most of the material is 20mm and less with two or three pieces between 20 and 35mm. This means that all the material falls within the range which is considered useful for hurdle or fence making, although tending to be rather light-weight (Forestry Commission 1956). Many prehistoric hurdles are lighter weight than modern ones, however (Morgan 1988: Table 2).

The poor condition of the material made precise species identification difficult. Most of the non-oak samples examined microscopically were either hazel (*Corylus avellana*) or alder (*Alnus glutinosa*). Both species were widely used in prehistory for wattle work.

Bark

The bark from the 1990 excavations is very thick, 15–25mm, suggesting it had derived from a mature tree. The material from the 2003 excavation comes from a larger range of thicknesses, (2–10mm) suggesting a range of younger tree.

Woodchips

Most of the woodchips are tangential and fairly small such as might be generated by sharpening posts, or trimming up raw material for coppice.

The assemblage is very small, but appears to be quite coherent. Almost all the debris is derived from the production of wattle, or preparing the coppiced wood for use. This is particularly clear in the material from the 2003 excavation. Most of the material is either hazel (*Corylus avellana*) or alder (*Alnus glutinosa*), although there is a small amount of oak (*Quercus* sp.). The combination of these common species, together with the size of the material, suggests that the material was destined for local fencing.

Other Finds

Aside from only three worked flint and two sherds of Roman pottery, a greyware base and a complete amphora handle (see, respectively, Beadsmoore and Andersen in Evans & Knight 2005 and also Lucas in Evans & Knight 2002a: 43), four fragments of burnt stone (980g) were found in three contexts: F. 40 and from the southern ditch terminal (F. 1). All the pieces derived from large, rounded sandstone pebbles.

The worked stone assemblage consisted of two, upper stones of rotary querns; the one near-complete (F. 42; Fig. 11.1) and, the other, a wedge-shaped fragment (F. 1; Fig. 11.2). The former was 34cm in diameter, had an oval-shaped central perforation (c. 4.5cm dia.), was 5.5cm thick and weighed 7kg; it had a worn cupmark-like hollow (120mm dia; 45mm deep) in its upper surface, which evidently did relate to its usage as a quern. The latter piece came from a 32cm diameter quern, was 8.5cm thick and had a tall arched profile. Both pieces were Lower Greensands (S. Timberlake pers. comm.). Although previously thought to date no earlier than the Late Iron Age, rotary querns have now been recovered from 5th century BC contexts in Britain (Gussage All Saints, Danebury and Thorpe Thewles: Waits 2002: 28).

Metal-detecting the ditch fills produced a single copper alloy coin from the tertiary fills of the northern ditch section (F. 1). Reported upon by A. Challands, it is a worn and corroded Gratian dated AD 367–383.

A single piece of ironwork was recovered from the excavation of entrance features, comprising a 'closed' penannular ring.

<047>, F. 28 Concreted and corroded penannular iron ring (two refitting pieces), creating an almost complete ring, with circular cross-section and tapering terminals (confirmed by X-ray; Fig. 9.7). Dimensions: external diameter 57mm, internal diameter 22mm, weight 43g. Recovered from 'gate' posthole, F. 28, the recut of F. 42 with its redundant rotary (top) quernstone.

It is not possible to ascertain the function of this ring, although a number of similar rings have been recovered, of varying sizes and including split-rings, from Danebury, Wiltshire (Sellwood 1984: 366, fig. 7.22)

Environmental Studies

Micromorphological Analysis

C.A.I. French

Exposure of the associated bank and palaeosol sequence in Trench IV in 1995 and Profile D in 2003/04 permitted sampling for micromorphological analysis (after Murphy 1986 and Bullock *et al.* 1985). Two sections through the rampart and underlying buried soil sequence were taken (see French in Evans & Knight 2005 for detailed micromorphological descriptions of the Trench IV samples, the results of which are summarised in Table 3 below; see also French in Evans & Knight 2002a: 39–40).

The soil profile in Trench IV is described as:

- 0–21 Ap; dark brown silt loam with occasional fine-medium gravel, <30mm; distinct boundary.
- 21–34 redeposited subsoil; greyish white/yellowish brown mottled, silty clay marl; distinct but irregular and undulating boundary.
- 34–40 redeposited? turf; dark greyish brown silt/very fine sandy loam; distinct but irregular and undulating boundary.
- 40–41 lens of reddish yellow/brown iron pan; distinct but irregular boundary.
- 41–44 *in situ* turf; dark brown silt/very fine sandy loam with occasional flecks of charcoal, <10mm; variable thickness; merges over 20mm.
- 44–60 buried soil; pale greyish brown silt loam with rare flecks of charcoal, <5mm; distinct boundary.
- 60+ subsoil; yellow/white mottled silty calcareous marl.

A continuous soil profile was taken through this sequence from the base of the bank material (at c. 29cm) to the top of the subsoil (at 60cm) for micromorphological analysis.

A second exposure through the rampart and buried soil was recorded and sampled for micromorphology in 2003/04 from Profile D. While this profile

was ostensibly similar to that in Trench IV, at least three layers of compressed turves (totalling 5–6cm in thickness) were observed at the base of the bank, placed on the truncated surface of the buried soil, with a 2mm thick iron pan developed at that contact surface. In addition, on the outside of the clay and gravel upcast of the rampart bank was a c. 30cm thick zone of turves that may represent a former turf stack on the exterior side of the rampart/interior side of the ringwork ditch.

The description of the thin-sections taken through the rampart and soil sequence are summarised in Table 3.

Beneath the present day ploughsoil is a 1.5cm thick zone of loamy sand exhibiting much sesquioxide impregnation, with horizontal and parallel crack patterns on the upper surface of the mixed loamy sand and gravel deposit which comprises the inner rampart. This zone could represent turf development on the former rampart's surface and/or iron pan development at the transition between the base of the present ploughsoil and the upper surface of the rampart.

The underlying context was composed of a similar loamy sand main fabric, but in addition it contained irregular aggregates and zones of clean, very fine quartz sand. This heterogeneous mixture of soil and subsoil was probably also part of the rampart upcast. In the field, there were also thought to be small lumps of turf-like material within it.

There is then an abrupt change to a thin zone of heavily iron impregnated, highly organic loamy sand. In thin-section this appears as two lenses of iron impregnation, 'sandwiching' a thin zone of loamy sand material. This turf zone is highly compressed and oxidised, and possibly represents one horizon of laid turves on top of the *in situ* turf. In addition, the upper 500µm of the upper surface of the turf exhibits a 'crust' of silty clay, as if it was a trampled upper surface (after Gé *et al.* 1993). In contrast in Profile D, at least three layers of individual turves were recognisable in the field at this level, but in this case they were laid directly on the truncated soil that had already had its turf removed.

Table 3. Summary of micromorphological results.

Depth below surface (cm)	Description	Interpretation
29-31.5	loamy sand	similar to buried soil
31.5-33	loamy sand with much sesquioxide impregnation, and horizontal/parallel cracks	turf on/within the rampart
33-40	loamy sand with small gravel pebbles throughout	upcast material from external ditch comprising the rampart
40-46	loamy sand with irregular aggregates/zones of very fine sand	mixed soil and subsoil, probably also upcast material of rampart
46-46.2	surface 'crust' of silty clay on a lens of iron impregnated organic material	compacted/trampled surface on former turf
46.2-46.8	loamy sand	redeposited soil with turf
46.8-47	lens of iron impregnated organic material	compacted former turf
47-60	loamy sand with very fine organic component and irregular zones of greater silty clay content	buried soil, probably disturbed and truncated before burial
60+	terrace sands and gravels	subsoil

The soil beneath is a similar loamy sand fabric to the other contexts, but exhibits a greater amount of finely comminuted amorphous organic matter and occasional zones of greater amounts of non-laminated silty clay within the fine groundmass. As this buried soil has an homogeneous composition and few features of note, it therefore contains few pointers as to the history of its development. Nonetheless, the relatively small amount of within-soil illuviation of fines down the profile does point to the rather poor development of a former brown earth (Avery 1980).

The thin-section analysis has mainly served to confirm the field observations of a brown earth with turf development sealed by deliberately dumped material containing turf, soil and subsoil material presumably derived from the earthmoving activities associated with the digging of the outer rampart. The buried soil is now severely oxidised and mixed by the soil fauna, with some evidence for soil disturbance given by the relative abundance of dusty or silty clay within the fine groundmass. Former turf development on this soil points to an open, grassland landscape prior to rampart and ditch construction. The thinness of the turf (<1cm) points to considerable compression, compaction and organic degradation, by an estimated factor of at least ten (given an average turf depth of about 10cm).

It was very unusual to find an intact soil profile without a reasonable depth of overburden, even more so in such an intensively utilised arable field as at Arbury. Several examples of Iron Age ringworks have now been investigated in Cambridgeshire using micromorphological analysis and either field assessment or some degree of excavation: Borough Fen Site 7 (French in French & Pryor 1993, 73–4; French 1995a), Wardy Hill, Coveney (French 1993 and in Evans 2003), Stonea Camp (French 1995b and 1997)

and Wandlebury (French 2004a and b). Of these, all but Wandlebury are either in a fen-edge or gravel terrace in a river valley location, and have been severely affected by intensive modern arable farming and/or past desiccation. Every site, except Borough Fen (French & Pryor 1993: 73–4) was no longer damp, let alone once waterlogged, and most have suffered truncation of the earthworks and associated buried soils as a result of subsequent ploughing and/or landscaping, despite their often 'protected' status, for example Stonea Camp, Wandlebury and Borough Fen. Nonetheless, in each case, it has been possible to extract some information either about land-use practice and/or rampart construction using micromorphological techniques (Table 4).

Pollen Analysis

Steve Boreham

Three monoliths (A, B & C) from a ditch fill south of the main entrance to Arbury Camp (Fig. 7) and a block sample of sediment from the bank/'rampart' north of the main entrance from the excavations are considered in this report (see Table 5 for pollen percentage data, Boreham in Evans & Knight 2005 concerning methodology and Note 7 in Evans & Knight 2002a for previous pollen sampling).

Monolith C

Three samples of sediment (5cm, 25cm & 42cm) were analysed from this monolith. Pollen concentrations varied enormously from 2,191 to 198,748 grains per ml respectively. There was a clear improvement in pollen concentration and preservation of palynomorphs from the base of the sequence upwards. The basal sample (5cm) contained oxidised and corroded pollen grains, and as a consequence, only eight pollen grains were counted from an entire slide. It was judged that further analysis of this sample would not

Table 4. Iron Age enclosure soil and land-use history.

Site	Date	Soil	Pre-site Land-use
Borough Fen Site 7 (SAM 222)	Middle to Late Iron Age (380 cal BC - 80 cal AD; Har-8512)	argillic brown earth and relict arable soil with included occupation debris; on fen gravels; sand and gravel dump rampart	once wooded, cleared, then ploughed; subject to periodic alluviation; molluscs also suggest dry, open, short-turved grassland
Stonea Camp	later Iron Age	poorly preserved sandy (clay) loam; on March gravels; dump rampart	suffered truncation, leaching, oxidation and some illuviation; nearby pre-Roman soil from Stonea Grange exhibited open ground, some alluviation and middening (French 1997)
Wardy Hill, Coveney	later Iron Age	gleyed brown earth with ? turf; on Gault clays; presumed clay subsoil used for rampart	? grassland on the fen-edge; poorly drained subsoil and peat fen encroachment, now severely truncated by ploughing
Arbury	later Iron Age	brown earth with turf; on terrace deposits; soil, subsoil and turves used for rampart	open grassland; much oxidation
Wandlebury	Early to Late Iron Age	Rendsina with turf; often with turf removed; on chalk; chalk subsoil for rampart	grassland on high ground, both now and in the Iron Age; possibly ploughed previously

have been cost-effective. However, the samples from 25cm & 42cm produced counts of 305 and 335 grains respectively, which exceeds the statistically desirable minimum of 300 pollen grains.

The sample from 5cm produced a pollen signal dominated by grass (c. 25%), sedges and herbs, with pine and ferns (Pteropsida). The percentage of Asteraceae pollen was rather high (c. 37.50%) indicating that soil processes had impoverished the pollen assemblage through oxidation. The sample from 25cm was also dominated by grass (32.5%) and

herbs, and also contained somewhat elevated amounts of Asteraceae pollen (29.8%) indicating that soil processes had begun to act on the pollen assemblage. However, a range of herb taxa were recorded, and arboreal pollen including birch (1%), alder (6.2%) and hazel (5.9%) were present. Spores of the polypody fern, which often grows on trees, were recorded, and spores of other ferns (Pteropsida), and pollen of the emergent aquatic bur-reed (*Sparganium*) were also counted. In contrast, the sample from 42cm, although dominated by grass pollen (79.1%), showed little sign of

Table 5. Pollen Percentage Data (* denotes low main sum).

	<209>	<209>	<206>	<205>	<204>	<204>	Rampart	Rampart
	Mono C	Mono C	Mono C	Mono B	Mono B	Mono A	Block	Block
	5cm	25cm	42cm	71cm	91cm	110cm	Turf	Buried Soil
Trees & Shrubs								
<i>Betula</i>		1.0	0.9					
<i>Pinus</i>	12.5*		0.3					12.5*
<i>Quercus</i>			0.6					
<i>Alnus</i>		6.2	1.2					
<i>Fraxinus</i>			0.3					
<i>Corylus</i>		5.9	2.7					
Herbs								
Poaceae	25*	32.5	79.1	100*	100*	100*	60*	25*
Cyperaceae	12.5*		1.2					12.5*
Asteraceae (Asteroidea/ Cardueae) undif.	25*	12.8	2.1					25*
<i>Achillea</i> type		0.7						
Asteraceae (Lactuceae) undif.	12.5*	17.0	0.9				20*	12.5*
Caryophyllaceae		0.3	0.6					
Chenopodiaceae		0.3						
Brassicaceae			0.6				20*	
<i>Malva</i> type		0.3						
<i>Plantago lanceolata</i> type		0.3	3.3					
<i>Ranunculus</i> type		0.3	0.6					
<i>Rumex</i> undif.		0.3	1.5					
<i>Sanguisorba</i>			0.3					
Apiaceae (Umbelliferae)		0.3						
Lower Plants								
<i>Polypodium</i>		4.3	0.3					
Pteropsida (monolete) undif.	12.5*	16.1	2.4					12.5*
Pteropsida (trilete) undif.		1.3	1.2					
Aquatics								
<i>Sparganium</i> type		1.6	1.8					
Summary								
Sum trees	12.5*	7.2	3.3					12.5*
Sum shrubs		5.9	2.7					
Sum herbs	75*	65.2	90.1	100*	100*	100*	100*	75*
Sum spores	12.5*	21.6	3.9					12.5*
*Main Sum	8	305	335	1	1	1	5	8
Concentration (grains per ml)	2191	41758	198748	<1000	<1000	<1000	<1000	1744

post-depositional oxidation. A range of arboreal taxa were represented including birch, pine, oak, alder, ash and hazel. Herbs were also well represented, and included sedges, strapwort plantain (3.3%) and dock (1.5%). Spores of the polypody fern, other fern spores (Pteropsida), and pollen of bur-reed (*Sparganium*) were also present.

Monolith B

Two sediment samples (71cm & 91cm) were analysed from this monolith. Pollen concentrations were extremely low at <1000 grains per ml. The preservation of palynomorphs was very poor with only a single grass pollen grain recognisable on each slide. Since the samples were so badly oxidised it was impossible to describe the assemblage, other than to say that it once may have been dominated by grass pollen.

Monolith A

The single sample (110cm) analysed from this monolith yielded very low pollen concentrations (<1000 grains per ml). The preservation of palynomorphs was very poor with only a single grass pollen grain recognisable on the slide. As above, the sample was so badly oxidised that it was impossible to describe the assemblage, other than to say that it once may have been dominated by grass pollen.

'Rampart' Block

The pollen sample from the buried turf produced a very low pollen concentration (<1000 grains per ml), while the buried soil sample was almost as poor (1744 grains per ml). The preservation of palynomorphs was generally quite poor with grains showing signs of oxidation and corrosion. The turf sample yielded only five grains from a single slide, and the buried soil yielded only eight grains. These counts are far below the statistically desirable minimum of 300 pollen grains and, therefore, the results should be treated with caution.

The turf sample was dominated by grass pollen (60%) with herbs including Asteraceae (20%) indicating alteration of the pollen assemblage by soil processes. The buried soil sample was dominated by grass (c. 25%), sedges and herbs, with pine and ferns (Pteropsida). The percentage of Asteraceae pollen was rather high (c. 37.50%) indicating that soil processes had impoverished the pollen assemblage through oxidation.

In conclusion, the base of the ditch fill (Monoliths A–C) has clearly been subjected to some oxidation, but the sample from 5cm shows an assemblage dominated by grass with sedges and herbs. A clearer idea of the vegetation can be gleaned from the 25cm sample, where grass dominates the signal, with herbs, hazel and alder scrub, and bur-reed growing in wet conditions. The sample from 42cm gives the clearest and most reliable data for the reconstruction of surrounding vegetation. Grass is the dominant vegetation here, but this signal could represent (at least partly) reed-swamp, rather than meadow grassland. Indeed, the presence of sedge and bur-reed add credibility to this interpretation. The disturbed ground indicator *Plantago lanceolata* (strapwort plantain) suggests trampling or soil disturbance at the site, and dock is a herb typical of riparian (bank side) habitats.

The arboreal signal suggests fragments of mixed oak woodland, probably some distance from the site, and local scrub of alder and hazel. Unfortunately, very little can be concluded from the pollen samples taken from Monoliths A and B, since almost all the pollen has been oxidised and destroyed by soil processes.

The absence of cereal pollen from these samples indicates that this was an ostensibly pastoral landscape, probably of meadows and grassland with alder scrub in the wetter areas and hazel scrub on drier ground. Curiously, in most Iron Age settings a strong arable signal might be expected, which seems absent here. The silty and clayey sediments appear to have been deposited in a water-filled ditch, probably covered by reed-swamp vegetation.

Very little can be concluded from the pollen obtained from the 'Rampart' Block. There is, at least, a confirmation that grass was a dominant component of the vegetation, and that sedges and other herbs grew nearby. The presence of pine pollen is not considered important here, since it is an ubiquitous and widespread pollen type.

Environmental Samples

Ellen Simmons

Five samples were selected for analysis from the ditch terminals deposits and three from gateway posthole features (see Simmons in Evans & Knight 2005 for full methodology and sample species-list). Preserved plant remains were identified in the terminal ditch samples and in posthole F. 45. A consequence of waterlogging, preservation of this material was generally very good, although more fragile seeds may have been damaged during drying.³ Samples from the shallower postholes to the east of F. 22 contained no preserved plant remains.

The seed taxa present can be divided into three general groupings:

- Aquatic plants living in or at the margins of water
- 'Ruderal' plants associated with human activity such as cultivation and pasturing, disturbed ground and nutrient enrichment.
- Plants associated with damp, shady, wooded and grassland environments.

The ringwork ditch itself contained water suitable for habitation by a wide range of aquatic and semi-aquatic plant life, as well as water fleas (*Daphnia*) and aquatic molluscan taxa (*Planorbis leucostoma* and possible *Lymnaea truncatula*). Aquatic plant species present in the ditch samples include pondweed (*Potamogeton* sp.), horned pondweed (*Zanichella palustris*) and, possibly, floating club rush (*Eleocharis* c.f. *fluitans*), all of which inhabit streams or ponds and ditches with standing permanent water. Additional semi-aquatic species of the margins of ponds and rivers present include sedges (*Carex* sp.), rushes (*Juncus* sp.), spike rushes (*Eleocharis* sp.) and club rushes (*Scirpus* sp.), as well as marsh stitchwort (*Stellaria palustris*) and possible marsh dock (*Rumex* c.f. *palustris*).

Human activity in the area around the ditches led to the presence of a number of plant species favouring disturbed/trampled ground and soil enriched by nutrients, such as

where animals are pastured or manuring is carried out in conjunction with cultivation. Such 'ruderal' plant species present include thistles (*Cardus* sp./*Cirsium* sp.), prickly sow-thistle (*Sonchus asper*), dandelion (*Taraxacum* sp.), stinging nettle (*Urtica dioica*), henbane, (*Hyoscyamus niger*), knotgrass (*Polygonum aviculare*) and stitchwort (*Arenaria serpyllifolia*). Also present are plant species known as common weeds of crop cultivation, such as goosefoots (*Chenopodium* sp.) and fool's parsley (*Aethusa cynapium*).

The environment local to the ditch, within which human activities encouraged the presence of a number of ruderal plant species, appears to have been one of generally damp grassland with shady hedgerow/woodland plants also present. Plants present in the ditches, such as meadow buttercup (*Ranunculus acris*), crowfoots (*Ranunculus* subgen. *Batrachium*), silverweed (*Potentilla anserina*), greater chickweed (*Stellaria neglecta*), blinks (*Montia fontana* ssp. *chondrosperma*), bramble (*Rubus fruticosus* agg.) and wood stitchwort (*Stellaria nemorum*), all favour shady damp grassland, hedgerow or woodland environments.

One posthole sample of the three analysed contained waterlogged plant remains, a similar suite of the three groups of plant taxa although at slightly different proportions (from F. 45, the deepest of gateway postholes). The combination of damp grassland, hedgerow and woodland plant species such as blinks, silverweed, crow foots and greater chickweed, with 'ruderal' plant species such as stinging nettle, stitchwort, thistle and field poppy (*Papaver rhoeas*) predominant. It is unlikely that this feature contained water, although the waterlogging of the soil is reflected by the seeds of rushes, club rush and sedge.

In summary, the ditches have been found to have contained waterlogged plant remains indicating the presence of standing water within both terminals. Plants growing locally to the ditch included species characteristic of damp grassy habitats and damp shady hedgerows and woods. Human activities such as trampling, pasturing and cultivation also led to the presence of a number of ruderal plant species and weeds of cultivation.

Dating Evidence

In addition to the two radiocarbon assays from the evaluation-phase, two further dates were obtained from 2003/04 material. Both derive from the basal deposits of the main ditch (F. 1), the first being an AMS sample from a piece of fungus, the second from a wood fragment:

- 1) ARB-04/[052] – 2210±40BP/380–170 cal BC
(Beta – 215386)
- 2) ARB-04/<080>SQ5 – 2100 ±40BP/200–30 cal BC
(Beta – 215387)

Entirely consistent with the results of the earlier samples (see Evans & Knight 2002a), these would, again, attest to the Middle/late Iron Age attribution of the enclosure (though see below concerning the possibility of its 'Early' origins).

Discussion: A Lowland Monumentality

The 2003/04 excavations both confirmed and detailed many aspects of the site's interpretation and character arising from the previous phases of investigation (Evans & Knight 2002a). The basic feature components were largely as recovered in 1991: the great ditch (with waterlogged fills), its interior bank/rampart, the circuit's broad entranceway and the imposing gate tower. The only new elements that the excavations contributed were another, more westerly bay/set of gateway posts and the F. 40 ditch. The evidence from the site's finds assemblages was also comparable and, apart from dismissing the attribution of its 'leather' (and adding the intriguing possibility of Iron Age fungus collection/usage; see Mould and Wills above), it essentially only extended the range of what had previously been recovered. Certainly, the quantity of material in the southern circuit terminal (and also ditch F. 40) is far greater than had been encountered elsewhere around the enclosure. Yet, the finds were so localised and their numbers still so relatively low that they certainly would not point to any kind of major occupation presence. Equally, the recovery of only three worked flints, would further emphasise the paucity of 'early pre-Camp' activity on the terrace's heavy sub-soils. This being said, as indicated by French's micromorphology studies, the enclosure would seem to have been built within an 'open' (i.e. cleared) grassland environment.

The opportunity to excavate the Camp's circuit at length allowed for the revelation of the quasi-segmented character of the ditch's construction, and basically it seems to have been dug as a series of inter-connecting, elongated hollows (Fig. 3). This raises a number of interpretative possibilities. These hollows are, for example, directly comparable to the primary form of the outer ditch at Wardy Hill, which there only locally survived because a portion of its circuit had been bridge-crossed and, otherwise, had subsequently been re-cut away on either side (Evans 2003: 34, fig. 23). From this, it could be extrapolated that Arbury's circuit had been left in a relatively pristine state and not extensively re-cut and maintained. (A functional logic could also be applied to this ditch form; that its builders themselves had trouble with high groundwater and, consequentially, left these ridges to control/dam its along-ditch flow.) Relating to this, it is equally possible that – whilst undoubtedly a distinct divide – the ditch itself was relatively unimportant as a boundary and that really its main purpose was to provide quarry upcast for its interior bank, which was the predominant enclosure-defining feature *per se*.

Unfortunately, due to 20th century disturbance and the cumulative impact of evaluation trenching in this area, it could not be determined whether the bank's construction was also segmented, or if it had been laid continuously. It is, however, here presumed that the latter would have been the case. The current excavation did conclusively determine that the bank's construction was 'simple'. Belying earlier speculations

tions that it possibly involved timber elements, it was clearly demonstrated that its bulk was supported only by a turf-stack revetment. How, the line of the bank is reconstructed is of crucial importance for the enclosure's interpretation and is discussed at length below.

Of the site's dating and finds, the recovery of the group of Middle Iron Age bowls from the southern circuit terminal are entirely consistent with the 4th–2nd century BC radiocarbon assays achieved (see Evans & Knight 2002a); though the recovery of flint-tempered vessels, normatively of 'Early' attribution, could suggest that its origins might lie in the later 5th century (see below). Otherwise of the finds, those *complete* items from the central middle gateway posthole(s) – the rotary quern base from its primary form (F. 42) and the iron ring/hook from the F. 28 re-setting (and as the only finds whatsoever from the gateway and bank contexts) – could conceivably attest to 'set placement', but this, also, is an issue we will have to return to. Given the restricted range of the site's artefacts, the recovery of a second quern fragment (from the main southern ditch terminal) to some degree belies the lack of evidence of arable production; the non-occurrence of cereals from both the bulk environmental samples (see Simmons above; though arable-associated weeds were present) and, too, the pollen record (see Boreham). There seems to be little evidence of fields within the Camp's immediate environs and, rather, it appears to have lain in grassland/meadows with scrub. Of course, the range of contexts sampled for environmental remains was essentially restricted to the enclosure's entrance 'architecture' and is not necessarily reflective of the Camp's interior throughout. Nevertheless, now taking the evidence of the many phases of its evaluation fieldwork and what was recovered during the 2003/04 campaign, the enclosure could only have ever hosted a relatively minor settlement component.

If one wished, an explanatory 'story' could be constructed from findings at the site. Drawing upon the negative evidence of the trenches cut south of Area A in 2003/04, this would relate to the recovery of the pottery and bone from the southern circuit terminal (almost alone) with the occurrence of the F. 40 ditch-line. The only really asymmetrical element in the entranceway's layout and without an obvious access-related function, this short boundary may have contributed to a small animal pen or the like, delimiting a space between the ditch terminal proper and the southern side of the gateway. Of course, it is always possible that a minor occupation 'presence' (perhaps amounting to no more than a small roundhouse) escaped our sampling grid in the area of the entranceway's interior, but it is equally conceivable that the gateway itself may have been modified to provide some manner of shelter. The much smaller postholes associated with its back/western bay could suggest that it was later enclosed to serve as a 7.50 x 6.75m room, perhaps the sometime abode of herders.

This would, indeed, be a convenient story, if not a very convincing one. Of this matter, all we can know

for certain is that evidence of some very limited domestic activity was forthcoming. Given, however, the great scale and 'formality' (albeit simple) of the Camp-enclosure, this does not itself seem terribly significant. Despite our now sustained efforts, the site still evades ready interpretation. The excavation's pollen cores could, admittedly, be enlisted to further support the idea that it essentially related to stock management (which the evidence of fence-manufacture within the wood assemblage could also complement, though a bank-top barrier is another possibility). Be this as it may, it was still a great *monumental enclosure* and its construction would certainly have marked a 'commanding gesture', staking a group-claim to what were then, obviously little used, lowlands (Evans 1992).

How the enclosure's entranceway is thought to have actually functioned is almost entirely dependent upon how the bank system is reconstructed (Fig. 12), as, much denuded (especially in the south), there can be no certainty that all of its line survived and/or was distinguished (the immediate area being greatly disturbed by modern farm buildings). Here, two models are proposed. In the first, the arrangement of the bank terminals, is essentially accepted at face value, with the southern projected to mirror that of the north. By this, there would, indeed, have been 'carriageways' flanking the ends of the ditch and the timber gateway. The latter would have stood proud of the bank/rampart, and, in effect, have been a case of almost 'folly-like' *show architecture* making little functional sense (see Bowden & McOmish 1987 concerning the 'display' attributes of hillforts and their role as social group-building 'projects'; see also Bowden 2006). Over the almost 15 years since the Camp's main entranceway was first discovered, no parallels for such a free-standing structure have been forthcoming. Yet, as depicted in Figure 12, shared construction principles can be recognised, but nothing close to a direct parallel.

The second model would reconstruct the bank more fulsomely and have its terminals out-turn to flank the entranceway. By this, the small posts associated with the northern and southern sides of the gateway's western bay would not so much relate to a 'room-like' space, but to the revetment of bank deposits which then would have been directly stacked against its sides; due to the tail-off of the bank terminals, such revetment would not have been necessary within the eastern 'front' bay. In this reconstruction the latter may not, in fact, have existed as an integral part of the gateway as such. The two front postholes, F. 31/38 and F. 27/41, may have simply held marker posts that were not structurally tied-in (*cf.* Rainsborough's 'arch'; Fig. 12.C). As it would be envisaged in this option, the large central posts of the western bay, F. 28/42 and F. 45/46, could have both contributed to carrying a second-storey 'watch' platform and, also, have blocked the gate-doorways proper. In this regard it is crucial to recognise that, while affording 2.00–2.50m wide passage between themselves and the gate's side posts, these central supports would

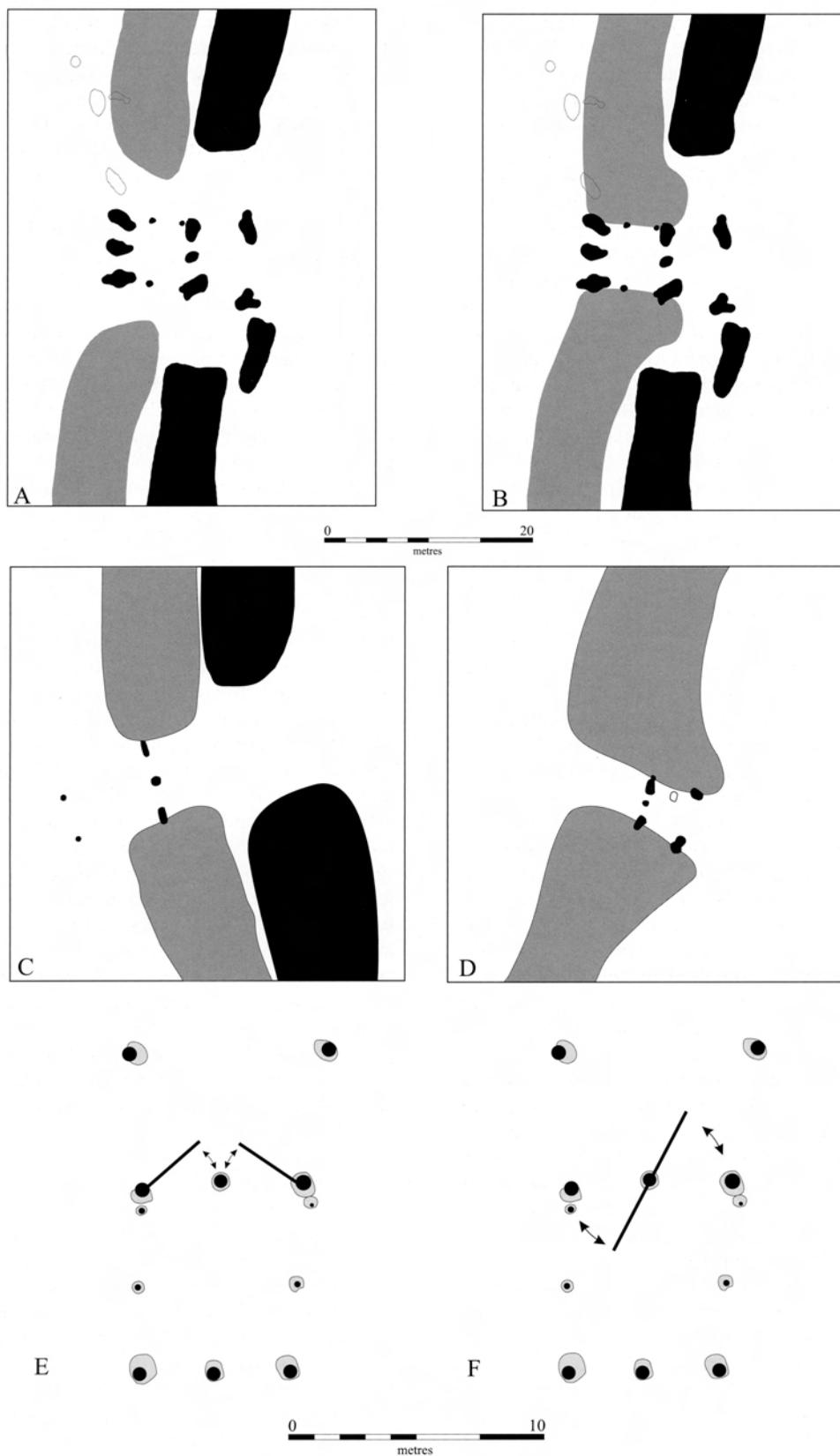


Figure 12. Entranceway Reconstructions: A) Gateway as freestanding 'show architecture' (Model 1); B) bank-flanked 'classic hillfort-type' arrangements (Model 2); C & D) comparative hillfort entranceway, Rainsborough (C; after Avery et al. 1967: fig. 16) and Danebury's southwest entrance (D; after Cunliffe & Poole 1991: fig. 3.16 & .19); E & F) alternative Arbury gate-layouts - 'conventional' two-door (E) and central, single-door pivot operations (F).

have impeded any ‘carriage’ by carts or even chariots into the enclosure. As shown in Figure 12 (B), this second model would be more akin to ‘classic’ hillfort entranceways and, making far greater structural/defensive ‘sense’ (admitting that this is now considered a greatly loaded term), is held to be the more likely reconstruction format. It would, moreover, correlate with the fact that the main, ‘back-bay’ posts had evidently been reset from ‘inwards’, the north and southern exterior sides being excluded as they would have been bank-sealed. Equally, it would also account for the somewhat splayed arrangement of the two front posts relative to the western bay, as these would not have been structurally integral to the gate itself.

As illustrated in Figure 12 (C & D), three-post gateways are not an uncommon hillfort entranceway setting. Yet, there has been little detailing of the operations of their doorways proper. As remarked upon by Avery (1986: 220) concerning their entrances generally: “The structure of the gate itself, the moving part, is obscure. Excavators have assumed that it was hung from gate supports, but this seems impossible, given the absence of metal fittings”. (Avery, instead, postulated some manner of lattice-like timber ‘piece-gate’ settings, whose elements could be dismantled and re-erected as necessary to provide closure/access; *ibid.*: fig. 1.) The key question being, how such doors opened and closed without large (iron) hinge fittings, as these have never been recovered. Rather surprisingly, Arbury’s gateway may provide crucial insights from the top rotary quernstone set into its central-front posthole (Figs 5, 8 & 11). It is its upward-set non-grinding face that had a deep-worn cupmark-like depression in its middle, which would not have resulted from its use as a quern. As set into the ‘post-hole’, this might not have so much as served as a post-pad, but a central pivot upon which its post would have spun (Fig. 12.F). Therefore, instead of having the gate hang ‘conventionally’ with two doors opening outwards, it would have had a single large, squarish, planked door attached to this central post, which – almost in the manner of a revolving door – would have opened and closed upon this central upright. In order to provide securely flush-closure, when shut the door’s sides would have been set into opposing rebate recesses within the flanking side posts. (Whether or not the complete iron ring recovered from the F. 28 ‘recut’ of this feature – essentially its then open upper profile in which the post turned – abetted this mechanism or was a fixture of the door itself, is unknown.)

Finally, the argument could be mounted that the deposition of semi-complete vessels within its southern ditch terminal was deliberate and that they had been ‘placed’ there (Fig. 8). Such reasoning could even go further; linking the enclosure’s plan with that of the eavesgully-surrounded roundhouses of the period and the characteristic, high artefact densities often found within the southern gully terminal of their generally east-/southeast-facing entranceways. Yet, it has been advocated that, rather than any manner of distinctly ritual behaviour, this ‘sided-ness’ in the case of roundhouses rather reflects a degree of ‘hand-

ed-ness’: convenient throwing of household refuse to the right upon exiting the building (Evans 2003: 212, fig. 105; Evans & Hodder 2006: 147, fig. 5.57). While, as remarked upon by Webley above, the recovery of a group of near-complete vessels from the Camp’s ditch terminal is, admittedly, unusual, ‘convenience’ might also be a factor here. On the one hand, the pots were clearly associated with tossed animal bone and, together, they seem to simply constitute large-piece domestic waste. (The ditch’s soft organic deposits would ensure that they wouldn’t have broken on impact nor be subject to subsequent trample-fragmentation. On this factor also turns Webley’s assignment of its recovered pottery as representing an interrelated/contemporary ‘transitory’ group; given the depositional conditions – and if the circuit’s maintenance/mucking-out was not intense – then it is quite conceivable that it included both Early and Middle Iron Age vessel-types.) The southward ‘sided-ness’ of this deposition is, on the other hand, further explained if, as argued above, the F. 40 blocking ditch – without there being any comparable closure on the gateway’s northern side – directly reflected the entranceway area’s sometime domestic utilisation. In other words, if a ‘focus’ of occupation was on that side of the gateway, then it is not surprising that the ditch terminal there received the bulk of deposition.

Of course, though perhaps sharing general, Iron Age ‘world-view’ principles with the period’s roundhouses in terms of the basic articulation of circular space, ultimately the Camp-enclosure was not a house but a monumental-scale construct. Clearly, its erection would have furthered social-group cohesion, binding-up communities through participation within *en masse* building. Yet, in contrast, for example, to earlier causewayed enclosures, the ‘Camp’ had certain attributes: strict perimeter closure and controlled access (and whose gateway tower offered elevated overview of its surrounding pasture lands). While it would have surely been ‘many things to many people’ – community-building project, stock compound, place of refuge, etc. – its prime attributes were defensive and, essentially, it would have served as a *fort*.

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Endnotes

- 1) A sample of the water from the main ditch was submitted to Dr CAI French for chemical testing to see if this contributed to the preservation of organic remains within its fills. The pH was 7.5 (or slightly basic/calcareous); the conductivity was 1133 uS, which is quite high and probably reflects the input of solute-rich groundwater accumulating in the ditch. The redox was low at 14mV and the dissolved oxygen quite low at 3.4%. In short, the groundwater conditions proved quite similar to those found elsewhere in the lower river valleys entering the Cambridgeshire fen. The good organic preservation would have been a combined result of the high groundwater table and the depth of burial leading to permanent oxygen exclusion since deposition.
- 2) The material was conserved by impregnation with polyethylene glycol followed by freeze-drying at the end of 1995.
- 3) A monolith column-sample from the main ditch circuit's basal fills was submitted to Dr Mark Robinson of Oxford Museum in order to assess the preservation of insect remains. A 1kg sample of the organic sediment was examined and it was found that the survival of such remains was very poor; all that could be found was the head of a *Forficula auricularia* (earwig) and a couple of unidentifiable elytral fragments of Curculionidae (weevil). Having little potential for insect studies, no further study was considered warranted (see, however, P. Murphy's summary of the ditch fills environmental microfossils in Evans & Knight 2002a: 41–42).

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Iron Age settlement by the Dam Brook at Scotland Farm, Dry Drayton

David Ingham

with contributions by John Giorgi, Sarah Percival and Alan Pipe,
and illustrations by Cecily Marshall

An excavation by Albion Archaeology in 2007 at Scotland Farm, south of Dry Drayton, revealed part of a late Iron Age enclosure, previously visible as a crop-mark. The excavated area occupied a subdivision of the overall enclosure, containing structural remains and a concentration of settlement-related features. Ceramic evidence indicates that the settlement had a short lifespan, beginning no earlier than the late 1st century BC and falling out of use by the mid-1st century AD. It was located next to the Dam Brook, and may have replaced an earlier farmstead to the south-west.

Introduction

In 2007, Albion Archaeology evaluated the proposed construction site of a grain store and access area at Scotland Farm, south-west of Dry Drayton (Fig. 1). The site lies within an area of crop-marks listed in the Cambridgeshire Historic Environment Record (CHER 11441). Reassessment of the relevant aerial photograph initially cast doubt on the archaeological origin of the crop-marks, but trial trenching subsequently identified them as evidence of an enclosed Iron Age settlement (Albion Archaeology 2007). The remains within the access area were buried deeply enough to be preserved *in situ* beneath the development, but an excavation was carried out within the footprint of the grain store (Fig. 2).

The site, centred at TL 3662 6016, lies in the base of a shallow valley adjacent to the Dam Brook, at a height of 55m OD. The underlying geology consists primarily of Boulder Clay, with occasional outcrops of degraded chalk. Though primarily open grassland immediately prior to excavation, the site had been ploughed during the 20th century, and the remains of ridge and furrow cultivation indicate a history of ploughing as far back as the medieval or post-medieval period. The presence of late prehistoric settlement in the area had previously been established by the discovery of a middle to late Iron Age farmstead further south along the Dam Brook (Fig. 4), while the brook itself is thought to have been canalised during the middle Iron Age (Abrams & Ingham 2008, 30).

There is little evidence for earlier prehistoric activity. However, both this site and the one to the south contained a layer of orange colluvium tentatively thought to have formed in the Mesolithic period (Fig. 2, G13; Abrams & Ingham 2008, fig. 1.11). An incomplete, patinated flint microlith of that period, which was recovered from G13 during trial trenching, lends support to this theory.

Late Iron Age settlement (Fig. 2)

Excavation revealed the south-western end of a large enclosure. Crop-marks suggest it measured 60m by 80m in total, although this end of the enclosure had been subdivided by ditch G2. The ditch that defined the enclosure (G1) was up to 4.2m wide and 1.6m deep, with a mostly 'V'-shaped profile (Fig. 2, d); no deliberate backfilling was evident, and its infill was largely homogenous. It appears that the ditch terminated shortly beyond the eastern limit of excavation, as it was not located in the trial trenches to the east. Ditch G2 was similar in size, although little of it was revealed within the excavation area. It was stratigraphically later than G1, suggesting that the enclosure was not originally subdivided.

The enclosure contained a penannular gully (G3) that was 8m in diameter, with a wide opening on its eastern side. The angularity of the gully and the flatness of its base (0.3–0.35m wide) suggest it may have held ground beams. However, no trace of these was evident in section, and it may just have been designed to catch rainwater. Few finds were recovered from the gully and it was located away from the concentration of pits to the east, suggesting that it was associated with an agricultural structure such as an animal pen, rather than a domestic building.

Pit groups G5 and G6 represent the main evidence for settlement activity within the enclosure, although no specific function could be identified for any of them. The pits revealed within the excavation area (G5) were mostly small — up to 2.3m by 1.5m in area and no more than 0.5m deep — but one of the pits

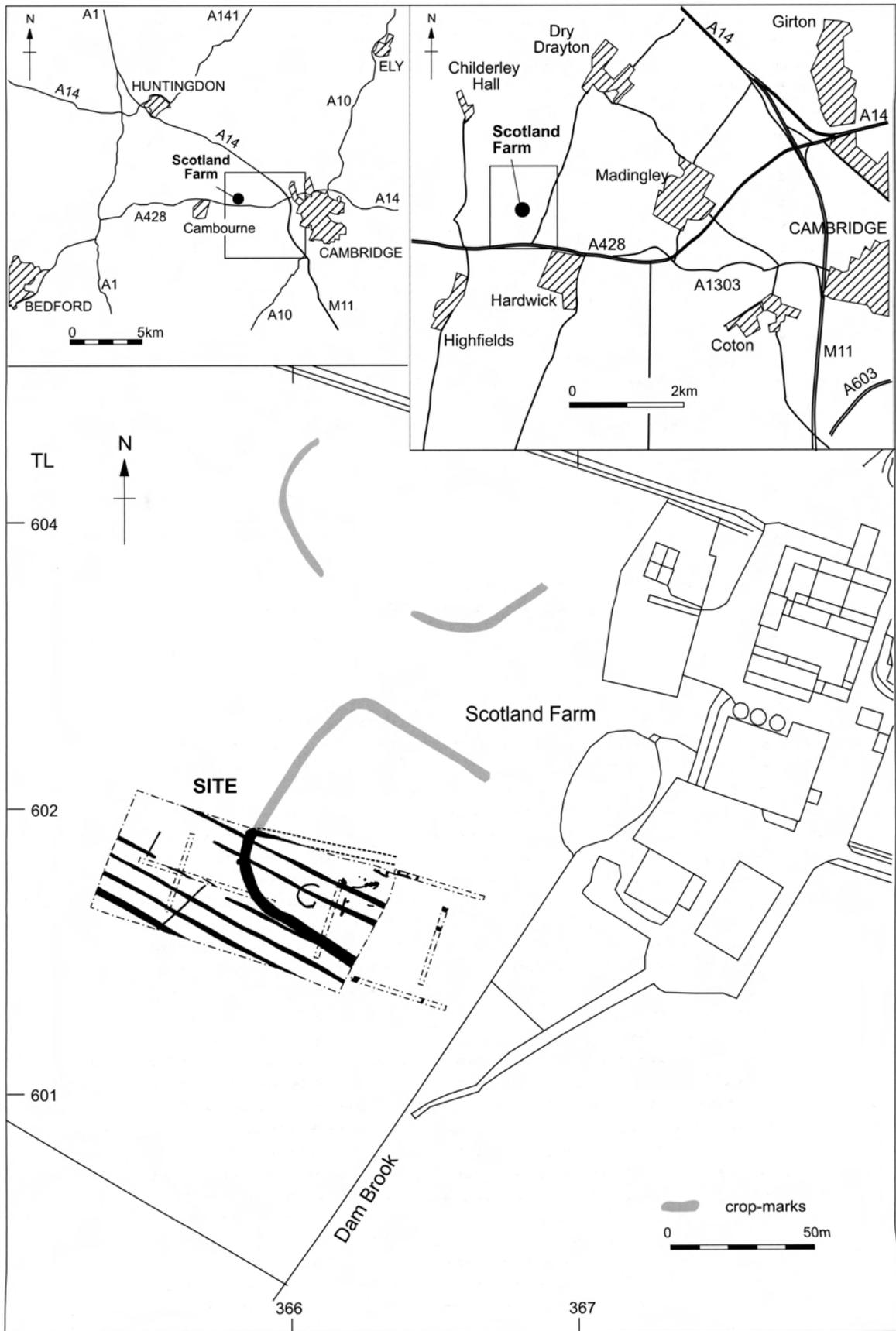


Figure 1. Site location plan showing excavated area, all features and crop-marks.

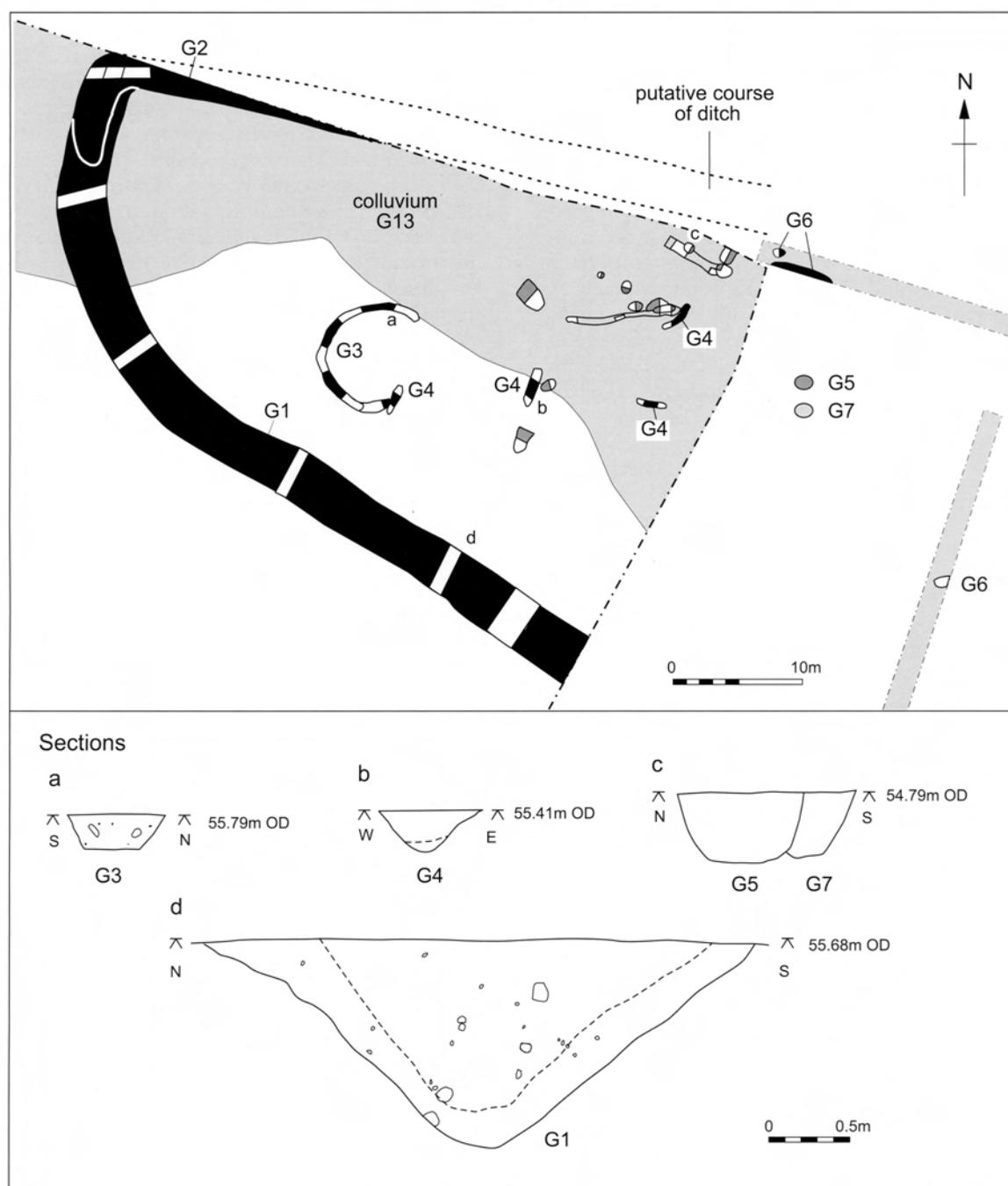


Figure 2. Plan of Iron Age enclosure, with representative sections.

partially revealed in the trial trenches to the east (G6) appears to have been substantially larger. Despite the small size of the pits, they contained more than half of the pottery assemblage recovered from the site (Table 2). Interspersed with the pits were four possible beam slots (G4), measuring 2.3–3m long, up to 0.7m wide and up to 0.25m deep. The beam slots each appear to have been part of separate structures, the form of which is unknown. One may have been associated with the penannular structure G3, despite being stratigraphically later. The function of gullies

G7 is also unclear; stratigraphically earlier than pits G5, they may have been associated with an earlier use of the enclosure prior to the main settlement activity within this part of it.

Pottery

The excavation found 267 sherds (3,309g) of pottery, which form a homogenous assemblage tightly dated to the later pre-Roman Iron Age (LPRIA). The pottery is moderately well-preserved with a mean sherd weight of 12g, and includes some partial profiles.

Fabrics

All of the vessels are handmade or perhaps slow-wheel-finished from unsourced local fabrics (Table 1). The assemblage consists primarily of sandy fabrics (57.81% 1,913g), including some micaceous proto-grey-wares (Table 1), but also contains a high proportion of grog-tempered vessels (38.71% 1,281g). The use of a mix of sand- and grog-tempered fabrics is highly characteristic of the LPRIA of the area (Thompson 1982, 17), and despite Cambridgeshire's location on the periphery of the main grog-tempered pottery areas of Essex and Hertfordshire (Thompson 1982), grog-tempered fabrics are still fairly common (Lyons 2008). Several grog-tempered fabrics are present at Scotland Farm, including a later Iron Age fabric with numerous dark grog inclusions similar to examples identified at Patchgrove (Tomber & Dore 1998, 167). A pink-surfaced, reduced, grog-tempered ware is also present (Tomber & Dore 1998, 210). This ware is commonly found at the broadly contemporary sites of Bobs Wood, Hinchingsbrooke, and Loves Farm, St Neots (Alice Lyons, pers. comm.) and has also been identified at numerous sites around Milton Keynes (Marney 1989, fabric 46).

The presence of grog-tempered vessels, particularly in large quantities, appears to be most prevalent on later Iron Age sites which continued in use through the LPRIA and into the Roman period (Hancocks 2003). In the area around Scotland Farm, little grog-tempered pottery was found during excavations on the middle to late Iron Age site immediately to the south-west (Percival 2008) or at Cambourne (Leivers 2005). In contrast, occupants of a later Iron Age site at Little Paxton, St Neots, used handmade, grog-tempered fabrics from around 100BC; by AD60, wheel-thrown grog-tempered fabrics had become the dominant type (Hancocks 2003, 76). Similar patterns were observed within the assemblage from nearby Loves Farm (Alice Lyons, pers. comm.). However, at some sites such as Caldecote Highfields, less than 2.5km south-west of Scotland Farm, grog-tempered pottery (both handmade and wheel-thrown) was present in the LPRIA phases (100–75 BC) but declined in use by the mid-1st

century AD, despite continued occupation at the site well into the Roman period (Sealey 2006, 8).

Very few shell-tempered sherds were found, accounting for less than 3% of the total assemblage. Shell-tempered wares often make up a large proportion of Iron Age assemblages from Cambridgeshire (Hancocks 2003, table 7.6; Percival 2008), with clay for the pots being selected from the fossiliferous, shell-rich Jurassic formations common in the south-west of the county (Williams 2003, 76; Percival 2008). The dearth of shell-rich fabrics at Scotland Farm is perhaps due to the later date of the assemblage, well after the middle Iron Age floruit for the use of shell temper, although they were similarly uncommon in the assemblage from the middle to late Iron Age farmstead south of Scotland Farm (Percival 2008).

Forms

A minimum of eighteen vessels are represented, based on rim count. The range of forms present is greater than might be found within a middle Iron Age assemblage (Hill 2002, 145), but is entirely utilitarian in character and does not include fine wares or imported wares. Five examples of simple everted-rim jars were found, of which four have a sandy fabric (Fig. 3, P1) and the fifth (Fig. 3, P4) is grog-tempered (Thompson Type C2-3). This ubiquitous utilitarian form dates from the late 1st century BC to the mid 1st century AD (Thompson 1982). A wide-mouth jar in grog-tempered fabric with a single cordon high up under the rim (Thompson Type B3-3) was probably made in the 1st century AD (Fig. 3, P3), and two examples of closed jars/bowls (Fig. 3, P5), also in grogged fabrics (Thompson Type C3), are of similar date. The assemblage includes three wide-mouth bowls in sandy (Fig. 3, P6) and grogged fabrics (Thompson Type D1-4) and three plain, wide-mouth, everted-rim cups in sandy, grogged and micaceous fabrics. Two large thick-walled storage vessels were also found: one (Fig. 3, P2) has a rolled rim and is made of dark, grog-tempered fabric, perhaps suggesting a later Iron Age date; the other is a wheel-thrown vessel (Fig. 3, P7) in a sandy fabric and features coarse-combed

Table 1. Quantity and weight of pottery by fabric type.

Fabric	Description	Quantity	% of total quantity	Weight (g)	% of total
C1	Sand with rounded chalk inclusions	2	0.75	17	0.51
DGTW	Dark grog-tempered ware	1	0.37	112	3.38
GS	Grog and shell	1	0.37	37	1.12
GTW	Grog-tempered ware	45	16.85	435	13.15
GTW P	Grog-tempered ware with pink surfaces	52	19.48	572	17.29
GTW R	Reduced grog-tempered ware	18	6.74	125	3.78
MPGW	Micaceous proto-grey ware	88	32.96	1,501	45.36
MSOW	Micaceous sandy oxidised ware	4	1.50	48	1.45
MSRW	Micaceous sandy reduced ware	5	1.87	21	0.63
PGW	Proto grey ware	4	1.50	46	1.39
Q	Sandy handmade ware	9	3.37	4	0.12
Q1	Coarse sandy handmade ware	17	6.37	163	4.93
Q2	Medium sandy handmade ware	11	4.12	131	3.96
SOW	Sandy oxidised ware	2	0.75	3	0.09
STW	Shell-tempered ware	8	3.00	94	2.84
Total		267	100.00	3,309	100.00

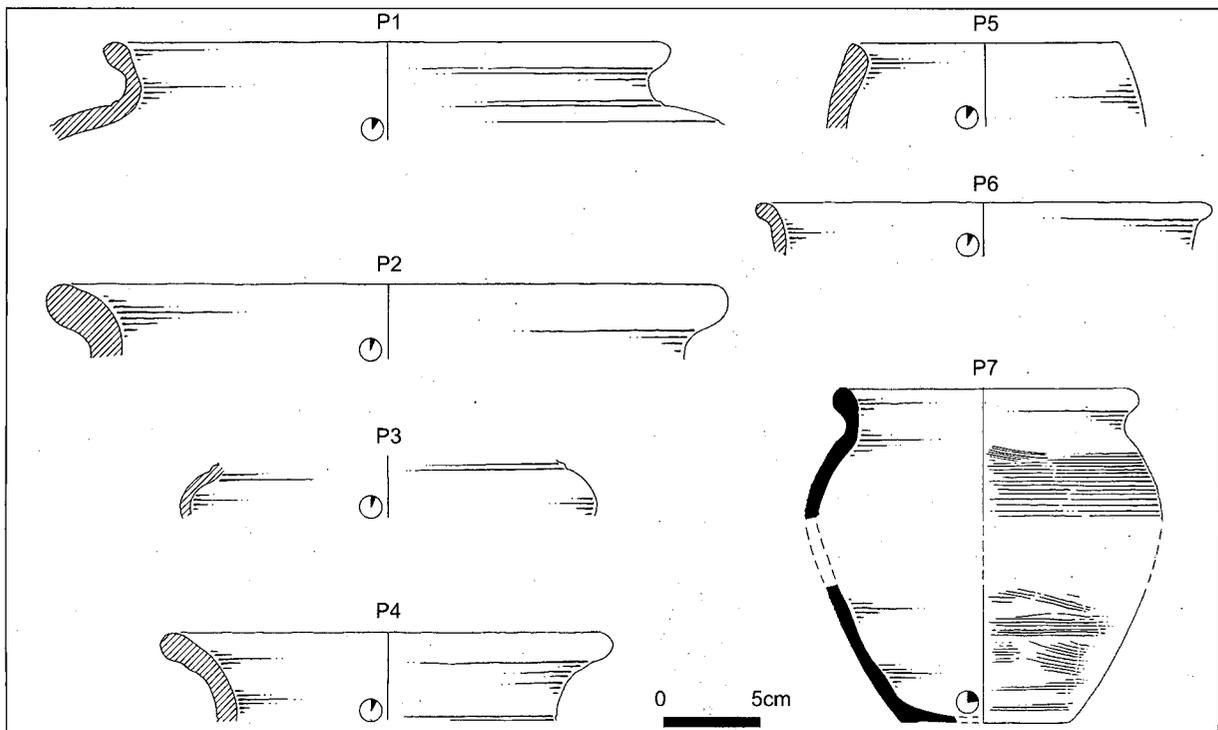


Figure 3. Illustrated pottery.

Catalogue no.	Fabric	Description	Group
P1	MPGW	Plain everted-rim jar	1
P2	DGTW	Rolled-rim storage jar	1
P3	GTW R	Cordoned jar	1
P4	GTW P	Plain everted-rim jar	1
P5	STW	Closed plain jar, no true external rim	5
P6	MSOW	Wide-mouth bowl	5
P7	MPGW	Round-shouldered jar; combed decoration on shoulder; everted rim	5

decoration. Decoration is fairly limited and consists of neatly executed combing, present on three vessels (Percival 2007, fig. 10), or vertical incised scratching or scoring (also on three vessels).

Deposition

Although pottery was recovered from all of the main feature types excavated, more than half of the assemblage came from pits G5 (Table 2). The remainder came largely from the structural slots (G4) and gullies (G7) within the enclosure, and from the enclosure

ditch itself (G1/G2). The largest and best preserved sherds were found in the enclosure ditch, suggesting that material had been placed into this feature during the occupation of the site and had remained there relatively undisturbed. Reasonably large sherds were also recovered from the pits and gullies, but it is likely that the sherds found in the other features, with a significantly lower average size, represent redeposited or reworked material.

Table 2. Quantity and weight of pottery by Group

Group	Quantity	% of quantity	Weight (g)	% weight	Mean sherd weight (g)
1	41	15.35	839	25.35	20.4
2	4	1.50	56	1.69	14.0
3	5	1.87	43	1.30	8.6
4	26	9.74	97	2.93	3.7
5	156	58.43	1,968	59.47	12.6
6	7	2.62	26	0.79	3.7
7	24	8.99	251	7.59	10.5
13	4	1.50	29	0.88	7.3
Total	267	100.00	3,309	100.00	12.4

Discussion

The assemblage of handmade jars and bowls in a mix of grog- and sand-tempered fabrics is consistent with those identified by Thompson as spanning the end of the 1st century BC, perhaps beginning as early as 140 or 130BC and continuing into the 1st century AD. The absence of fully Romanised forms or imported fine wares such as samian indicates that activity had ceased before the end of the 1st century AD. Hill has noted that many communities in the region were slow to adopt these more Romanised forms, perhaps as a statement of cultural identity (Hill 2002, 159), although the lack of fine wares may equally reflect the low status of the site. Sources of supply for the pottery may well have been local; several contemporary production sites such as Greenhouse Farm (Gibson & Lucas 2002), Swavesey (Willis *et al.* forthcoming), Hutchison Site, Addenbrooke's Hospital (Alice Lyons, pers. comm.), Cherry Hinton (Evans 1990) and Water Newton (Perrin 1999, 44–5) have been identified, producing both grog-tempered and sandy coarse wares.

The range of open and closed bowls and jars and carinated forms is similar to that recovered from Structures 2 and 6 at Hurst Lane Reservoir, Ely, where both pottery and stratigraphic evidence indicated occupation into the mid 1st century AD (Evans *et al.* 2007). However, at the Ely site the vessels were made of sandy and shell-rich fabrics rather than grogged fabrics, perhaps continuing the fabric traditions begun in the middle Iron Age phases of occupation at the site (Percival 2007, 54). The settlement at Scotland Farm had no such direct middle Iron Age predecessor; shell-tempered fabrics may simply not have been chosen, or the fabric traditions established by the middle to late Iron Age farmstead south of Scotland Farm may have been followed, where shell-tempered fabrics were similarly infrequent (Percival 2008).

Animal Bone

A total of 180 fragments of highly-fragmented but moderately-preserved bone, weighing approximately 2.0kg, were recovered by a combination of hand-collection and wet-sieving. Each fragment was recorded in terms of standard parameters. Fragments not identifiable to species, genus or family level were assigned

to an approximate category, 'ox-sized', 'sheep-sized' or 'mammal, unidentified'.

Although the identified bones derive largely from ox (*Bos taurus*) and sheep/goat (*Ovis aries/Capra hircus*), with 'ox-sized' and 'sheep-sized' fragments, the assemblage includes occasional finds of chicken (*Gallus gallus*), pig (*Sus scrofa*), horse (*Equus caballus*) and dog (*Canis familiaris*) (Table 3). Sheep was positively identified, but there is no definite identification of goat. There was no recovery of fish, amphibians or any wild bird or mammal species.

Carcass-part representation derives from all skeletal areas, including those of prime, moderate and negligible meat-bearing quality, but is heavily biased towards elements and areas of greatest robustness. Evidence from epiphysal fusion and dental eruption and wear indicates the recovery primarily of adult, or at least sub-adult, animals, with only occasional recovery of juveniles and no representation of foetal/neonate or infant animals. No complete long bones were recovered and all partially-complete bones with fully-fused epiphyses are too poorly preserved to allow accurate measurement; no metrical data or stature estimates were therefore recorded.

Clear butchery evidence was seen from two ox bones only, probably a result of only moderate preservation of the bone surface. Evidence of canine gnawing was seen on three ox bones, but there were no signs of rodent gnawing. One of the G5 pits contained charred 'sheep-sized' long bone, while a second contained calcined 'sheep-sized' long bone; calcined ox bone was recovered from one of the G7 gullies. Charring and calcination respectively indicate combustion temperatures of 400–500 degrees Celsius, equivalent to a campfire, and >700 degrees, equivalent to a much more intensive fire such as a cremation pyre (Lyman 1994, 386). There was no evidence for bone or horn working, pathological change, or any other modification.

Charred plant remains

Nine of the eighteen soil samples, all 10 litres in volume, produced very small amounts of charred plant remains, with no significant concentrations. The remains consist mostly of cereal grains, as well as sev-

Table 3. Number of hand-collected and wet-sieved animal bones. HC: hand-collected; S: sieved

Group	1		2		3		4		5		6		7		Total	
	HC	S	HC	S	HC	S	HC	S	HC	S	HC	S	HC	S	HC	S
Horse	4														4	-
Ox	27		2		1				4	1	1		7		42	1
Ox-sized	1				1				12						14	-
Sheep						2									-	2
Sheep/goat	11		3				1		6	3			5		26	3
Sheep-sized		7		1			1	14	5	48			1		7	70
Pig			1				1								2	-
Dog			1						4	1					5	1
Mammal/ unident.				1					1						1	1
Chicken													1		1	-
Total	43	7	7	2	2	2	3	14	32	53	1	-	14	-	102	78

eral chaff fragments and a few weed seeds (Table 4). There were also small amounts of very fragmented charcoal in all the samples. Hulled wheat, emmer/spelt (*Triticum dicoccum/spelta*) and possibly emmer (*T. cf. dicoccum*) were identified on the basis of several well-preserved grains and a few wheat glume bases, while barley (*Hordeum* spp.) was identified from two rachis fragments. The few weed seeds, from vetch/tare/vetchling (*Vicia/Lathyrus* spp.), dock (*Rumex* sp.) and possibly brome (cf. *Bromus* sp.), are probably from arable weeds, harvested incidentally with the cereals.

The charred plant remains show that hulled wheat and barley, the two cereals most commonly found on Iron Age sites in Britain (Greig 1991), were being used and probably cultivated in the vicinity. The material represents background cereal-processing debris which may have derived from activities taking place some distance away; this corresponds with the archaeobotanical data from the middle to late Iron Age farmstead excavated to the south (Fig. 4), where hulled wheat and hulled barley were the main cereals represented within a similarly small assemblage (Giorgi 2008). The paucity of remains allows little further comment on Iron Age crop husbandry at Scotland Farm.

Discussion

Late Iron Age occupation at Scotland Farm

The late Iron Age settlement at Scotland Farm was unusual in that it had a short lifespan which did not continue into the Roman period. Occupation at most contemporary sites in the region was subsumed by Roman activity, particularly field-systems, as at Bobs Wood, Hinchingsbrooke (Mark Hinman, pers. comm.) and Hurst Lane, Ely (Evans *et al.* 2007, 49). There are perhaps indications of why occupation of this site

was so short-lived; these are discussed below in relation to wider evidence for settlement along the Dam Brook.

The enclosure was occupied by a small agricultural community, which the pottery assemblage suggests may have dwelt there for as little as one generation. However, there may not have been settlement activity within the enclosure from its beginning: despite its short lifespan, two phases of activity can tentatively be identified. Stratigraphic evidence suggests that there was initially a single large enclosure used primarily for livestock, contemporary with which were animal pen G3 and gullies G7. Occupation perhaps only began with the subdivision of the enclosure, at which time beam slots G4 and pits G5 and G6 were constructed. The uniformity in date of pottery recovered from across the site suggests, however, that there was not a lengthy time period between the enclosure's formation and its occupation.

An absence of fine wares and imported wares ostensibly suggests that the settlement was not a high status site, yet its wealth may have been invested primarily in livestock rather than artefacts. The size of the enclosure suggests that it was used for holding animals, with domestic activity perhaps confined to the subdivided area at the south-western end. The faunal assemblage suggests that cattle and sheep or goats were the main animals being kept, though not apparently bred, while the presence of horses, pigs, chickens and dogs is also indicated. Such a limited range of species, with no apparent utilisation of wild animals, may be a factor of the small size of the assemblage, yet it corresponds with the evidence from the larger faunal collection from the middle to late Iron Age farmstead to the south (Abrams & Ingham 2008, 20–33). The negligible quantity of charred plant remains recovered from soil samples suggests that the settlement's economy was primarily pastoral; it is at least unlikely that crop-processing took place in the immediate vicinity, which again reflects evidence

Table 4. Charred plant remains.

Frequency of items: + = 1–10 items; ++ = 11–50 items; +++ = 50–100 items

Group	1	1	2	3	4	4	4	5	5	
Sample	4	11	5	8	9	14	16	12	17	
Flot vol. (ml)	10	1	<1	30	2	30	20	10	1	
Cereal grains										
<i>Triticum</i> cf. <i>dicoccum</i> Schubl.	?Emmer				1					
<i>T. dicoccum/spelta</i>	Emmer/Spelt				1		1			
<i>Triticum</i> sp(p).	Wheat				1		5		2	
cf. <i>Hordeum</i> spp.	?Barley				2					
<i>Hordeum/Triticum</i> spp.	Barley/Wheat				2					
Cerealia	Indet. Cereal				1		4		2	1
Cereal chaff										
<i>Triticum</i> spp.	Wheat glume base				1		1			
<i>Hordeum</i> spp.	Barley rachis				1		1			
Other plants										
<i>Vicia/Lathyrus</i> sp.	Vetch/tare/vetchling				1		1			
<i>Rumex</i> sp(p).	Dock						1			
cf. <i>Bromus</i> sp.	Bromes						1			
Indet.	Charcoal				+		+++		++	++
Total	1	2	1	1	16	1	5	3	4	
Item density	0.1	0.2	0.1	0.1	1.6	0.1	0.5	0.3	0.4	

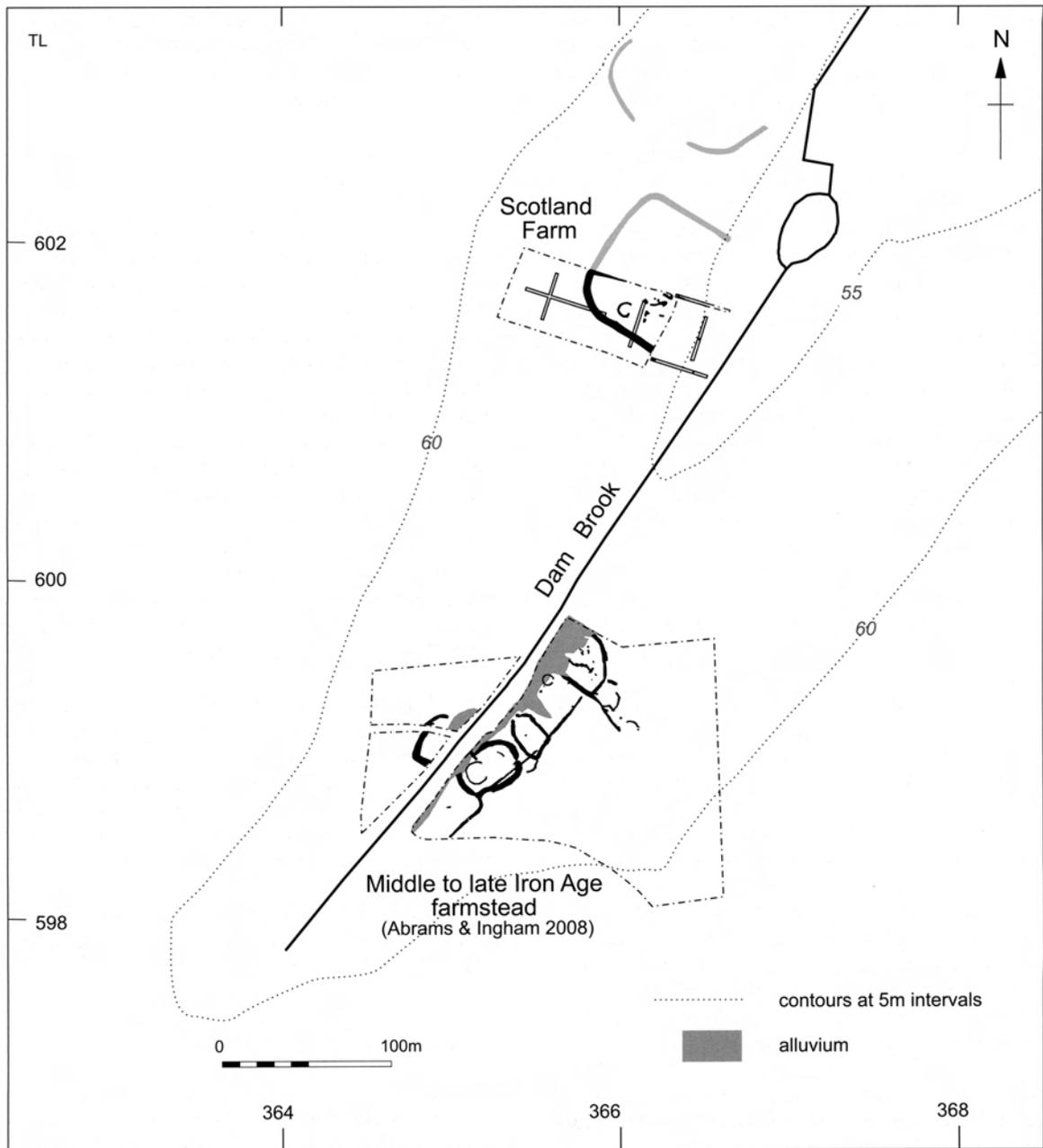


Figure 4. Iron Age settlement along the Dam Brook.

from the farmstead to the south. Indeed, the pastoral economy, waterside location and large enclosure ditches of the two settlements all closely resemble each other, raising the possibility of a direct connection between the two sites, separated by a distance of little more than 150m.

Settlement along the Dam Brook

Recent years have seen the accumulation of a growing body of evidence for higher population densities in areas of clay geology than was traditionally thought. This has been brought about principally by the increase in developer-funded excavations since 1990, as well as by the deliberate taking of aerial pho-

tographs in conditions conducive to the appearance of crop-marks on clay soils (Mills & Palmer 2007). Iron Age settlement in the vicinity of Scotland Farm was first identified as a result of a road-building project (Abrams & Ingham 2008). Widespread Roman activity was also identified along the course of the A428 west of Cambridge, although continuity between the two periods was more evident in the character of the settlements than in their location.

Excavation at Scotland Farm has helped to demonstrate a concentration of Iron Age settlement stretching for at least 400m along the course of the Dam Brook (Fig. 4). No settlement activity was identified along the Callow Brook to the east of Scotland Road

during work on the A428, but the Dam Brook may simply have been preferred due to the gentler gradient of the slope on either side. Aerial photographs suggest the presence of another large enclosure north-east along the brook; no further activity can be identified beyond that, yet the failure of the farmstead south of Scotland Farm to appear as a crop-mark demonstrates that the absence of crop-mark evidence may not be significant. Even the crop-marks that first suggested the presence of enclosures at Scotland Farm were initially thought not to be archaeological in origin: rather than appearing as customary darker lines on the aerial photographs, the ditches are visible as white lines, which led to a suspicion that they were related to modern agriculture. The identification of a circular crop-mark 600m west of Scotland Farm as a ring-ditch had already been shown to be erroneous (Abrams & Ingham 2008, 17). The confirmation of the archaeological origin of the Scotland Farm crop-marks is therefore significant in validating them, and potentially in helping to identify other crop-marks in similar ground conditions that may otherwise have been regarded as modern.

Although a concentration of settlement remains has been identified along the Dam Brook, it is clear that not all of them were contemporary. The farmstead to the south was middle to late Iron Age in date; ceramic sequences for Cambridgeshire are poorly refined for this period, but the site probably went out of use in the 1st century BC. The enclosure at Scotland Farm, however, was late Iron Age in date. It was established in the 1st century BC, at about the same time as the southern farmstead was abandoned. Both settlements were enclosed by large ditches; both had a pastoral economy with little evidence for crop-processing; both produced ceramic assemblages containing little of the shell-tempered pottery common to Cambridgeshire — the evidence is circumstantial, but it is at least plausible that a north-eastward shift in settlement occurred along the brook.

If settlement migration did occur, then it may have been due to changing climatic conditions. There are clear indications that the farmstead south of Scotland Farm suffered from excessive groundwater, particularly at its north-eastern end (Abrams & Ingham 2008, 29–30). Observations from sites such as Little Paxton, 20km west of Scotland Farm (Roseff 2000, 32), suggest that water tables rose between the Iron Age and the Roman period, meaning that a settlement located directly next to a watercourse may have become too wet to remain viable. The earlier community on the Dam Brook perhaps abandoned the farmstead and moved a short distance downstream to a new site at Scotland Farm; yet the short life of this new settlement may indicate that it too quickly became uninhabitable on a permanent basis. There is no indication that the settlement was destroyed by fire, or that Roman reorganisation of the area forced the people off the land; instead, the features were apparently allowed to fall into disuse, silting up gradually, despite the amount of effort that it must have taken to dig the enclosure ditch. The Roman sites identified during work on the

A428 all occupied relatively high ground, and a wetter climate in the Roman period may simply have meant that the Dam Brook was no longer a viable location for settlement.

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Excavation of a Middle Iron Age enclosure at Bushmead Road, Eaton Socon, Cambridgeshire

Daniel Stansbie

with contributions by Rebecca Devaney, Denise Druce,
Elizabeth Stafford, Ruth Shaffrey and Lena Strid

Excavation by Oxford Archaeology, on behalf of CgMs Consulting (acting for George Wimpey North Thames), at Bushmead Road, Eaton Socon, Cambridgeshire, revealed a Middle Iron Age enclosure with associated ditches and pits. The enclosure represents the remains of a small settlement, probably on the periphery of the larger settlement recorded to the north. A small assemblage of pottery and animal bone was recovered. Environmental evidence suggests that the inhabitants of the enclosure practised mixed farming in an open landscape.

Introduction

Site location and geology (Fig. 1)

Work in advance of development at Bushmead Road was carried out by Oxford Archaeology (OA) between July and August 2006, on behalf of CgMs Consulting (acting for George Wimpey North Thames). The development site comprises an area of c. 1.146 hectares, located in west Eaton Socon at NGR TL 164 593. The site is bounded to the north by Bushmead Road, to the east by properties fronting Bushmead Road, by Bushmead Infants School to the south and by the A1 to the west. The site is located on relatively flat ground, at a height of approximately 31m OD. The underlying geology of the area is 1st-terrace river gravels, overlying grey mudstones with infrequent stone bands (British Geological Survey 1:50,000 series, Sheet 187).

Archaeological and historical background

Earlier prehistoric

The only evidence of Palaeolithic activity from St Neots is a single flint axe (CB14470). Although this artefact was probably redeposited in the river terrace gravels, it may indicate activity near the site. Evidence for Neolithic activity is also scarce, comprising a handful of flint tools from Eaton Socon (CB01919) suggesting a Neolithic presence, although this may have been transitory. Bronze Age evidence is restricted to a single bronze adze from Eaton ford (CB00407), again suggesting not very extensive activity in this period.

Later prehistoric

A ditch containing Iron Age pottery was found during house construction in 1962, c. 200m north of the site. Aerial photographs taken during the 1990s revealed cropmarks on the western side of the A1 (BHER 16781). A further enclosure with entrance, associated with four early Iron Age roundhouses, was found during the construction of the A1; these were overlain by a group of Late Iron Age ditches (CB00370; English Heritage NMR Excavation Index for England).

Roman

First and third century AD pottery, glass, coins and a trumpet brooch were found c. 200m to the north of the site. In addition a rectangular aisled building, and a number of pits containing pottery, animal bone and metal slag were found during the construction of the A1 (CB00370; English Heritage NMR Excavation Index for England). Further aerial photography revealed cropmarks of sub-rectangular and curvilinear enclosures c. 500m to the north-west of the site (BHER 8572). Unfortunately these remain undated, along with further cropmarks to the west and south-west of the site.

Saxon and medieval

The site is located to the west of the Saxon settlements of Eaton Socon and St Neots and would probably have been put to agricultural use during this period. During the medieval period the site would probably have been within the agricultural holdings of Eaton Socon. However, no Saxon or medieval material is recorded within the vicinity of the site.

Post-medieval

The Eaton Socon enclosure map of 1799 shows the site as part of a field. By 1884 the first edition Ordnance Survey map shows the site within a larger field and with part of Bushmead Road running through its north-eastern corner. The OS 1:2500 map shows that by 1970 the original Bushmead School and playing fields had been constructed on the site. Episodic

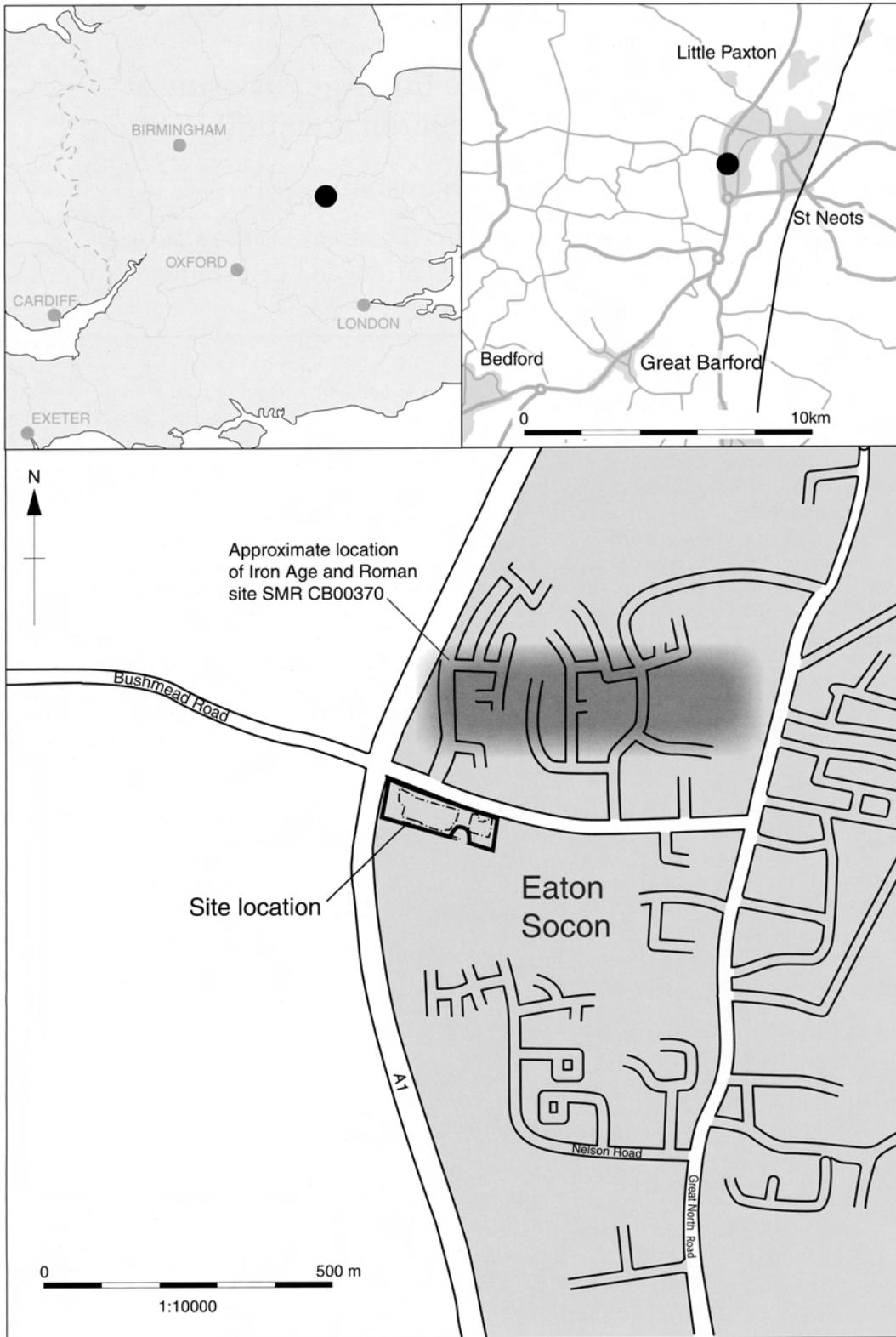


Figure 1. Site location.

redevelopment has occurred around the site during the last three decades of the 20th century.

Excavation methodology

The development site, comprising two areas (A and B; see Fig. 2), was stripped of topsoil and subsoil down to the archaeological horizon, using a 360° tracked excavator fitted with a toothless ditching bucket. Features were hand-cleaned and planned, and a sample were investigated. This comprised 50% of discrete features and a maximum of 25% of linear features. Environmental samples were taken from features deemed to have good potential for environmental investigation. All recording was carried out according to OA guidelines (Wilkinson 1992).

The Middle Iron Age settlement (Figs 2 & 3)

General summary

Archaeological evidence recovered from the site at Bushmead Road indicated the presence of settlement during the Middle to Late Iron Age (400–1BC). In area A, a partially exposed ditch (1032) probably represented the remains of a sub-rectangular enclosure orientated NE/SW, with a north-east facing entrance. Just inside the entrance was an isolated pit (1025) containing pottery, which was the only evidence for contemporary activity within the enclosure. Abutting enclosure 1032 at its north-western corner was a ditch (1033) orientated north-east/south-west, which ended in a rounded terminus at the point where it abutted

the enclosure ditch and was cut away by a substantial pit (1027) at its north-eastern end. Approximately 60m to the south-east of enclosure 1032, in area B, was a group of isolated features probably related to the settlement. These comprised a short stretch of ditch (5016), recut as 5009, which ended in a rounded terminus to the south-east and ran beyond the limit of the excavation to the north-west. Other features identified included a tree-throw hole (5003) in the north-western corner of area B and an isolated pit (5005) at its eastern end.

Area A

Enclosure 1032 was only partially exposed within the limits of the excavation. However, the exposed part suggests that it comprised a sub-rectangular enclosure, orientated north-east/south-west and measuring 42.80m NW/SE by at least 28.20m SW/NE. A gap, defined by two opposed termini in the north-eastern side, formed an entrance 2.80m in width. The ditch averaged 1.41m in width by 0.59m in depth and varied in profile, being V-shaped, with a narrow flat base and steeply sloping sides on the north-western side and more U-shaped, with a wider more rounded base and concave sides on the north-east. The ditch fills (1046 and 1045) comprised silty clay, with moderate inclusions of gravel. The north-western arm of the enclosure ditch contained a tertiary upper fill (1044), averaging 0.71m in width by 0.26m in depth and consisting of silty clay, with frequent inclusions of gravel. The fills contained substantial deposits of Middle Iron Age pottery, including parts of four slack-shouldered jars, and animal bone, including cattle and sheep/goat.

Pit 1025 was sub-circular in plan, U-shaped in profile and

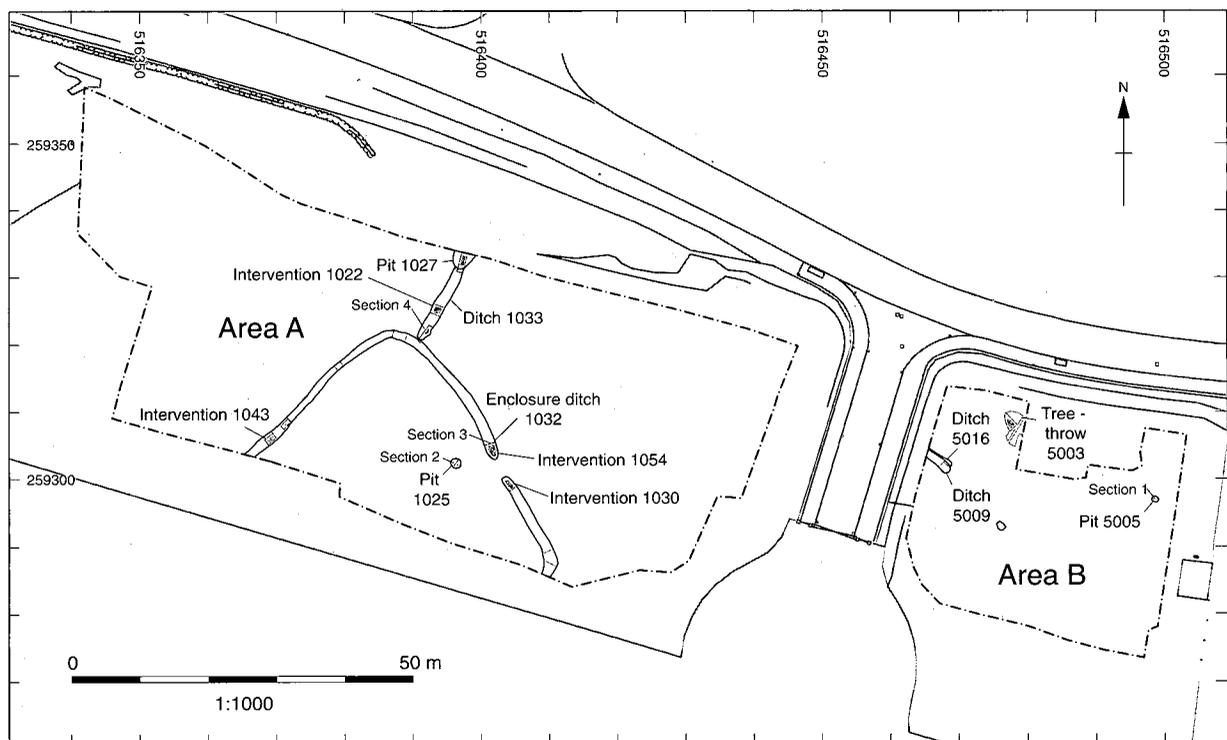


Figure 2. Middle Iron Age enclosure 1032 and associated features.

measured 1.5m in diameter by 0.45m in depth. The pit fill (1026) was a silty clay, with frequent inclusions of gravel and moderate inclusions of charcoal. Finds from the pit included a substantial assemblage of Middle Iron Age pottery, including rim sherds from two slack-shouldered vessels, a small amount of animal bone, fragments of fired clay loom-weight or oven furniture and a small hammerstone or processor.

Ditch 1033 was orientated NE/SW, measured approximately 12m in length by 1.1m in width and 0.41m in depth and had a shallow irregular profile. The ditch fills (1024 and 1023) were both sandy clays, with frequent inclusions of gravel. Both fills produced a substantial assemblage of Middle Iron Age pottery, including a potentially complete slack-shouldered jar, and a substantial assemblage of animal bone, including cattle and sheep/goat.

Pit 1027 was only partially exposed within the limits of the excavation, but was probably oval in plan and measured 2.8m by 2.5m (exposed area) and 0.68m in depth. The pit was U-shaped in profile and had two fills of sandy clay (1028 and 1029), with frequent inclusions of gravel and occasional flecks of charcoal. Another possibly complete slack-shouldered jar was recovered from the primary fill, along with some body sherds of Middle Iron Age date, and the bones of cattle and sheep/goat.

Area B

Ditch 5016 was only partially exposed within the limits of the excavation, running for approximately 4m on a SE/NW axis, from the north-western edge of the excavation, before ending in a rounded terminus. In profile the ditch had a narrow flat base and steeply sloping sides and it was filled by a sandy clay (5017), with frequent inclusions of gravel, but no finds. Cutting ditch 5016 was ditch 5009, which followed the same alignment and also ended in a rounded terminus. It measured approximately 4m in length by 1.31m in width and 0.34m in depth with a rounded profile. The ditch fills (5010 and 5011) comprised sandy clay, with frequent inclusions of gravel. The upper fill (5010) produced a small assemblage of pottery, including rim sherds from a slack-shouldered jar/bowl, and some animal bone.

Pit 5005 was sub-circular in plan, measured 0.96m in diameter by 0.06m in depth and had concave sides and a flat base. The pit fill (5006) comprised a silty sand, with frequent inclusions of charcoal. A small assemblage of Middle Iron Age pottery and some charred plant remains including wheat and barley were recovered from the fill.

Tree-throw 5003 was sub-circular in plan, measured 3.8m in length by 2.5m in width and 0.3m in depth and had a flat base, with concave sides. The single fill comprised a silty clay, with frequent moderate inclusions of gravel. A substantial assemblage of Middle Iron Age pottery and animal bone was recovered from the fill.

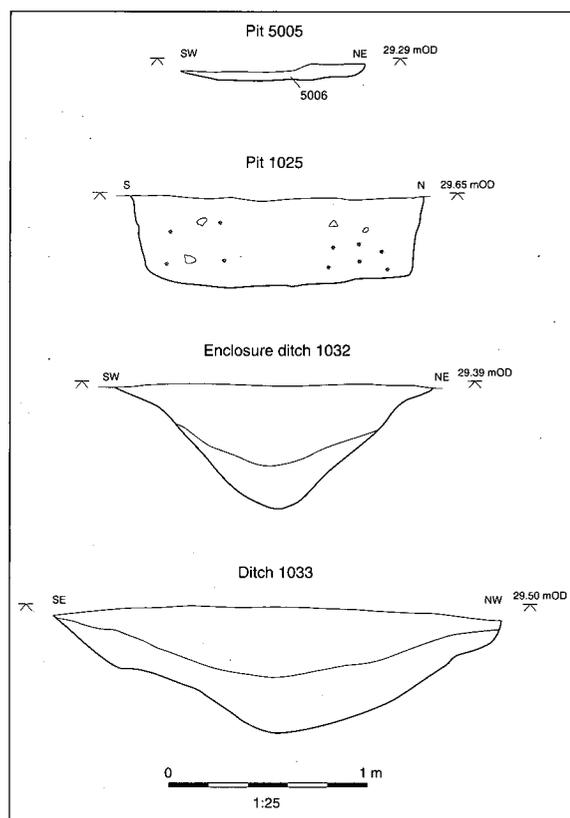


Figure 3. Sections through enclosure ditch 1032, ditch 1033, and pits 1025 and 5005

Finds

Middle Iron Age pottery

Daniel Stansbie

Introduction

The excavations at Bushmead Road produced a small assemblage of 533 sherds, weighing 2415 g. The pottery was recovered from a sub-rectangular enclosure and associated ditch, several pits and tree-throws and a ditch terminus; the average group contained 30 sherds and weighed 134 g. The assemblage comprises hand-made pottery, some of which is decorated with scoring, with vessels exclusively of the slack shouldered jar/bowl type. Such material is dated to between the 4th/5th centuries BC and the 2nd century BC by Knight (2002, 133–4); although he notes that it may have continued in use into the 1st century AD in some parts of the region (*ibid.*, 134). However, the absence of any so-called 'Belgic' (grog-tempered and wheel thrown) material from the assemblage suggests that occupation did not continue beyond the end of the 1st century BC. The material from Bushmead Road can, therefore, be placed within the period 400BC–1BC with some confidence. Following a discussion of the methodology employed and the condition of the material, this report discusses the pottery in the context of the site and then goes on to consider

the assemblage in its local and regional context.

Methodology

The assemblage was sorted macroscopically into fabric groups based on surface appearance and major inclusion types. A binocular microscope at x20 magnification was employed to aid fabric identification where necessary. The pottery was recorded according to standard OA procedures (Booth 2004) and in line with PCRG (1997) recommendations.

Condition

With an average sherd weight of 4.5g the pottery was in moderate condition, with surfaces and decoration surviving reasonably well.

Fabrics

Five different fabrics are represented in the assemblage. There is a fabric with shell and ironstone inclusions (SI2); a sandy and calcareous fabric (AC2); a shelly fabric with clay pellets (SP4); a sandy fabric with mica (AM2), and a shelly fabric with limestone (LS3). Of these the sandy and calcareous fabric (AC2) is most common, contributing 51% by weight, with the shelly fabric (SP4) contributing 23% and the other three contributing minor amounts, of no more than 10% by weight. All five fabrics are likely to be of local origin, with fabric SI2 being identical to a fabric common on sites along the A421 Great Barford Bypass (Webley 2007) and described in the Bedfordshire fabric type series, based at Albion Archaeology, under code F37. Fabric SP4 probably derives from Jurassic (Oxford) clay deposits, which were commonly used for the manufacture of pottery in the region, from the early Iron Age until the post-medieval period. The remaining three fabrics are probably specific to the site, or its immediate area.

Table 1. Middle Iron Age pottery

Fabric Type	Sherd count	Sherd %	Weight (g)	Weight %
AC2	366	68.6	1225	50.7
AM2	62	11.6	198	8.1
LS3	25	4.6	232	9.6
SI2	16	3	212	8.7
SP4	64	12	548	22.6
Total	533	100	2415	100

Fabric descriptions

SI2: Black to brown surfaces, with a grey core and a sandy texture. The fabric contains a moderate frequency of fine shell, average size c. 0.1–1.0mm and frequent red iron ore, average size c. 0.5–2.5mm, which is clearly visible on the surface of the sherds.

AC2: Black to brown surfaces, with a black core and a sandy texture. The fabric contains sparse fine to moderate calcareous inclusions, average size c. <1mm and frequent sub-rounded quartz grains, average size c. <1mm.

SP4: Brown to orange surfaces, with a buff/orange core and a slightly soapy texture. The fabric contains a common frequency of coarse fossil shell, average size, c. 0.2–3.0mm and occasional clay-pellets, average size c. <1.0mm.

AM2: Black to brown surfaces, with a black core and a medium sandy texture. The fabric contains common silver mica and fine sub-rounded quartz grains, average size c. <1.0mm.

LS3: Brown to black surfaces, with a brown/grey core and a soapy texture. The fabric contains common inclusions of moderate shell, average size c. 0.1–2.0mm and occasional coarse sub-angular lumps of limestone, average size c. 2.0–5.0mm.

Surface treatment

Scoring occurs on sherds from two contexts: the fill of pit 1025 and the north-west facing terminus of the entrance to enclosure 1032, representing 3.37% of the assemblage by sherd count and 14.4% by weight. Scored body sherds from pit 1025 occur in all fabrics, apart from the sandy and calcareous material (AC2). In addition scoring is present on a rim sherd from a jar/bowl in sandy and micaceous fabric (AM2).

Vessel form

Rim sherds are present from nine different vessels, all of which are of the slack-shouldered jar/bowl type; rim and shoulder sherds from two of these vessels suggest a slightly more globular profile. Three of the slack-shouldered jars were potentially complete when deposited, rim sherds from these vessels being associated with large groups of body sherds in the same fabric. Such vessels are typical of the Middle Iron Age in the region (Knight 2002, fig. 12.3; Webley 2007).

Decoration

Apart from the scored vessels described above, the vessels were largely undecorated. The only exception was a slack-shouldered jar with fingertip impressions on the top of the rim.

Distribution

Fabrics of sandy and calcareous type (AC2) were distributed fairly evenly between the ditch of enclosure 1032, ditch 1033, ditch 5009 and pits 5005 and 1027, although there was a particularly strong concentration in ditch 1033. There do not appear to be any strong patterns in the distribution of the remaining fabrics, although sandy and micaceous fabrics (AM2) are absent from features other than enclosure ditch 1032 and pit 1025, which also contains a relatively low proportion of sandy and calcareous fabric (AC2). Given the ubiquity of sandy and calcareous fabrics on the site, this gives the assemblage from pit 1025 a relatively 'exotic' character, and this coupled with its position close to the entrance of the enclosure may indicate some kind of structured deposition within the pit. Rim sherds were largely concentrated in the fills of enclosure ditch 1032 and ditch 1033 and were relatively scarce in the tree-throw holes and pits.

Worked stone

Ruth Shaffrey

A single small hammerstone or processor (SF 3), with percussion marks on one side resulting from pounding, is the only identifiable piece of utilised stone recovered. This was found in the fill of pit 1025, just inside the entrance to the Middle Iron Age enclosure (1032).

Ceramic building material

Daniel Stansbie

A total of 12 fragments of undiagnostic and/or post-medieval fired clay and CBM weighing 1268 g were recovered from the excavations. Some of this material was recovered from the top of the fills of enclosure ditch 1032 and ditch 1033; the remainder came from the modern topsoil.

Fired clay

Daniel Stansbie

Seven fragments of fired clay, weighing 896 g, were recovered from the fill of pit 1025, just inside the entrance to enclosure 1032. This material possibly represents parts of a loomweight or oven furniture, in a sandy and shelly fabric. A further 13 fragments of very abraded material weighing 197 g were recovered from the fills of enclosure 1032 and pit 1025.

Environmental evidence**Animal bone (Table 3)**

Lena Strid

The animal bone assemblage from the site comprises 900 refitted fragments (922 g) deriving from ditches and pits dated to the Middle Iron Age. The bones were recovered through hand collection and from

Table 3. Anatomical distribution of all animal species, including NISP, MNI and weight. Skeletal element used for MNI is marked with an asterisk.

	Cattle	Sheep/ goat	Sheep	Pig	Horse	Red deer	Deer	small mammal	medium mammal	large mammal	Indeterminate
Antler							1				
Skull	1	1									
Mandible	7	11			1					3	
Loose teeth	15	37	3		2						
Atlas											
Axis	1										
Vertebra									2	5	
Sacrum					1						
Rib								1	1	7	
Scapula	2				1						
Humerus	4	3			1						
Radius	6*	2									
Ulna	1										
Carpal bones											
Metacarpal	1	6									
Pelvis	2			1							
Femur	5				1					1	
Patella											
Tibia	2	3			2*						
Fibula											
Calcaneus	1										
Astragalus		1			1						
Tarsal bones											
Metatarsal	3	5*	1			1					
Phalanx 1		3									
Phalanx 2		1									
Phalanx 3											
Indet. metapodial	1	1			1						
Long bone								1	63	17	
Indeterminate											655
Total (NISP)	52	78	4	1	11	1	2	2	66	33	655
MNI	4	2		1	2	1					
Weight (g)	2685	248	7	16	851	92	11	<1	108	341	922

wet sieved bulk samples (processed using a 500 µm residue mesh). Almost a third of the recorded bones derive from sieved contexts, and hence this group included a large number of small, unidentifiable fragments. A full record of the assemblage documented in a *Microsoft Access* database along with a full description of the methodology employed can be found with the site archive.

The assemblage

Of the 900 refitted fragments, only 143 (15.9%) could be determined to species (see Table 2). The presence of dog is evidenced only by gnaw marks on a cattle metacarpal.

The small assemblage is dominated by bones from cattle and sheep/goat, which is consistent with other sites in the vicinity (Hambleton 1999, 46–7; Maltby 1996, 20). Only one pig bone was recovered. Assuming both cattle and sheep/goat were eaten when slaughtered, cattle would have been the major meat provider owing to a larger body size. Judging from epiphyseal fusion (n: 16 for cattle, 4 for sheep/goat) and tooth wear (n: 3, 5) most cattle and sheep/goat were adult or sub-adult when slaughtered. The horse remains comprise disarticulated bones from adult horses.

The poor surface preservation of the bones (83% were grade 3) meant no butchery marks or pathologies could be discerned. Only three bones were measurable and these indicate that sheep/goat and horse were of average size for the time period (ABMAP database). Two bones from deer (antler and metapodial fragments, the latter from red deer) may represent the importation of raw material such as skins and antler, but it is probably more likely to reflect local hunting of a wild resource.

Charred plant remains

Denise Druce

Introduction

Six environmental bulk samples of between 20 and 40 litres were processed and an assessment made of their potential for the preservation of charred plant remains (CPR). Five of the samples (one from pit 1025, three from enclosure ditch 1032 and one from ditch 5016) contained very sparse CPR. However, the sixth sample, from the fill of pit 5005, contained very abundant charred cereal grains, which were analysed.

Results (Table 4)

The sample was very rich in whole cereal grains and indeterminate cereal fragments. The dominant determinate cereal grain was *Triticum* sp. (wheat), and an additional third of the cereal assemblage exhibited the linear compressions characteristic of a glumed variety such as *Triticum spelta* (spelt wheat). A number of grains (c. 35) exhibited a very high frontal ridge characteristic of *Triticum dicoccum* (emmer wheat), and approximately 30 grains were either short and plump with sunken sides, characteristic of *Triticum aestivum* (bread wheat), or exhibited a cellular-like surface pattern, an additional criterion recently put forward

by J. Huntley for the identification of bread wheat (J. Huntley pers comm). The sample also contained numerous *Hordeum vulgare* (barley) grains, of which many were hulled and asymmetric, suggesting the cultivation of the hulled six-rowed variety. A number of *Avena* sp./large Poaceae (oat/large grasses) were also recorded, although the presence of a single *Avena fatua* floret base suggests that the possible oat grains represent the wild variety.

Chaff remains were relatively sparse but included *Triticum spelta* glume bases and spikelet forks, and a single *Hordeum vulgare/Secale cereale* (barley/rye) rachis fragment. Numerous detached cereal embryos were present in the sample, which may represent spoilt grain or malting.

Charred weed seeds of typical arable plants, such as *Chenopodium album* (fat-hen) and *Bromus* spp. (bromes), which were probably harvested along with the crop, made up a very minor component of the CPR assemblage.

Discussion and conclusion

The evidence is consistent with other Iron Age charred cereal assemblages from the region. Spelt wheat is considered the chief cereal crop of the Iron Age in southern Britain, and as such its dominance is to be expected. Although spelt wheat appears to have superseded emmer wheat by the Early Iron Age, the latter is often recorded at sites in neighbouring Bedfordshire (Druce 2007; Pelling 2007), and as such is likely to represent the remains of a relic crop. The early cultivation of possible bread wheat at Bushmead Road is also consistent with similar records from Great Barford, Bedfordshire (Druce 2007) and Stansted, Essex (Carruthers forthcoming), and may represent a regional trend. Although records for the cultivation of barley are less common, this is also considered to have been an important Iron Age crop in the region (Robinson 2005).

The relatively sparse cereal chaff and weed seed assemblage suggests that the grain was fully processed. The evidence for partially germinated grain suggests that part of the assemblage is made up of either spoilt grain, which was subsequently destroyed, or represents brewing activity at the site.

Land and freshwater mollusca

EC Stafford

Introduction

A total of 17 samples were taken during excavation for the retrieval of molluscan assemblages. Of these, 12 samples were examined from three interventions through enclosure ditch 1032, including both termini (intervention 1030) and (intervention 1054). Three samples were examined from ditch 1033 (intervention 1022), and a further two from pit 1027 which truncated 1022. All features are dated to the Middle Iron Age. Overall preservation of shell was moderate to poor in the 17 samples examined, averaging only 26 identifiable individuals per kilogram of sediment. Despite this, however, some general observations can

	Context No	5006
	Sample	4
	Feature	Fire pit
	Sample size - Litres	30
Charred Cereal Grain		
<i>Triticum</i> sp.	Wheat	460
<i>Triticum</i> cf. <i>spelta</i>	cf. Spelt wheat	130 (6 ger)
<i>Triticum</i> cf. <i>dicoccum</i>	cf. Emmer wheat	35
<i>Triticum</i> cf. <i>aestivum</i>	cf. Bread wheat	30
<i>Hordeum vulgare</i>	Barley undiff.	80 (45 asym/30 st)
<i>Hordeum vulgare</i>	Barley hulled	95 (80 asym/5 st)
<i>Avena</i> sp./large Poaceae	Oats/large grasses	60
Cerealia indet.	Indeterminate grains	250
	Total Cereal Grain	1140
Cerealia indet. frag. $\leq 1/2$ grain		1000s
Cerealia indet. frag. $<1/4$ grain		1000s
Charred Cereal Chaff		
<i>Triticum spelta</i>	Spelt wheat glume base	13
<i>Triticum spelta</i>	Spelt wheat spikelet forks	8
<i>Hordeum/Secale</i>	Barley/Rye rachis frag.	1
<i>Avena fatua</i>	Wild oat floret base	1
Culm nodes		1
	Total Chaff	24
Glume bases/fragments		61
Detached embryos		205
Charred Weed Seeds		
<i>Chenopodium album</i>	Fat-hen	11
Caryophyllaceae	Pink family	1
<i>Centaurea</i> sp.	Knapweeds	1
<i>Polygonum aviculare</i>	Knotgrass	4
<i>Rumex obtusifolius</i>	Broad-leaved Dock	1
<i>Rumex acetosa</i>	Common Sorrel	1
<i>Rumex acetosella</i>	Sheep's Sorrel	2
<i>Brassica</i> sp.	Cabbage/mustard family	1
Fabaceae Melilotus-type	Melilots	2
<i>Plantago lanceolata</i>	Ribwort Plantain	1
<i>Veronica</i> spp.	Speedwells	1
Poaceae <2mm	Grass family	6
Poaceae 2-4mm	Grass family	3
<i>Bromus</i> spp.	Bromes	22
Indet CPR		6
	Total Charred Weed Seeds	63
Other*		
Charcoal		5
Waterlogged seeds		4

Table 4. Charred Plant Remains: Context 5006. Figures given are actual counts except * where numbers are scored on a scale of 1–5 where 1=<5 items, 2=5–25, 3=25–50, 4=50–100, and 5=>100 items.

ger = germinated grains, asym = asymmetric grains, and st = straight grains

be made regarding the local environment of the site during the period of occupation.

Method

All samples were processed at OA. One kilogram of sediment from each sample was disaggregated in water, floated and sieved onto 0.5mm mesh and then air-dried. The flots were scanned under a low power binocular microscope at x10 and x20 magnification

and whole shells and apical fragments were identified and counted. The fine residues from the samples were then rapidly scanned for additional identifiable shells. Nomenclature follows Kerney (1999) and habitat information follows Boycott (1934; 1936) and Evans (1972). The shell counts are presented in Table 5.

	Ditch 1022			Pit 1027			Ditch 1030			Ditch 1054			Ditch 1043				
Sample number	7	8	9	6	5	17	16	15	14	18	19	20	21	10	11	13	12
Context number	1024	1023	1023	1028	1029	1031	1031	1031	1031	1046	1046	1045	1045	1052	1052	1044	1044
Taxa																	
<i>Carychium</i> sp.		17	30	1	3	1			10				3			5	
<i>Lymnaea</i> sp.					1								1	1			
<i>Lymnaea truncatula</i> (Müller)	9	14	2	1				8									
<i>Anisus leucostoma</i> (Millet)			1														
<i>Oxyloma/Succinea</i> sp.		1															
<i>Cochlicopa</i> sp.	3	5	2						1							1	
<i>Vertigo pygmaea</i> (Draparnaud)			1					1	2								1
<i>Pupilla muscorum</i> (Linné)								2	4				2				
<i>Vallonia</i> sp.	4	10	17	9	5	1	1	13	8	1		3	7	1		6	2
<i>Vallonia costata</i> (Müller)		2	5	1				1	1				3				
<i>Vallonia excentrica</i> (Sterki)	6	6	7	4	1		2	5	2				3			3	
<i>Vallonia pulchella</i> (Müller)		1			1			2			1						
<i>Acanthinula aculeata</i> (Müller)			1													1	
<i>Punctum pygmaea</i> (Draparnaud)	3	1	3	2	1								1				
<i>Discus rotundatus</i> (Müller)			1														
<i>Vitrea contractor</i> (Westerlund)			8														
<i>Nesovitreia hammonis</i> (Ström)	1	1	4														
<i>Aegopinella pura</i> (Alder)		1															
<i>Aegopinella nitidula</i> (Draparnaud)	1	9	4	3	1	1			1							1	
<i>Oxychilus cellarius</i> (Müller)			3						1								
Clausiliidae indet.			1													1	
<i>Cochlodina laminata</i> (Montagu)			1														
<i>Clausilia bidentata</i> (Ström)													2				
<i>Helicella itala</i> (Linné)			1	1						1							1
<i>Trichia hispida</i> (Linné)	10	28	14		7	2		3	9			4	8	2	2	4	6
<i>Cepaea/Arianta</i> sp.			1										1				
<i>Cepaea</i> sp.			+														
Minimum number of individuals	37	96	107	22	20	5	3	35	39	2	1	7	31	4	2	22	10

Table 5. Molluscan assemblages. Non-apical fragments only indicated by '+

Results

The samples from the three interventions through enclosure ditch 1032 (1030, 1054 and 1043) were broadly consistent. Preservation was particularly poor in the lower part of the profiles probably due to rapid infilling with sediment from unstable edges immediately after the feature was cut. Further up the profile, however, shell was a little more abundant. Open-country terrestrial taxa predominated, particularly the *Vallonia* and the catholic species *Trichia hispida*. Occasional specimens of *Vertigo pygmaea* and the xerophile species *Helicella itala* and *Pupilla muscorum* were also noted suggesting an open environment, probably of short-turfed grassland. The latter species may suggest patches of bare soil. Shade-demanding species were fewer comprising occasional zonitids (e.g. *Oxychilus cellarius* and *Aegopinella nitidula*), apical fragments of a Clausiliidae and a single shell of *Acanthinula aculeata*. These may be residual shells representing a former environment when conditions were more enclosed at the site, or perhaps given they generally appear within the upper parts of the profiles, the presence of ranker vegetation such as long grass growing within feature as it infilled. *Carychium* sp. was particularly numerous in fill 1031 of enclosure ditch 1032 (sam-

ple 14). Although classed as shade loving, due to its small size it often inhabits the base of long grass. Both *Carychium tridentatum* and *Carychium minimum* were noted in the samples. Although attempts to distinguish between the two by exposing the parietal fold usually resulted in shell breakage, the majority of the shells examined belonged to the latter species which, along with *Vallonia pulchella*, generally prefers wetter habitats such as damp grassland on or close to floodplains. This together with the presence of the freshwater slum species *Lymnaea truncatula* in fill 1031 of enclosure ditch 1032 (sample 15) and the slightly deeper profile suggest the south-east terminus may have held seasonal shallow water.

Ditch 1033 (intervention 1022) immediately to the north of the enclosure was somewhat shallower in profile. Overall, shell preservation was moderately better than the enclosure ditch. The basal fills contained a greater abundance of freshwater slum species, predominantly *Lymnaea truncatula*. *Anisus leucostoma* was, however, also noted, along with *Succinea/Oxyloma* species. This would be consistent with the interpretation of the feature as a drainage ditch. The terrestrial component of the assemblage was similar to the enclosure ditch although shade-

demanding and catholic species were more numerous and diverse, particularly in the upper levels of the feature (sample 9). Additional species include *Discus rotundatus*, *Vitrea contractor*, *Aegopinella pura* and *Marpessa laminata*. Again this may suggest the growth of rank vegetation as the feature infilled, or perhaps scrub or a hedge line in the vicinity. The reduction in the abundance of freshwater species as the profile shallows may suggest progressively drier conditions as the feature infilled. The two samples from pit 1027 produced sparse assemblages of similar composition to the upper fills of ditch 1033 (intervention 1022).

Discussion

Settlement layout and function

Although no evidence of buildings was encountered during the excavation, the small assemblage of pottery from the enclosure ditch and the pit, along with a small quantity of animal bone and the setting of the enclosure on a low-lying gravel terrace, leaves little doubt that this was a settlement. This settlement comprised a sub-rectangular enclosure, possibly associated with an outlying field system and a pit and ditch terminus to the east. Any evidence of occupation, including structures and shallow pits, seems to have been truncated to the point of destruction, although it is possible that such evidence survives beyond the limits of the impact of development, to the south-west. The quantity and style of the pottery (slack-shouldered vessels in locally made fabrics and an absence of vessels with burnishing or elaborate decoration), along with the relatively small size of the enclosure, the small scale of the ditch and the lack of metalwork suggests a small farmstead, possibly for a single extended kinship group, with few if any wide-ranging contacts with the outside world. However, the NE/SW orientated ditch (1033) which abuts the enclosure possibly formed part of a similar enclosure to the north, which may have been the focus for a similar kinship group. Pottery and bone evidence from the enclosure ditch and pit 1025, especially jar rims from the pit and possibly complete vessels from the enclosure ditch, suggest structured deposition. Environmental evidence, including cattle and sheep/goat bone from the enclosure ditch and the remains of charred plant remains, including wheat and barley, from a pit outside the enclosure (admittedly 90 m to the north-east), suggests a mixed farming economy, with red deer antler and metapodial fragments indicating that hides were being worked. Molluscan evidence indicates that the immediate environment of the site was relatively open, with short-turfed grassland and rank vegetation in the ditches, while the site was in use. After the ditches filled up, a less open environment with some scrub may have developed.

The settlement in the wider landscape

The site may have been part of a larger Middle Iron Age settlement complex lying immediately to the

north. A large ditch and roundhouses, along with a ploughed out earthwork of Iron Age date, is recorded as lying c. 200m to the north of the site and this settlement apparently continued in use into the Roman period (CB00370; English Heritage NMR Excavation Index for England). However, it has proved difficult to find information on this site and the relationship between the two settlements, whether part of a single complex, or distinct farmsteads, is therefore difficult to elucidate. Recent work on the Iron Age of Britain has noted the expansion of settlement, involving the infilling of gaps around existing settlement and the settlement of larger areas of landscape in the Middle Iron Age (Hill 2007, 23). The lack of evidence for activity earlier than the Middle Iron Age at Bushmead Road suggests that the enclosure could have been part of this phenomenon. The nature and development of the settlement to the north almost certainly has a bearing on the question of why the enclosure at Bushmead Road was abandoned at the end of the Middle Iron Age. Possibly settlement shifted to the north around the beginning of the first century AD, for reasons to do with wider social and economic shifts at this time, and the continuity of the former site into the Roman period would seem to bear this out. The enclosure was similar to enclosures of the same date from Little Paxton, where a sub-rectangular enclosure was dated to the earlier Middle Iron Age, two others were dated to the later Middle Iron Age and one was dated to the Late Iron Age, although the latter three enclosures appeared to be more firmly tied into a system of enclosures than was the case with Bushmead Road (Jones 2000, 134–7). Another similar enclosure was excavated at Prickwillow Road, Ely, where the excavators argue that it represented a ‘small enclosed farmstead common in the eastern counties and elsewhere’ (Atkins and Mudd 2003, 49). Despite the limited scale of the evidence, the settlement may therefore be seen as typical for its region.

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Late Iron Age/Early Roman Pottery Kilns at Blackhorse Lane, Swavesey, 1998-99

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With a contribution by Christopher Evans

Illustrations by Crane Begg, Gillian Greer and Sue Holden

Excavations at Blackhorse Lane, Swavesey by Cambridgeshire County Council's CAM ARC in 1998-99 revealed, inter alia, important evidence for pottery manufacture during the Late Iron Age/Early Roman period consisting of one or possibly two kilns, as well as kiln debris and pottery. Contemporary features included a probable cremation burial, ditches and the remnants of a possible roundhouse. These features suggest the presence of a craft/industrial area on the western edge of the fen island.

The evidence for pottery production is particularly notable since very few kiln structures of this period are yet known in Britain. A large group of kiln superstructure fragments and kiln furniture was found either associated with the kiln(s) or dumped in ditches nearby. Although the pottery recovered from these features is of late pre-Roman Iron Age type (at its broadest c. 130 BC – AD 80), the kiln technology suggests a date no earlier than the second quarter of the 1st century. The pottery, which has particular importance since most of it occurred in stratified settlement-related contexts, makes a significant addition to the growing corpus of later Iron Age and Transitional material from Cambridgeshire. The assemblage has numerous relatively complicated forms, with a high proportion of well-executed handmade items. The typology of the pottery assemblage displays both traditional and changing elements, reflecting wider developments in society at this time.

Geology and Topography

Swavesey is a large parish on the edge of the fens in south-east Cambridgeshire (Fig. 1). It lies at the junction of first and second terrace gravels and Ampthill clay which constitutes the main part of a spur of higher ground (British Geological Survey 1985). The gravels on which the present settlement lies form an 'island' at the end of this spur, leading out into the Ouse valley and the edge of the fen, where there is a covering of alluvium.

The village is 14km to the north-west of Cambridge and 13km south of Huntingdon. The site is generally flat and lies approximately 200m to the west of the village core at a height of 6m OD.

Archaeological Background

The gravel promontory or island on which most of Swavesey stands would have offered a favourable settlement site within the fen edge zone throughout the later prehistoric period. Concentrations of later prehistoric remains have been found on the valley/fen edge at, for example, Over – the next promontory east from Swavesey (Spoerry 1996, 4). A conquest period kiln was excavated in the field immediately to the north-east of the development site in 1990 and is summarised by Evans below.

Between 1995 and 1998 CAM ARC undertook several phases of evaluation and excavation in advance of housing development between School Lane, Blackhorse Lane and the High Street (Sutherland and Hatton 1996; Spoerry 1996; Cooper and Spoerry 1997; Roberts 1998; TL 360 688; Fig. 1). The present report relates to Iron Age remains uncovered during the 1998-9 work. Most of the remaining evidence from the site dates to the Late Saxon and medieval periods and is soon to be published (Sayer in prep.).

Recent work in the general area has considerably enhanced understanding of early settlement patterns and associated landscape development. The results of excavations by the Cambridge Archaeological Unit (CAU) at Haddenham (Evans and Hodder 2006 and see below) are reflected in findings from Colne Fen, Earith (Evans pers. comm.), which lies c. 7km to the north of Swavesey. Here, eight Middle to Late Iron Age enclosures were found which, as well as providing insights into the fen-edge economics of these communities, give crucial information on what, as it is interpreted, appears to be the 'arrival' of Late Iron Age wheelmade pottery-using groups into the area in the late 1st century BC (Evans *et al* forthcoming).

The Kilns and Associated Activity

A kiln found on the northern edge of the Blackhorse Lane site was figure-of-eight shaped in plan (3928; 1.55m long, 0.9m wide and 0.15m deep), with the

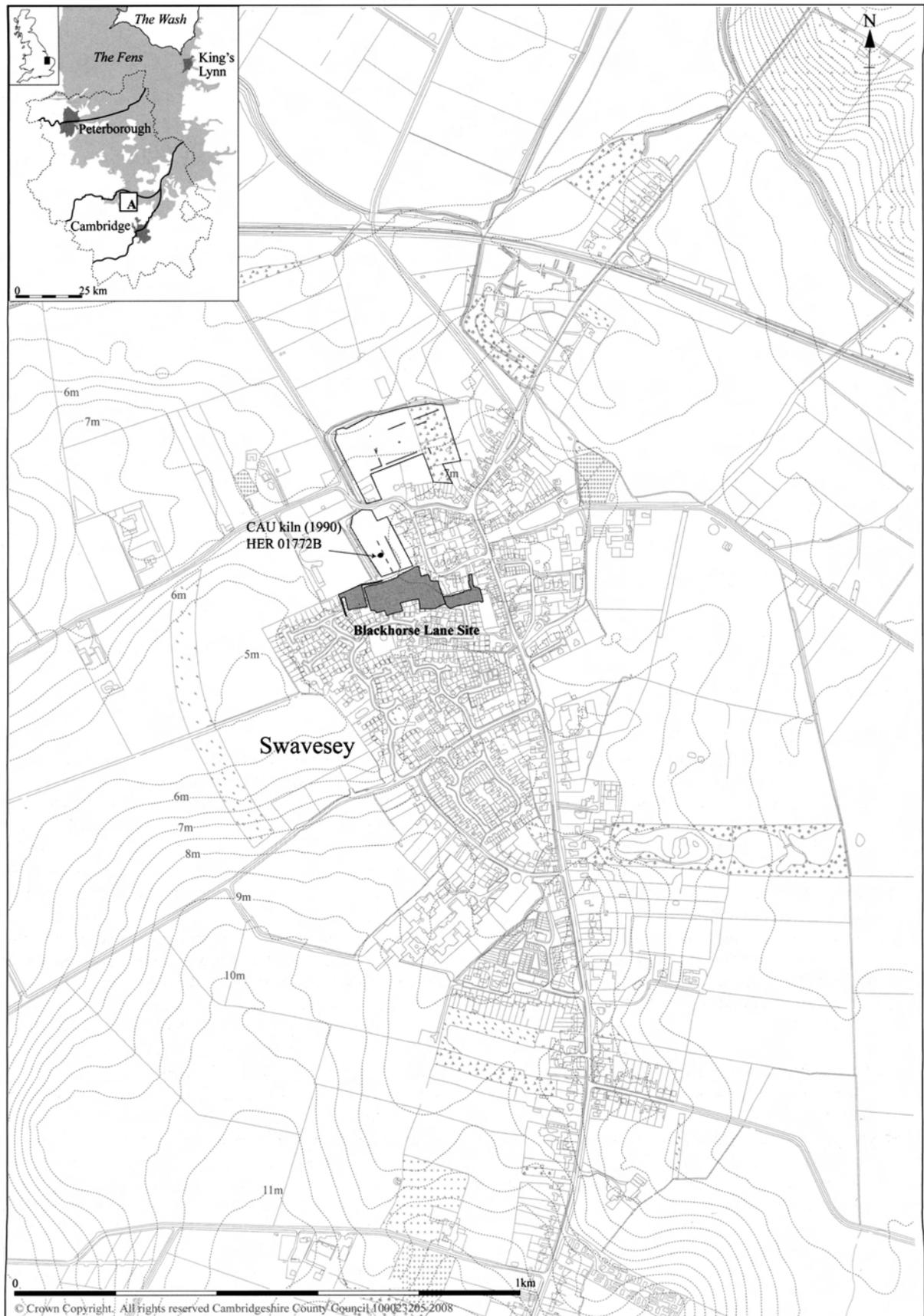


Figure 1. Site location showing the local topography.

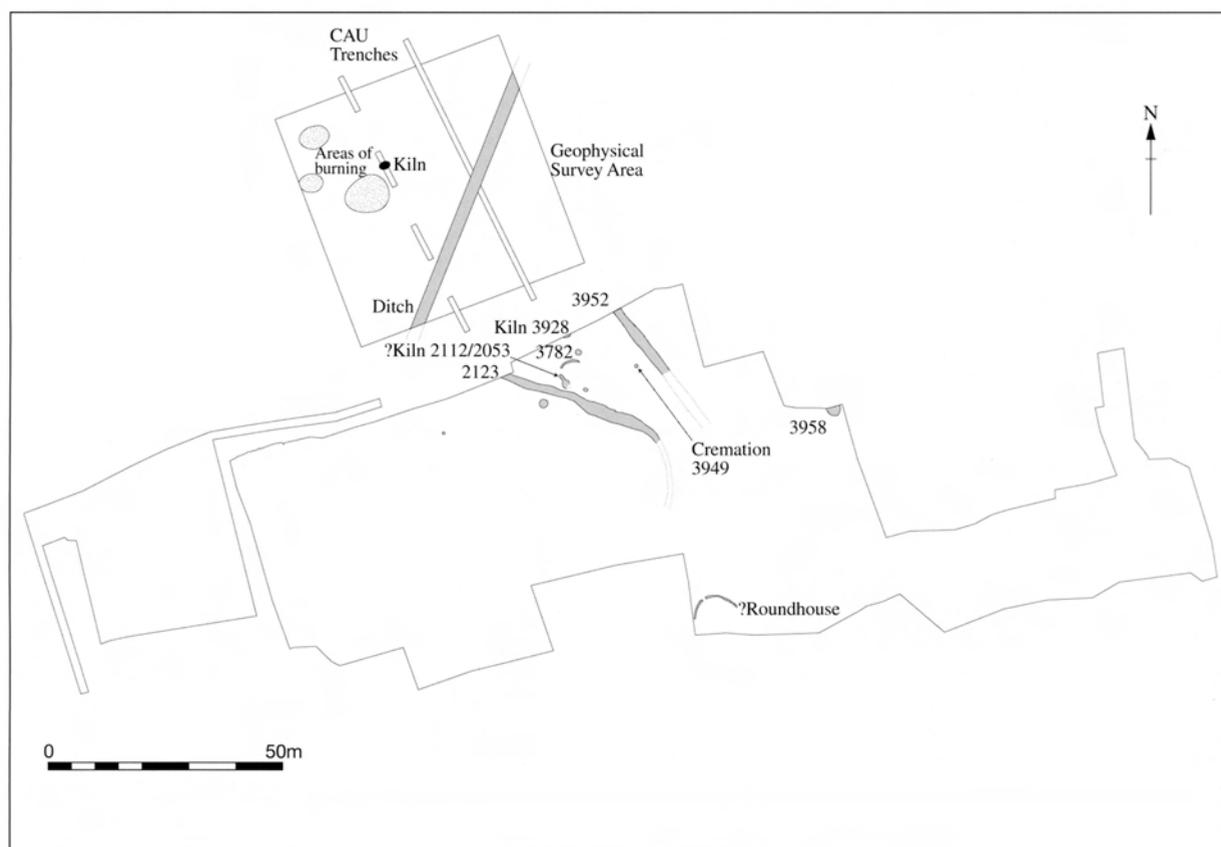


Figure 2. Site plan showing Iron Age features.

steep-sided firing chamber to the west (Figs 2 and 3). The sides of the stoke-hole were gently concave, sloping up to the firing chamber which had a flat base. The feature was lined with a pale yellow clay which had been applied and smoothed and was fired to a depth of 15–25mm, although some fragments of the collapsed lining were fired to their full thickness (50–60mm). The fill of the kiln (3926) was a mix of very dark grey brown and dark grey clayey sandy silt containing ash, moderate charcoal flecks and fragments of fired clay. Ten partial and one complete kiln bar (3925) were found resting on the kiln fill. None of these appeared to be *in situ* but were probably part of a deliberate backfilling episode once the kiln had been opened after firing, rather than collapsing during use. Sealing the kiln bars was a layer of dark grey brown silty clay, dark red clay and olive clay, containing fragments of poorly fired pottery, kiln lining and flecks of charcoal (3923/3924). Eighty-three sherds of pottery (weighing over 4kg) were recovered from the kiln and surrounding area.

A second possible kiln (aligned north-west to south-east) lay between the first kiln and a ditch immediately to its south (2123), which itself contained large quantities of kiln debris. This possible kiln consisted of a flue or stokehole (2112) which was curving and narrowed towards the north-west, as well as a pit which may represent the firing chamber (2053). The profile was irregular dropping from 5mm to 15mm

in the south-east. Interpretation as a kiln remains tentative since no evidence of firing was found. The putative flue contained a single fill of very dark grey brown clay silt which included fragments of Iron Age pottery and animal bone. A curvilinear slot (3782), 4.18m long, and associated posthole may have served as a windbreak around the northern side of this potential kiln.

Just to the south was a ditch which was up to 3.30m wide, with a butt end to the south-east. Its upper fills were cut by a major ditch which had been recut several times (2123) and was up to 5m wide and 1.08m deep. This perhaps formed part of an enclosure or other boundary and was aligned north-west to south-east, but may have turned to the south-west at its eastern end. It was traced over a distance of c. 60m, and various sample sections were cut across it during the course of the excavations. One slot dug immediately adjacent to the putative second kiln recorded upper fills, some of which indicate natural erosion; one fill suggests deliberate refuse deposition within dark clay silt. This deposit (2121=2143) contained 97 sherds of Iron Age pottery as well as 18 partial kiln bars, 42 kiln bar fragments and kiln lining. The fill of another section (3906) contained a large dump of kiln waste including 54 partial kiln bars and 76 kiln bar fragments, as well as various other items of kiln furniture. Other finds from the ditch include a fragment of quern stone and cow, sheep/goat, pig, red

deer and dog bone. An early fill contained a cattle metatarsus showing considerable polish on the shaft and distal condyles, with a hole made in the proximal articulation. This bone was certainly used, but its precise function remains unclear; similarly worked long bones have been found at other Iron Age sites such as Danebury (Sellwood 1984, fig. 7.39, no. 3.217), Dragonby (Taylor *et al.* 1996, 359, fig. 14.8), Nettleton (Stallibrass 1999, 22) and Thorpe Thewles (Swain 1987, 92, fig. 59, no. 2) and it has been suggested these items represent handles for tools with tangs. Perhaps given the context this item was one for fashioning pottery or structural elements of the kiln. Eel and frog bones were also recovered, while environmental samples yielded cereals, legumes and elder; there was some suggestion, however, of contamination from later contexts.

Further east were other ditches (3966 cut by 3952) of apparent Iron Age date, although these ran on a different alignment to the ditch sequence to the west. A feature in the far north-eastern corner of the site may represent a pit or the butt end of a ditch (3958).

A few pits were scattered across the northern part of the site and may have been used as quarries or for storage. They varied in diameter between 2.5m and 0.7m and in depth between 0.4m and 0.27m. Very few finds were recovered from them and it is unlikely they were used for rubbish disposal. One (3949, 0.5m wide, 0.3m wide and 0.12m deep) had steep sides and a flattish base. Its fill of a very dark grey brown clay silt with frequent gravels contained a small quantity of human bone associated with pottery (including Fig. 9, Nos 52 and 53) and it is possible the latter represented an urn or partial urn. The bones comprised the badly eroded but largely unburnt remains of the upper right torso of an individual – the right scapula, right clavicle, upper vertebrae and upper ribs with totally burnt animal bone mixed in.

Lying isolated some distance to the south was a shallow ring gully (3094), positioned close to the edge of the wetter land. This may relate to a roundhouse and had a diameter of *c.* 7m. Its fill contained small quantities of Iron Age pottery.

A Note on the 1990 Kiln

Christopher Evans

In 1990 the CAU undertook evaluation fieldwork throughout the north-western corner of Swavesey, anticipating an application for housing development (Evans 1990). Initially, the focus of the programme was in the area of Amen Corner, in the rampart-bounded fields behind Taylor's Lane. For the purposes of this note, the main area of interest, however, is the investigation of the plots behind Blackhorse Lane where, across our six trenches, evidence of dense 'early' settlement was found. At this point some contextual explanation is necessary. This was only the second trenching programme the Unit had undertaken and the quality of the archaeology stretched the limits of its then four staff (and, by comparison with today's

levels, the project's funding was minute). Those were early days in developer-funded fieldwork and we were all 'learning the ropes'.

Little excavation *per se* was then made of the many features exposed within the Blackhorse Lane trenches (four only), though considerable quantities of surface finds were recovered (e.g. *c.* 330 sherds of pottery). Although a number of features therefore had to remain undated, two main phases of usage were identified: late pre-Roman Iron Age and Saxo-Norman/early medieval (11th to 13th centuries).

As chance would have it, one of the trenches cut straight through what was clearly the remains of a kiln; again, it was not excavated as such and its recording can only be considered 'un-nuanced'. Sealed by a layer of 'scorched clay' (i.e. the remnants of the kiln's dome), and including fragments of end-tapering kiln bars, this primarily consisted of ash and charcoal-filled radial/spoke-like 'troughs' (i.e. flues). Together these must represent the remains of some manner of up-draft kiln, whose floor would have been raised on the kiln bars (see e.g. Detsicas 1987, 157–9, fig. 36); five postholes occurred within the same area. For the purposes of this contribution, the pottery recovered from the kiln has recently been reviewed and has duly been reassigned to the conquest period (i.e. of early Roman attribution), with the remainder of the 'early' assemblage still being of Late Iron Age date (M. Brudenell and K. Andersen, pers comm.).

While no other kiln-related features were found, a large pit present in an adjacent trench, which yielded a surface find of 2nd-century AD mortarium, could also potentially have been associated with pottery production. In 1990 it was assigned to the Saxon-Norman phase based on the abrasion of that sherd and its assumed residuality; the pit could well, though, have been of Roman date.

In 1994, in collaboration with the CAU, a team from Toyama University in Japan undertook geophysical survey within Swavesey, including across the Blackhorse Lane plots. Involving ground radar, resistivity, magnetic susceptibility and magnetometry survey, they successfully identified a number of ditches associated with the settlement and, moreover, what appears to be a major timber building in the south-east corner of the area (Maekawa *et al.* 1995; Maekawa 1997; Senda 1999). In addition, the magnetometry also detected significant anomalies in the northwest quarter, near the recorded kiln. Though possibly only the traces of modern bonfires, it is conceivable that they reflect other kiln locations.

The recovery of the kiln in 1990 obviously resonates with the Iron Age kilns found on the adjacent CAM ARC site and, thereby, attests to a continuation of pottery production across the 'the divide' of the conquest. Moreover, it contributes to the growing corpus of conquest period kiln complexes recently recovered from the region, such as at Greenhouse Farm and the Addenbrooke's Hutchison Site, Cambridge (Gibson and Lucas 2002; Evans *et al.* 2004), and further attests to how very localised was early Roman pottery production.

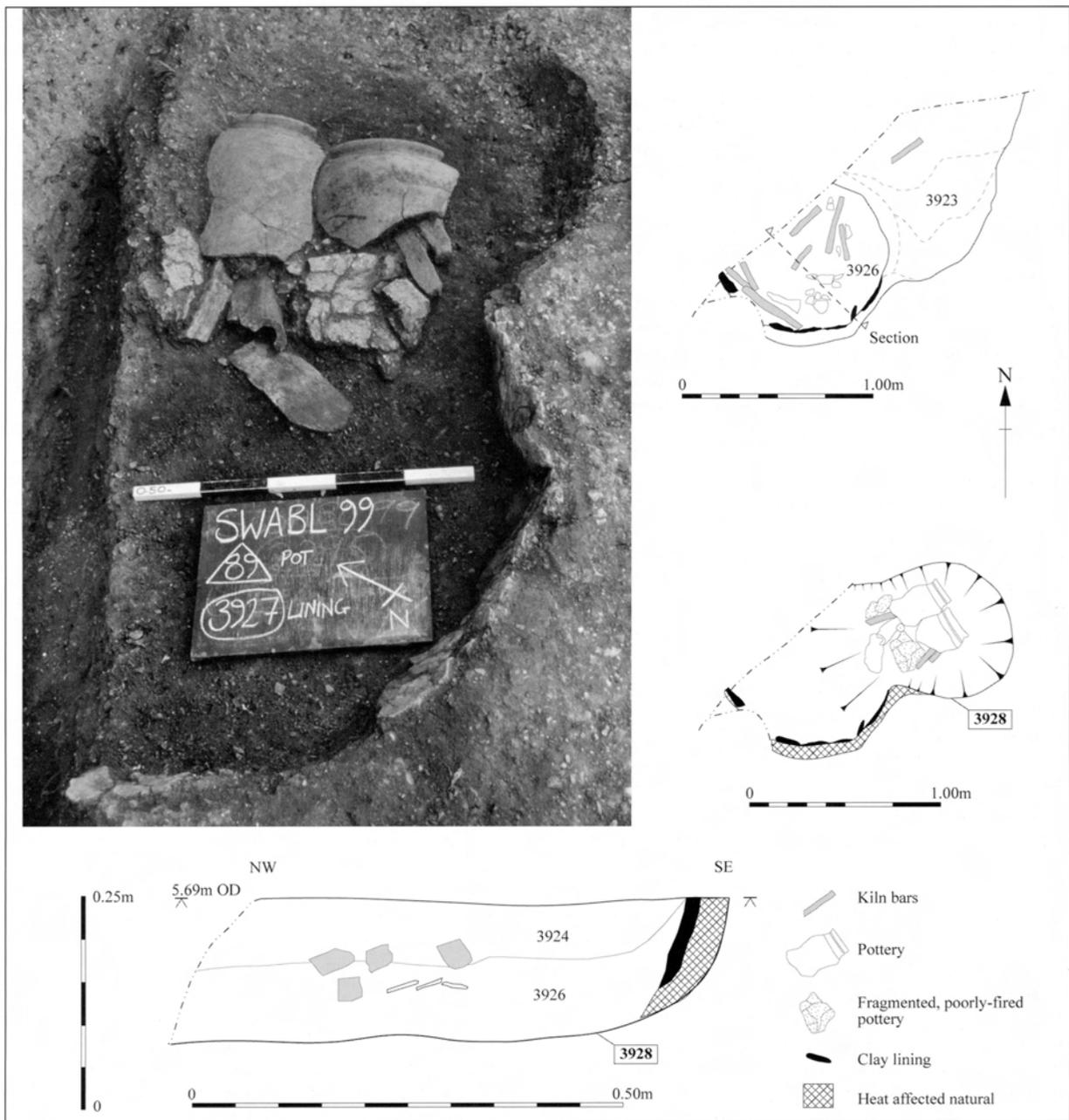


Figure 3. Kiln 3928.

The Kiln Debris and Kiln Furniture

Alice Lyons

Introduction

A significant quantity of baked clay, weighing 47.8kg, consisting of kiln bars, kiln plates, clay slab plates, kiln lining, a possible stacker or setter and undiagnostic daub fragments was recovered from the CAM ARC site. This material was associated with the *in situ* pottery kiln (3928), as well as the probable kiln and associated dumps of kiln debris within an adjacent enclosure ditch (2123). The largest group came from ditch fill 3906 (17.2kg; 36% by weight of the

entire assemblage). A second large dump of kiln debris came from a medieval trackside ditch (3934, ditch 3935), which cut through underlying kiln 3928. Small quantities of baked clay were also recovered from other ditches and pits. It is clear that the assemblage from Swavesey represents several kilns, in addition to those excavated.

Kiln Bars

Three complete kiln bars, 94 partial bars and 134 bar fragments was found, most of which (54 partial bars and 76 bar fragments) came from ditch fill 3906. The kiln bars are of a square-sectioned type with tapering ends ('cigar-shaped'; Fig. 4). Most of these bars

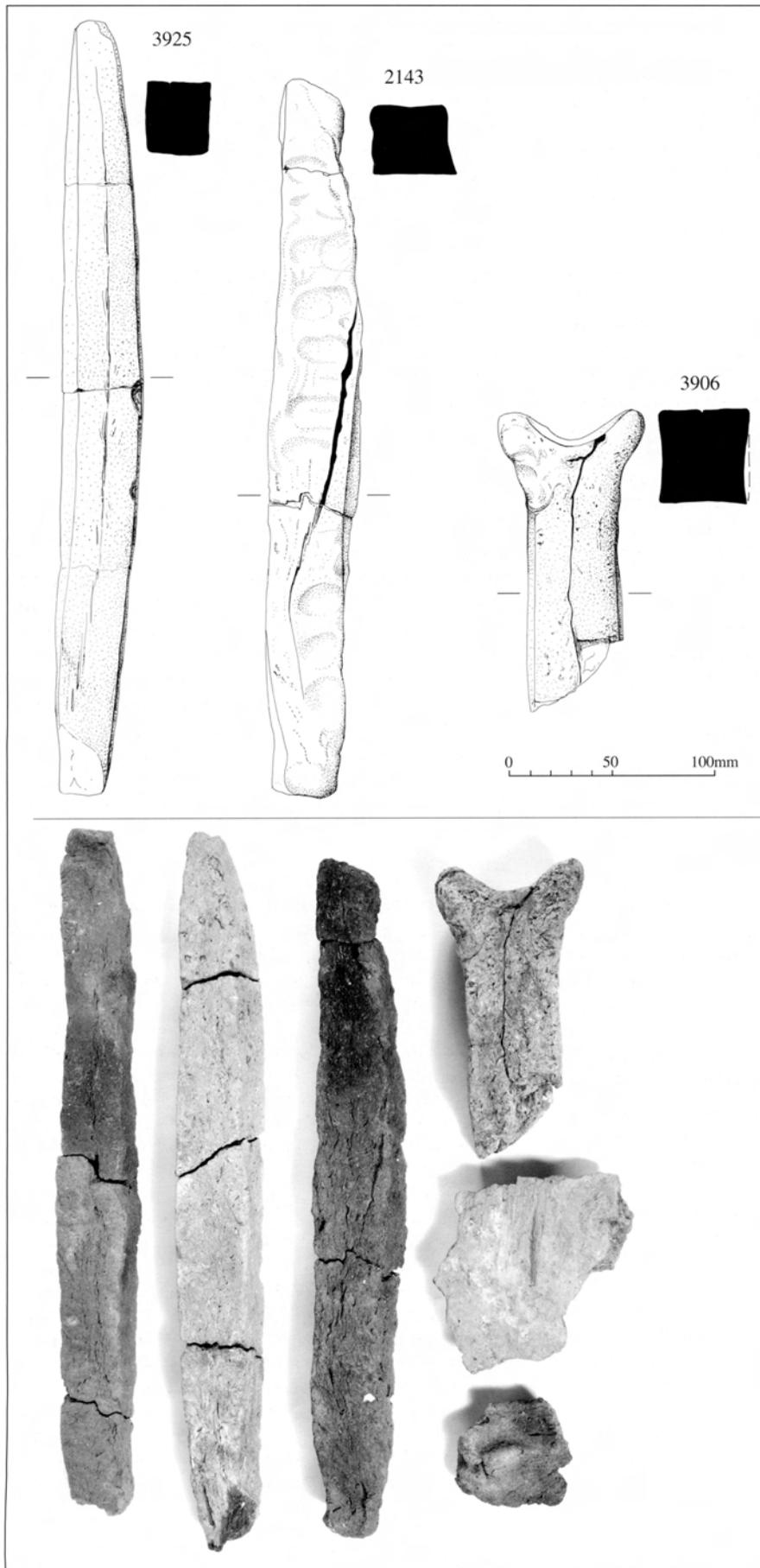


Figure 4. Above: kiln bars and stacker or setter; below: kiln bars (2143=2121 and 3925), modified kiln bar (3906) and kiln lining fragments (2143=2121 and 3934).

have a grey (reduced) core with an orange (oxidised) surface. Common inclusions within the sandy fabric are chalk flecks and flint fragments, as well as organic matter. The clay has been roughly mixed and folded over (with a single seam) to form the tapering rectangular shape. Most bars have grey (reduced) centres with orange-grey (partially reduced) surfaces. There is no evidence that the bars were formed around a stick and in some instances the finger prints of the maker can still be seen.

Of all the types of kiln furniture found, bars are the most frequently encountered (Swan 1984, 62). Kiln bars were used in conjunction with a (usually central) pedestal on which one end rested and from which the bars radiated (*ibid.*, 60–63, plates 18 and 20). The tapering shape of the bars allowed the maximum number to be placed on a single pedestal, the other end of the bars being seated on a ledge constructed integrally as part of the lining of the firing chamber (*ibid.*, 63, plate 20). Unfortunately evidence for a pedestal in either kiln excavated at Swavesey is lacking, although parts of the integral ledge appear to be visible on the plans and photos of kiln 3928.

The shape and length of kiln bars, even within the same kiln can vary quite considerably, presumably as the bars from different kilns became mixed through re-use, which would also have the advantage of allowing the potter to arrange the kiln bars individually for each new kiln that was constructed.

Clay Slab Bars and Portable Kiln Floor Fragments

Slab bars are quite flat objects with a rectangular section (Swan 1984, 64). Objects of this type have been found at Water Newton in the Lower Nene Valley where an early Roman kiln of similar date to the Swavesey example was found (Swan 1984, 96–97). At both sites slab bars are found in addition to the 'cigar-shaped' kiln bars and may have been used as a portable floor plate in conjunction with them. The fabric for the six clay slab bar fragments recovered at Swavesey is constant across the site; it is sandy with chalk inclusions and orange (oxidised) throughout.

A single piece of clay with a curved edge (50–70mm thick) was the most complete example of a fragment of kiln floor (from kiln fill 3926). The surface of this object is cracked as if it has been exposed to extreme heat. This appears to be a section of portable flooring that would have been used in conjunction with the kiln bars.

Possible Kiln Stacker or Setter

Stackers or setters were used within the kiln to aid horizontal stacking of the vessels with the aim of preventing pottery moving or collapsing during firing (Swan 1984, 40). Published examples are found in various shapes including rings, squat cylinders and bobbin-shaped objects. In addition pottery wasters from previous firings were often used for this purpose, along with natural materials such as stones. The possible two-pronged stacker or setter found at Swavesey is without a close published parallel in this region (Fig. 4).

Plate Fragments

Unperforated baked clay plates, such as the 67 examples found at Swavesey, were perhaps used as part of the portable kiln floor and may also have helped to separate layers of pots within the kiln (Swan 1984, 64) and/or provide the temporary topping of the pottery stack before the turf roof was laid down (*ibid.*, 41). Although recorded artefacts of this type are generally rare in Cambridgeshire (as are the kilns themselves) both circular and sub-rectangular forms are well documented artefact types on sites of the 1st millennium BC around Milton Keynes (Williams 1994, 363).

The fabric for the Swavesey plates is constant across the site, being sandy with chalk inclusions and orange (oxidised) throughout. Both sides of the plates are densely covered in grass and/or cereal impressions.

Kiln Lining

Baked clay often constitutes the remains of the lining of the kiln furnace chamber (Swan 1984, 32). The material from Swavesey is orange (oxidised) throughout and contains coarse inclusions of chalk and sometimes flint. Large inclusions were added to help reduce shrinkage during firing and therefore prevent the collapse of the kiln.

Some of the clay retains the finger marks of the kiln builder, where the clay has been pressed into the cut of the oven (Fig. 4, bottom right). Although no tool marks were visible on the fragments recovered here, some bear impressions of straw where the surface has been wiped after construction but before firing (Fig. 4, middle right).

Catalogue of illustrated items

2121=2143, fill of ditch 2123. Fig. 4. One complete, six incomplete and thirteen fragments of kiln bars. The complete bar measures 380mm in length by 40mm wide, by 33mm deep. All of these bars have a grey (reduced) centre, with an orange (oxidised) surface.

3925, fill of kiln 3928. Fig. 4. One complete and ten partial kiln bars. The complete bar measures 350mm long by 40mm wide by 35mm deep. Most of these bars have a grey (reduced) centre with orange-grey (partially reduced) surfaces. It is worthy of note that the complete example has an orange centre, with orange-grey surfaces, while one end is a darker grey.

3906, fill of ditch 2123. Fig. 4. Incomplete modified kiln bar made in the same way as the other kiln bars of a sandy fabric with chalk and flint inclusions. It has a square section measuring 44mm by 42mm. The surviving end has been (pre-firing) shaped to form two equal prongs with a smooth semi-circular concave shape in between them. Its similarity to a kiln bar makes it unlikely that it was intended to stand vertically, and it probably lay horizontally within the kiln to support the internal structure of the loaded kiln during firing.

2121=2143, fill of ditch 2123. Fig. 4, bottom right. Fragments of kiln lining. The material is orange throughout with chalk inclusions. The lining is smoothed on one side (with no sign of tool marks) with ridges and finger impressions visible.

3934, fill of ditch 3935. Plate 1, middle right. Substantial frag-

ments of kiln lining. It is orange (oxidised) throughout, with chalk and sparse flint inclusions. Unfortunately most was fragmentary. The lining is smoothed on one side with no sign of tool marks, although several of the pieces bear impressions where they have been wiped with a bundle of straw. Ridges and finger impressions are also visible.

The Pottery

Steven Willis

Introduction

The CAM ARC excavations produced an assemblage of later Iron Age tradition pottery amounting to 780 sherds (19.371kg), of which 109 were rims. Much of this pottery came from a series of stratified deposits, evidently dating to the Late Iron Age/mid 1st century AD. Other sherds of this period were also recovered as residual items from later contexts and are included here. A total of 80 contexts yielded pottery of this type. This material belongs on typological evaluation to a single ceramic phase which is culturally Late Iron Age, though not necessarily closely dateable. It has a potential date bracket, at its broadest, of *c.* 130 BC to AD 80, though a date of *c.* AD 25–60 is most likely. No chronological sub-divisions are discernible within this material. Of particular importance is the evidence of pottery production at the site during this period. A key question therefore is the relationship of the recovered assemblage with the evidence of manufacturing. The kiln excavated immediately to the north in 1990 (Evans, above) is now thought to be post-conquest; the kiln evidence from 1998–9 should not be assumed to be of like date but rather requires evaluation on its own terms, especially as elsewhere in the region there are sites where a sequence of kilns through time is evident in the 1st century (cf. Gibson and Lucas 2002). The kilns and the contemporary features in their vicinity, together with the well preserved pottery, offer some opportunity to explore a pottery production site of the Late Iron Age/Transitional period.

Although the assemblage is not large it is of sufficient size to enable types of analysis involving quantifiable variables to be undertaken. The range of fabrics and forms is fairly wide, though this is not unusual for a site of this general date in Cambridgeshire. Overall, despite the fact that a proportion of the pottery was recovered in disturbed or later layers the assemblage is in remarkably good condition being characterised by an abnormally high proportion of large sherds, with many vessels being represented by several sherds and with a considerable number of readily identifiable cross-joins between contexts. In consequence the profiles or part profiles of many vessels are evidently reconstructable. A comparison with the average sherd weight for the Wardy Hill assemblage is instructive; amongst that assemblage the average sherd weight was 11.5g (Hill with Horne 2003, 145) compared to 24.8g for the present material.

Indeed, every fabric amongst the present assemblage has an average sherd weight greater than 11.5g (cf. Table 1). Sherds generally display minimal or no abrasion. Weathering is negligible.

Six sherds of Roman pottery were recovered during the excavations and it is likely that a small rim sherd amongst the later prehistoric material is Bronze Age rather than Late Iron Age (Fig. 6, No.15). These items were quantified separately from the typologically Iron Age pottery.

The Late Iron Age pottery groups from Swavesey should not have any residual material as the site was not used earlier in the Iron Age. The site was, however, occupied fairly intensively in the early medieval and medieval periods, and as is to be expected in such circumstances an amount of Iron Age pottery had evidently been disturbed by this later activity and incorporated in younger deposits. However, the amount of Iron Age pottery occurring in later groups proved to be modest. All of the larger groups of Iron Age pottery appear to come from undisturbed contexts. (Curiously all of the Roman sherds from the site were associated with either earlier or later pottery. Two Roman fine ware sherds were recovered together with three Late Iron Age sherds. Moreover, all three Nene Valley colour coated sherds present in the assemblage were associated with Saxon sherds, while the Roman grey ware fragment was found amongst a large medieval group.)

Methodology

The methodology adopted in characterizing and cataloguing the pottery followed the guidelines and conventions outlined by the Prehistoric Ceramics Research Group (PCRG 1995). The initial identifications, cataloguing and assessment were undertaken in 1999 and these records were enhanced in 2004 for reporting. Initial examination of sherds established the existence of considerable variation in the fabric types present and demonstrated that these differences could not be consistently determined by unaided visual examination. Consequently all sherds were scrutinised via clipped breaks under a x20 microscope, to establish the nature of the fabric and character of the tempering inclusions. Fourteen different and discrete fabric categories were identified with all sherds accordingly allocated to a fabric category. The sherds were then counted and weighed and basic data on their technology of production (manufacture), firing conditions, vessel form and occurrence of decoration was recorded. The presence of any surface residues (carbonised deposits and/or limescale) was also recorded. This information was entered into an Access database to facilitate basic analysis of the assemblage; the approach adopted followed the principles of the Oxford Archaeology-Warwickshire Museum Service pottery recording system (cf. Booth n/d). A copy of this Access database is included with the Site Archive. The composition of the assemblage is recorded in Table 1. Subsequently rim and base percentages (EVES) and diameters were measured when the pottery for drawing was definitively selected.

Chronology

The sherds belong to a later Iron Age cultural horizon. Precise dating is elusive and there is an absence of independent dating evidence; no continental pottery imports occur and metalwork was not found, while the typology of this pottery is notoriously difficult to pin-down chronologically (cf. Gibson and Lucas 2002, 106-7; Hill with Horne 2003). Nonetheless, the general form types present, together with the fabric varieties, are well precedented in the region and are consistent with forms catalogued by Thompson (1982). The technology of production, general forms, rim type, attention to detail and finish, and attributes such as shoulder cordons and carinations place the pottery in the Late Iron Age and are features associated with the so-called 'Belgic' phase. Some specific parallels can be found amongst the Camulodunum assemblage (Hawkes and Hull 1947; see below). Yet as with pottery of Late Iron Age/early Roman type from elsewhere in Cambridgeshire, no one source of influence is discernible (cf. J. Evans 1990). The start date for these types is not securely anchored, especially since the conventional dating of the Late Iron Age in south-east England is now in doubt, with the probability that types have been consistently ascribed dates which are unnecessarily 'late' (cf. Haselgrove 1997). Hence on typological grounds some of the pottery from Swavesey may pre-date the turn of the millennium. Equally, pottery types as represented here are known to continue in use in Cambridgeshire into the period following the Roman conquest. No early Roman pottery is present, though absences of Roman pottery are known to occur at other Cambridgeshire sites where occupation is believed to continue well into the second half of the 1st century AD and even to the Trajanic period, especially in the fen region (J.D. Hill and Christopher Evans, pers. comm.; cf. Fincham 2002). Roman material culture was evidently slow to

arrive at some sites in the county. The potential date range for the spread of types present is therefore c. 130 BC-AD 80/90. However, a considerable proportion of the vessels represented display a clear 'Transitional' dimension in terms of form and/or fabric (i.e. transitional between what is typical of Iron Age vessels and what is typical of Roman vessels, in these respects). On balance a likely date for the assemblage is c. AD 25-60 (see discussion below). Comparison with the types manufactured at Greenhouse Farm and Cherry Hinton, indicates that this assemblage from Swavesey is earlier in emphasis than at these two production sites of the Early Roman era (Gibson and Lucas 2002; J. Evans 1990), markedly so in the case of Cherry Hinton.

The absence of pottery that is culturally Middle Iron Age is a matter of interest. This absence is apparent, for instance, when one compares the illustrated material from the present site with that from the nearby site of Wardy Hill (Hill with Horne 2003). At some Late Iron Age sites in the Lower Nene valley, c. 20-25km north-west of Swavesey, Late Iron Age (so-called 'Belgic') pottery forms appear alongside Ancaster-Breedon/'Scored Ware' types which are more typical of the Middle Iron Age (Elsdon 1992). The evidence from these sites (e.g. Rollo 1988; Willis 1998) and indeed from other sites in Cambridgeshire (J.D. Hill, pers. comm.) demonstrates that these types were, at some locations at least, being used contemporaneously. It is unclear whether this absence of culturally Middle Iron Age pottery from the Swavesey assemblage is due to geography or social choice factors, or is an index of date (for instance, implying that the assemblage post-dates any overlap between these two ceramic traditions).

The typology of the extant kiln remains (feature 3928 and perhaps features 2112/2053) and furniture indicates that it, at least, is of mid-1st century AD date,

Table 1. Late Iron Age pottery by fabric.

Fabric	Number of sherds	%	Weight (grams)	%	Average sherd weight	No. of rim sherds
A	226	28.9	4340	22.4	19.2	35
B	194	24.9	3271	16.9	16.9	32
C	15	1.9	529	2.7	35.3	2
D	249	32.0	8734	45.1	35.1	26
E	22	2.8	366	1.9	16.6	2
F	13	1.6	213	1.1	16.4	0
G	1	0.1	13	0.1	13.0	0
H	4	0.5	147	0.8	36.7	0
I	26	3.3	993	5.1	38.2	6
J	2	0.3	28	0.1	14.0	1
K	3	0.4	41	0.2	13.7	0
L	2	0.3	37	0.2	18.5	0
M	21	2.7	605	3.1	28.8	4
N	2	0.3	54	0.3	27.0	1
	780	100.0	19,371	100.00	24.8	109

but does not provide further assistance in refining the chronology. Thermoluminescence and archaeomagnetic dating of the kiln remains were considered by the excavator, but in the event did not prove feasible following discussions with various specialists.

There is one rim sherd, from the fill of pit 3154, which may be a Bronze Age residual piece. The sherd is small (6g) and from an uncertain form, though the rim is upstanding above a slight neck (Fig. 6, No. 15). This item has a brown surface and is decorated with simple slash marks at the top of the rim and a narrow herring bone arrangement on the exterior below the rim. These features imply a Bronze Age cultural association while such features are not unprecedented for the Iron Age. The fabric (B) in which this item occurs does not distinguish it, while its site context is also unindicative. On balance it looks conspicuous amongst this assemblage and a Bronze Age attribution is reasonable.

The six Roman sherds recorded from the site are not closely diagnostic of date within that era. A grey ware sherd and a fine oxidised sherd can only be classified as Roman (c. AD 50–400) while three of the remaining four sherds are Nene Valley colour-coated fine wares (c. AD 140/150–400); the remaining item is a copy of a Drag 31 samian dish (c. AD 150–300). The dating of these items imply that there was no continuation of occupation into the Flavian/Hadrianic period.

Fabric and Manufacture

Fourteen fabric types are represented amongst the Iron Age pottery. These categories are principally based upon inclusion type though there are other (corresponding) differences. With the possible exception of the quartz grains in Fabrics H and L, and the probable exception of the mica in H, all inclusions are evidently deliberately added temper. A large proportion of sherds can be described as heavily tempered. The following table summarises the fabrics on the basis of inclusions:

The presence of a fairly wide range of fabric categories is not surprising amongst an assemblage of this date from Cambridgeshire, whilst the nature of the tempers used is well preceded in the region. There is no reason to believe that these fabrics are other than very local, though some vessels may have been made elsewhere in the region. Fabrics A, B and D predominate accounting for c. 85% of the assemblage (see Table 1). There was a clear preference for potters to use quartz grains and grog. In broad terms this is typical for a Late Iron Age / Transitional assemblage from this area. Quartz grains and grog are both efficient tempers and will have been readily accessible. Swavesey lies with Isobel Thompson's Late Iron Age pottery zone 9 (Thompson 1982) which is characterized by quartz sand fabrics rather than dominated by grog; the present material is in accord with this characterization. The less frequent fabrics might represent non-local imports or 'variations on a fabric recipe theme' or 'experiments'. Fossil shell

Table 2. *The pottery fabrics.*

Fabric A:	Quartz grains with rare grog.	Common to abundant sub-rounded and rounded quartz grains, which are fine and well-sorted, occur, together with sparse or rare grog pellets, which are also fine.
Fabric B:	Quartz grains with sparse to moderate grog.	Well-sorted sub-rounded and rounded fine quartz grains are common or moderate; fine grog pellets, equally well-sorted are sparse to moderate.
Fabric C:	Quartz grains; hard and oxidised.	Well sorted, sub-rounded and rounded fine quartz grains are common or abundant; the fabric is hard or very hard, oxidised, with a rough feel.
Fabric D:	Grog.	Examples of this category are moderately hard with a soapy feel and tempered with sub-angular grog pellets in moderate frequency. The pellets are (seemingly invariably) well-sorted, though their size varies from sherd to sherd (vessel to vessel), the range being, typically, c. 0.5-2.5mm.
Fabric E:	Quartz grains; unoxidized.	Well sorted, sub-rounded and rounded fine quartz grains are common or abundant; the fabric is hard and unoxidized.
Fabric F:	Calcareous fragments.	Calcareous (fossil shell) fragments, typically c. 1-2mm, are common to abundant.
Fabric G:	Rare calcareous fragments.	Calcareous (fossil shell) fragments c. 1mm and less are rare.
Fabric H:	Grog, plus very fine mica and some quartz grains.	The fabric is moderately hard with a soapy feel; fine grog pellets occur in sparse frequency together with some very fine mica and rare fine/very fine quartz grains.
Fabric I:	Calcareous fragments and grog.	Calcareous (fossil shell) fragments, typically c. 1-2mm, are moderate; grog pellets, c. 1-1.5mm are sparse to moderate.
Fabric J:	Flint.	Angular/sub-angular flint, c. 1-2.5mm, is moderate to common.
Fabric K:	Flint and grog.	Angular/sub-angular flint, c. 1-2.5mm, is sparse to moderate; grog pellets c. 1-2mm are sparse to moderate.
Fabric L:	Flint and sparse quartz grains.	Angular/sub-angular flint, c. 1-2.5mm, is moderate to common; fine quartz grains are sparse.
Fabric M:	Grog; calcareous fragments rare.	Grog pellets, c. 1-1.5mm are sparse to moderate; calcareous (fossil shell) fragments, typically c. 1mm, are rare.
Fabric N:	Quartz fragments and grog.	Fragments of quartz c. 1.5-2mm and grog pellets are sparse.

(calcite) tempering occurs (Fabrics F, G, I and M) and is commonly encountered amongst Iron Age assemblages in East Anglia and Lincolnshire. The flint and calcite tempered fabrics form only a very minor proportion of the assemblage (Table 1) and represent only a few vessels; rims and other sherds in these fabrics suggest that the forms in question also differ from those of the general run of the assemblage. This latter pattern might imply a different source/s or a slightly differing (earlier) date. However, as a number of later Iron Age assemblages from Cambridgeshire and the south-east Midlands testify, typologically (and ostensibly culturally) differing pottery was, during this period used on settlement sites contemporaneously (cf. above; Rollo 1988; Willis 1998; Hill 2002b).

Two strong trends amongst the material are germane. First, virtually all of the contexts which contained comparatively sizeable groups of Iron Age pottery yielded proportions of the three fabrics which dominate the assemblage as a whole. This might be taken to suggest that these fabrics are broadly contemporary. An exception is ditch fill 4016, from ditch 3904 (22 sherds of Fabric D, from a variety of vessels, but none of A and only one in B). However, something of a division can be seen between the forms occurring in Fabrics A and B and those in D. The latter, grog tempered ware was generally employed in manufacturing vessels of classic Late Iron Age type with cordons and carinations and thickened out-turned rims. On the whole these forms have an affinity with many seen at Camulodunum (Hawkes and Hull 1947). Hence Fabric D was used to produce vessel Nos 11, 22, 23, 24, 25, 42, 43, 44, 47, 48, 49, 52, 54 and 58. A and B were used to produce forms in the same genre (e.g. Nos 20 and 21) but are associated with forms where cordons and carinations are absent (perhaps had been 'dropped') and profiles are more rounded; Fabric D at best seems to have been infrequently used for these forms. There may, therefore, be a chronological/sequential aspect visible here, with D being a fabric associated with more traditional forms. There is no tight form-fabric difference in the case of Fabrics A and B and so they might be considered contemporary recipe variants; there is some evidence though of a chronological or technological distinction between the two.

The vessels have been manufactured with care and skill. The majority of the sherds (461: 59.1%) come, unequivocally, from handmade vessels. The latter are well formed and some may have been finished on a turning board, perhaps at the rim (as with the South-East Dorset Black Burnished ware industry). Some 21.5% of sherds (168) appear to be from wheelmade vessels, though this figure is inflated by 59 sherds from a single vessel. In the case of 151 sherds (19.4%) it is not possible to tell for certain how the vessel was formed; with a proportion of items careful surface finishing has obscured the manufacturing technique (cf. Seager Smith 1998, 13; Hill with Horne 2003, 166). Of note, a similar proportion (that is, two-thirds) of the pottery from the mid-1st century/early Roman transition phases at Wardy Hill was handmade (Hill with

Horne 2003, 164-6). Amongst the Swavesey assemblage there appears to be some correlation between fabric and construction technique. This is indicated by the data presented in Table 3. The table shows that sherds from handmade vessels are present in similar numbers for the three main site fabrics. However, the pattern with regard to sherds from wheelmade vessels is somewhat different. The absolute numbers are small, which immediately raises the question as to whether this is a reliable pattern for characterizing trends; nonetheless, with this proviso in mind, the data in Table 3 imply that Fabric A may have been preferred to B and D in the manufacture of wheelmade pottery. This might be a chronological trend, consistent with wider patterns, if the quartz sand tempered Fabric A was replacing B and D with their grog inclusions; indeed, a switch to sand tempering is seen in other Late Iron Age/Transitional assemblages from the region. Or this might be a manufacturing or social choice. It is interesting to note, in this connection, Hill's thesis that the potter's wheel was a technology adopted by Late Iron Age people because they wished to produce certain specific, ceramic forms, and that the choice of a temper to be used in potting was culturally influenced (Hill 2002a; 2002b). In the Cambridgeshire region, in contrast, Hill contends, the adoption of the wheel was not a catalyst of ceramic change but was adopted and applied in line with traditional ceramic ideas (2002b). Use of the wheel in Cambridgeshire appears to have differing adoption dates across the county; it may have been in regular use in parts of middle and northern Cambridgeshire by c. 30 BC (cf. Rollo 1988; Hill with Horne 2003).

Table 3. Late Iron Age pottery by method of manufacture: the relative frequency of sherds from handmade and wheelmade vessels in the three main fabrics. *Counting one vessel represented by 59 sherds as 1 for Fabric D and dividing the number of sherds by 110 not 168.

Fabric	Handmade Pottery		Wheelmade Pottery	
	Number of sherds	As a % of all sherds identifiable as handmade	Number of sherds	As a % of all sherds identifiable as wheelmade*
A	137	29.7	44	40.0
B	126	27.3	19	17.3
D	123	26.7	27	24.5

The firing environments which produced these vessels also show variation. Just over half of the sherds (51.1%) have unoxidized exterior surfaces. The figure for sherds with oxidised surfaces is just over a quarter (26.1%), while the remainder show variation in exterior surface colour (the vessel represented by the 59 sherds is of this category). The storage jars tend to have light grey or light brown surfaces, while the three beakers represented (see below) are all oxidised. These types apart, the impression gained is that there is no clear correspondence between colour and form.

Table 4 shows the incidence of firing by fabric type. No clear trend is present beyond the confirmation that the three main fabric types are associated with both oxidized and unoxidized conditions. Amongst the oxidized items Fabric A is somewhat more prominent. These data can only provide a rough guide, not least since firing/colour can vary across the surfaces of single vessels and so sherds from the same vessels may speak of differing firing circumstances.

Table 4. Late Iron Age pottery by firing, as indicated by surface colouring, etc.: the relative frequency of oxidized and unoxidized sherds in the three main fabrics.

Fabric	Unoxidized Pottery		Oxidized Pottery	
	Number of sherds	As a % of all unoxidized sherds (n = 399)	Number of sherds	As a % of all oxidized sherds (n = 204)
A	117	29.3	87	42.6
B	106	26.6	51	25.0
D	124	31.8	61	29.9

Form Types and Function

A broad range of forms is represented amongst the material. The very good condition of the items means that a high proportion of the assemblage is sufficiently extant to ascertain forms, profiles and sizes. The generic form type of the 109 Iron Age rim sherds present has been identified and these data are presented as percentages in Table 5. These data are not a perfect index of the form composition of the assemblage as in a number of cases there will be more than one rim sherd from the same vessel. This is an inherent aspect as the standardization in manufacture of some types renders it difficult to take a 'minimum number of vessels' approach (EVE data might provide an alternative). Nevertheless the table and the illustrations provide a guide to the character of the assemblage.

Table 5. Late Iron Age pottery: rim sherds by form type

Form	Number of rim sherds	Relative frequency (%)
Bowls	53	48.6
Jars	12	11.0
Large storage jars	10	9.2
Bowls or jars	24	22.0
Beakers	6	5.5
Cups	2	1.8
Uncertain	2	1.8
	109	100.00

The assemblage is clearly dominated by bowls. In large part these are medium sized necked bowls with high rounded shoulders or carinations and a simple bead-type or slightly out-turned (and thickened) rim.

A high proportion of the vessels of this type display burnishing or are semi-burnished on the exterior of the neck, though this tends to be absent from the body; this is a phenomenon seen in other assemblages of this era. Vessel shoulders frequently display cordons or corrugations typical of Late Iron Age vessels from south-east England (Thompson 1982; Cunliffe 1991). These are in the style which has often been referred to as 'Belgic' or late La Tène, following the precedent of the Aylesford-Swarling tradition. In many instances bowl forms present at Swavesey can be paralleled with examples from elsewhere in the region. Some instances can be noted: fills 2144, 3828 and 3906 (ditches 2123, 4035 and 3939 respectively) produced sherds from vessels of Cam. 218 (Hawkes and Hull 1947), occurring in Fabrics A and B. From 3006 (gully 3005) came a rim probably from a Cam. 242 in Fabric J (Fig. 6, No.14). Context 3828 also contained rims from forms Cam. 221 and 258, both in Fabric D, while 3906 also contained a fine example of a Cam. 211b (Fabric D) and sherds from identical bowls similar to Cam. 267 in upper profile (Fabric B).

The storage jars present are evidently tall forms with a high shoulder and neck; their straight-sided bodies taper moderately to the base. They occur principally in Fabrics A, B and, particularly, D, though there is an example in L (see Fig. 6, No.19; Fig.8, No. 48; Fig.9, No.49). These forms display a high frequency of decoration at Swavesey, with vertical combing on the body and wavy combing on the shoulder being common characteristics. Similar vessels are known from elsewhere in East Anglia and the southern Midlands (e.g. Gibson and Lucas 2002, fig. 11, no. 12; Kenyon 1948, fig. 34, no. 13; Clamp 1985, fig. 31, nos. 11 & 12). One vessel, from 3926, has a thick interior residue, presumably limescale.

Jars form a small proportion of the assemblage and the rim sherds are less easy to parallel than are those from bowls (perhaps due to the fact that these sherds often represent smaller proportions of their parent vessels). Necked and narrow mouthed vessels occur. One vessel resembles Cam. 232 (from ditch fill 3906, in Fabric A, Fig. 7, No.39) which may be termed a flask, while a vessel in Fabric I has a lid-seated rim and carbonised residues on its exterior.

Sherds from four beakers are present. Ditch fill 3948 (ditch 3949) produced a group of sherds from a single vessel in Fabric M; a number of sherds from a decorated beaker similar to Cam. 115 (in B) came from ditch fill 3906; much of a further decorated beaker came from 4023 (Fabric A). Ditch fill 3976 (ditch 3904) yielded a small rim sherd evidently from a butt beaker in Fabric B (not illustrated). These beakers are large vessels, with a capacity making them suitable for communal use. Beakers following Gallo-Belgic form prototypes such as that from 3976 and Fig. 9, No.55 here, whilst exceptional amongst the Swavesey material became popular in southern and eastern England from c. AD 30; indeed imitations of the imported types are more frequent finds than the 'originals' through the mid 1st century AD (cf. Willis 1994). It is significant therefore to see such Gallo-Belgic de-

rived forms present amongst the assemblage from Greenhouse Farm, Cambridgeshire (e.g. Gibson and Lucas 2002, fig. 12, nos 27–29, fig. 15, no.66) though the likelihood is that the production at that site is later in emphasis than was so with the 1998–9 Swavesey material.

Sherds from a single cup are present (ditch fill 3828; Fabric B), Fig. 6.21. Cups are occasionally present amongst later Iron Age and Transitional assemblages from across England. In this case the item in question is a miniature version of the simple carinated bowl, Cam. 214, a type which is widespread in southern Britain during the 1st century AD. Examples of this form in such modest dimensions are not unknown, though unusual. It is essentially the size of a modern cup so is not a genuine 'miniature' pot of the type sometimes thought to have a 'votive' purpose or to be a potter's firing test piece (cf. Hamilton 2002).

The overall composition, whilst displaying some considerable range in form variants, is, at the generic level, heavily weighted to vessels of one class: the bowl. This basic form is the traditional mainstay of Iron Age assemblages from the region comprising north Cambridgeshire, Peterborough, the Fens, Norfolk and north Suffolk. The near absence of beakers and cups, and the actual absence of platters from the present assemblage is typical of the region during this period (cf. Hill 2002b) and is perhaps indicative of an emphasis in the dating of this material which is earlier in the c. AD 25–60 range rather than later. Whilst understanding of the Iron Age, Transitional and early Roman pottery sequences in Cambridgeshire is growing, sub-regional and chronological variations are manifest with a complex mix of traditional and new types at many sites. Comparison and sequencing of particular assemblages is not straightforward, while specific difficulties in the attribution of sherds to forms also hinders comparison.

A total of 197 sherds (25.3%) have some decoration present. A large proportion of these are body sherds from large 'storage' jars, which show combing characteristic of the form type, or bowls with bands of horizontal grooves on their upper body.

Soot, carbonised residues and limescale can provide an indication of the functions to which vessels were put. Amongst the present material 4.1% of sherds have interior limescale deposits suggesting that they have been used in a process/es involving the boiling of water. There is no evident association with a particular fabric or form type (several vessels display this coating including bowls, jars and storage jars). (No cases of limescale on vessel exteriors were observed). A closely similar proportion of sherds, 5.0%, have soot/carbonised residues, with approximately 24 vessels with such residues. In two cases these residues occur on vessel interiors, but in all other cases they are on the exterior, as is normal, indicating use of the pots over fires and perhaps the burning of foodstuffs which have boiled over the side of the vessels. Hill noted a similar proportion of the pottery with such residues at Wardy Hill, and suggested the residues are likely to be from porridge or stew (cf. Hill with

Horne 2003, 181). In the case of the Swavesey pottery there is a strong pattern to the incidence of these residues: they are associated closely with handmade forms (as at Wardy Hill: Hill with Horne 2003, 181) and with the following Fabrics B, D and I; only one sherd is of Fabric A and only one vessel amongst this group of 24 was wheelmade. Hence grog tempered wares were preferred in this role, rather than sand tempered Fabric A (this is at some variance with the Wardy Hill pattern: Hill with Horne 2003, 181). In terms of form types with soot/carbonised residue, it is apparent that it was very largely bowl shapes that were being used in this cooking role, with only two jars associated with the exterior residue. Jars were presumably used for storage.

In sum the forms present show a close affinity to those occurring amongst other Late Iron Age assemblages from the region. The beakers and cup are the only vessel forms classifiable as 'finewares' amongst the ensemble (a total of five vessels). The bowls are comparatively well made but are heavy and robust types which cannot be categorised as fine ware. In fact the assemblage has a distinctly 'undifferentiated' character, with an absence of 'status' vessels. Hill highlights the significance of burnishing with the Wardy Hill assemblage, seeing this as an expression of fine ware (Hill with Horne 2003); comparatively little material amongst the present assemblage was burnished to any marked extent.

The Kilns

Kiln 3928 was encountered in 1999; it was disturbed and was only partially exposed within the area of archaeological investigation. Its fill (3926) yielded 83 sherds weighing over 4kg. Sherds came from approximately five vessels, and in the case of three of these vessels, substantial proportions survived. Four items are illustrated here: Fig. 8, Nos 46–48 and Fig. 9, No. 49. Number 46 is in Fabric B (wheelmade and unoxidized) while the other four vessels, including three illustrated forms are examples of Fabric D (three at least evidently wheelmade).

The three well represented vessels comprised two large storage type jars and a moderate to large jar, in Fabric D. All three were wheel-made and essentially unoxidized. Whilst Nos 48 and 49 are similar forms there is a size difference. There is no necessary reason to believe that these are products of the kiln. They differ in typological detail and capacity; while the two large storage jars were combed on the body the other vessels were unembellished. They were clearly not elements of a consistent batch, if indeed their production took place in this kiln or not. One of the vessels has what appear to be extensive limescale deposits on the interior, and if this indeed represents limescale this vessel is unlikely to relate directly to the kiln.

An associated deposit lying to one side of the kiln (3924) may represent kiln collapse. It yielded 12 sherds belonging to one of the three storage jars from 3926; further sherds from the same vessel were forthcoming from ditch fill 3934.

The probable kiln 2112/2053 was encountered and

investigated during the trial trenching in 1998. It lay between kiln 3928 and the ditch immediately to its south (2123, etc.) which contained large quantities of kiln debris. The identification of 2112/2053 as a Late Iron Age kiln is problematic for reasons discussed elsewhere in this report. Morphologically this feature resembles a flue (2112) and kiln (2053) which can be paralleled with examples from the Nene Valley (Woods 1974). However, no evidence for firing was found and sherds recovered from 2053 were spotted to AD 900–1150. The fill of the flue, 2113, contained four small body sherds (35g) in Fabrics B, D and F.

It is a curious and signal fact that no wasters/sherds from wasters or items with noticeable defects were present amongst the assemblage recovered in 1998–9. Overall the Late Iron Age pottery from the excavations has the profile of a normal domestic assemblage at a time of change. Relating pottery at production sites directly to kilns is not always straightforward and is dependent on a range of variables. It is difficult to associate firmly any Late Iron Age pottery from the excavations directly to these kilns. Whilst it may be that they were employed to fire a range of types at any one time one might expect some greater typological uniformity amongst the recovered pottery, but this is lacking, which may raise questions for our comprehension of production at this time. Contrastingly Thompson, in assessing the grog tempered pottery from a mid 1st century kiln at Watford, Hertfordshire, found that 16.6% of the 41kg of pottery from the site was from the kiln (Thompson 2004). She established that a wide range of forms was fired in this kiln which is noteworthy with regard to the point about typological range at Swavesey. Likewise Gibson and Lucas were able to associate much of the assemblage from Greenhouse Farm directly with the kiln and production complex encountered at that site (2002, 104).

Catalogue of Illustrated Pottery

- 1 Fig. 5. 2121, fill of ditch 2123. Rim sherd, Fabric A, dark grey surfaces, reddish brown margins and a dark grey core; RE: 0.12. Wheelmade/turned. Smoothed exterior surface at neck.
- 2 Fig. 5. 2121, fill of ditch 2123. One rim sherd and two body sherds, Fabric A, mid to pale grey exterior surface, pale yellowish brown interior surface, pale yellowish brown margins, and a dark grey core; RE: 0.08. Rilling on shoulder. Probably handmade with wheel-finishing, especially to upper part of vessel. Some similarity to a vessel from Greenhouse Farm (Gibson and Lucas 2002, fig. 11 no. 1).
- 3 Fig. 5. 2121, fill of ditch 2123. Five base sherds and eleven body sherds, Fabric A, mid to dark grey exterior surface, pale yellowish brown to pale grey interior surface and margin and a dark grey core; BE: 0.35. Probably handmade with wheel-finishing.
- 4 Fig. 5. 2121, fill of ditch 2123. Rim sherd, Fabric B, dark reddish brown surfaces and a dark grey core; RE: 0.06.
- 5 Fig. 5. 2121, fill of ditch 2123. Rim sherd, Fabric B, dark reddish brown surfaces and a dark grey core; RE: 0.05. Wheelmade/turned rim. Exterior surface below rim was originally smoothed.
- 6 Fig. 5. 2143, fill of ditch 2123. Four rim sherds and five body sherds, all conjoining, Fabric A, strong reddish brown exterior surface and margin, pale reddish brown interior surface and margin and dark grey core; RE: 0.47. Wheelmade/turned rim. As with other vessels of this form amongst this assemblage the exterior surface is rough rather than smoothed or burnished.
- 7 Fig. 5. 2143, fill of ditch 2123. Decorated body sherd, Fabric A, red exterior surface, dark reddish brown interior surface, reddish brown margins with grey core. Probably handmade. A vessel from a "Belgic ditch" at Cambridge has similar combed decoration on its body (Alexander and Pullinger 1999, pl. XLII No. 128).
- 8 Fig. 5. 2143, fill of ditch 2123. Rim sherd, Fabric B, reddish brown to dark grey surfaces and margins, with dark grey core; RE: 0.15. Wheelmade/turned rim.
- 9 Fig. 5. 2143, fill of ditch 2123. Rim sherd, Fabric B, brown to dark grey exterior surface, dark reddish brown interior surface with grey core and margins; RE: 0.11. Smoothed exterior surface. Traces of carbonized residue on exterior surface. Probably handmade with wheel-finishing to the rim.
- 10 Fig. 5. 2144, fill of ditch 2123. Two rim sherds and a body sherd, all same vessel, Fabric A, generally grey exterior surface, with the interior surface ranging from pale to dark brown, with a grey core; RE: 0.27. Body probably handmade with wheel finishing. Exterior surface below shoulder is burnished.
- 11 Fig. 5. 2144, fill of ditch 2123. Rim sherd, Fabric D, reddish brown interior and exterior surfaces, with dark grey core and margins; RE: 0.10. Wheelmade/turned rim; otherwise method of manufacture uncertain. Exterior surface smoothed.
- 12 Fig. 5. 3004, surface cleaning. Rim sherd, Fabric M, pale yellowish brown exterior and interior surfaces, dark grey core; RE: 0.12. Probably handmade with wheel-finishing. Smoothed surfaces.
- 13 Fig. 6. 3004, surface cleaning. Rim sherd, Fabric N, dark grey throughout; RE: 0.06. Handmade. This item, unusually amongst the Swavesey assemblage, has a resemblance to types of Middle Iron Age tradition; compare to vessels from Wardy Hill (eg. Hill with Horne 2003, fig. 79 nos 9 and 12; fig. 81 no. 7, though the Swavesey item has more of an external bead to its rim).
- 14 Fig. 6. 3006, fill of gully 3005. Rim sherd, Fabric J, pale brown, mid brown and dark brown throughout; RE: c. 0.05. Handmade. Perhaps Cam. form 242.
- 15 Fig. 6. 3100, fill of pit 3154. Rim sherd, Fabric B, dark brown exterior surface and rim, with grey interior surface and dark grey core; RE: c. 0.03. Handmade. Probably Bronze Age.
- 16 Fig. 6. 3359, fill of ditch 3360. Rim sherd, Fabric A, dark grey exterior surface, mid brown interior surface and a grey core; RE: 0.08. Wheelmade/turned rim; otherwise method of manufacture uncertain.
- 17 Fig. 6. 3798, fill of pit 3853. Rim sherd, Fabric B, dark grey exterior and interior surfaces, red margins and dark grey core; RE: 0.17. Wheelmade/turned.
- 18 Fig. 6. 3806, fill of ditch 3804. Two conjoining rim sherds, Fabric B, mid grey to brown exterior and interior surfaces, with grey core; RE: 0.09. Probably handmade with wheel-finishing. Surfaces smoothed.
- 19 Fig. 6. 3824 and 3828, fills of ditch 4035. One base and five

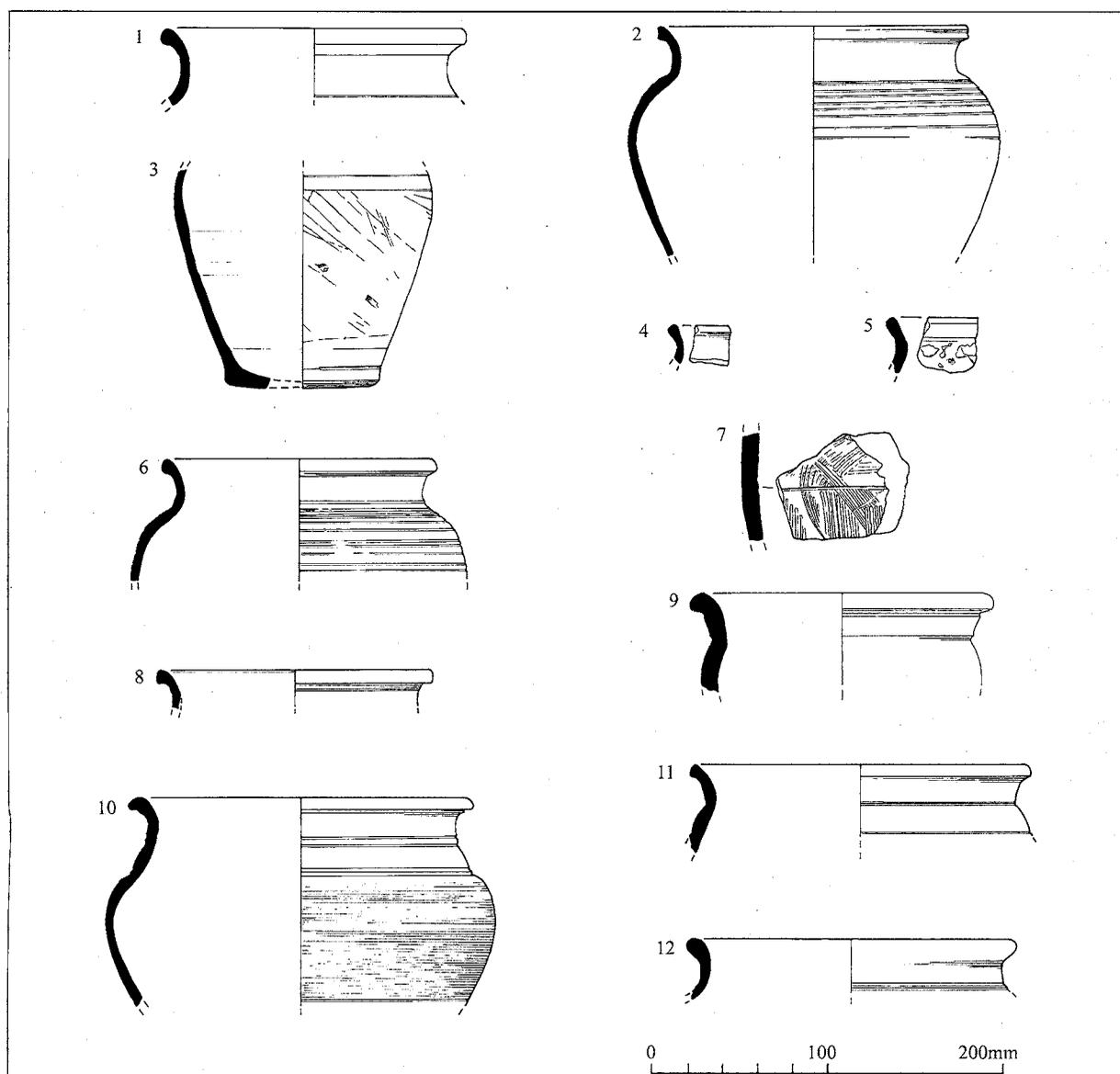


Figure 5. Pottery (cat. nos 1-12).

- body sherds, all conjoining, Fabric A, red to pale brown exterior surface, pale yellowish brown interior surface, with grey core; BE: 0.23. Handmade with wheel-finishing. (Context 3924: 1 sherd; and 3928: 5 sherds). Similar vessels occur at Wardy Hill (Hill with Horne 2003, fig. 74.5), Greenhouse Farm (Gibson and Lucas 2002, fig. 11.12) and Leicester (Kenyon 1948, fig. 34 no. 13; Clamp 1985 fig. 31 nos. 11 & 12); see too, no. 48, below.
- 20 Fig. 6. 3828, fill of ditch 4035. Three rim sherds, one base and six body sherds, Fabric A, reddish brown surfaces and margins with a dark grey core; RE: 0.33; BE: 0.15. Probably handmade with wheel-finishing, especially to upper part of vessel. The exterior of the neck (at least) is burnished. Some similarity to a vessel from Greenhouse Farm (Gibson and Lucas 2002, fig. 11 no. 7).
- 21 Fig. 6. 3828, fill of ditch 4035. Two rim sherds and a base, Fabric B, reddish brown surfaces and margins with dark grey core; RE: c. 0.32; BE: 0.20. Small Cam. 214 Bb. Method of manufacture uncertain. Resembles a small Cam. 214 Bb; cf. Form 57 at Greenhouse Farm which appears more developed (Gibson and Lucas 2002, fig. 14 no. 57).
- 22 Fig. 6. 3828, fill of ditch 4035. Rim sherd, Fabric D, light grey to yellowish brown surfaces; yellowish brown margins and a dark grey core; RE: 0.18. Probably wheelmade. Smoothed exterior surface. Calcareous deposit covers the whole of the interior surface.
- 23 Fig. 6. 3828, fill of ditch 4035. Rim sherd, Fabric D, dark grey throughout; RE: 0.10. Wheelmade/turned. Burnished exterior surface at neck.
- 24 Fig. 6. 3828, fill of ditch 4035. Rim sherd, Fabric D, dark grey throughout; RE: 0.09. Handmade. Exterior and interior surfaces smoothed.
- 25 Fig. 6. 3828, fill of ditch 4035. Rim sherd, Fabric D, dark grey throughout; RE: 0.08. Wheelmade/turned rim. Burnished exterior surface. Traces of carbonized residue on exterior surface and rim.
- 26 Fig. 7. 3837, fill of ditch 4035. Rim sherd, Fabric I, dark

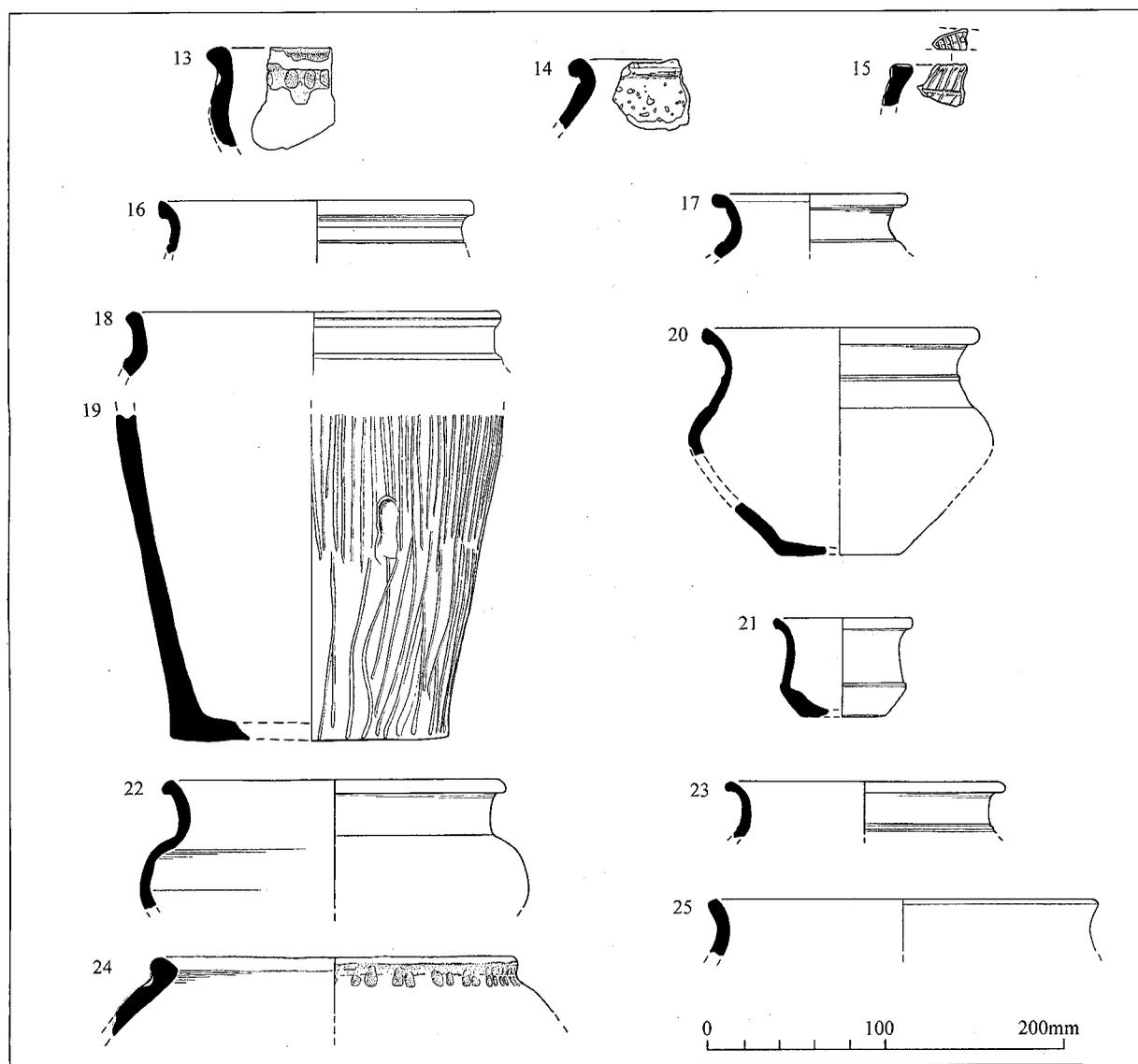


Figure 6. Pottery (cat. nos 13–25).

- brownish grey throughout; RE: 0.15. Wheelmade/turned. Smoothed exterior surface. Pierced hole at neck; compare this with a vessel from Wardy Hill with two neck piercings (Hill with Horne 2003, fig. 77 no. 10) and Vessel No. 51 from Swavesey.
- 27 Fig. 7. 3837, fill of ditch 4035. Rim sherd, Fabric I, dark grey throughout; RE: 0.15. Handmade. Interior surface very smooth. Traces of carbonized residue on exterior.
- 28 Fig. 7. 3889, fill of ditch 3804. Two conjoining base sherds, Fabric M, dark grey exterior and core, with pale brown interior surface; BE: 0.46; pierced base. Handmade or wheel-turned. Smoothed exterior surface.
- 29 Fig. 7. 3894, fill of ditch 3893. Rim sherd, Fabric A, dark grey exterior and core, with reddish brown interior surface; RE: 0.10. Handmade body, with wheel turned rim? Burnished exterior.
- 30 Fig. 7. 3894, fill of ditch 3893. Decorated body sherd, Fabric A, dark grey exterior surface and dark reddish brown interior surface, red margins and dark grey core.
- 31 Fig. 7. 3904, ditch cut 3904. Rim sherd, Fabric A, dark brown to dark grey exterior and interior surfaces, reddish brown margins and a dark grey core; RE: 0.15. Wheelmade/turned rim. Burnished exterior.
- 32 Fig. 7. 3904, ditch cut 3904. Rim sherd, Fabric C, red surfaces and margins with grey core; RE: 0.16. Evidently wheelmade/turned. Smoothed surface at rim.
- 33 Fig. 7. 3905, 3906, fills of ditch 3904 and ditch cut 3939. Four rim sherds and three body sherds, all same vessel, Fabric B, reddish yellow surfaces throughout with dark grey margins and core; RE: 0.61. Probably handmade, with wheel-finishing. Rilling on shoulder and upper wall. (Context 3905: 1 sherd; 3906: 5 sherds; and 3939: 1 sherd). A similar form occurs at Wardy Hill (Hill with Horne 2003, fig. 82.4) but has more of an angular rim.
- 34 Fig. 7. 3905, 3906, fills of ditch 3904 and ditch cut 3939. Three rim sherds and four body sherds, all conjoining, Fabric B, pale brownish yellow to pale grey exterior surface, pale brownish yellow interior surface and margins throughout, with dark grey core; RE: 0.34. Handmade body, with wheel turned rim. (Context 3905: 1 sherd;

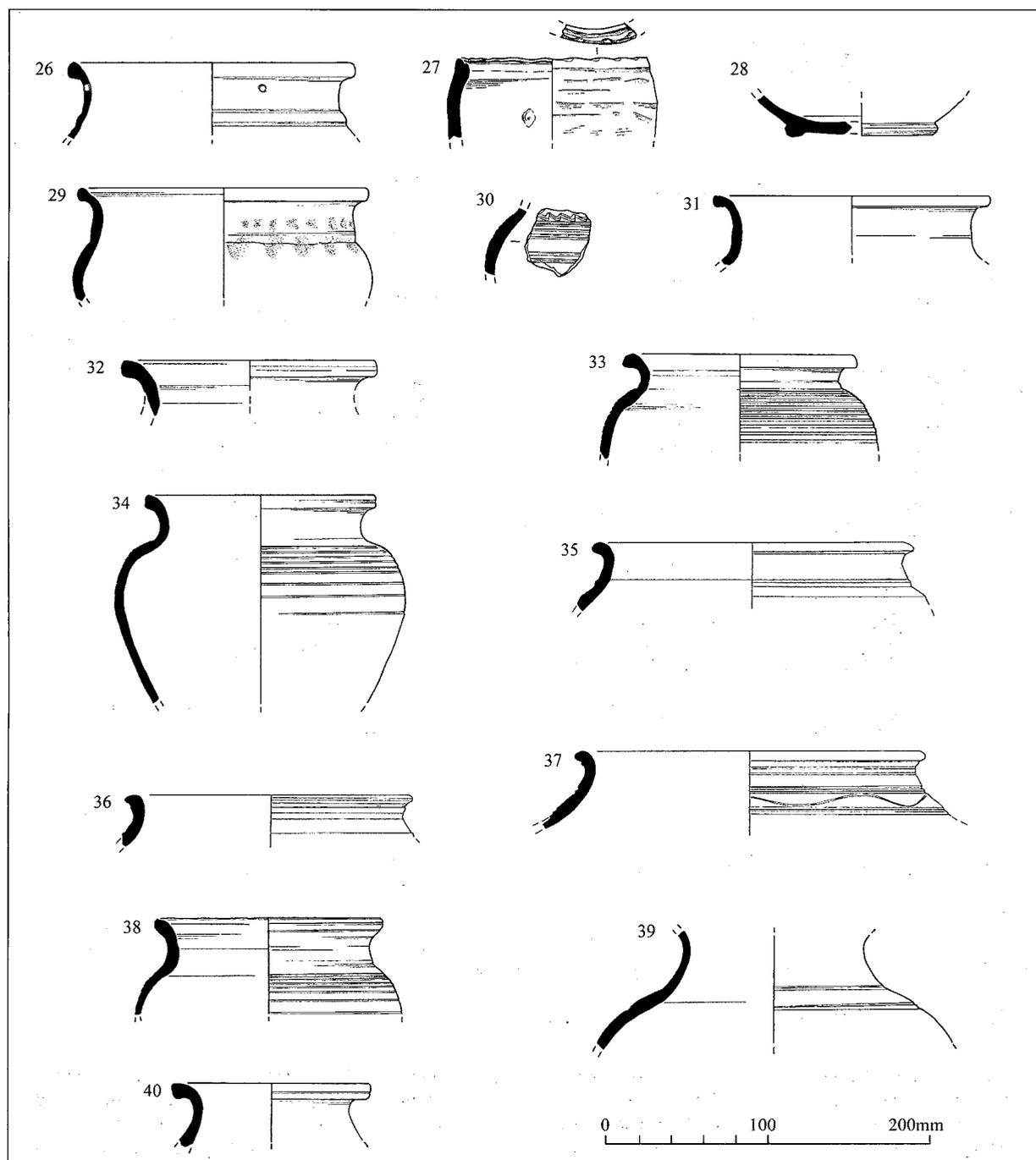


Figure 7. Pottery (cat. nos 26-40).

- 3906: 3 sherds; and 3939: 3 sherds).
- 35 Fig. 7. 3906, fill of ditch 3904. Rim sherd, Fabric A, pale brown to dark grey exterior surface with dark grey margin, pale reddish brown interior surface and margin, and a grey core; RE: 0.13. Wheelmade/turned rim.
- 36 Fig. 7. 3906, fill of ditch 3904. Rim sherd, Fabric A, pale brown to pale grey exterior surface, pale reddish brown interior surface, dark grey margins and a mid grey core; RE: 0.10. Rim probably wheel-turned.
- 37 Fig. 7. 3906, fill of ditch 3904. Rim sherd, Fabric A, pale brown to mid grey exterior surface, reddish yellow interior surface, dark grey margins and a mid grey core; RE: 0.08. Wheelmade/turned rim.
- 38 Fig. 7. 3906, fill of ditch 3904. Rim sherd, Fabric A, mid greyish-brown exterior and interior surfaces, reddish brown margins and a grey core; RE: 0.07. Probably handmade body, with wheel turned rim.
- 39 Fig. 7. 3906, fill of ditch 3904. Neck and shoulder sherd with rim missing, Fabric A, pale brown exterior surface, reddish brown interior surface, pale red margins and grey core. Wheelmade. Smoothed exterior surface. Similar form to Cam. 232.
- 40 Fig. 7. 3906, fill of ditch 3904. Two conjoining rim sherds, Fabric B, light grey to yellowish brown surfaces; yel-

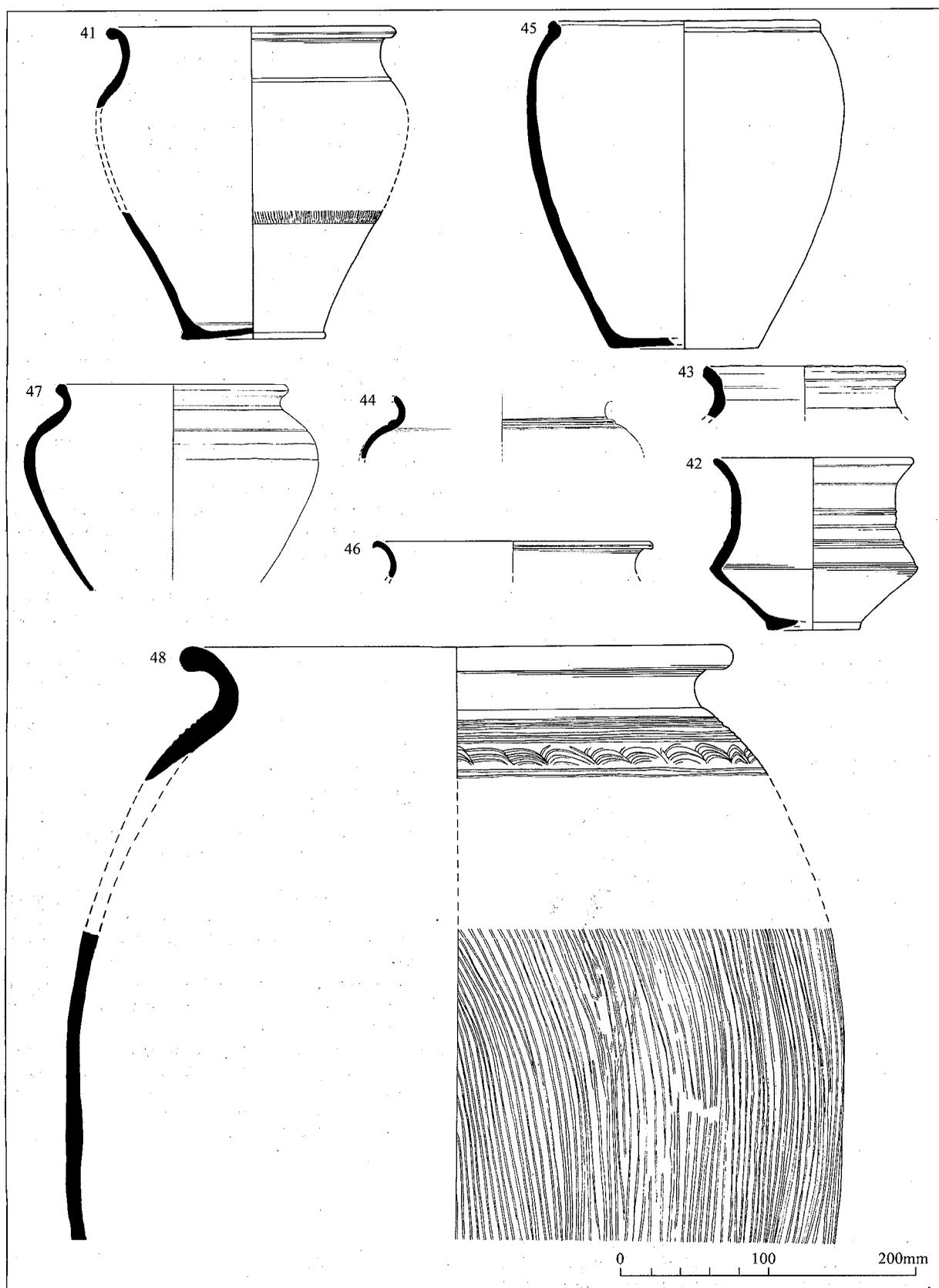


Figure 8. Pottery (cat. nos 41-48).

- lowish brown margins and a dark grey core; RE: 0.24. Wheelmade/turned rim. Smoothed rim and exterior surface.
- 41 Fig. 8. 3906, fill of ditch 3904. One rim sherd, five base sherds and seven body sherds, all same vessel, Fabric B, pale reddish brown exterior and interior surfaces, with grey core; RE: 0.09; BE: 1.00. Wheelmade. Smoothed exterior surfaces. Cf. Cam. 119B.
- 42 Fig. 8. 3906, fill of ditch 3904. Four rim sherds, one base sherd and eleven body sherds, mostly conjoining, Fabric D, exterior surface generally reddish brown to grey, interior surface generally pale reddish brown, with dark grey core; RE: 0.54; BE: 0.32. Wheelmade/turned. Cf. Cam. 214A. A similar vessel occurs at Wardy Hill (Hill with Horne 2003, fig. 77.9).
- 43 Fig. 8. 3906, fill of ditch 3904. Rim sherd, Fabric D, dark grey exterior surface, brown interior surface, reddish margins and grey core; RE: 0.21. Wheel-formed rim.
- 44 Fig. 8. 3906, fill of ditch 3904. Neck and shoulder sherd with rim missing, Fabric D, reddish brown exterior surface and margin, dark grey interior surface, and a grey core. Laminated interior surface. Method of manufacture uncertain. Smoothed exterior surface.
- 45 Fig. 8. 3906, 3976 and 4016, fill of ditch 3904. Four conjoining rim sherds, one base, and fourteen body sherds, all same vessel, Fabric I, mainly dark grey exterior surfaces, while interior surface varies between pale yellowish brown and dark grey; the core and margins are dark grey; RE: 0.40, BE: 0.38. Traces of carbonized residue on the exterior surface. Handmade. (Context 3906: 4 sherds; 3976: 8 sherds; and 4016: 7 sherds). This neckless bead rimmed form is close to Cam. 255a.
- 46 Fig. 8. 3926, fill of kiln 3928. Two conjoining rim sherds, Fabric B, essentially dark grey throughout; RE: 0.20. Burnished rim and exterior surface at neck. Evidently wheelmade/turned rim.
- 47 Fig. 8. 3926, fill of kiln 3928. Four rim sherds and fifteen body sherds, all conjoining, Fabric D, generally the exterior surface at and above the shoulder is pale reddish brown, while below the shoulder the surface is grey; the core and interior surface are dark grey; RE: 0.37. Wheelmade/turned rim and shoulder, whilst body apparently handmade. Smooth exterior surfaces. Interior surface has extensive calcareous residues.
- 48 Fig. 8. 3926, fill of kiln 3928. One rim sherd and seven body sherds, all same vessel, Fabric D, essentially the fabric and surfaces are pale grey throughout; RE: 0.24. Handmade, with wheel-finishing, especially to upper part of vessel. Smoothed surfaces. There is another sherd from this vessel in context 3698. Similar vessels occur at Wardy Hill (Hill with Horne 2003, fig. 74.5), Greenhouse Farm (Gibson and Lucas 2002, fig. 11.12) and Leicester (Kenyon 1948, fig. 34 no. 13; Clamp 1985 fig. 31 nos. 11 & 12); see too, No. 19.
- 49 Fig. 9. 3926, fill of kiln 3928. One rim sherd, three base sherds and seven body sherds, several conjoining, Fabric D, generally reddish brown surfaces and margins with dark grey core and with some areas of dark grey on the exterior surface; RE: 0.23; BE: 0.48. Wheelmade/turned rim, whilst body apparently handmade. There are many other fragments and flakes from this vessel which could not be reconstructed. Similar to a large jar type from Greenhouse farm (Gibson and Lucas 2002, fig. 11 no. 12).
- 50 Fig. 9. 3939, fill of ditch 3939. One rim sherd and two conjoining body sherds, Fabric A, dark grey exterior and interior surfaces, with reddish brown exterior and interior margins and a grey core; RE: 0.14. Wheelmade/turned rim. Burnished exterior surface.
- 51 Fig. 9. ditch cut 3939; 3976 and 4016, fills of ditch 3904. Two rim sherds, one base sherd and three body sherds, all same vessel, Fabric B, the exterior is reddish brown at and above the shoulder, but below the shoulder is dark grey, the interior surface is reddish brown, with the core being dark grey; RE: 0.29; BE: 0.17. Handmade, with wheel-finishing, especially to upper part of vessel. There is a pierced hole through the neck of the vessel. The exterior surface above the shoulder is burnished. (Context 3939: 1 sherd; 3976: 1 sherd; and 4016: 4 sherds).
- 52 Fig. 9. 3948, fill of ditch 3949. One rim sherd and four body sherds, all conjoining, Fabric D, reddish brown to grey exterior surface, reddish brown interior surface and grey core; RE: 0.16. Wheelmade/turned rim; otherwise method of manufacture uncertain. Smoothed exterior surface. A similar form occurs at Wardy Hill (Hill with Horne 2003, fig. 82.4).
- 53 Fig. 9. 3948, fill of ditch 3949. Two rim sherds, two base sherds and seven body sherds, all conjoining, Fabric M, generally pale brown exterior surface, grey interior surface and core; RE: 0.24; BE: 0.50. Probably handmade with wheel-finishing, especially to upper part of vessel. Smoothed exterior surface. This somewhat complicated carinated form is not without parallel (cf. Elsdon 1997, fig. 76 no. 354 and fig. 79 no. 396).
- 54 Fig. 9. 3953, fill of ditch 3952. Rim sherd, Fabric D, dark grey exterior and interior surfaces, with reddish brown exterior and interior margins and a grey core; RE: 0.18. Wheelmade/turned rim, whilst body handmade. Burnished exterior surface.
- 55 Fig. 9. 4023, fill of ditch 4025. Two rim sherds, a neck sherd and three body sherds (with only two body sherds conjoining), Fabric A, red throughout; RE: 0.14. Wheelmade. This beaker form equates to Cam. 115A; and resembles a form from Greenhouse Farm (cf. Gibson and Lucas 2002, fig. 12 no. 27).
- 56 Fig. 9. 4023, fill of ditch 4025. One rim sherd and conjoining body sherd, Fabric C, reddish brown throughout; RE: 0.10. Wheelmade/turned rim. Smoothed exterior surface.
- 57 Fig. 9. 4608, fill of ditch 5888. Rim sherd, Fabric M, red surfaces and margins, with grey core; RE: 0.03. Probably handmade with wheel-finishing.
- 58 Fig. 9. 3976 and 4016, fill of ditch 3904. Two rim sherds and five body sherds, all conjoining bar one body sherd, Fabric D, dark grey throughout; RE: 0.21. Exterior and interior surfaces smoothed. Carbonized residues on exterior surface. A similar form occurs at Wardy Hill (Hill with Horne 2003, fig. 82.4).

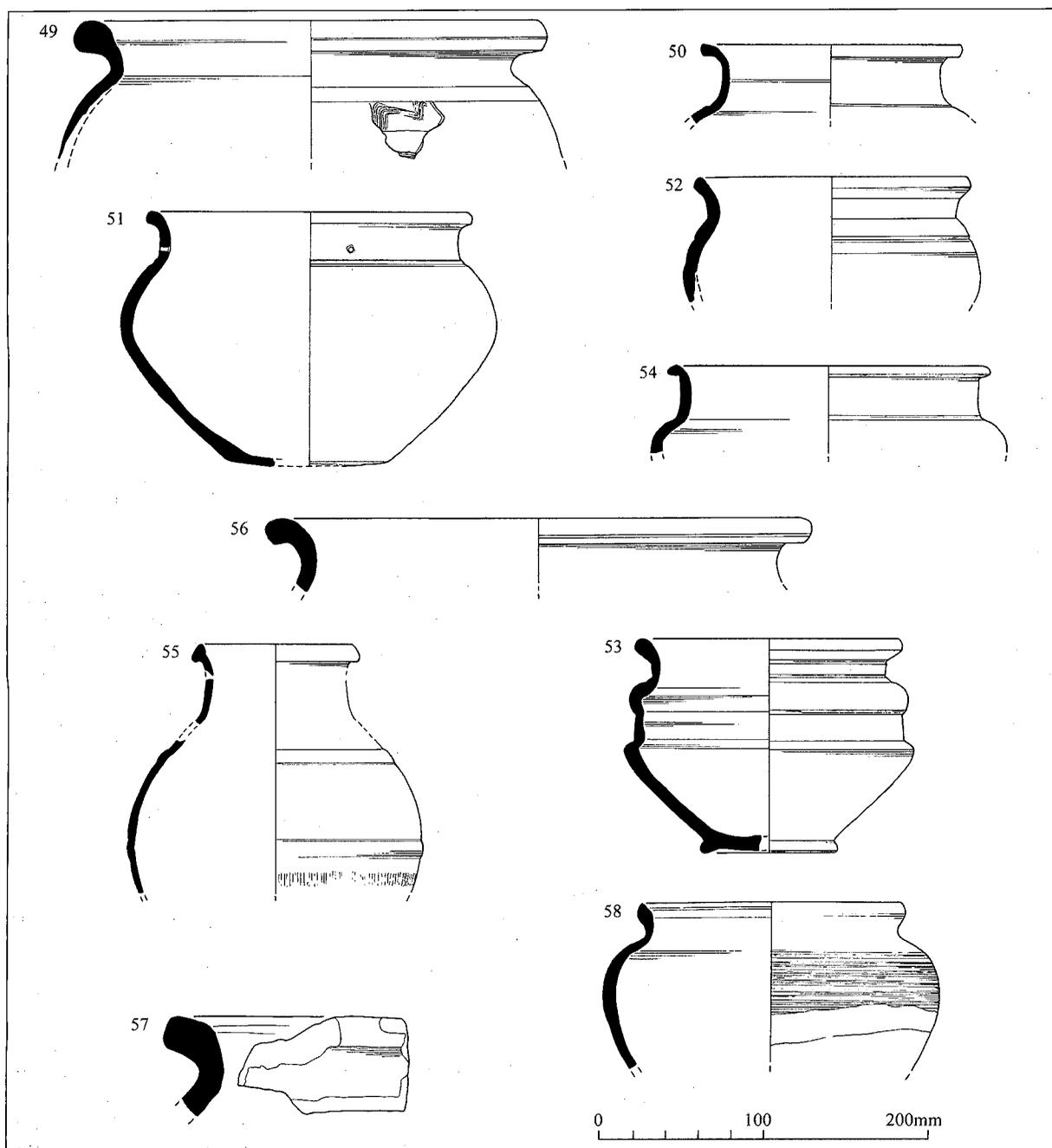


Figure 9. Pottery (cat. nos 49–58).

Discussion

Recorded examples of non-military pre-Flavian pottery production have been found at several sites in the Cambridge and Lower Nene Valley area. Eleven kilns are known at Greenhouse Farm (Gibson and Lucas 2002), eleven others were found at the Hutchison Site, Addenbrooke's Hospital (Evans *et al* 2004), six more at Cherry Hinton (J. Evans 1990) and a single kiln at Water Newton (Perrin 1999, 44–5). A solitary Flavian kiln has been recorded at Haddon near Peterborough (J. Evans 2003, 75–81). This kiln (while slightly later in

date) was associated with debris that may have come from earlier kilns producing 'Belgic'-type grog tempered wares. The kilns found at Swavesey are similar to the Group 4 ('dumb-bell') type found at Greenhouse Farm (Gibson and Lucas 2002, 99, fig 5). Reference to the published pottery from sites of broadly similar date in the region, such as Cambridge (Alexander and Pullinger 1999), Cherry Hinton (J. Evans 1990), Greenhouse Farm (Gibson and Lucas 2002) and Wardy Hill (Hill with Horne 2003), shows marked typological contrasts with the material reported here. This doubtless arises from a combination of chrono-

logical and cultural reasons. The assemblage from Wardy Hill includes much culturally Middle Iron Age pottery, plus Aylesford-Swarling tradition forms alongside early Roman types, with comparatively little in the way of Transitional types. The pottery from the production sites at Greenhouse Farm and Cherry Hinton is dated to the early Roman era (pre-Flavian and pre-Flavian/Flavian respectively) and in these cases the pottery is stylistically much more Gallo-Belgic and Roman in inspiration compared to the present assemblage, and it is instructive that there are few typological parallels between these two sites and the 1998-9 pottery from Swavesey.

In the absence of independent dating evidence the 1998-9 material suggests a date of *c.* AD 25-60. A proviso arises in this respect due to the known endurance of Iron Age traditions in the vicinity of the fens to the early 2nd century AD; this is significant given that Swavesey is on the fen margin. Occupation/activity at the site was limited in time and extent. There is a possibility that the area examined in Blackhorse Lane was part of a larger contemporary complex, while the 1990 kiln is now seen as Early Roman. Yet the nature of the evidence from Swavesey is consistent with Gibson and Lucas' model for Greenhouse Farm (Gibson and Lucas 2002) which they interpret as potentially an occasional or seasonal gathering place where pottery production and marketing was an element in a local 'coming together' event involving exchange and other activities. Pottery production and activity at neither site continued much into the Roman era. In the case of Swavesey, considering the evidence from 1990 and 1998-9, the site was in use over a period of time in the mid 1st century AD at least. Whilst the 1990 kiln is thought to be associated with an early post-conquest date it is conceivable that the 1998-9 evidence is mainly pre-conquest, though the suggested date for the pottery and activity of *c.* AD 25-60 seems most appropriate.

The kiln evidence from Swavesey 1998-9 is such that it can potentially be associated with pre-Roman Iron Age precedents, for which Swan has noted continental parallels (Swan 1984; cf. J. Evans 1990). Whether the kiln technology arrived with incomers or was developed by indigenous people on the basis of transferred or locally emerging knowledge is an intriguing question. Swan associates kilns such as these with the production of 'Belgic' style pottery. The 1998-9 kiln and pottery evidence is consistent with her identification of this pattern. Whilst direct evidence of a link between the kilns and the Iron Age tradition pottery recovered from the site is minimal (e.g. contextually and through the absence of wasters) they are characteristically and technologically consistent.

The majority of the kiln bars from Swavesey are of the tapering 'cigar-shaped' type which is the most common kiln bar-form in this region. This is the only type of kiln bar with a clearly concentrated distribution around the area of the Wash (Swan 1984, 63). Bars of this type can be found to the north into southern Lincolnshire and as far south as Bedfordshire and

Buckinghamshire. An increasing corpus of evidence suggests that this type of portable furniture was in use in pre-Flavian contexts and possibly even pre-conquest (AD 43) deposits.

Portable kiln furniture technology was introduced into Britain during the second quarter of the 1st century (Thompson 1982, 23) and continued in use throughout the 1st century AD (apparently unchanged by the conquest) and sporadically through most of the 2nd century (Swan 1984, 63). Such furniture was, however, generally unstable, and fixed interiors therefore became more popular over time. Although kilns with permanent internal fittings were introduced to Cambridgeshire at the time of the conquest (Greenhouse Farm Group 2, kiln F238; Gibson and Lucas 2002, 116) permanent features did not become the standard until the late 1st/early 2nd century.

Some 20% of the pottery recovered from Swavesey was wheelmade, with 60% identifiably handmade, with some finishing on a turning wheel/board. Investigations at Haddenham and Earith have led Christopher Evans to suggest that an 'arrival' of a Late Iron Age population can be envisaged utilising wheelmade pottery and this was associated with a change to organically 'planned' enclosure complexes, contrasting with the earlier Middle Iron Age square compound communities associated with Scored Ware pottery (Evans and Hodder 2006; Evans *et al* forthcoming). This inevitably raises the long-standing issue of 'Belgic' influence or incursion; for Evans, these were clearly separate groups operating within what is now Cambridgeshire, with no question of direct settlement continuity (Christopher Evans pers. comm.). Given this view it is intriguing to note the coincidence of these two traditions of pottery at the Swavesey site, occurring in the same features, thus raising questions about chronology, manufacture and consumption. In terms of the site context, however, the excavated evidence for Iron Age activity in Swavesey is as yet relatively limited. The few ditch systems and enclosure boundaries recorded so far are too fragmentary to permit any overview of the layout of settlement. The character of the Iron Age features recorded at Blackhorse Lane does, however, suggest that the site lay adjacent to a main contemporary settlement which was probably focused on the higher gravels occupied by the medieval and modern village, but this deduction is a matter for future investigation.

Conclusions

Direct evidence for pottery manufacture in Britain in the Iron Age is (intriguingly) meagre and this evidence is itself weighted to the end of the Iron Age. Manufacture and kilns of the mid 1st century AD are somewhat better known through *in situ* and artefactual traces. The visibility of manufacture increases around the time of the Roman conquest, but the conquest should not be seen as causal in this process in

a blanket manner. There is a wider trend to greater archaeological visibility (in many forms) through the later Iron Age and into the Roman era, and in relation to pottery manufacture complex unfolding changes were underway by the start of the Late Iron Age (cf. Hill 2002a; 2002b). Reconfiguration in pottery usage and production were part of the vanguard of change. The evidence from Swavesey is an episode within these broader processes. Certainly potters travelled to Britain in the wake of the incoming army following the invasion of AD 43 and skills were disseminated. Perhaps they also travelled to Britain before the Claudian invasion. Precise dating of kilns and production at this time has proved elusive (and in this respect Swavesey is no different from other sites), yet whilst close dating is instructive, to pursue the question of 'is it pre- or post conquest production' is not necessarily of the greatest significance as it attributes a primacy to the invasion of AD 43 when we might best be considering the wider configuration of cultural changes through this time. The processes of change and their social roots are more germane: pottery was changing independent of whether legions crossed the Channel and stayed.

The question arises as to quite what is represented by the Iron Age remains, from the Blackhorse Lane site, comprising, as they do, of much pottery, some production evidence and comparatively few features and contemporary deposits. Is this a settlement with production, part of a specialist production site or a market place? A direct link between the kiln evidence and the recovered pottery in the present case is not necessarily proven but is implied by the nature of the pottery, in particular its quantity (in the light of comparatively modest Iron Age deposit volume), high average sherd weight, the high incidence of conjoining sherds, and typological consistency as with the rilled vessels (e.g. Fig. 7, Nos 33, 34 and 38). Fabric and technological variation is not necessarily inconsistent with a production centre as there is some correlation between specific fabrics and specific forms and technology and forms and fabrics: this signals careful design rather than a long period of activity at the site. On the other hand it is clear that a proportion of vessels had been used. Such a combination of evidence is consistent with production on the edge of a large settlement complex or an occasional market/production node, following the interpretative model for Greenhouse Farm forwarded by Gibson and Lucas (2002).

Recorded kilns of this early date are rare in Cambridgeshire but not as rare as they once were and the new evidence from Swavesey adds significantly to corpus of data available. In fact the Cambridgeshire region has a unique and growing corpus of sites testifying to pottery production in the 1st century AD. Moreover, it is particularly unusual in terms of the quality of evidence dating to the mid 1st century; it is especially helpful that much evidence has been examined and published recently by some of the leading practitioners in ceramic studies, who have engaged the question of the role these vessels had in societies.

The Swavesey finds are a contribution to the picture as they illustrate the sequence, and in particular the transition from Iron Age tradition to more Roman types. Publication and discussion of the issues meets one of the significant research aims identified by the Study Group for Roman Pottery (Willis 2004, 10), namely to address the lack of published kiln groups in the East Midlands and East Anglia.

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Iron Age Ditches and an Anglo-Saxon Building near the Mile Ditches, Bassingbourn, TL 3294 4335

Tom Phillips

With Paul Blinkhorn and Chris Faine

Illustrations by Crane Begg and Gillian Greer

Excavation by CAM ARC in 2007 of approximately half a hectare of land at Bassingbourn Village College, south Cambridgeshire provides the first evidence for Iron Age settlement in the parish and makes a notable contribution to current understanding of this period in the area. The work revealed a series of parallel Iron Age ditches, perhaps representing a wide track or droveway, set within a landscape of known prehistoric and Roman routes, boundaries and monuments. Subsequent Anglo-Saxon activity included a sunken-featured building relating to the re-establishment of settlement in the post-Roman period, the core of which may lie further west.

Bassingbourn

Bassingbourn lies in a landscape of gently rolling hills and chalk grassland 3km to the north-west of Royston, Hertfordshire (Fig. 1). The surrounding area has a distinctive pattern of rectilinear fields and lanes, the origins of which have recently been explored (Hesse 2000). Development of the local landscape was influenced by the presence of ancient roads, interspersed with monuments including the enigmatic Mile Ditches (Crawford 1936).

The name *Bassingbourn*, meaning the stream of Bassa's people, indicates a pre-Conquest origin: although no prehistoric or Roman settlements have yet been found here, thirteen ring ditches noted elsewhere within the parish have been interpreted as representing ploughed-out Bronze Age barrows (Reaney 1943, 52; Taylor 1997, 19). Taylor (1997, 19) suggested that Bassingbourn High Street might be one of a series of parallel east to west prehistoric trackways within the Icknield Way zone. These include Ashwell Street to the south of the recent excavation and the Icknield Way itself, further south again. The Roman road of Ermine Street, approximately 1.5km to the east of the village, runs north to south and crosses the Icknield Way at Royston.

South of the village is an abundance of prehistoric activity. On Therfield Heath, an area of higher land approximately 3km distant, are several Bronze Age

round barrows and a long barrow, the only known example in Hertfordshire. Of particular interest is a set of three parallel ditches known as the Mile Ditches, which commence near an upstanding round barrow on Therfield Heath and run towards Bassingbourn's Wellhead Springs (Burleigh 1980), from which a brook runs northwards approximately 150m to the west of the subject site. The banks associated with the Mile Ditches were once visible, but were levelled during the Second World War. The earthworks were investigated during road widening in 1978 and were found to be a maximum of 3.50m wide and 1.20m deep (the narrowest being c. 2.00m wide and 0.75m deep), with distances of 5–8m between them (Burleigh 1980). The precise date of their construction is not known although they evidently silted up during the Roman period; amongst the finds recovered in 1978, a horse mandible was radiocarbon dated to the 2nd century BC. The Mile Ditches are the westernmost in a sequence of five boundaries in the vicinity of the Icknield Way, which they either run up to or across at right angles (Malim *et al* 1997, figs 1 and 2). The dating of the other four boundaries remains a matter for debate – they were clearly significant in the Anglo-Saxon period but have possible origins in prehistory, forming dykes across the chalk uplands that may have served functions as defensive barriers, land boundaries and routes, associated with earlier sacred places (Malim *et al* 1997, 27). Notably, the Mile Ditches appear to be the only examples with a bank on the west as well as the east, the others only having banks to the east (Malim *et al* 1997, 106).

Between Ashwell Street and the Icknield Way, following the same alignment as the roads, are a set of 'camps' thought to be Iron Age (Crawford 1936). These include Arbury Banks, south of the village of Ashwell; Limlow Hill, west of the Mile Ditches; Hoy's Farm, south of Bassingbourn and Burlow Hill to the east of Royston. The evidence for these comes mainly from aerial photography and no excavation has yet taken place.

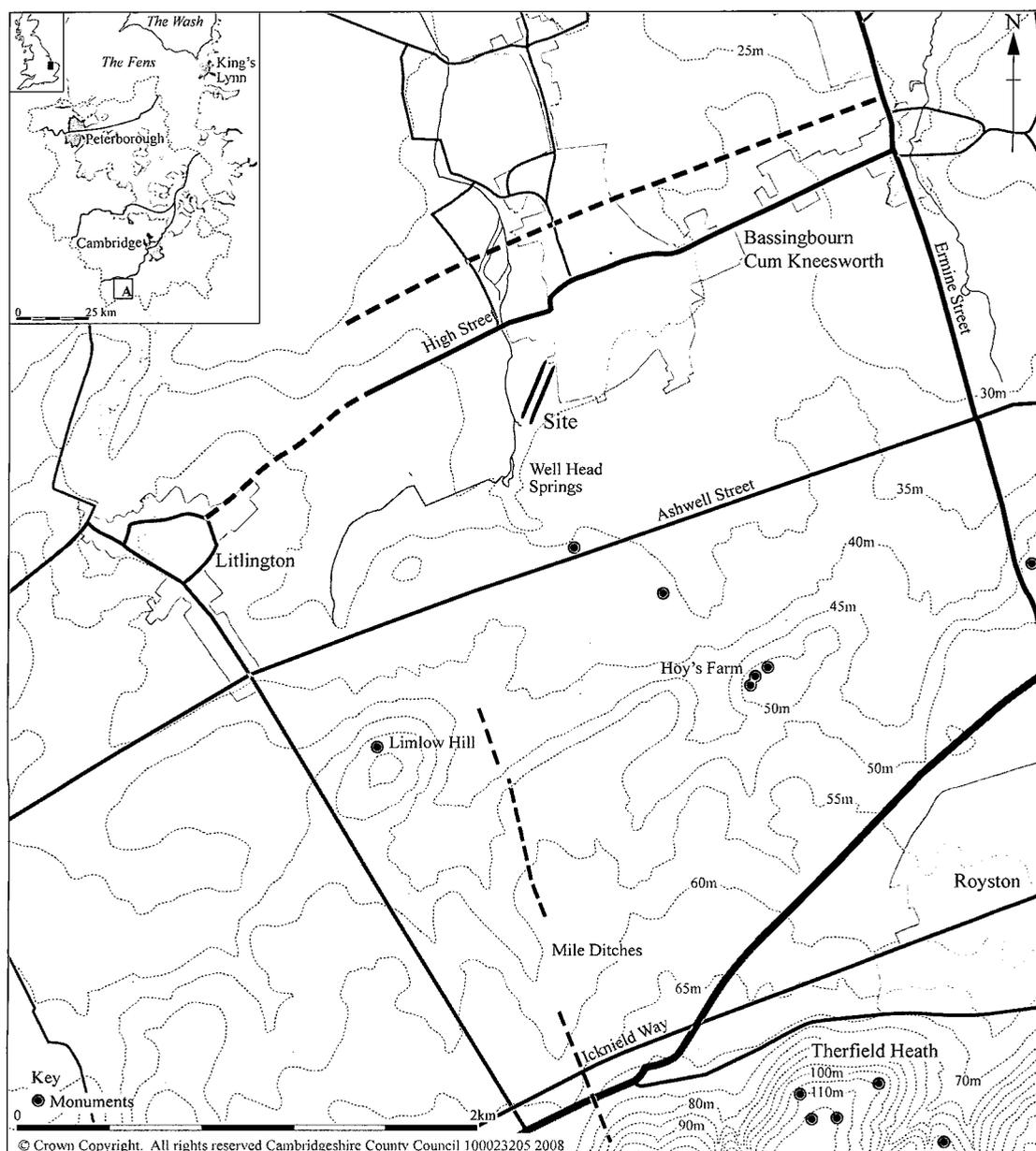


Figure 1. Site location, showing local topography, ancient routes and monuments.

Iron Age

The newly discovered ditches at Bassingbourn Village College were recorded over a distance of 70m within the excavation, while their south-westerly course was traced for a further 160m through geophysical survey (Fig. 2). To the extreme south-west is a hint that the ditches narrow into a funnel, a feature which aids livestock management and is therefore common in droveways. An alternative interpretation is that the ditches defined some other form of repeated but shifting boundary, perhaps akin to the Mile Ditches themselves.

The excavated sequence of ten linear ditches, all orientated north-north-east to south-south-west, lay in two groups – three to the west and the remainder

to the east (Fig. 2). While their size and form varied considerably, indicating occasional widening and narrowing of the space between them, their strict alignment remained the same. Some were wide and shallow, whilst others were narrow or wide and deep with sharp v-shaped profiles. Widths ranged from 0.39 to 2.00m and depths from 0.18 to 1.00m, the largest therefore being of similar scale to the smallest of the Mile Ditches. Distances between any two sets of flanking ditches varied from 13m to 26.5m, making the intervening space relatively wide compared to known contemporary droveways. The ditch fills were very similar throughout being a reddish brown or greyish brown sandy silt. Dating evidence was scarce, although Iron Age pottery was retrieved. A notable find from one of the southern ditches (ditch 3)



Figure 2. Site plan of Iron Age ditches and Anglo-Saxon features, with insert showing the results of geophysical survey.

was a complete red deer antler which had been deliberately placed within its fill. This had evidently been naturally shed and would have been highly valued in prehistoric times.

In the north-western corner of the site a short section of another ditch lay within the excavated area (311), aligned perpendicular to the other ditches. A cow skull had been deliberately placed upright near the base of and facing the ditch terminal. Cranial suture closure indicates an adult animal, around 7–9 years of age, while metrical analysis of the horn cores suggests a beast of similar morphology to those from contemporary sites.

Although only a small quantity of Iron Age pottery was recovered (11 sherds, 171g) it includes fragments of two vessels likely to be of Middle Iron Age date. The first, from ditch 5, consists of eight sherds, including a piece of the rim from an ovoid jar with fragments of vertical scratches on the body in a manner typical of the Scored Ware tradition (Elsdon 1992). Scored ware, which is commonly found on Middle to Late Iron Age sites in the south-east midlands, particularly Northamptonshire, is thought to be of Middle Iron Age date, ie. 5th/4th to 1st centuries BC (Knight 2002, 124–6). The second vessel is represented by a rimsherd from a large jar found in ditch 2. The top of the rim bead is decorated with fingertipping, with nail marks visible in the centre of each impression. Fingertip decoration occurs on both Early and Middle Iron Age pottery in Cambridgeshire. It would appear therefore that there was certainly human presence at the site during the Middle Iron Age, with a possible origin in the Early Iron Age.

Anglo-Saxon

A sunken-featured building lay in the north-western corner of the site, to the west of the earlier ditches. Aligned north to south it was 5.5m in length and 0.35m deep, with vertical sides, with a probable width of approximately 3m. Opposing post-holes were located in the middle of each short side; a common form of building in this period (Tipper 2004, 1). Its two fills contained no dateable finds, although the uppermost was cut by a pit containing Early to Middle Saxon pottery and animal bone, dominated by cattle with smaller proportions of sheep/goat. The assemblage contains a high proportion of fragments showing signs of butchery. The only other contemporary feature was a circular pit (170), which lay some distance to the east. This had vertical sides and was 1.3m deep, possibly serving as a well.

A small group of fourteen sherds of Early to Middle Saxon pottery came from these features (443g). The dating of Early Saxon hand-built pottery is entirely reliant on the presence of decorated sherds: it seems that the Anglo-Saxons generally stopped decorating hand-built pottery around the beginning of the 7th century (Myres 1977, 1), but it cannot be said that an assemblage which produced only plain sherds is of 7th-century date. Usually, decorated hand-built

pottery only comprises around 3 to 4 per cent of domestic assemblages, as was the case at sites such as West Stow, Suffolk (West 1985) and Mucking, Essex (Hamerow 1993). All of the Bassingbourn pottery is undecorated apart from a single sherd from the rim and shoulders of a jar with corrugated and burnished shoulders. The vessel is difficult to date other than to within the broad Early Saxon period (AD 450 to 650), but it does have some similarities with a class of decoration (that of linear design on the neck and shoulders) which Myres (1977) saw as dating to the earlier part of the Early Saxon period.

Discussion

The Iron Age ditches evidently led towards the adjacent spring and this, combined with the fact that their course does not conform to other local alignments, may suggest that they represent a track linking fields or enclosures rather than a major routeway. The presence of the Mile Ditches to the south-west is, however, clearly significant. These formed an important multi-ditched territorial boundary and the presence of what may have been a substantial droveway or other boundary so close to them may suggest an association.

Deliberate deposition of animal remains is a common theme throughout prehistory and into the Roman and Anglo-Saxon periods, providing evidence of ritual or symbolic activity. Many authors have discussed the possible meaning of such deposition (e.g. Wait 1985; Hill 1995). Both examples of placed animal bone at Bassingbourn come from ditches; in such contexts the deposits may be signifying change or transition, and/or marking out settlement or other boundaries. During the Iron Age such rituals often appear to be linked to water and river cults, as well as ancestor worship associated with earlier prehistoric sites (Bryant 2000, 17).

Deer antlers are common at early prehistoric monumental sites such as Maumbury Rings, Dorset (Bradley 1975) but are also found on settlement sites dating as late as the Anglo-Saxon period. The vast majority of red deer remains in the Iron Age are recovered from such deposits, with relatively few deriving from domestic contexts (Hambelton 1999). Local examples, ranging in date from the Late Neolithic to the Early Saxon periods, include those found at Babraham Road, Cambridge (Hinman 2001) and Love's Farm, St Neots (Hinman in prep. a). Deliberate inhumations of cattle remains (particularly skulls) are relatively common on Iron Age sites, particularly in the Thames valley (Mulville *et al.* forthcoming). A spectacular example of numerous cattle and horses of Late Iron Age to Early/Middle Roman date buried nose to tail was recently found in a ditch at Haddenham (Phillips and Grassam 2006). There is a growing corpus of examples of cattle skulls placed in Iron Age ditch terminals or junctions, such as those found at Landbeach, Limes Farm (Sealey *et al.* in prep).

The discovery of the Anglo-Saxon building is notable in the context of understanding the development of settlement in the parish. Although its north to south orientation is not exceptional, an east to west alignment is much more common. At Bloodmoor Hill in Suffolk, for example, only one out of 38 such buildings was definitely orientated north to south (Dickens, Mortimer and Tipper 2006). Similarly, at West Stow, of the 69 sunken-featured buildings, only one was orientated north to south (West 1985).

Conclusion

Despite their small scale, the excavations at Bassingbourn contribute new information to the study of this important landscape. An association between the 'droveway' and the Mile Ditches, a significant territorial boundary, remains a possibility. The evident ritual behaviour at the site is perhaps linked to its location, close to springs and earlier prehistoric monuments.

Acknowledgements

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A Zoomorphic Roman Handle from New Street, Godmanchester, TL 5246 2704

Nina Crummy and Tom Phillips

Illustrations by Gillian Greer

An unusual Roman handle of zoomorphic form and potential apotropaic meaning recovered from central Godmanchester may echo an Egyptian prototype.

Roman Godmanchester – *Durovigutum* – lies on Ermine Street near the River Ouse, just to the south of Huntingdon. A legionary fort was founded here within a year of the invasion of AD 43 and the settlement eventually grew into a small town. West of its *mansio* and possibly associated with it was a temple apparently dedicated to the god Abandinus, not known elsewhere and perhaps a local river deity (Green 1975, 201; Green in prep.).

In 2007, CAM ARC excavated a small trench at No. 8 New Street in the centre of the town, virtually on the cross roads of Ermine Street and the Cambridge to Sandy road (Fig. 1). Stratified Roman remains included pits, boundary ditches and layers. The site was particularly rich in finds, including coarse and fine ware pottery, glass and an unusual copper alloy handle surmounted by the upper body and head of an animal. This zoomorphic handle was retrieved from the fill of an otherwise unexceptional boundary ditch which also contained 2nd- to 3rd-century pottery. The creature it depicts is ambiguous; it may be a poorly modelled horse or dog, or something more exotic (Figs. 2 and 3).

Given the constraints imposed on the maker by showing the body as vertical rather than horizontal, the animal may be a horse. The crest could be a stiff equine mane, and the lines of punchmarks on the face and around the body could represent harness, with the large ring-and-dot motif representing a *phalera*; but the jaw and muzzle are not equine. Horse profiles on late Roman antler combs can sometimes be, as here, almost like those of beaked dolphins (Crummy 2001, fig. 4), but the length of the mouth on this creature is quite canine. Its nose could be an attempt to model a dog from two profiles, rather than full-face, although the absence of any other canine features, in particular ears, makes a dog a very unlikely candidate.

The animal is probably a Nilotic beast, deliberately intended to be strange in the context of the northern Roman empire and not as an accurate image of any

one specific creature. The handle is almost certainly of continental manufacture, and the animal may be very loosely based (perhaps at several removes) on an Egyptian prototype; it cannot be defined as representative of any one particular Egyptian deity. The rectangular section, decorated top and round iron tang suggest that it comes from a key of tumbler-lock type (cf. Kaufmann-Heinimann 1998, 104, no. 217, 109, no. S207). There is no reason to suppose that it is earlier or later than the 2nd- to 3rd-century date range suggested by its context.

Apotropaic animal images were often used on key handles, with lions, other large felines and rams being most commonly depicted, no doubt chosen as symbols of strength and aggression and also for their otherworldly powers, providing security above and beyond the simply practical aspect of turning a key (Henig 1984; Kaufmann-Heinimann 1998, 32-7). Similar imagery pervaded Roman life and was probably only subconsciously registered in the same way that we see, but rarely reflect upon, both secular and religious symbols today. Gods and animals, along with charms such as the crescent moon and phallus, appeared on wall paintings, mosaic floors, vehicle fittings, military equipment, knife and razor handles, *tintinnabuli*, pendants, coin reverses, lamps, ring intaglios and many other objects, as well as on specifically religious items such as model votives, temple furniture, altars, reliefs and cult statues.

The meanings attached to individual creatures were complex. The dog for example accompanied healer gods such as Apollo, Nodens and Aesculapius, but also had a chthonic aspect through its association with Mercury, the Mother goddesses and the horse-goddess Epona, among others, as the guide and guardian of the soul on its journey between life and death. It was beliefs such as this that led to dogs being sacrificed for use as funerary deposits and as both dedicatory and closure offerings; notable examples being the Cambridge infant burials placed in shafts and accompanied by dogs (Jenkins 1957, 64-5; Black 1983; Green 1997a, 176-8; Clarke 1979, 421-3, table 2, grave 400; Alexander and Pullinger 2000 45-7, 53-4;

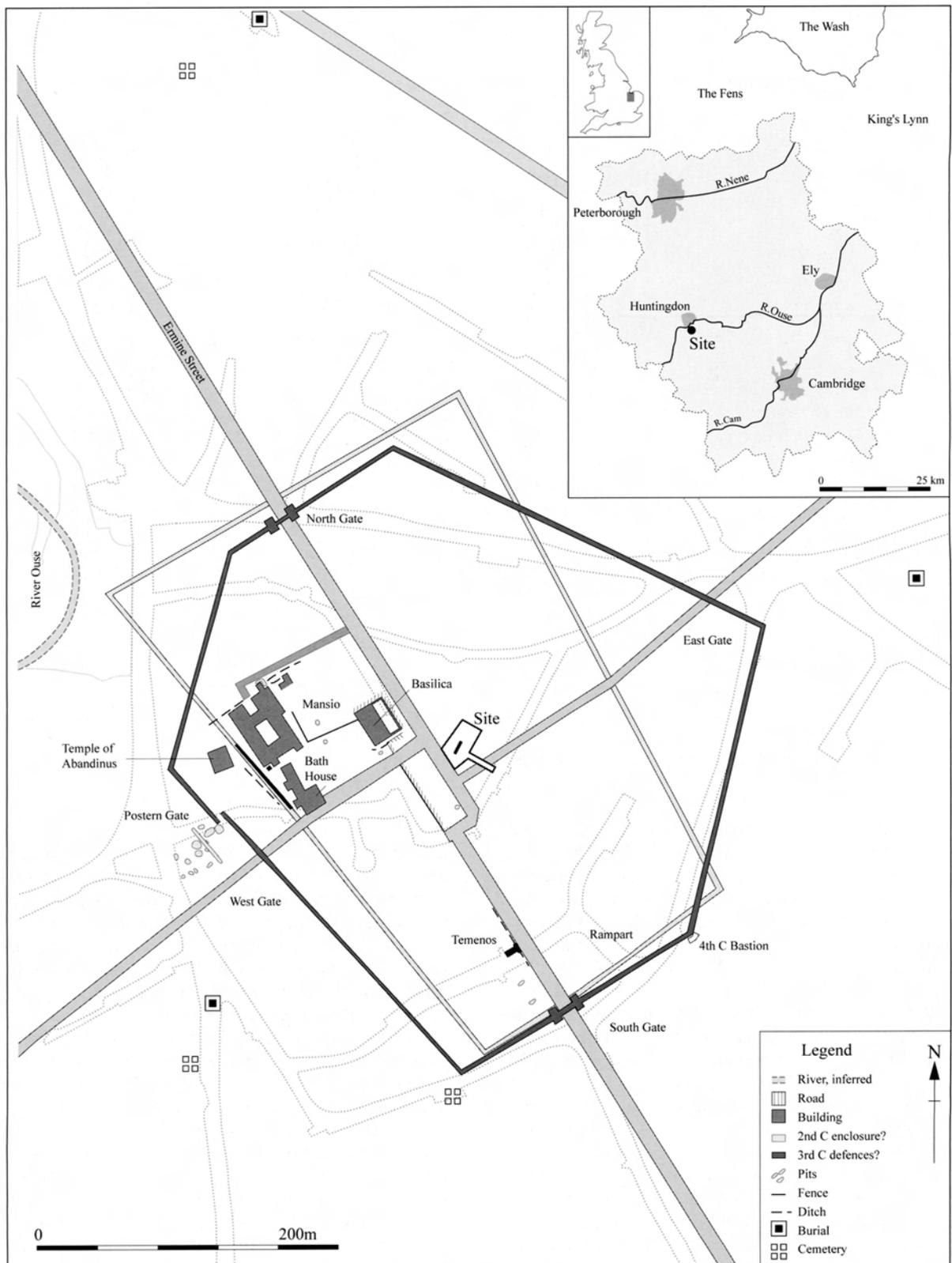


Figure 1. Interpretative plan of Roman Godmanchester, showing the development site (after Green 1975).

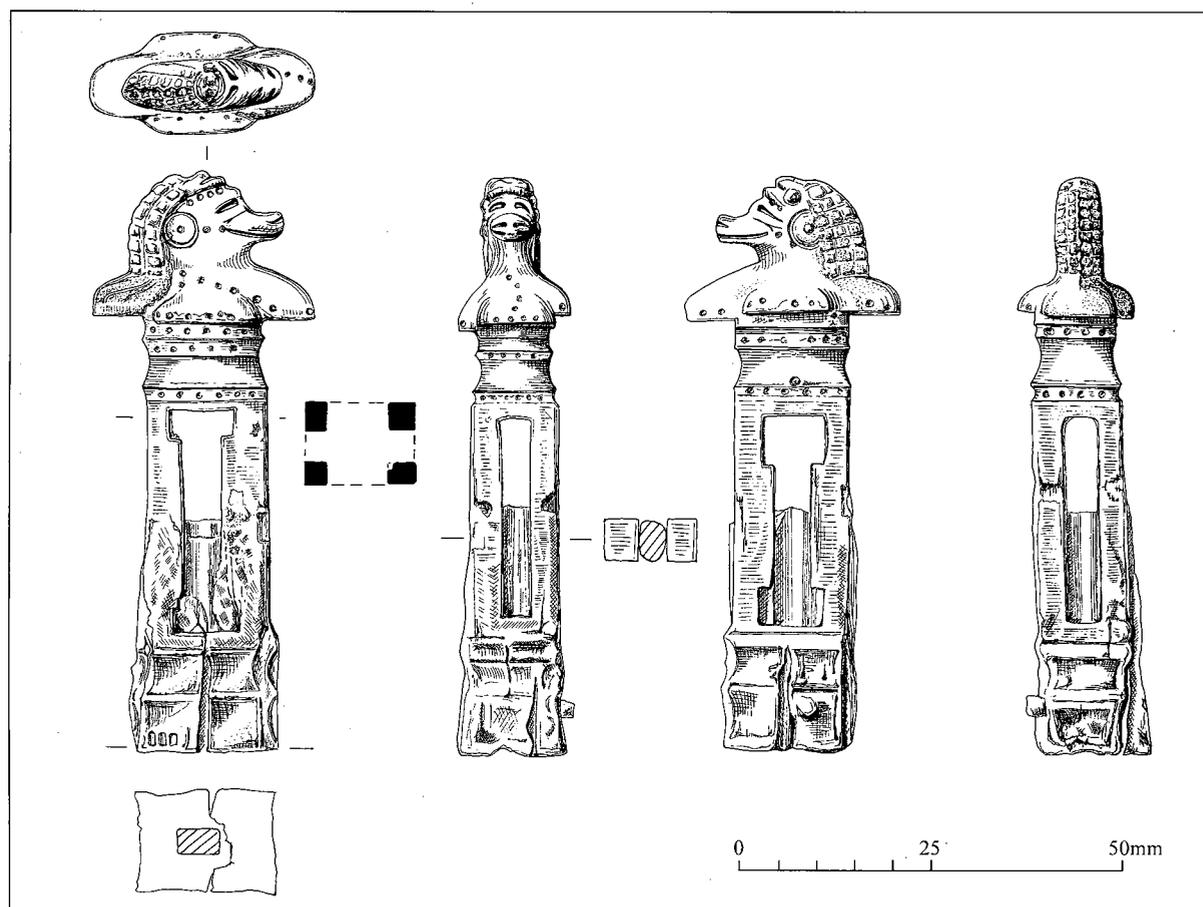


Figure 2. Roman handle from New Street, Godmanchester.

Fulford 2006, 271). The horse fulfilled a similar dual role through its association with Epona, whose images link her to fertility, healing and death, and the occurrence of elements of horse skeletons in pits and wells might represent animals who had been sacrificed or whose bones had been utilised in religious rites after they had died a natural death (Grant 1989, 137; Green 1997b, 172–3).

Representations of Nilotic creatures such as the crocodile, hippopotamus and mongoose are either very rare or even unknown in Roman Britain, and Egyptian deities and their animal emblems, such as the falcon of Horus, are similarly very scarce, being generally, although not exclusively, confined to large towns (Toynbee 1996, 218–20; Green 1976, 57–8; 1978, 28). The long jaw and nostril slits of the creature on the Godmanchester handle could be seen as crocodilian, and the unusual ring-and-dot ears are a fair match for those of the crocodile, which has mere oval flaps of skin lying behind the eyes. The rows of punchmarks might represent a harness or even a form of body chain. The lateral grooves of the creature's skin also resemble the banded scaly plates of the Nile crocodile and are very similar in appearance to the scales on a model crocodile from Hampshire, reported recently under the Portable Antiquities Scheme (Worrell 2007, 303–44).

African creatures were also used in the northern Empire to symbolise fertility and death. The Hampshire crocodile mentioned above has been interpreted as part of a Nilotic figure group perhaps associated with the resurrection cult of Isis. Two 1st-century lamps, one from Colchester and one probably from London, show a lion fighting a crocodile. The Colchester lamp came from the burial of a young child and the image is funerary, the lion not only represents the power of all-consuming death but is also the guardian of the dead, shown attacking the dangers of the afterlife symbolised by the crocodile (Bailey 1988, 84, Q1518; Crummy in Orr 2006).

Against a constant background of imagery, the animals used to ornament small objects were not necessarily intended as a reference to a specific deity in a specific role, but only as generally apotropaic. This gave them a secondary value, and in some cases the handles of broken objects appear to have been saved for use as votives, as seems to have been the case with some spatula handles in the shape of busts of Minerva, particularly examples from Woodeaton in Oxfordshire, and Sole in Hampshire (Crummy 2003, 16). The Godmanchester handle might have been similarly valued for its imagery and reused as a votive offering after its iron element had broken off. The recovery of the handle from a ditch does not lessen its



Figure 3. Roman handle from New Street, Godmanchester.

potential interpretation as an offering. Votives were not only deposited at shrines and temples but also on adjacent land in open pits and ditches and shallow scrapes in the ground, their proximity to the sacred area being considered sufficient to render them effective (Crummy 2006, 56).

Green has argued that the cult objects from Godmanchester are notable for the limited range of sky and earth deities they represent (Green 1986, 36), which would make the handle anomalous in the context of the town, but the association of a Nilotic creature (if were it recognised as such) with water would make it an appropriate offering to the town's

river god, Abandinus (*ibid.*, 39, 42), or even to Isis. More probably, the animal might have been seen in Godmanchester as a horse, or an odd-looking dog, and credited with their chthonic and healing aspects. The dog in particular seems to have played a particularly prominent role in the religious life of the town (*ibid.*, 48). The presence of 58 bone fragments from at least three adult dogs in a pit on the subject site (and remains of a further two found in a later watching brief; Punchard 2007) finds a parallel in a group of 30 pits found outside the kitchen of the *mansio* in 1970 (Green, in prep.). Nearly every pit here had two dogs buried at the bottom and in many cases only part of the carcass was present: Green suggests that these were ritual burials.

In conclusion, the zoomorphic handle, when a new and complete key, can be viewed as exotic within the context not only of Godmanchester but Roman Britain as a whole, and within the context of the northern European perception of Africa. As a broken object that might have been reused for its imagery it has significant implications for religious life in this important Roman town, perhaps even in relation to Abandinus.

Catalogue

SF 2 Figs 2 and 3. A copper-alloy rectangular-section open-work handle, with a zoomorphic terminal and the remains of a round-section iron tang preserved in the lower part. Length 75 mm, maximum width 28 mm. The base is in the form of a double plinth, now riven with cracks where the corroding iron tang has expanded and forced the metal apart. Above it the handle is open on all four sides, with column-shaped openings on the broad sides and plain rectangular ones on the narrow sides. Part of the iron tang remains exposed in the openings, and traces of iron corrosion suggest that it originally ran to the upper end, although it did not penetrate the terminal, which consists of a plinth, with round punchmarks in the grooves, surmounted by the head and upper body of an animal. The jaw and mouth of this creature are long and the muzzle blunt, with wide nostril slits. The eyes are shown by angled grooves and the ears, which are set at the level of the mouth, by ring-and-dot motifs. Two punched dots link the ears to the corners of the mouth. The face is smooth, but a row of round punchmarks above the eyes mark the beginning of lateral bands in the skin or pelt that are formed into a crest at the back. The chest of the animal projects forward beyond the muzzle, with its midline marked by a row of punched dots. There is a matching, but slightly shorter projection at the back below the crest, and the shoulders are indicated on the sides. The lower edge of each shoulder is marked by a row of round punchmarks, and another row runs across the top and down the chest to meet its central row at the edge.

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Excavations on a Roman Salting Site at Cedar Close, March, Cambridgeshire

Tom Lane, Elaine L Morris and Mark Peachey

Evaluation and excavation in advance of housing development revealed an area of features including salting ovens and associated salt production debris. The features lay at the side of an extinct channel, the source of the brine. Earlier, but undated, pits and post holes had been sealed by an alluvial deposit into which the salterns had been cut. The briquetage suggested the possibility of two phases of salting, both occurring in the Roman period.

Introduction

Archaeological Project Services (APS) was commissioned to undertake a scheme of archaeological works ahead of residential development on land off Cedar Close, March, Cambridgeshire. An earlier evaluation, undertaken by Cambridgeshire County Council Archaeological Field Unit (CCCAFU) and comprising eight trenches distributed across the site, revealed a high density of archaeological features including pits and post holes. Many of the features were undated, although it was suspected that these were of Romano-British date (Hickling 2003).

Three further evaluation trenches were excavated by (APS) (site code MCCB 04) within the south part of the development area and a further four (site code MCCC 04) immediately to the north. Evaluation was followed by excavation of two areas (Areas 1 and 2) (site code MCCA 04).

Post-excavation assessment (Peachey 2005) highlighted the significance of the saltern, one of a number known from the island.

Archaeological Background

Situated approximately 38km north of Cambridge and 23km east of Peterborough in the Fenland District of Cambridgeshire (Fig. 1) March occupies a former island within the fenland, lying on the northern tip of a large peninsula between two major embayments of the southern fen. On March island, Boulder Clay till and interglacial gravels overlie the Kimmeridge Clay

bedrock (Hall 1987, 38). While the land surface on the island attains a height of c. 4m AOD in places, the development site lies on its eastern edge at approximately 2m OD. The surrounding fen landscape underwent a series of complex changes during the prehistoric, Roman and later periods, influenced by the peninsula and the constantly changing courses of the major rivers on either side of it (Hall 1987).

The site at Cedar Close, an approximately rectangular area of former allotment gardens covering c. 1.25ha, is located in the northeast of the town at National Grid Reference TL 422 973 (Fig. 1).

Much of the island is covered by modern settlement and prehistoric finds are relatively sparse, tending to be found on the west side of the island. Romano-British activity is better attested by the extensive cropmark evidence of settlement, field systems and droveways identified to the north and east, either side of the Fen Causeway Roman routeway. Recent investigations to the west have revealed remains relating to enclosures and droveways of possible prehistoric date.

Excavations at Norwood (Potter 1981), 2km to the north of the Cedar Close site, identified evidence of occupation and salt production between the late first century and fourth century AD.

Recent archaeological investigations to the north of Longhill Road have also revealed extensive evidence of Romano-British settlement and salt-production (SMR 08445/TL 4185 9939).

Realignment of the River Nene to its present course occurred during the Saxon period allowing March to develop as an inland port. March was given to the monastery of Ely about 1000 AD and at that time was part of the manor of Doddington. However, no Saxon finds have been noted from March itself.

The first (CCCAFU) evaluation at Cedar Close revealed a series of pits and ditches and a deposit of briquetage and ash associated with salting on the higher ground of the northern part of the site. The only dating evidence recovered was a single small piece of Roman pottery from the deposit of briquetage giving a tentative date for the activity (Hickling 2003). Some pits were cut into an 'inundation layer'

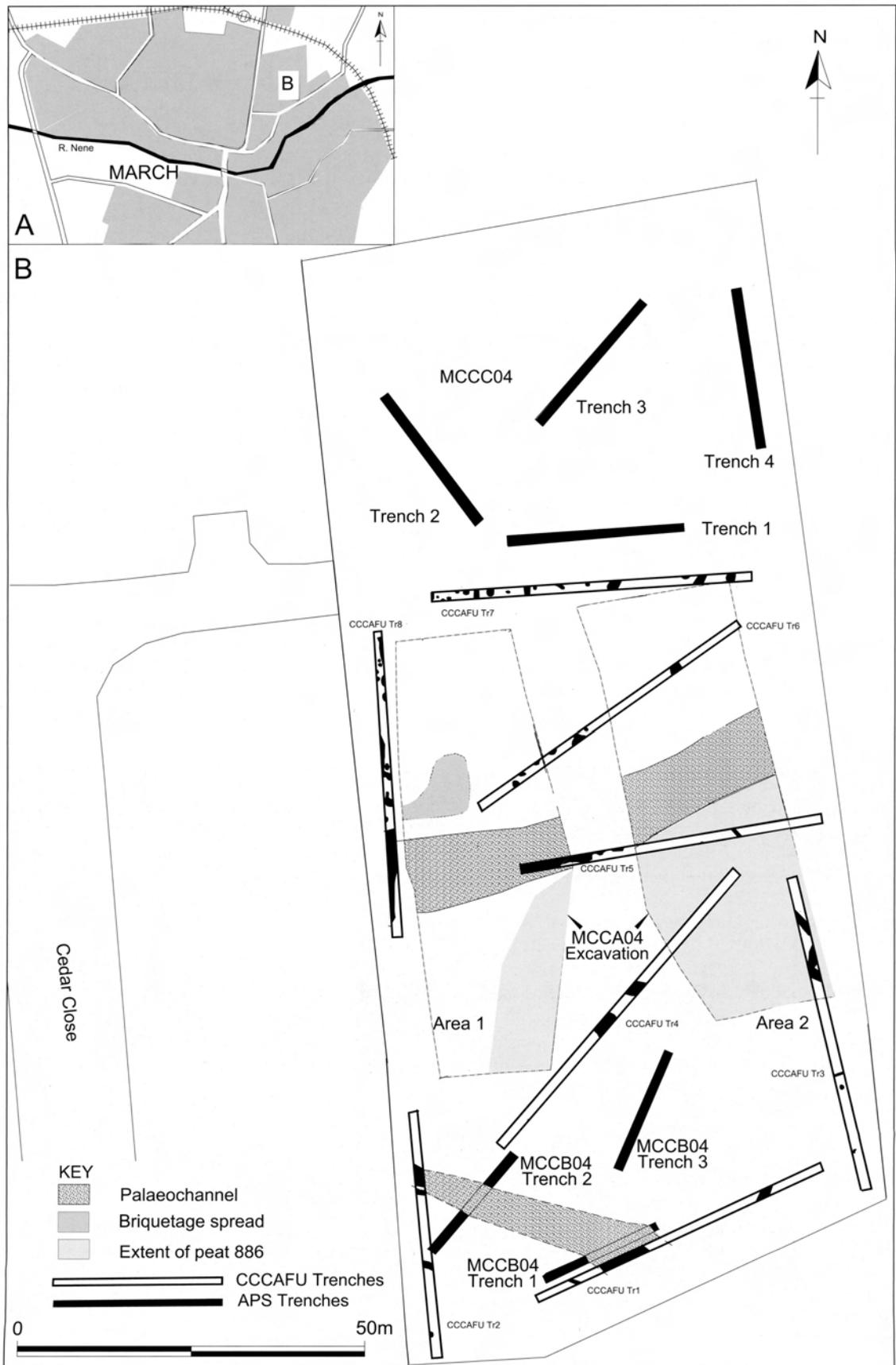


Figure 1. Location plan showing excavated areas.

(*ibid*, 10), while other were either sealed beneath it or were beyond the range of alluviation.

Methodology

Two areas (1 and 2, Fig. 1) were excavated as they formed the main focus for the proposed housing. The baulk in between the areas was not included within the main development, but was topsoil stripped late in the excavation. Features apparent after stripping, including hearth/ovens, were planned but, as the ground was not to be lowered, the features were not excavated. Prior to excavation 10 samples were taken at 3m intervals from a dense spread of briquetage (566) on the advice of the curator.

Results

From assessment of the context records, drawn records and stratigraphic matrices, in conjunction with the spot dating of the sparse pottery and denser briquetage, two broad period divisions were identified:

Period 1: Prehistoric

Period 2: Early to Mid Roman

Period 1 (Figs. 1 and 2)

The major natural feature on the site is a 10m wide palaeochannel [719] running east-west across the centre of both Areas 1 and 2. While this feature re-

mained active in Period 2 it is believed to have origins in Period 1. There is a much higher density of features to the north of it than to the south and it is likely to have demarcated the habitable or usable ground to the north from the more marshy and lower southern part. A similar but smaller palaeochannel was identified in the CCCAFU evaluation in the southwest corner of the site aligned WNW-ESE, but there were no other features of significance in these low lying trenches.

Area 1 (Figs 3, 4)

Some 64 pits or post holes and three linear features were recorded to the north of palaeochannel [719] in Area 1. Most of the features were undated. A layer of peat (886) was present over most of the lower lying area south of the palaeochannel but not to the north of it up the slope on the higher ground. This peat layer sealed ditch [888] (Fig.3). Some of the pits were very irregular and could have been caused by tree root disturbance. Only two sherds of Iron Age pottery, both coarse, hand-made examples, were recovered in Area 1, from contexts 653 (the fill of palaeochannel [719]) and alluvium 720.

Area 2 (Fig 3)

Features on Area 2 were also mainly located north of the palaeochannel and included a shallow depression or possible pond. A slot excavated through this feature revealed a few pits, post holes and linear features, with several of the 'pits', again being the likely

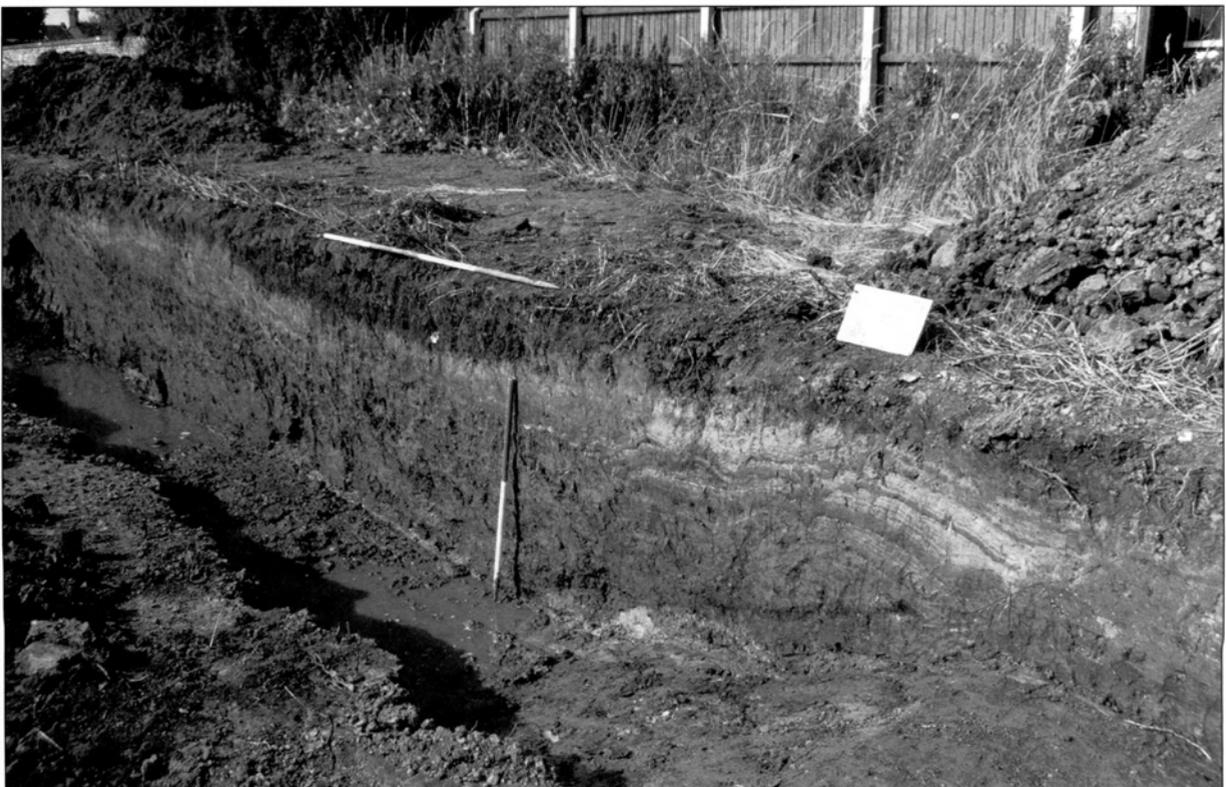


Figure 2. Section of the palaeochannel.

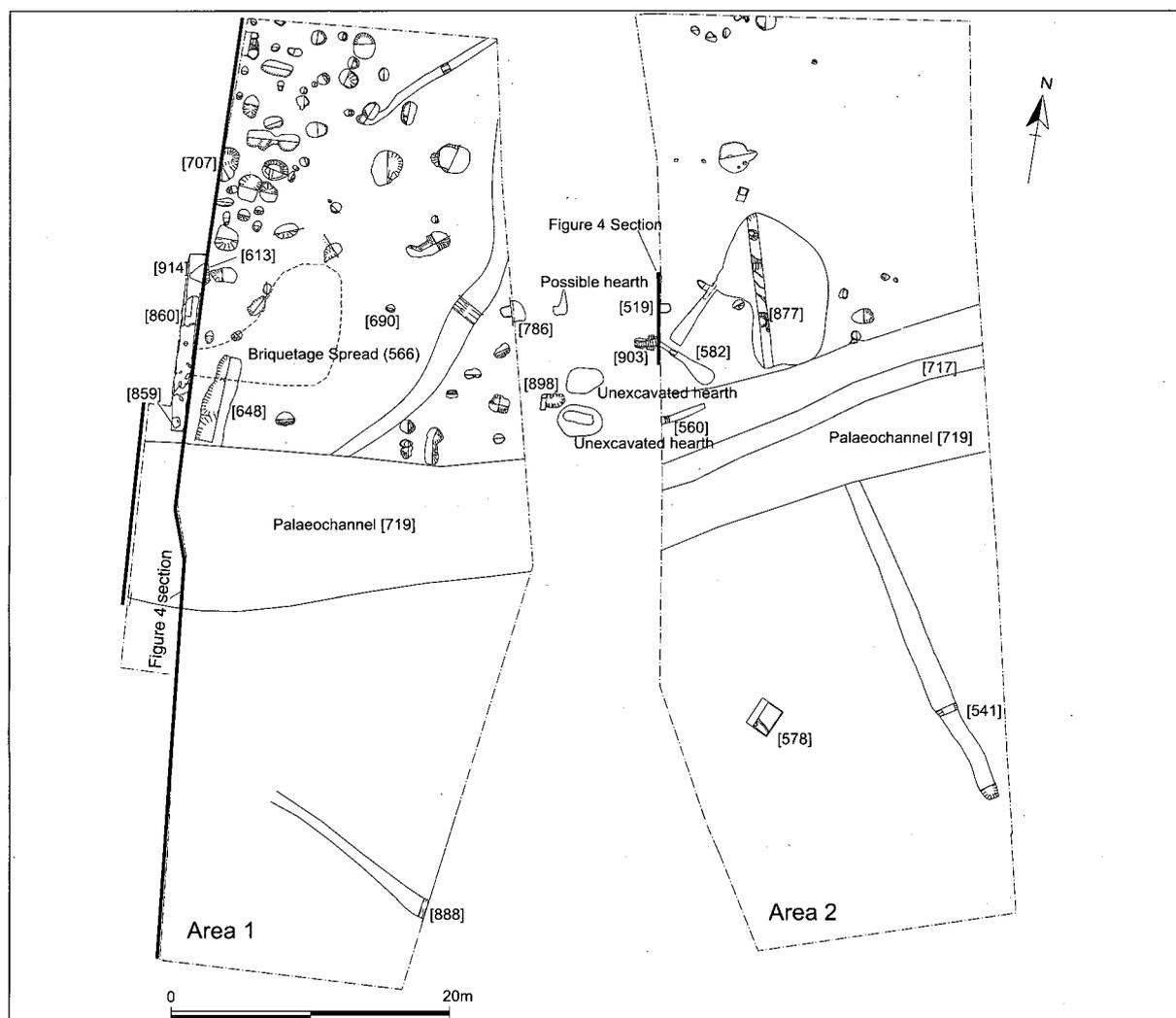


Figure 3. Excavation plan.

result of tree root disturbance. However, fill (878) of pit [877] contained two sherds of coarse, hand-made Iron Age pottery. South of the palaeochannel in Area 2 was a single linear feature [541] and one rectangular pit [578] of undetermined function.

Period 2

Area 1 (Fig 3)

Remains of a number of small hearth/ovens were noted in both the west (Fig 9) and east sections of the area. Those on the western side ([860], [914], [898], and [903], Fig. 11) were excavated while a further five hearth/ovens were cleaned and surface recorded in the baulk between the excavation areas. The zone of hearth/ovens was found to extend about 10m to the north from the palaeochannel and from the western edge of the site to about 3m into Area 2. Each of the hearth/oven recorded in the site baulks was found to overlie or be inserted into a pit, these pits cutting the alluvium (for example [613] and [897]). Other pits, for example [668], [707], were sealed by the alluvium (Fig

4). Initially identified as 'subsoil' on site the deposit is most probably transformed alluvium, the result of overbank flooding from the creek.

The zone of hearth/ovens clearly extends beyond the western limits of the site. The presence of briquetage in some quantity indicates that the heating structures were used in the production of salt. Some of the pits excavated, often of irregular shape (Fig 3), may have been originally dug for clay extraction and then used for brine storage. The briquetage is of the type that has a Roman date on other Fenland sites but only one sherd of Roman pottery has been found (by CCCAFU), that among the briquetage deposit [566] in the upper layers of the site.

Area 2

Gully [560] (Fig.3) was the only feature found to cut the palaeochannel fill, apart from later channel [717]. The gully contained a quantity of briquetage fragments suggesting that salt production was being undertaken when the palaeochannel was already at least partially silted, although it is possible that dis-

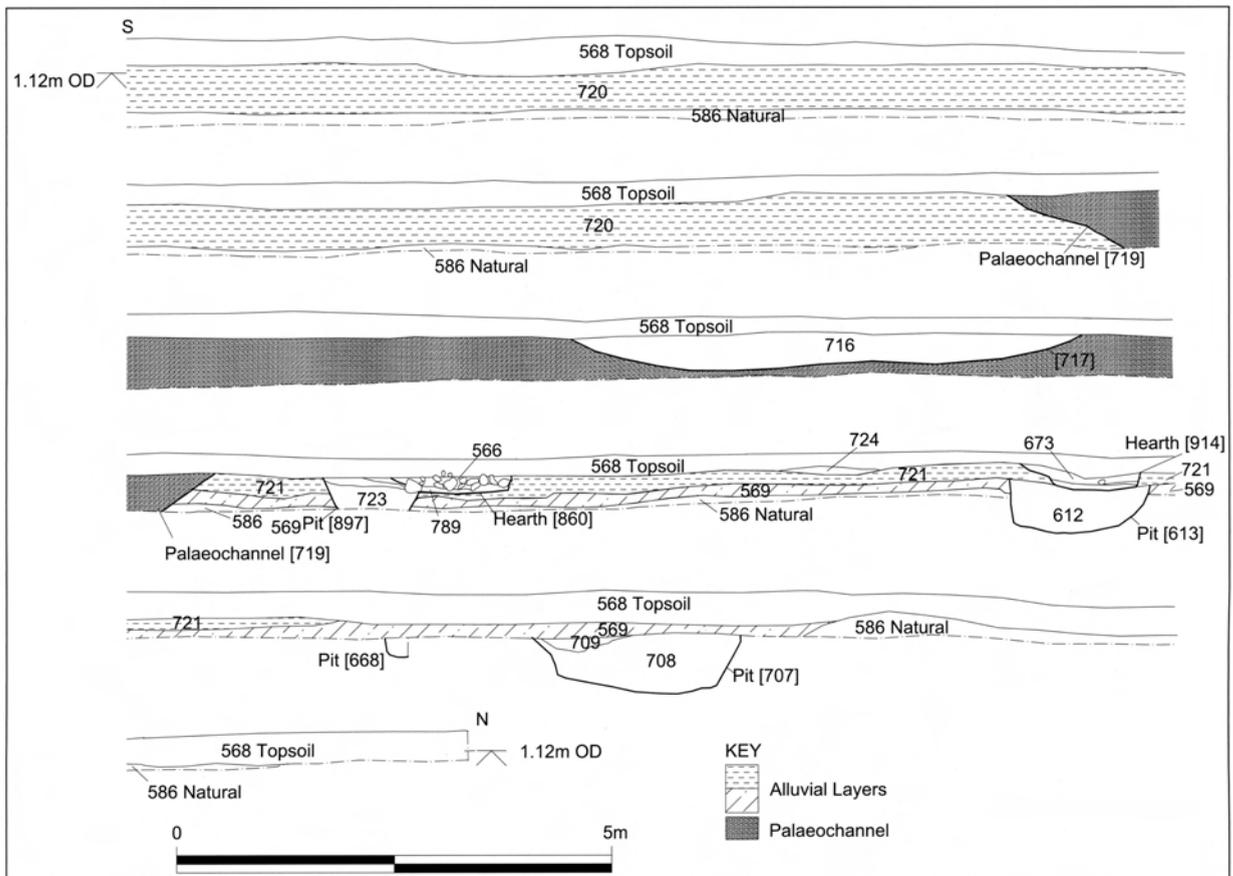


Figure 4. Full east-facing section Area 1.

turbed material may have got into the fill of a later feature. Hearth [903] was discovered in the western baulk of this area with gully [582] possibly being an elongated flue for it.

Briquetage

Elaine L Morris

Introduction

A total of 2836 pieces (55,357g) of ceramic material associated with salt production, known as briquetage, was submitted for analysis. The assemblage consists of fragments from containers, supports, structures and undiagnostic miscellaneous material (Table 1), which are the four classes of briquetage defined from previous work on salt production assemblages from the Fenland region (Lane and Morris 2001). The condition of the assemblage is curiously varied with some extremely large fragments of diagnostic structural debris in very good condition (but continuously disintegrating), five complete-thickness platform fragments and one complete-width platform fragment present, in addition to many small fragments of probable supports which cannot be assigned to specific form types but are likely to be pedestal supports based on fabric and firing condition.

Table 1. Briquetage assemblage by class (weight in grammes)

Class	Count	Weight	%Count	%Weight
Container	362	1490	12.8%	2.7%
Support	480	18603	16.9%	33.6%
Structural	1618	31513	57.1%	56.9%
Miscellaneous	227	2905	8.0%	5.2%
?Miscellaneous/ Structural	149	846	5.3%	1.5%
Total	2836	55357	100.0%	100.0%

The analysis and recording of this assemblage followed the scheme established for prehistoric and Roman period briquetage recovered from excavations conducted as part of the Fenland Management Project (Lane and Morris 2001) which includes assigning fabric types using standard codes with site specific descriptions, form types using Fenland-wide standard codes and descriptions, using wall thickness codes for container sherds as previously established (2, <7mm; 3, 7–9.9mm; 4, 10–12.9mm; 5, 13–15.9mm; 6, 16–18.9mm), diameter and thickness minimum and maximum as well as height measurements for supports where possible, minimum heights for featured container sherds, and the presence and positions of evidence of use in salt production. The spreadsheet of this recorded data is available in the archive, along

with 1:1 sketches of a small sample of each form type and additional notes on Featured Briquetage Record forms.

Fabrics

Analysis revealed the presence of four different fabrics: one which is a naturally-occurring sandy clay containing rare flint, limestone and quartz or quartzite detritus (Q1); two which are made from the same naturally-occurring clay with the addition of either an abundant amount of coarsely chopped, linear organic matter as temper (V1) or a moderate amount of coarsely chopped, linear organic matter as temper (V2); and a very rare fabric type which is organic-tempered and also has pieces of briquetage added deliberately as grog temper or incidentally during this industrial process (V2G). In addition, there are a few fragments which could not be assigned a fabric type description due to their overfired condition (Table 2).

The distinctive size range of quartz sand inclu-

sions and the detritus in fabric Q1 are not similar to other briquetage fabrics from within the Fens which have been interpreted as deriving from Fenland silts (Williams 2001). The sandy clay resource used to make fabric Q1, with occasional pieces of detrital material, is most likely to be found nearby, somewhere on March island itself which is a rise of boulder clay in the Fens left behind after the glaciers receded. The quantities of organic temper added to V1 and V2 are, however, typical of organic-tempered fabrics in Late Iron Age and Roman assemblages in the Fens. If March island had been utilised during this period for crop production, then plenty of chaff from grain processing would have been available to be used as tempering for the V group of fabrics. If this location had not been suitable for growing cereals, then it would have been necessary for bags or baskets of chaff to be brought to the saltern site for this purpose. Evidence for this behaviour is not unknown. At Cowbit (Lane 2001), which is located in the Fens and away from the crop-

Table 2. Briquetage assemblage by class, weight and form.

Class	Form Type	Fabric Type (count)					Total count	Total weight
		NV1	V1	V2	VG1	over-fired		
Containers								
Rims	R3	-	3	-	-	-	3	17
	R4	-	1	-	-	-	1	2
	R5	-	2	-	-	-	2	6
Bases	B1	-	6	-	-	-	6	152
Body sherds	BS1/2	-	350	-	-	-	350	1313
	<i>sub-total</i>	-	362	-	-	-	362	1490
Supports								
Bars	BR1	-	8	14	-	-	22	191
	BR99	-	1	-	-	-	1	3
Stabilisers	CL2	-	1	-	-	-	1	7
	CL4	-	-	1	-	-	1	50
	CL99	-	1	-	-	-	1	13
Pedestals	PD3	-	-	1	-	-	1	28
	PD9	-	1	1	-	-	2	9
	PD14	-	-	5	-	-	5	213
	PD97-99	-	-	64	-	-	64	388
Platforms	PL1	-	-	116	-	-	116	3580
	PL3	-	1	22	-	-	23	246
	PL7	-	1	2	-	-	3	184
	PL12	-	-	53	-	-	53	8215
	PL13	-	-	7	-	-	7	544
	PL14	-	-	1	-	-	1	3525
	PL99	-	-	179	-	-	179	1407
	<i>sub-total</i>	-	14	466	-	-	480	18603
Structural Material								
Wall/Flooring	W/FL1	157	-	-	-	-	157	16446
	W/FL2	1	-	-	-	-	1	226
	W/FL99	1460	-	-	-	-	1460	14841
	<i>sub-total</i>	1618	-	-	-	-	1618	31513
Miscellaneous								
Undiagnostic	FC99	23	149	62	127	14	375	3750
	Lozenge	1	-	-	-	-	1	1
	<i>sub-total</i>	24	149	62	127	14	376	3751
Total		1642	525	528	127	14	2836	55357

producing zone of the fen edge, chaff (Murphy 2001) had been added to local silty Fenland clay (Williams 2001), chaff which must have been transported to that site, a distance of 12km (Morris 2001b, 39). The light-weight chaff would have been worth carrying some distance to March-Cedar Close if the return of effort produced salt effectively. It is interesting to note that the Fen Causeway crosses March island and could have eased the transportation burden of getting chaff to the site as well as distributing the salt out to the regional consumers and beyond. Unfortunately, it is not possible to determine from the poorly preserved environmental evidence whether the rare oat and wheat grains recovered had been grown on the island or brought to it as part of chaff. At least the boulder clay matrix, however, was most likely to have derived from a local, Island source.

Quartz Sand Fabric

Q1 sandy fabric: Moderate to common (15–25%), rounded to subangular, moderately to poorly-sorted quartz, measuring < 0.8mm with the majority < 0.5mm across, with rare (1–2%), angular to rounded, patinated flint and quartz or quartzite, 1–5mm across and rare (<1%), rounded, red, iron pellets, < 0.5mm, and swirls of iron staining in a micaceous clay matrix; dense, laminated fabric; in thin section, there has been some calcite replacement or infilling of the fabric structure; can be very hard fired [structural and miscellaneous material fabric]

Organic-tempered Fabrics

V1 abundantly organic-tempered fabric: Common to abundant (20–40%), linear voids remaining from former, now burnt out, organic matter, <8mm with the majority < 6mm long, in the sandy fabric Q1 described above; well-wedged, irregular texture (never laminated); in thin section, it appears that there has been calcite infilling of the linear voids which may have derived from the nature of the boulder clay or due to the underlying Corallian beds (Chatwin 1961, 12–15) being affected by the salt or other process [container and support fabric]

V2 moderately organic-tempered fabric: Moderate to common (10–20%), linear voids remaining from former, now burnt out, organic matter, up to 15mm long but mainly < 6mm, in the sandy and slightly micaceous fabric Q1 described above with rare pieces of patinated, angular flint detritus up to 15mm across, fossil shell up to 1 mm and swirls of iron staining in the clay; irregularly textured due to the addition of the temper, rather than being laminated as with fabric Q1; in thin section, calcite replacement is a characteristic of this fabric [support and miscellaneous fabric]

V2G organic-tempered fabric with grog: Rare to sparse (1–5%), poorly sorted, sub-rounded to angular crushed fragments of fabric V2 material as deliberate grog temper or as unintentional incorporation, <15mm, into fabric V2 described above; poorly structured, very irregular or hackly texture [miscellaneous fabric].

Classes and Form Types

Quantification of the assemblage by class and form type is presented in Table 2.

Containers

There is a small quantity of rim, base and body sherds derived from briquetage containers used to evaporate water from brine and dry wet salt crystals in the salt-making process (Morris 2001a). Three rim types were identified (Fig. 5, 1–3), all from convex-profile, shallow pans with simple flat bases. Similar rim types have been published from later Iron Age and Romano-British Fenland saltern sites, including Bourne-Morton Canal (Crosby 2001a), Cowbit (Morris 2001b), Helpringham (Healey 1999, fig. 8, 30–39), Holbeach St Johns (Gurney 1999, fig. 40), Market Deeping (Morris 2001c), Morton (Lane 1992, fig. 131, 5; Crosby 2001b), Middleton (Percival 2001a) and Nordelph (Percival 2001b). No cut rim or flared base sherds, typical of middle Iron Age briquetage trough-shaped containers (Morris 2001a), were identified in the Cedar Close assemblage.

Rims

- R3 rounded rim (Fig. 5, 1)
- R4 flat-rounded rim, with channel groove on top (Fig. 5, 2)
- R5 pointed/rounded rim (Fig. 5, 3)

Body Sherds

- BS1/2 straight, flat and curved body sherds; grouped classification (not illustrated)

Base

- B1 simple, flat base (Fig. 5, 4)

Supports

Four different types of supports, used to raise and secure ceramic containers in hearths or within ovens (Morris 2001a), were identified: bars or rods, spacer/clips, pedestals and platforms. Bars or rods are a common form of support on many sites in the region and usually found in later Iron Age and some Roman period assemblages as at Billingborough 21 (Lane 1992, fig. 129, 2), Cowbit (Morris 2001b, fig. 19, 28), Morton saltern (Crosby 2001b, fig. 34, 36), Morton 69 (Lane 1992, fig. 129, 1 & 3–7) and Norwood (Potter 1981, fig. 16, 6). Clips are distinctive but easily broken lumps of fired clay which had been squeezed across the rims of usually two different containers to secure or stabilise them during the brine evaporation process. Clips are often found on saltworking sites of later Iron Age and Roman date as at Billingborough 21 (Lane 1992, fig. 130, 8), Cowbit saltern (Morris 2001b, fig. 17, 9), Hacconby 25 (Lane 1992, fig. 130, 6), Holbeach St Johns (Gurney 1999, fig. 41, 19–30), Morton saltern (Crosby 2001b, fig. 33, 16–25), Morton 13 (Lane 1992, 7 & 9) and the Wrangle-Friskney area (Lane and Hayes 1993, fig. 85, 1–13), but only three fragments were found in the March-Cedar Close assemblage.

In addition, very few pedestal fragments were found in the assemblage. Pedestals are solid, chunky, hand-squeezed pillars of clay onto which troughs and pans were placed. Hand-squeezed pedestals are probably the most distinguishing type of briquetage found on Fenland saltern sites of later Iron Age and

early Roman date such as at Cowbit (Morris 2001b, fig. 21, 45–50), Addlethorpe (Morris, in archive), Morton (Crosby 2001b, fig. 34, 29), and Wrangle (Lane 1993, fig. 84, 1–14). Excavation of the second century AD salt-working site at Norwood, located 2km north of March-Cedar Close, also produced examples of hand-squeezed pedestals (Potter 1981, figs. 16, 1 & 17, 11) but various types of bricks were more frequent finds at that site. Pedestal supports can appear to be extremely overfired on some sites, such as in the Morton and Addlethorpe assemblages, resulting in a very brittle feeling to them. This is also the case for the 64 fragments in fabric V2 from March which are believed to be from pedestals. The severe fragmentation of these pieces makes it impossible to determine their original shapes (PD97–99).

The most significant quantity of supports, however, was platforms. The March-Cedar Close assemblage has an outstanding collection of platform fragments which provides information for a much better understanding of this form type than previously appreciated. Platforms and flooring slabs proved to be rather enigmatic in some publications (Lane and Morris 2001), and it is only the reconstructed image of long discarded examples from Holbeach St Johns (Lincs.) which has recently suggested that this type of support is actually a reality (Gurney 1999, fig. 43, Bi-Biv). No platforms appear to have been identified, for example, in the second century AD Norwood assemblage (Potter 1981). Platforms can best be described as porous, very thick floor tiles having four squared-off side edges and two well-fingered or finger-smoothed parallel, horizontal surfaces. The thickness of the March-Cedar Close platforms ranges from 17–19mm for PL3, 32–38mm for PL7, 47–59 and 63–68mm for PL12, and 58–67mm for PL14. There is a very strong likelihood that the thicker PL12–14 platforms were actually made in a prepared mould, possibly a wooden box, due to the appearance of horizontal lines on the side edges. If platforms were not made in a mould, then they may have been knife-trimmed or severely wiped to provide this effect. In addition, many of the edges with one or more surface still present display a lipped effect rising up from one or both of the flat surfaces due to strong pressure from fingering which creates this lipped appearance during the manufacturing process, again suggesting the possible use of a mould. Platforms were free-standing supports for receiving containers and this is realised because there is salt-bleaching, or white colouring, on both of the surfaces and often down the side edges as well. Unfortunately, many of the fragments of platforms do not have both surfaces present, a very distinct characteristic of platform fragments, one which can lead to their misidentification as probable oven flooring slabs rather than objects used to raise containers above the flue of an oven. In the March-Cedar Close assemblage there is one example which displays the full width and thickness of platforms as well as the lipped construction effect (Fig. 6, 10); it is 265mm wide, 58–67mm thick and more than 200mm long. It seems possible that the thicker, PL12–14 platforms

found at March were likely to have been square in plan. It is hoped that someday a complete Fenland briquetage platform will be discovered, measured and conserved.

Bars or Rods

BR2 roughly smoothed, round cross-section bar or rod fragment (Fig. 5, 5)

Stabilisers (Clips/Spacers)

CL2 cylindrical spacer/clip with lips, fragment (Lane and Morris 2001, fig. 113, 11) (not illustrated)

CL4 flattened spacer/clip (Fig. 5, 6)

CL99 fragment of probable clip/spacer (not illustrated)

Pedestals

PD3 lipped base, angled-top, hand-squeezed pedestal fragment (Lane and Morris 2001, fig. 114, 18) (not illustrated)

PD9 undiagnostic, hand-squeezed pedestal base and stem fragment (Morris 2001b, 43) (not illustrated)

PD14 sub-squared, pedestal base which is very similar to BK1 (Lane and Morris 2001, fig. 118, 37) but with softened edges

PD97 undiagnostic, hand-squeezed pedestal fragment (Morris 2001b, 44) (not illustrated)

PD98 hand-squeezed pedestal stem fragment (Morris 2001b, 44) (not illustrated)

PD99 probable hand-squeezed pedestal stem or base plate fragment (Morris 2001, 44) (not illustrated)

Platforms

PL1 fragment from a platform which has one smoothed flat top surface (Morris 2001b, 44) (not illustrated)

PL3 bevelled-profile, platform fragment (Fig. 5, 7)

PL7 rounded-edge, platform fragment (Morris 2001b, 44, fig. 18, 25) (not illustrated)

PL12 squared-sided, or piece of edge, platform fragment which has 2 (two) smoothed sides, a top surface and an edge surface (which is often wiped or scraped-off; very sharply defined); this profile often displays a lipped-effect to the ridge where side and surface join as if smeared from surface to edge with force; usually PL12 is incomplete with only one true horizontal surface extant and the other side irregular due to the loss of the surface but occasionally, there are both, parallel surfaces present (Fig. 5, 8)

PL13 corner piece of platform which has two wiped sides and one smoothed surface (i.e. it is a PL12 with an additional finished, edge side creating a corner) (Fig. 5, 9)

PL14 total width of platform which has two wiped, edge sides and two parallel smoothed surfaces (Fig. 6, 10)

PL99 irregularly-shaped piece of platform which is probably from a platform but it does not actually have a smoothed top surface so it cannot be called a PL1 (not illustrated)

Structural Material /Oven Lining

The largest class of briquetage in the assemblage is fragments of structural material. This material derives from salt production ovens, partially below ground surface structures made with one or more flues and surrounding clay walls, as well as possible partial domes. Well-preserved, published examples of these structures were found at Cowbit (Lane 2001, plate 2, fig. 12) and Middleton (Crowson 2001, figs. 47, 51, 54,

61; plates 10–12). Ovens with flues provide indirect heating systems for better control of the salt production process by regulating the intensity of heat to the salt pans and, therefore, the pace of evaporation. Slow evaporation results in finer salt crystal production; rapid evaporation results in coarser crystals. Coarser crystals are used for different types of preservation than those of a finer nature. For example, coarse crystals are used to salt and pack fish but finer crystals are for use at the table without a salt grinder.

The fragments of wall/flooring material from the oven structures at March are very distinctive due to their thickness; the thickest fragments measure at least 150mm. The March-Cedar Close ovens had been made in an unusual manner which explains the laminated nature of the fabric Q1 used to construct them. It is believed that a pit was dug into the ground and raw sandy clay poured into it, and then the oven shape was carved out of this feature due to the presence of shovel or knife-cut marks visible on the fire-hardened, inner wall surfaces of structural pieces. The layers of clay poured into the pit were the basis for the very distinctive, laminated character of fabric Q1 oven fragments. Experimental archaeology to investigate these processes and the amount of effort to construct a pit oven is required to explore the actual procedures of construction further.

Wall/Flooring

WFL1 flake fragment of wall/flooring material which has one smoothed surface; the key component here is that this piece must have a flaky structure to it (Fig. 6, 11)

WFL2 square-sided piece of wall/flooring which has two smoothed sides, a top and an edged, without a sharp definition between the two sides in contrast to PL12–14 (Fig. 6, 12)

WFL99 flake fragment from wall/flooring material from the walls/floor of an oven but does not actually have the smoothed surface so it cannot be called a WFL1 (not illustrated).

Miscellaneous

There is a moderate amount of fired clay fragments which could not be assigned to a diagnostic form of briquetage but due to the nature of the firing and evidence of use from salt bleaching (discussed below) were undoubtedly involved in some way with the salt-making process (FC99). In addition, there is a small, complete, oval-shaped piece of fired clay which had been rolled in the hand (Fig. 6, 13). It is likely that this object is the result of testing the texture of the natural clay to determine its plasticity.

Manufacturing - Correlation of Fabrics and Forms

Certain fabric types were made to be used primarily for a single class of briquetage (Table 2). All container sherds were made from fabric V1. Nearly all supports, such as pedestals and platforms, were made from fabric V2. In addition; however, there are some support fragments which may derive from disintegrating and often overheated pedestals which were also made from V1 fabric which is highly porous; however, this

cannot be proven unreservedly due to the fragmentation of the support pieces. Clearly, the manufacture of the two different organic-tempered fabric variants, one to make containers and the other to make most supports, was deliberate. It is likely that different degrees of porosity were the main requirements for these objects to fulfil their functions and that the salt-makers were well-aware of this difference.

This is in contrast to all structural material which was made from the un-tempered fabric Q1, indicating that porosity was not a major criterion for the building and use of saltmaking ovens. The absence of tempering of any kind in fabric Q1 is intriguing. It might have been expected that, as this fabric was used to make ovens for heating the brine, a form of tempering would have been required to provide thermal resistance. However, this was clearly not the case and it may be that the form of these ovens with their flues could have been well-controlled, and that the salt-makers would have been able to gradually bring the heat of the structures up to the required temperature so that there would have been no thermal shock to resist. Undoubtedly, reconstruction of a March-Cedar Close oven could provide insight into the role this untempered fabric performed.

Fabric V2G, a grog-included organic-tempered fabric, appears to have been a non-specific fabric which may have been the result simply of casual incorporation of old pieces of platforms or pedestals into clay being worked for new objects. The miscellaneous lumps which have this grog present are quite non-specific in shape or intension for use.

Evidence of Use

One of the striking aspects of the platforms, wall/flooring fragments and container sherds is the amount of salt-bleaching effect they display. 74% of the container fragments are white-buff in colour throughout, 22% have only the exterior or exterior and interior surface bleached, and only 4% are unbleached. The orange-red firing Fenland clay used to make the containers loses its iron-rich colouring after repeated contact with the chlorine in saltwater. The more a container is used, the more bleaching takes place. Therefore, the majority of containers used at March-Cedar Close were used for extended periods of time or repeatedly. This phenomenon is quite common amongst the late Iron Age and Roman briquetage assemblages but much less so amongst earlier prehistoric collections such as at Cowbit (Morris 2001b, 41, plate 4a), Langtoft (Morris 2001e) and Market Deeping (Morris 2001c). It is likely that the extreme bleaching is a result of intensification of salt production during the late Iron Age and Roman periods (Morris 2006). This is supported at March-Cedar Close, in particular by the presence of bleaching of the thick platforms on one or both sides with up to 15mm bleached zonation and up to 60mm bleached zonation of some wall/flooring pieces (Fig. 7, 4–7). How much time and brine are required to produce these effects is not known but undoubtedly experimental reconstruction and use of ovens could help to identify this level of

Class	Site Assemblage													
	Langtoft		Market Deeping		Cowbit		Morton		Addlethorpe		March		Middleton	
	Ct	Wt	Ct	Wt	Ct	Wt	Ct	Wt	Ct	Wt	Ct	Wt	Ct	Wt
Container	96.2	53.6	95.5	84.2	83.1	38.6	64.1	53.9	30.9	4.7	12.8	2.7	0.2	<0.1
Support	2.7	42.4	1.7	11.6	5.4	31.6	5.7	23.7	36.7	69.2	16.9	33.6	3.8	12.8
Structural	-	-	0.1	0.2	1.6	15.7	1.0	5.6	9.9	17.0	57.1	56.9	69.3	72.5
Miscellaneous	1.1	4.0	2.7	4.0	9.9	14.1	29.2	16.9	22.4	9.1	13.3	6.7	26.9	14.7
Total (actual)	4426	24948	4031	46296	5619	24505	6598	35090	1127	26545	2836	55357	11039	480179

Table 3. Percentage of briquetage by class from published sites - Addlethorpe (Morris, in archive), Cowbit (Morris 2001b), Langtoft (Morris 2001e), Market Deeping (Morris 2001c), Middleton (after Percival 2001a), and Morton (Crosby 2001b).

salt production intensity and in particular determine how the firing conditions relating specifically to oven [898] resulted in glazed miscellaneous material, and overfired structural material with bubbles preserved on the surface while the container fragments are in normal, salt-bleached condition.

Dating Evidence

Assessment of the range of material in the March assemblage by class and by form type can provide a better indication of the likely date for this assemblage compared to other Fenland assemblages from Lincolnshire, Cambridgeshire and Norfolk within the broad period of organic-tempered briquetage use. What is important is the relative frequency of each class in this sizeable assemblage compared to other quantified assemblages found in the region (Table 3) and the range of form types present or absent.

To start with, however, there are no container sherds of shell-gritted briquetage and no fragments from the very distinctive pyramidal pedestals (Morris 2001a-c & d) in the March-Cedar Close assemblage. Therefore, there is no evidence for middle Iron Age or earlier salt production at this location. All of the container and support fabrics are organic-tempered which indicates that the assemblage dates from at least the late Iron Age period or later (Morris 2001a, 2006). In addition, the cumulative percentage frequency of measurable container sherds by thickness category for the March sherds (Table 4) is not at all similar to the frequency ranges of the middle Iron Age assemblages recovered from Langtoft and Market Deeping (Morris 2001a, table 91, fig. 120).

Table 4. Quantification of measurable container sherds by thickness category.

Thickness category	Count	% within class	Cumulative percentage frequency
2 (<7mm)	53	18.6	18.6
3 (7-9.9mm)	166	58.2	76.8
4 (10-12.9mm)	59	20.7	97.5
5 (13-15.9mm)	5	1.8	99.3
6 (16-18.9mm)	2	0.7	100
Total	285	100	

The March assemblage is characterised by: (1) a small quantity or proportion of container fragments (12.8% by count; 2.7% by weight), none of which are cut rims and all of which were made from organic-tempered fabric; (2) a moderate proportion of supports (16.9%; 33.6%), which are dominated by thick, removable and reversible platforms (Table 2) that may have been made in moulds and a very small amount of other support types; and (3) a very large proportion of structural material (57.1; 56.9).

The March assemblage is extremely different from the middle Iron Age assemblage from Langtoft with its massive proportion of shell-gritted containers (96.2; 56.6), its very solid, pyramidal pedestals (2.7; 42.4) and the virtual absence of any evidence for an oven structure (Morris 2001e). March is also different from the Market Deeping assemblage for similar reasons (Morris 2001c). The later Iron Age assemblage at Cowbit, where an oven was discovered, should have some similar characteristics to the March assemblage but comparison of their proportions by class clearly shows that this is not the case. In particular this is because there are very significant quantities of both shell-gritted and organic-tempered container fragments including 31 cut rims, 60 stabilisers which are mainly clips and 119 pedestals or fragments from Cowbit, as well as a significant presence of platform fragments (Morris 2001b, table 4). Two virtually indistinguishable second century radiocarbon dates, with a weighted mean of 185-95 cal BC, were determined from charcoal found in the oven (Bayliss and McCormac 2001). Therefore, the March assemblage is very likely to date from after this period based on comparison of briquetage assemblages.

The very fragmented assemblage from the Morton saltern (Lincolnshire) had an unusual array of material, primarily because there is so much which was undiagnostic and assigned to the miscellaneous category of class (Crosby 2001). If some of this material was in fact disintegrated pieces of structure, based on the presence of possible ovens on the site (Trimble 2001), then the proportion of structural material would be significantly greater. The dominant forms of supports are clips and bricks rather than pedestals or platforms (Crosby 2001a, table 26). Precious (2001) has shown that the pottery from the latest levels at Morton probably date to the early to middle second

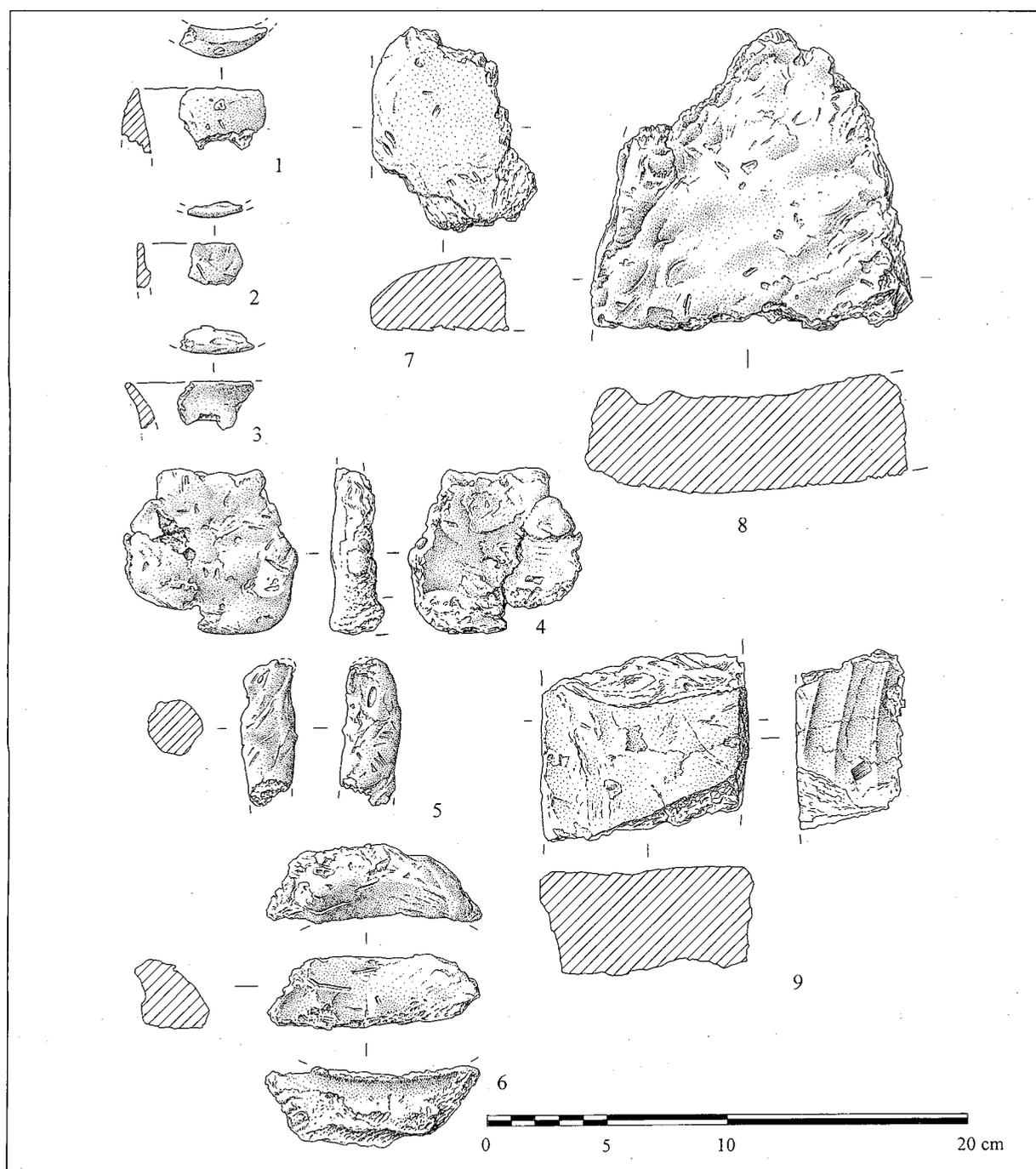


Figure 5. Briquetage.

1. Container rim; R3, class C, fabric V1; not bleached; context 566, layer, BRN 1108.
2. Container rim; R4, class C, fabric V1; bleached throughout; context 683, pit 682, BRN 1138.
3. Container rim; R5, class C, fabric V1; bleached on top edge; context 683, pit 682, BRB 1137.
4. Container base; B1, class C, fabric V1; bleached throughout; context 789, oven 860, BRN 1191.
5. Bar or rod; BR2, class S, fabric V1; bleached on exterior; context 562, gully 560, BRN 1091.
6. Stabiliser clip; form CL4, class S, fabric V2; bleached on exterior (both upper and lower surfaces); context 566, sample 1, layer, BRN 1244.
7. Bevel-edged platform with full thickness; form PL3, class S, fabric V2; white, salt-bleaching effect on upper and lower surfaces to 6mm in depth at the most; context 566, sample 1, layer, BRN 1224
8. Platform fragment with lipped, side edge and one surface present; form PL12, class S, fabric V2; white, salt-bleaching effect on one surface only to a depth of 6mm; context 566, sample 1, layer, BRN 1225
9. Corner platform fragment; form PL13, class S, fabric V2; bleached on both surfaces; context 566, sample 1, layer, BRN 1227.

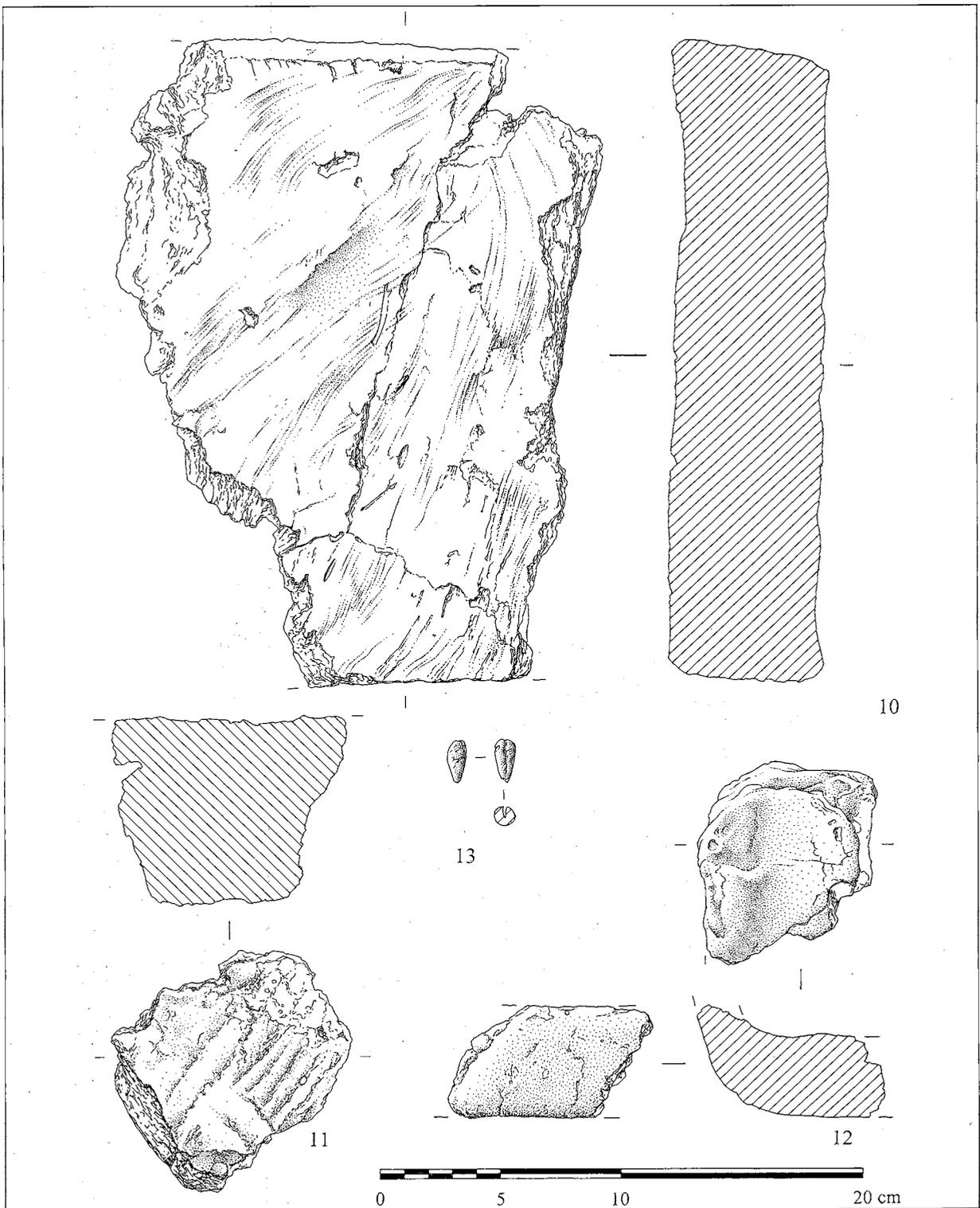


Figure 6. Briquetage

10. Platform fragment with two lipped, side edges, two parallel surfaces and complete width present; form PL14, class S, fabric V2; bleached on both surfaces; context 566, sample 1, layer, BRN1200.
11. Wall/flooring fragment; form W/FL1, class ST, fabric NV1; bleached on surface into wall up to 40mm; context 566, sample 8, layer, BRN 1057.
12. Square-sided wall/flooring edge fragment; form W/FL2, class ST, fabric NV1; bleached on surface into wall up to 25 mm; context 649, pit 648, BRN 1121.
13. Lozenge; class M, fabric NV1; context 905, oven 903, BRN 1302.

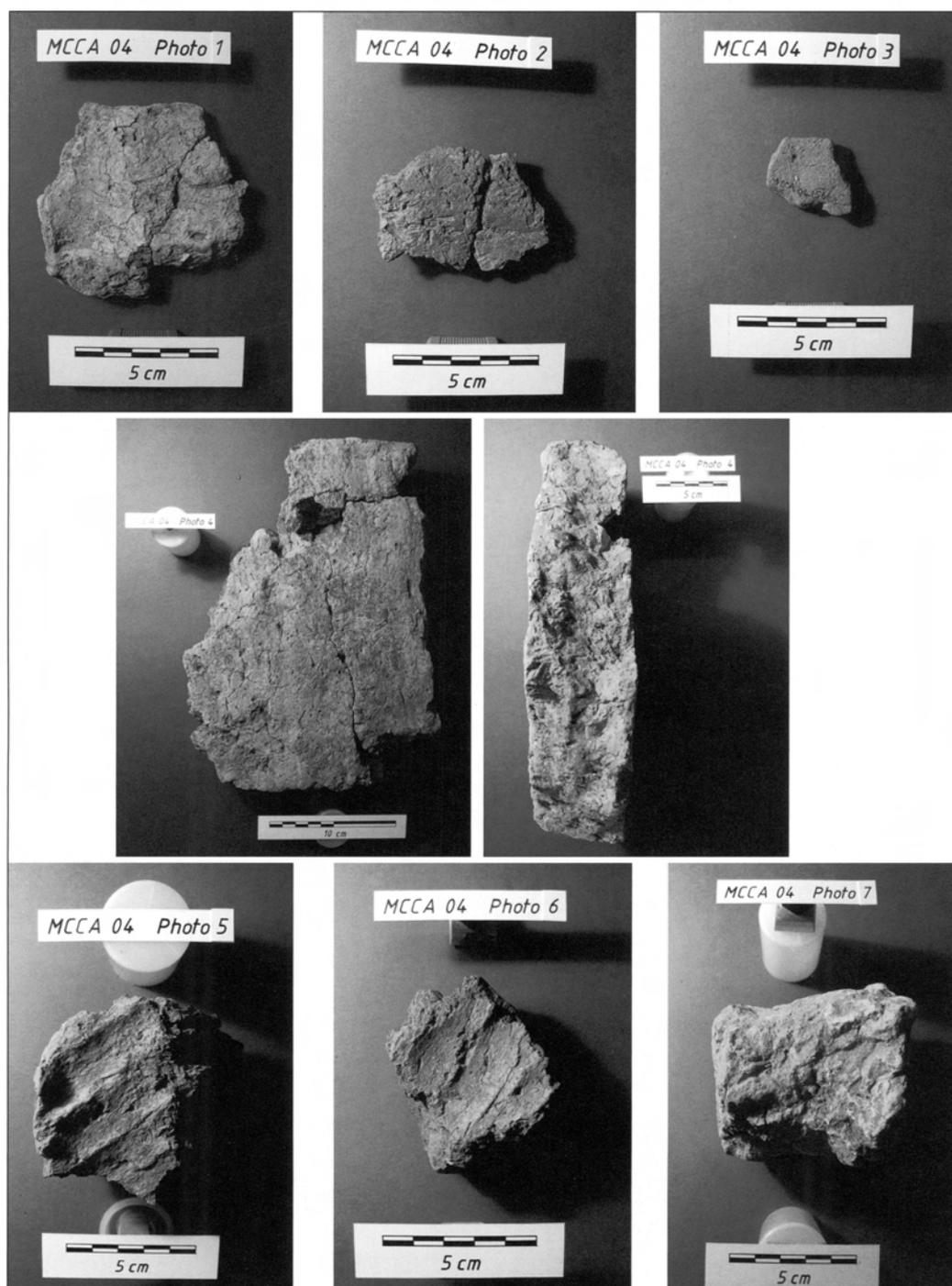


Figure 7. Selected briquetage.

1. Container base, completely bleached due to prolonged use as salt production vessel; form B1, class C, fabric V1; context 789, oven 860, BRN 1191.
2. Container body sherd, bleached on exterior surface by salt bleach; form BS1/2, class C, fabric V1; context 910, oven 672, BRN 1309.
3. Container rim, unbleached; form R3, class C, fabric V1; context 566, layer, BRN 1107.
4. Full width and full thickness platform displaying evidence of use; form PL14, class S, fabric V2; white, salt-bleaching effect 8-20mm in depth; one edge side well-scraped or wiped; context 566, sample 1, layer, BRN1200
5. Platform fragment displaying pronounced manufacturing by fingers and thin line of bleached surface from use; form PL12, class S, fabric V2; context 566, sample 1, layer, BRN 1232.
6. Platform fragment displaying pronounced manufacturing by fingers and thin line of bleached surface from use; form PL1, class S, fabric V2; context 566, sample 1, layer, BRN 1233.
7. Wall/flooring fragment displaying deep bleaching into wall; form W/FL1, class ST, fabric NV1; context 566, sample 8, layer, BRN 1057.

century AD and the lowest to the later first century, if not the mid to late first century.

The unpublished assemblage from Addlethorpe (north Lincolnshire) has a moderate amount of container material (30.9; 4.7) a moderate to large amount of supports (36.7; 69.2) and a moderate amount of structural material (9.9; 17.0) (Morris, in archive). This assemblage, unfortunately, was found (just like March-Cedar Close) with no directly associated pottery to help date the salt production activity, although Roman pottery was found on the site.

The early second century AD saltern at Norwood (Cambs.) (Potter 1981) might have been a suitably dated assemblage to compare the March assemblage to but for one major drawback – no platform fragments were reported from this site which makes comparability difficult. A similar problem lies with the assemblage from the late second to early third century AD saltern at Denver (Norfolk) (Gurney 1986).

The Middleton (Norfolk) assemblage, which dates from 'perhaps the mid to late third running into the fourth century' based on the significant collection of associated Roman pottery (Darling 2001, 216), has virtually no container sherds (0.2; <0.1), a small quantity of very distinctive extremely large, shaped pedestal supports (3.8; 12.8) with their bases found *in situ* around an oven (Crowson 2001, plate 9) and a tremendous amount of structural material (69.3; 72.5). It is thought that by the late Roman period lead containers were used in place of ceramic vessels for evaporation.

Therefore, it seems that the range of briquetage from March-Cedar Close lies somewhere between those of undated/Roman Addlethorpe, later first to second century Morton, and late Roman Middleton. The most similar assemblage is actually from Holbeach St Johns excavated in 1961 by Ernest Greenfield and published recently by David Gurney (1999). Direct comparison of this assemblage to that from March is hampered, however, by the realisation that much of the 1961 Holbeach briquetage was discarded after original descriptions were recorded. Nevertheless, it is the quantities of platforms as well as oven debris which make the briquetage from this Lincolnshire saltern site appear to have been contemporary with the activity at March. The associated pottery ranges from the late first century to the early third century, with the bulk belonging to the mid-second to early third century. Therefore, if March and Holbeach St John's had been contemporary or near contemporary for at least some of the time, this would fit comfortably into the chronological position between Morton/Addlethorpe (mid-late first to early second century) and Middleton (mid-late third to fourth century). This interpretation, however, assumes that there was a chronological development in the methods, in particular the types and relative frequency of supports, used to make salt from brine in the Fenland region during the Roman period, and this has not yet been proven.

Phases of Production

Table 5 presents the quantification of briquetage by class and summarized form types for all features by area. Oven [860] has no pieces of platforms, 29 pedestal fragments and 34 container sherds. In contrast, layer (566) had 310 platform fragments, only 21 pieces of pedestals, a clip and 42 container sherds, as well as masses of structural material from demolished ovens. There is every possibility that this variability amongst the different ovens and their activity zones is a reflection of different phases of salt production at this location. There are quite a number of ovens present in a small area and there is every reason to suspect based on the infrequency of pedestals, clips, and bars compared to platforms that this location was witness to a change in technological methods of salt-making during the Roman period.

Platforms are quite significant in their massiveness compared to hand-squeezed pedestals and appear to have replaced pedestals and stabilisers as the principal support material during the Roman period. This suggests that there may have been two closely dated phases of salt production activity at March-Cedar Close; one which is probably slightly earlier Roman in date and more similar to the evidence from Morton (Lincs) and one which is later based on these changes in the technology of manufactured ceramic equipment used to win salt from seawater in the Fens that were probably contemporary with the briquetage evidence from Holbeach (Lincs). It is possible that Norwood and Cedar Close, both located on March island, were not directly contemporary in date due to the strong differences between the majority of the briquetage supports from these two sites, or it may be that these differences were simply personal saltmakers' preferences. It is absolutely vital that additional saltern sites of this period and stage in technology should be excavated with a primary purpose of gathering all possible dating evidence, whether organic for radiocarbon dating, *in situ* fired clay structures for archaeomagnetic dating, or artefacts for material culture dating, to assist in our understanding of these changes in technology and the impact on salt production during the Roman period. In addition, variations in the types of supports recovered need to be tested to determine if there are technological advantages amongst them or whether these are simply reflective of individual saltmakers.

The Environmental Remains

Val Fryer

Introduction

Samples for the extraction of the plant macrofossil assemblages were taken from across the excavated area, and twenty eight were submitted for assessment.

Methods

The samples were processed by manual water flotation/washover, collecting the flots in a 500 micron mesh sieve.

Area	Feature	Context	Containers	Supports				Structural	Miscellaneous	Total count	Total weight
				Bar/Rods	Clips	Pedestals	Platforms				
2	pit 519	520	6	-	-	-	-	-	1	7	13
2	pit 539	540	-	-	-	-	-	-	2	2	9
2	gully 560	562	22	2	-	-	20	50	1	95	1051
1	layer	566	42	-	1	21	310	1114	138	1626	45008
1	subsoil	569	-	-	-	-	5	11	2	18	68
1	pit 609	608	-	-	-	-	1	1	-	2	20
1	pit 626	630	-	-	-	11	-	-	-	11	30
1	pit 641	640	1	-	-	-	-	-	-	1	1
1	pit 648	649	-	-	-	-	1	1	-	2	257
1	palaeochannel 654	653	-	-	-	-	1	-	-	1	10
1	oven construction	673	1	3	-	-	1	119	-	124	1314
1	pit 682	683	138	8	-	-	4	3	17	170	678
1	pit 690	689	12	1	-	1	-	6	15	35	205
1	pit 713	712	-	2	-	-	-	7	-	9	145
1	oven 860	722	34	-	-	29	-	6	-	69	109
1	pit 750	748	2	-	-	-	-	-	-	2	6
1	pit 770	769	1	-	-	-	-	-	-	1	5
1	faunal skeleton	771	-	-	-	-	-	-	5	5	4
1	palaeochannel 719	775	-	-	-	-	-	-	7	7	16
1	layer	788	17	1	1	10	-	5	1	35	254
1	oven 860	789	14	-	-	-	-	26	1	41	273
1	pit 859	791	3	-	-	-	1	-	4	8	38
1	layer	820	-	-	-	-	11	78	-	89	2382
baulk	oven 898	899	16	-	-	-	-	21	12	49	191
baulk	oven 904	904	3	-	-	-	-	111	-	114	437
baulk	oven 903	905	18	6	1	-	7	199	17	248	2432
1	oven 672	909	22	-	-	-	18	-	2	42	261
1	oven 672	910	7	-	-	-	1	9	-	17	123
baulk	gully 911	912	3	-	-	-	1	-	2	6	17
		Total	362	23	3	72	382	1767	227	2836	55357

Table 5. Quantification of briquetage by feature.

As the matrix of some samples consisted of a very stiff grey clay which resisted all attempts at manual dis-aggregation, a mild bleach solution was employed during processing. Whilst designed to cause minimum impact, some slight deterioration of both plant remains and mollusc shells may have occurred. The dried flots were scanned under a binocular microscope at magnifications up to x 16. Charred, mineral replaced and waterlogged plant remains were recorded. Modern contaminants including fibrous roots, seeds and arthropods were present throughout.

The non-floating residues were collected in a 1mm mesh sieve and sorted, when dry, for the retrieval of artefacts/ecofacts. Most residues were entirely composed of briquetage fragments.

Results of assessment

Plant macrofossils

With the exception of charcoal fragments, plant macrofossils were extremely rare. Preservation was generally poor, with severe puffing and fragmentation of most grains and seeds. Individual grains of oat (*Avena* sp.) and wheat (*Triticum* sp.) were recorded from the fill of channel [719] hearth/ovens [860] and [898]. A spelt wheat (*T. spelta*) glume base was noted in the fill of Pit [682]. Weed seeds were also rare, with specimens of segetal and/or grassland weeds including brome (*Bromus* sp.), black bindweed (*Fallopia convolvulus*) and large grasses (Poaceae) occurring in only eight samples. Wetland plant macrofossils were marginally more common, with nutlets of club-rush (*Scirpus* sp.) and saw-sedge (*Cladium mariscus*) recorded from seven assemblages. A single hazel (*Corylus*

avellana) nutshell fragment from the fill of Ditch 888 was the sole tree/shrub macrofossil.

Charcoal fragments were present in all assemblages, although they were rarely abundant. Other plant macrofossils were rare, although charred root/stem fragments and indeterminate culm fragments and nodes were present throughout, the latter more especially in samples from the hearth contexts.

Other materials

Other material types consisted largely of black organic concretions, pieces of burnt or fired clay (probably briquetage) and vitrified/siliceous globules, the latter possibly fuel ash slag resulting from the super heating of organic materials in the evaporation hearths. The fragments of black 'cokey' and tarry material are further possible residues of the combustion or organic remains at very high temperatures.

Molluscs

Mollusc shells were not generally common, but did occur in eleven assemblages. Fresh water species (namely *Bithynia* sp. and *Lymnaea truncatula*) were most common although brackish water taxa (*Hydrobia ulvae* and *Phytia myosotis*) and rare dry land species were also noted.

Discussion

Pit assemblages

Ten samples were taken from pit fills. Plant macrofossils were rare throughout although fills of pit [682] (which contained briquetage), [853], and [729] had a slightly higher density of charcoal fragments. All samples contained a moderate to high density of mineralised concretions, possibly indicating that all contained standing water at some stage. The presence of a spelt glume base within Sample 9 possibly confirms a Romano-British date for these deposits, although a single specimen is far from conclusive, as it may be either residual or intrusive within the feature.

Hearth/oven assemblages

Twelve samples were taken from deposits within five hearths. Plant macrofossils were again very rare although hearths [860] and [898] did contain moderate densities of charcoal fragments. This lack of plant remains may largely be due to the high temperatures of combustion which occurred in the hearths, as witnessed by the abundance of globules of vitreous fuel ash slag. Mollusc shells occurred in eight of the hearth assemblages, with freshwater taxa being most frequently recorded.

Other contexts

In Sample 5, from fill (775) within palaeochannel [719], plant remains were not common, but black organic concretions were abundant, and it is tentatively suggested that these may be derived from deposits of peat or highly organic mud.

In summary, with rare exceptions, the assemblages are very small (<0.1 litres in volume) and contain a

low density of plant macrofossils. In part, this may be due to the very high temperatures of combustion, which were obviously being used during the evaporation processes of salt production. The few plants that are present appear to be derived from the local fen habitat, from grassland herbs and possibly from cereal processing debris. Contemporary evidence suggests that this latter debris may have been imported on to the site as fuel, and there is certainly nothing to indicate that crop processing was occurring on or near the site. The presence of abundant concretions of black organic material may indicate that peat or similar compressed matter was being used as fuel, although this has yet to be verified.

Discussion

Landscape and Environment

The presence of the suitable raw materials for salt making – brine from the tidal channels, peat from the fen and clay from the island – made the March area ripe for salt production in the Late Iron Age and Roman periods. A substantial number of saltern sites of Roman date are present to the north and east of March island and the Cedar Close site formed one in a relatively dense pattern of such sites (Fig. 8; Lane and Morris fig. 2).

March is located on a low-lying island within the surrounding extensive peat land and would have always been an important focus of settlement and industry within the region. While much of the island is presently covered by the urban area of March and therefore inaccessible for field survey, the fringes and adjacent fenland were the subject of surveys as part of the Fenland Project (Hall 1987). This work revealed numerous Roman period sites, many of them engaged in salt production. The presence of tidal rivers flanking the island enabled salt to be made by means of heating brine in shallow containers in hearths or ovens. The major contemporary rivers/creek systems have been mapped (*ibid.* fig. 23) and smaller channels linking into those major systems would have been equally useful for supplying brine. Two such small channels were revealed on the south side of the Cedar Close site (Fig. 1) where the land surface dipped gently towards an indentation in the island's perimeter through which an alternative and artificial course of the River Nene was dug during the Saxon period (*ibid.*, 46). Most probably the fuel source for the salt making would have been the peat that surrounded the island. There is evidence of extensive Roman peat cutting little over a kilometre to the south of Cedar Close (Hall 1996, fig. 102) and within 5km to the east of the site (Palmer 2002, fig. 4). However, a surviving shallow, interrupted remnant peat on the south side of the Cedar Close site may be medieval in origin.

On-site features

The east facing section of the excavation (Fig.4) demonstrates that two phases of archaeology were present

separated by two distinct layers of transformed alluvium. As the original ground surface sloped up to the north that end of the site was not affected by the flooding, with the result that the pits and postholes recorded beyond the spread of alluvium are not datable to phase. However, the dense distribution of the pits and the lack of intercutting suggests that those features in the north were probably contemporaneous and, given the rarity of such features on salterns elsewhere in the Fenland (Lane forthcoming), may well have predated the saltern phase. With the exception of Pits [641] and [626], which contained briquetage, none of the northern features yielded finds and, given the density of briquetage present on salterns, such material would most probably have found its way into any contemporary open features.

Two phases of saltmaking within the Roman period were suggested (E.L. Morris above) by comparing

the briquetage forms with dated examples elsewhere in the region. It is entirely plausible, although not proven, that the alluviation occurred in the Roman period between those dates. Further east along the Fen Causeway Roman features were recorded above and below a flooding layer and was linked with a period of flooding in the first half of the third century AD (Silvester 1991, 115). However, only a small quantity of the briquetage came from secure deposits in features sealed beneath the alluvium at Cedar Close.

Some pits definitely belonged to the post-alluvial phase. Some may have been dug to accommodate the hearth/ovens (eg 860, Fig. 4), possibly to minimise the amount of superstructure to be built.

The dense briquetage spread (566) outlined by CCCAFU in the original evaluation probably represented smashed hearth/ovens aligned along the higher, landward, edge of the palaeochannel and built

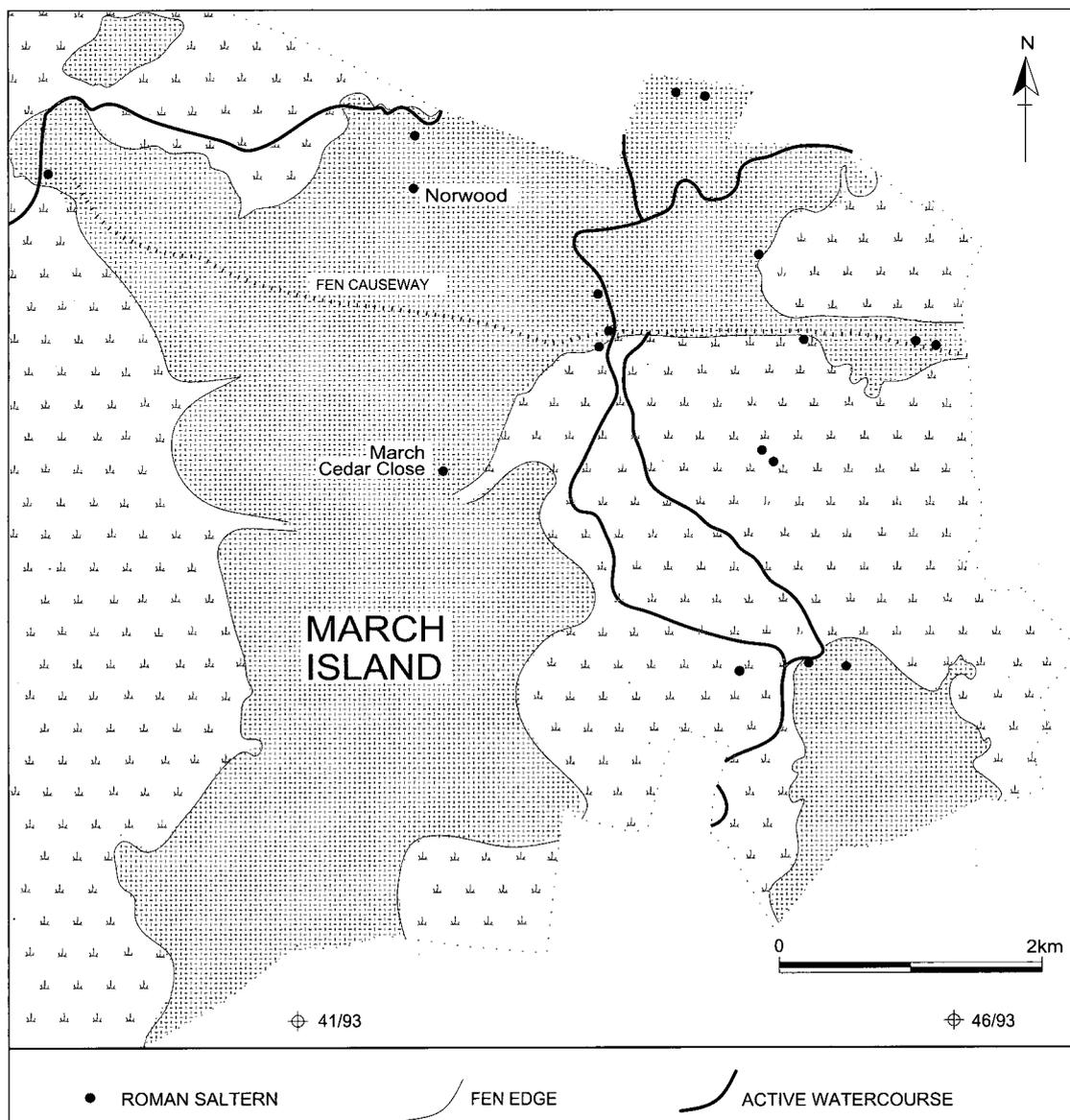


Figure 8. Location of Cedar Close in the Roman Fens (after Hall 1995).

following the period(s) of alluviation. Those hearth/ovens in pits or depressions have partially survived later episodes of agriculture, although no superstructure remains *in situ* other than on [903]. Two hearth/ovens, [903] and [898] (Fig. 9), were broadly rectangular in plan in keeping with other Fenland examples. Hearth/oven [903] (Figs. 9, 10 and 11) was probably the best preserved example on the site. Aligned east-west, it was situated 0.5m north of the edge of the palaeochannel [719] and measured 1.5m long by up to 1m wide by 0.17m deep. The feature was set into the firm blue/grey clay fill of pit [901], itself cut into alluvium. The sides of the hearth/oven were 'composed of briquetage', probably clay fired *in situ*, although the base was described as yellow clay. It was filled with ashy material containing a lens of briquetage.

Few of the pits appeared to be clay-lined, a characteristic that might be expected if serving a brine storage function, although the clayey nature of the natural into which they were cut may have precluded the necessity for lining. None was rectangular, as is the common form on salterns such as Norwood (Potter 1981) and elsewhere in the Fenland (Lane 2005, fig. 4). Only one pit, [648] (Fig. 3), sited at the northern edge

of the palaeochannel in Area 1, resembled the 'settling tanks' common on Fenland salterns. Briquetage was present in the fills suggesting a chronological link with the saltmaking. Although heavily truncated, [Pit 648] appeared to have more than one 'compartment', reminiscent of the Late Roman examples from Middleton, Norfolk (Crowson 2001).

Aside from the lack of rectangular clay-lined 'settling' tanks another variation from the usual range of Fenland saltern features is the presence of several ovens on the same site. With the exception of the two-oven site at Middleton, Norfolk (Crowson 2001) (but with the ovens in separate phases) excavations elsewhere have revealed only a single heating structure at each site, although in many cases this has been re-used many times (eg Spalding Wygate Park). At Cedar Close a minimum of nine ovens were located and the 10m by 10m dense briquetage spread is likely to have resulted from the destruction by agriculture of a number of others. All of these are above the alluvial deposits.

On the north of the island the saltern site at Norwood underwent partial excavation in the late 1950s and early 1960s (Potter 1981). Following the

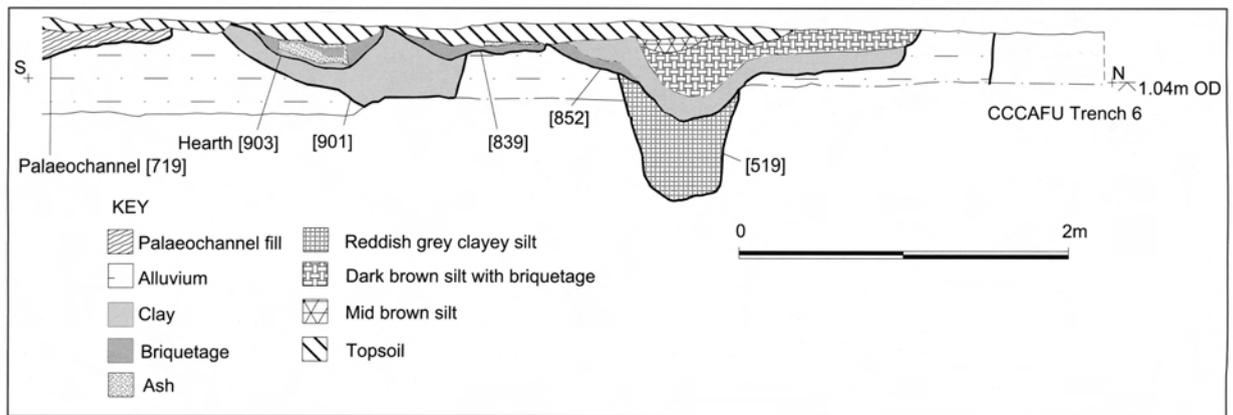


Figure 9. Part of east facing section Area 2 showing hearth [903] and associated features.

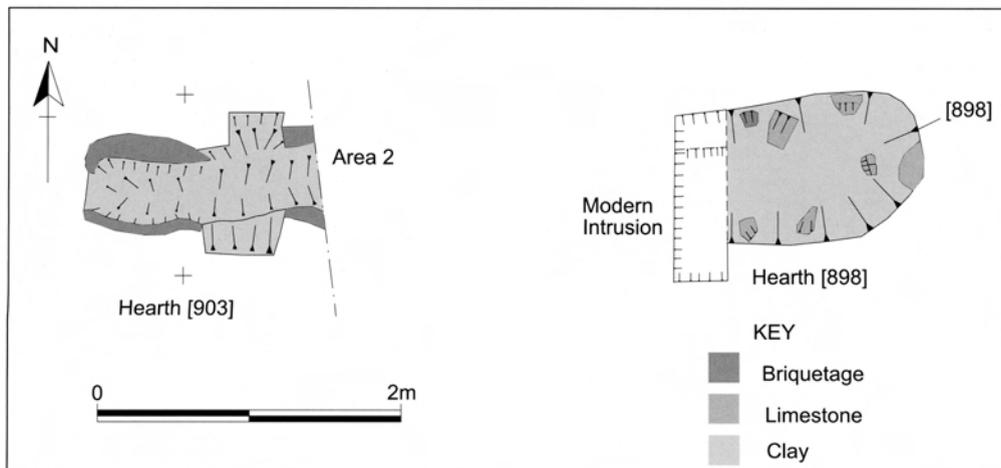


Figure 10. Hearth plans.



Figure 11. Hearth/Oven [903].

discovery of clay-lined 'tanks' during dyke cutting, a small scale excavation revealed a series of pits, one of which had a narrow end interpreted as a stokehole. Large amounts of briquetage were present, including pedestals and container fragments. Fuel used on this site was thought to have changed from wood in the early stages to peat. If that was the case (and Potter [*ibid.*, 106] stated clearly that no analysis had taken place to confirm the suggestion) it may indicate diminishing supplies of wood growing on the island and infers a preference for wood over peat as saltern fuel.

Aside from the local presence of raw materials many of the salterns in the March area would have benefited from the presence nearby of the major west-east trans-fen routeway, known as the Fen Causeway, linking Peterborough to Denver and East Anglia (Hall and Coles 1994, 107). Crossing March island a kilometre to the north of Cedar Close the routeway started life as a canal east of March and subsequent to infilling later became a road. This communication link would have eased the passage of goods, perhaps bringing in peat from the known turbaries adjacent to the road further east and enabling the outward movement of salt either west or east.

Dating

Only a few sherds of pottery were found during the excavations. All were from coarse, hand-made vessels of probable Iron Age date. None were associated with saltmaking features, the sherds coming from a fill of the palaeochannel, the alluvium [720] and from the fill of Pit [877] in Area 2. In addition, the CCCAFU evaluation yielded a single sherd of Roman date from the spread of briquetage [566]. Therefore, the dating is limited and relies on the briquetage typology.

Morris (above) has discounted a pre-Roman date for the saltern based on that typology and suggests that the site operated somewhere between the mid-late first to early second century and the mid-late third to fourth century. A limited amount of briquetage was present in a few pre-alluvial features but the suggestion by Morris of two closely dated phases of briquetage production cannot be correlated to the two stratigraphic levels separated by the alluviation. The earlier, Period 1, activity takes the form of pits and possibly post holes that are generally devoid of finds with which they may be dated. Some are separated stratigraphically from most of the saltern-related features by probable transformed alluvial deposits of varying thickness. Figure 4 indicates the relationship of features to the alluvial deposits in the section on the western side of the site.

Following the alluvial deposition salt production took place alongside the palaeochannel. As stated above, a period of alluvial deposition has been dated to the first part of the third century further east and it is quite possible that the salting commenced around the time of that deposition. However, despite the Fenland Project's generalised environmental maps (Waller 1994, fig. 5.22) indicating marine deposits extending almost to March island in the Late Iron Age and Roman periods such deposits are known to be diachronous across the region and notoriously difficult to date precisely on a local level. Gurney (1987, 68) notes that where dating evidence has been recovered during fieldwalking from salterns in the March area the dates are usually 'Antonine', broadly mid-second century.

Site Status

Clearly an industrial complex the site is one of many in the area. As with salterns elsewhere in the Fenland issues of ownership and control are not resolved. Whether these sites existed to meet the requirements of a single family/farm or whether the product was traded is not proven. Gurney (1987, 68) suggests the salterns may have had quotas to fulfil and that control may have been by the state. Situated only 3km from the major Roman centre at Stonea the March saltmakers may not have been far from a centre of control or a market. Salt production was often state controlled in the Roman world and Jackson and Potter (1996, 688) state that it is reasonable to regard the 'Fenland industry' as part of this set-up. While the proximity of the March area salterns to the Roman centre at Stonea adds weight to the argument for these salterns being state-operated it need not follow that the many hundreds of others in remote areas of Lincolnshire, many kilometres to the north, should be under the same regime.

The salting is indicated by the presence of hearth/oven structures and the remains of brine containers, and the supports that stabilised the containers during the heating process. Other saltern-related features included at least one possible brine storage pit. The extent of the industry (if that is what it was) locally is not known. Of significance is the higher than normal number of hearth/ovens, although whether elsewhere the same single oven was refurbished and re-used on a regular basis while at March the salterns invested regularly in new plant is again not determined.

Despite the attentions of the Fenland Management Project the number of salterns excavated within the Fenland overall is limited. While this is the case the attention to detail during analysis of the briquetage remains a prime method in moving studies further on. Each site tells us a little more but there are still some major gaps in our knowledge about these common but enigmatic sites.

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A Romano-Saxon Farmstead and possible 12th-century Dovecote or Windmill: Community excavations at Spring Close, Boxworth, TL 350 645

Aileen Connor

With Ian Baxter, Nina Crummy, Carole Fletcher, Stephen Kemp, Alice Lyons and Ian Taylor; illustrations by Gillian Greer and Crane Begg

A series of earthworks was examined by CAM ARC and the Boxworth Village Research Group in 2004 at Spring Close in Boxworth, south Cambridgeshire. The investigations provide the first evidence for transitional Late Roman/Early Saxon occupation in the parish and the finds suggest a nearby domestic dwelling of moderately high status associated with a ditched field system, perhaps a farmstead. A substantial circular structure of probable 12th-century date may have been a dovecote or windmill.

Introduction

Boxworth occupies the summit of a ridge overlooking the Cambridge to Huntingdon road (now the A14) and the southern part of the fens, some 11km to the west of Cambridge (Fig. 1). The southern end of the village lies at around the 50m contour, falling to the north-west into a double valley containing two streams. Previous discoveries in the parish generally date to the medieval period, with a few find spots of Iron Age and Roman material, despite the presence of known Roman roads to the north and south; the *Via Devena* (from Cambridge to Huntingdon, now the A14) and the Cambridge to St Neots ridgeway. At Domesday, Boxworth was referred to as *Bochesuuorde* or Bucc's Enclosure (Reaney 1943, 164) and the land was divided between the Abbot of Ramsey, Count Alan of Brittany (William the Conqueror's son-in-law) and various others, the largest portion of the village being in the domain of Hardwin de Scales (Taylor 1997, 23; Williams and Martin 1992, *passim*).

Two manors are known in Boxworth. The larger was the manor of Overhall, the earthworks of its manor house being located on the edge of the parish. The second manor was known as Huntingfields in the 13th to late 14th century, and was originally a Saxon estate taken over by Picot, sheriff of Cambridge (Wright 1989, 270). The site of the original Huntingfields manor house is probably an earthwork that lies a little to the south of the investigation area (Taylor 1997, 23). It probably moved in the 17th century to the site of the present Manor House Farm on Manor Lane. Much of

the 17th-century village was located along the north side of this route. At this time, several closes (a close being an enclosed field or area; Bennett 1987, 234) lay to the southwest of the lane (i.e. the land now known as Spring Close) and were largely empty except for three or four farmsteads (Wright 1989, 269). Boxworth was subject to enclosure and the Award of 1840 gave the majority of the land to George Thornhill who also owned 804 acres of closes. The newly enclosed land was then arranged into four large farms including Church Farm (600 acres) (Wright 1989, 276) which today names Spring Close amongst its holdings.

Spring Close is shown on an 1855 estate map of the lands belonging to George Thornhill (HRO 148/LR368). It is a triangular shaped area of ground surrounded by roads on two sides – High Street and Manor Lane – and a hollow way (the former High Street, named Old Lane on the 1855 Thornhill estate map) to the south. The land may once have formed part of the larger of two village greens (Wright 1989, 269; Taylor 1997, 24) and is now much reduced in size having been enclosed after 1650 and later bisected by the High Street in 1839 to link to the main Cambridge to Huntingdon road (Wright 1989, 269). An estate map of 1640 (CRO TR373 P1; Fig. 2) shows a different road pattern; Spring Close comprised several closes in the southeast corner of a trapezoidal plot of land bounded by School Lane to the west, the former High Street (now a hollow way) to the south, Rectory Lane to the north and Manor Lane to the east. It is clear from the 1640 map that Manor Lane was also a later addition as it cuts diagonally across three fields.

A watercourse flows across Spring Close approximately parallel with the hollow way to the south (Fig. 3). It rises around the 40m contour near Mermaid Spinney and flows across School Lane and the High Street into two possible medieval fish ponds known as View Ponds (cf. the views c. 1840 Tithe Award; Reaney 1943, 165) – and thence across Spring Close to Manor Lane where it flows into another group of fish ponds, after which the course is lost.

The recent excavation formed the major component of a community project funded by the Local Heritage

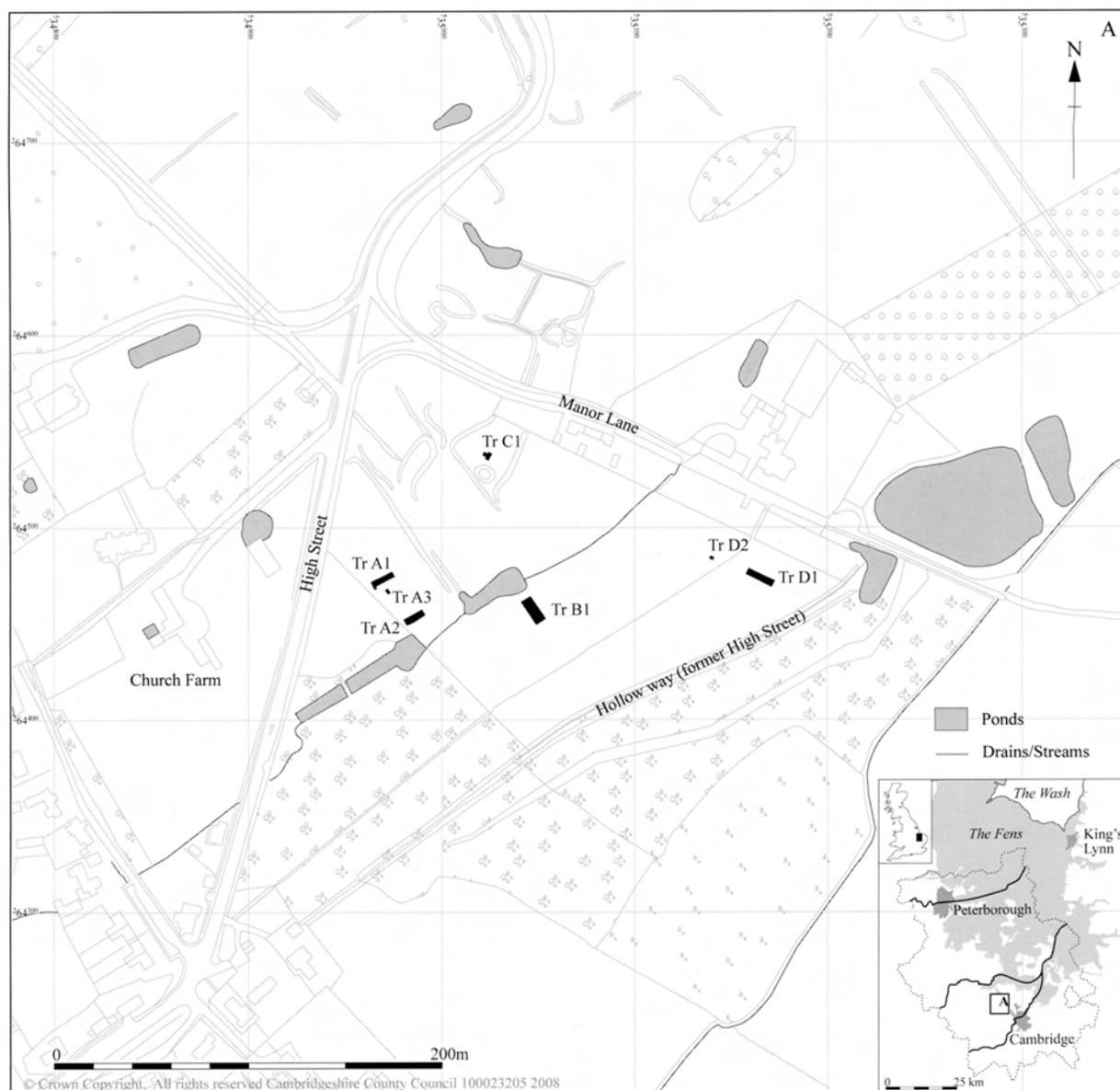


Figure 1. Site location showing excavated areas.

Initiative and was initiated by Mr Ian Taylor (Boxworth Village Research Group; BVRG) after chance discoveries of three Roman coins and Romano-British pottery, followed by limited test pitting as part of the 2003 *Time Team Big Dig* project (Taylor 2003). The site is not under any immediate threat being given over to pasture and the owner, Mr Christopher Parish (a former president of the Cambridge Antiquarian Society) is sympathetic to the archaeological remains being a keen supporter of the BVRG. Work began with geophysical and earthwork surveys (Fig. 3), followed by limited excavation by trenching to test anomalies highlighted by the geophysical survey (Butler and Fisher 2004, 3). The BVRG carried out the work under the direction of CAM ARC staff.

Prehistoric

A pre-Roman component to the site is suggested by two ditches (in Area A2), one of which was curvilinear, as well as a few sherds of Iron Age pottery and several worked flints found residually in later contexts. Most of the flint tools came from the trenches to the north of the stream and they include scrapers, knife blades, an axe fragment and other tools that are generally late Neolithic or Early Bronze Age in date. A saddle quern found in topsoil is the only evidence for possible prehistoric activity to the southeast of the stream. Other finds include a bone awl of probable Bronze Age or Iron Age date and a woodcock bone recovered from one of the possible prehistoric ditches.

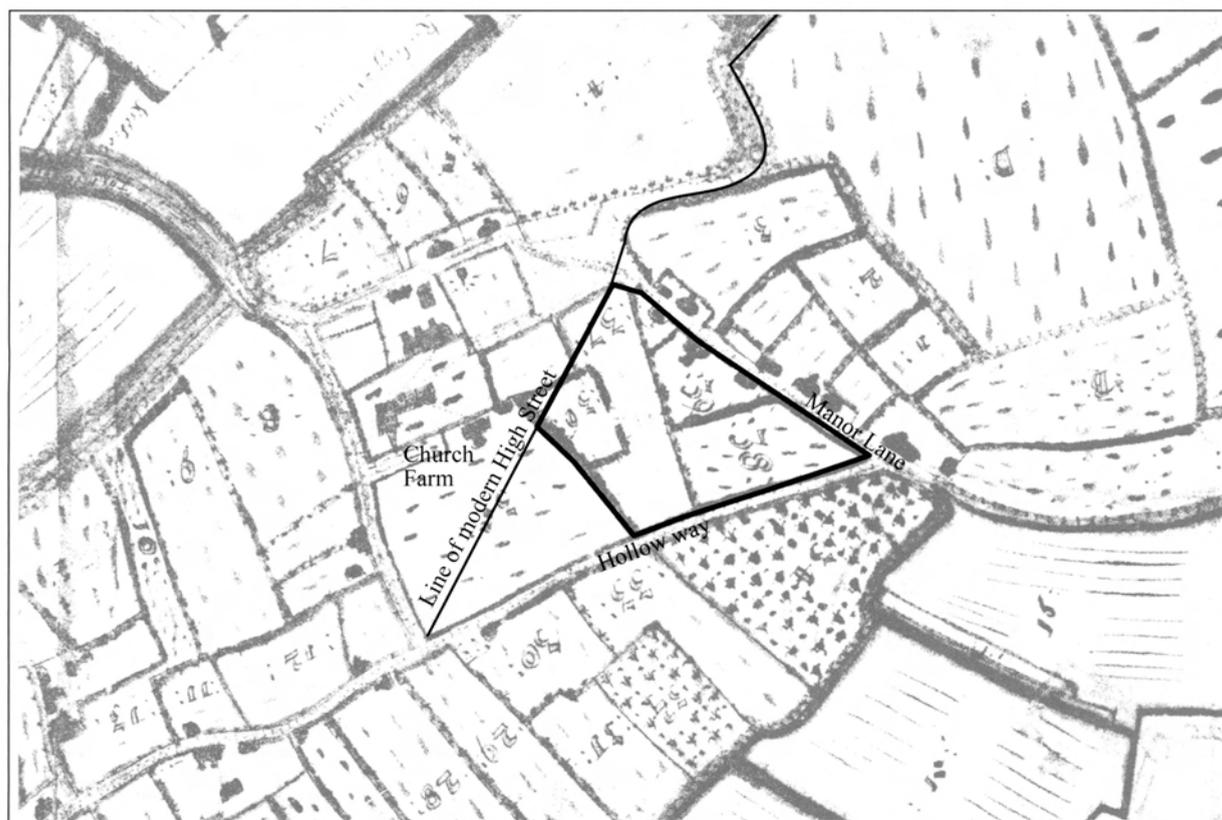


Figure 2. Estate map of Boxworth (1640), showing the original road pattern in the vicinity of the excavations (CRO TR373 P1; courtesy of Cambridge Records Office).

Early Roman?

A possible pottery kiln was discovered in the north-west corner of the field (C1) as a result of geophysical survey and was carefully exposed and recorded by plan and photograph (no excavation was attempted at this time). The probable firing chamber was oval, aligned northwest to southeast, with internal dimensions of 1.7m long by 1m wide (Fig. 4). Surrounding this chamber was a burnt clay lining that measured between 0.20m and 0.40m thick. Leading into the ?kiln from the southeast was a suspected flue and/or stoke pit which was 0.25m wide and 1.35m long (extending beyond the edge of excavation).

Ten fragments of kiln debris including part of a possible kiln bar were found associated with the ?kiln and a further five including three kiln bar fragments were recovered from elsewhere on the site (B1). It is suspected several phases of kiln construction and use may be present. The date of the kiln is uncertain; finds from the overlying topsoil included pottery of Romano-British date (204 sherds, 1.434kg) the majority of which (156 sherds, 1.080kg) is 2nd to 4th century and Early Saxon (15 sherds, 0.135kg), but the presence of baked clay kiln bar fragments suggest that this feature may be Early Roman. The feature lies in an area of earthworks close to a large hollow that may have been a source of clay, although there was no evidence of waste products. Adjacent to the kiln and a little to the south is what appears to be a hollow way – this

may have been used to transport the finished goods, although it may be of later date.

Romano-British (3rd to 4th century)

It was from the Middle Roman period onwards that the site saw the greatest activity. Features included pits or post holes, a possible buried soil or hillwash, and ditches, one of which contained a cow burial (A1). Although the site seems to have been largely agricultural and peripheral to settlement at this time the finds, including ceramic roof and box-flue tiles, stone floor tiles and several basalt lava quern stone fragments hint at a nearby dwelling, possibly of moderately high status. Other finds that hint at the presence of domestic settlement are a bone gaming counter and part of a shale armlet: both are Roman although not closely dateable. A sparrowhawk (*Accipiter nisus*) femur from a later Roman context may indicate the activities of a hawker, although, as this is a common bird, it may be an incidental inclusion.

Most of the Romano-British pottery (990 sherds, 7.406kg) dates from the 3rd or 4th century with frequent examples of wares produced in the industrial complex of the Lower Nene Valley, including colour coats, white wares, parchment wares, grey wares and shell-gritted material. In contrast, other very Late Roman fine wares are rare, as are specialist wares of any type, with only one amphora sherd identified and a few Nene Valley white ware and Oxfordshire red



Figure 3. Location of excavated trenches, showing the results of the magnetometer survey.

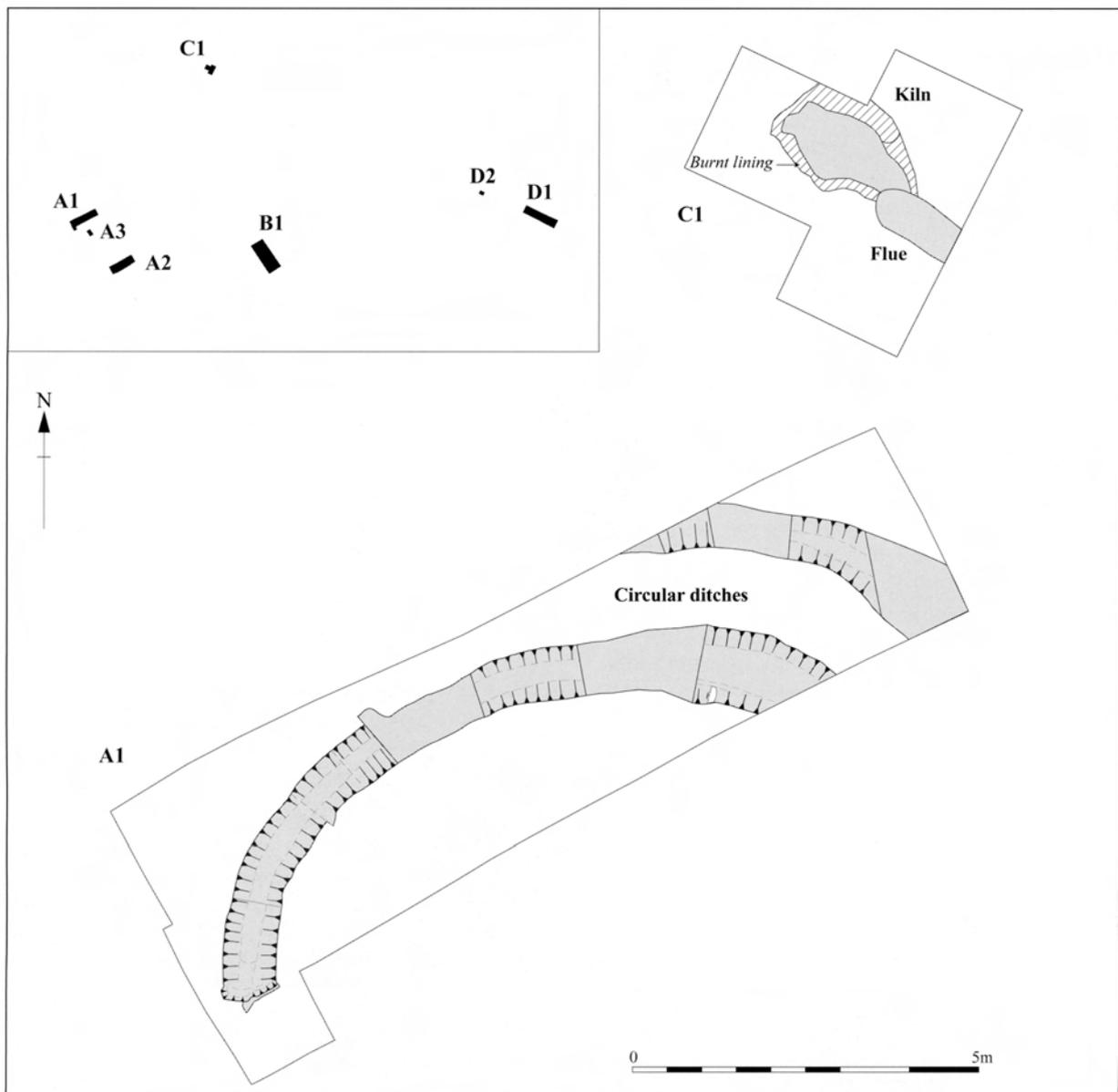


Figure 4. Plan of kiln (Trench C1) and circular ditches relating to a windmill or dovecote (Trench A1).

ware mortarium sherds noted. This heavy reliance on locally-produced utilitarian coarse wares, supplemented by products from a nearby regional pottery production centre, is typical of the later Roman period when the monetary economy was collapsing and the pottery industries that had previously thrived were beginning to decline, reducing the range of products produced (Tyers 1996, 77–78; Going 1997, 41).

Late Roman/Early Saxon Transition (4th to early 5th century)

Agricultural activity and land division occurred in the later Roman/Early Saxon period across all parts of the site, when a ditched rectilinear field system was laid out; this appears to have been heavily influenced by the local topography, particularly the stream that flows across the site from southwest to northeast. The

date at which the field system was first laid out may, however, be much earlier since there is at least one ditch on this alignment (A2) that appears to have been open in prehistory.

Along with Late Roman sherds, a significant quantity (128 sherds, 1.542kg) of Early Saxon hand-made coarse ware was recovered comprising wide-mouthed jar and body sherds, very plain and undecorated. In several instances evidence of use in the form of soot-ing had survived on the external surfaces of these vessels. The discovery of this assemblage is perhaps one of the most significant results from the project; research into the Late Roman/Early Saxon transition has clear potential for studying the effect the end of Roman administration in Britain had on local populations in this part of Cambridgeshire.

Late Saxon to Norman (10th-12th century)

There was an apparent hiatus in activity between the Late Roman/Early Saxon and Late Saxon periods. Subsequent remains were largely confined to the area to the northwest of the stream, which coincides with an area of earthworks in the northwest corner of the field, suggesting these may in part date to the Late Saxon to Norman periods. The stream continued to exert its influence: the hollow way that bounds Spring Close to the southeast runs approximately parallel to it while a second possible hollow way in the northern half of the site ran approximately perpendicular. A single ditch (in A2) cut on the same alignment as its Late Roman/Early Saxon predecessors was apparently still being backfilled after the 10th century, when it perhaps remained visible as an earthwork. This might imply that the field had been turned over to more open grazing.

An obvious feature of the local landscape during this period would have been the structure built on a pair of circular ditches (measuring respectively 0.75m wide, up to 0.62m deep by 11m in diameter and 0.6m wide, up to 0.4m deep and 13m in diameter) located on one of the highest spots (33.36m OD) in the field (A1; Figs 3 and 4). Pottery from both these ditches clearly suggests a 10th- to 12th-century or later date for their backfilling. Their purpose is unclear although there are several possible interpretations including dovecote, haystack and windmill (see below).

Finds from this period are relatively few by comparison with earlier periods: only 295 sherds (2.341kg) of the pottery recovered from the site dates to the 10th to 12th centuries. The earliest material in the group consists of the normal range found on Cambridgeshire rural sites (coming from St Neots, Stamford and Thetford), while some of the later medieval material derives from Northamptonshire, Norfolk and Essex. All of the pottery appears to be domestic and unremarkable.

The few other finds that can be dated to this period notably include a bone whistle fragment (from A2); this is of typical end-blown form which could be played one-handed while the other hand was used to beat a drum (pipe and tabor playing). Examples occur chiefly in Late Saxon to 13th-century contexts and are often made of hollow bird bones, with swan, crane, goose and domestic fowl all identified at sites such as Thetford, London, York and Exeter. One or two of those found in Exeter were made from sheep tibia, as may be an example from Colchester and the fragment from Boxworth (Lawson 1984; Pritchard 1991, 207; Egan 1998, 287; MacGregor *et al* 1999; Megaw 1984, 349, no. B.6-7; Crummy 1988, 47, no.2110).

Medieval to Modern

Occasional sherds of medieval and post-medieval pottery and other finds show that low-level activity continued on Spring Close to the present day, although this has almost certainly been confined to agricultural use, probably pasture, interrupted by only a brief period of cultivation during World War II.

Discussion

The nearby spring would undoubtedly have made the area attractive to prehistoric communities, although later events had clearly obscured or removed much of the slight evidence for early activity. A clear preference for the south-facing slope to the north of the stream is shown by the distribution of prehistoric finds. Although limited, the finds show that a number of settlement-related activities were taking place. Leather or textile working is suggested by the presence of flint scrapers and a bone awl of probable Bronze Age or Iron Age date, perhaps used to pierce leather before stitching or as a pin-beater (which separated warp threads between throws on a warp-weighted loom). A saddle quern suggests that crop processing was taking place nearby, supplemented by exploitation of local wild resources.

The discovery of a possible Early Roman pottery kiln at Boxworth is significant; two other pottery kilns of similar date have recently been discovered close by to the north-east at Swavesey (Lyons forthcoming; Evans 1990). Published kilns of this early date are rare in Cambridgeshire and the Boxworth kiln potentially adds significantly to the available data. Pottery kilns were first introduced into this region during the 2nd quarter of the 1st century (Thompson 1982, 23) and continued in use through out the 1st century AD (apparently unchanged by the Roman conquest) and sporadically through most of the 2nd century (Swan 1984, 63). These kilns were usually internally furnished with a central pedestal from which numerous baked clay kiln bars radiated to form a temporary oven floor. However as portable furniture was generally unstable, fixed interiors became more popular over time. In Cambridgeshire, although kilns with permanent internal fittings were introduced at the time of the conquest (Greenhouse Farm Group 2, kiln F238; Gibson and Lucas 2002, 116), permanent features did not become the standard until the late 1st/early 2nd century, after which time they continued in use until the end of the Roman period (early 5th century). Pottery kilns fell out of fashion during the Early Saxon era and were only gradually reintroduced during the Late Saxon and early medieval periods (11th century). Remarkably, the design of pottery kilns over this 1,000 year period remained almost unchanged. It was not until the late 18th and 19th centuries (during the time of the Industrial Revolution) that the technology associated with pottery firing made any significant developments.

Perhaps one of the most significant results of the work has been the discovery of rarely recognised Late Roman/Early Saxon transitional occupation. Few settlements of this date have been found or excavated. Recent work at Tilbrook, 15 miles to the west of Boxworth, has revealed settlements dating to the Early/Middle Roman period (2nd to 3rd centuries AD) and Early Saxon to Late Saxon periods (6th to middle/end 9th centuries AD) but no sign of continuity from Roman to Saxon was found (Atkins 2007). Similarly, excavations in Willingham revealed

evidence of Roman and Early Saxon settlement that was not continuous. A rare example of continuity has been excavated at Thetford in Norfolk, however, where evidence suggests that a Late Roman farmstead developed into an Early Saxon settlement (Atkins and Connor forthcoming).

The circular ditchwork at Boxworth is also of interest. Interpretation of this 12th-century structure as a windmill is particularly appealing given its proximity to Church Farm, where a *graffito* of a windmill was discovered scratched onto the timber post of a 17th-century barn (Fig. 5). Four windmills are documented in Boxworth from as early as 1229 (Wright 1989, 276). Elsewhere in England windmills are documented from around 1180 onwards, with one of the best examples coming from the 1191 *Chronicles of Jocelyn de Brakelond* which records a dispute between Dean Herbert and the Abbot of Bury St Edmunds regarding a windmill (Gimpel 1988, 25; Hills 1996, 37). A 12th-century date for the ditches would therefore put the Boxworth structure amongst the earliest windmills known. The size and diameters of the ditches, however, are perhaps too small to be consistent with excavated examples such as that at Boreham Airfield in Essex (Clarke 2003, 22–26), Tansor Crossroads

in Northamptonshire (Chapman 1998, 19), Great Linford in Buckinghamshire (Mynard and Zeepvat 1992), or more recently at Burwell (Muldowney 2007) and Milton (Hounsell in prep.) in Cambridgeshire.

There are many examples of circular dovecotes and this interpretation is also worthy of consideration. The excavated ditches at Boxworth (with flat bases and near vertical sides) could have held timber beams. The two ditches may even have worked together to create a cavity into which the nest-boxes could have been inserted, although the distance between them is perhaps too great (at nearly a metre); nest-boxes generally require less than half a metre of depth (Brunskill 1987, 87).

Both windmills and dovecotes were normally linked to relatively high-status farms. The right to the latter was restricted to elite groups such as landlords, monasteries and the clergy (Brunskill 1987, 84), and the former were evidently extremely important sources of income, causing their owners to resort to desperate means if threatened by competition (Gimpel 1988, 25).

Another possible interpretation is a stack stand: protection and drainage rapidly built around stacks of hay or corn. Such features have been identified by



Figure 4. Graffito of windmill in a 17th-century barn at Church Farm, adjacent to Spring Close.

aerial photography, particularly in the East Anglian Fens, and usually had very narrow ditches (c. 0.3m wide) between 9m and 16.5m in diameter; they sometimes comprise double concentric circles (Wilson 1982, 91). Some may have been more permanent structures, perhaps used year after year. Whilst the Boxworth example fits two of these criteria, the individual ditches may be too wide and regular, and an entrance or break in the ditch such as that found in the excavated example does not seem to be a feature of the crop-mark examples. Little if any excavation has been carried out on this type of feature to date, however, making comparison problematic.

Conclusion

The investigations at Boxworth have shown that the surviving earthworks on this site probably relate to the Late Saxon to Norman period and were abandoned in the 12th century. The discovery of a Late Roman/Early Saxon transitional settlement is particularly significant given their current rarity in the excavation record and further research excavation would be valuable to the study of this period.

These investigations have improved knowledge and understanding of past land-use of the village of Boxworth. Although limited, the excavation has highlighted a number of important questions about the site that warrant future investigation should resources become available or should future changes in land-use threaten the archaeological remains here. Currently the land is under no imminent threat, although the ground is subject to fairly severe bioturbation by winter grazing cattle and there is a large population of rabbits, the activities of which provided the initial impetus to investigate this area (Taylor 2003, 4).

Acknowledgements

Permission to undertake the excavation was given by the owner of Spring Common, Mr Christopher Parish. Quinton Carroll and Sarah Poppy supported the application for a Local Heritage Initiative grant. The excavation was carried out by CAM ARC, Cambridgeshire County Council (formerly the Archaeological Field Unit) and the Boxworth Village Research Group. Geophysical survey was carried out by Northamptonshire Archaeology. The excavation was managed by Aileen Connor, while the site was excavated by BVRG members under the direction of Rachel Clarke with assistance from Taleyna Fletcher and Helen Fowler. Additional training was given by Paul Spoerry, Carole Fletcher and Stephen Macaulay, while school visits were organised by David Crawford-White. Each of the contributing specialists is thanked for their reports. Full discussion of the results can be found in the archive report (Connor and Taylor 2007). This article was prepared for publication by Elizabeth Shepherd Popescu.

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- Estate map of Boxworth, 1640, CRO TR373 P1
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[The following text is extremely faint and illegible due to low contrast and scan quality. It appears to be a multi-column document, possibly a book or a technical manual, with several columns of text visible across the page.]

New work on old sites: Somersham and Pampisford revisited

Christopher Taylor

Aspects of the landscape of two Cambridgeshire villages, either ignored or simplified in earlier papers, are here examined in detail. At Somersham the possibility that the village originated as a tenth or eleventh-century planned settlement is put forward. At Pampisford the evidence for Roman, medieval and later reclamation of an area of ill-drained marsh, some of which is also connected to the two deliberately planned villages there, is analysed.

Introduction

There can hardly be a greater contrast between the large fen-edge village of Somersham, in the old county of Huntingdon and Pampisford, a small rural settlement in south Cambridgeshire. The link between them is that both have figured in papers on the history of their landscapes by the present writer (Taylor 1989; 2003). In both of these papers aspects of the villages were used as examples of two very different landscape features, the recognition of which had implications both within and, more importantly far beyond, our county. As a result, in order to present the broader issues involved, it was inevitable that many of the finer details of these landscapes, as well as aspects not directly concerned with the main arguments, were simplified or ignored. Yet some of these details are not only of local interest but are themselves also of wider significance. The writer thus decided that it might be of value to future historians of Cambridgeshire if the details were published in *PCAS*.

Somersham

The village of Somersham is situated on the fen-edge, midway between St Ives and Chatteris. It was mentioned briefly in a paper that was written at an early stage in the discovery of what later became known as 'medieval designed landscapes' (Taylor 1989; 2000). These landscapes, seeming to comprise extensive grassland, woods, lakes, ponds and gardens, were recognised first as archaeological sites that contained

the earthworks of former ponds, dams, moats, terraces and park pales. Their existence was subsequently confirmed both in the documentary record and in later medieval paintings and literature (Harvey 1981, *passim*). Such landscapes were found once to have surrounded many castles, manor houses, and even monastic establishments from at least the twelfth century. They were recognised as the precursors of the better-known designed landscapes and parklands created in the eighteenth and nineteenth centuries. The discovery of such designed landscapes of medieval date was not only important for the history of gardens and parks, it also coincided with the re-examination of the function and use of medieval castles, and their position as status symbols and administrative centres, rather than as or in addition to their use as defensive structures (Coulson 2003; Liddiard 2005).

The medieval designed landscape at Somersham was an early discovery, hence the ambiguous title of the paper that described the remains (Fig. 1). In fact it turned out to be a very good example of the type, well over a hundred of which are now known from Britain and Western Europe. It lies immediately to the south of Somersham village, and surrounds the site of a palace that belonged to the bishops of Ely from 1109 until 1600, although the manor of Somersham had been in the hands of the abbey since 991. The main period of use of the palace was between the later twelfth and the fourteenth centuries and it has been assumed that the surrounding designed landscape was created soon after the acquisition of the manor by the bishop. Certainly gardeners are recorded there as early as 1167–77.

The Somersham designed landscape included an extensive deer park, ponds, terraces, a moated gazebo, gardens and orchards, evidence for all of which survives as archaeological earthworks. But, it is that part of the designed landscape that lay between the palace and the village to the north that is discussed here. For in that area there was a very formal approach to the palace from the village that can still be appreciated. It comprised a long straight drive that probably passed through various paddocks, in one of which stood

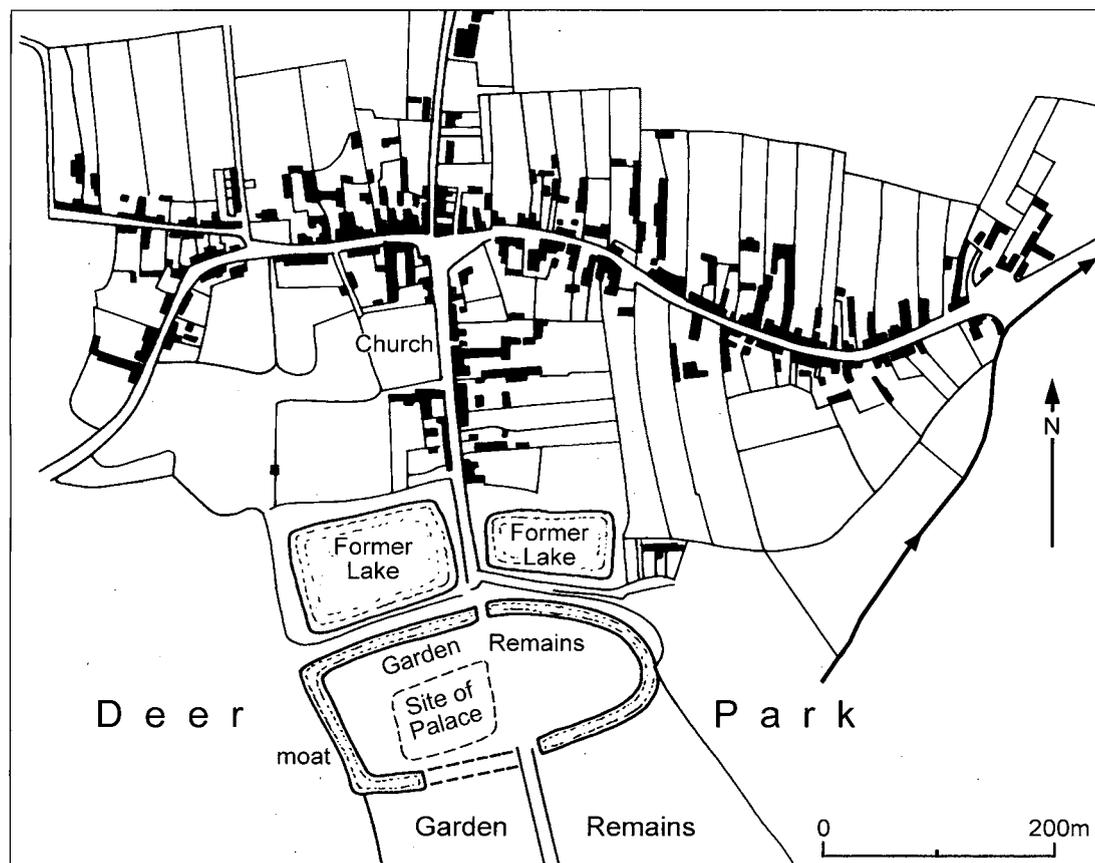


Figure 1. Somersham village. The plan of the village is based on the 1842 Tithe Map. The plan of the palace and gardens is based on Taylor (1989).

the present parish church. This was rebuilt on a lavish scale, presumably by one of the bishops, in the mid-thirteenth century, perhaps as much as an enhancement to the landscape as an improvement to a building dedicated to the glory of God (RCHME 1926, Somersham (1); Pevsner 1968, 342–4). As the drive approached the moat around the palace and its inner gardens, it was flanked by two large rectangular embanked lakes that were intended to give visitors the impression of crossing sheets of water, a feature noted elsewhere in medieval designed landscapes (Everson *et al* 1991, Stow (3), (4); Lofthouse 1997). The dams and retaining bank of the larger of these lakes still survive while those of the other have been destroyed only recently.

All of the above were described in detail in the original paper on the Somersham designed landscape. In addition it was pointed out that to make the long approach drive, and indeed to create the two lakes, the earlier village of Somersham that had lain on both sides of what was to become the drive – then its main street – had been bodily removed to its present position further north, leaving only the parish church to mark its original site. This remarkable occurrence, which perhaps took place in the early twelfth century, was not emphasised in the paper, despite it being one of the earliest, if not the earliest, known examples of

village removal for landscaping in Britain.

The principal evidence for this removal was in some of the curving property boundaries along the present main east to west High Street of the existing village (Fig. 1). These indicated that they had been laid out on top of former open field strips, a well-known feature noted in a number of places including Caxton in Cambridgeshire (Taylor 1979, 129–30; 1983, 158, 162; RCHME 1968, Caxton (24); 1981, Yelvertoft (4)). Further, the indented northern boundary of the village follows what seem to be five or six separate rectangular blocks of former strips. These are presumably earlier north to south furlongs incorporated bodily into the new layout of the village. A further piece of evidence, not examined in the earlier paper, is that the presumed original main street of Somersham, later the formal drive to the palace, was part of a road system that probably pre-dates both the palace and its landscape. To the north it continues for 3.5 km to Somersham High North Fen where it must have joined, or become, the road to Chatteris. To the south it must have run across the rising ground to Wood End in Bluntisham (VCH 1932, 223.) Such a situation would place the predecessor of the bishop's palace, the abbey's manor house if on the same site, at the south end of the village as it then was.

The removal of the village to its new position on the

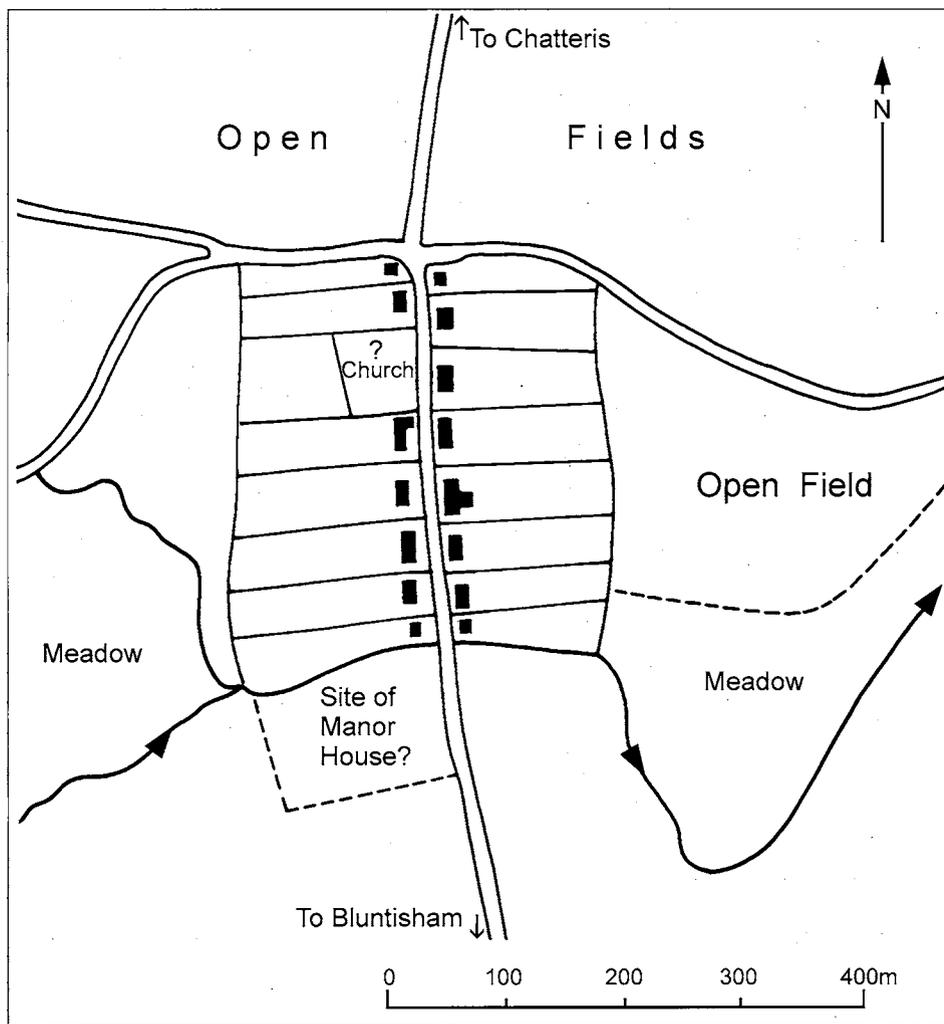


Figure 2. Somersham village in the early 11th century: a tentative reconstruction.

east to west road perhaps took place soon after 1109 to make way for the formal approach to the palace. It is unlikely to have been later than 1190 for in that year the Bishop of Ely was granted the right to hold a weekly market at Somersham. This market was traditionally said to have been held at the wide triangular open space in the centre of the existing village where a market cross once stood (VCH 1932, 223–4). This situation and date, particularly after a major change in the village siting, is by no means uncommon in the case of these relatively minor medieval market grants (Taylor 1982). Confirmation of the early relocation of the village was produced by an excavation carried out in 1996 on a site south of and towards the western end of High Street. One of a group of property boundaries there was found to date from around 1100 (Roberts 1996).

Apart from the results of the excavation, this history of Somersham village is a shortened version of that published in 1989. What was then ignored because it formed no part of the story of the designed landscape was the development of the settlement *before* its relocation, beyond the fact that it had been

arranged along the north to south road. However, the reconstruction of the layout of the village prior to its removal in the twelfth century is possible and adds much to both its history and to the history of medieval settlement in Cambridgeshire (Fig. 2).

As a result of the nineteenth-century expansion of Somersham back along the former main street or drive, and more particularly recent housing development along and to the east of it, it is difficult to appreciate the landscape as it was when the approach drive was complete, let alone the appearance of the earlier village there. However, there are two plans dating from before the modern expansion that allow a possible reconstruction of the earlier arrangements. The first edition 1:2500 OS map (1886) shows as earthworks the boundaries of the two former lakes that lay on the north side of the designed landscape. This is of considerable value as the site of the eastern lake has now been built over and nothing survives on the ground. The Tithe Map of 1842 is even more informative. For, although it does not show the remains of either of the lakes, it does depict the overall outline or 'envelope' of what must represent the original village,

to the south of the market place. This is an almost rectangular area of roughly playing-card shape 380 m long and between 325 m and 345 m wide. Its north side bows slightly outwards, a line that the later east to west main street of the village takes, while its south side curves inwards, probably following the original course of the brook that was later used to fill the two lakes. The road to the palace, earlier the main street of the village, ran north to south, bisecting the envelope and thus producing two almost equal parts. The parish church stood in the western half, one third of the way along it. Any former dwellings along this street thus would have had crofts behind them, almost all of exactly the same length. And to judge from the four crofts surviving on the eastern side in 1842, the original ones may all have been roughly 30 m to 45 m wide.

If this interpretation is correct it means that the pre-twelfth-century village of Somersham was of a type known as a regular two-row settlement. This form of village is widespread, particularly in the north and north-east of England where it is usually considered to be the result of deliberate planning (Roberts 1972; Taylor 1983, 131). However, while most regular two-row villages, as well as other forms also interpreted as being the result of planning, are indeed in the north, they have also been recognised in almost every other part of England, although in fewer numbers. Even in Cambridgeshire there are excellent examples, including Hinxton, Reach and Little Shelford (Taylor 1995, 2002, 2006). Further at least 28 other Cambridgeshire villages have features that suggest that all or part of them were planned (CT personal knowledge). The same is true of Northamptonshire where the process of village planning has also been identified and dated to the late Saxon period (Brown and Foard 1998, 77–92). Here too the present writer has calculated that at least a quarter of the villages in the county have elements of regularity in their layouts.

Such estimates are crude and subjective. More detailed work in Dorset has indicated that at first sight perhaps as few as eight per cent of existing villages there had regular plans. Yet, after an examination of all of the deserted settlements in that county, almost all of which had regular plans, it was concluded that as many as half and perhaps more of Dorset villages were originally regular in form. The deserted settlements were merely illustrating what had been a common layout before the late-medieval and later alterations (Taylor 1994). Thus the relatively low number of possibly planned villages in the southern and midland counties of England compared with those in the north is the result of subsequent change. Many of these changes have been on such a scale as to have destroyed or obscured any original regular features. Furthermore, however imprecise these figures may be they show that villages with regular plans were relatively common in all of those parts of England dominated by nucleated settlements. It is thus not surprising that an undistinguished fen-edge village has a layout that indicates that it too once had a regular plan and that this plan was probably

the result of deliberate design. As usual it is easier to see what has happened in the landscape than to explain or to date it (Taylor 2006, 121). The regular village of Somersham must have existed well before the designed landscape around the bishop's palace was laid out, or at least completed, for the two lakes that formed the northern part of that landscape could not have been constructed until the village had been relocated.

The implication of this relationship, together with the usually accepted theory that most regular villages seem to date from the later Saxon or early Norman periods is that the village of Somersham was laid out between 991 and 1109 during the tenure of the abbey of Ely. This is not to suggest that the abbey necessarily was responsible for the new village. It may well have been but this is not certain. The question of the responsibility of individuals and institutions and of their motives in the emergence of planned villages remains a matter of intense academic debate even after nearly fifty years of research (Taylor 1983, 133–48; Lewis *et al* 1997, 202–23; Jones and Page 2006, 10–15). Nor can any suggestion be made for the location or form of the presumed even earlier settlement of Somersham. Archaeological evidence for pre-nucleated settlements elsewhere in Cambridgeshire and beyond would suggest that there may have been a dispersed pattern of settlement of farmsteads and hamlets scattered across the parish and especially along the fen edge (Hall & Martin 1979; Malim 1993; Shaw 1993).

Pampisford

The origins of Pampisford were discussed in a paper concerned with the reasons for the appearance of nucleated villages in South Cambridgeshire (Taylor 2002). The two villages at Pampisford – one is now virtually deserted and thus largely unknown – seemed to be good examples of planned settlements of the type already discussed at Somersham, but set in a hitherto unrecognised environment (Fig. 3).

In many places in the south of the county large shallow basins of poorly drained former meadow or pasture seem always to have attracted a dispersed pattern of settlement around them. This type of settlement, comprising individual farmsteads and small hamlets, lay around the edges of these basins certainly from late prehistoric times and probably much earlier, their inhabitants presumably exploiting the adjacent grassland (Fig. 5). This dispersed settlement, stable in form if not in location, existed for at least 2000 years. Then, apparently in mid to late Saxon times, it was replaced by the nucleated villages that mostly survive today. Examples of this presumed settlement development have been recognised at nearby Hinxton and Stapleford, as well as elsewhere, although the best instance is at Pampisford where a particularly large basin, as well as a much smaller one to its south-west, survive in part (Taylor 2002, 60–7).

At Pampisford the changes, involving the origins

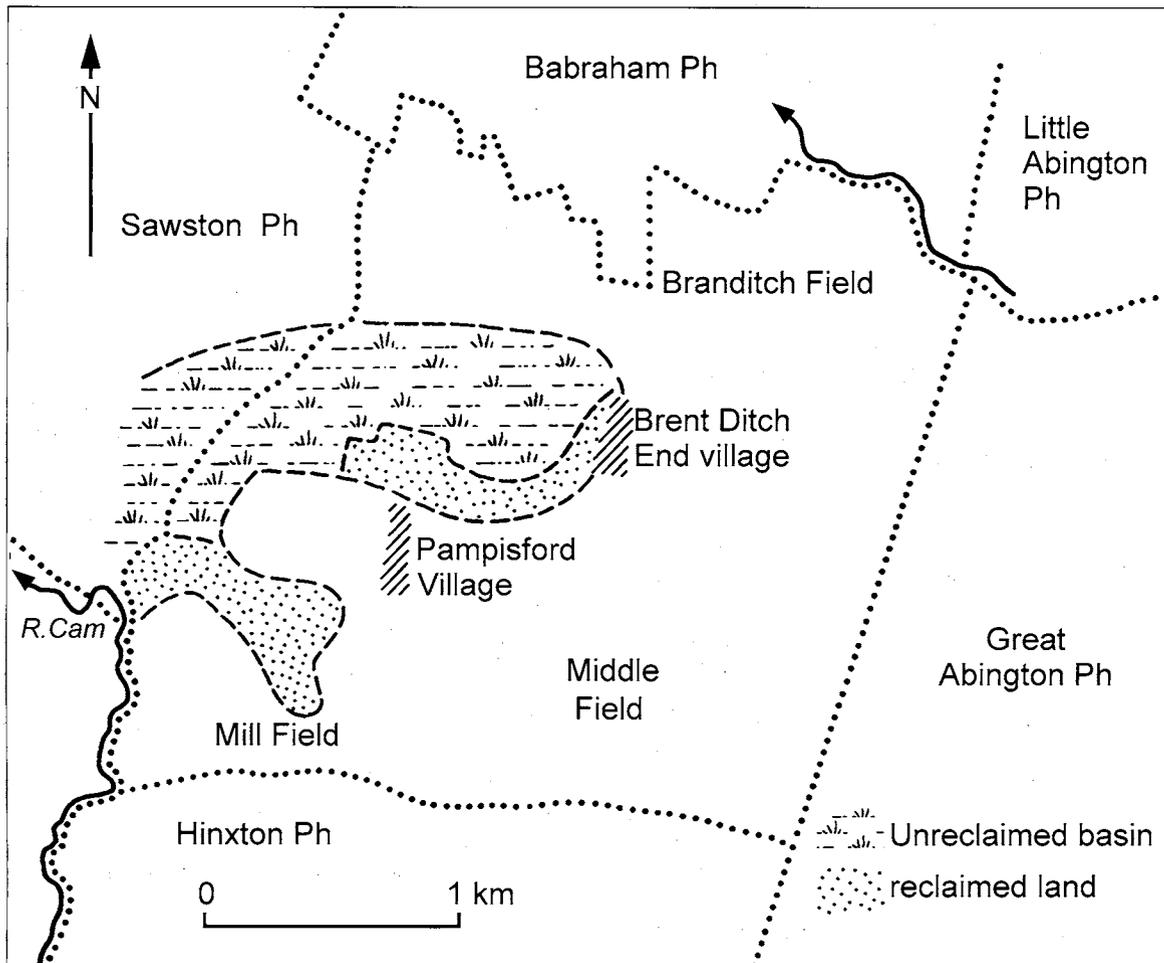


Figure 3. Pampisford parish in the medieval period.

of both of the villages that replaced the earlier but unproven Saxon dispersed settlement there, were described and analysed in the original paper (Taylor 2002, 57–60). However, in order to emphasise the importance of the larger of the two marshy basins there, its outline was simplified in the accompanying diagram and the existence of the smaller basin was ignored. Nor was its subsequent history examined in detail, all of these matters having been judged irrelevant to the principal subject of the paper, involving as it did village origins throughout England. In fact the later changes to both of the basins are complicated and have their own historical interest.

The larger, roughly east to west, elongated basin at Pampisford lies across the centre of the parish and extends south-west into Sawston parish (Fig. 4). Although much of it is now permanent arable land, some of it occupied by tree plantations and in Sawston built over, its original area can be established with reasonable certainty. The uneven ground with depressions and raised ridges created by freeze-thaw action within waterlogged land at the end of the last Ice Age (Taylor 1981) marks out part of its former extent. In some places this hummocky ground remains virtually intact, except for later drainage ditches, in

permanent pasture. Good examples of this are in the fields to the south-west and east of College Farm and to the north-west of Manor Farm. Elsewhere traces are visible as crop or soil marks on aerial photographs (RAF 1946; CUULM RC8-A 211–12, RC8-DH 54 198, RC8-DY 192–3, BLQ 46).

The lowest, central part of this main basin is recognisable from the existence of a small west-flowing stream named as a Public Drain in 1799 (CRO Q/RDz6) and into which most of the modern drains flow. It is likely that this stream was part of the original natural drainage of the area. The northern and north-western boundaries have long since been incorporated into fields that were established across them on enclosure in 1799. But its actual line is still marked by the remains of degraded low scarps or by slight changes in height.

It is much more difficult to ascertain the original eastern and southern boundaries of the basin. In the 2003 article this boundary was confidently illustrated as curving south from the north-east corner along the western edge of the now deserted village at Brent Ditch End. It was then shown as running west, passing the northern end of Pampisford village and continuing west and south-west (Fig. 5). There were good

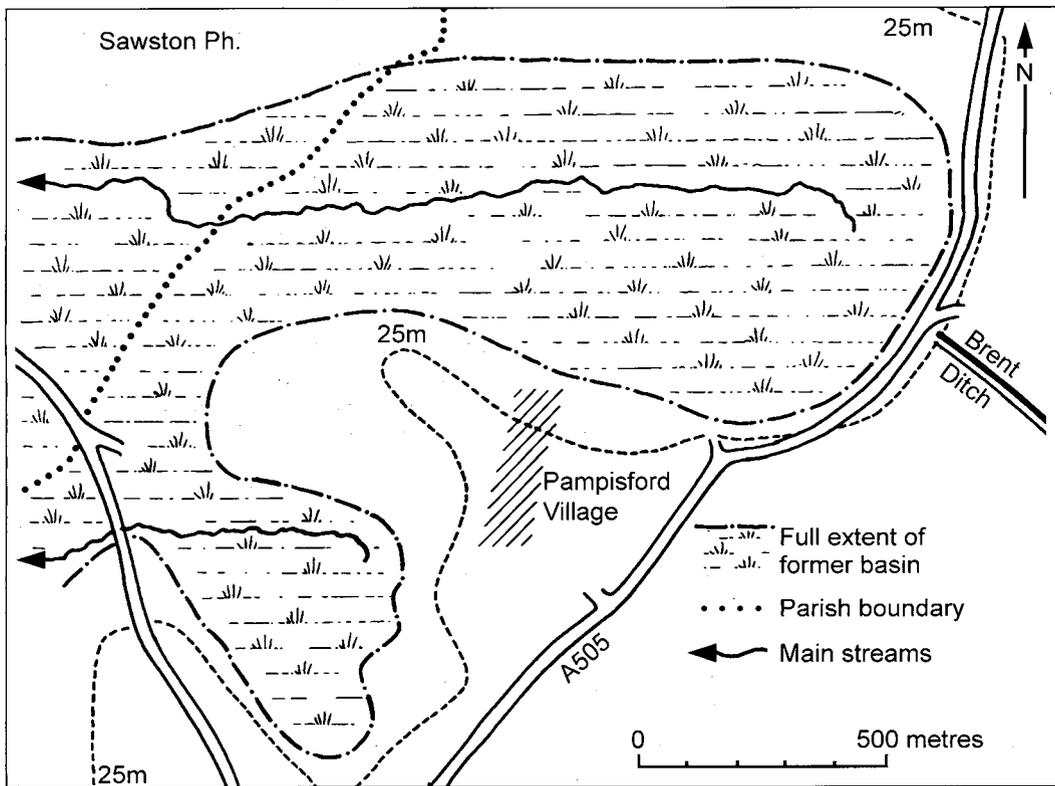


Figure 4. Pampisford: original extent of the basins.

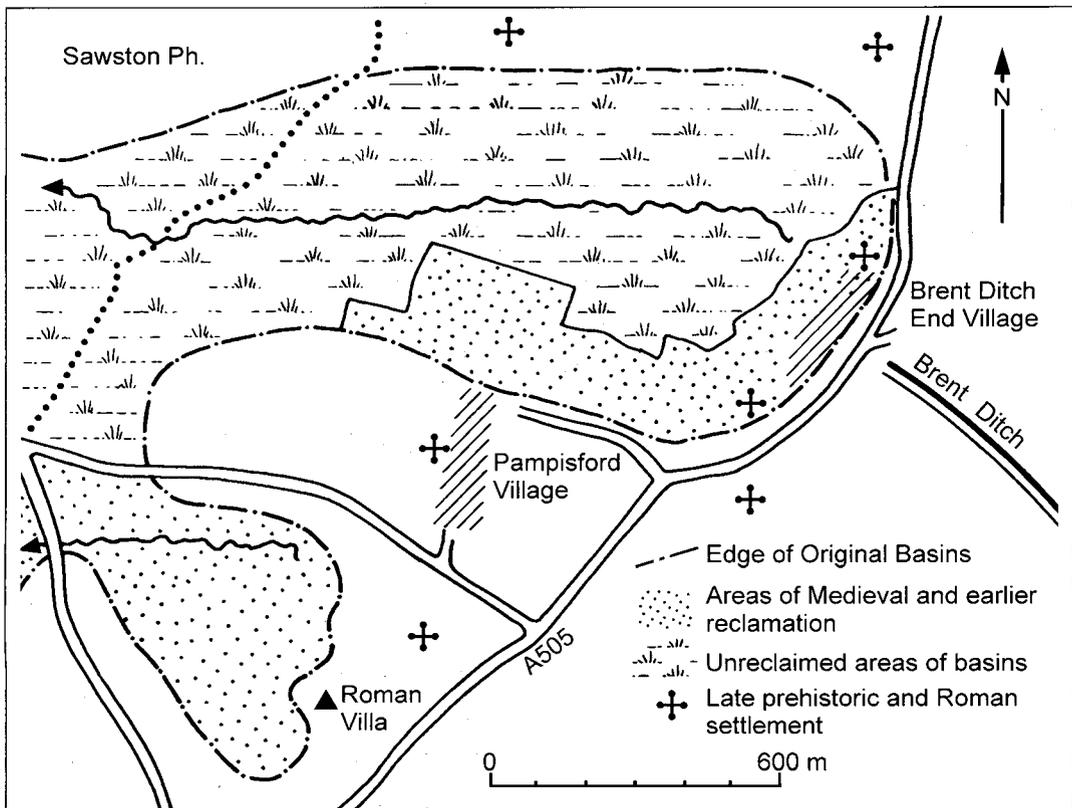


Figure 5. Pampisford: extent of the medieval and earlier reclamation.

reasons for this confidence, not least because of rising ground to the south on which the village is situated and, in particular, the extent of the ground-ice hollows extending south and west as far as the edge of Beech Lane and to the north-west of the village. However, the actual southern and eastern boundary of the basin today, and as shown on the 1799 Enclosure Map (CRO Q/RDz6), is far from this simple curving line. On the south side it is marked by a series of drains or deep ditches projecting northwards into the basin thus producing a markedly stepped northern edge (Fig. 6). These ditches form the boundaries of a group of rectangular paddocks that clearly have encroached into the basin. At two places trackways, one now abandoned, pass between the paddocks and link what remains of the basin with the village to the south. The westernmost track is a continuation of the main village street and leads directly north to Manor Farm which stands within one of the paddocks. After reaching the farm buildings this track turns sharply west and then north. Although nineteenth-century

changes have obscured the earlier picture, in 1799 the northern part of this track opened out into a funnel shape as it reached the basin. The eastern track ran east from its junction with the western one near the end of the village street and along the southern side of the paddock in which Manor Farm lies. It then curved north and as another funnel-shaped ditched track passed between the Manor Farm paddock and one to the east, now and in 1799 occupied by the buildings of College Farm.

This pattern of small rectangular ditched paddocks separated by droveways has all of the characteristics of marshland reclamation, although here on a very small scale compared with elsewhere (Silvester 1988, *passim* and plate II). The location of these paddocks close to the northern end of the village and seemingly part of its overall plan, suggests that the reclamation may have been undertaken by its inhabitants. There is no documentary evidence for the date or of the instigators of this reclamation. All there is is the evidence on the ground and on the Enclosure Map. This

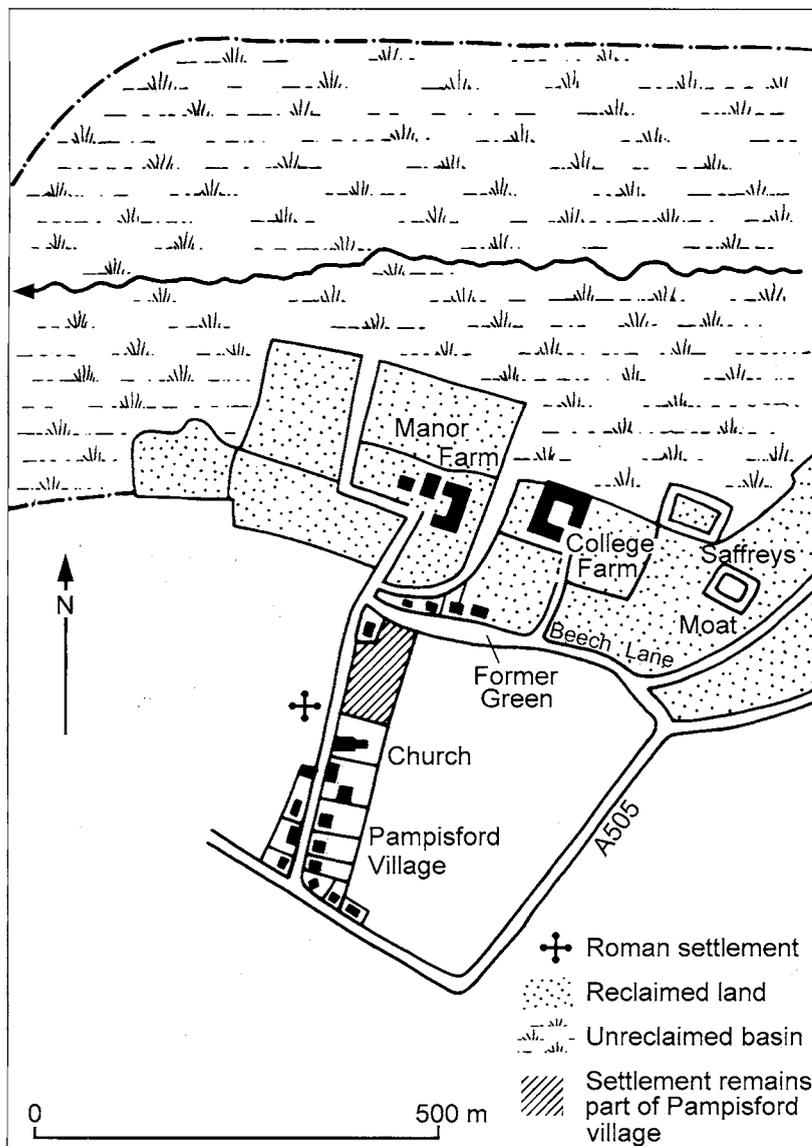


Figure 6. Pampisford: detail of reclamation around Manor Farm and College Farm, based on the 1799 Enclosure Map.

seems to indicate that the reclamation of this part of the basin at Pampisford may have begun at an early date and be connected in part with the origins of the village.

Here a comparison with other villages in the area may be useful. The layout of Pampisford is both very similar and yet slightly different from most of the surrounding villages (Fig. 7). These include Ickleton, Duxford, Whittlesford, Sawston, Great and Little Shelford, Great and Little Abington and Hildersham, all in Cambridgeshire, and Littlebury and Great and Little Chesterford in Essex. All have or had their main streets aligned roughly south-west to north-east. These streets lead to crossing places or fords on branches of the River Cam in one direction and extend as axial parish roads, or longer distance routes, in the other (Taylor 1979, 106–8; Taylor 2006).

Pampisford is similarly orientated but there is a difference. The village lies well away from the River Cam and thus has no connection with any ford across it. The 'ford' element in its name is an instance of the relatively common occurrence of the change in the name *worth*, meaning 'enclosure', to *ford*. Indeed the original enclosure belonging to *Pampe* at Pampisford is likely to have been the central marshy basin which

perhaps was used primarily for grazing stock, as has been suggested elsewhere, for example in Surrey (Reaney 1943, 92–3, 111, 305; Costen 1992; Taylor 2002; English 2002; Faith 2006, 14). And of course it is to this basin or enclosure that the northern end of the village street and the funnel-shaped trackways lead.

Another similarity between Pampisford and its neighbours is their probable origin. All of the examples given above, and others, are or were regular two-row settlements suggesting that they were planned at a relatively late date. Indeed, both Hinxton and the southern part of Duxford, St Peter's Street, were laid out over parts of earlier Saxon settlements (Taylor 2002, 55–6; Roberts 2003, 217–18; personal observation CT). Pampisford was originally a single-row settlement with the church and twelve house plots confined to one side of its main street. This arrangement is even better evidence for its planned origin and the theory is supported by Domesday Book that records twelve villeins on the principal manor in 1086 (Rumble 1981, 5.18; Taylor 2002, 57–8).

The position of the principal manor house at Pampisford and at many of its neighbours is also significant. At Whittlesford, Harston, Little Shelford and Little Chesterford the manor houses all stood close to

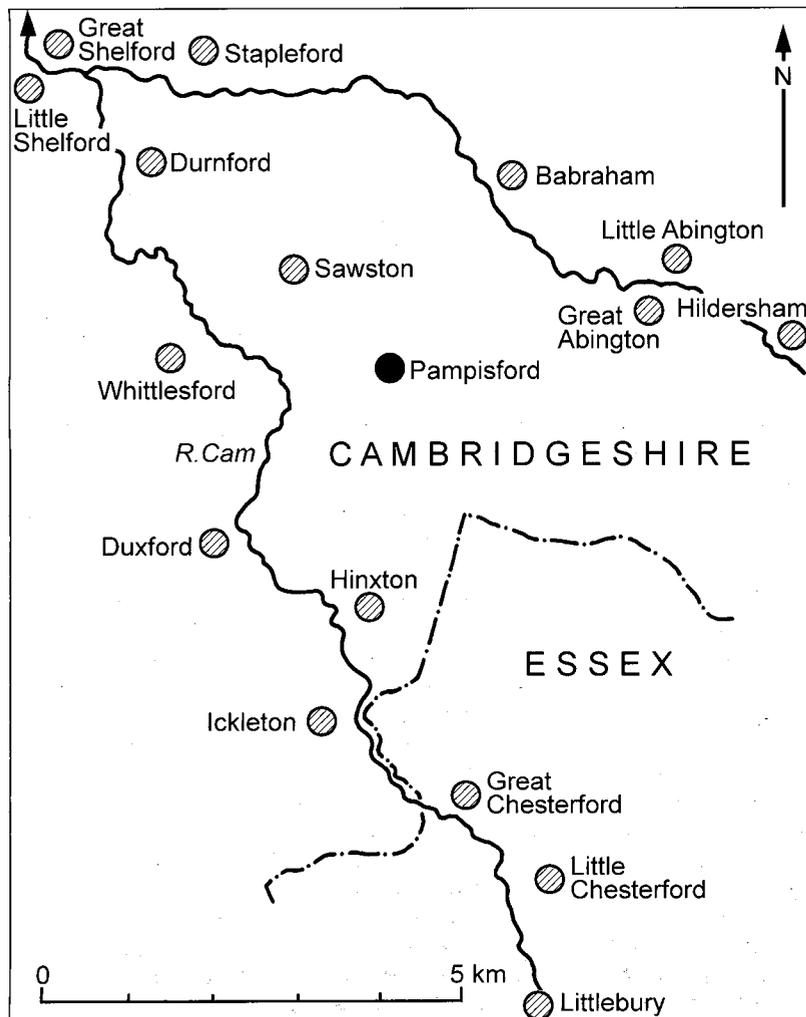


Figure 7. Pampisford: location of neighbouring villages mentioned in the text.

the river and meadowland with the village extending along the main street away from them. At Duxford too the moated sites of two of the main manors are in similar positions at the river ends of St John's and St Peter's Streets. At Pampisford, Manor Farm, traditionally the site of the principal manor house, is also situated at the end of the village, albeit on former pasture or meadowland of the basin (Fig. 6). This holding can be traced directly to 1086, when it was in the hands of the abbot of Ely, precisely the time when the village seems to have come into existence (VCH 1978, 106-7; Rumble 1981, 5.18; Taylor 2002, 58). However, if the interpretation of the former extent of the basin is correct, then this manor house lay within one of the rectangular ditched paddocks reclaimed from the basin.

Further, the rectangular nature of these paddocks, the relationship of their outer boundaries to those of the village and the position of the farmstead at the end of the track, itself an almost straight continuation of the village street to the south, might be interpreted as the result of a more extensive piece of planning than merely a new village. That is, the reclamation of the paddock, the construction of the manor house and the laying out of the village and its church could be a single development. But, if this was so, then one other possibility follows. The inclusion of the manor house and paddocks with the planning of the late eleventh-century village might suggest that the instigator of the whole scheme actually was the abbey of Ely. Whether this is so is impossible to prove, but the idea might add something to the ongoing discussion on the origins of the English nucleated village.

There is another piece of evidence in the landscape that could be used either to support or to reject this last hypothesis. Towards the western end of Beech Lane where it meets the northern end of the village street are two timber-framed and thatched cottages, both probably sixteenth or seventeenth-century in date. They stand just inside the former basin between Beech Lane and the western end of the eastern trackway that formerly ran north-east as a funnel-shaped way. At this point, the Enclosure Map of 1799 shows Beech Lane widening out to form a long, narrow 'green'. The map also shows four buildings, perhaps all dwellings, on its north side and thus on reclaimed land (Fig. 6). There is no indication of any buildings on the south side, but the former edge of the green here is still partly visible as a curving scarp, some ten metres south of the present road and outside the bounds of the original basin. In the earlier paper the author ignored this group of buildings and its green, being more interested in the fact that the thirteen almost equal-sized plots that once made up the eastern side of the village, one of which contained the parish church, may have had some relation to the twelve villiains and the priest recorded in Domesday Book (Rumble 1981, 5.18, 41.6). This fact seemed to confirm the late eleventh-century date for the village. The existence of five bordars and three serfs was largely forgotten and the possible location of their homes relegated to a position south-west of the main village

on the road to Sawston. However, Dr Ros Faith has suggested (*pers com*) that the predecessors of the cottages on the 'green' on Beech Lane could actually have been the site of the homes of the bordars and/or serfs, the latter in particular being dependant on the nearby manorial farm for their livelihoods. Thus this minor settlement might also have been part of the late eleventh-century planning, set between the village and the manor house and partly on reclaimed land.

On the other hand, it is possible to see this 'green' settlement perhaps as being the remnants of something even older, probably a survival of the late Saxon dispersed settlement pattern that once lay around the basin, most of which was removed and the inhabitants relocated in the new village. Such a suggestion does not, of course, preclude Dr Faith's idea of its subsequent use in the late eleventh century. It merely indicates the depth of complexity in the history of settlement here with the possibility that reclamation occurred before the late eleventh century. The discovery of Roman pottery (CT *pers obs*), a little to the south-west (Fig. 6), adds to this complexity.

The rectangular paddocks of Manor Farm are not, of course, the only ditched reclaimed ones there. To the west of the farm, on the other side of the western funnel trackway leading into the basin, are traces of two more and, on the Enclosure Map, three are depicted, all bounded by ditches. The relationship between these three paddocks, the trackway and the Manor Farm paddock suggests that they are later in date than the trackway and the farm paddock. Therefore this area could be interpreted as belonging to a post-late-eleventh century period of reclamation and, because of its location close to the site of the Manor Farm, perhaps the result of an expansion of the demesne land there.

To the east of the Manor Farm paddock and also separated from it by the eastern funnel-way is another group of paddocks or small fields with deep ditches on their northern sides. The two rectangular western paddocks lie side by side and were only divided by a hedge in 1799. The northernmost of these is separated from Beech Lane by an area of well-marked hummocky ground that is, presumably, an area of partly reclaimed marshland. The northern paddock is now occupied by another farmstead, College Farm (Fig. 6). It is the history of this farm and its land that holds the clue to the complex reclamation of the south-eastern end of the basin.

The farmhouse and its buildings are all modern. The house was erected in 1927 after a fire and neither the date nor the architecture of its predecessor are certain. However, to judge from photographs taken immediately after the fire, it was a large timber-framed building, perhaps seventeenth-century or earlier. If so it is likely to have been the house recorded in the 1664 Hearth Tax Returns with seven hearths, the largest in Pampisford, and occupied by a lessee of Queens' College, Cambridge. It was perhaps also the 'tenement' in Pampisford recorded in 1530 and 1571 as belonging to the College. Queens' certainly held a farm here from at least the early sixteenth century

to the nineteenth, hence its name (VCH 1978, 106-8; Evans and Rose 2000, 187).

The pre-sixteenth-century history of Queens' College land is not so well documented. Much of it was originally known as *Saffreys*, a name it took from the Saffrey family who had held it from before 1235 until about 1400. The 1571 record of the 'tenement' locates it next to Saffrey Grove, then surrounded by a hedge and a ditch. As the VCH (1978, 107) pointed out, this suggests that Saffrey Grove was a former moated site. And only 100 m east of College Farm is a small rectangular moat, with a wooded interior, as it was in 1799 (Fig. 6). The area in which it lies is still known as The Grove and the name Saffrey Grove is recorded in the Enclosure Award. It is thus very likely that this moated site was the centre of the Saffrey estate in later medieval times and the predecessor of the present College Farm. It is situated within an area of hummocky ground which is crossed by deep ditches, presumably the result of long-term attempts at improving the drainage during earlier reclamation. Only 40 m to the north-west is another moat, rectangular in plan and with much less well defined ditches. It lies on the edge of the hummocky ground that surrounds the first moat and actually projects into the lower, central, part of the former basin. Its ditch was fed by a drain that in 1799 still marked the outer edge of the reclaimed land. The slightness of its ditches suggests that it was not a separate inhabited site but merely an adjunct to the main moat, perhaps a garden, barnyard or paddock.

The identification of the main moated site with the Saffrey estate places that estate back in the earlier medieval period, not least because most moated sites of this type seem to date from the twelfth to fourteenth centuries (Aberg 1978, *passim*; Le Patourel 1981, 7-9). More conclusive is the admittedly unsatisfactory documentary record. The Saffrey family who held the land by 1235 were probably non-resident for they also held small estates in Northamptonshire and Bedfordshire (*Cal IPM* 1916, no 282, 283). However in 1279 Robert Saffrey's land in Pampisford, comprising 60 acres or perhaps half a hide, was held of John de Camoys, lord of Hinxton. The 1235 holding of an earlier Robert Saffrey was also half a hide in extent. The link with Hinxton is significant for, in 1086, there was a three-quarter hide estate in Pampisford held by Picot the Sheriff who also held the largest manor in Hinxton which later descended directly to John de Camoys (Rumble 1981, 32.3, 4; VCH 1978, 107).

It therefore seems likely that there is a direct connection between the Saffrey half-hide and the Picot three-quarter hide holdings. The missing quarter of a hide of 1086 is explained below. Thus, while the Saffrey estate, later College Farm, might have been interpreted as originating from the reclamation of marshland in the thirteenth century, a time of agricultural prosperity, the reality is perhaps different. It seems to have been in existence by the late eleventh century with some of its associated land already having been taken from the marsh.

The most complex area of reclamation in the large

Pampisford basin is at its curved eastern end (Fig. 8). The first problem is to identify accurately the original edge of the basin here. The evidence from the Enclosure Map suggests that, by 1799, the division between the basin proper and the drier land to its south-east, east and north-east were two major drains that curved north-east and south-west and then joined the principal central west-flowing water-course of the basin. But much of the land south-east of these drains, around and to the north-east of the southernmost moated site, is extremely uneven as a result of the existence of the ground-ice hollows, with large depressions up to 1.5 m deep. These features are cut through by deep drainage channels that must be the result of attempts to improve the land here either for meadow or pasture after it had been reclaimed from the basin. Further south-east, between the south-eastern edge of this former marshy area and the modern road, the land is now arable. The division between the marsh and the arable is an irregular scarp. This scarp must also have marked the edge of the basin at some time, the more so since in 1799 it was also the edge of a trackway running south-west from the site of the second medieval village in Pampisford, now known as Brent Ditch End, to the bend in Beech Lane. Because, as was discussed earlier, the original basin extended up to edge of Beech Lane further west, because the trackway can be seen as a continuation of Beech Lane and most importantly because at its north-east end it became the main street of the now largely deserted village of Brent Ditch End, it seems at first sight likely that the trackway or its scarp was the edge of the original basin. However, if this is so, then it is difficult to explain the former broad south-eastwards curve of the, now re-aligned, main road (A505) and its continuation north as the road to Babraham. This road must always have been a through route. As the modern A505 it runs from Royston to the crossing of the River Cam at Whittlesford Bridge. Its route then by-passed Pampisford and ran north through Babraham to join the present A11 at Worstead Lodge. The straight section of the A505 that runs north-east along the edge of the park of Pampisford Hall was created only in 1799 and, although perhaps the replacement or re-alignment of an older road, could never have been as important as the route through Babraham. The only explanation for the curious curve of this road at Pampisford in what must have been, by medieval times, an important route, is that it was avoiding the marshy land of the basin. Thus its alignment must be on, or very close to, the original south-eastern and eastern edge of that basin. This theory is made the more convincing by the fact that the northern end of the curve in the Babraham Road begins to turn north-west. The continuation of this bend would bring it close to the presumed northern edge of the basin as defined on the basis of other evidence (see above).

This complicated argument ending in the apparent establishment of the south-eastern edge of the Pampisford basin as being originally along or near to the curve in the A505 is convincing, except for one

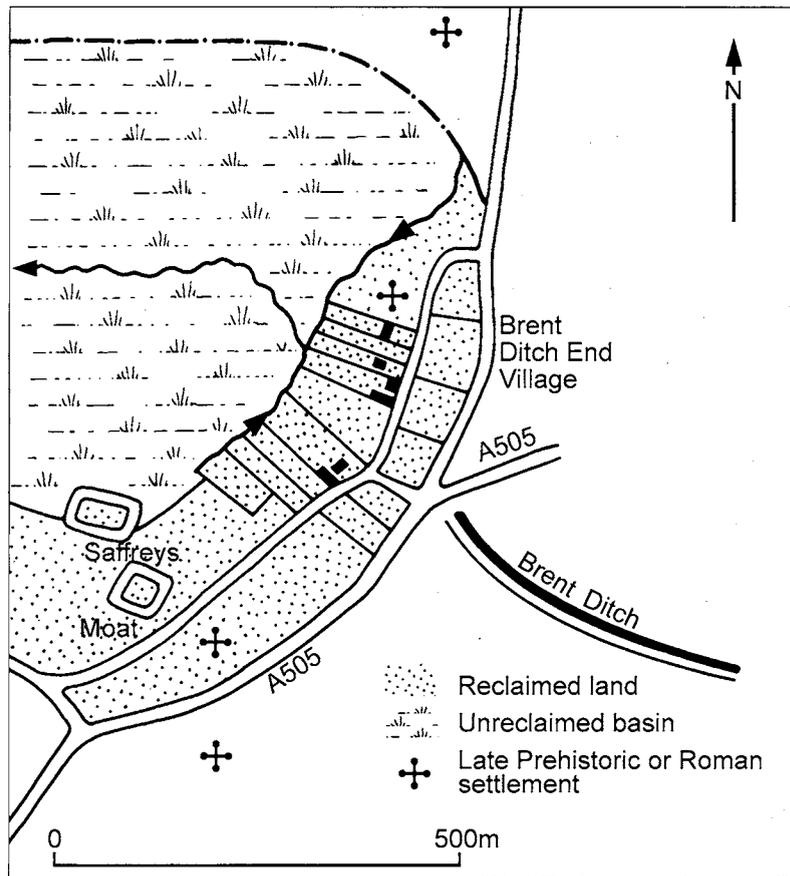


Figure 8. Pampisford: detail of reclamation at Brent Ditch End, based on the 1799 Enclosure Map.

feature. The placing of the edge of the basin on this alignment means that the now deserted village of Brent Ditch End and the former trackway running south-west to Beech Lane both lie on former marshland that has been reclaimed at some time (Fig. 8). This seems to be another extraordinary situation.

The details of the layout and the history of the Brent Ditch End village were summarised in the earlier paper (Taylor 2002, 59). It was there explained that the now abandoned lane that ran roughly parallel to and west of the northern part of the curving through route (A505) and that was still part of a road to the main Pampisford village until 1799 was once the main street of the Brent Ditch End village. The site of this village is depicted on the Enclosure Map with eight, perhaps originally nine, long narrow plots on the western side of the street, extending to the then edge of the basin and with four with buildings within them. This led to the suggestion that Brent Ditch End had originally been a regular single-row settlement. Thus, perhaps like its neighbour, Pampisford, it was planned. This in turn might mean that it was relatively late in date.

The relationship of this village to the post-Roman defence work of Brent Ditch itself was also noted in the earlier paper. There it was assumed that the edge of the basin was formerly further west than suggested here and that, to fulfil its defensive function the

Ditch once must have extended to the then edge of the basin. Thus the village could only have been laid out *after* the north-western 200 metres of the ditch had been removed. And, although the date of the Ditch is not known, by analogy with the neighbouring Fleam Dyke, it may have been abandoned by AD 700. If so, then its north-western termination could have been removed at any time after this, perhaps to allow the main road to cross its line and for the village to be established. However, if the proposal here, that the basin edge was close to the line of the later main road, unless the reclamation was earlier than the construction of the Ditch, then the Brent Ditch would have terminated just alongside it and not further north-west. Therefore the establishment of the village could have taken place at any time after the reclamation of the land on which it stood. The documented history of this village is, as usual, poor. Even its name is unrecorded until 1821 (Reaney 1943, 112). It is probable, however, that the settlement is listed in Domesday Book in 1086 as the second estate in Pampisford of one hide and 22 acres held by Count Alan with a recorded population of only seven (Rumble 1981, 14, 17). This holding can be traced through its successive lords until 1319 when it was united with the main manor.

The evidence for a possibly planned, single-row settlement at Brent Ditch End, perhaps established in

later Saxon times on newly reclaimed land, is circumstantial but compelling. However, there are two other pieces of evidence that turn this theory on its head. These are, first, the discovery in the garden of the existing cottage at the northern end of the Brent Ditch End settlement of considerable quantities of Roman pottery (Fig. 8). This included Nene Valley type wares and very large pieces of jars of Horningsea wares. More pottery, as well as roof tiles, were found there subsequently. There can be little doubt that all this material came from a substantial Roman settlement. Second, are the crop-marks of two small rectangular enclosures of late prehistoric or Roman type immediately south and east of the Saffrey moated site (CUULM BE 56; Fig. 8). If the thesis put forward earlier is correct, both this Roman settlement and the crop-marks lie on reclaimed land. A number of matters thus follow from this. The first is that at least some, and perhaps much, of the reclamation identified around the eastern end of this basin could be Roman or even earlier in date and not Saxon or medieval. Another is that, if the reclaimed land already existed in Saxon times then the Brent Ditch is likely to have continued across it to reach the then edge of the basin. Otherwise the defensive purpose of the Ditch would have been compromised. This in turn means that the Ditch must have been flattened to allow the laying out of the Brent Ditch settlement, a situation that once more suggests the possibility that it is of later Saxon date. In any case the destruction of part of one of the Cambridgeshire dykes to allow the creation of a planned settlement would not be unique. Reach, at the north-western end of the Devil's Dyke is another example (Taylor 1995).

This theory presupposes that the Brent Ditch End settlement was laid out on a then empty site, which had been abandoned as a habitation at the end of the Roman period. But it is also possible that occupation was continuous from Roman times and that, prior to the later Saxon planned village, there had been an early to mid Saxon settlement on one or both sides of the Brent Ditch. This settlement would have been part of the dispersed pattern that lay around the basin. The subsequent planned village could have been part of a later reorganisation of occupation there, a process that has been recognised in Northamptonshire (Brown and Foard 1998, esp. 73–82). The small settlement around the 'green' between Pampisford village and Manor Farm, partly on reclaimed land as well (Fig. 6), may also be the site of a Saxon settlement, in that case having survived and changed its social make-up by the late eleventh century. The moated site near College Farm, if indeed it represents the later modification of the documented eleventh-century holding, again may have originated as part of a Saxon or earlier dispersed pattern of settlement but, yet once more, within the area of the former basin. Although much of this is supposition, at least the suggestions made will be able to be tested eventually by excavation or fieldwork. Indeed the latter has already produced results in that a watching brief on building work within the western extension of the Pampisford

basin in Sawston parish has led to the discovery of Saxon occupation there (Cambridgeshire SMR). In the meantime, this hypothesis of dispersed Saxon settlement around the basin can be taken further.

The commonest forms of entry in Domesday Book, at least in eastern and central England, are places with multiple names. That is, there are often a number of separate holdings all with the same place-name. Ever since Maitland (1897) studied Domesday Book in the late nineteenth century, such multiple entries have been interpreted as describing nucleated villages with multi-manorial structures. But this interpretation was based on the assumption that all nucleated villages were early Saxon in origin. However, with the evidence from recent research, that nucleation of villages is certainly much later, it is possible that there another explanation. Separate entries with the same settlement name could be describing separate places. Thus the term normally used 'in x' and not 'at x' might mean that Domesday Book is recording distinct settlements within the *vill* or township (in Cambridgeshire, usually the parish) of that name, not just in a particular settlement that happens still to exist. Subsequently many or most of these different places could have been abandoned, reorganised, replaced or have gained a different name.

This is not a new idea and these processes can be seen to have taken place in many parts of England. At nearby Sawston the isolated hamlet of Durnford in the north-west of the parish is certainly the centre of the two-hide manor held by the Abbot of Grestain of the Count of Mortain in 1086, but there recorded as 'in Sawston' (Rumble 1981, 12.1; Teversham 1942, 21–2, 44–7). Further afield, in Bedfordshire, Domesday Book has six entries described as 'in Thurleigh' or 'in the same vill'. It has been established that while the large three-hide holding there does indeed refer to the village, all of the remainder can be identified with hamlets and farmsteads scattered across the parish (Brown & Taylor 1989, 61–9). Pampisford appears to be similar. Seven holdings are recorded in Domesday Book, all described as 'in Pampisford' (Rumble 1981, 5.18–19, 14.17, 25.2, 26.12, 26.55, 32.3, 41.6). It has been pointed out already that the largest of these holdings (5.18) was the main village held by Ely, and another was the Brent Ditch settlement (14.17), both probably new at that time. It has also been suggested that part of a further holding (32.3) may have become the Saffrey estate that was later called College Farm. This leaves four other small estates unaccounted for. Two, of only ten and thirty acres, were held by Hardwin de Scales, one of five acres was held by Eudo the Steward and one of fifteen acres was held by Countess Judith. There is also the matter of the quarter hide of land that belonged to Picot. All of these could have been isolated farmsteads, which either disappeared shortly after 1086, were subsumed by other settlements in the parish or acquired new names that can still be traced.

It seems that two of these holdings can indeed be identified as separate settlements. One is the fifteen acres held by Countess Judith (Rumble 1981,

41.6). In 1066 it was in the hands of a sokeman, but by 1086 it was held by a priest. He was perhaps the first member of the clergy that Pampisford had for the parish church seems to have been erected as part of the planned village there (Taylor 2002, 58). This fifteen acres, or half virgate, had become the rectorial holding of 32 acres by 1279. In 1377 the parish church was appropriated by the Benedictine nunnery of Blackborough in Norfolk which retained the rectory and appointed a vicar. The rectory farm was held and leased separately from the church ever afterwards and it survives today as a working agricultural unit. The present Rectory Farm lies a little to the west of the southern end of the main village street and, until eighteenth-century and later expansion, except for two cottages opposite, stood almost alone on the road to Sawston (Fig. 9). The surviving farmhouse, although much altered, is at least sixteenth-century in date, as was one of the associated cottages that survived until 1968 (VCH 1978, 106, 110). While this farm is distant from the large marshy basin under discussion in this paper, it actually stands on the former edge of the other much smaller area of ill-drained land that covers some 50 acres (20 ha) to its south-west. It seems possible that Rectory Farm is the site of the centre of Countess Judith's 1086 holding and thus is a remnant of the Saxon pattern of dispersed settlement at Pampisford. Whether the large Roman building, sometimes described as a villa, together with a cremation cemetery, that has been found a little to the south of the farm is related to it is unknown. Certainly this villa and its associated paddocks and trackways also lies on the very edge of this small basin (JRS 1956, 138; CBA 1955, 2; CUULM BVA 61).

The identification of an early settlement related to the smaller basin at Pampisford leads directly to the discovery of another there. It was noted earlier that of the three-quarters of a hide held by Picot in Pampisford in 1086 (Rumble 32.3), half a hide probably became the small estate that was held by the Saffrey family from 1235 until after 1400 and that subsequently became Queens' College Farm. It is possible that the unaccounted for quarter of a hide was also a separate estate with its own associated settlement. For, when in 1279 Robert Saffrey held sixty acres of land in Pampisford of John de Camoys, lord of Hinnton and the successor to Picot, a John Martin held thirty acres there, also of de Camoys. Martin was still holding this land in 1302–3, as was a relative of his in 1346 (VCH 1978, 107). This land can certainly be traced to 1428 and seems to be that later known as Cockfarnams or Cock Farm which was also in the hands of Queens' College by 1524.

The location of Cockfarnams is known. It lay on the northern edge of the smaller basin at Pampisford, along the road to Sawston, 150 m west of Rectory Farm (Fig. 9). The farmhouse still stood there in 1799, was called Cockfarnams and was still owned by Queens' College (CRO Q/RDz6 Enclosure Map plot 24 and Award). It was demolished at some time in the nineteenth century but its site is still marked by earthworks. A probable sixteenth-century cottage,

that presumably housed the employees of the farm, stood on the opposite side of the road, was burnt down in 1916 and never replaced (Mayo 2008). The value of these earthworks for future excavation that could support or disprove the thesis here proposed cannot be over-emphasised. The results of such an excavation would be of interest at a parochial level but, far more importantly, would help to prove or otherwise the existence of early dispersed settlement around all the Cambridgeshire basins.

One other possible link with the Saxon period has been noted. In 1086 Countess Judith's estate was held by a sokeman. And of the four other small estates, one was held by two sokemen in 1066 (Rumble 1981, 26.12), while two others were held by men who were free enough to withdraw from their land if they wished (25.2 26.55). The possible correlation between sokemen and other 'freemen' and dispersed farmsteads or small hamlets, has been noted before at neighbouring Hinnton. There it seemed to be part of the social structure of the parish *before* the dispersed settlement pattern was replaced by a nucleated village (Taylor 2002, 56–7; see also Morris 1977, appendix). Whether this correlation is valid and has a real meaning in terms of settlement history must await further research.

Two final points require emphasis. The first relates to the date of the reclamation around both of the Pampisford basins. One of the most striking features to emerge is that some of the medieval and presumed Saxon settlements associated with the larger basin are actually on land reclaimed from it. Manor Farm, at least part of the 'green' settlement north of the village, the two moated sites and the Brent Ditch End village all lie on land that had been enclosed and drained before their establishment. All of these settlements may be late Saxon or even earlier. In addition, the Roman settlement at Brent Ditch End and the cropmark site to the south are also on reclaimed land. The implication of this is that most of this reclamation had taken place by the end of the eleventh century and some of it was very much earlier. This is perhaps unexpected, not least because the reclamation of wastes and marshland, together with moorland intakes and forest clearances, is usually said to date from the twelfth and thirteenth centuries, a time of agricultural prosperity and expansion and of a rising population.

Nor, apart from the nineteenth-century drainage works, could post-medieval farming activity have been involved in the reclamation process. The total area of the original larger Pampisford basin can be calculated as about 250 acres (105 ha). The area that was later enclosed and improved by drainage is about 100 acres (41 ha). Thus, what remained of the basin before the nineteenth-century changes extended to some 150 acres (62 ha). In addition there was also an estimated 50 acres (20 ha) of undrained land in the small basin south-west of the village. But, in the sixteenth century, as well as 20 acres of riverside meadows intercommoned with Whittlesford, Pampisford parish was said to contain a 'moor' or common of

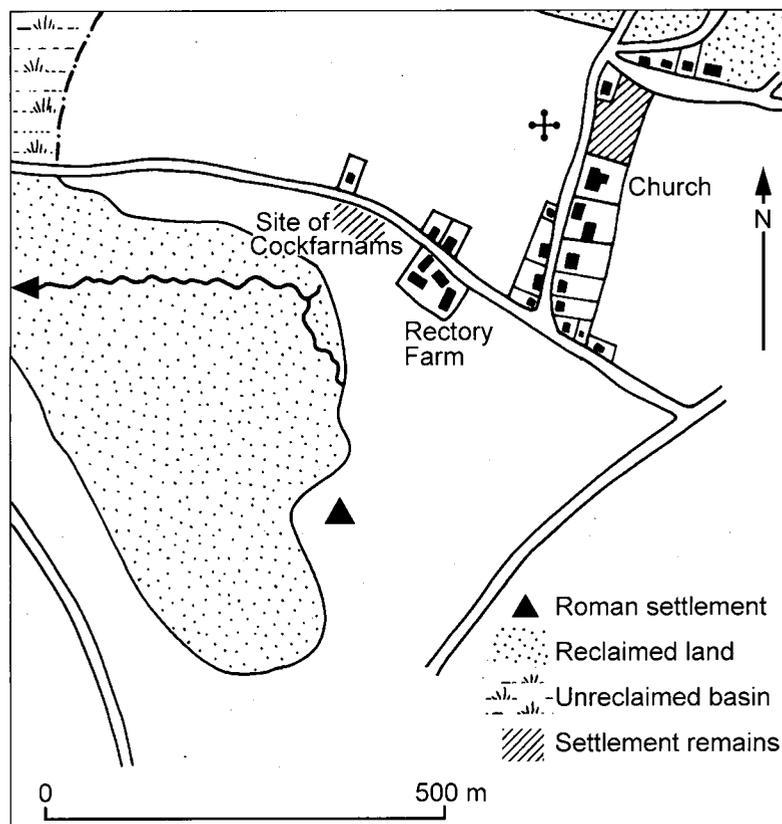


Figure 9. Pampisford: detail of reclamation at Rectory Farm and College Farm and Cockfarnams, based on the 1799 Enclosure Map.

about 150 acres (62 ha) on which cows and horses were pastured in summer and sheep in winter. In the later eighteenth century 155 acres (64 ha) of pasture were recorded in Pampisford, of which 51 acres (21 ha) were intercommoned with Sawston (VCH 1978, 109; Vancouver 1794, 66–7). All this seems to suggest that, except perhaps for the paddocks to the west of Manor Farm, almost all of the reclamation of the larger basin at Pampisford had taken place by the twelfth century. These figures for the acreages of meadow and pasture in the larger basin, as well as for the parish as a whole, also indicate that the smaller basin had certainly been reclaimed entirely before the late eighteenth century and presumably by the sixteenth century. The existence of the two medieval farmsteads of Rectory and Cockfarnams on its north side might suggest that its reclamation had taken place even earlier and, as with the larger basin, perhaps by the twelfth century. Why was there no reclamation after this? The answer may lie in a combination of a continuing low population in Pampisford, and the usually non-resident lordships with relatively small estates. Both may have limited the usual pressures to exploit land in later medieval times (VCH 1978, 105–7).

The undrained land within the larger basin is usually described as pasture, a situation that confirms the hypothesis that such areas or ‘enclosures’ were indeed always used for grazing (English 2002), although it was probably also used as meadow.

Surprisingly perhaps, very little meadow is actually documented at any date for Pampisford. Only two and a half acres are recorded in 1086 but such a small area is not unusual for south-east Cambridgeshire. The problem with the Domesday Book entries for meadow in the county was discussed by Darby (1957, 300–2) who concluded that no significance could be attached to the figures. Even the 20 acres of riverside meadow intercommoned with Whittlesford in the late eighteenth century seems small (Vancouver 1794, 67). Nevertheless the evidence such as it is suggests that after the early reclamation, perhaps beginning in Roman times, there was never such a shortage of either arable or meadow as to have required major changes to the land use in the basin at Pampisford until the nineteenth century. On the other hand there may have been a good agricultural reason for the early work of reclamation of as much of both of the basins as was possible. In 1794 Vancouver (67) advocated the completion of the drainage and the improvement of the pasture of the main basin because ‘at present it is extremely obnoxious to rot in cows which frequently happens’.

Conclusion

At the end of this investigation into the minutiae of the landscape, what conclusions may be drawn? At Somersham the recognition of yet one more apparently planned late Saxon village in the county is of some interest if only at a local level. Pampisford is more important for a number of reasons. The closer examination of the two basins, with settlement around them from at least late prehistoric times, has confirmed that they were areas of, perhaps communal, grazing some of which survived until the nineteenth century. Although different in character from the 'greens' of Norfolk and Suffolk, as well as from those recognised in Lincolnshire, the Pampisford basins, and probably the others in south Cambridgeshire, seem to have fulfilled the same function (Wade-Martins 1980; Taylor 2002; Stocker and Everson 2006, 65–6). These Cambridgeshire basins are thus not as unique as was originally thought, but merely illustrate the use of a local natural phenomenon for a basic necessity of medieval and earlier agriculture.

The two planned villages at Pampisford had already been recognised, both significantly close to the 'frontier' of medieval nucleated settlements in eastern England. What is new is, first, the associated planned manorial site there that appears to be part of the original village layout. Such arrangements have been found elsewhere, for example in Lincolnshire, but not on reclaimed land (Everson *et al* 1991, 41–2; Stocker and Everson 2006, 61, 64, 67–8). The discovery of this reclaimed land around the edges of the marshy basin is also a new feature, although not perhaps unexpected. This having been found, similar reclamation can be suggested elsewhere. For example, some of the ten small demesne closes immediately south of Sawston Hall, recorded by name in 1580 and probably the 'lord's closes' of 1349 and 1413, lie on land that seems to have been taken in from the former marsh, the remains of which still lie immediately to the south (Teversham 1942, 21; 1947, 45, 47; VCH 1978, 254).

However, what is perhaps unexpected is the early date for this reclamation. Some of it is at least Roman or even earlier, much of it is before the twelfth century and some is connected with the postulated late eleventh-century laying out of a manor house and village. Most remarkable of all is the siting of a planned village, Brent Ditch End, on this reclaimed land. There is no lack of evidence elsewhere in Britain for extensive drainage, reclamation and subsequent settlement in Roman times (eg Rippon 2006; Silvester 1988, 154 and *passim*). But this is the first time that small areas such as these, with medieval settlement on them, have been identified in southern Cambridgeshire. Yet such a phenomenon is not unique in our county. Two other examples have been noted recently, albeit in the fens. Excavations at Ramsey have identified twelfth or thirteenth-century reclamation on the fen edge there. This was built on soon afterwards (Nicholson 2006). Work at the medieval inland port of Downham Hythe at Little Downham, first recorded in 1251, has shown that at least part of the settlement there was

established on reclaimed land (Taylor forthcoming). What it means in terms of the early history of agriculture and settlement in the county is as yet not fully known. Perhaps the most interesting of all, especially for an historian who has always been fascinated by the origin and development of settlement, is the age and complexity of such settlements revealed in a parish that, superficially, only contained one small medieval nucleated village. One is reminded of the perceptive remark made by W G Hoskins (1977, 12–13) 'Everything in the landscape is older than we think'. One might also add, and much more complicated too.

Acknowledgements

This ragbag of ideas and unsubstantiated theses is the result of arguments with colleagues and friends, too numerous to mention, although *they* know who they are. More specifically, the writer is grateful to Dr Ros Faith for her comments on the possible whereabouts of the bordars in Pampisford, to Mrs Olive Mayo for help with place-names and photographs and for drawing his attention to the Roman site at Brent Ditch End and to Dr Michael Costen for information on 'worths'. The drawings are the work of Phillip Judge.

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Excavation of the Civil War bastion ditch of Cambridge Castle

Craig Cessford

with a contribution by Andrew Hall

Excavations on land adjacent to 68 Castle Street, Cambridge, revealed part of the western bastion ditch of the Civil War defences. The excavations shed light on the size and form of the ditch, while the location and alignment of the ditch allows a reconsideration of this part of the Civil War defences on Castle Hill. The ditch was not completely infilled until the early nineteenth century, which has important implications for the area.

Introduction

Excavations were undertaken by the Cambridge Archaeological Unit (CAU) on behalf of Ashwell's Property Group on land adjacent to 68 Castle Street, Cambridge (Figure 1), between November 2005 and March 2006 (Ten Harkel 2006). These are the first detailed investigations of the Civil War ditch of Cambridge Castle, shedding important light on the form of the ditch, the arrangement of the defences and the infilling of the feature. The excavations took place in an irregular rectangular area roughly 14m by 11m, covering c. 155m². This revealed a considerable amount of Iron Age and Roman archaeology (Evans & Lucas forthcoming), plus a small number of Saxo-Norman and medieval features. Over half the excavation area was covered by a single feature, a ditch F.28 identified as part of the Civil War defences (Figures 2 & 3).

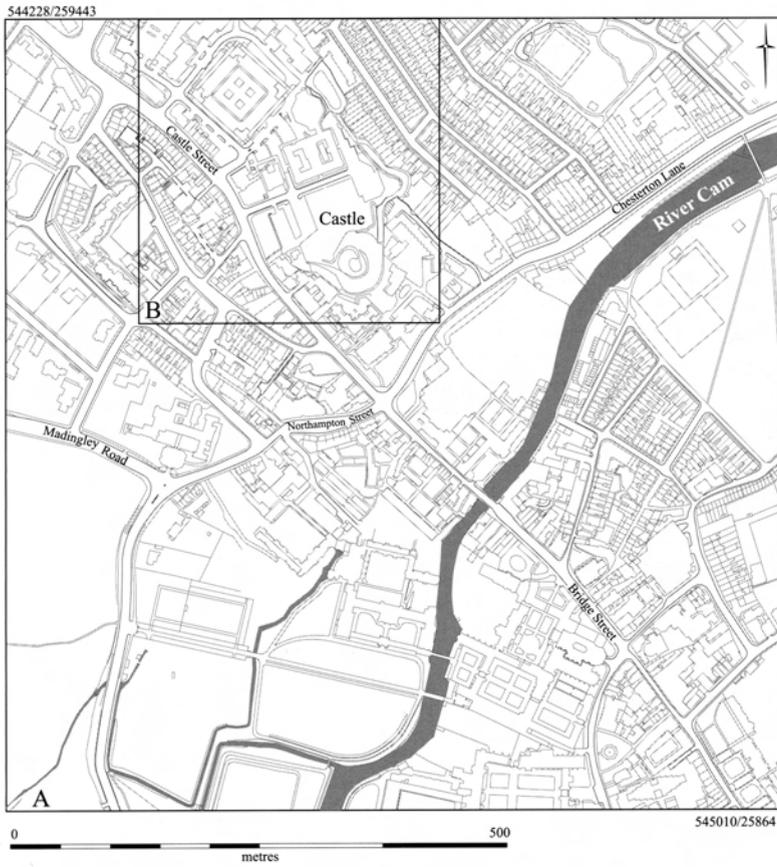
Background

Although there is evidence of continual occupation on Castle Hill since the 8th century AD, archaeological investigations have been relatively piecemeal and are largely unpublished (see Cessford with Dickens 2005 for a recent summary, plus McKenny Hughes 1894 and Palmer 1976 for summaries of Cambridge Castle). Twenty-seven late Saxon dwellings were destroyed to make room for the construction of a Norman motte and bailey castle in 1068. Towards the end of the 13th century the Castle was rebuilt in stone, but by the 15th century the great hall was in ruins and building stone was removed for the construction of King's College. Shortly afterwards, the remainder of the Castle was

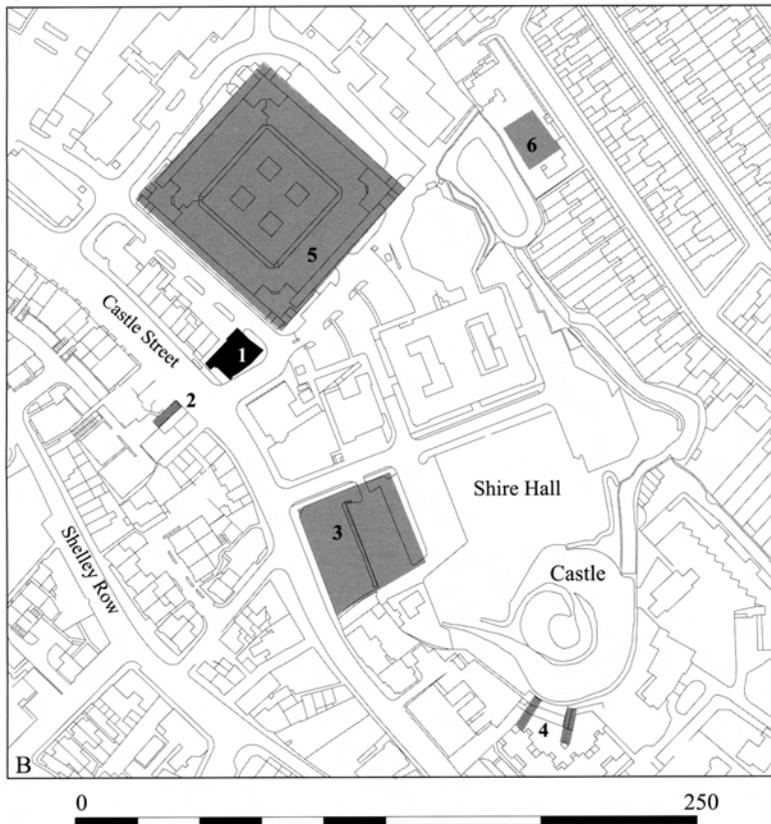
sold to Emmanuel and Magdalene colleges. Only the outer wall and the southwestern gatehouse, used as a prison, were left intact and the area enclosed by the walls was let out as pasture. In 1592 the Castle was described as 'old ruined and decayed'. In the 16th century permission was granted to tip rubbish into ditch and in the early 17th century it was described as 'a noisome, foul ditch, which was filled up by earth and gravel'.

The most reliable depiction of Castle Hill prior to the Civil War is the map by John Hammond in 1592 (Figure 4). This indicates that Castle Street as such did not exist in the late 16th century. Instead there was a relatively wide open area to the southwest of the Castle, which continued northeastwards as a substantial open area in front of the church of All Saints at the Castle. Overall the impression provided by Hammond is that the construction of Civil War defences would have required the clearance of some houses, but not a very large number.

The situation changed drastically in the 1640's, when the Civil War gave a large number of castles, Cambridge included, a renewed military relevance (Harrington 2004, 36–59; contemporary documentary sources are discussed by Kingston 1897 and Varley 1935). In August 1642 'Mr. Cromwell ... seized the magazine in the Castle at Cambridge'. From then onwards Cambridge was controlled by Parliamentary forces and was the headquarters of the Eastern Counties Association. In March 1643 an appeal was read in local parish churches stating that, 'whereas we have been enforced, by apparent ground of approaching danger to begin to fortify the town of Cambridge ... now standing in need of your further assistance to the perfecting of the said fortifications, which will cost at least two thousand pounds ... we desire the free will offering of a liberal contribution from you'. In July 1643 the governor reported to Parliament that 'our town and Castle are now very strongly fortified being encompassed with breast works and bulwarks'. In the same year the restoration of the Castle began, and new brick barracks were built on the north side of the hill to house the garrison. A certain Thomas



Based on the Ordnance Survey 1:2500 map
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1 Area of Investigation

Other sites mentioned within text

- 2 75 Castle Street
- 3 Law Courts
- 4 Clare College Hostel
- 5 Castle Court
- 6 Rex Cinema

Figure 1. Location map and plan of sites where the Civil War ditch of Cambridge Castle has been identified.

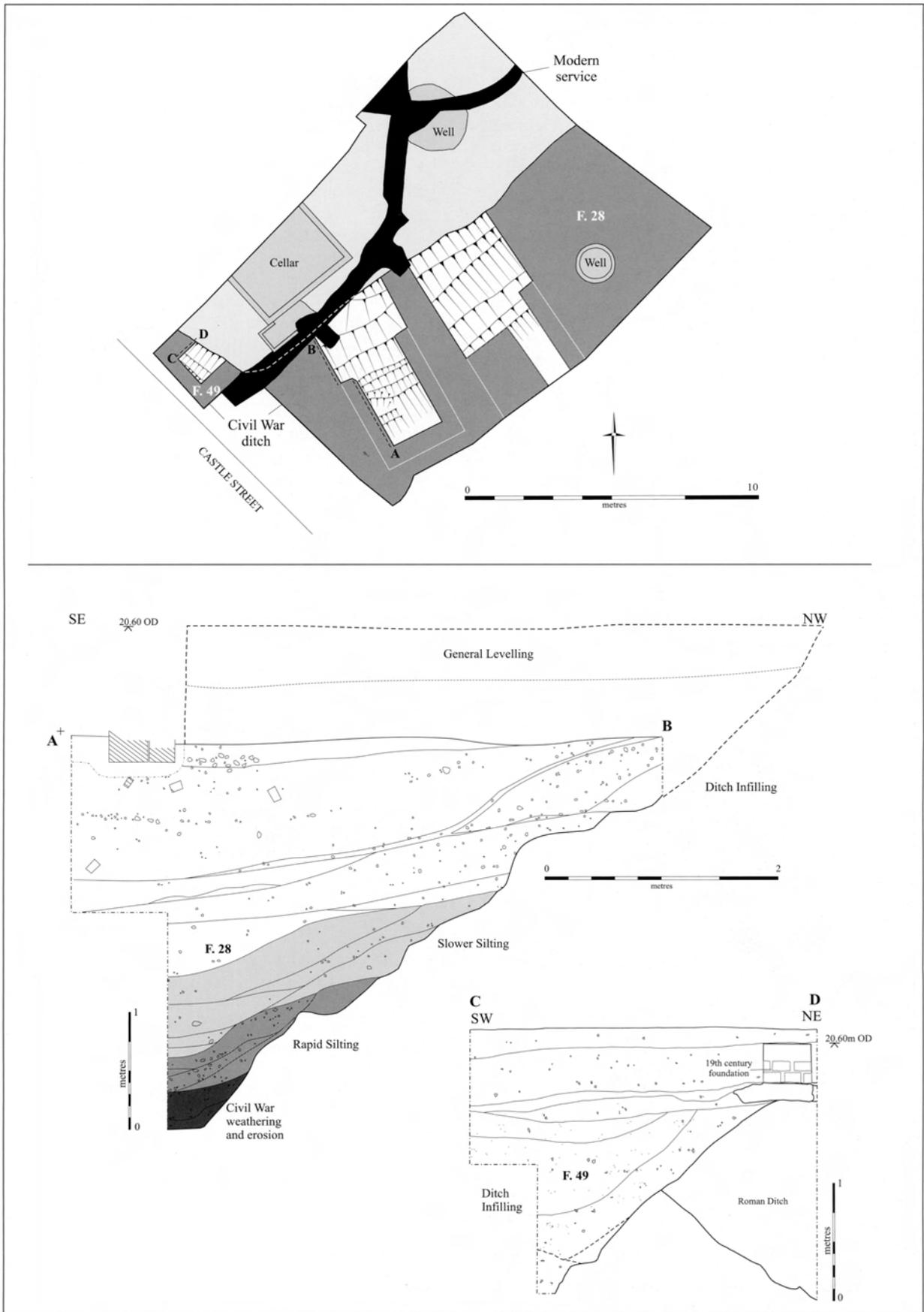


Figure 2. Site plan of the excavations on land adjacent to 68 Castle Street and sections through ditches F.28 and F.49.

Wallis and Walter Chapman were paid £3.6s.8d 'to dig five poles (c. 25m) of ditch on the north and east flanks' (Osborne 1990, 23).

Wallis and Chapman completed their work in December 1644, but not without attracting criticism. The commander of the Castle reported in October 1643 that 'Oxford forces come within 20 miles and plunder at their pleasure ... How soon they may surprise us God only knows. Our ditch goes very slowly on, notwithstanding without it the Castle is of little value'. In August 1646 Parliament ordered the garrison buildings to be slighted and the defences to be demolished. In the second half of the 17th century the defences were levelled further to accommodate the construction of Castle Street, and in the late 18th or early 19th centuries the modern layout of Castle Hill began to take shape. Castle Street was widened, and more of the old earthworks were levelled for the construction of the octagonal county gaol, the present Shire Hall and the old police station.

The northern and eastern bastions of the Civil War defences at Cambridge still survive as earthworks up to 6m high. A number of other Civil War sites in Cambridgeshire survive as earthworks and some have been excavated (Keynes & White 1909; Malim 1991; Taylor 1999; Tebbutt & Rudd 1966). It is unknown to what extent the earlier Castle earthworks were still visible and extant by the 1640's, but the presumption is that the outer bailey ditch was reopened and cleaned out to form the main part of the enclosure ditch, so that only the bastion ditches had to be dug into undisturbed natural chalk. In the 15th century the development of effective and manoeuvrable artillery had changed the nature of fortifications. In order to counteract the effect of artillery defensive walls were made lower and thicker and built from materials that did not shatter upon impact, usually earth and brick. Additionally projecting structures or bastions were added, facilitating active defense by allowing the defenders to cover adjacent bastions and the curtain walls between them with defensive fire. This system of fortification developed in Italy in the mid 15th to early 16th centuries and then spread across Europe in the 1530s and 1540s. By the time of the Civil War this system was well established in England and the defences of Cambridge Castle were probably typical of its time, with low arrow-headed earthen bastions built to mount artillery connected by earthen curtain walls and substantial ditches.

Previous Observations

Prior to these excavations there had been very limited opportunities to examine the Castle ditches (Figure 1). Unpublished excavations by John Alexander between the 1950s and the 1980 have revealed the Civil War defences in a number of locations (Alexander et al. 1994). On the northwestern side of the defences at Castle Court there was evidence for the recutting of the earlier ditch and alteration for a new bastion. The ditch was 13m wide, over 6m deep and filled with sticky black clay. On the southwestern side of the defences at the Law Courts the ditch was over 6.1m

deep; it was deliberately infilled with homogenous clay that contained 17th century pottery. At the Rex Cinema, on the side of the northern bastion, the ditch was 5m wide and deliberately infilled with clean chalk marl. More generally Alexander states that the ditch was infilled 'immediately after 1660' and 'back-filled when parts of the fortifications were slighted after the Restoration of 1660 and before 1688'.

More recently part of the ditch southeast of the motte was examined during a watching brief at Clare College Hostel (Malim & Taylor 1992). It was at least 14m wide and over 4m deep with waterlogged fills. No dating evidence was recovered, but it was thought to be 'cleaned out by Cromwell, which would explain the lack of medieval finds' (Malim & Taylor 1992, 6). This argument seems unlikely, as if the ditch was cleaned out at the time of the Civil War and then filled in later it would be more likely to contain dating evidence, as 17th century and later deposits in Cambridge generally contain higher densities of material than medieval deposits. In 1994 a large, roughly northeast to southwest aligned ditch, was observed under 75 Castle Street (Butler 1994). It was around 4m deep and filled with a dark homogenous silty loam, with no apparent weathering or tip lines. It was suggested that it was probably not backfilled for some time (*ibid.*), although it had probably disappeared by 1688 at the latest (Figure 5.1). All the previous work consisted of observations of machine-dug slots. The excavations described here represented the first opportunity to hand-dig and record in detail a section through this ditch.

Excavation Results

The present excavations revealed two substantial ditches, F.28 and F.49 (Figure 2). F.28 was the northwestern side of a large northeast to southwest aligned ditch 4.0m deep and 6.5m wide (Figures 2 & 3). As only one side was revealed it was probably originally at least 13.0m wide with steep stepped sides and a flat base lying at 16.03 to 16.26mOD. F.49 was aligned southeast to northwest and was cut at a 100° angle to F.28. Only a small part of this feature fell within the excavation area; its sides were as steep as those of F.28, but the stepping was more regular and showed less sign of erosion. The area exposed demonstrated that F.49 was over 1.9m deep and 2.4m wide, in all likelihood the width and depth were similar to F.28. The size and profile of F.28 suggest it was not part of the Civil War defences and fulfilled some other function, such as a roadside ditch along Castle Street, highly improbable. F.49 can not have been very long, as it was not present under the cellars of 68 to 70 Castle Street (Hickling 2004) and the alignment and location of the ditch observed at 75 Castle Street (Butler 1994) favours the idea that F.49 is relatively short.

Initially F.28 was interpreted as the main northwestern ditch of the Civil War fortifications and F.49 as the side of the western bastion (Ten Harkel 2006). Whilst appealing, this appears unlikely given the close



Figure 3. Photographs of ditch F.28 under excavation, both facing broadly southwest. The edge of the ditch is visible as a line of light chalk natural on its northwestern side.

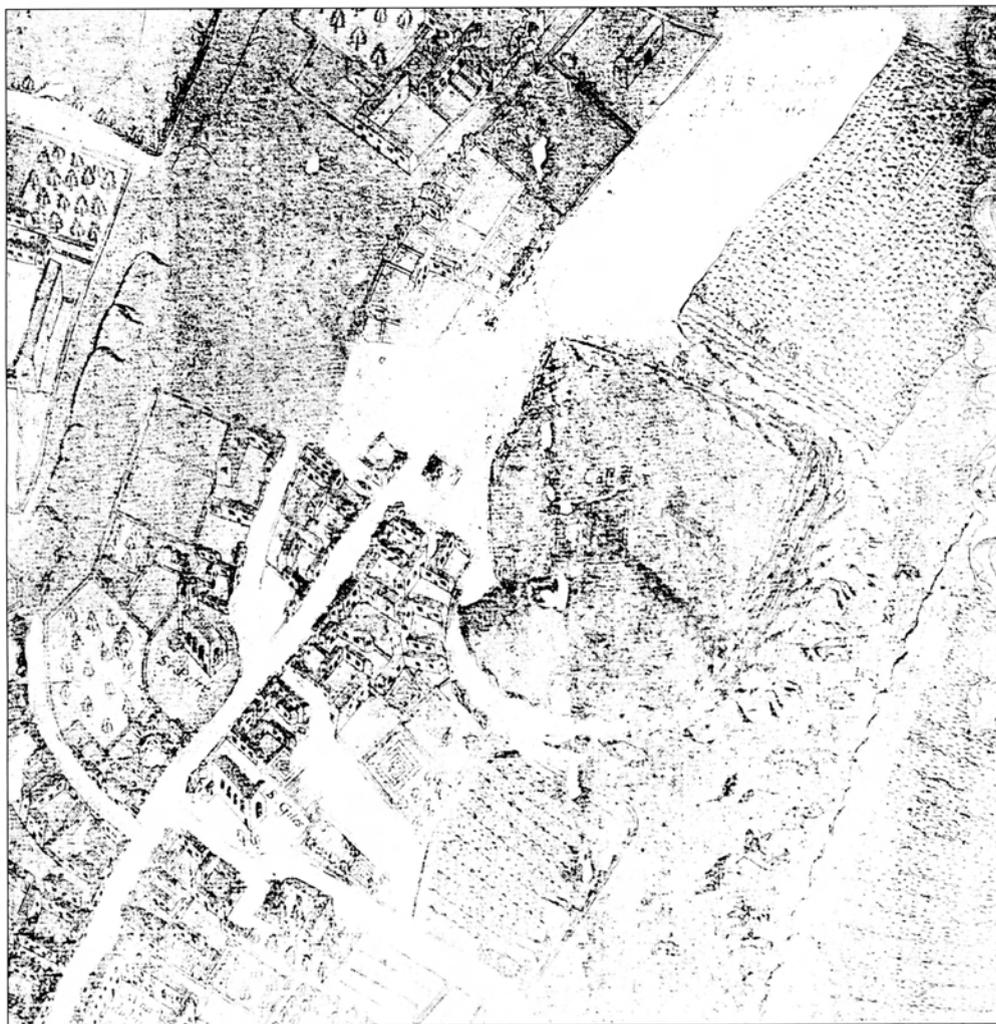


Figure 4. Pre Civil War historic map of Cambridge Castle and environs by Hammond in 1592, showing earlier road layout including the substantial open area in front of All Saints at the Castle.

proximity of the area excavated to Castle Street, as all the cartographic sources show that the eastern side of the bastion was some distance from Castle Street (Figures 6.1 to 6.4). A detailed comparison between these historic maps, particularly that by Loggan in 1688 (Figure 6.1), and the modern Ordnance Survey was undertaken using a wide range of points that can be reliably located, including major college buildings, churches and road junctions. This indicates that Castle Street has not shifted position substantially between 1688 and the present day, it is probably in an identical location and has certainly not shifted by more than a metre or two. This is not enough to allow F.28 to be the main northwestern ditch of the Civil War fortifications and F.49 the side of the western bastion. Instead it appears that F.28 is the northwestern side of the western bastion and that F.49 is therefore probably a slight outwork or extension of the bastion. Such an outwork or extension appears to be depicted on the Bowtell Mss. of 1785 (Figure 5.3). It seems that F.28 and F.49 are both elements of the western bastion, which must have been of rather irregular form. This

has been tentatively reconstructed (Figure 7.1), using the evidence of the recent excavations, the 1994 observations, Loggan's plan of 1688 (Figure 5.1) and the Bowtell Mss. of 1785 (Figure 5.3). Civil War fortifications were constructed using clear design principles and the slightly unorthodox proposed shape of the bastion may relate to some unknown factor in the topography or terrain of the area. One possibility is that the western and southern bastions were in fact demi-bastions, which have only one face and flank and were used to fortify the angle of a place that is too acute. If this was the case then the ditch at 75 Castle Street might be a flanking entrenchment and not part of the main circuit of fortifications. Alternatively F.49 may be a post Civil War addition of some kind relating to the later use of the site, although this seems unlikely given its similarity to F.28. The scale of investigations undertaken obviates against dogmatic certainty, but the proposed reconstruction is the one that best fits with the archaeological and cartographic evidence.

The ditch sequence can be divided into four infilling horizons. The first consisted of c. 0.3m of mid grey

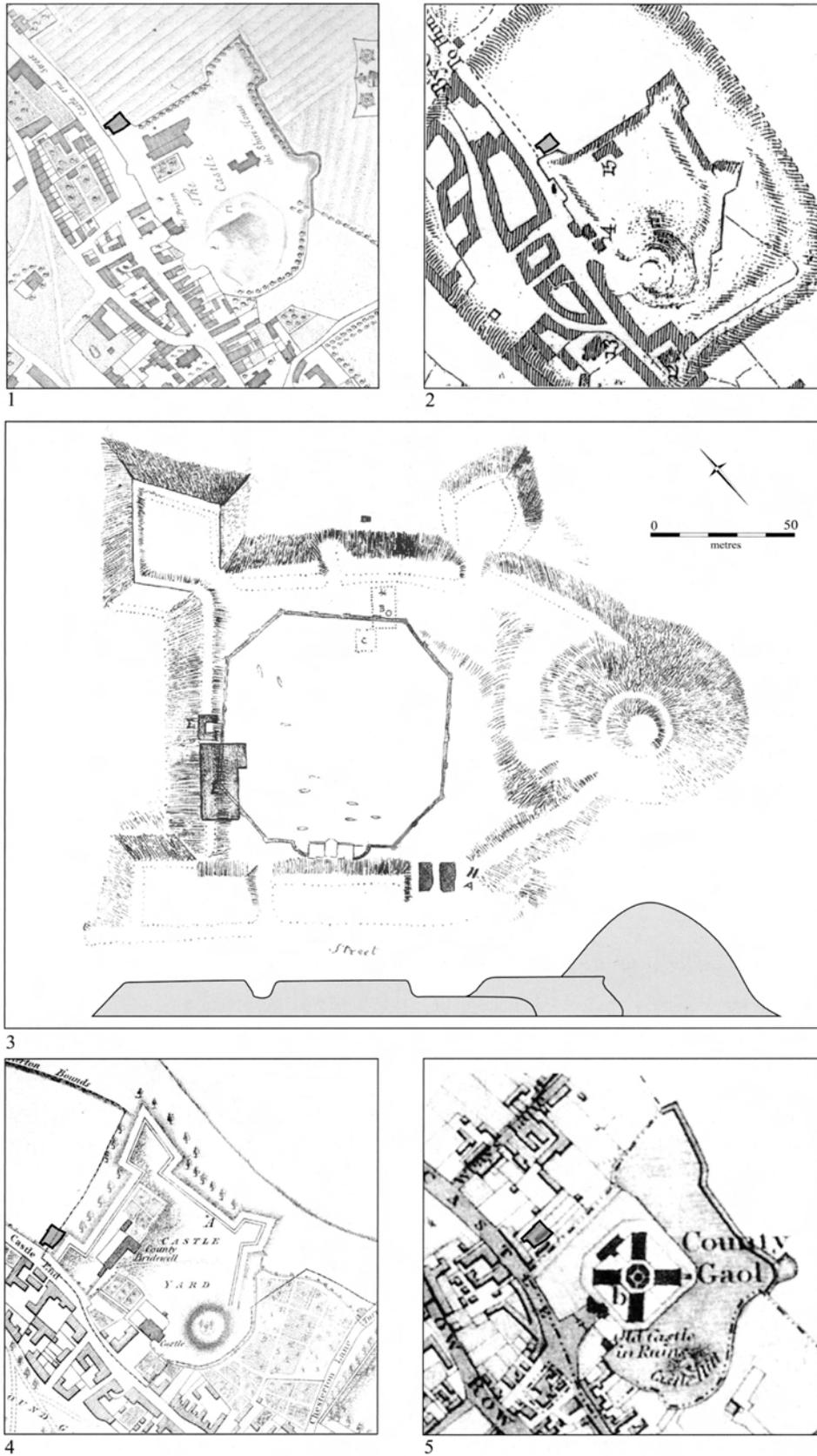


Figure 5. Post Civil War historic map sequence.
 5.1 Loggan 1688.
 5.2 Anonymous 1763.

5.3 Bowtell Mss. 1785, including a redrawn section
 from the same source.
 5.4 Custance 1798.
 5.5 Baker 1830

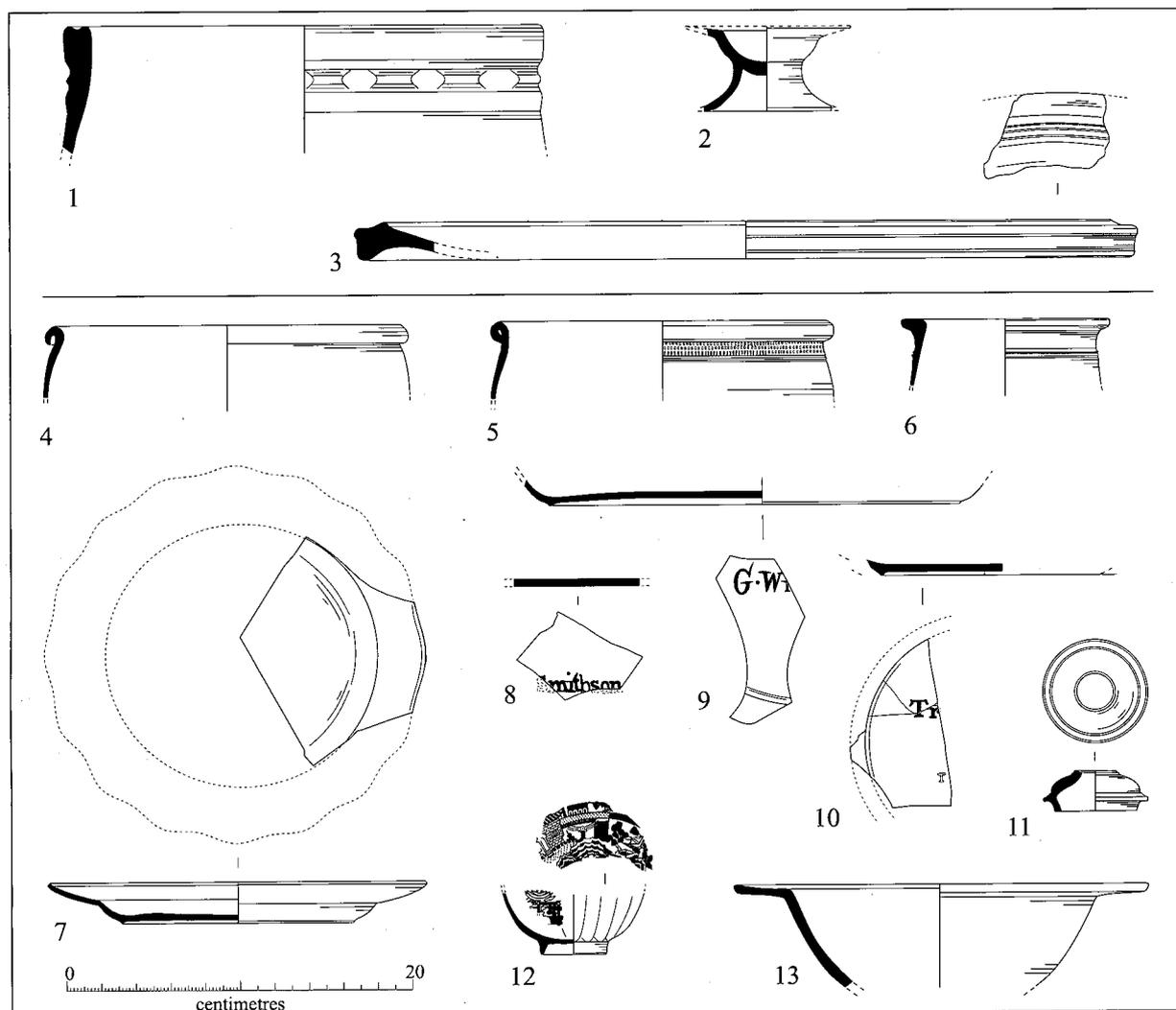


Figure 6. Pottery from Infilling Horizons 3 and 4 of ditch F.28.

- 6.1 Glazed Red Earthenware jar, with clear lead glaze to interior and dark brown mottled lead glaze to exterior.
 6.2 Tin-glazed earthenware pedestal bowl with plain white-glaze.
 6.3 Large, Glazed Red Earthenware pancheon, with mottled lead-glaze to interior.
 6.4 Plain creamware chamber pot
 6.5 Nottinghamshire/Derbyshire type salt-glazed stone-ware jar with rouletted decoration.
 6.6 Plain creamware jar.
 6.7 Plain creamware plate with queen's-shape rim.
 6.8 – 6.10 Fragments of creamware plates or dishes, with hand applied script to the base in underglaze blue.
 6.11 Teapot or coffee pot lid in English soft paste porcelain.
 6.12 Pearlware tea bowl of fluted form, with transfer-printed decoration (willow-type pattern).
 6.13 Plain creamware bowl with flared rim.

clayey silt underneath some dirty white and yellowish white chalk, whose upper surface was most heavily compacted and quite smooth. These fills produced no dating evidence; and probably represent natural erosion and weathering of the ditch during the Civil War between the digging of the ditch in 1642/43 and the end of its active use in 1646. Alternatively, it could represent undisturbed deposits from the medieval Castle ditch. This is however unlikely, if the medieval Castle ditch was reused it is more likely that this was for the main enclosure ditch rather than the bastion.

The second infilling was a localised event found only in one slot. It consisted of light yellowish grey

silt containing a large quantity of fragmentary late medieval or early post-medieval brick and tile. The brick and tile may derive from the Civil War barracks and could relate to the 1646 slighting of these structures.

During the third phase of infilling the ditch seems to have initially silted up relatively rapidly with a variety of fills, which appear to derive from the cultural deposits and natural layers that the ditch was cut through. After this stage the ditch had presumably stabilised somewhat, with slower erosion, again consisting of a mixture of materials. The clay pipe bowls from this infilling horizon are forms that date

to c. 1660 to 1680 and 1680 to 1710, while the latest pottery is late 17th and 18th century. This silting raised the height of the base of the ditch to c. 17.6m OD, the overall width of the ditch had not been affected, but it now had a shallower more flat bottomed profile. It was still, therefore, around 13m wide and 2.6m deep.

In the fourth and final infilling horizon the remaining open portion of the ditch was deliberately and completely backfilled, with mixed dark clayey silt containing lighter lenses. The pottery from this deposit dates to the late 18th century and there was also a George III first issue halfpenny minted in 1771. This coin was probably deposited no later than 1817, when pre-1792 copper coins were withdrawn from circulation. The clay pipe bowls are forms dated c. 1680 to 1740, indicating that they are residual. Straight after the ditch itself was backfilled a layer of dirty white chalky clay was laid over the entire area as a general levelling or foundation layer. This appears to have occurred immediately after the backfilling of the ditch and indicates that the ditch was infilled as part of a more general levelling of the area. Infilling Horizon 4 probably relates to the early 19th century construction of the County Gaol (see below).

Pottery

Andrew Hall

The pottery from Infilling Horizon 3 (Table 1) included tin-glazed earthenware (Figure 6.2), German stoneware from Frechen, Staffordshire slipware plus locally produced Glazed Red Earthenware (Figure 6.1 & 6.3) and Babylon ware from Ely (Table 1). The Staffordshire slipwares date to the end of the 17th and 18th century, while the Glazed Red Earthenwares show little variance in fabric or forms between the 16th and 18th centuries. Frechen stoneware dates mainly to the 17th century, although it was also in use in the 16th and early 18th centuries (Gaimster 1997), while the tin-glazed earthenware is probably 17th century. The relatively small size and abraded nature of the sherds combined with the low density of ceramics implies the incorporation of 'background' refuse from the general vicinity rather than specific domestic refuse dumping events.

Infilling Horizon 4 pottery includes ceramics dating from the mid 17th to late 18th centuries (Table 1). The mid 17th century wares are similar to the Infilling Horizon 3 group, although much fresher with less abrasion. This suggests that this had been relatively protected, perhaps in a midden or other feature that was disturbed and deposited in the ditch. Early 18th century wares are poorly represented with English tin glaze earthenware, Kangxi and early Qianlong Chinese export wares conspicuous by their absence.

Most of the ceramics were fragments of flatware, kitchenware, chamber pots and teaware in the full range of later 18th century fabrics, including Staffordshire white salt-glazed stoneware, lead-glazed Staffordshire earthenware, creamware (Figure 6.4, 6.6-10 & 6.13), pearlware (Figure 6.12), Nottinghamshire/

Table 1. Pottery from Infilling Horizons 3 and 4, quantified by number of sherds (Roman pottery and unidentified material omitted).

Fabric	Infilling Horizon 3	%	Infilling Horizon 4	%
Creamware	0	-	211	37.8
Pearlware	0	-	30	5.4
Tin-glazed earthenware	9	15.6	6	1.1
Chinese export porcelain	0	-	7	1.3
Salt-glazed stoneware	1	1.7	24	4.3
English soft paste porcelain	0	-	4	0.7
Staffs lead-glazed earthenware	0	-	7	1.3
Staffs slipware	10	17.2	36	6.4
Scratch blue	0	-	3	0.5
Black basalt	0	-	1	0.2
Glazed Red Earthenware	34	58.6	216	37.2
Babylon ware	2	3.4	1	0.2
German stoneware	2	3.4	14	2.4
Total	58		560	

Derbyshire type stoneware (Fig. 6.5), scratch blue ware, slipware plus a small amount of English soft paste porcelain (Figure 6.11) and Chinese export porcelain.

The most common type of pottery creamware was first produced in the 1740s; by the 1760s it had largely replaced earlier wares and remained extremely popular until the 1780s. Pearlware came into use in the mid 1770s and significant production occurred from the early 1780s. There was also a single fragment of a Staffordshire black basalt teapot or cream jug, this ware was refined by Josiah Wedgwood in the early 1770s and was popular and widely imitated until the early 19th century. The bulk of the pottery probably dates to the 1770s and 1780s; as a whole the group probably relates to the period when pearlware was replacing creamware in the 1780s. None of the other pottery is closely dateable, but it is all compatible with this dating. No 19th century wares, such as general refined white earthenwares, bone china and utilitarian stonewares, were present.

The assemblage lacked any reconstructable vessels and the sherd-size and mean weight (12g for creamwares) is relatively low, indicating that this is not a 'clearance deposit' involving the direct dumping of domestic refuse (cf Pearce 2000); the pottery may derive from a midden or other feature. If the majority of the pottery dates to the 1770s and 1780s, then a time lag from production to discard of 15–25 years (cf. Adams 2003) suggests a date of deposition around 1800.

The period 1770 to 1780 witnessed the increasing popularity of creamwares and pearlwares, in the main produced in Staffordshire (Barker & Halfpenny 1990). These replaced white salt-glazed stonewares, Staffordshire lead-glazed and tin-glazed earthen-

wares within the marketplace at this time (Mountford 1971). This assemblage is a 'snap-shot' of these consumer trends. The vast majority of the wares are plain, standard utilitarian wares with little decorative appeal. The finer English porcelains with underglaze decoration by Worcester, Lowestoft etc are rare (1%), as is fine Qianlong blue and white Chinese export porcelain (2%), and there are no enamelled creamwares, suggesting a relatively low status origin for the material. Three creamware plates have under glaze painted names of either colleges or individuals on the underside of their bases. They read "Tr.." (probably Trinity or Trinity Hall), "Smithson", and "G.Wi..." (Figure 6.8 to 6.10). The named individuals may well be the head chefs from college kitchens, who had to supply such plates themselves, or innkeepers.¹ Similarly marked vessels have been found at other recent excavations in Cambridge, including Grand Arcade (Cessford in prep) and Bradwell's Court (Newman in prep).

Discussion

The Civil War refortification of Cambridge Castle occupied a crucial strategic position overlooking the town and the route to Magdalene Bridge. A relatively regular four-bastioned fortification was constructed, with the existing motte effectively forming a fifth 'bastion'. The western and northern bastions facing away from the town were substantially larger than the eastern and southern bastions, indicating that this was the perceived direction of greatest threat. The ditch of the western bastion of the Civil War defences was around 4m deep and 13m wide, steep sided and flat bottomed. The excavations on land adjacent to 68 Castle Street allow the establishment of the exact location of the bastion and combined with the 1994 observations allows us to tentatively reconstruct its form (Figure 7.1), although the result is undoubtedly somewhat unorthodox and only larger scale investigations will allow greater certainty.

The most reliable depiction of Castle Hill prior to the Civil War is the map by John Hammond in 1592 (Fig 7). This indicates that Castle Street as such did not exist in the late 16th century. Instead there was a relatively wide open area to the southwest of the Castle, which continued northeastwards as a substantial open area in front of the church of All Saints at the Castle. Overall the impression provided

by Hammond is that the construction of Civil War defences would have required the clearance of some houses, but not a very large number.

Although a small portion of the ditch filled from natural erosion and weathering (plus deliberate infilling) during and soon after the Civil War, this still left a substantial extant feature that slowly continued to partially fill over a period of around 150 years. The earliest reasonably accurate map of Castle Hill after the Civil War was produced by David Loggan in 1688 (Figure 5.1), which shows the southwestern extent of the surviving Castle defences stopping short of Castle Street by this date. The southeastern and northeastern sides are shown as having open ditches, no open ditch is shown on the northwestern side but this may be due to the three-dimensional perspective of the map. The northwestern rampart is depicted as having trees growing along it, but these are not shown on the western bastion. The area to the north of the bastion is open fields. The area inside the defences contained a number of buildings including the Shire House, the Prison, an enclosed orchard and the House of Correction and jurors house. Outside the ditch to the north, the area was ploughed fields. A rather curious kink in the alignment of Castle Street probably reflects a partial reversion to the layout of the area prior to the Civil War as depicted by Hammond. Although Loggan's map of 1688 established the traditional model for the Civil War Castle defences, two factors need to be borne in mind. Loggan records the contemporary late 17th century townscape, not the Civil War fortifications of over 40 years earlier. Additionally he utilised a three-dimensional perspective, which created potential confusion when later cartographers or authors reused his work. The excavations have demonstrated that, contrary to some later sources but not necessarily to Loggan, the western bastion did cross the line of Castle Street and was probably relatively similar in size and shape to the northern bastion.

Castle Street had definitely been reopened by the time of Loggan's plan of 1688. Much of the western bastion ditch must, therefore, have been infilled and the earthworks slighted. F.28 fulfilled no obvious role, as it only divided the Castle area from ploughed fields. This suggests that it was acceptable to whoever owned the land for such a large open feature to exist, and that they had the power and will to prevent casual encroachment or dumping of material in the ditch. This indicates that the Castle authorities were deliberately maintaining the ditch, possibly relating to the use of the Castle as the County Gaol.

An anonymous plan of 1763 (Figure 5.2) adds relatively little, although the western bastion is depicted rather differently. A plan of 1785 (Figure 5.3) provides considerable detail; in particular it suggests that the western bastion was similar to the northern bastion. A plan by William Custance in 1798 (Figure 5.4) appears to simply replicate elements of the earlier Loggan plan, which Custance often did when major changes had not occurred.

By the early 19th century the ditch was still around 2.6m deep and 13m wide when it was deliberately

¹ With the assistance of Rachel Wroth it was possible after this article was written to identify the individuals probably associated with these names. 'Smithson' probably relates to Christopher Smithson, a cook of St John's College, who paid a bond to the trustees of the Cambridge to Ely Turnpike in 1782. Smithson married Sarah Geary at All Saint's in 1769; the baptisms and burials of their children are mentioned in the parish registers of St. Edward's in 1772 and Holy Sepulchre between 1773 and 1776. 'G. Wi...' was probably a member of the Wicks family, cooks at various Colleges between 1750 and 1857. A George Wicks was cook between 1820 and 1851, too late to be linked to the plates, but there may have been an earlier member of the family with the same name.

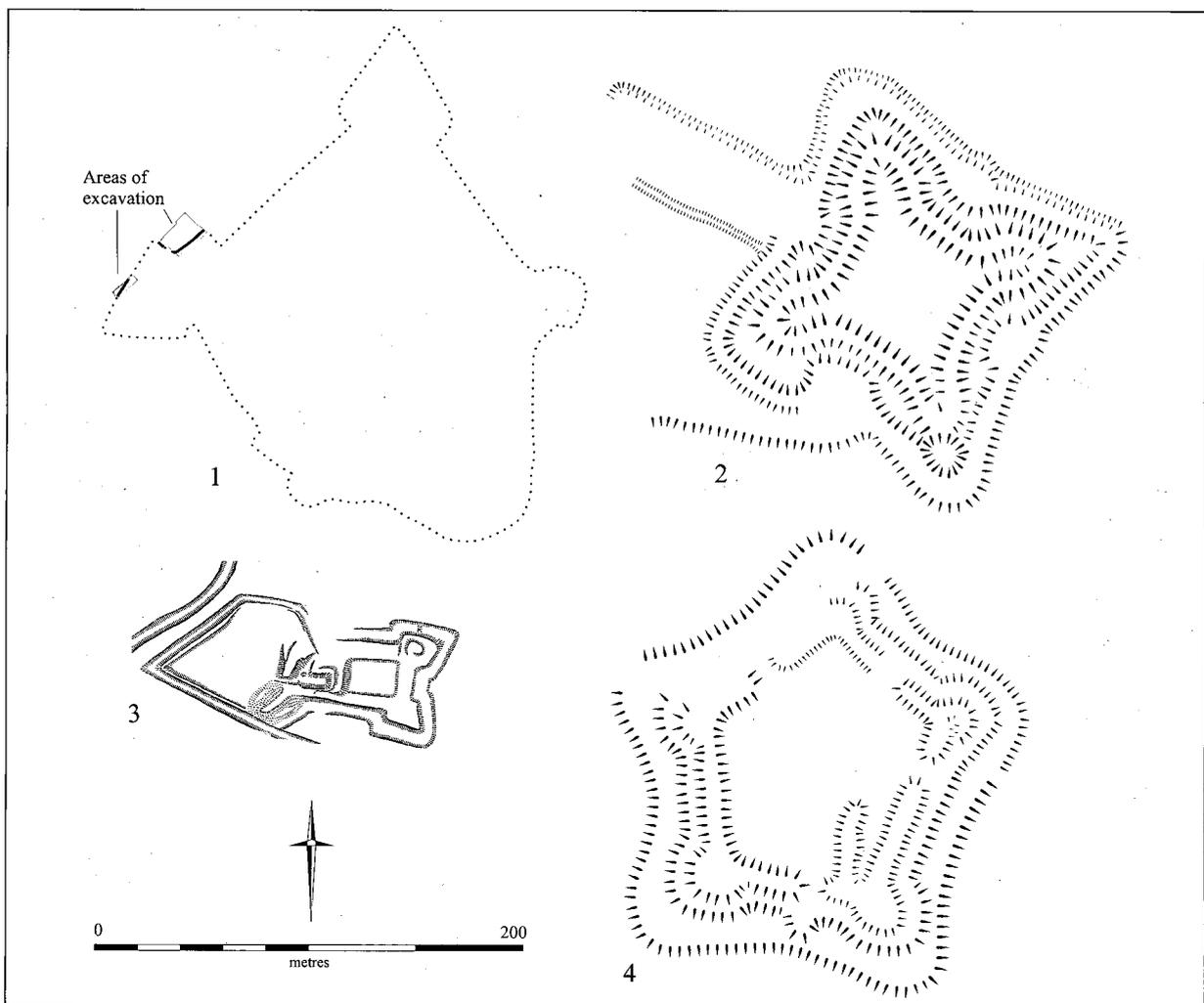


Figure 7. Cambridge Castle and other Civil War earthworks in Cambridge.

7.1 Cambridge Castle

7.2 Earith Bulwark.

7.3 Battery Hills, March.

7.4 Horsey Hill, Stanground.

backfilled. The octagonal County Gaol was built between 1802 and 1807 and at the time a local antiquary John Bowtell made some valuable records. In 1802 'the height of these [the Civil War] ramparts from the bottom of the fosse, in a diagonal direction, was full sixteen yards' (14.6m). The ramparts 'perpendicular height from the level of the surface on which they were raised, was 17 feet 6 inches' (5.3m) and they had 'courses of retentive gault and firm white clay, alternately laid in a chevronal position'. The figures provided by Bowtell suggest that in 1802 the ditch was roughly 3m deep, which is broadly comparable with the archaeological results of around 2.6m; 'Some of the ramparts were thrown into the adjacent deep fosse', and the surface of the bailey was lowered and levelled by four to ten feet (1.2 to 3.0m). The material removed contained 'a great number of stone bullets' and clay tobacco pipes 'down to the reign of Charles I', suggesting that it included Civil War deposits. Allowing for a time-lag in the deposition of the pottery, the ditch around the western bastion could well

have been infilled as part of the events of 1802. It is unlikely to have occurred much later as 19th century wares would probably have been present. By the time of Richard Baker's map in 1830 (Figure 5.5), most of the northwestern defences and the western bastion had disappeared and the area to the north (formerly occupied by open fields) has been built up. These early 19th century buildings were represented archaeologically by a cellar and two wells (Figure 2), lying to the rear of buildings fronting onto Castle Street.

As well as the refortification of the Castle, there were a number of other Civil War defensive measures in Cambridge. Most of the bridges over the Cam were removed and a gun emplacement was located on Magdalene Bridge. A ditch with rampart was dug around the lower town, with a small square fort with angle bastions known as a sconce where the defences crossed Jesus Lane. The Castle and town defences did not exist in isolation; to the northeast along the river Cam, there was another sconce in Chesterton at Mount Ararat and, also, a gun battery on the Devil's

Ditch. Further downriver on the Ouse, before Ely, there were defences at Stretham and Upware, and westwards along the Ouse more were located at Aldreth, Willingham and Earith. The well preserved earthworks of the fort at Earith, known as the Bulwark (Figure 7.2), show that it was a roughly square enclosure, around 60m by 60m, with arrow-headed bastions on each corner measuring around 30m by 24m. The top of its rampart was around 9m wide and 0.9m above the ground level inside the fort and the ditch 1.5 to 2.75m deep and 5m wide at the base. Further afield, there are other well preserved earthworks at March and Stanground. At Battery Hills, March (Figure 7.3), there is a low rectangular platform 60m long by 35m wide, around 1m high, with a ditch 8m wide and 0.8m deep, which has 15m wide bastions. The fortifications at Horsey Hill, Stanground (Figure 7.4), are similar to those at Earith, but pentagonal and are 5m from the base of the ditch to the top of the rampart. These are among a large number of sites around the northern and northwestern edge of Cambridgeshire generally controlling lines of communication and defining the limits of the parliamentarian Eastern Association. The Civil War defences of Cambridge Castle enclose an area of broadly 130 by 110m and the bastions appear to be around 22m wide. It, therefore, had around four times the internal space of the other sites with a more substantial ditch and earthwork.

Conclusion

Although the excavations adjacent to 68 Castle Street only revealed a small area of the Civil War ditch of Cambridge Castle, it was the first opportunity to examine this feature in detail. It allows part of the ditch to be precisely located and provides information about its shape and form. The most unanticipated discovery was the demonstration by the infilling sequence of something of the overall character of Castle Hill during the mid 17th to early 19th centuries (*cf.* Cessford with Dickens 2005). For over a century and a half it was left largely undisturbed, as the area was a relatively unimportant backwater. Its final infilling related to the beginning of the 19th century, when the area was absorbed into the town proper and in particular to the construction of the County Gaol.

Acknowledgements

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The Old Plough: a neglected property of Ely Porta Manor

Michael Chisholm

The Old Plough is mid-way between Ely and Prickwillow, adjacent to the Ouse until it was diverted in 1830 to run direct from Ely to Littleport (Figure 1). It was a public house until it became a private residence in the 1930s. So far as has been ascertained, there are only two modern references to the history of this building. Astbury describes it as a 'stone cottage', and his photograph has a caption which reads in part: 'It is built partly of Barnack stone which never completed its journey to the site of Ely Cathedral' (Astbury 1958, p. 158 and plate 15). A similar message is conveyed by Jakes (1995, p. 103), in the text accompanying his photograph: the ancient public house was built 'to cater for the river traffic held up at the shallows on the River Ouse.' But even a brief visit to the site suggests that the building has a much more interesting history than that solely of a riverside public house which illicitly incorporates stone destined for Ely cathedral.

Location and situation

The Old Plough stands at TL 575 812 on a small "island" of Kimmeridge Clay between the former course of the river to the north and Middle Fen Bank to the south (Figure 2). It seems probable that, from early times, the summit of this "island" stood above the level of the recurrent inundations that would have been the norm in mediaeval times and later. There is no other patch of land in the immediate vicinity which stands as high. However, the island we see today is much larger than it would have been before the Fens were drained. Since 1652, the surface of peat lands has fallen in some places by as much as 4.6 metres (French and Pryor 1993, p. 11; see also Fowler 1933), so we must imagine the Old Plough as having stood upon a tiny patch of dry ground. Between the building and Middle Fen Bank there is a very pronounced depression, of which more will be said below.

It is generally accepted that the Ouse was diverted in the twelfth century to connect Ely to the river, whereas prior to that it flowed past Stuntney and Quanea to the Old Plough and then turned east-

wards to Prickwillow. Before this diversion the Lark joined the former course of the Ouse about 800 yards south of the Old Plough, roughly half way to Quanea (Astbury 1958, pp. 31 and 33; Fowler 1934). The former main channel of the Ouse, past Stuntney and Quanea, came to be known as Roll's Lode.

The Old Plough as a building

The principal part of the building is rectangular, 41 feet long and 20 feet wide (c. 12.5 m by 6.25 m), with the long axis being approximately east-west. This is a single-storey building in which the roof space has been incorporated as bedrooms, apparently long ago, now lit by velux windows replacing the former dormer windows, each with a flat roof covered by a single sheet of cast lead (compare Figures 3 and 4). The present tiled roof replaces tiles which the owner believes were late sixteenth century or early seventeenth in date; they had been re-laid so that the formerly weathered lower parts were protected by the unweathered areas of the tiles above. At the eastern end there is a modern extension, mainly timber-framed and slightly narrower, also one storey in height but substantially lower than the main building; this extends for 36 feet (c. 11 m). On the north side of the property is a nineteenth-century lean-to extension housing the kitchen, etc; this runs for 22 feet (c. 6.75 m) from the east gable.

There is no known early documentary evidence about the house and there are no timbers that can be confidently accepted as original to the building suitable for dendrochronology dating (Martin Bridge Pers. comm, 2007). Despite considerable work on the house and garden over a period of twenty years by the present owners, no midden has been found, and no scattering of shards and other debris that might illuminate the early settlement of the site. Tim Murray (Pers. comm, 2007) finds it difficult to understand this lack of archaeological evidence. Consequently, the starting point of the enquiry has to be the architectural evidence of the building itself.

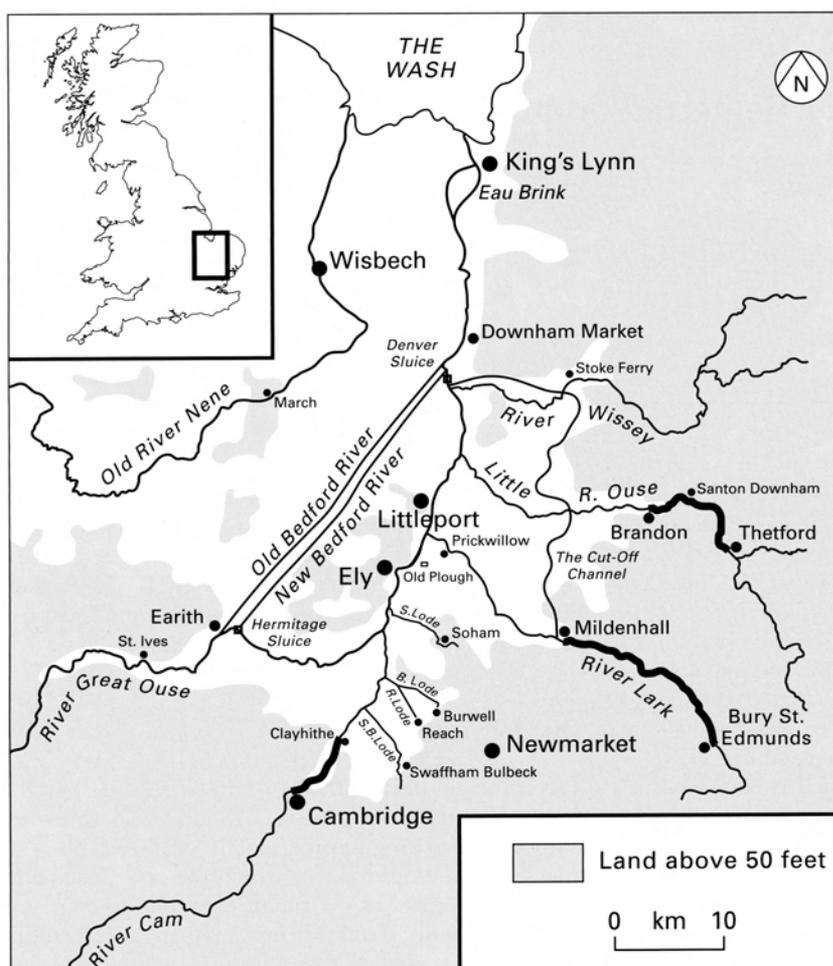


Figure 1. The location of the Old Plough in relation to the present-day river system of the Fens. The Old Plough is midway between Ely and Prickwillow. River sections emphasised show statutory navigations established between 1670 and 1702 (Chisholm 2008).

Exterior

The central chimney is a nineteenth century addition to the property. The visible upper part of the eastern chimney was re-built by the present owner in a manner to approximate the original structure; all the lower part is undoubtedly original. As for the west gable, prominent in the photographs, the upper metre or thereabouts was also re-built by the present owner; the overall height was reduced by six courses. Otherwise, the chimney is original, subject only to building scars and recent re-pointing. There is no doubt that the western gable chimney is integral with the structure of the house, and it appears that the same is true of the eastern chimney.

Mac Dowdy considers that the chimneys, especially the western one, are key to the architectural understanding of the building, taking the view that the quality of the bricks and the pattern of their bonding provide a conservative dating to the early sixteenth century (Pers. comm. 2006). This is an assessment with which Paul Spoerry concurs (Pers. comm. 2006). However, Beth Davis (Pers. comm. 2007) draws attention to the tumbling brickwork in the western gable, and that the gable without the chimney is one of the commonest forms found in the Fens from the eighteenth century (Cudworth 1937); she thinks the present house was built in the second half of the sev-

enteenth century. A fact of critical importance that cannot be inferred from either photograph must be noted: the present-day house stands upon a masonry plinth, which faithfully traces the entire footprint of the main rectangular building, including the base of the western chimney. It is obvious that the plinth was constructed by masons who were familiar with their materials and Davis accepts that this plinth may be late medieval, believing that the property was re-built in the second half of the seventeenth century.

In sharp contrast to the plinth, the Barnack stones above are set randomly, paying no attention to proper alignments, and with a small intermixture of Greensand and Chalk clunch plus the occasional brick. Some of the stones are dressed, others are not, and the present owners have found several pieces of fully worked stone buried in the garden. These materials have all the appearance of being second hand, or rejects from mason's yards. These materials, and the way they are laid, are identical to dwellings and walls that abound in Ely, and elsewhere. King's School has inherited several monastic buildings and a perambulation with the Archivist, Lynne Turner (2006), revealed the use of recycled stone in the fifteenth century and even earlier, comparable to 5 Silver Street, Ely, which is thought to have been a merchant's abode (Blakeman and Petty 2001, p. 67).

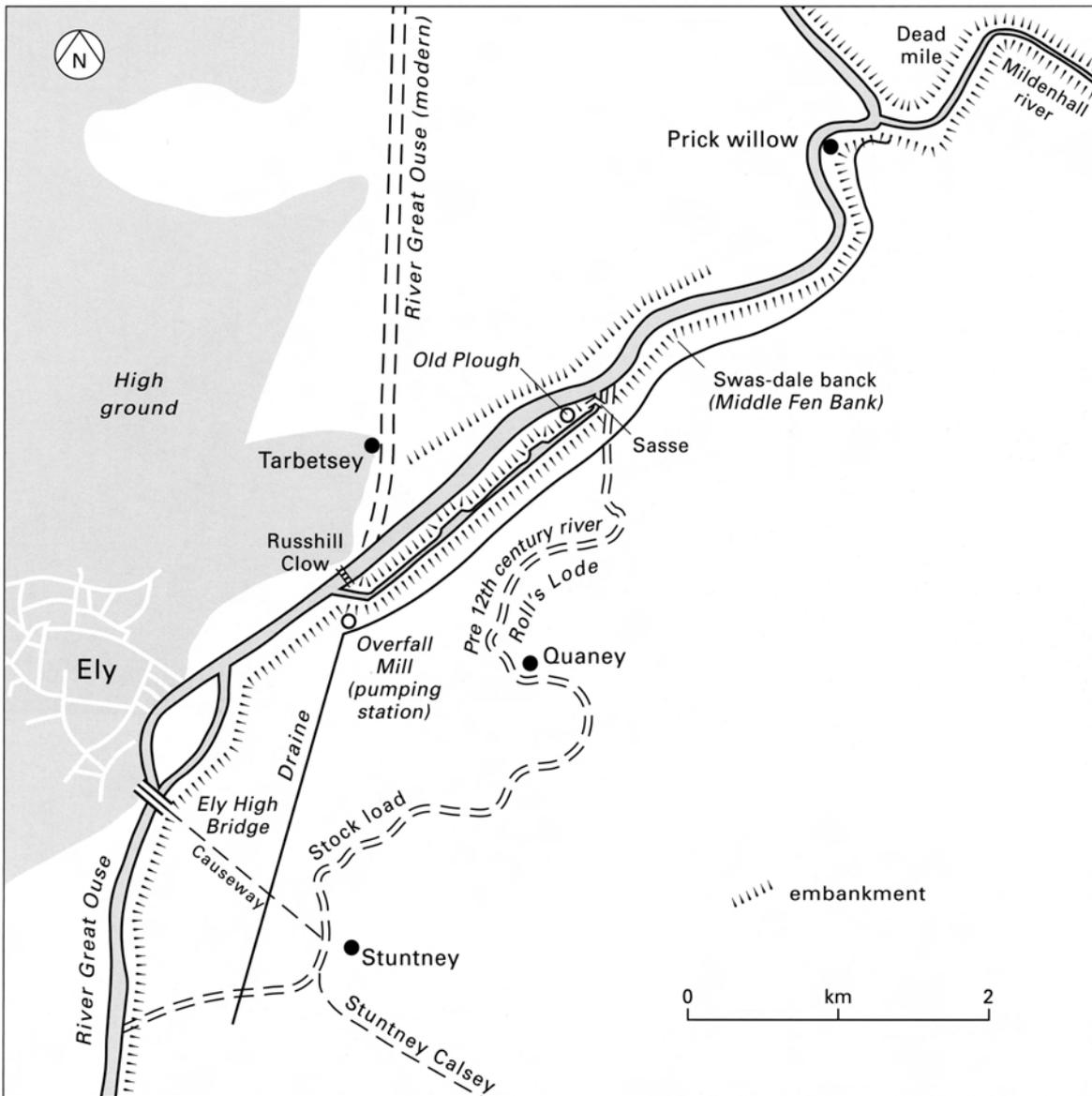


Figure 2. The lock or sasse that Vermuyden intended to build at the Old Plough, mid-seventeenth century. Roll's Lode marks the course of the Ouse until the early twelfth century. Re-drawn from Moore c. 1658 with additions (see Chisholm 2007, fig. 3).

The key to dating the Old Plough above the stone plinth is the brickwork, which is English bond, in general use from the fifteenth century and then progressively replaced by Flemish bond during the seventeenth (Brunskill and Clifton-Taylor 1977, pp. 27-8; Lloyd 2003, p. 65). English bond has alternating courses of headers and stretchers, whereas Flemish bond alternates headers and stretches in each course. The bond suggests the earlier date in preference to the later one suggested by Davis, but on its own is not conclusive.

The most obvious other features of the Old Plough brickwork are the use of relatively thick mortar and disregard for the perpends, the alignment of the vertical joints between bricks. Over time, as bricks became more precise in their dimensions, it was possible to

use thinner mortar and to respect the perpends, so that brickwork became more geometrical. Although there are examples of early brickwork using relatively thin mortar with well-defined perpends (e.g. the Deanery at Hadleigh in Suffolk, 1495), the chronological survey contained in Brunskill and Clifton-Taylor (1977) indicates that the characteristics found in the Old Plough were general until the seventeenth century, when there was a fairly sharp change before mid-century. Ball's Park in Hertfordshire (c. 1640) illustrates the transition, being English bond with relatively thin mortar and well-kept perpends. It appears that, from the Restoration onwards, brickwork was much more regular than hitherto.

The other notable changes were the increasing thickness of bricks and the greater regularity of their



Figure 3. The Old Plough, November 2005, viewed from the west. Photograph by Michael Young.



Figure 4. The Old Plough, probably 1930s. Astbury 1958, plate 15.

sizes. Lloyd (2003, pp. 89–95) tabulates buildings by the thickness of the bricks used and the date of construction. Bricks under 2 inch were not in use after about 1500, whereas 2 inch bricks were used from the thirteenth century until the late seventeenth. Somewhat larger bricks, ranging in thickness from 2 to 2.25 inch, were in use from the mid-fifteenth century to 1744, and, from about 1550, 2.5 inch bricks began to be used. The general trend was towards thicker bricks.

Cambridge illustrates the changing use of red brick (Royal Commission on Historical Monuments 1959). The Front Court of Queen's College was built in 1448–49, a variable semi-English bond, with an excess of stretches, using 8×1.75–2 inch bricks, relatively thick mortar and with no attention to perpends. Late fifteenth century bricks in Jesus College are 8.75×1.75 inch, and somewhat later, 1511–16, the First Court of St John's was built in English bond and with the perpends disregarded; the bricks are 8-9×2–2.25 inch thick. By 1586, Emmanuel used 9.25×2.25 inch bricks. Chesterton Hall, c. 1630, was built using a rather irregular bond and with imperfect to non-existent perpends. The bricks appear to be somewhat thicker, 2.25 to 2.5 inches, and the mortar is much thinner than in the earlier buildings. Striking changes are then visible in both St Catharine's and St John's. The south west corner of St Catharine's Main Court, abutting Queen's Lane, was built in 1673–74, in English bond, with ill-defined perpends; the bricks, 9×2.5 inch thick, are set in thin mortar. At almost the same time, 1669–73, St John's completed the Dutch gabled range that rises from the river Cam, with bricks that appear to be 9×2.25 inch, in Flemish bond and using mortar that is comparatively thin. Although the perpends are only partially kept, the precision of the brickwork has a distinctly 'modern' appearance, more so than contemporaneous St Catharine's.

Bishop Alcock (1486–1501) built two palaces, one in Ely and another in Little Downham, both in red brick. The former has been much modified, whereas what is known as the barn at the latter, which is probably the original palace, with a magnificent crow-step gable, is mostly original. This is largely 9 inch bricks, with some 8 inch, and all are 2 inch thick. English bond, thick mortar and disregard of perpends are the other characteristics of the Little Downham building. The brickwork is very similar to that of the Old Plough, the bricks there being 8.5–9×2 inch.

This brief review of dated buildings indicates that the brickwork of the Old Plough is late fifteenth century or early sixteenth, possibly built of bricks surplus to the construction of Alcock's two palaces. However, is the presence of tumbling brick in a straight sided gable sufficient reason for thinking that the present building was constructed some 150 years later?

According to Clifton-Taylor (1987, p. 251), the Fenland gable 'won considerable favour' in the eastern counties in the seventeenth century and thereafter, implying somewhat earlier adoption than indicated by Cudworth. However, the two separate elements – straight sides and tumbling brick – had

been in use considerably earlier.

Good examples of early straight-sided gables are to be seen in Silver Street, Ely. The stone-built dwelling contains fifteenth or sixteenth century paintings. Another property, in Littleport, no longer exists, being the building which Astbury (1958, p. 158) likens to the Old Plough for the Barnack stone supposedly destined for Ely cathedral. Described by Fowler (1937), Fisher's Cottage dated from the fifteenth or sixteenth century and possessed a straight-sided gable.

Tumbling brick was in use for chimneys and gables well before the second half of the seventeenth century. Cudworth cites a property in Fen Drayton as a good example of early Dutch/European architectural influence, in the form of a crow-stepped gable, a design that became popular in the late fifteenth century (Clifton-Taylor 1987, p. 218). The Fen Drayton example is interesting for the transition from vertical wall to gable, effected by tumbling brick. The use of tumbling brick in 'Sussex chimneys' was common throughout the Sussex-Kent area and in Essex from the sixteenth century (Lloyd 1929, p. 35), and an example from that century, adjacent to Badley Hall, Suffolk, is illustrated in Brunskill and Clifton-Taylor (1977, p. 108). The Prior's House in Ely possesses a Sussex chimney, built on a massive stone base; although the date of the brickwork appears to be uncertain, the quality thereof and its situation suggest that it is an early example of the use of tumbling brick. Two notable sixteenth century houses have been identified that incorporate tumbling brick in straight-sided gables: Sissinghurst Castle in Kent, 1535 (Lloyd 2003, p. 338); and Lovell's Hall at Terrington St Clement, near the Wash, 1543 or earlier (Wight 1972, plate 75 and p. 347).

The form of the gable at the Old Plough appears to be a much less reliable indicator of its date than is the quality of the brickwork. Therefore, it seems probable that the Dowdy/Spoerry dating to the the early sixteenth century or earlier can be accepted, with the implication that the property represents an early example of what became the common Fenland gable of the eighteenth century. However, whatever the date of the present building, Davis accepts that the masonry plinth may be late mediaeval, which implies that a substantial and important building was on the site from around 1500.

Interior

The interior of the Old Plough has been much altered but the owners have found nothing to show that the entrance was ever situated other than on the south front. There is evidence, probably dating from the nineteenth century, of its use as a pub; for example, a sliding glass panel into 'The Snug'. Beth Davis judges that the door and its frame leading into the lean-to kitchen on the north side of the property are from the period 1660–1720 but it seems unlikely that they are in their original location because they show no sign of weathering. Another similar frame has been relocated by the present owners. Traces of a bread oven were found at the eastern end, and a doorway has been re-opened into the extension at that end of the

building; when this was re-built on the previous footprint, it that was found that the northern and eastern walls stand on foundations very similar to the those of the main house, with the northern foundation built on the remnants of a wooden plate.

The ceiling joists are all pine, consistent with a date any time between the twelfth century and the seventeenth or even later. Salzman (1967, p. 318) records the use of pine scaffolding for work on Ely cathedral in 1324, and it seems probable that the thirteenth-century pine roof timbers of the Three Blackbirds, Broad Street, Ely originated as scaffolding (Holton-Krayenbuhl 1984, p. 13). Prior to the construction of the Guildhall in Cambridge some houses dating from before the end of the sixteenth century, standing on Peas Hill, also had pine roof timbers, and it is known that the best scaffolding poles used for the construction of the chapel for Peterhouse in the seventeenth century were passed on to the carpenter (Hughes 1937, p. 12). However, the supply of secondhand pine scaffolding poles almost certainly declined as the great period of mediaeval church and cathedral building came to an end, suggesting that the presence of the pine beams in the Old Plough implies an earlier rather than a later date for its construction.

Upstairs, the present owners found a small fireplace at the western end of the building, the flue for which is constructed of the same bricks as the main chimney and in a manner consistent with it having been built at the same time. Access from the ground floor was by means of a simple open tread timber stair, a feature consistent with an early date for the property.

Conclusion

The strong balance of probability is that the existing building was built early in the sixteenth century or late in the preceding one. If in fact Davis is right that it was re-built in the second half of the seventeenth century, the pre-existing building would have had the same footprint as the main part of the present-day structure, and there appears to be no doubt that it would have been late mediaeval because of the nature of the stone plinth. Therefore we may be confident that there was a structure of some importance on the site round about 1500, whose owner must have been a person of substance.

A building as significant as the Old Plough, adjacent to the Ouse, must have had a landing place, or hithe. However, there is now no visible sign thereof, nor is there known any folk memory of such a facility. However, the photograph reproduced as Figure 4, probably taken in the 1930s, is highly suggestive. Clearly visible to the right of the motorcar is a retaining wall, which apparently turns at ninety degrees to run northward beyond the eastern end of the building. By the time the present owners bought the property in 1987 there was no visible sign of the wall, and no traces have since been encountered. So it is a matter of speculation that the wall may have been the remnants of a quay.

Documentary evidence

The earliest public records of the Old Plough that have been identified are two auction notices in the *Cambridge Chronicle*, published on 19 April 1806 and 7 June 1811 respectively. Both notices refer to the availability from solicitors of further particulars, but there is no record at either of the relevant Record Offices (Cambridge and Norwich) that the documents have survived. The property was offered as a public house under the sign of the Plow or Plough. It was a copyhold property, occupied by a tenant at will (Mole Gotobed in 1806), being the property of Ely Porta Manor in the parish of Holy Trinity (more usually, Ely Trinity). In 1811, the land tax charges had been redeemed. The property came with 'the yard, lodges, and appurtenances', plus some four acres of 'excellent wash land'.

There is no doubt that the Old Plough was a manorial property of Ely Porta, which was one of the monastic properties transferred to the Bishop of Ely shortly after the bishopric was established in 1109. Presumably, the four acres of washland that went with the property in 1806 represented part of the manorial lands. The fact that they were described as 'washland' implies that they lay to the north of Middle Fen Bank, where periodic river inundations would have occurred.

Being a property of the Bishop implies that there should be ecclesiastical records from early times. So far as can be ascertained, no scholar has identified the property from these sources. In fact, there are very few references to Ely Porta, and certainly nothing to compare with Coleman's (1984) account of Downham, another of the Bishop's manors administered by the Dean and Chapter. The nearest to an early published reference to the site that has been found is derived from a 1251 survey of Ely, which records that the Bishop's wastes merged into the wastes of other townships, including Padnal Fen, wherein he had enclosures for peat digging (VCH 1967, p. 35, including fn 2). The major turbarry at Turbutsey was at the western edge of Padnal Fen, and evidently it was not the only one.

Reaney (1943, p. 222) identifies Padnal Fen as the intermixed lands of the parishes of Ely St Mary and Ely Trinity, with the earliest record for the name being 1221. The name survives to the present day on Ordnance Survey maps, and was cartographically recorded by Hayward (1604), Hondius (1632) and Moore (c. 1658). Hayward's map is at a scale of one inch to the mile and is particularly interesting (Figure 5). Padnal (or Padnold) is shown as occupying the triangular area between Ely, Prickwillow and Littleport, and as being divided into the northerly 'Littleport Padnold' and the southerly 'Ely Padnold', the latter presumably being the area controlled by the Bishop. Hayward records Padnold Lake, as an appendix of the Ouse on its left (north) bank, almost exactly half way between Ely cathedral and the Ouse/Lark confluence, placing it very near to the Old Plough. The Old Plough is not shown, nor is Quanea, though both Thorney and

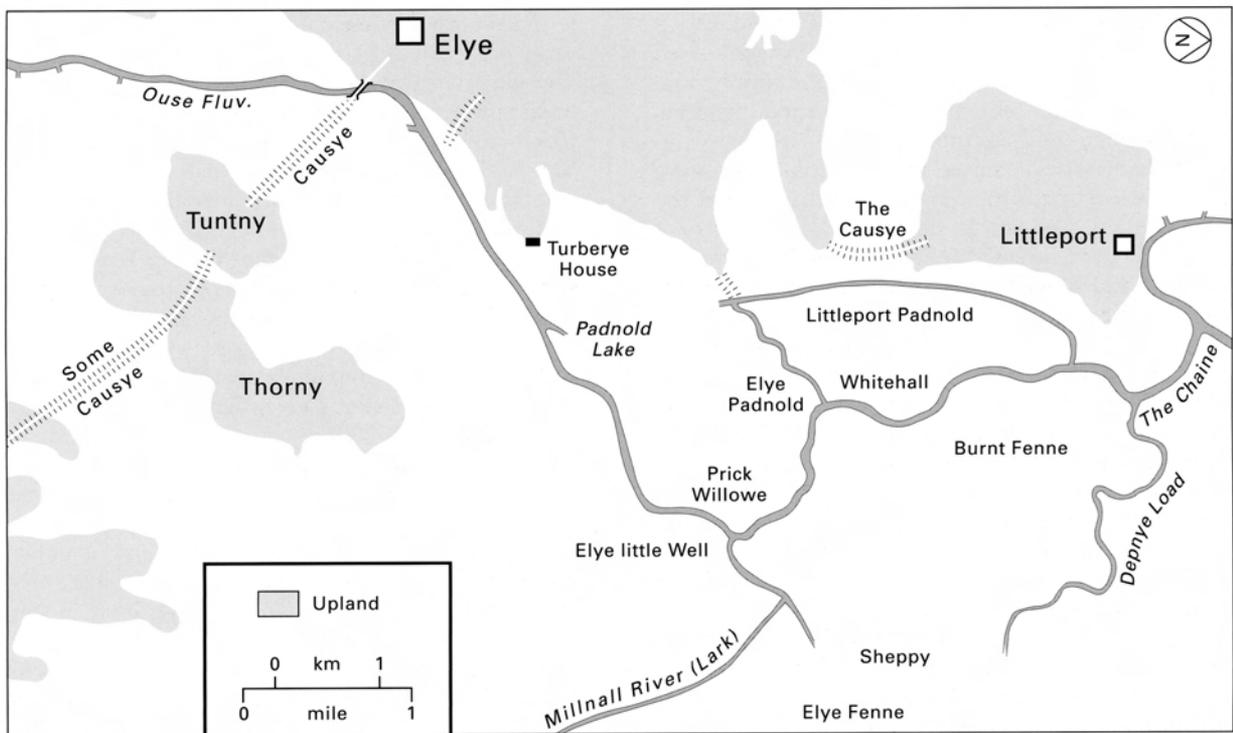


Figure 5. Padnal Fen and environs, 1604. Re-drawn from Hayward 1604.

Turbutsey do figure. The Lake is clearly not a natural mere, but artificial in origin, with two possible interpretations. It might have originated as a peat digging that had become flooded, as occurred in the Broads. However, an alternative explanation is that the Lake represents the relic of a water channel linking to the north-south channel shown by Hayward, so forming a continuous watercourse passing through the Fen between two points on the Ouse, as portrayed in 1662 by Dugdale (1772, map facing p. 416). Whether there was a continuous channel or not, Hayward shows a Fen for which access had been created, implying active commercial use. Consequently, it seems likely that the Old Plough would have played an important role, whether for a turbarry or as the upstream access into Padnal Fen as part of the management of Ely Porta Manor.

Reaney offers two possible origins for Padnal as a name: the first is suggested by the element *pad*, derived from the Old English for a frog or toad, and hence 'frog's nook'; the other possibility is the personal name *Pad(d)a* and hence 'Pada's nook'. If the former is the root of Padnal, then Reaney suggests comparison with 'Pathewere' or 'Padewere', a fishery of the monks of Ely dating to 1086. As Darby (1971) makes clear, the Domesday documents are difficult to work with. He points out that the Domesday Book was compiled from other documents, with loss of information in the process, which means that where these subsidiary documents exist they can be very valuable in providing information that is not contained in the Domesday Book itself. In our case, the document in question is the *Inquisitio Eliensis* (Hamilton 1876). The

Domesday Book includes Stuntney and its fishery, but no other property or fishery in the vicinity, even though Turbutsey is known to have existed in 974. On the other hand, the *Inquisitio* lists 15 or 16 fisheries belonging to the Abbot, including one identified as 'Pathewere' or 'Padewere', but omits Stuntney, which is surprising given its importance (Hamilton 1876, p. 190). The *Inquisitio* also includes 'Prickewyleu' and 'Quammingewere' as fisheries; the former is Prickwillow, while the latter might have been a fishery in the vicinity of Quanea (Reaney 1943, pp. 220 and 222). Thirty Domesday fisheries have been mapped in Cambridgeshire (Darby 1971, fig. 84), and we know that the Abbot of Ely had the benefit of 15 or 16, so it is evident that fisheries were widespread in the area at the time of the Norman Conquest; there must have been eel fishing in Padnal Fen.

It is tempting to suppose that the 'nook' or 'knoll' of Padnal refers to the small island of Kimmeridge Clay on which the Old Plough stands, which may have been the only dry land on the edge of the Bishop's part of Padnal Fen other than the Ely upland to the west. It seems probable that there was a fishery, and it is enticing to suppose that Padnoll Lake could have been either a turbarry or the relic of a channel giving access into the heart of Padnal Fen. The little area of dry ground at the Old Plough would have been a good base for commercial operations, the Ouse providing relatively easy communications to both the north and the south. The fact that the river did not flow directly to Ely until the twelfth-century diversion would not necessarily have been a problem, despite the fact that most of the local manors were used to provision the

clergy in Ely, because the Abbot and then the Bishop were both also interested in the cash income which their manors could generate, which could imply non-local disposal and sale for produce originating at the Old Plough and transported along the river.

To determine whether these suppositions have merit would require a careful search through the surviving ecclesiastical documentation, much of which is now held by Cambridge University Library. The well known study of the Sacrist Rolls published by Chapman was based on a very small sample of the available records (Chapman 1907, p. v), and it is known that there were major primary sources which never did survive beyond their immediate use (Evans 1940). For someone with the requisite skills and interest, it seems that there is a substantial piece of work to be done to see whether or not the Old Plough can be identified and how the site was used.

Given the dearth of identified documentary material, it might be thought that very little more could be said about the early history of the Old Plough. In fact, this is not so. The property occupies a peculiarly important position in relation to the Ouse, and to the other manorial properties in the area. Consequently, the basic question may be formulated as follows: what economic function or functions would warrant the construction of an important residence in this particular location in the early sixteenth century or before? This question is a shorthand way in which to describe what archaeologists term 'site catchment analysis' (Murray 2001, p. 570; see also Chisholm 1962). Following this train of thought, it is possible to set out important leads that it would be possible to explore by documentary enquiry or direct archaeological investigation.

What may the history of the Old Plough be?

There are hints that there would have been turf cutting and eel fishing in the vicinity, and no doubt the washland was used for summer grazing. The additional possible functions of the Old Plough in mediaeval and post-mediaeval times are listed below:

1. Transhipment of goods on the Ouse to permit vessels to negotiate the shallows or 'Hards' that existed just upstream from the Old Plough.
2. Transhipment of goods over Middle Fen Bank, between the Ouse and Roll's Lode, to service Quanea and Stuntney.
3. Collection of tolls or dues on river traffic.
4. A retreat for the clergy and place for entertainment, analogous to the way in which Turbutsey was used (Chapman 1907, p. 3; Meadows and Ramsay 2003, p. 65).

Something can be said about the first three of these numbered possibilities.

The need for transhipment on the Ouse at the Old Plough

It is well known that, in the early seventeenth century, there were shallows downstream from Ely, locally

termed Hards. Their location can be determined with some precision as being a very short distance on the Ely side of the Old Plough. The twelfth-century cut to divert the Ouse crosses the outcrop of Kimmeridge Clay on which the Old Plough stands, this Clay being a resistant rock in the local context. Relatively large vessels coming from King's Lynn fully laden found that the Hards could not be negotiated, at least during times of low flow. Badeslade (1766 p. i) avers that, prior to the draining of the Fens in the seventeenth century, keels could carry 40 ton cargoes 36 miles from King's Lynn and that cargoes of about 13 ton could proceed further upriver; the 36 miles would have brought keels to the Hards near the Old Plough (Chisholm 2007, p. 180).

That transhipment did occur in the immediate vicinity of the Old Plough is strongly suggested by the coal that can be gleaned. It happens that the field immediately north of the property was deep ploughed in the winter of 2005/06, this being the first ploughing for about eight years. On 22 March 2006, the author walked the land. Very little coal was found south of the ditch which marks the northern boundary of the Old Plough curtilage, and only in the northeastern corner of the property and the adjacent field to the east, close to the ditch. On the other hand, coal proved to be plentiful north of the ditch, most especially between points A and C in Figure 6; a frontage to the Old Plough of about 125 metres. The greatest concentration, especially of the larger lumps, was in the vicinity of B. In places, coal be found some 30 m. north of the ditch. Coal was also found between C and D, a distance of about 125 m. Outside the limits A–D, coal seemed to be entirely absent.

The recent ploughing clearly revealed that the ditch forming the northern boundary of the Old Plough property represents the southern edge of the former river channel. Between A and C in Figure 6, riverine gravels with some fresh water shells mark a channel some 20–30 metres wide, beyond which to the north is a sharp transition to stoneless alluvium, the remains of the ploughed out natural levee deposited by flood waters. South of the ditch, the land rises gently, being the outcrop of Kimmeridge Clay.

Coal found today may have been moved from its original location by the river itself and/or by cultivation since 1830. The distribution in the bed of the former river implies that it has not originated from a single source, such as a sunken vessel, but has its origins in widespread spillages. The most likely cause of spills is transhipment, from larger boats coming from King's Lynn (or Wisbech) into smaller vessels which could negotiate the Hards just upriver from the Old Plough. Some of this transhipment evidently occurred along the course of the river east of the point at which it was diverted in the twelfth century. No transhipment seems to have occurred between C and E (Figure 6), where the pre-twelfth century river ran along the eastern edge of the Old Plough.

The field evidence recorded above corroborates the following oral history. The present owners say that the elderly lady from whom they purchased the

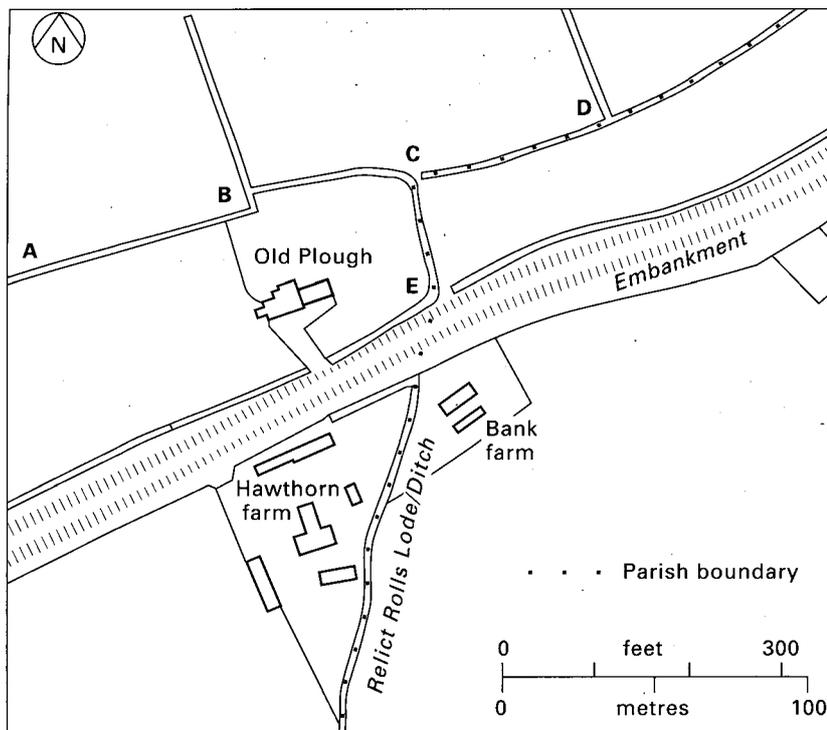


Figure 6. Site of the Old Plough in 1885. Re-drawn from Ordnance Survey 1886. See text for A, B, C, D and E.

property recollected, as a child, being sent by her mother with a bucket to collect coal from the field. We do not know how frequently this happened, nor the quantity collected but we may assume that the practice went back to the time when the Ely-Prickwillow channel became redundant in 1830. The March 2006 field walk was devoted primarily to ascertaining the spatial pattern of finds, but nevertheless 0.76 kilogram of coal was collected in about one hour; the largest lump weighed 0.10 kg.

No coal has been found south of the existing dwelling. This may mean that there was no transshipment there. Alternatively, it may be that the existing depression is the pale shadow of a former harbour, in which coal spillages lie buried under more recent infill. The only way to find out would be some systematic excavation. If there had been transshipment over Middle Fen Bank to service Quanea and Stuntney, then we would expect some coal to have spilled on the south side of the Bank, but there are no reports of finds having been made.

There is no reasonable doubt that transshipment of coal in the Ouse north of the Old Plough was a common occurrence. Likewise, if there was the need to do this for coal, presumably the same thing was necessary for other goods. Consequently, it is clear that there was at least this economic function for the Old Plough. But was there a staithe, or did all of the transshipment take place from one vessel to another somewhat randomly over the 250 m. stretch of river? And over what period of time did this happen? Coal was being transported to the monastic coal yards in Ely as early 1251 (Owen 1993, p. 11), so it is possible that transshipment at the Old Plough occurred from that date or even earlier. The latest that transshipment

would have been necessary seems to be the mid-seventeenth century, for reasons discussed in the section below on the draining of the Fens. We can be reasonably confident that transshipment was necessary in the first half of the seventeenth century but information for earlier times is scanty. One relevant factor would have been the size of the vessels in use and their laden draught, regarding which the available information is somewhat contradictory.

Excavations at Broad Street in Ely have revealed four cuts perpendicular to the river, variously in use from the fourteenth century to the sixteenth; two were probably dug in the late fourteenth century or early in the fifteenth. Ranging in width to somewhat over 13 ft (4m), these cuts would have allowed small barges or boats to berth, vessels that may have carried 15 to 25 tons when fully laden (Cessford *et al.* 2006; see also Fairweather 2005, p. 181 fn 382). Such craft would have needed about one m. of water, a depth which may normally have been available at the Hards. The two early harbours appear to have been replaced by two others in the sixteenth century with similar dimensions. Unfortunately, we do not know whether the craft using these four anchorages would have been fully laden when crossing the Hards. More confidently, we may say that the dimensions of the cuts preclude the possibility that keels, with a beam of about five metres, could have used them. But these hithes were not the only ones at Ely, so we cannot be sure that larger vessels were not reaching the town. A somewhat different picture is conveyed by a mid-sixteenth century report that Ely had but three barges or lighters, the average capacity of which was only just over seven tons of cargo (Elye *et al.* 1909, p. 95; see also Summers 1973, p. 39). These boats were trading all the

way to King's Lynn, and are unlikely to have been seriously impeded by the Hards. It seems reasonable to suppose that vessels became larger over time, and that this increased the frequency with which transshipment became necessary. And we know that early in the seventeenth century the Hards presented a serious problem at times of low flow, so it is probable that this had been the case for some time previously.

The transshipment function identified above places the scene of action to the north of the Old Plough. That being the case, one might expect the building to face in that direction. However, the present owners have found no evidence to suggest that the building ever faced north; in the light of their renovation work, they believe that it has always faced south. Why? Attention has been drawn to the depression which separates the building from Middle Fen Bank, a depression that Michael Young (*Pers. comm.*, 2005) thinks is reminiscent of river harbours elsewhere in the area. To explore matters further, we need to consider Roll's Lode.

Roll's Lode

It is generally accepted that, at the time it was decided to re-build the cathedral at Ely after the Norman conquest, the Ouse did not follow its present course from the Old Plough westward to the city. Instead, it turned sharply south from a point immediately east of the Old Plough, to wind its way past Quanea and Stuntney to join the modern course of the river south of Ely, just upstream of the railway bridge, at TL543 782. To bring stone close to the cathedral construction site, the river was diverted, most probably early in the twelfth century, and the straight section of Middle Fen Bank which runs west from the Old Plough marks the new course (Gardiner 1993, p. 35; Hall and Coles 1994, p. 136). The channel of the abandoned river is clearly visible as a roddon on the 1:50,000 geological map, solid and drift, published by the British Geological Survey in 1980, passing close to Quanea and Stuntney. It came to be known as Roll's Lode, remnants of which are still visible in the landscape (Figures 2 and 6).

We know that Quanea had a hithe in 1416 (VCH 1967, p. 38 fn 60, and p. 49; see also Hall *et al.* 1996, p. 40). At the minimum, therefore, we know that Roll's Lode was navigable for some period after the Ouse had been diverted. But does this imply free access to the Ouse, or had Middle Fen Bank been constructed, with the effect that navigation on the Lode depended on transshipment at the Old Plough?

There are no known documentary sources which record the diversion of the Ouse in the twelfth century. Nor are there records about the construction of embankments, which are hard to date unless they contain datable material, as was the case with the wooden culvert through a sea bank near Wisbech (Taylor 1977). Consequently, in considering Roll's Lode and Middle Fen Bank, it is necessary to rely upon indirect evidence, in the interpretation of which we need to remember an important feature of ecclesiastical administration following the establishment

of the Ely bishopric in 1109. The re-building of the cathedral was in the hands of the Bishop, and his lands, including Ely Porta Manor, were administered by the Dean and Chapter, so it may be surmised that the Bishop was responsible for diverting the Ouse to facilitate the carriage of stone. Stuntney and Quanea remained monastic properties, reliant upon Roll's Lode for water transport.

That Stuntney was an important manorial property in Saxon and Norman times is well attested. It was given to the monks at Ely in about 955, along with its fishery (Bentham 1812, p. 70), and at the time of the Domesday Survey in 1086 the fishery was the third most important in Cambridgeshire, with 24,000 eels (Darby 1936, p. 50 and 1971, p. 306). Eels remained important at Stuntney following the confirmation of Hervey as the first bishop of Ely in 1109 (Evans 1973, p. 5; Miller 1969, p. 282); eels were perhaps the major fenland resource during the mediaeval period (Darby 1974, pp. 22–32). Stuntney was also important for the Causeway, leading to Ely from the uplands east of the Fens, which was built not long after Etheldreda and her brother founded a monastery at Ely in the seventh century (Fairweather 2005, 319–20). In addition, Stuntney's early church is thought to have had Saxon associations (Hocker 1984–86, p. 11); the existing edifice, which has been much altered, goes back to the late eleventh century or early twelfth, and is thought to have been a resting point for pilgrims (Mullett 1904, p. 114). Although there are no known documentary references to a hithe at Stuntney, nor archaeological evidence for the mediaeval period or later, what is thought to have been a Roman dock was discovered in 1901 (Hall *et al.* 1996, pp. 35–6).

Apparently less important was the manorial possession of Quanea, first recorded in 1279, and possessed of a hithe which was still in use in 1416. Given the ubiquity of hithes at that time, it is inconceivable that Stuntney was lacking in this facility, and if Quanea's continued in use after the Ouse had been diverted at the Old Plough, then so must the one at Stuntney.

Consequently, the first inference is that Roll's Lode remained an open waterway until 1416 or later, which would be consistent with a desire to maintain the economic viability of the manorial possessions, an inference upon which some archaeological finds in the Lode near Quanea throw light. The finds mostly date from the eleventh century, and include a pitcher and a jug which are of special interest in the present context. Lethbridge and Fowler (1933) thought that the pitcher was late Saxon or early Norman, a view confirmed by Hurst (1956, p. 52) and, more recently, by Paul Spoerry (*Pers. comm.*, 2006), who gives 1050–1150 as the probable range of dates. As for the jug, Lethbridge and Fowler were not certain that it was contemporaneous with the pitcher, and Hurst confidently puts the date as late thirteenth-century. Unfortunately, this pot cannot now be located in the Cambridge Museum of Archaeology and Anthropology. Nevertheless, on the basis of the published description and photograph, Spoerry believes that the jug was made no earlier

than 1200 and no later than the fourteenth century. It seems to be clear, therefore, that the pitcher found its place in what is now Roll's Lode either before the Ouse had been diverted in the early twelfth century, or very shortly thereafter. On the other hand, the jug must have been dropped after the diversion had occurred, and no later than about 1400. So far as can be ascertained, the only other archaeological evidence found in or very near the Lode is at Stuntney and is of Roman date, including the hithe mentioned above.

The two Lethbridge and Fowler pots found near Quanea both rested on silt, which must have been the bed of the channel. This indicates fairly conclusively that the Lode must have remained an open channel with a reasonable flow of water, possibly until 1400 or even later. With open access between the Lode and the Ouse, it is reasonable to infer that navigation was able to continue without undue hindrance.

The pots were found 'embedded in a stratum of freshwater shells about 6 in. thick', which implies a considerable environmental change sometime after the jug came to rest on the channel bed; the implication is a reduced current but nevertheless a continuing free flow of water. Among the freshwater shells were found single valves of *Ostrea*, or oyster; clearly, fresh oysters had been consumed in the vicinity, which implies continuing access to the Wash and hence the navigability of the Lode. Above the shells were three feet six inches of black peat and then a further two feet six inches of brown peat, making six feet in all. Peat formation implies that the water in the Lode was no longer freely flowing, which carries the further implication that one end at least had been blocked. The inference to be drawn is that the commencement of peat accumulation was triggered by the completion of Middle Fen Bank, all the way from Soham Lode to the Old Plough and across Roll's Lode at both ends, isolating it from the Ouse. The probability that this was the case is increased by the following further information from the excavation.

The lower horizons of the peat contained unopened shells of *Mytilus edulis*, the common mussel that inhabits coastal and estuarine waters. It is conceivable that they lived *in situ* during a marine incursion, which brought brackish water this far up the Ouse. Such an incursion might have been possible, since the silt of the Lode itself consists of Terrington Beds in at least one place; in origin, these Beds are marine alluvium and/or saltmarsh deposits. However, it would be difficult to explain the simultaneous accumulation of peat and the presence of brackish/saline water, since the vegetation which gives rise to fenland peat is freshwater. Furthermore, Lethbridge and Fowler do not record the peat as having any intermixture of silt, which one would expect to be present if the water were tidal. Finally, a marine incursion would imply that, while the upstream end of the Lode had been blocked, eliminating the free river flow, the downstream end at the Old Plough remained open, allowing the brackish water to penetrate up the Lode.

It seems that a natural origin for the mussel shells must be discounted, which leaves just one possibil-

ity, human agency. The fact that the shells were unopened proves that the mussels had not been eaten. Consequently, it seems probable that the mussels had died and were thrown into the Lode as being inedible. The mussels would have been brought from King's Lynn, this port having become the point of access to the Wash, with the implication that the Lode was navigable after the peat began to form, and hence after it had been blocked at the Old Plough. Therefore, the mussels must have been transhipped at the Old Plough.

On this interpretation, it is evident that Roll's Lode remained an open waterway after the Ouse had been diverted in the twelfth century, and continued in this state possibly as late as the 1416 survey which records the Quanea hithe, and conceivably even later. There was then a period of unknown duration when the free flow of water was much curtailed, creating conditions for the accumulation of freshwater shells. On the evidence so far, Middle Fen Bank cannot have been built across the Lode any earlier than the late thirteenth century. And we know that, once the Bank had been built and the accumulation of peat had begun, the Lode remained navigable for some period of time, on the basis of transhipment at the Old Plough.

The problem of dating the closure of the Lode can be approached in another manner. Whereas Hayward's 1604 map shows just one short isolated section of the Lode, hugging Stuntney island, even this relic is absent from the earlier map of Saxton (1576) and the later cartography of Hondius (1632) and Blaeu (1645). Moore's map, published in c. 1658, is at a larger scale (two inches to the mile) and shows considerable detail regarding the waterways, drains and ditches, which is hardly surprising given his role as the Surveyor for the Fen drainage enterprise, working with Vermuyden. This map shows the Lode as a continuous feature, mostly as a single line, in a manner suggestive of a drain and not a navigable waterway. Around Stuntney, the Lode is emphasised by the use of double lines instead of a single line, and here it is labelled 'Stock load'. Celia Fiennes travelled through Stuntney to Ely in 1697, recording that, after descending the steep hill, she crossed 'a bridge over water' (Morris and Trevelyan 1949, p. 155). By the late seventeenth century, the Fen drainage project was in crisis on account of the shrinkage of the peat, rendering gravity drainage ineffective (Darby 1956, pp. 104-16). In addition, at the time of her journey there had been exceptionally heavy rains, the land was sodden, and it would not be surprising if the relic Lode had some water in it; her observation cannot be taken as evidence that navigation was possible. The cartographic evidence is consistent in showing the Lode so diminished as to have been useless for navigation by the beginning of the seventeenth century, being little more than a ditch for most of its length. This suggests that the accumulation of peat rendered navigation impossible, even for small boats, by about 1500 at the latest.

If navigation had become impossible by about 1500, Middle Fen Bank must have been built some

considerable time previously but it is largely a matter of guesswork when. It seems likely that it cannot have been constructed across the Lode much later than about 1416, giving us a range of possible dates from the late thirteenth century to the early fifteenth. The possibilities can be narrowed even further by the following consideration. The Black Death (1347–51) caused a severe shortage of labour and had a major impact on the organisation of society. It seems unlikely that Middle Fen Bank would have been engineered after this disaster, which suggests that the first half of the fourteenth century is the most likely time for the Bank to have been built¹. Such a date is consistent with what we know about the responsibilities of the Ely bishops for flood control and the fluctuating fortunes of monastic and church enterprises (Heal 1973; Platt 1995).

With embankments at both ends of the Lode, the hithes at Quanea and Stuntney could only remain in business with the transshipment of goods over the Bank at one end or both ends. The Old Plough is nearer to King's Lynn than is the southern end of the Lode, from which we may infer that there must have been a period when transshipment was taking place at the Old Plough. With the steady accumulation of peat, navigation along the Lode would have become impossible, probably by about 1500. A transshipment business over the Bank implies water access immediately adjacent, i.e. a harbour or hithe, on both sides. This would provide a reason for the Old Plough to face south, towards a harbour adjacent to the north side of Middle Fen Bank.

Land drainage

Embankments across Roll's Lode implies that there would have to be provision for removing land water draining into the Lode, i.e. a culvert, with a sluice or gate to prevent the river waters flooding the land. In this way, the land water could drain off whenever the river level was lower. Sluices of this kind are known to have been in use in the mid-thirteenth century, and maybe earlier. The thirteenth century one de-

scribed in Taylor 1977 (see also Hall *et al* 1996 p. 185) was constructed from three hollowed out tree trunks. At the Old Plough, there is a substantial brick culvert through Middle Fen Bank, on the alignment of the former Roll's Lode. Figure 6 is based on the 1886 1:2,500 sheet, for which the survey work was done in 1885. The Lode is clearly visible passing between Hawthorn Farm and Bank farm, reappearing on the northern side of Middle Fen Bank, immediately east of the Old Plough before turning eastwards for Prickwillow. These two ditches are still clearly visible but they are not now connected. There is, however, a brick culvert through the Bank between them.

At the time of the author's first site visit, in November 2005, the upper part of the culvert was visible at either end, to a height of about 0.65 m, being the vaulted roof and the upper part of the walls. About three metres of the culvert through the Bank were still in place, covered by a thin layer of soil, the upper part of the Bank having been removed. The top of the culvert is one or two metres above the present day ground level south of Middle Fen Bank, where silt deposits show through the peat. The culvert has a gentle declivity to the north. It is built of white unfrosted bricks, which are approximately 9×4 inches, and generally slightly less than 2 inches thick; they are laid with lime mortar.

The southern end of the culvert had been truncated over time, with the result that it is impossible to know how the inflow was originally configured, but the northern outflow was substantially intact. Excavation of this end with Gerald Rigby (Figure 8) revealed that the structure comprises walls which are 1.25m. apart, rising 0.75m. from the cill to a barrel vault, which rises a further 0.5m, measured to the underside. The two parallel side walls extend about 1.2m. beyond the culvert's mouth to the north, and at the culvert's entrance there are original rebates in the brickwork. Some fragments of rotten wood were found in the vertical rebates, and plaster in the cill rebate carried the imprint of the grain of timber that had been set there; evidently, the culvert was built with an inset wooden frame. In addition, several pieces of rusted iron were found, including substantial nails and iron strapping, and an object that may have been the base bearing for a door. The floor of the culvert is paved with bricks, as is the floor between the two parallel walls extending toward the former course of the Ouse. These two walls were built upon a timber base, the wood now rotted. At 1.2m from the culvert's mouth, the side walls turn through 45° to form a fan, and then again to run parallel with the embankment. No evidence has been found that the floor of the fan was paved.

The design of the culvert's outfall distinguishes it from the culverts in use in the nineteenth century, associated with windmills to pump water from land lying below river level (Wheeler 1868, facing p. 36; see Darby 1956, facing p. 226). As portrayed by Wheeler, the water issued from the culvert as a cascade down three shallow steps forming a fan between two splayed retaining walls. The splayed outfall was paved to pre-

1 There is an oddity about Middle Fen Bank which appears not to have attracted the attention which it deserves. To the west and south of the Old Plough, the Bank consists of a series of straight sections, joined by regular curves, all the way to near the point where Soham Lode joins the Ouse. South of this point, the Bank is sinuous, as would be the case if built along a natural river, and the same is the case between the Old Plough and Prickwillow. Figure 7 shows that, in 1811, the sinuous sections of the bank hugged the river, whereas the 'straight' section was at variable distances away. The inference is that the sinuous and straight sections were built at different times, which suggests that when Middle Fen Bank was completed (no later than the mid-fourteenth century, in all probability) it was the straight section that was built, uniting the pre-existing sinuous banks. If that is the case, why was the Bank built from Prickwillow to the Old Plough but not further west along the Ouse? That question provides the starting point for further enquiry.

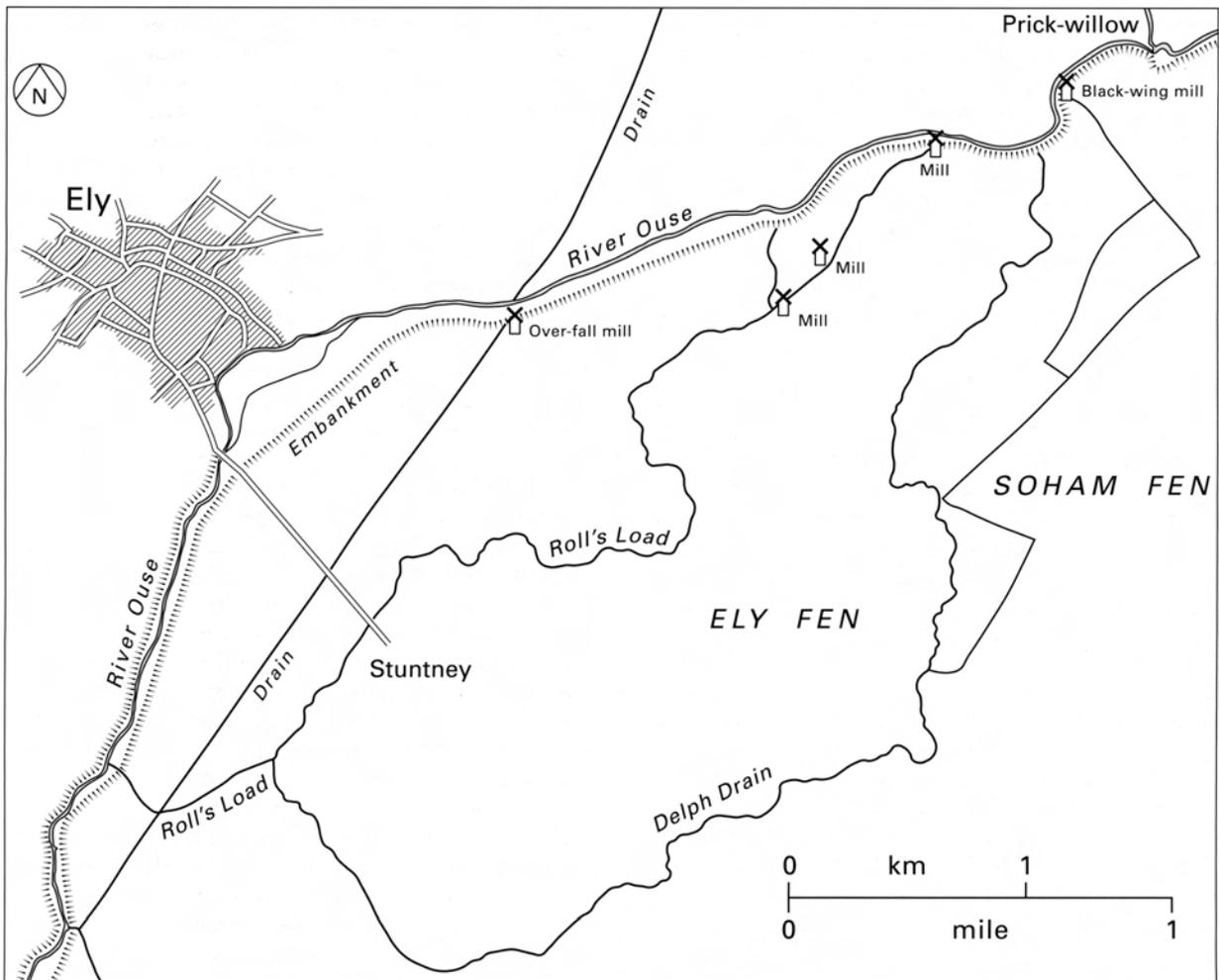


Figure 7. River embankments, Rolls Lode and Delph Drain in 1811. Re-drawn from Ordnance Survey 1811.



Figure 8. Culvert at The Old Plough, viewed from the west (water flow from right to left). Note the horizontal and vertical rebates in the brickwork. Gerald Rigby at work. March 2006. Photograph by Judith Chisholm.

vent erosion by the rushing water. The culvert at the Old Plough would have been destroyed very quickly if had been handling rapidly moving water, even if the flow were considerably smaller than was possible in the mid-nineteenth century. The design of the Old Plough culvert is consistent with gentle gravity flow, not with the rush of water associated with windmills lifting water over a bank. In any case, culverts associated with windmills did not need a gate such as was incorporated into the Old Plough culvert.

The inference is that the Old Plough culvert was built to provide gravity drainage from the Lode into the Ouse, and that it was equipped with a wooden door which could close to the wooden frame at the outflow (northern) end. If freely hinged, the door would open when the water in the Lode was higher than the Ouse, and close to prevent river water entering the Lode when the river was running high: the same system as that used at Denver Sluice from 1652 to discharge water from the Ouse. The whole structure was well-designed and evidently built with the intention that it would last.

So when was the existing culvert at the Old Plough built? Moore's map of about 1658 shows Roll's Lode discharging into the Ouse through a culvert, in the same way that Crooked Drain (or Delph Drain) also debouched into the river near Prickwillow. Two other culverts are recorded by Moore in the vicinity, both on the right bank of the Lark between Prickwillow and Isleham and identified as 'A Tunnell'. Given the then state of technology, the implication is that these culverts would all have been built of brick, and that therefore a brick culvert existed at the Old Plough in the mid-seventeenth century, presumably replacing an earlier structure.

Two other lines of evidence combine to suggest a mid-seventeenth century date for its construction. Michael Young believes that the bricks are seventeenth century, a view which Paul Spoerry modifies slightly to suggest sometime between 1600 and the early eighteenth century (Pers. comms, 2006). Within that time frame, the probable date of construction can be narrowed quite precisely in the following manner. The first major attempt to drain the Fens was in the 1630s but, comparatively modest in concept and beset by the troubles of the subsequent Civil War, proved largely ineffectual. It is unlikely that the culvert was built as part of this early drainage scheme. A new start was made in 1649 by Cornelius Vermuyden. Dependent entirely upon gravity drainage (Harris 1957, p. 320), this project initially appeared to be a success but the peat quickly compacted and began to degrade in the presence of oxygen. The peat surface became progressively lower, while rivers flowed along the ribbons of firm silt which they had deposited, eventually standing above the surrounding land. Gravity drains ceased to work, and the whole enterprise was in crisis before the end of the century. Salvation lay with windmills to pump water over the embankments; introduced in the late seventeenth century, they were in general use in the first quarter of the succeeding one (Darby 1956, pp. 104–16). The

Old Plough culvert would not have been built when the problems of gravity drainage had become evident. Consequently, the most probable time of construction is when the major engineering and embanking works were being undertaken in the 1650s. Within half a century it would have ceased to function.

There is local evidence that the culvert had ceased to function by the middle of the eighteenth century. Excavation of the apex of the culvert's fan, beyond the two parallel walls, revealed a jumble of bricks and mortar, the bricks being identical to those in the existing structure. This collapsed material went a foot or more below the paved surface already mentioned and imbedded therein was found the base of a wine bottle. A tentative, but not authoritative, date for this shard is the third quarter of the eighteenth century (see Appendix), with the implication that the culvert had been out of use for some time previously.

We know that Roll's Lode no longer discharged into the Ouse in 1811, land waters having been diverted to a point further east (Figure 7). There is no known physical evidence that there was ever a windmill at the Old Plough, nor any known reliable documentary information. An anonymous undated eighteenth-century sketch of the river system shows windmills along the Ouse. One is clearly the Overfall Mill and another is located roughly where Crooked Drain debouched, near Prickwillow. In between, two mills are shown, one of which could be at the Old Plough (Cambridge RO, R59.31.40.89). The reliability of this document is questionable and it seems probable that the local drainage was reorganised when windmills came into general use in the early eighteenth century, diverting the water of Roll's Lode further eastward.

Evidence of harbours at the Old Plough?

Figure 6 shows that, on the south side of Middle Fen Bank, on the property of Hawthorn Farm, Roll's Lode terminated in 1885 with a short appendix running westward, parallel with the Bank and immediately at its foot; the same feature survived until the 1925 revision, which was published in 1927. There is nothing now visible to reveal the presence of this short watercourse. Was it the remnant of a small berth or harbour for the transhipment of goods over the Bank?

The existing Hawthorn Farm house, built in the 1980s, stands on the site of a former dwelling of unknown age, thatched and with a mud floor. The garden land slopes from the house to the east, towards, and merging with, Roll's Lode, with a sharp bank rising on the other side to Bank Farm. This local topography contrasts with the Lode south of the garden: here the channel is distinctly incised into the landscape, with banks of equal height on either side. How much re-shaping of the landscape has occurred within the curtilage of Hawthorn Farm is unclear, but the form suggests that there may have been a small basin at some time which has been filled in, perhaps in the process of cultivation. A rather similar conclusion applies on the north side of Middle Fen Bank. There is a distinct depression between the Bank and

the Old Plough, which might be the remnants of a long disused basin. This topographical evidence is no more than suggestive but it is consistent with the clear evidence that transhipment over the Bank did take place for a period in mediaeval times.

River tolls and dues

In the early mediaeval period, a general feature of England was the ubiquity of tolls and imposts of all kinds, including those upon trade and the movement of goods by land or water (e.g. Carus-Wilson, 1958; Gras 1918, Chap. 1; Poole 1951, p. 75; Willard 1926, p. 369). It is clear that traffic on the Ouse and its tributaries was indeed subject to imposts. We know that in the mid-fifteenth century the Abbot of Bury St Edmunds had full control over the river Lark for all uses, and imposed tolls on the barge traffic (Gottfried 1982, pp. 80 and 92). More generally, sometime between 1120 and 1131, Henry I issued a Writ, part of which reads as follows:

Henry King of the English to Hervey Bishop of Ely and all his barons of Cambridgeshire greeting. I forbid that any boat shall ply at any hythe in Cambridgeshire, save at the hithe of my borough of Cambridge, nor shall barges be laden save in the borough of Cambridge, nor shall any take toll elsewhere, but only there' (Maitland and Bateson, 1901, p. 3).

As Jones (1920, p. 113) points out, issuing a Writ is one thing but enforcement is another matter. In any case, the Isle of Ely enjoyed privileges akin to those of a palatinate. In 1052, Edward the Confessor gave the Ely Abbey to Wulfric "in all things within borough and without, (with) toll and team and ..." A subsequent Charter from Richard II in 1189 provided that the Isle of Ely "was free and quit of all royal exaction" (VCH 1967, pp. 5 and 7). In the early period after the Norman Conquest, the ecclesiastical authorities had very considerable, if not complete, independence in fiscal matters, this being one feature of the liberties enjoyed by the Isle of Ely.

The manors owned by the bishop of Ely were managed with a high level of integration to supply his entourage and for trade to London, King's Lynn, Wisbech and elsewhere. A fair was established in Ely in the 1120s that came to rival St Ives in importance. The Ouse was the essential transport artery for the bishop's own commerce, and for commerce more generally (Miller 1969; Miller and Hatcher 1995). When the bishopric was established in 1109, there is no evidence that Bishop Hervey's charter for the monks gave them any share of the franchises pertaining to the Isle of Ely (VCH 1967, p. 8). Therefore, it is reasonable to assume that he retained the right to levy tolls on river traffic, an assumption that is confirmed by the following. Between 1541 and 1660, the Dean and Chapter levied tolls on vessels passing under the High Bridge in Ely (Atherton 2003, p. 185). Since this was happening in the sixteenth and seventeenth centuries, it is difficult to believe that it had not been happening since the Ouse was diverted in the early twelfth century. Whether the revenues were entirely

the possession of the Dean and Chapter, on behalf of the Bishop, or whether the levies were "farmed" on behalf of the Crown, is uncertain, because the fiscal exemptions for the Isle of Ely were eroded from the early thirteenth century onwards; however, the effect was that "the liberty paid just the same" (VCH 1967, p. 10). In any case, we do know that, in the thirteenth century, the Bishop was responsible for the bridge across the Ouse (presumably a timber construction that preceded the first stone bridge the following century), which bridge he allowed to fall into such disrepair that, for sixteen years, those wishing to cross had to use a ferry, which contributed handsomely to his coffers (Darby 1974, p. 111).

Given that river traffic would have been subject to tolls, the diversion of the Ouse in the early twelfth century to flow past Ely would have posed a problem of immediate relevance for the Dean and Chapter. Although tolls could be collected in Ely itself, traffic destined for Cambridge, St Ives and elsewhere could use Roll's Lode and avoid those imposts. The logical response would have been to establish a toll point which could control all the river traffic, for which purpose the site of the Old Plough would have been the place to choose, where the Dean and Chapter would have needed an establishment to collect river tolls and to keep a general eye on river traffic. This points to permanent occupation as early as the first decades of the twelfth century, and to the probability that the resident must have been a person of some importance.

Draining the Fens

When Vermuyden dug the New Bedford river to divert the Ouse at Earith, and constructed Denver Sluice, the general expectation was that water levels in the Ouse between Earith and Denver would be lowered. In the absence of the tides, this might have created problems for navigation because of shallow water. Given that there were Hards near the Old Plough, and shallows in Ely, it is reasonable to expect that something might have to be done to maintain an adequate draught for vessels: either modify the channel; or construct a lock. There is clear evidence that both solutions were contemplated, though it is uncertain what exactly may have been done.

A hitherto overlooked source is the report given by Vermuyden to the Lords Commissioners of Adjudication of the drainage scheme in March 1652. He was asked to 'read over' his design for draining the South Level, the text whereof contains the following passage:

'And yet, least whilst I was dreyinge I might not prejudice the navigation from Cambridge to Salter's Loade, and so to Lyn, in regard the tydes were stopt out att Salter's Loade, and the old channel of Ouze, nere to Elie bridge, exceeding large and spacious, and very shallow, by reason whereof the navigation formerly, in dry tymes, and upon all neape tydes in summer, was obstructed, I caused a water gage to bee sett upon the said river, near Elie, at a place called Russell Hill, to keep up the water att a gage,

and then made a little cutt by about a myle in length, sufficient for boates to pass att all tymes, and which is fedd with water sufficient from Grant river [Cam] to supply it, by reason of the narrowness now it is of, so that the navigation is now better, and more certaine than formerly.' (Wells 1830, pp. 273-4.)

The Lords Commissioners were in Ely at the time Vermuyden gave this account, so it is virtually certain that he portrayed the then existing arrangements accurately.

However, within six years ideas had changed, it then being intended to construct a lock, which would have been little more than the adaptation of the arrangements described by Vermuyden in 1652. Figure 2 records the lock as shown by Jonas Moore about 1658; there is some documentary support for the intention to build this lock (Chisholm 2006, 2007, 2008) but it was never built, which implies that an alternative solution was found, most probably by managing Denver Sluice in a way that was not originally thought to be possible. The full account of this water control regime remains to be written. Sufficient in the present context to note that the need for transshipment to get over the Hards immediately upstream of the Old Plough apparently ceased with the construction of Denver Sluice. By that time, Roll's Lode had for some considerable period been impassible for boats, so this other transshipment business at the Old Plough had already disappeared. Consequently, with the draining of the Fens, the reasons for overseeing river traffic at the Old Plough finally ended.

Conclusion

Use of the Old Plough site had its origins in the manorial organisation of lands around Ely, first as a monastic property and then under the control of the Bishop. It occupies a strategic position for the exploitation of Padnal Fen, with eels and peat both being likely resources used in mediaeval times. River traffic would also have provided reasons for the establishment of an important habitation, there being clear evidence of transshipment on the Ouse and over Middle Fen Bank. In addition, it seems probable that the collection of river tolls would have been important, especially while Roll's Lode remained an open waterway.

However, with the passage of time, the early economic functions ceased, and it may be that draining the Fens in the seventeenth century was the near final blow, with the end of transshipment on the Ouse. The only available business would then have been as an inn, serving the river traffic and also land-based custom. There used to be a significant number of dwellings along Middle Fen Bank, presumably associated with agriculture, and the Bank was an important thoroughfare from Ely to Prickwillow until the modern road link through Queen Adelaide was built in the nineteenth century; indeed, the Bank was still occasionally used in the 1930s (Ken Hopkin, Pers. comm. 2006).

This assessment of the site and the building is

consistent with what may be termed the 'folk memory' recorded by Shirley Cornwell, daughter of the lady who sold the property to the present owners in 1987. In some notes prepared for Chris Jakes, dated 11 June 1991, she records that her mother believed the Old Plough was 'built about [the] 13th century' (Cambridgeshire Collection, C.274). There is no reason for supposing that the present building is that old, but the recorded oral testimony points to the site having been used for a very long time indeed.

The present building appears to date from the early sixteenth century or late fifteenth, and manifestly was not constructed as a riverside public house but for much more important purposes. The stone incorporated into the Old Plough was not on its way up river, intended for the cathedral, but is second-hand material presumably originating in Ely; supplies were available from the fourteenth century. Consequently, the Old Plough should be thought of as an example of the local habit of re-cycling building materials, particularly evident in Ely but common in Cambridge, Littleport and elsewhere.

The Old Plough is also of interest for the brick culvert through Middle Fen Bank, a culvert which was clearly constructed to provide gravity drainage from Roll's Lode into the Ouse. There seems to be little doubt that it was built in the 1650s, as part of the major engineering works for draining the Fens undertaken by Vermuyden, and that it replaced an earlier structure serving the same purpose.

There seem to be two two possibilities for adding to our knowledge of the early use of the site and the date of the present building. The first would be archaeological investigation going beyond the preliminary and essentially negative preliminary findings reported in the Appendix. The second is the possibility that information awaits discovery in Ely ecclesiastical manuscripts, now housed in Cambridge University Library. Is it the case that the Old Plough occupies the site identified as 'Pathewere' or 'Padewere' in the *Inquisitio Eliensis*? At the time Chapman wrote his highly regarded study of the Sacrist Rolls of Ely, he noted that his study encompassed a "very small portion of the documents which have been for centuries lying in the Muniment Room of Ely Cathedral" (Chapman 1907, vol. 1, p. v. When they are examined by scholars with the requisite skills, the present paper should be helpful in providing leads regarding relevant information for which to look, information that may confirm or confound the analysis that has been set out above and thereby shed important light on the management of resources around Ely in mediaeval and post-mediaeval times

Appendix

Preliminary site investigations

Dowsing

Mac Dowdy walked the land in February 2006 with his dowsing rods. Though many will be sceptical

about this technique, the results were very suggestive (Figure 9). He found what appeared to be the foundations of substantial extensions to the main house, mostly to the west and to a lesser extent to the east, giving dimensions which he regards as a classic ratio for a mediaeval dwelling. Two rectangular building plans were also identified, as detached structures. He believes that there is evidence of the site being used from the early fourteenth century or even earlier.

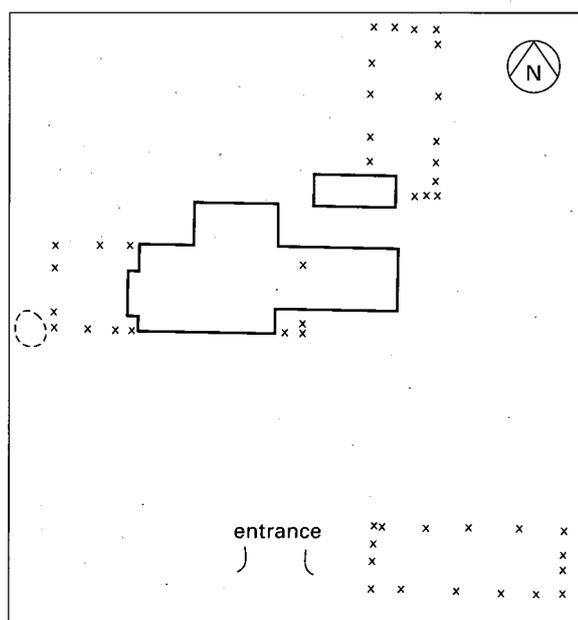


Figure 9. Old Plough site details and dowsing record by Mac Dowdy.

Archaeology RheeSearch

The second investigation was by Archaeology RheeSearch, on 15 October 2006, a team equipped to measure soil resistivity and magnetometry responses. Unfortunately, the site does not lend itself to this form of investigation, for two reasons: there are numerous trees and a number of outbuildings within the curtilage; and to the west of the house there is a substantial amount of made ground, being the spoil from the pond which the present owners dug. Four comparatively small areas were surveyed, with results that are no more than suggestive. No evidence was found for a westward extension of the house, but there is the suggestion of foundations consistent with the building which Dowdy thinks stood to the north of the present building. In addition, the geophysical results suggest that there may have been a harbour basin north of Middle Fen Bank and east of the present house, an area of low resistivity flanked on both sides by markedly higher resistivity, with some confirmation from the magnetometry data.

Trial trench

A week after the geophysical survey, the author dug an experimental trench to see whether any evidence exists of foundations on the westward extension of the north wall of the main building. The edge of this

trench nearest to the building was nine feet (2.7 metres) away, clear of the land for which the resistivity results indicate the presence of rubble near the house. The trench was four feet long, straddling the line of the possible foundation. To a depth of somewhat over two feet, the soil was manifestly disturbed, incorporating a mixture of materials, including modern artefacts, some shards of relatively modern pottery and some fragments of tile that are similar to the tiles that were on the house in 1987, but nothing from mediaeval times. There was no hint of foundations. From about two feet three inches (0.7 of a metre) below the surface down to three feet (0.9 of a metre), the ground appeared to be undisturbed and no artefacts were found. The investigation was then carried a further two feet to a final depth of five feet (1.5 metre) with the use of an augur at intervals of six inches along the trench. These augur trials showed conclusively that there has been no interference with the subsoil. Therefore, it is clear that there has never been a wall extending the line of the north wall of the present house, with the clear implication that the results from dowsing cannot be accepted as evidence that there was a building west of the existing one.

The culvert

As noted on page 162, a bottle shard was recovered from the discharge end of the brick culvert, tentatively dated to the third quarter of the eighteenth century. The shard comprises almost the entire base of a bottle, about 11.5 cm in diameter, rising to a maximum of 6.5 cm from the base, the side curving slightly outwards. The bottle is cylindrical, with a high conical kick. It is made of green glass, 2–3 mm thick at 50 cm from the base, thickening downwards to a maximum of 4 cm. All the surfaces, including the broken edges, were covered with a fragile iridescent patina, the product of degrading glass, indicating that the object had not been disturbed since deposition in the alkaline environment.

Being cylindrical, the bottle could not be earlier than the eighteenth century (Bacon 1939; Bossche 2001; Charleston 1984; Dumbell 1983; Willmott 2002). According to Bossche, Belgium was the main centre for glass bottle manufacture from the seventeenth century, most of the output being green glass, unlike the black glass commonly used in England. The glass of English bottles was generally 3–6 mm thick, whereas Belgian wares were made with thinner glass, 2–4 mm. Consequently, the bottle is probably Belgian.

Cylindrical Belgian bottles with a high kick were manufactured from 1740 to 1800, and the English equivalent from 1735 to 1780. During the eighteenth century, bottles became taller, the necks shorter; at the same time, the diameter declined towards 9 cm. In combination, the characteristics of the shard suggest that it was in use no later than the third quarter of the century, probably nearer 1750 than 1775.

Lead plumb bobs

Close to the bottle shard, in the same jumble of bricks and mortar, three cast lead objects were found (Figure

10). These are unlike mediaeval fish tackle (Lucas 1998; Stean and Foreman 1988), and are not weights for weighing machines. Almost certainly they are plumb bobs that would originally have had a piece of wood passing through the tapered holes piercing the objects from one end to the other. They are in remarkably good condition, probably reflecting the alkaline environment in which they were embedded.

There is no information about any similar finds in the records of the Cambridgeshire Portable Antiquities Scheme, and other enquiries indicate that these unusual objects cannot readily be dated except by association with other datable materials. In this case, they probably reached their resting place about the same time as the glass shard, although they could be considerably older.



Figure 10. Lead artefacts found at the outfall end of the culvert through Middle Fen Bank. Probably plumb bobs.

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I am greatly indebted to Melanie and Gerald Rigby, the present owners of the Old Plough. They bought the property in 1987, when it was in a near terminal state of dereliction. With great skill and understanding, they have rescued the property with sympathetic restoration, whereby they have become intimately acquainted with its quirks and foibles. Both of them have been very generous with their time and knowledge. A very considerable debt is also owed to Michael Young for his invaluable help, with suggestions for people to contact, for literature leads, and in reading and commenting on early drafts. He accompanied the author on the first visit to the property in November 2005, and then again with Mac Dowdy in January 2006 and Paul Spoerry in June. The staff at the Cambridge Record Office, the Cambridgeshire Collection and Cambridge University Library have given a great deal of assistance, as also staff in the University's Faculty

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Living on the Edge: Commons, Castles and Regional Settlement Patterns in Medieval East Anglia

Robert Liddiard

East Anglia is characterised by a dispersed pattern of settlement, but with subtle variations between 'Northern' and 'Southern' East Anglia, the former comprising a landscape of primarily common-edge settlements and the latter one of minor nucleations. The siting of Norman castles reflects this sub-regional variation: in south Suffolk and Essex castles tend to be located in nucleations, while in north Suffolk and Norfolk they tend to be found in association with commons. The differences in siting can be related to antecedent structures but also to a desire on the part of incoming Norman lords to guarantee rights over specific resources in the regional economy.

Introduction

A steady stream of publications in recent years on the subject of 'castles and landscapes' has led to renewed interest in the relationship between castles and settlement patterns. A general conclusion of much of this work has been to demonstrate that variations in the settlement morphology of medieval England are often reflected at a local level in the location of seigneurial buildings: in Midland England, for example, castles are frequently associated with the nucleations typical of the region; whereas in the south west castles are often isolated, reflecting the highly dispersed settlement pattern of scattered farms and hamlets (Creighton 2005). Such discussions bring into focus specific questions concerning the reasons behind castle siting at a local level, but also raise more general issues concerning how the physical manifestations of lordship interfaced with, and were sustained by, regional societies and landscapes.

This article builds on research in this field by discussing the relationship between castle-building and settlement patterns in East Anglia, an area with distinctly regional characteristics in terms of its historic landscape. Much has been written in recent years both on the subject of the regional landscape of East Anglia and on its castles (Liddiard 2000a; Williamson 2003). Due to the differing historiographical priorities of those scholars who study the rural landscape and

those who study castles, however, links are often only intermittently made between what can often appear as two different subjects. This article will review the recent developments in both the fields of medieval settlement and castle studies and attempt to link the findings of both in order to arrive at a greater understanding of any regional characteristics in castle siting and distribution. It will concentrate on those castles raised in the two hundred years after the Norman Conquest and, in terms of geographical scope, will focus on the old kingdom of the East Angles, modern Norfolk and Suffolk, although, as will be seen, the divisions of county boundaries are not always the best criteria for discussing castles and settlement patterns and so a slightly different geographical model will be employed.

The Regional Landscape of East Anglia

It is well known that during the Middle Ages an idiosyncratic settlement morphology evolved in East Anglia, characterised by clusters of farmsteads grouped around the edges of commons and greens (Roberts and Wrathmell 2000). Extensive fieldwalking surveys over many decades have demonstrated that East Anglia's 'common-edge settlements' were established in the period from the eleventh to the thirteenth centuries (Wade-Martins 1980; Davison 1990; Rogerson 1995; Martin 2001). In a process known as 'common-edge drift', settlements originally founded in the Middle Saxon period and associated with the site of churches gradually shifted to new locations. The new settlements of East Anglia developed around common waste, land too often dismissed in the past as 'marginal', but now accepted as a crucial resource in the regional economy. As existing settlements disintegrated by their constituent farms relocating to the edges of commons, churches remained in place; thus the process of 'common-edge drift' was responsible for the phenomena of isolated churches, one of the most obvious regional characteristics of the East Anglian countryside and, as will be seen below, an important factor in the structuring of regional castle landscapes.

Within the broader classification of East Anglia as an area dominated by common-edge settlements there are, however, subtle, but important, variations. Of particular relevance here is the broader distinction between 'Northern East Anglia' and 'Southern East Anglia', with the dividing line not precise, but which can be drawn as an imaginary line across Suffolk running from Ipswich to Bury St Edmunds, in large part approximating to the valley of the river Gipping (Figure 1). South of the 'Gipping Corridor' as it has come to be known, is south Suffolk and north and east Essex, while to the north lies most of east and north Suffolk and south and central Norfolk (Williamson 2006, 51–6). These two sub-regional landscapes display subtle, but significant, variations in settlement morphology. The countryside of Northern East Anglia is characterised by relatively high numbers of isolated churches, large commons and a high frequency of common-edge settlements. Southern East Anglia, by contrast, is a landscape of minor nucleations focussed on a smaller commons or greens, frequently associated with a church, and, in addition outlying farms and green edge hamlets. The cultural difference between these two landscapes is reflected by the names given to common wastes: in Northern East Anglia commons are referred to as 'moor', 'heath', or

'common', while in Southern East Anglia 'green' and 'tye' are more frequent, the latter term only occurring south of the Gipping (Martin 1999, 62–3).

The boundaries of regional landscapes are never easy to define and often blurred at the margins but, while the change is gradual, two further observations on the settlement morphology of East Anglia as a whole are highly significant. Firstly, the further north one moves into the region, and especially north of the Gipping valley, the greater instances of common-edge settlement and secondly, the area of those commons that attracted settlement generally becomes larger (Williamson 2007).

The reasons behind the emergence of these two distinct sub-regional landscape types are complex and do not warrant an extended discussion, but do demand explanation as it does help to explain the differing locations of castles across the region (Williamson 2003). While it is possible to suggest a date for the process of common-edge drift with some certainty, the causal factors behind this phenomenon remain a matter for debate. In Northern East Anglia, however, it appears likely that the desire to relocate settlements close to commons was a response to wider structural problems within the regional economy. From the eleventh century demographic pressure



Figure 1. Sites mentioned in the text and principal features governing castle distribution in East Anglia.

and consequent expansion of the area under arable, together with a shortage of meadow, ensured that the commons represented areas that provided late grazing essential for the seasonal economy of individual communities. In a climate where both lords and free peasants were anxious to safeguard their rights over common grazing, the physical act of moving one's farm and erecting a new structure on the edge of the waste constituted a visible display of those privileges. In Southern East Anglia, by contrast, where the availability of meadow was slightly greater, the seasonal requirement for labour for haymaking encouraged the development of small nucleations in major river valleys, but with settlement on outlying interflaves mostly comprising scattered farms and hamlets, often closely aligned on smaller ribbons of meadow or on greens that provided grazing for livestock.

At the time of the Norman Conquest and the initial stages of castle construction, the East Anglian landscape was thus undergoing a major re-structuring. In Northern East Anglia, settlements were increasingly shifting to new locations on the edges of commons, while in Southern East Anglia a pattern of minor nucleations with outlying farms was gradually taking shape. In 1066 both these landscapes were still in the process of development, but were already distinctly regional in character.

Historical Pattern of Building

The chronological outline of castle construction in East Anglia broadly follows the three-phase model proposed by Richard Eales (Eales 1990). Royal foundations in urban centres are likely to have been in place at an early stage, and royal castles were present at Norwich by 1075 and Colchester by 1076 and it seems likely that a royal presence at Ipswich was established by a similar date (Shepherd-Popescu 2005). A close reading of Orderic Vitalis' *Ecclesiastical History* suggests that Thetford castle was also in place by 1075: Orderic's discussion of the revolt of that year states that there was a failed attempt to capture Earl Ralph de Gael 'at his castle' between the battle of *Fagaduna* and prior to the siege of Norwich, the most likely place being Thetford (Chibnall 1969, 316–7).

The establishment of royal castles was quickly followed by baronial building, chiefly in the countryside. A burst of building seems to have taken place in the 1070s: archaeological and historical evidence suggests that the construction of Castle Acre took place c.1072 and the large mottes at Eye, Clare and Haughley also probably date to this decade, a suggestion supported by detailed work on the tenurial history of Domesday land holding (Martin 2005, 172–207). The building of castles by major tenants in chief was closely followed by those raised by associated lordly tenants. This 'third phase' building appears to have been limited in scope (although much here necessarily depends on how accurately 'campaign' castles have been identified, as discussed below) but a relatively secure example exists at Horsford in Norfolk where the motte and bailey castle of Walter of Caen, a tenant of Robert Malet of Eye was established, presumably

soon after the Conquest (Brown 1987, 470). The construction of castles continued long after the Norman settlement and East Anglia arguably became more 'incastellated' during the twelfth century, as the period c.1100–1190 saw the construction, or substantial rebuilding of, Castle Acre, Mileham, New Buckenham, Castle Rising, Bungay, Orford, Framlingham and Castle Hedingham.

The regional character of East Anglian castle-building was commented upon by David King in 1983, who observed that Norfolk and Suffolk had the lowest density of castles in England, but that its major sites were frequently defined by formidable earthworks (King 1983, 305). The low number of Norman castles in East Anglia raises a paradox in as much as the high population density and wealth of the region throughout the Middle Ages has often been invoked as explaining phenomena such as the high numbers of parish churches and monastic foundations but such factors did not, seemingly, translate to widespread castle-building (Pestell 2004). A conventional explanation lies in the status of East Anglia as something of a military backwater, but such reasoning fails to convincingly explain why the eastern seaboard represented a thriving network for trade, but seemingly not an invasion route.

More recent interpretations have suggested that part of the answer, at least in Norfolk, may lie in the tenurial geography of the region in 1086, specifically a relatively small number of major barons with a landed base in the region to necessitate building (Liddiard 2000a, 22–3). For men such as William of Warenne or Gilbert de Clare, both of whom had substantial landholdings in Norfolk and Suffolk respectively, a regional *caput* was a necessity. By contrast, for those tenants in chief whose landed base lay outside the region, such as Ivo Taillebois, it is hardly surprising that his *caput* was located elsewhere, in this case Lincolnshire. How much weight can be placed on such an analysis – and how accurately it can be quantified – is difficult to judge, at its most basic level, there must be some link between distribution of landed wealth and castle-building and relatively paucity of barons in East Anglia in the decades following the Conquest with a sufficient landed base in order to necessitate castle construction, may help explain low overall numbers.

Although questions over the low number of castles have yet to be fully resolved, the distribution of castles across East Anglia does, however, lend itself to more specific observations and again, the pattern of castles can be linked to the broader tenurial geography of the region. The majority of castles in Norfolk lie to the west of the 'central watershed', a major interfluvial boundary that had a profound effect on the historical development of the county, while there is a distinct absence of castles in the west and south west of Suffolk (Williamson 1993). There is a clear correlation between the absence of large regional *capita* in areas of high free tenure, which, it has been suggested, deterred castle-building due to the problems of 'buying out' *liberi homines*. The relatively small number of tenants in chief who built castles in the

region after 1066 appear to have favoured compact manors, held as bookland and with limited numbers of free tenures. In Norfolk, the west of the county fulfilled these criteria and it is significant that it is here too that the majority of religious houses were established. In Suffolk major castles again avoid areas of free tenure and the existing liberties of St Edmund and St Etheldreda also deterred castle-building.

While issues of tenurial geography were clearly important in structuring the general pattern of castles across the region, antecedent structures appear to have played a direct role in the specific location of castle buildings in the landscape. There are a significant number of cases where the tenurial geography strongly suggests that, at the very least, the locations chosen for castles after 1066 were also manors of tenurial importance in the pre-Conquest period. Painstaking analysis of Domesday Book has highlighted continuity from the pre-Conquest period in terms of estate structure; thus the greatest East Anglian fiefs in 1086 (such as Warenne, Clare, Malet, Montford) had at their core a collection of Old English estates that had passed, more or less intact, to incoming lords (Marten 2005). The presumption in these cases is that the castle was not simply placed in an important manor, but that it was raised over existing lordly buildings, with the clear reason of the legitimacy implied by the re-building of an existing seigneurial seat (Coulson 1996). In the small number of instances where it has taken place, archaeological excavation confirms that Norman castles do indeed overlie earlier high status buildings. The clearest examples is at Castle Acre, where the stone hall of the 1070s built by William of Warenne was raised over an existing wooden structure – interpreted as a hall – that in all probability belong to the major pre-Conquest thegn, Toki (Coad *et al* 1987). A large wooden building was also excavated beneath the *donjon* at Castle Rising, but here it was not clear if the earlier structure was pre or post-Conquest (Morley and Gurney 1997). Although such examples represent only a small number of sites, it is in all probability symptomatic of a much wider pattern, especially when put alongside historical evidence to suggest tenurial continuity. At Haughley in Suffolk a hall is mentioned belonging to Guthmond in 1066 and at Clare the pre-Conquest lord, Whitgar, dwelt in a manor house with a *burh-geat* or lordly tower before the Conquest (Marten 2005). It does therefore seem to be the case that the essential pattern across the region was one where incoming Norman lords chose to raise their castles over existing high-status buildings, which in some way would suggest that the pattern of castles across the region reflects an earlier pattern of high-status settlement.

Thus far, the development of regional landscapes in East Anglia and the process of castle-building have been discussed separately. To do so is simply expedient due to the divergent trends in the secondary literature. The two themes will now be linked, in so far as is possible, in order to help shed light on how castle building might have reflected and influenced the regional landscape of East Anglia.

The Pattern of Castles

If, *a priori*, it is accepted that there is a close relationship between castles and settlement patterns then, as far as East Anglia is concerned, it might reasonably be expected to see the majority of castles to be associated in some way with commons or common edges. Perhaps unsurprisingly (even with due allowance for the inevitable examples that do not conform to the overall trend), this is indeed the pattern that emerges. In general terms, castles in northern East Anglia are associated with commons and common-edge settlements, while in southern East Anglia castles are closely connected with small nucleations. Of greater significance is that the location of castles appears to 'mirror' the dominant trend of the broader pattern of rural settlement: the further north into East Anglia, the stronger the association between castles and commons becomes. It should be noted that it is not only castles that display such a trend; it is a pattern that also holds true for moated sites. For whatever reason, castle siting in East Anglia was thus deeply rooted in the distinctly regional landscape (Figure 2).

Northern East Anglia

The relationship between castles and commons is immediately apparent on eighteenth-century county maps surveyed before the widespread enclosure of common in the late eighteenth and early nineteenth centuries (Barringer 1989; Dymond 2003; Chapman and André 1777). Where a castle lies on a common edge it can be surmised that settlement drift had already taken place and that the location of the castle was simply reflecting a pattern of settlement that was already in place. At sites such as Castle Acre, such a situation is suggested archaeologically by the fact that the earliest Norman castle overlaid pre-Conquest levels, suggesting that the settlement has already 'shifted' to the damp lower ground beside the river Nar, typical for west Norfolk. Here the development of the castle also appears to have been responsible for encroachment on this common at an early date, with the residue surviving only to the east and west. At new foundations of the twelfth century a similar pattern can be observed: at New Buckenham (c.1146), the castle town of William D'Albini II abutted directly on the common edge; effectively, the lordly *caput* is a common-edge settlement writ large (Liddiard 2000a).

A particularly clear example is Castle Rising. At the time of Domesday, Rising was a berewick of the major soke centre of Snettisham but following its acquisition by the D'Albini family in 1088 developed into a small manorial centre with church and presumed hall (Liddiard 2000b). Although in this case the 'shift' was not dramatic, by the late eleventh century settlement stood on the common edge. Rising was transformed c.1140 following the marriage of William D'Albini II to the royal widow Alice of Louvain and his elevation to the Earldom of Sussex, which was marked by the building of a *donjon*. The acidic soil in this part of Norfolk rendered the area unsuitable for intensive arable cultivation and was characterised well into the

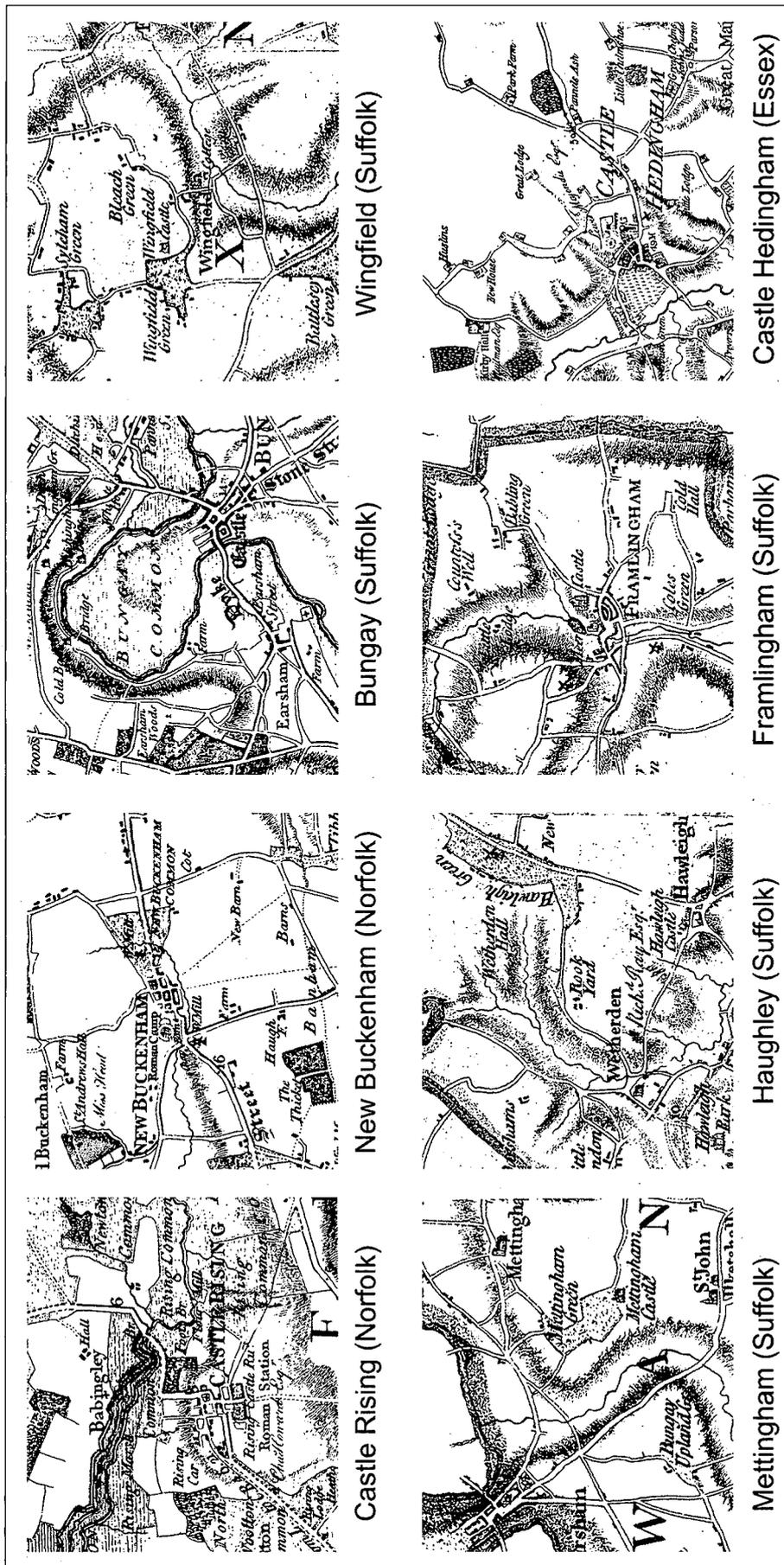


Figure 2. Maps of some Castles and Settlements in East Anglia. Note how those castles in Northern East Anglia (Castle Rising, New Buckenham, Bungay, Wingfield, Mettingham) tend to be found in association with commons and those in Southern East Anglia (Haughey, Framlingham, Hedingham) with nucleations. It should be noted that the dividing line of the 'Gipping Corridor' is only a general rule and is subject to variation; Framlingham has the characteristics of Southern East Anglia, yet lies to the north of the Gipping. From Faden's map of Norfolk (1797), Hodskinson's map of Suffolk (1783) and Chapman and Andre's map of Essex (1777).

nineteenth century by large expanses of sandy heath. The development of the castle in the twelfth century involved an expansion of lordly interests over this waste. To the south of the castle was deer park, the line of which is clearly visible on Faden's map of 1797, drawn up before enclosure. The creation of the park had encroached on the heathy common that made up much of the landscape in the medieval period. The wider landscape was also appropriated for the purposes of hunting, with the establishment of a substantial chase with a circumference of some fourteen miles (BL Harl. MS 380, fo.7).

The association between castles and commons continued into the late medieval period. Two examples from north Suffolk demonstrate this clearly. At Mettingham (1343) the castle is immediately adjacent to the green, with the isolated church some way to the north, while at Wingfield (1384) the common lies immediately to the east. Such an association can be explained by the fact that by the mid-thirteenth century, with the process of common-edge drift complete, any lord contemplating re-building his ancestral seat, by default, was re-building on the edge of the common or green.

The process of common-edge drift can therefore be seen to have been an important determinant in the siting of castles north of the Gipping and it also helps to explain one particular regional aspect of castle landscapes, that of the spatial relationship between castles and parish churches. Northern East Anglia

have few examples where church and castle lie in close proximity; the usual arrangement is for the church to be some little distance removed from the castle site. Here we can surmise that common-edge drift had occurred prior to castle construction and that the church site was not deemed an acceptable location for the noble building. At Mileham in Norfolk fieldwalking has traced the shift of settlement away from the church; the castle was placed some distance to the west, significantly where an area of common abutted the road that the castle complex straddled. Presumably the location of the castle marks the extent of the 'shift' before construction commenced (Wade-Martins 1980, 40-8). Another example comes from Wormegay in west Norfolk, an honorial barony held by Hermer de Ferrers at the time of Domesday (Figure 3). Prior to 1066 an English thane, Thorketel, held the manor and after the Conquest his lands passed virtually intact to Hermer, a particularly clear example of tenurial continuity (2000a). Detailed fieldwalking of the area has demonstrated that the Middle Saxon settlement at Wormegay was situated on the east of the island on the site of the parish church (Silvester 1988). At some point in the eleventh century this settlement shifted to the western tip of the island, leaving the church isolated. There is no reason to suppose that the building of the castle was necessarily the direct cause of settlement change; it is just as likely that the shift occurred before 1066 and that the castle was constructed in the pre-existing settlement. Given the

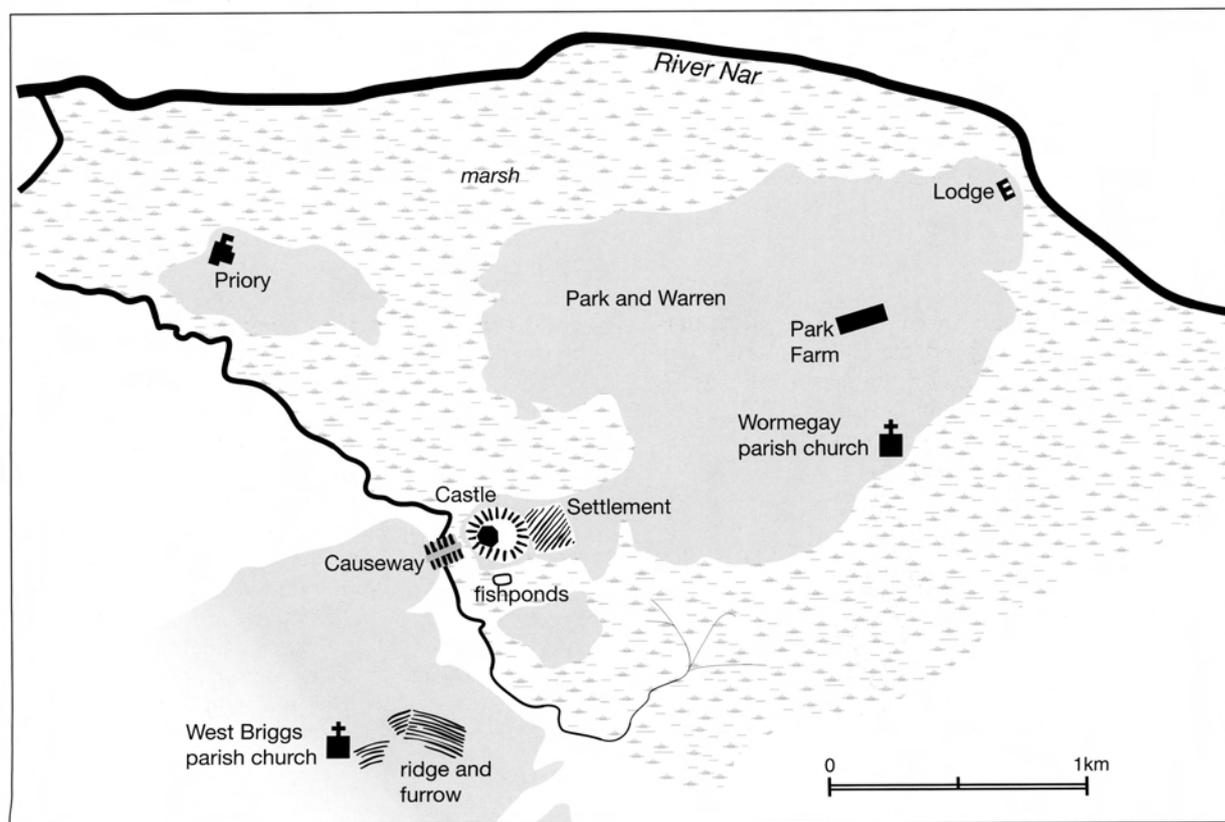


Figure 3. Wormegay, Norfolk. The castle landscape of the Middle Ages was, in part, regionally determined.

almost total absence of Thetford Ware from the church site, it is more probable that the latter was in fact the case. It is possible that the castle itself was only built in the twelfth century, in which case continued occupation in the pre-Conquest hall, or perhaps a re-built hall – like that seen at Goltho in Lincolnshire – is perhaps the most likely scenario. Whatever the precise chronology, the western side of the island became the focus for settlement; a priory was established in the twelfth century and the area between the church and castle was imparked. In the final event, the form of the castle landscape was, in part, regionally determined.

While a case can be made for explaining the close relationship between castles and commons in northern East Anglia with reference to the re-building of English seigneurial sites already on common edges, of greater significance are those cases where castles were placed close to commons, but where there was *little* antecedent occupation of the site. This is well illustrated by the motte and bailey castle at Horsford, to the north of Norwich. As was stated above, there is strong historical evidence for this being the castle of Walter of Caen, a major tenant of the Malet lords of Eye in Suffolk. Walter's castle stood immediately adjacent to a ribbon of common marsh that was itself adjacent to an area of sandy heath that originally stretched from Mousehold in Norwich some ten miles to the north to Aylsham. The seigneurial exploitation of this heath chiefly concerned hunting. There are documentary references to nine deer parks and, significantly, was also the setting for Horsford chase, one of only three medieval chases in the county (Yaxley 2005, 56–7). The castle itself occupied a somewhat isolated position, some distance removed from the settlement and parish church of Horsford and also the castle priory at Horsham St Faiths. In this instance, it was the desire to establish a lordly presence close to the waste seems to have been a strong motivation behind the location of the castle.

Southern East Anglia

In Southern East Anglia, by contrast, a slightly different pattern can be observed. Here, the pattern is one of castles usually centred on the minor nucleations in river valleys, rather than associated with outlying farms and greens closer to interfluves. The contrast between the two landscapes is well illustrated at Haughley in Suffolk, just twelve miles south west of Wingfield. Significantly, here the castle is not in close association with the common edge at Haughley Green to the north; rather, the castle is centred on a small nucleation in the valley of a major tributary of the Gipping. Again, the implication is that this nucleation was in place before the castle and, as was noted above, was the location for the pre-Conquest hall of Guthmond. A similar situation is seen at Clare in Suffolk. Clare is the site of one of the East Anglia's few Iron Age hillforts, which lay in the valley of the river Stour. Medieval settlement continued this focus on the river valley and by 1066 was one of the most significant manors in Suffolk and the residence of the

major pre-Conquest thane Whitgar with a *burh-geat* and college of priests. It is unsurprising that the castle (built c.1075x1090) perpetuated the pre-Conquest arrangements, in this case sited close the Stour. The pattern seen in south Suffolk continues south into Essex. At Rayleigh (in place by 1086) the motte and bailey of Earl Swein of Essex was also associated with a nucleation, in this case well away from the outlying farms towards the interfluves. A similar situation can be found at Ongar, where the castle is situated close to Crispey brook. Here the presumed line of pre-Conquest enclosure would certainly evidence that nucleation already existed in the river valley prior to the construction of the castle (Eddy 1983).

As is the case in Northern East Anglia, south of the Gipping corridor the existing pattern of settlement appears to have structured the development of broader elite landscapes. This is seen most clearly at Castle Hedingham in Essex, the principal residence of the de Vere family, the great magnatial dynasty at the heart of English political and court life from the Norman Conquest to the seventeenth century (Brown 1995). The social achievement of the de Vere's was symbolised by their castle, which is best known for the Norman *donjon* of c.1142 that marked the elevation of Aubrey de Vere III to the Earldom of Oxford (Dixon and Marshall 1993). The original eleventh-century castle comprised a motte and bailey and was sited on a spur of land overlooking the valley of the river Colne. The pattern of settlement around Hedingham is typical for this part of Essex, with relatively small nucleations along the Colne valley and outlying farms towards the interfluves.

The settlement of Hedingham was one such nucleation and the construction of the castle ensured that it remained the primary focus for settlement. The surviving village plan suggests a number of phases of development, but the re-building of the parish church and the creation of a market place points to a concerted period of re-organisation in the eleventh or twelfth century. The castle landscape also involved imparking. By 1263 'great' and 'little' parks to the north and east of the castle turned potential arable land over to the de Vere's recreational interests (ERO, D/DMh M1; TNA C132/31/1). Crucially, this expansion took place within the existing pattern of settlement. At Hedingham the outlying farms that were already in place were left *in situ*: a small farmstead at Rushley Green thus sat incongruously between the two parks. Thus both the siting of the castle and the layout of its attendant landscape were structured by the earlier settlement pattern. Aubrey de Vere III may well have intended to make his residence suitably magnificent, but he did so against a local setting that led in to the creation of a very regional castle landscape. This is seen, albeit with some exceptions, across both Northern and Southern East Anglia.

Minor Castles

As important to this discussion are those castles that do not conform to the general pattern. Such sites, such as Denton and Raveningham in Norfolk and Milden and Offton in Suffolk are frequently undocumented, do not appear to be related to earlier patterns of tenurial geography and the field remains are often degraded. Ascribing a date and possible builder to such castles is a frustrating problem for all such sites that exist across Britain and East Anglia is no exception. Such castles might represent abandoned sites most probably dating to the immediate post-Conquest period or the remains of temporary fortifications 'fieldworks' thrown up during a military emergency (Coulson 1994). It is tempting to ascribe the conventional date of the anarchy of Stephen's reign to such sites and indeed some were undoubtedly constructed at this time, at Milden and Offton in Suffolk there is documentary evidence to suggest that this was indeed the case (Greenway & Sayers 1989). How far such a methodology can be taken to ascribe a possible date to other such sites remains a moot point. Within an East Anglian context it is at least worth noting in passing that such 'campaign castles' – if that is indeed what sites such as Denton represent – might just as easily date from the rebellion of 1173, a period that saw the most intensive period of warfare in the region from the Norman Conquest to the Peasants' Revolt. What little excavated evidence exists is entirely consistent with such a suggestion: at Redcastle in Thetford the date of construction lies within an archaeological horizon of the twelfth century (Andrews 1995; Rogerson and Dallas 1984). It may also not entirely be without significance that the major protagonists in the events of 1173, William d'Albini II and Roger Bigod, held the manors of Denton, Raveningham and Quidenham in Norfolk, and had interests in the borough of Thetford. In other cases it is simply impossible to establish a date with any certainty, at Burgh Castle in Suffolk the excavation established that the Norman motte post-dated the Middle Saxon cemetery, but yielded no evidence as to the date of the motte itself (Johnson 1983).

A certain unity is given to these minor sites, however, when their relationship to the wider settlement pattern is assessed, as they tend to be unrelated to commons or common edges. The motte at Raveningham in south Norfolk is isolated and, to judge from field boundaries, appears to have been raised in what was once open field, while that at nearby Quidenham is placed adjacent to a road and in close proximity to a minor river crossing. For the purposes of this discussion, such sites contrast markedly with those castles that are outwardly 'residential' in character and only reinforce the idea that they are a separate category of site in their own right.

Castles, Lordship and the Regional Landscape

The evidence presented here would suggest that, in general, there was a close relationship between the

existing settlement pattern of East Anglia at the time of the Norman Conquest and the location of early castles. This should, in itself, not be surprising; it is well known that commons formed the focus of settlement across the region during the medieval period, it would be of greater interest if there was not a connection. Of some consequence, however, is the fact that castles appear to be strongly related to the *sub-regional* pattern of rural settlement and thus the siting of castles in accordance with a distinctly local settlement pattern demands some explanation. The conclusion from sites such as Horsford is that there was some greater significance to the choice of a common-edge site than simply antecedent structures; rather, other reasons why lords might want to *actively* exploit such locations.

In terms of the legitimisation of local power, the advantages to be gained by building a castle on the same site as the residence of an English predecessor were fully exploited by incoming Normans. The political reasons for the building of castles over existing settlements are increasingly well rehearsed, but it is how this need was played out in a regional context that is of interest in this case. Characterisations of the Norman settlement as a process necessarily involving 'repression' are easily justified with reference to the large numbers of new buildings being raised in the English landscape after 1066, but it has proved altogether more difficult to construct a narrative that seeks to explain the meaning of continuity, despite the fact that the archaeological evidence for manorial development across the Conquest does not reflect a view of 'tenurial disruption' (Gardiner 2007, 178).

In Southern East Anglia the desire to build castles in embryonic nucleations can be related to a wide variety of factors. Such places were centres of population, occupying good locations characterised by fertile, well-draining soil and were probably the locations for the manor houses of the pre-Conquest thegns whose estates were appropriated after 1066. In terms of the local economy, it was these places that would see greater reliance on haymaking and if the principal settlements of the region were already exploiting such valuable areas then building a castle in such a location would appear eminently sensible from an economic point of view and would, in effect, be 'hardening up' the settlement pattern.

In Northern East Anglia similar factors were at work, but here the desire to place the marker of lordship in many cases directly over an earlier building on a common edge or, where such a site did not exist, in an area of waste that is of crucial importance. To judge from fieldwalking, at the time of the Conquest common-edge drift was well underway but it was undoubtedly a process, rather than an event; we should probably envisage farms slowly moving to the edges of commons and by 1066 there were probably many places where farms still clustered around existing church sites. In such a fluid situation it is all the more interesting that Normans seemingly chose to locate their castles where they did, regardless of the presence of an earlier manor house or not, because if

common-edge drift was a response to concerns over pressure over pasture resources then in northern East Anglia castle-building in such a prominent location can also be interpreted as a highly visible sign of lordly rights over reserves of common grazing. By the early thirteenth century and the Statute of Merton – which ensured the rights of free holders over common grazing – the general issue of management of waste was clearly causing problems in the national economy. In a regional context where a lack of meadow led to a greater reliance on common grazing, the issue is likely to have been more important than elsewhere and to have become so at an earlier date. If we accept that Normans often chose to raise their castles on earlier seigneurial sites, and that such sites seem to have occupied common edges then, at the time of the Conquest, it would appear that pre-Conquest thegns were already anxious about their rights over such areas. Indeed, it would be distinctly odd if lords in eleventh-century East Anglia did *not* wish to guarantee their rights over such areas by building – this is, after all what the peasantry were doing – and look to increase those rights if at all possible. The extension of common rights is seen most obviously in the post-Conquest period in encroachment for the creation of parks and warrens, a phenomenon that may be observed at all the major castles of the region. The activities of the D'Albini family, with parks that, for the most part, had been imparked from common waste (Rutledge 1999) in conjunction with their castles at Rising, Wymondham, Old Buckenham and New Buckenham, are a case in point. It is particularly telling that, where it exists, charter material often reveals concerns over grazing; in the foundation charter of Old Buckenham priory (c. 1146) William D'Albini II was careful to detail the rights the canons were to have in his park, with later charters explicitly stating the number of animals and the time of year that their beasts were permitted within the pale (BL Harl. Ch 83. D9; Calendar of Charter Rolls vol.3, 367-7).

The idea that castle siting may be related to the expression of rights over common waste is not one that sits easily with traditional motivations for castle-building but may not be so far wide of the mark when it is considered that lords were undoubtedly keen to exploit all the resources at their disposal. In the particular regional context of East Anglia, it may also have provided an even stronger incentive for lords to reinforce the pre-existing settlement pattern when choosing a location for their castles.

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West Cambridge: the two World Wars and the inter-war lull

Philomena Guillebaud

This is the fourth of a series of articles tracing the history of the landscape of west Cambridge following the enclosure of the former West Fields.¹ In the two World Wars, west Cambridge suffered no physical damage but saw the appearance of large temporary structures: a military hospital in WW1 and an aircraft repair factory in WW2, each subsequently – and after much delay – demolished after peace returned. In the interwar period, a combination of financial constraints and an effective campaign waged by the Cambridge Preservation Society, nominally a town-and-gown organisation but weighted on the side of University interests, saw very little development on the west side of town. Clare College's Memorial Court was built, as was the new University Library: the first University building since the Observatory to be built outside the town centre. A small council housing estate was built in 1924 in the area south of Barton Road, and a limited amount of private housing appeared in the academic suburb, mostly after 1933 when five new roads provided more building plots. Compared with the visual transformations both before 1914 and after 1945, the landscape changed remarkably little. But three important invisible forces were at work: the intervention in University affairs by central government through the University grants system, the introduction of town planning and the transfer of over a quarter of the land area from college to University ownership. These forces were to result in the transformation of west Cambridge after 1945.

Introduction

Unlike North Oxford, the expression "west Cambridge" has no official status. For want of a better term, I have been obliged to use it to describe (initially) that area once known as the Parish of St Giles, with which the University and its colleges have traditionally had close ties. In 1800, the Parish (legally part of the Borough of Cambridge) consisted of over 1300 acres of open fields, known as the West Fields, and two small populated areas, that part of the old town lying between Castle Hill and the river Cam on the northeastern edge of the fields, and the village of Newnham on their southern fringe. Although no precise figures exist, the colleges

owned more than half the area of the Parish, some acquired through benefactions and some bought, and many of the academics took their exercise walking or riding through the fields.

The significance of the parish in this narrative lies in the fact that parishes were the units of enclosure under the Parliamentary Enclosure Acts of the 18th and 19th centuries. As the major owners, the colleges had a considerable impact on the outcome of the enclosure of St Giles, which took place between 1802 and 1805, not (so far as can be determined) by altering the statistics of ownership but very much by influencing the location of the lands allotted to the colleges – and to the University.² The latter was an insignificant landowner and moreover enclosure took place at a time when the powers of the University in relation to the colleges were at their nadir: things may have been done in the name of the University, but it was the colleges that called the tune, and continued to do so for the next century or so as far as the development of west Cambridge was concerned, though not always the same tune. While this power balance began to shift in the late 19th century, with the various University reform acts, the impact on west Cambridge was a long time in coming.

By the end of the 19th century, urban parishes had ceased to be secular administrative units, even for census purposes, and one might well ask whether the original Parish of St Giles is a meaningful geographical unit when considering changes over the last 200 years, which have been so closely bound up with the development of the University and its colleges. The perhaps surprising answer is that, by and large, it is. Huntingdon Road remains a genuine boundary, with hardly any university or college involvement north of that road, and the somewhat complicated eastern boundary nearest to the river (the Backs) is unchanged. The long western boundary that zigzags through the countryside bordering the parishes of Madingley and Girton and then southeast past Coton to Grantchester has no distinguishing physical features, but survives unchanged; even today university-related development has remained essentially within it.

It is on the southern boundary that there has been a change. In 1912 that part of Grantchester parish which recent building had turned into a suburb of Cambridge was detached and incorporated into the Borough.³ About half of its 166 acres was composed of allotments, water meadows and college playing fields, but it also contained a certain amount of “gentry” housing as well as the closely-packed working class district of Newnham Croft. For the first time, this brought a significant commercial area to the suburb, with numbers of small tradesmen.

Figure 1, based on a map of 1928 showing the tentative thinking of the town planners at that time, has been adapted to show, *inter alia*, the original area (the Parish of St Giles) enclosed in 1805, and the area added in 1912 which effectively became part of the suburb of

west Cambridge. St Giles disappeared as an electoral or administrative unit after 1911, most of it incorporated into Castle Ward, and in 1934, with a general revision of electoral boundaries, the latter was split into two wards, Madingley Road being the dividing line between Castle Ward to the north and Newnham Ward to the south. St Giles remained an ecclesiastical parish, though somewhat truncated when the new parish of St Mark’s was created by uniting the former Grantchester area with what had been the southern extremity of St Giles’s Parish.

In the text which follows, the term “west Cambridge” should be understood to include both the area covered by the Enclosure Award and the added area south of Barton road.

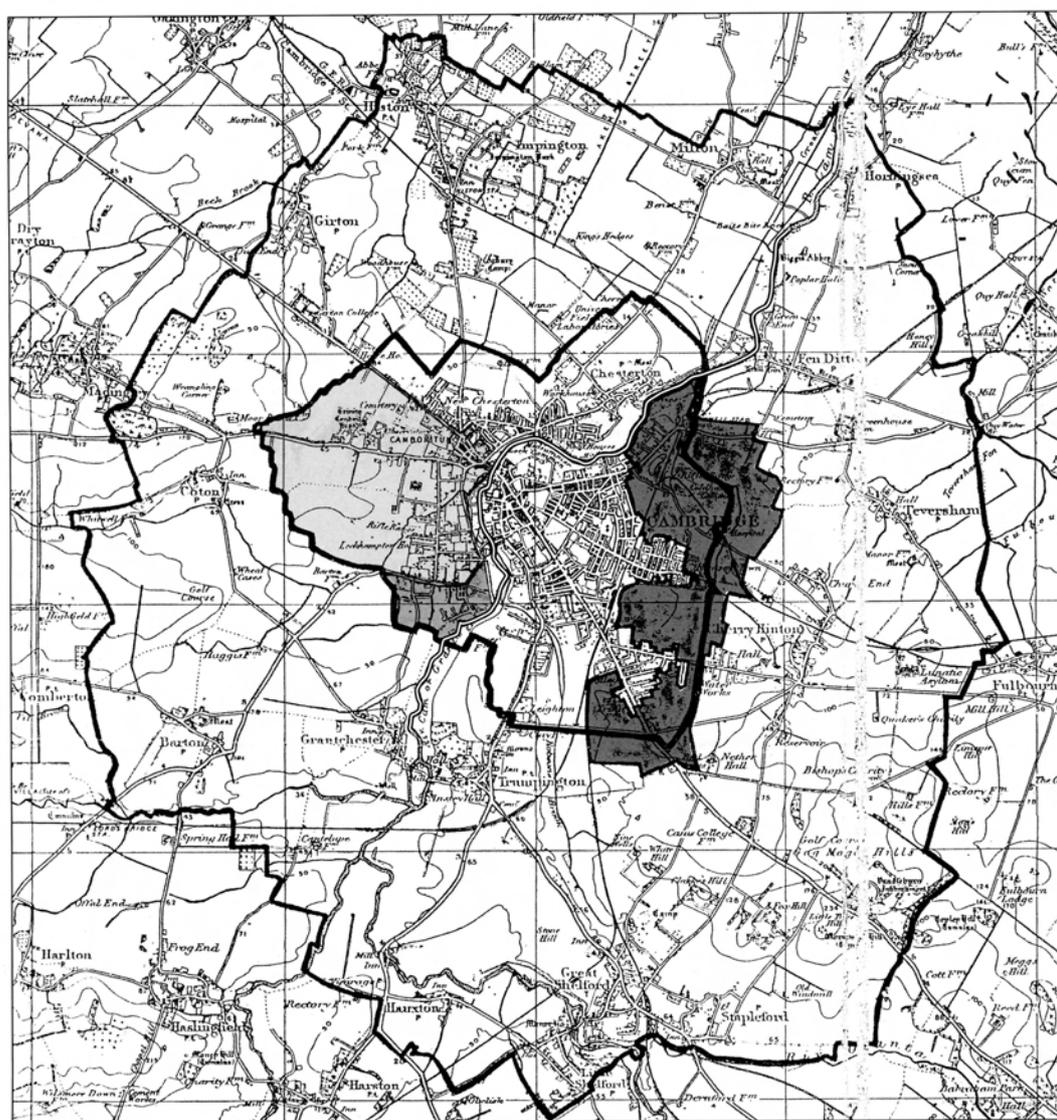


Figure 1. “Cambridge Borough Town Planning Proposals, June 1928” (CUL Maps 53(2).92.5). Shading has been added to distinguish the areas discussed here: The Parish of St. Giles in 1805; Area included in west Cambridge after 1912; “Area already Town Planned” as shown on the original Planning Proposals map. The inner thick black line marks the boundary of Cambridge Borough after 1912; the outer thick black line represents the area covered by the 1928 Town Planning Proposals.

World War I and its impact on the University

The town and its surroundings suffered no physical damage in the first war, the major impact being the disappearance of most of the younger male and some of the female population, town or gown, into the armed services or war industry. Not that the place was deserted: there were times in the first war when so many troops were stationed there that there were encampments as far away as Grantchester, and horses were picketed in Adams Road.⁴ There was however one significant change in the built landscape.

Anyone looking at the 1927 Ordnance Survey map of Cambridge will be struck by a feature not found on maps either before or after that date: a large grid-like structure east of Grange Road and south of Burrell's Walk (Fig. 2). This is the First Eastern General Hospital, built in 1914 on what had been the joint cricket field of Clare and King's Colleges.

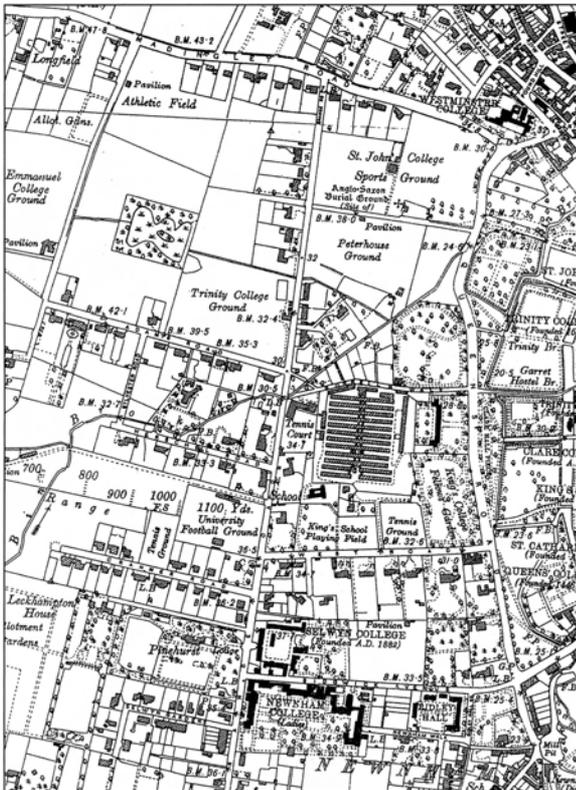


Figure 2. First Eastern General Hospital, subsequently used for temporary housing. Source: Ordnance Survey Map published 1927

When the first wounded arrived in Cambridge from France in September 1914, an emergency open-air hospital with 250 beds was improvised under the arcades of Trinity's Neville's Court while building of a hut hospital started on the requisitioned playing field site, where the first patients were received little more than a month later.⁵ The astonishing speed of the new hospital's creation resulted from the long

period of detailed planning, beginning in 1908, by the man who was to be the head of it, Col. Joseph Griffiths.⁶ At its fullest extent, it contained 24 wards arranged in two rows of 12 one-storey huts either side of a central spine, and held 1,700 beds. Vehicular access was from West Road. For the first two years it resembled the arcade hospital in so far as the wards were open on one side, the patients more or less protected from wind and rain by canvas blinds which could be lowered.⁷ While this resulted in remarkably low death rates compared with many military hospitals and was said to be popular with the patients, it was unpopular with the nursing staff, and after two years 20 of the 24 wards had been enclosed, though 4 remained unchanged till the end.⁸

The tenancy agreement signed in December 1915 between the Army and the two colleges provided for its continuance for as long as the former needed it but not more than 6 months after the end of the war.⁹ By the end of 1918 the hospital had been largely evacuated, having cared for over 62,000 patients of whom 437 died,¹⁰ and in August 1919 it closed, by which time the two colleges were clamouring for the return of their playing fields. In a letter of 23 August 1919 to the Bursar of King's, the then Mayor of Cambridge wrote that the Borough was facing a disastrous housing shortage: among other problems, war workers and others had been occupying University-licensed lodging houses, and now that the students were returning the lodging-house keepers wanted them out and there was nowhere for them to go. He pleaded that the Borough be allowed to rent the site for 12 months, if the Army agreed to let the buildings remain.¹¹ Reluctantly, and not unaffected by fear of a possible compulsory purchase order,¹² the colleges agreed, and agreement was reached to let the site until January 1922.¹³ In March 1921 the colleges, having been informed by the Town Planning Committee that 213 families were now housed on the site, with a waiting list of another 100,¹⁴ recognized the inevitable and sought an alternative site for their playing field, eventually settling on land owned by King's in the area south of Barton Road which had recently been amalgamated with the Borough.¹⁵

The Borough spent £17,000 on converting the buildings into units of between 1 and 5 rooms, with an average of 3.¹⁶ Spalding's Street Directories for the period 1921 to 1929, which list the site under Burrell's Walk, show consistently full occupation by approximately 200 tenants until 1927/28, when the numbers start to decline. While by no means all residents' occupations are identified, among those listed over the years are GPO inspector, coach painter, college servant, postman, "M.A.", school master, dental mechanic and 4 CUOTC sergeants.¹⁷ I revert to the role of this site later when discussing housing development.

In the meantime, certain University officers had started to look for a site for a new University Library building, the inadequacy of the existing premises in the Old Schools having reached crisis proportions. Given strong resistance in some quarters to any move from its historic site, this was a delicate mat-

ter. However, in November 1921 the Secretary of the University Financial Board, presumably aware that King's and Clare had given up hope of reclaiming their playing fields within a reasonable time, wrote inquiring whether they might be interested in selling the site, of which 5 acres belonged to Clare and 3 acres to King's, to the University for the Library.¹⁸ No decision was reached at the time, and indeed other locations such as that which became the Sidgwick site were canvassed during the following years. Meanwhile, whatever the eventual site chosen, the University was faced with a formidable and unprecedented fund-raising effort.

Because the history of the Library is entwined with that of Clare College's Memorial Court, it is necessary at this point to examine the latter. Alone among the colleges with land along the Backs, Clare erected no college buildings in the nineteenth century – and indeed none once its original court was completed in 1769.¹⁹ Between 1815 and 1915, it had only two masters (one presiding over the college for 40, the other for 60 years) both conservative by nature and the first specifically determined that the college should remain small. Nonetheless undergraduate numbers grew from 70 in 1870 to 183 in 1900,²⁰ the increase having to be accommodated in lodgings in the town,²¹ and by 1911 it was concluded that further building was unavoidable. Since tests had shown that the area between the river and Queen's Road occupied today by Clare Fellows' Garden was unsuitable for building because of the high water table, the site chosen was the so-called 'farther Fellows' garden' on the west side of Queen's Road, part of an 11-acre allotment received by the college at the time of enclosure in 1805. After enclosure, Clare owned about 32 acres in various locations in the Parish of St Giles, as well as other land in Chesterton Parish, but from the college's point of view the alternatives were even less convenient than the one selected.

With a generous offer from an anonymous donor, it seemed that financing was feasible, designs were requested from architects including Lutyens, but for unknown reasons, probably disagreement among the fellows, the project was abandoned in October 1912.²² However the notion of building on the farther garden survived, and in 1921 plans begin to be drawn up for a Memorial Court in honour of college members who had fallen in the war.²³ The architect chosen was Sir Giles Gilbert Scott, and the first wing of the court was occupied in 1924, though the project as he designed it was not completed until 1935. It was financed partly by selling college property in St Giles and Chesterton parishes and partly by donations from the likes of Paul Mellon, a former student, or relatives of college members killed in the war. No other college followed this precedent to expand into west Cambridge until after 1945, but then none faced similar physical obstacles to expansion within its traditional site.

By the mid-1920s recognition was growing that the old hospital site, immediately west of Memorial Court, was the best location for the new Library. The consensus was that its design should be on the same

axis as Memorial Court and aesthetically compatible with Scott's work there, which met with such approval that the Library Syndicate, ignoring normal practice, selected him as designer for the Library without holding a competition. This is one of the very few instances in Cambridge of deliberate urban design, all the more interesting in that it involved two autonomous academic entities.²⁴ By the time Scott produced his first proposals, which envisaged using the same brick and tile as Memorial Court, the University had successfully enlisted the massive financial support of the Rockefeller Foundation (£250,000 out of a total building cost of £320,000) but unfortunately John D. Rockefeller Jr, when shown the designs, objected that they were not sufficiently impressive.²⁵ Scott then revised his designs and produced the Library with which we are familiar today. George V when opening it in 1934 referred to it, a little too aptly, as "this powerhouse of learning."

Academic institutions were among those hardest hit by the fall in the value of money during and after the war. Already in November 1918 the new universities created in the 19th century had appealed to the Chancellor of the Exchequer for help. The Government asked for detailed reports on their needs, and decided to extend its inquiry to the two older Universities by setting up in 1919 the Royal Commission on Oxford and Cambridge Universities (commonly known as the Asquith Commission) which made its report in 1922.²⁶ Unlike the 1850 and 1877 Royal Commissions on those Universities, this one was primarily focussed on finance.

Before this time, Oxford and Cambridge had been entirely self-financing, but the Asquith Commission concluded that they were no longer able to pay their way. "Already before the War, the financial situation was serious; many staff were underpaid and overworked, and not a few had no pension prospects; research, particularly in the Humanities, was very poorly provided for and difficulties were beginning to be felt in maintaining and staffing Libraries and Museums. If these problems were present before the war, they have been rendered insoluble by the change in the value of money; but for the interim grant of £30,000 allowed by the State to each University for general purposes since 1920, it would have been impossible to continue their present work even provisionally."²⁷

The report noted that while the gross income of some colleges had risen since the end of the war, the aggregate purchasing power of University and college wealth had shrunk seriously and the number of students had increased significantly compared with 1914.²⁸ The key recommendation was that the interim grant be replaced by an annual grant of £100,000 to each University, in addition to a £10,000 grant for special purposes (mainly women's education and extramural work).²⁹ Thus began the system of University grants which continues if in modified form to the present day.

The report also contained a crucial statement: "We are opposed to any public grant being made to

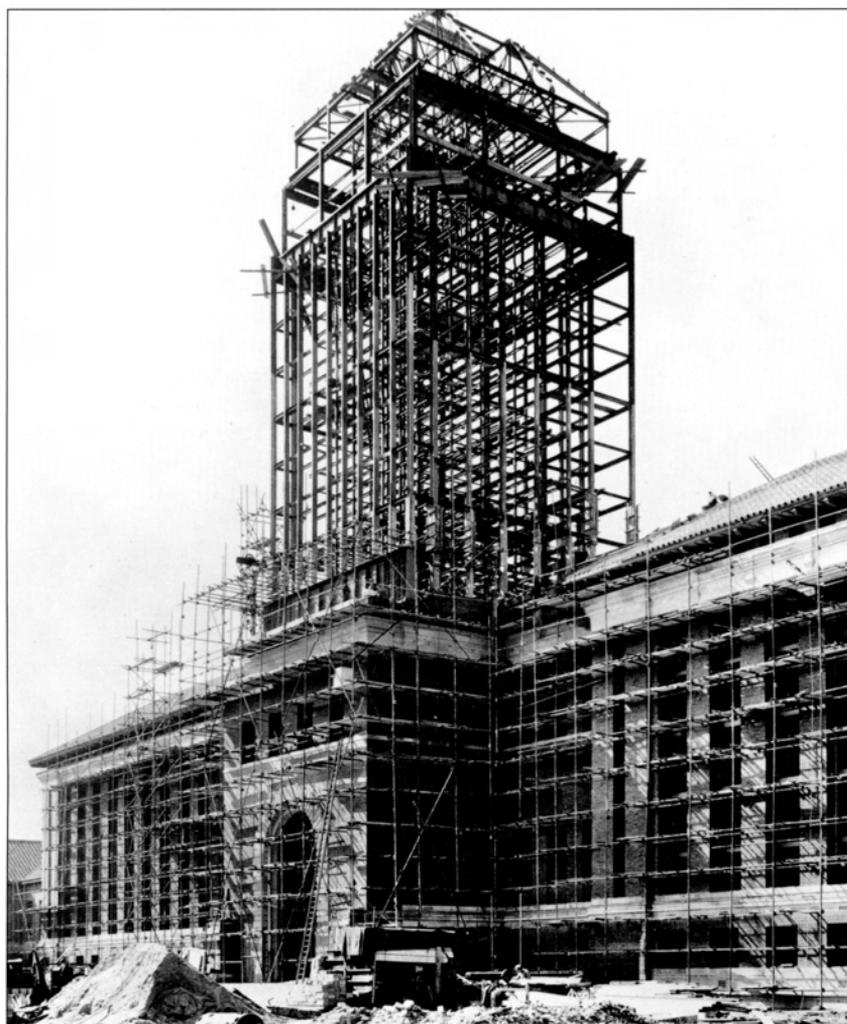


Figure 3. The tower of the University Library under construction, "Exterior work to Blocks A and E completed September 1933." CUL cam. a.934.2, with permission.

Colleges or Public Hostels.⁷³⁰ Given the parlous condition of most college finances at the time, this statement goes a long way in explaining the small amount of building they undertook. No new colleges were created in the interwar period, and such older colleges as did add new buildings utilised land within their traditional bounds, usually by the process which today would be called in-filling. Clare College constituted the only exception among the pre-19th century colleges and, as explained above, its reluctant decision to cross Queen's Road and build in west Cambridge was forced upon it by lack of practical alternative.

The colleges' preference for remaining within the close quarters of the town was echoed by University decisions: the majority of new laboratories, lecture rooms and faculty buildings made possible by the new grant system were to be found there, mostly in the New Museums Site and the Downing Site, though the new engineering laboratories were built on the southern outskirts. The University Library was the only significant exception to this pattern, and even there it took years of debate to overcome opposition to the move.

The War's impact on the town

Cambridge was far from being alone in facing an acute housing shortage at the end of the war, but the need to accommodate the flood of undergraduates coming up for the first time or returning to finish their interrupted studies gave an added urgency to the problem. Not only was there an absolute shortage, but in the decades leading up to the first World War, there had been growing awareness and unease about the conditions in which a substantial part of the town's population were housed and scepticism about the ability of an untrammelled market system to deal with the problem. Some of the worst housing lay in those parts of east Cambridge that were developed shortly after the enclosure of the former East or Barnwell Fields, and there was fear that similar uncontrolled development after the war would simply result in more slums.

The origins of town planning lay in the recognition of the link between bad living conditions and epidemics of disease which menaced the entire community, hence the fact that town planning at central government level came under the Ministry of Health until 1942. Cambridge, whose unsanitary conditions

were notorious, obtained parliamentary approval of its Improvement Act as early as 1788. The first Act focussed on paving (including road widening), drainage and lighting but in subsequent years further Acts, supplemented by local bye-laws, broadened the powers of the local authorities to include road and housing standards, and by the time the west Cambridge suburb was being developed in the late 19th century, builders of new roads and houses were obliged to submit their plans to those authorities for approval.

In 1909 the Housing, Town Planning, etc. Act appeared, the first piece of national legislation to bear the term 'town planning', and in 1913 Cambridge Borough Council established an official Town Planning Committee, whose members included from 1914 to 1919 Mrs. F.A. Keynes, wife of the University Registrar and herself a future Mayor of Cambridge, and later Hugh Durnford, Senior Bursar of King's College, who served on it for 4 years from 1921.³¹

Unlike a number of other municipalities in which foot-dragging was rife, Cambridge Borough seems to have leapt at the opportunity to use new legislation to tackle the problems of rehousing people from the numerous dwellings found by the Medical Officers of Health to be unfit for human occupation. Apart from a small venture in 1910–11 which will be mentioned later, the first scheme, for new cottages off Victoria Road in north-east Cambridge, was begun in 1914 and completed in 1915, but others planned had to be postponed after the outbreak of war. Although the Town Planning Committee met less frequently as the war went on, it continued to work actively – encouraged by central government authorities – on plans for schemes to be executed after the war ended.

In November 1918 the Town Planning Committee produced a list of eight proposed sites for new housing, four of which were on the east side of town (including sites on land owned by St John's, Corpus Christi and Jesus Colleges), two on the north side and two on the west side. Those on the west side were on Selwyn and Millington Roads, both in the newly added part of west Cambridge south of Barton Road.³² It must be assumed that consultation took place with existing land-owners before the list was prepared, though no evidence has been found.

Of the two proposed sites in west Cambridge, the 3-acre site on Selwyn Road, owned by King's College, was sold in 1924 to the Borough which built 31 terrace houses there, the only "Council housing" built in west Cambridge between the wars (Fig. 4). Millington Road, being jointly developed by King's and Trinity Colleges for what I have termed gentry housing, was not heard of again as a possible site, and it can only be assumed that the other colleges with land in west Cambridge showed no interest in selling.

In March 1919 a map headed 'Cambridge Town Planning 1919' was published, reflecting current thinking.³³ The area outlined, identical with the area marked pink on a 1928 map (Figure 1) covered what became known as the Cambridge (East) Town Planning Scheme. All of it lay to the east of the railway line, except for an area between the railway and

the river which included Stourbridge Common and was the site of some of the earliest Council housing (Stanley Road and Garlic Row). Although modified in detail over subsequent years, that area remained the most significant area of housing development between the wars.

In August 1919 the minutes of the Town Planning Committee record that the Housing Commissioner for the Cambridge District (within the Ministry of Health) wrote that certain of the sites proposed by the Council in east Cambridge were "unacceptable for working class housing", and suggested others, including *inter alia* one unidentified site near Storey's Way in west Cambridge. Since his reasons are not cited, it is impossible to tell the nature of his objections. Did he criticise the exclusion of west Cambridge from the plans? The fact remains that throughout all their subsequent reworkings, which continued right up to the outbreak of WW2 and focussed on three principal topics, the road network, zoning regulations and reservation of land for open spaces, west Cambridge remained barely touched, with the two exceptions which will be described later.

Why was west Cambridge omitted? I have found no contemporary evidence on the subject, but there is a plausible answer. Once again, we go back to the enclosures of the West and East Fields, in 1805 and 1811 respectively. Before then, the town was bursting at the seams, with a rising population hemmed in by the open fields. Under the enclosure of the Parish of St Giles (the West Fields) the colleges succeeded in establishing an almost complete *de facto* green belt beyond the river and maintaining it for almost 70 years, but after 1811, with the enclosure of the Parish of St Andrew the Less (the East or Barnwell fields) where the colleges were less powerful and less interested, the town was able to burst out of its confinement in a rash of new building.³⁴ This was given further impetus with the arrival of the railway in the 1840's and the need to house the labour force connected with it. So the east side became predominantly a series of working class neighbourhoods, interspersed with some areas of gentry housing such as Harvey Road, Hills Road and Maids' Causeway and retaining considerable undeveloped areas. In 1918, when the shortage of working-class housing was desperate, it is not surprising that the Borough preferred to concentrate its efforts on the east side of town, where there was more privately owned land and where moreover the colleges were much less reluctant to sell, than to spend time and energy on a probably losing battle to insert working-class housing into the academic suburb.

Entwined with the later history of physical planning in the inter-war period is the history of the Cambridge Preservation Society (CPS), which impinged more directly upon west Cambridge. In what follows, I have drawn heavily on Anthony Cooper's book *Planners and Preservationists*³⁵ and anyone interested in the wider aspects of Cambridge planning is referred to that book. Founded in 1928 largely by the efforts of Henry "Hugh" Hughes, a local architect and part-time member of the faculty of the University's

School of Architecture, and Hugh Durnford, Bursar of King's College, the CPS was partly modelled on the Oxford Preservation Trust. It came into being in response to two main concerns: the hope of avoiding the fate of Oxford, felt to have been seriously damaged by the inability of existing planning mechanisms to control the negative impacts of industrial development, and the threat posed by creeping ribbon development on some of the main roads out of Cambridge, particularly along the roads from Trumpington to Great Shelford (described later as "an almost continuous row of ill-proportioned and unsightly houses"³⁶) and from Shelford to the Gog Magog Hills, both on the southeastern outskirts of the town.

To quote Cooper: "The 'beauties of Cambridge and its neighbourhood' which those who resolved to form the Society were determined to preserve was the setting of Cambridge rather than the town itself... It will be seen that their efforts were to lead eventually to the establishment of the Cambridge Green Belt."³⁷ Its members included influential members both of the University and of the town, who were particularly concerned to preserve the views over Cambridge from the two small eminences on its outskirts, namely the Gogs to the south and Madingley Hill to the west of the town.

It is curious that in none of the literature of the period is there mention of the ribbon development carried out by Trinity College along the south side of the outer reaches of Huntingdon Road beginning in 1923 and continuing steadily through the decade.³⁸ Was it because these sales were for substantial houses of better quality than those on the Shelford Road? Or because there is no eminence on that section of Huntingdon Road providing a vista of Cambridge which could be spoiled? Or because, given the university connections of many of the activists, there was a reluctance to criticize the most powerful college?

For some time Hughes in particular had been working behind the scenes to persuade the local authorities to broaden the scope of their planning activity beyond the urban area, and to think regionally. The 1923 revision of the plans, in response to new legislation, remained focussed on the immediate urban area but by 1927 the views of Hughes and his supporters were making themselves felt. Figure 1, the map entitled 'Cambridge Borough Town Planning Proposals, June 1928' shows a new approach encompassing an area with a radius of between 3 and 5 miles from the town centre, and including several nearby villages including Coton and Girton, but not Madingley.

Nonetheless planning matters moved with glacial slowness, existing planning machinery was felt to be inadequate and perhaps the events that finally triggered the formation of the CPS in 1928 were the news firstly that the Borough was planning to build a sewer along Madingley Road and secondly that a landowner intended to build a bungalow at the foot of Madingley Hill. The Society's initial preoccupation with preserving the Gogs was set aside to concentrate on this more immediate threat. It had three weapons:

outright purchase of land, purchase of development rights by acquiring covenants not to develop, then known as "sterilisation", and bargaining with the local planning authority.³⁹ It used the first of these in the Madingley area.

In October 1925 a Mr Danby had bought from King's College a 5-acre plot on the south side of Madingley Road abutting the Coton parish boundary, and in 1928 his building plans became known. Conceivably a large house set in a spacious garden might have aroused less opposition but a bungalow! The CPS made every effort to dissuade him and managed to buy most of his land for £800 in October 1928 but he successfully retained a small strip on which he built the bungalow "Bonde Mteko" which is still to be seen, in complete isolation, a short distance west of the exit slipway from the M11.⁴⁰

The CPS moved swiftly to make the much more substantial purchases in 1929 of the 60-acre Rectory Farm in St Giles Parish immediately east of the bungalow, as well as a larger area on the Coton side of the boundary, thereby achieving the isolation of the bungalow. By 1932 the CPS owned some 590 acres in the vicinity of Coton. These purchases were made with donations or loans from private individuals, of whom the most significant was G.M.Trevelyan, historian and later Master of Trinity College, and trusts such as the Pilgrim Trust. Although Rectory Farm was eventually sold to a private party (under protective covenants) in the 1960's to help finance urgent work elsewhere, the Coton land remained in the possession of the CPS and is currently being made into the Coton Countryside Reserve.

Having safeguarded the Madingley Hill area from further encroachment by undesirable construction, the CPS now turned to another threat, that of the proposed ring road, an almost universal feature in town plans of the period. This road was to be created partly by improvement of existing roads and partly by construction of new ones. In early plans produced by the Borough, the route would have crossed the Cam between Cambridge and Grantchester, closely skirted Grantchester village, traversed the middle of Coton village and then proceeded north and north-east crossing Madingley and Huntingdon Roads. The CPS strongly opposed the stretch near Grantchester; the University, on behalf of its Farm (on which see below), objected to its western alignment. The battle over the road route continued unabated through the interwar period, and even when the alignment was altered to preserve Grantchester Meadows and give more protection to Grantchester village, while some sections were built on the eastern side of town, the opponents succeeded in blocking action on the southern and western parts until the outbreak of the second World War put a stop to further action and the disputed section was never built.

In resisting the threat to Grantchester, and particularly the Meadows much loved by walkers, the CPS made use of the second of its weapons, "sterilisation" or the acquisition of covenants not to develop. Having begun by buying up a 3-acre plot in the Meadows of-

ferred by Corpus Christi College for building plots, in 1932 it reached agreements, to which the Borough Council was also party, with the two largest landowners in Grantchester, King's College and Merton College Oxford, under which construction on 110 acres of King's and 41 acres of Merton land on the west bank of the Cam was to be restricted to agricultural buildings and sports pavilions. The CPS paid the colleges £7,549 and £4,100 respectively.⁴¹ This was one of the tactics it was to pursue when it was finally able to concentrate its efforts on the preservation of the Gogs, which was to be the major focus of its efforts until the end of the century.

In the meantime, in 1931 St John's College, owning land in both St Giles and Coton Parishes and opposed to the western road alignment, made a declaration that in the interests of preserving the amenities of that side of Cambridge the college had no present intentions of developing as a building estate the part of Grange Farm lying south of the Coton footpath, and that it would be prepared to reserve this area for 10 years without compensation, and for a further 10 years subject to the right to take part of the land for University or college buildings, though it could not commit the college in perpetuity.⁴² The land in question totalled 128 acres, and came to be known as the Coton Corridor.⁴³

A Cambridgeshire Joint Planning Committee had been established as early as 1928, out of which grew a Regional Planning Committee which included representatives from the relevant local authorities, the University and the CPS. This Committee commissioned the so-called Davidge Report published in 1934.⁴⁴ This is not the place to go into the details of the report, but as the first comprehensive regional report it strongly influenced the next official planning effort, the Cambridge and District Town Planning Scheme drafted in 1936, and also laid the foundations for the Cambridge Green Belt.

Considering only the parts of the 1936 draft that dealt with west Cambridge, these aroused opposition from the CPS, the University and colleges not only because of the alignment of the ring road to which they objected, but because of a proposal that virtually the entire unbuilt area between Barton Road and Madingley Road (excluding the old Rifle Range) as well as a considerable area north of the latter road be zoned for housing, at 4 houses per acre. Most of this area belonged to the colleges, and there then ensued a battle between the Borough Council and the University and colleges on whether and to what extent the former had the right to control future development of college property. This was of course only the latest phase of the centuries-old contest for power between the town and the University. A public inquiry was held in March 1939 by an Inspector appointed by the Ministry of Health, whose report remained unpublished, being overtaken by the outbreak of war. It dealt at length with the future of the land west of Cambridge and proposed a number of changes, particularly with regard to zoning, but before further negotiations could take place the war

broke out. To quote Cooper: "There is no indication that it [the 1936 Scheme] was formally approved. The scheme did, however, achieve a policy of containment which served well enough through the war years and their immediate aftermath..."⁴⁵

Housing

The greatest change in the housing situation in the interwar period, in Cambridge as elsewhere, resulted from construction of housing by local authorities, an issue initially of enormous controversy about how far to go in abandoning the market mechanism to provide housing for the working class. Council housing impinged minimally on west Cambridge, and yet it was in west Cambridge that the earliest initiative took place. To describe this we have to go back to the early years of the 20th century.

As mentioned, the old Parish of St Giles contained two ancient populated areas, one on the north-eastern and one on the southern edge of the Fields. At the time of Enclosure, because of their fringe position, these residential areas lapped over into neighbouring parishes, but the majority of the dwellings lay within St Giles. The northern one was the old town clustered below Cambridge Castle, a fortification since Roman times, while the southern one was the village of Newnham, near the mill of that name; between them these two areas accounted for almost all the population of St Giles, which in 1801 was recorded as 916.⁴⁶ Given their antiquity it is not surprising that some sections had deteriorated into slums, particularly in the Castle End/Pound Hill area, and it is noteworthy that the first housing to be built by the Borough authorities should have been there.

Correspondence in the archives of St John's College testifies to the existence in the 1890's of bands of young toughs from Castle End who made nuisances of themselves among the newly built houses of the academics along Madingley Road,⁴⁷ while Gwen Raverat's book *Period Piece* contains the following: "To reach our grandmother's [Mrs Charles Darwin's] or uncles' houses in the Huntingdon Road, we had to pass through a corner of Castle End, called Mount Pleasant... At the top of a steep green bank stood a short row of tumbledown cottages, inhabited by most unpleasant people. The place was quiet, there were only gardens with very high palings on the lower side of the roads, so there was little hope of help if we were attacked. We tried to rush through quickly, if possible when the boys were at school; for if they could, they threw stones at us; and I was knocked off my bicycle and my hair was pulled."⁴⁸

One wonders whether the representations of indignant middle-class parents, Darwins among others, had anything to do with the fact that the first instance of house building by the municipal authorities in Cambridge was in Castle End, where in 1910-11, under the terms of the Housing of the Working Classes Act of 1890, the Borough built 8 small houses for elderly people, 6 semi-detached and 2 single.

These houses, from external appearance well-built, still exist on the south-east side of Albion Row and Mount Pleasant, though it is unclear whether their location corresponds exactly with the area of Raverat's tumbledown cottages. Unfortunately after this initial foray the Borough transferred its activities to the east side of Cambridge, and no further rebuilding took place in the Castle End area until after WW2, though other evidence demonstrates that there was plenty of sub-standard housing there.

While the old part of Newnham also had several crowded and insanitary courtyards, conditions appear to have been less bad than in Castle End. Mention has already been made of the single instance of Council house construction in west Cambridge, the 31 terrace houses built in 1924 in Selwyn Road, considered part of Newnham. That Hugh Durnford, Senior Bursar of King's, was a University member on the Town Council and from 1921 to 1924 a member of the Town Planning Committee, as well as the prior existence on the south side of that road of terrace housing privately built in the 1880s, might explain the willingness of King's to sell the land on the north side of the road to the Borough. (Fig. 4)

West Cambridge's biggest contribution towards mitigating the housing crisis in the town as a whole lay in the approximately 200 temporary housing units created in the huts of the former Army hospital on Burrell's Walk. As fast as Council housing became available in east and northeast Cambridge (reflecting the priorities established by the planners), people were moved out of Burrell's Walk, but such was the backlog of housing need that new tenants were immediately moved in.⁴⁹ This remained true right until 1929, when most of the site had been demolished in preparation for the building of the Library, but the

Medical Officer of Health was given permission to hang on to the last remaining huts to the very last minute to house a few families whose seriously defective houses were being refurbished. After the initial rush immediately after the war, the former addresses of tenants being moved into Burrell's Walk give a good indication of the areas with the worst housing: most are in east Cambridge, but a sprinkling are in the Castle End area. None have been identified from Newnham.

Along with Council housing, the private sector was also producing new houses, slowly in the 1920's and more rapidly after 1931. In the immediate post-war period the building industry was in chaos. There were material shortages, skill shortages, labour unrest – in fact even the conversion of the hospital huts was held up by strikes in 1919. Where west Cambridge is concerned, such private housing as was built was almost exclusively gentry housing, the earliest being along Storey's Way, between Huntingdon and Madingley Roads, where a major building scheme on Storey's Charity land had been interrupted by the outbreak of the war;⁵⁰ this picked up momentum after 1918 and was essentially completed by 1939. Some houses were built along the eastern end of Barton Road after the opening in 1926 of Fen Causeway, a new vehicular road whose route across the Cam at Coe Fen aroused bitter controversy. Before this bridge was built, except for bicyclists and pedestrians, west Cambridge had been linked to the rest of the town only by the Silver Street and Magdalene Street bridges.

A plan dated 1928 found in the archives of St John's⁵¹ shows a suggested housing scheme for the area now occupied by Churchill College, indicating that St John's, the major landowner in west Cambridge and responsible for the lion's share of pre-



Figure 4. Council housing in Selwyn Road, erected in 1924/1925

1914 residential development in what I have termed the bicycle suburb, was beginning to think of resuming activity in this sphere. Between 1922 and 1931 the college granted building leases for nine new houses along Madingley Road but only after 1932 had housing demand strengthened to the point where the college was ready to embark on significant new development. Much of the existing housing stock in west Cambridge was too large for young academics with fewer children and fewer servants, and there was a shortage of building plots. Grange Road was fully developed, except for those stretches devoted to playing fields, and the side streets built in the 1880s and 1890s had few sites left. St John's therefore decided in 1933 to build two new roads, Wilberforce and Clarkson Roads, (named to commemorate the 100th anniversary of the abolition of slavery in the British Empire in which both Johnians had played a prominent part) and offer 99-year building leases on plots of about half an acre. To avoid the problems which had arisen earlier over the adoption of the roads built by the college in the late 19th century,⁵² it was agreed that the new roads, though financed by the college (with a contribution from Emmanuel College, whose playing field was skirted by Wilberforce Road), would be built by the Borough. When the college approached the Borough, it suggested that this construction might provide jobs for the unemployed, but the Borough seized on the opportunity of using its own under-employed workforce.

Wilberforce Road, running north from the end of Adams Road, replaced the drift linking the home-stead of St John's Grange Farm to Madingley Road (Fig. 5). A pair of semi-detached tied cottages had been built beside the drift in 1905 for labourers at the farm⁵³ and in 1926 Mrs Evelyn Hopkinson, living in one of the big houses in Adams Road, obtained from St John's College the lease of under half an acre with permission to build one single bungalow and a pair of semi-detached bungalows⁵⁴ immediately south of the tied cottages mentioned. This is the only known instance in which the college acquiesced in the construction of working-class housing unconnected with its own farming activities in west Cambridge. Had the college at that point contemplated the middle-class road development it decided on in 1933, it is unlikely that she would have received their agreement. Clarkson Road ran west from Grange Road and met Wilberforce Road at its midpoint. The building plots on both were of half an acre, and by 1939 17 plots had been let on 99-year leases.

Next to be built were two short *cul-de-sac* roads running south from Madingley Road, to the west of Wilberforce Road. Both were built on private land, and offered individual lots for sale. The first was Hedgerley Close, on the site of Hedgerley Lodge, a substantial house built in about 1880 by a prosperous businessman, Christopher Bulstrode and demolished in 1935 when the new road was built. The second was Bulstrode Gardens, between Hedgerley Close and Wilberforce Road, built in 1937. Both resembled the Wilberforce/Clarkson Road developments in terms of

house and plot sizes, and offered respectively 7 and 16 plots, not all of which had been taken up by 1939.

The last road to be built before the outbreak of war was Barton Close, running north from Barton Road west of Grange Road. For many years St John's College and Storey's Charity had owned adjacent plots of 2 and 6 acres respectively, abutting Barton Road on its northern side, and the former had been trying to develop its small site without running afoul of the 1935 legislation against ribbon development.⁵⁵ After long negotiations, in 1937 St John's bought 3½ acres of the Storey's Charity property and was thereby enabled to build a close with 17 house plots, 12 of which had been let by the outbreak of war.

Throughout the interwar period, the great majority of houses built in west Cambridge were free-standing two-storey houses on plots of between a quarter and half an acre, most designed on conservative lines although there were a few examples of Modernist houses (Figs. 6, 7, and 8). Apart from the bungalows referred to above, the only new feature was the building of the first blocks of flats. The largest development was Pinehurst, a 9-acre site west of Grange Road originally owned by Corpus Christi College and leased to A.A.Vansittart, a former fellow of Trinity, on which in the 1870's he built the largest private house in west Cambridge.⁵⁷ So large was it that by 1924 it had become a girl's school, but when the school failed the college decided to sell the site to a developer, who pulled down the original house and built two blocks of flats, Grange Court and Manor Court, with a total of 42 units. Occupancy started in 1934, but was slow to take off: evidently the idea of living in a flat was not immediately attractive to a community used to more generous spaces, and the flats only filled up after the war started. At about the same time, a second development was built, also on Grange Road. Containing 12 flats and named Grange Gardens, it replaced several small enclosed leisure gardens (not allotments) which since the mid-19th century had been rented by residents of the town who had no such facilities there – a feature still to be found on the outskirts of Dutch or German towns.⁵⁸

Finally, two sets of flats were built on Barton Road, Maitland House in 1936 and Croft Gardens in 1937, with 10 and 12 units respectively.

West Cambridge during the Second World War

Although there were a few air-raids and some casualties in other parts of the town, west Cambridge escaped damage, but the war nonetheless made a visual impact on it. There is a curious symmetry about the changes which took place in both World Wars, the appearance of a large physical feature which later disappeared, though in each case the disappearance was a long time in coming. In the first war, it was the Army hospital near Burrell's Walk, and in the second a massive aircraft repair factory in fields south of Madingley Road.

Short's were the manufacturers of the Sterling

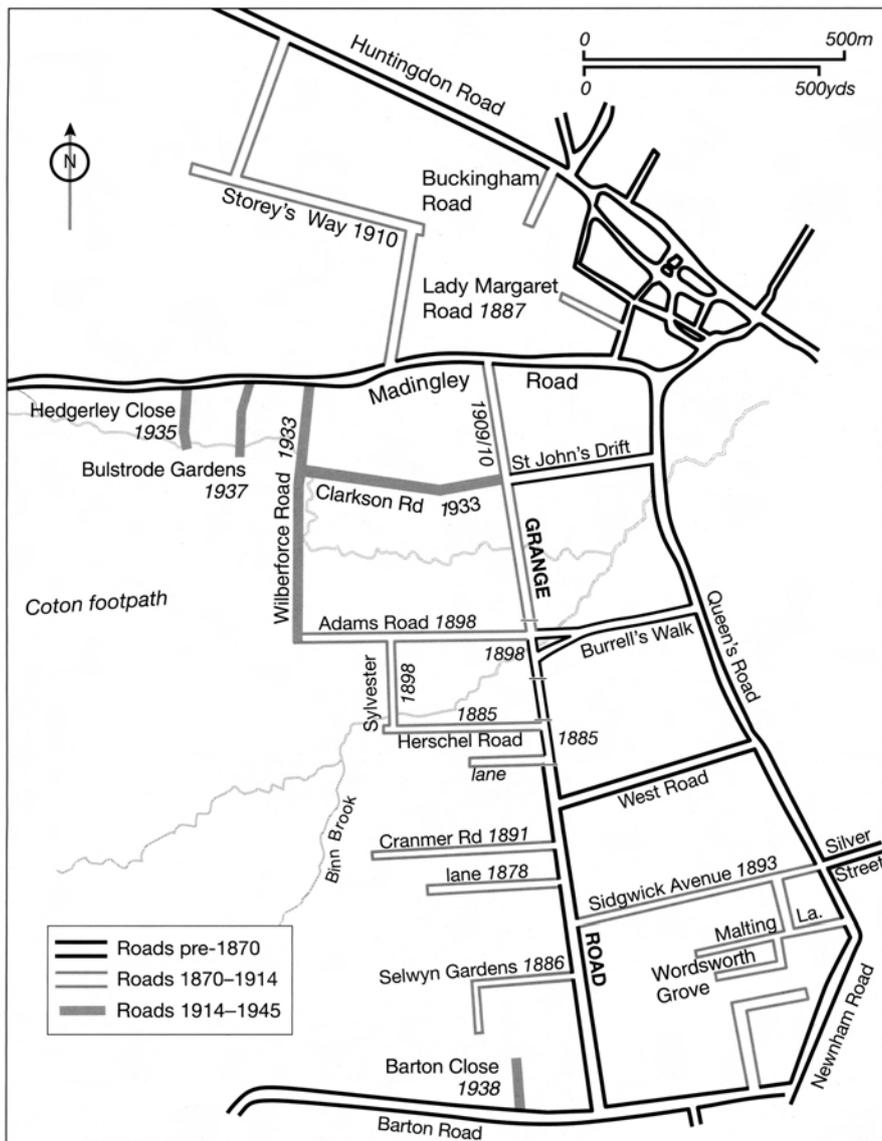


Figure 5. Road development in west Cambridge up to 1945.

bombers, many based at airfields in East Anglia. It therefore made sense to site a repair facility in that region, but what considerations brought the Ministry of Aircraft Production to select Cambridge and then the particular fields chosen is currently unknown. The first 20 acres of land requisitioned in March 1941 for Short's repair factory, known as SEBRO, belonged to Storey's Charity. A narrow rectangle running south from Madingley Road, it flanked Merton Hall Farm (100 acres belonging to Merton College, Oxford) on the latter's western side. That farm would have been a more convenient site, but no doubt the fact that it was a dairy farm exempted it. In January 1942 St John's College learned of the intention to requisition a second piece of land, a 17-acre east-west stretch of its land (part of Grange Farm) bordering Merton Hall Farm on its southern flank, which required the closing and rerouting of the Coton footpath. Since these two plots had no common boundary, a right of way across a corner of Merton land had to be negotiated in order to connect them. When the factory was fully

built, the main repair hangars were on St John's land while ancillary facilities were located on the 20 acres of Storey's Charity land, through which ran the access route to the hangars. Aircraft (or sections of them) were delivered and removed on lorries.

There could be no question of refusal, but the choice of sites caused consternation in the University and the CPS. Already in April 1941, the Secretary of the CPS had written to the Ministry of Aircraft Production pointing out that siting the factory in that location completely negated the results of the many years of negotiations which had finally achieved agreement that the land in question was to be protected from building for a term of years.⁵⁹ Anxiety increased with the second requisition of 1942, not to mention the diversion of the Coton footpath, a favourite constitutional for local residents, and reached a peak in February 1943 when the Ministry informed the respective landowners that it wished to purchase the whole factory site. A massive campaign was mounted, involving the Mayor, the Vice-Chancellor,



Figure 6. 29 Storey's Way, designed by M.H. Baillie-Scott, 1922. Photo courtesy R. Akester.



Figure 7. Willow House, Conduit Head Road, designed by George Checkley, 1932.

the University's Members of Parliament, the CPS, the Warden of Merton and perhaps most effectively the newly created Ministry of Town Planning. Every possible string was pulled, and by April 1943 the Ministry had decided to drop the idea of purchase.

As pointed out at the time by the Senior Bursar of St John's, much of the factory's labour force was billeted on families in Cambridge, and had the factory become permanent a housing estate would inevitably have had to be built nearby, thereby further undermining the efforts to maintain the rural amenities of that side of town.⁶⁰

By way of epilogue, by the mid-1960s all the factory buildings had been demolished except the former works canteen (the "Atlas building") still in use by

the University for storage, but in the meantime both St John's and Storey's Charity had sold their parts of the factory site to the University which has since incorporated them into its West Cambridge development plans.

Changes in land ownership

Although, apart from the Library, the University made little impact on the built landscape of west Cambridge in the interwar period, a major change in land ownership took place which was to have important consequences for its later expansion. As described elsewhere,⁶¹ in 1903 Trinity College had acquired



Figure 8. A representative house of the interwar period: 7 Wilberforce Road, built in 1937/38.

from a private owner in financial difficulties more than 400 acres of farmland at the western extremity of the old Parish of St Giles, abutting the Parishes of Madingley and Girton. This transfer, amounting to almost one-third of the parish area, from private to college ownership is the largest single factor explaining the expansion of academic ownership from 60% of the Parish in 1805 to about 85% by 1914. This trend continued in the inter-war period, albeit more slowly, but then a different shift began, from the colleges to the University, one that was to continue after 1945.

In the redistribution which occurred at Enclosure in 1805, the Commissioners allotted to the University a little over 5 acres, stemming from some small benefactions in the 13th century, and the University immediately leased and subsequently sold the plot to Trinity College for its Fellows' Garden.⁶² Until 1923 it owned no land in west Cambridge, but in 1909 it began renting part of Trinity's land referred to above for its University Farm, previously located in Impington north of Cambridge, to provide a more convenient location for practical training for students of the Department of Agriculture, which had opened in 1899. Trinity, having bought the land in question as an investment and with limited development interests in it, preferred to sell 404 acres of it to the University in 1923, retaining only a strip on the south side of Huntingdon Road for residential building.⁶³ Although the farm now covers a much wider area, its core to this day lies within the triangle between Madingley Road, Huntingdon Road and (nowadays) the M11, and in the latest local plan, this triangle is designated for future university development.⁶⁴

Another shift to University ownership occurred near the Observatory on Madingley Road. In 1890 H.F. Newall, Professor of Solar Physics, bought from

St John's a plot of about 1¼ acres, adjacent to the Observatory, on which to build his house, Madingley Rise, and in 1895 he bought, again from St John's, the paddock of just under 8 acres lying between his house and Madingley Road.⁶⁵ With the object of protecting the Observatory from unwelcome development to the south, in 1921 he also bought the 33-acre Vicarage Farm (allotted at Enclosure to the Vicar of St Giles in lieu of small tithes) on the south side of Madingley Road immediately opposite the Observatory.⁶⁶ In 1931 he sold the 33 acres to the University at the price he had paid for it, with the written understanding that his motives in acquiring the land be respected and that no use would be made of the land "which in the opinion of the Directors...of the said Observatories shall or may be undesirable or tending to prejudice the proper and efficient use of the said Observatories."⁶⁷ It is on this land that the new Cavendish laboratories and later developments were built after the second World War.

Conclusion

The period between 1914 and 1945 saw only minor modification of the landscape of west Cambridge (barring the temporary appearance of war-related structures) but major structural changes both in the University, with the active involvement of central government through the University Grants Committee, and in local government, with the introduction of the machinery of town planning. These, together with shifts in land ownership from the colleges to the University, were to lead after 1945 to the transformation of that area, which came to be the site of 8 new colleges⁶⁸ as well as new buildings for existing

colleges, the newly-created Department of Veterinary Medicine with its farm and the University's West Cambridge campus involving faculty, research and residential buildings, still in the process of development at the time of writing.

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Additional Abbreviations:

- CPS: Cambridge Preservation Society
 CCAD: Clare College Archives, Administration
 CCGB: Clare College Archives, Governing Body
 KCAR: King's College Archives, Administrative Records
 KCGB: King's College Archives, Governing Body
 RCHM: Royal Commission on Historic Monuments
 SJCA: St John's College Archives

Endnotes

- 1 Guillebaud 2005, 2006, 2007
- 2 The enclosure process is described in detail in Guillebaud 2005
- 3 VCH Cambridgeshire, Vol.V, p 198
- 4 Brooke 1993, p 335
- 5 Saundby 1914, p 942
- 6 Griffiths 1918 pp 3–7. The Cambridge hospital was only one of a network of hospitals for which preparatory designs were made following the creation of the Territorial Forces in 1907 in place of the earlier Volunteer units
- 7 *Op.cit.* p 9
- 8 *Op.cit.* p 14
- 9 KCAR/3/1/1/8/31.
- 10 Griffiths 1918 p 27
- 11 KCAR/3/1/1/8/31: 23 August 1919, letter from Ralph Starr, Mayor of Cambridge to Bursar of King's
- 12 KCAR/3/1/1/8/31: 9 September 1919, letter from King's College's lawyers to Bursar of King's
- 13 KCAR/3/1/1/8/31. Draft agreement 12 September 1919
- 14 KCAR/3/1/1/8/31. Note dated 21 March 1921 on meeting of Bursars of Clare and Kings with Town Planning Committee
- 15 KCAR/3/1/1 Section II.
- 16 KCAR/3/1/1/8/31. Summary on status of hospital site made by Bursar of Clare 19 July 1921 and undated newspaper clipping attached to 20 June 1921 letter from Inland Revenue to Senior Bursar of King's
- 17 Spalding *passim*
- 18 KCAR/3/1/1/8/31. Letter 2 November 1921 from Secretary of University Financial Board to Bursar of King's headed 'Sites: University Library.'
- 19 RCHM, 1959 Vol I p 38
- 20 *Clare through the Twentieth Century* p. 93
- 21 Clare College's gradual development of its properties at the foot of Castle Hill for student accommodation (now known as the Colony) began only in the late 1920s.

- ²² Clare College Order Book, Minutes of meeting of Master and Fellows of 8 October 1912 refers to the report of the Buildings Committee which might throw some light on the decision, but the report is missing
- ²³ Clare College Order Book, Minutes of 31 May 1919
- ²⁴ Unfortunately the building of Clare's new library in the middle of Memorial Court has meant the loss of the original visual unity.
- ²⁵ Brooke 1993 p 377–8
- ²⁶ Royal Commission on Oxford and Cambridge Universities, Report 1922
- ²⁷ *Op.cit.* Section IV para 36, p 48 (p 76 in Blue Book)
- ²⁸ *Ibid*
- ²⁹ *Op.cit.* Section V, para 46, p 57 (pp 84–5 in Blue Book)
- ³⁰ *Op.cit.* Section V, para 44, p 55 (p 82 in Blue Book)
- ³¹ Minutes of Town Planning Committee, 1913–1924
- ³² Minutes of Town Planning Committee, 26 November 1918. The Committee, chaired by Mr Negus, a prominent builder, included two Aldermen who lived in Adams Road, Mrs Keynes and 5 others.
- ³³ Cambridge University Library map bb.53.91.10
- ³⁴ Bryan 1999, 2005; Guillebaud 2006
- ³⁵ See bibliography
- ³⁶ CPS Brochure 1929, cited in Cooper 2000 p 16
- ³⁷ Cooper p 34
- ³⁸ Trinity College Archives Box 26 #100
- ³⁹ Cooper p 35
- ⁴⁰ *Op.cit.* p 36
- ⁴¹ *Op.cit.* p 40
- ⁴² SJCA, Council Minutes 1345/7 of 15 May 1931 and 1447/5 of 22 November 1934.
- ⁴³ SJCA, Bursarial Correspondence SBF 84/2, letter of 2 November 1939 from Carter Jonas to Senior Bursar of St John's
- ⁴⁴ See Bibliography
- ⁴⁵ Cooper p 76
- ⁴⁶ VCH, Vol. II, p. 138
- ⁴⁷ SJCA, Bursarial correspondence: SB21/Cb/W/17.51, W/18.23, 33 and 34, W/55.26
- ⁴⁸ Raverat p 168
- ⁴⁹ Minutes of Tenants Selection Sub-Committee of Housing Committee, *passim*
- ⁵⁰ Guillebaud 2007 p 200
- ⁵¹ SJCA, Map MPS 805, 1928
- ⁵² Guillebaud 2007 p 208
- ⁵³ Now numbers 20 and 22 Wilberforce Road
- ⁵⁴ Now numbers 24 and 26 Wilberforce Road.
- ⁵⁵ Restriction of Ribbon Development Act, 1935
- ⁵⁶ Howard 1940, p 18
- ⁵⁷ Guillebaud 2007 p 196
- ⁵⁸ Guillebaud 2006 p 165
- ⁵⁹ SJCA, Bursarial Correspondence SBF.36, letter 20 April 1941 from H.I.Fyjis-Walker, Secretary of CPS to Ministry of Aircraft Production
- ⁶⁰ SJCA, Bursarial Correspondence SBF.36, letter 15 February 1943 from Sir Henry Howard to H.I.Fyjis-Walker, Secretary of CPS
- ⁶¹ Guillebaud 2007 p 206–7
- ⁶² Guillebaud 2005 p 196
- ⁶³ Private communication from Dr John Bradfield, former Bursar of Trinity College.
- ⁶⁴ *Northwest Cambridge Area Action Plan*, pp 3–5
- ⁶⁵ SJCA D.170.1 and Deed Book 1868–97, pp 637–9. It is not known why the College, which normally insisted on granting leases, agreed in Newall's case to sell the land.
- ⁶⁶ SJCA D.192.7
- ⁶⁷ *Ibid.* There is some difference of opinion on whether the University has been sufficiently scrupulous in observing this condition.
- ⁶⁸ Churchill, Clare Hall, Darwin, Fitzwilliam, Lucy Cavendish, New Hall, Robinson and Wolfson. A ninth, St Edmunds College, had already established itself in west Cambridge in 1895 in its earlier incarnation as a residence for Catholic students.

Fieldwork in Cambridgeshire 2007

Elizabeth Shepherd Popescu and Sarah Poppy

The work outlined below was conducted for a variety of reasons, including development control derived projects, emergency recording and research. All reports cited are available in the Cambridgeshire Historic Environment Record, Cambridge, for public consultation.

Abbreviations:

AS	Archaeological Solutions, previously Hertfordshire Archaeological Trust
BUFAU	Birmingham University Field Archaeology Unit
CAM ARC	Cambridgeshire County Council Archaeological Field Unit, now OAEast
CGMS	CGMS Consulting
CAU	Cambridge Archaeological Unit
GSB	Geophysical Surveys of Bradford
NA	Northamptonshire Archaeology
OA	Oxford Archaeology

Babraham, Babraham Research Campus Flood Compensation Scheme

TL 5059 5114 (CAU Report 779)

M. Collins

Evaluation revealed a Romano-British pit and boundary ditch, and a post-medieval ditch running along the edge of the floodplain.

Babraham, Babraham Research Campus (2006)

TL 5077 5073 (CAU Report 763)

N. Armour

A programme of excavation and monitoring was undertaken in association with infrastructure construction works across the campus. The earliest activity identified at the site was the use of a post-glacial hollow during the Neolithic period, while a thin spread of residual worked flint spanning the Mesolithic to Bronze Age was found in later features. Evidence from the nearby ARES excavations has suggested a shift in settlement following the conquest period, a view supported by the discovery of an early 2nd century post-built structure, with associated enclosures and field boundary ditches, which may have formed

a focus for later settlement. The enclosure system was cut by a later Roman road or trackway with roadside ditches, although little of the road surface survived. Occupation appears to have been abandoned by the end of the 3rd century AD, and the area was levelled off with large quantities of midden material. The dumped material contained quantities of high status building materials, presumably brought in from a villa at an unknown locality. A series of later Roman ditches were also recorded, one containing a small group of coins of Magnentius (AD 350–353). The line of the Roman Road was preserved and continued in use in the medieval period, and a large roadside quarry may have been systematically exploited for the construction and maintenance of this medieval roadway. An area of rubbish pits dating to the 12th and 13th centuries AD were also revealed 150m north of the hall, which may represent an outlying area of early medieval settlement expansion. Several small quarry pits of late medieval/early post medieval date were also excavated for the purposes of the small-scale extraction of cut building stone. The main Cambridge to Linton road (A1307) was constructed in the mid 18th century, and made into a turnpike road in 1766.

Babraham, Babraham Research Campus (2006)

TL 5107 5070 (CAU Report 754)

S. Timberlake, N. Dodwell and N. Armour

Following the discovery of human remains during evaluation, a Roman cremation and inhumation cemetery comprising at least 36 late 2nd to early 4th century graves was excavated. While the burials were initially focused on an earlier circular cremation cemetery, containing up to seven cremations of late 1st to 3rd century date, later burials appeared to respect the alignment of the putative Roman road some 70m to the west. The burial group was equally divided between males and females, and also included infants and juveniles. Four skeletons, mostly adult males, showed evidence for post-mortem decapitation. At least four coffin burials were evident, and a variety of grave goods were present, including pottery beakers, jars and flagons, hob nailed footwear (males) and

jewellery (females). An unusual jet necklace of a type more common in prehistoric burials, accompanied one of the skeletons. A group of pits of probable Neolithic date were also identified, together with small quantities of residual Late Iron Age/Conquest period pottery. Post-Roman activity was limited to an early medieval pit, post medieval cultivation features and a roadway that truncated some of the burials.

Balsham, Hay Close (2006)

TL 5897 5047 (Heritage Network Interim Report)

D. Kaye

Evaluation identified a group of features in the north-west part of the site, comprising a small complex of pits that were cut by a later shallow ditch or gully. A separate small pit containing pieces of charcoal was also recorded. The fill of the ditch and the main pit contained Early Iron Age pottery, animal bone and three pieces of possible flint debitage. Twelve stones, some showing signs of being heated, were also recovered from the pit fill, indicating a possible function as potboilers or part of a hearth.

Barrington, Barrington Cement Quarry (2006–7)

TL 3905 5092 (CAU Report 804)

M. Collins and M. Knight

Excavations identified substantial recut boundary ditches, thought to define the easterly extent of a small Roman farmstead lying to the west of the area investigated. The excavations also defined the northerly edge of a Roman field system that extended across the floodplains to the south. A series of clunch pits uphill from the settlement and field system were also investigated and found to retain traces of tool marks made by bow-drills and metal picks on the quarry face. These quarries may represent the small scale extraction of building materials, associated with low status rural settlement, or possibly part of a larger programme of stone extraction associated with a higher status site. Evidence for possible timber structures was identified during the excavation and earlier evaluation phase, although no evidence for stone footings has been recorded to date. A limited assemblage of finds was recovered from the features, confirming a primarily late 1st century AD date, with some continuation of activity into the 2nd – late 3rd centuries AD.

Bartlow, Bartlow Park

TL 5864 4500

H. Eckardt with A. Clarke

A further season of archaeological investigations was undertaken in the grounds of Bartlow Park to investigate the area surrounding the Bartlow Hills Roman barrows. Two trenches were placed to examine the linear earthwork recorded by Gage and Brocklebank, revealing a substantial ditch with accompanying bank on its southern side. A trench in the park grounds failed to locate any dating evidence within the ditch, which was recorded to be 2.8m wide and 0.8m deep, and provided clear evidence that the earthwork had been extensively landscaped during the previous centuries. A trench in the woodland to the north of the

walled gardens also revealed the profile of the ditch, and recovered pottery of 3rd – 4th century date from the bank. Pottery of later 2nd century date was also found within the bank, suggesting a *terminus post quem* for the linear earthwork. Disturbance, probably related to the walled garden and associated paths, was noted to the south of the earthwork.

Three trenches in the park grounds investigated geophysical anomalies tentatively interpreted as potential funerary structures and settlement evidence. A curving ridge of chalk was noted at the location of the potential barrow, overlain by deposits containing 3rd and 4th century pottery. It is possible the feature represented a natural knoll or an earlier barrow, although the results were inconclusive. A large late Roman pit, containing quantities of animal bone, pottery and shell was excavated. A trench to investigate anomalies thought to be associated with the villa revealed only evidence for mid 20th century landscaping and dumping of building materials, which may have concealed any remains previously visible to Haverfield or Brocklebank. This dump may be associated from the nearby World War Two ammunition dump, or have originated from the demolition of the former Bartlow Hall in the 1950s. Magnetometer survey of the two walled gardens, revealing associated paths and potential walls completed the survey. Seven test pits were also excavated in the surrounding area to establish the depth of natural and nature of overlying deposits.

Bassingbourn-cum-Kneesworth, Bassingbourn Village College

TL 3294 4335 (CAM ARC Report 945)

T. Phillips

Discoveries at this site are reported in the archaeological note contained in this volume.

Bassingbourn cum Kneesworth, Bassingbourn Village College

TL 3290 4342 (Archaeology Rheesearch Group Report)

I. Sanderson

Magnetometer and resistivity survey were conducted to locate continuations of ditches that had been recorded during a nearby CAM ARC excavation. The survey detected a NE–SW ditch that aligned with one of the excavated examples. More slight traces of a parallel ditch were discovered, which also aligned broadly with excavated features to the NE.

Boxworth, Spring Close (2004)

TL 3506 6448 (NA Report)

Detailed resistance and magnetometer survey revealed a wealth of anomalies on the old village green, many consistent with existing earthworks at the site. Several linear features and anomalies relating to possible structural remains were recorded in the north-west corner of the site, with a probable kiln feature. A series of ‘ladder’ enclosures were recorded in the central part of the site. High levels of magnetic interference were recorded in the west part of the survey area, suggesting dumps of fired and ferrous material.

Boxworth, Spring Close (2004)

TL 3506 6448 (Boxworth Village Research Group Report)

A. Connor and I. Taylor

A community based training excavation was funded by the Local Heritage Initiative, with guidance from CAM ARC. Seven trenches were excavated to investigate anomalies identified by the geophysical survey. Some traces of prehistoric activity were recorded, including a possible curvilinear ditch, together with small quantities of pottery and worked flints from residual contexts. The evidence indicates an upsurge in activity in the mid-Roman period that continued though to the Early Saxon period, characterised by a rectilinear field system, the layout of which was strongly influenced by the topography of the site. Although the area appears to have been peripheral to settlement, numerous finds indicate occupation in the vicinity, including roof tiles, floor tiles and several lava quern fragments. The presence of a kiln in the northwest corner of the site was confirmed, although it was not excavated. After an apparent hiatus activity at the site resumed in the Saxo-Norman period. A pair of concentric curvilinear ditches of Saxo-Norman or later date were recorded in the higher western part of the site, interpreted as a possible windmill, dovecote or hay stack stand. The distribution of Saxo-Norman pottery was largely confined to the area northwest of the stream, coinciding with the area of earthworks at the site. Small quantities of medieval and post-medieval pottery were recovered, suggesting only a low level of activity at the site since the 12th century AD.

Brampton, Manor Farm

TL 2144 7061 (Albion Archaeology Report 2007/25)

V. Osborn

A group of features was recorded in the northern part of the site, comprising pits, ditches and a gully, containing limited finds of medieval and post-medieval date. This activity may represent a continuation of later medieval and post-medieval activity seen to the north of the site during previous investigations. Considerable evidence for artificial infilling in the centre of the site was also recorded, with two large undated features being tentatively interpreted as medieval ponds.

Burwell, Land Behind 15 and 42, Kingfisher Drive

TL 5859 6752 (CAM ARC Report 937)

M. Muldowney and S. Cooper

This excavation lay to the rear of properties fronting North Street, one of the main medieval streets in North Burwell. It was bounded by waterways on two sides: the Weirs to the west and a disused spur lode to the south. The site was sub-divided in the medieval period by a series of ditches running parallel with and at right angles to the Weirs. Rectangular, tank-shaped pits clustered together towards the western end of the site may have been medieval fish tanks. At the eastern end of the site a small circular gully may be the remains of a dovecote, along with possible evidence for a barn or other timber structure. The recorded evi-

dence mainly relates to medieval and post-medieval backyard and waterfront activities.

Burwell, Land south of Isaacson Road

TL 5910 6587 (CAM ARC Report 951)

M. Muldowney

Work at this site encountered important archaeological remains relating to early medieval industrial activity, which included five limekilns (three with stoke holes), a series of large, contemporary quarry pits and a slightly later post-built windmill with surrounding C-shaped ditch. Numerous postholes, whilst not forming any clear structure, may have formed temporary buildings associated with the lime processing activity and chalk extraction.

Burwell, Land north-west of 60 Reach Road

TL 5829 6609 (Allen Archaeological Associates Report)

M. Allen

Evaluation revealed a series of features of prehistoric and Romano-British date, suggested to be the remains of field systems. Lithic material was also recovered, indicating some activity in the area from the Late Neolithic/Early Bronze Age. A former prehistoric water channel was also identified, on the edge of which were found the part remains of at least two individuals, indicated by radiocarbon to be date to the Late Iron Age. A rising water table caused the abandonment of the area, probably in the later Roman period.

Cambridge, Addenbrooke's Hospital Water main diversion

TL 4594 5526 (CAU Report 794)

S. Timberlake

Evaluation and small-scale excavation recorded a cluster of intercutting Early Anglo-Saxon pits and a well. The features contained a small assemblage of decorated 5th–6th century Anglo-Saxon pottery, in addition to bone waste, iron knife blades, burnt quern fragments fired and unfired clay. Evidence for small-scale iron smithing from the nearby area was also recovered. It is suggested that the pits were dug as quarries for daub or flooring material, which were then used for various craft working activities, before being abandoned and infilled with domestic waste. This group of features represents the fringes of a previously identified Early-Middle Anglo-Saxon settlement straddling the Roman road.

Cambridge, Addenbrooke's NCP Car Park

TL 4646 5529 (CAU Report 778)

J. Hutton and C. Evans

An evaluation was undertaken in advance of proposed development, with the aim of locating the Iron Age enclosure ditch excavated by Mary Cra'ster in 1967. A single undated gully was recorded in the northern part of the site, while the enclosure ditch was encountered towards the southwest area. The enclosure ditch was on a WNW/ESE alignment, and contained animal bone and middle Iron Age pottery. Evidence for

considerable truncation to a depth of 0.4–0.5m was recorded, associated with the construction of the hospital. Limited additional information about the nature of the settlement was encountered, although the observation of two very distinct fills within the enclosure ditch suggest that settlement may have been a secondary usage of the enclosure.

Cambridge, Addenbrooke's Access Road, Glebe Farm
TL 4442 5389 / TL4485 5408 (CAU Report 802)

N. Armour

Open area excavation along the Addenbrooke's access road revealed significant evidence for occupation dating to the 5th – 3rd centuries BC. Excavations revealed eleven ditched features, forming four discrete rectilinear alignments, within which two probable droveways were identified. Two flexed inhumations were also located, one an adult female seemingly interred within a probable tree throw, the other an adult male placed within a sub-circular cut which may have originally been a storage pit. Numerous pits and postholes were recorded, many of which could be attributed to post-built structures. A large waterlogged feature in the western part of the site was confirmed to be a well and found to contain a log ladder and part of a wooden trough. Three hollows partially filled with metallurgical deposits were associated with the well. Two earlier features were also recorded during the excavation; a small Middle Bronze Age pit and a tree throw containing fragments of Neolithic pottery and worked flint. An assemblage of 109 residual flints of Late Neolithic/Early Bronze Age date was also recovered from Iron Age features. Further evaluation trenching along the route also revealed a small number of undated ditches and pits, which correspond to cropmarks plotted from aerial photographs.

Cambridge, Addenbrooke's Access Road, Clay Farm
TL 4522 5424 (CAU Report 803)

S. Timberlake

Excavation demonstrated that archaeological remains were largely confined to the northwest part of the site on the edge of the Third Terrace gravels. The earliest activity on the site comprised a number of Neolithic pits and tree throws, and a single cluster of Early Bronze Age pits. Middle Bronze Age activity was characterised by a NW–SE aligned rectilinear field system, with one ditch containing the partial remains of a Deverel-Rimbury urn. A large enclosure ditch following the edge of the field system was also established at this time, and a large Middle-Late Bronze Age pit was found at the point the enclosure ditch changes alignment. A number of Middle Bronze Age burnt stone spreads and pits, including two cooking pits were also recorded. No evidence for a Late Bronze Age–Middle Iron Age presence was noted. Late Iron Age activity comprised a poorly developed field system, the edge of a N–S ditched trackway and a single cremation. Evidence for small scale quarrying, starting at the end of the Iron Age, was recorded in the east part of the site. A cultivation enclosure was also established during this period, which developed during the

Conquest Period. By the period c. AD 50–60 the cultivation of probable asparagus beds was undertaken in the northwest corner of the site, perhaps indicative the presence of an unknown villa or farmstead nearby. Quarrying and agricultural activity appears to have continued into the Early Roman period, although the site was largely abandoned by AD 80–100, possibly in favour of the larger settlement at Addenbrooke's. Later activity was confined to small-scale post-medieval gravel and marl quarrying, and the cutting of field ditches and land drains. Features relating to the agricultural show which took place on Clay Farm during the 1950–60s were also noted.

Cambridge, Bradwell's Court (2005–6)
TL 4516 5843 (CAU Report 775)

R. Newman

Area excavation revealed a small but well-preserved part of the medieval suburb, in which the remains of at least 15 timber, stone and brick structures were identified. The evidence indicates that settlement in this area commenced during the 11th century, at which time a number of gullies/fencelines were established, delineating plot boundaries that remained largely unaltered until the 19th century. This earliest phase of activity, dated to the 11th–16th centuries, was also characterised by numerous extraction pits, which had subsequently been filled in with domestic refuse. Two possible buildings were also identified, although they were too truncated for identification to be conclusive. Subsequent to this was the formation of garden soil-type deposits across most of the site; some found to be 11th century while the bulk of this material was 14th century in date. During the 14th–17th centuries at least six timber-framed buildings were established on the site, along with associated pathways and refuse pits. The 16th–18th centuries saw the gradual replacement of these timber buildings with brick ones, some at least as the result of their timber precursor having burnt down. During the first half of the 19th century the plot was remodelled and at least two large houses with formal gardens constructed. Finally, in 1959 the site was cleared to allow for the construction of Bradwell's Court itself.

Cambridge, Land off Hatherdene Close, Coldham's Lane, Cherry Hinton

TL 4840 5760 (CAM ARC Report 948)

R. Mortimer

The main archaeological features revealed were possible Bronze Age and Iron Age burials, an early Romano-British funerary enclosure containing inhumations and/or cremations, and an Early Anglo-Saxon inhumation cemetery. These features occupied the southern corner of the site, towards the crest of the hill. An Early Roman field system extending to the north of the enclosure and a large pit or well to the east suggest that the area lay at the edge of a Middle Saxon settlement area. Remnant ridge and furrow agriculture of the post-medieval period extended across the whole site.

Cambridge, 95 Glebe Road

TL 54671 25601 (CAM ARC Report 966)

M. Muldowney

Eight shallow pits and ditches, thought to date to the Iron Age period (and/or earlier) provided evidence for sparse occupation of the immediate area, already known to contain Iron Age (and Roman) remains.

Cambridge, Grand Arcade (2005–6)

TL 4508 5830 (CAU Report 800)

C. Cessford

Within the 1.5 ha area of the Grand Arcade development, 0.7 hectares were investigated archaeologically. While a small amount of evidence of Middle Iron Age, Roman and Middle Saxon activity was recorded, the main occupation sequence began in the 11th century AD. Several substantial lengths of the King's Ditch were examined, which indicated that the ditch was probably constructed in the 11th century, and was dug in a series of short segments with some deeper slots. The ditch was well maintained throughout the medieval period, and was recut a number of times. One probably bridge pier was also identified. In the late 15th/16th century the maintenance of the ditch began to decline, with increasing amounts of refuse being dumped in it. The ditch continued to become shallower, and the later 17th and 18th century phases of the ditch were represented solely by the lower portions of wooden stakes and brick footings. The ditch was completed backfilled in the 19th century and was replaced by St Tibb's Row.

A dozen suburban property plots lying between the King's Ditch and St Andrew's Street was also investigated. Occupation began in the 11th century, with evidence of a planned layout from the late 11th century. The general picture is of increased levels of activity through to the 14th century, with some evidence of decline in the late 14th and 15th centuries. The area appears to have experienced renewed activity in the 16th century, while the 17th century left a sparse archaeological imprint. Throughout this period occupation was focused on the St Andrew's Street frontage, with yard areas immediately behind, and open areas for grazing and growing crops at the rear. The main feature types excavated from these phases were pits, wells, postholes, beamslots, gullies, animal burials, oven and ditches. Increased levels of building activity were witnessed from the 18th century onwards. During the early 19th century the area becomes fully urban in character, and the features from this phase were largely brick built and consisted of walls, floors, wells, cellars and soakaways. The scale of the investigations led to the recovery of large assemblages of many artifact types, including mid 18th to mid 20th century assemblages, and the waterlogged conditions resulted in the survival of large quantities of leather and wood.

Cambridge, Homerton College

TL 459 561 (OARreport)

Dave McNicol

A geophysical survey and evaluation for Colophon

Ltd revealed a large amount of magnetic activity within the site, although only a small proportion was of potential archaeological interest. The subsequent trench evaluation confirmed this low potential. A number of isolated post-medieval features, including a field boundary and a number of pits were investigated. Although largely undated, pottery and other material suggested agricultural and quarrying activity from the late 19th to early 20th century in the south-eastern part of the site.

Cambridge, Kavli Institute for Cosmology, Madingley Road

TL 4317 5934 (CAU Report)

D. Webb

Archaeological monitoring recorded a single cut feature containing early Romano-British pottery and animal remains, thought to a medium sized pit. A concrete footing was also recorded, which may relate to the former housing for the Newall 25 inch refractor telescope that was sited here during the period 1890 to 1958.

Cambridge, 4–5 Peas Hill

TL 4487 5835 (CAU Report 799)

A. Dickens and R. Darrah

Building recording was undertaken in the ground floor and cellar of 4–5 Peas Hill, a grade II listed building. The majority of timber framing surviving in the two buildings dates to the late 16th/17th century, with some traces of potentially earlier material. The structures were altered and rebuilt during the 18th, 19th and 20th centuries. A series of test holes in the floors and walls of the cellar area were also examined for below ground remains, which provided evidence of probable cellars or undercrofts that predated the main phase of the extant buildings on the site. Archaeological deposits also appear to survive intermittently in islands between the cellar walls, and demonstrate activity on the site from at least the 12th to the 16th/17th century.

Cambridge, Thompson's Lane

TL 4480 5901 (CAU Report 809)

R. Newman

Archaeological investigation encountered five distinct phases of activity. The earliest elements in this sequence comprised a series of alluvial deposits that formed from Prehistoric times up until the 14th century, including a drier episode during the Roman period. From the 14th to the 16th centuries the area was gradually 'reclaimed' by the introduction of numerous dump deposits before becoming incorporated into an area of widespread riverside development undertaken in the early 17th century. The route of the King's Ditch, the medieval boundary to the city, appears to have been moved at least twice over the course of this period. Having run at first adjacent to the southern perimeter of the site, it was apparently recut in the late 13th century along a new alignment parallel to the northern boundary of the area. At some time between 1607 and 1609 this recut was backfilled

and the original route of the boundary re-established. Following this final reorganisation, any pre-existing structures on the site were demolished and a new series of buildings constructed. Although rebuilt, extended and modified several times, including the use of the site as a brewery between 1788 and 1902, the layout of these buildings remained relatively unaltered until the early 20th century.

Cambridge, St Faith's Playing School

TL 4486 5662 (Air Photo Services Report)

R. Palmer and A. Ziemele

Aerial photographic assessment identified a series of enclosures and other ditched features, which show at least three phases of construction. Deeper soil covered much of the southern part of the playing field and may mask features at this locality.

Chatteris, Area 5, Block Fen B (2006)

TL 4367 8376 (AS Report 1456)

B. Roberts and D. McConnell

Several features were recorded during this stage of investigation, mainly comprising tree hollows and animal burrows. Excavation of a large Bronze Age ring ditch revealed an unusual entranceway formed by two clearly defined termini on the southwest side. A large pit was located within the ring ditch which contained large amounts of charcoal, burnt animal bone, flint debitage and pottery fragments, interpreted as feasting deposits.

Colne, Rhee Lakeside North, Colne Fen

TL 3836 7733 (CAU Report 777)

G. Appleby, N. Armour and C. Evans

Excavation revealed evidence for activity spanning the Mesolithic to Romano-British periods. A small quantity of later Mesolithic and Neolithic material was recovered from the ploughsoil and later features. Bronze Age activity was limited to a small pit and a ditch, which aligned with the Bronze Age field system recently investigated to the south of the Rhee Lake. A large Iron Age trapezoidal enclosure was excavated, and found to contain a large eaves drip gully, which at 15m in diameter represents one of the largest prehistoric roundhouses in the region. Two oval pits were located within the entrance, representing a probable porch structure, while a further seven internal post-holes may also be structural. A small quantity of Iron Age pottery, animal bone and residual flints were recovered from the gully, which together with the paucity of environmental evidence, suggest the structure was relatively short lived. The excavations also recorded the continuation of Romano-British paddocks and field systems, which had previously been identified at Langdale Hale. The ditches followed the same alignment as the Iron Age enclosure, and may have exploited surviving elements of the earlier system, with some evidence for recutting of ditches and re-configuration of entranceways. A low density of finds was recovered, indicating the site was peripheral to the main area of settlement.

Comberton, St Mary's Church

TL 3836 5554 (AS Report 2212)

P. Weston

Monitoring of groundworks recorded the clunch foundations of the northern aisle and its associated construction cut, as well as seven east-west burials. Five burials, comprising four adults and one child, were disturbed by the foundation trench, while a further two burials were located within the construction cut of the northern aisle, suggesting they were intentionally placed under the church foundations. A Victorian/20th century storm drain was also recorded.

Dry Drayton, Scotland Farm

TL 3661 6016 (Albion Archaeology Report 2007/86)

D. Ingham

Evaluation recorded a Late Iron Age enclosure ditch, which seems to correspond with one of the enclosures identified on aerial photographs. Other Late Iron Age features comprised a gully, two pits and a further ditch terminal. The heavily truncated remains of medieval ridge and furrow were also recorded. The excavated and cropmark evidence suggests the possibility of settlement extending northeastwards along the Dam Brook.

Duxford, Duxford Grange to A505 pipeline

TL 4524 4454 (CAU Report 792)

D. Mackay

Fieldwalking in advance of a new water pipeline recovered only a single flint flake, attesting a low level of activity in the area. Evaluation identified a number of pits of potentially natural origin, as well as a small ditch of possible Roman date. Two 20th century ditched features were also recorded, which may have been associated with Second World War defensive structures around Duxford Airfield.

Earith, Rhee Lakeside South (2006)

TL 3861 7706 (CAU Report 776)

M. Brudenell and C. Evans

Excavation over 3.2 ha revealed extensive evidence for later prehistoric settlement and funerary activity. Neolithic activity was limited to tree-throws and three possible pits, together with a low-density spread of worked flint from later features across the site. Investigation of an Early Bronze Age C-shaped ring ditch, which had an entrance on the southwest side, revealed a crouched inhumation of an adult male. The ring ditch became a focus for cremation in the Middle Bronze Age, and 35 cremation pits were found clustered into three spatially discrete groups. A series of parallel ditches were recorded to the south and west of the ring ditch, which together formed a series of large rectilinear and D-shaped paddocks. During the later Bronze Age the disused paddocks became a focus for settlement. A series of five post-built roundhouses and several four- and six-posted granary structures were identified, together with a number of large wells/watering holes, pits clusters and isolated pits and postholes. Relatively few finds

were recovered from the settlement, although a large dump of Late Bronze Age pottery and animal bone was recovered from a well, together with a fragment of shale bracelet. Radiocarbon and ceramic evidence indicate a hiatus in activity between 800 and 500 BC. Settlement resumed during the Middle Iron Age, and comprised two ditched compounds, an area of open settlement dominated by a group of eight roundhouses and a few pits and postholes. These appear to have been abandoned before the 1st century AD, and later remains were confined to a small number of Roman boundary ditches and a series of post-medieval field boundaries.

Eltisley, Church of St Pandionia and St John the Baptist

TL 2684 5965

T. Reynolds

Photographic recording was undertaken in advance to repair works to the wall of the south aisle. The works comprised the removal of a recent outer skin of the wall, and excavation of a small area adjacent to the wall. The wall retains original medieval features, set within a later patched wall, made up of fieldstones and a single limestone block. A ditched linear earthwork was observed to the east of the church, interpreted as possible evidence of the expansion of the graveyard at an earlier date.

Ely, Ely to Haddenham water pipeline (2006)

TL5098 7799 (Archaeological Services and Consultancy Report 737/EHP/3)

A. Hancock

A series of ditches and pits/postholes containing early Romano-British pottery were discovered during evaluation at the centre of the former Witchford airfield. These findings confirm that the Romano-British rural settlement located during earlier investigations on the Lancaster Way Business Park extends east and southeast into the airfield. Mid-Late Iron Age pottery sherds were also recovered, suggesting continuity of settlement.

Ely, Ship Lane

TL 5439 8000 (CAM ARC Report 953)

T. Phillips

Two large pits and a ditch dating between the 10th and 14th centuries were found, above earlier layers indicating episodic flooding. The site may have formed part of a backyard plot for buildings fronting on to Broad Street to the west. The small assemblage of Middle-Late Saxon pottery recovered is significant due to the limited evidence of Saxon activity in this part of Ely.

Ely, Land to the rear of 30–32 St Mary's Street, Ely

TL 5384 8038 (AS Report 2933)

S. Hogan, I. Williamson and K. Nicholson

Evaluation recorded deeply stratified deposits dating from the Late Saxon period through to the 19th century. The earliest features were ditches, a posthole and pits, containing a finds assemblage indicating of

domestic activity in the vicinity in the Late Saxon/Saxo-Norman period. These features were sealed by a soil horizon, which in turn was cut by medieval features. The earliest medieval features included ditches, which may have marked the boundary of plot known as 'Le Grene' on early cartographic sources. A series of pits were excavated, possibly for the extraction of the natural sandy clay or for the disposal of rubbish. The remains of a medieval structure were also identified, represented by areas of rammed chalk floor, one with two post pads resting on it. A second phase of medieval activity was represented by three large quarry pits, probably for the extraction of natural deposits for use in the manufacture of building materials. A series of post-medieval features were also recorded, comprising pits, a possible floor and a cobbled surface. A right-angled section of wall is consistent in position and alignment with a building depicted on mid 19th–early 20th century maps, and it likely to be an ancillary structure to the rear of 32 St Mary's Street.

Ely, Westfield Farm (2006)

TL 5256 7981 (CAU Report 780)

R. Newman

Excavation uncovered a total of 15 plough-damaged graves, all dating to the mid 7th century AD. The graves appear to have been clustered around a central 'founder' grave, which contained an individual aged 10–12. This grave, which may have been covered by a barrow, was richly furnished with a gold and silver cross-pendant necklace, a wooden box with iron fittings, a pair of glass palm cups, a silver pin and chain, an iron chatelaine and iron knife. A second burial, a young female of 15–17 years, was also richly furnished with a brooch, beads and a bag containing a copper alloy work-box. Seven other burials were furnished, but only with very simple grave-goods such as iron knives and copper-alloy buckles. The remaining burials were unaccompanied. The majority of the burials were orientated west east, with a degree of patterning in the spatial arrangement of the cemetery. The cemetery is contemporary with the foundation of the monastery at Ely and belongs to the growing number of 'Final Phase' cemeteries that have been recognised throughout Anglo-Saxon England, especially in Cambridgeshire, Norfolk and Suffolk.

Fen Ditton, Home Farm, High Ditch Road

TL 4879 6019 (CAM ARC Report 973)

S. Kenney

Trenches were placed to investigate the line of a ditch seen in a previous evaluation on the adjoining plot in 2006. No evidence was found for any ditch crossing the present subject area, which must either have terminated or turned towards the road. It now appears that the ditch may have formed part of the boundary to the adjacent area, formerly called Townsend Farm Allotment. Interpretation of the earthwork as part of the putative 'Northern Fleam Dyke' can now be discounted.

Foxton, Mortimers Lane

TL 4141 4846 (CAM ARC Report 975)

G. Rees

Medieval remains included a structure adjacent to the modern street, to the west of which was evidence of domestic activity, small-scale animal husbandry and boundaries. A series of depressions up to 5m wide may be associated with the medieval moated site just to the north. Activity dating to the 11th to 19th centuries indicates continuous use for this plot of land.

Foxton, West Hill

TL 4075 4757 & TL 4077 4769 (Archaeology Rheesearch Group Report)

I. Sanderson

Two discrete areas were subject to resistivity and magnetometer survey. In the southwest area, the survey recorded dried-up line of a SSE–NNW-running stream flanked by areas of high resistance, which the surveyors interpreted as the site of a mill. A ring-ditch was discovered to the east of the river and a 34 x 28m ovoid enclosure lay to the east of the ring ditch. Survey of a second ring ditch to the northeast revealed the ditch to be approximately 33m in diameter, with a central area of low resistance. The magnetometer survey revealed two concentric ditches with a slight anomaly just off the centre of the ring-ditch.

Fulbourn, The Chantry (2006)

TL 5204 5638 (Essex County Council Report 1634)

M. Germany

Area excavation was undertaken to record any surviving remains following the stripping of the site. A small quantity of residual undiagnostic prehistoric pottery was recovered, together with two possible Roman features, although the scarcity of remains indicated that the site lay outside the immediate focus for Roman settlement activity. A higher density of medieval features, mainly deep pits and wells, were concentrated towards the eastern end of the site. While few of the pits were securely dated, the majority contained pottery of 12th–14th century date, with a few containing pottery dating to the 14th to 16th centuries, suggesting a decline in activity during the later medieval period. Three wells were investigated, and found to contain small quantities of animal bone, slag and medieval pottery. No direct evidence for medieval structures was identified, although such evidence may not have survived the severe truncation in the eastern part of the site. A small number few post-medieval features were revealed, in addition to a large number of modern farmyard features, which relate to the expansion of the Queen's College Farm farmyard to the south-east of the site.

Gamlingay, Land off West Road

TL 2347 5204 (AS Report 2120)

K. Doyle and P. Harris

Evaluation revealed a ditch terminus containing Saxo-Norman pottery and quern stone fragments. Undated ditches, pits and a hearth were also recorded.

Godmanchester, 8 New Street

TL 524675 270434 (CAM ARC Reports 935 and 974)

W. Punchard and T. Phillips

This site lies close to Ermine Street in the centre of Roman Godmanchester. Stratified Romano-British deposits were revealed, including ditches and pits cutting into layers containing large quantities of finds, generally of 2nd to 3rd century date. The latter includes pottery, bone, oyster shell, metalwork and animal bone (including dog and horse skulls). The results of earlier evaluation are detailed in a related note (Phillips, this volume).

Godmanchester to Hemingsford Abbots Water Main Renewal

TL 258 685 to TL 277 713 (CAM ARC Report 940)

N. Wright

This pipeline route stretched for 4.5km from the A1198 to Hemingsford Abbots and was 20m wide. Twenty-six trenches were excavated along the route. A geophysical survey carried out prior to trial trenching revealed relatively few magnetic anomalies. It was suggested that these were possible enclosure ditches of Iron Age/Romano-British date. Remains of ridge and furrow were also detected along the entire course of the pipeline. Archaeological features found in trenches targeting magnetic anomalies consisted mainly of ditches attributed to agricultural activity, probably dating to the prehistoric period.

Great Abington, St Mary's Church (2006)

TL 5317 4880 (Archaeology Rheesearch Group Report)

I. Sanderson

Magnetometer and resistivity survey was undertaken on the area to the southeast of St Mary's church to investigate the earthworks visible at the site. Evidence for earlier field boundaries, a possible trackway and a moated site was recorded.

Haddenham, Rear of 40 West End

TL 4595 7561 (BUFAU Report)

L. Bishop

An evaluation revealed two ditches, small gullies and a pit of possible prehistoric date in the eastern part of the site. These remains appear to predate the findings of earlier excavations to the east and southeast of the site, which produced evidence of Late Iron Age to medieval date.

Haslingfield, Cantelupe Road

TL 4116 5308 (Archaeology Rheesearch Group Report)

I. Sanderson

A programme of geophysical survey was undertaken at the request of the Cambridge Archaeology Field Group at the location of a concentration of Roman material discovered during fieldwalking and rectilinear cropmark features visible on aerial photographs. A few discrete areas of high resistance were recorded in the northern survey area, although no distinct features were recognisable. Magnetometer survey revealed a

series of rectilinear features in the northern part of the site, which appear to have been sharply truncated along the southern edge, probably by coprolite workings. A faint linear anomaly was noted running across the southern area of magnetometer survey, possibly associated with the coprolite works. The northern features, combined with the field walking finds, indicate the presence of a Roman structure, possibly a villa.

Hemingford Grey, St Ives to Hemingford flood alleviation scheme (2005–7)

TL 2951 7068 (OA Report 2933)

M. Sims

Features associated with the trackway of the former North Eastern Railway Company's Huntingdon to Cambridge railway line were identified in southwest corner of Hemingford Meadow. A brick abutment marking the southern terminus of the railway embankment was recorded, in addition to seven pairs of timber piles, on which were fixed the trestles that carried the railway line. Three further pairs of trestles were discovered to the east of the main road, where the railway track continued south to the malt houses.

Hildersham, Field southeast of Holy Trinity Church

TL 5449 4879 (Archaeology Rheesearch Group Report)

I. Sanderson

Magnetometer survey indicated a scatter of small ferrous or heat related responses, in addition to two linear features running across the site, tentatively interpreted as trackways running from the village. Resistivity survey identified a rectilinear low resistance feature towards the east side of the survey area, crossed by a high resistance linear feature. The low resistance feature, which covered an area of 9m x 11m, may represent the robbed out foundations of a possible building, and the high resistance part may reflect a spread of foundation materials.

Horseheath, Orchard House

TL 6144 4747 (CAU Report 757)

A. Slater

An evaluation revealed evidence of low density Romano-British activity at the site, comprising two pits containing small quantities of 1st–2nd century AD date. Three shallow ditches of post-medieval date were also recorded.

Houghton and Wyton, St Mary's Church

TL 2813 7209 (AS Report 2964)

C. Davies, G. Brogan, S. Unger and T. Woolhouse

Evaluation uncovered six articulated skeletons adjacent to the north wall of St Mary's Church, which were left unexcavated.

Huntingdon, Brookside

TL 23861 72135 (CAM ARC)

N. Gilmour

This site lies just outside the probable line of the town ditch of medieval Huntingdon, which is believed to lie approximately under the current ring road.

Cartographic evidence indicates a crossing of this town ditch, just beyond the area of excavation to the southwest, where Ambury Road meets the ring road. Excavation revealed the remains of two Late Saxon or medieval (10th to 13th century) buildings, with a strong suggestion of a third, as well as other evidence of contemporary activity including pits and boundary ditches.

Huntingdon, Pathfinder House (2006)

TL 2400 7155 (Heritage Network Report 372)

D. Kaye

A programme of monitoring and recording was undertaken during the excavation of a single soakage test pit. A sequence of layers, containing small quantities of early medieval and late Roman pottery and animal remains was recorded. These are thought to be continuations of deposits recorded in the earlier evaluation, where they were interpreted as being the remains of a garden soil overlying a layer of medieval plough soil.

Huntingdon, Town Centre

TL 23779 71716 (CAM ARC)

R. Clarke and A. Connor

The most recent in a sequence of excavations in Huntingdon has revealed evidence for the lost street of Dilleys Yard – it existed in the 1800s, but had vanished from the townscape in the early part of the 20th century. Much of the south side of the street has now been exposed, including two rows of buildings apparently built back to back, many of which now lie beneath the Falcon Inn car park. Some unusual structural features were found in one of the buildings, including a curving brick feature which may be the remains of a large oven, associated with a well. These may have served a commercial function and were perhaps linked to Mr Robert Taylor, a baker who is known to have owned at least part of the property before James Dilleys took it over in the 1860s. Ongoing excavation is currently examining medieval and earlier deposits.

Linton, Linton Free Church (2006)

TL 5602 4663 (English Heritage Research Department Report Series 40/2006)

S. Roberts

Photographic recording and general investigation of the building was undertaken in advance of the planned removal of the pulpit, rostrum and pews. The non-conformist chapel was built in 1818 on the site of a meeting house built in 1698. Documentary sources depict the former meeting house as well as documenting the erection of the current building. The present chapel is a rectangular brick building with a small attached office to the SE. The north elevation is rendered with three unequal bays and a dominant central entrance. The chapel interior is galleried with a central apse in the south wall. The present organ, pulpit and rostrum are late 19th century whilst the pews are also likely to be a later insertion. An early 20th century hall, situated to the west, is attached to the chapel via a corridor.

Littleport, 17 Main Street

TL56738673 (Archaeological Services and Consultancy Report 978/LMS/2)

N. Wilson

A large ditch, containing two sherds of post-medieval pottery, was found running the full length of the evaluation trench. Two phases of 19th century rammed chalk surfaces and a wall constructed of Gault brick were found sealing the ditch.

Longstanton, Cambridge Golf Course and Land North of Rampton Road (2006)

TL 4044 6732 (Oxford Archaeotechnics Report)

A. Johnson

Extensive magnetometer survey was undertaken in advance of the Northstowe development proposals. The survey recorded the extent and location of an area of conjoined enclosures of Romano-British date, and identified a further area of rectilinear enclosures which appeared to be defined by one or more former palaeochannels. Enclosures of probable later prehistoric date were also recorded within the western part of the site, while in the centre of the golf course, a 1ha area of small enclosures was recorded, thought to represent a settlement of Mid-Late Iron Age date. A number of isolated substantial ferrous anomalies were also identified, some of which have a magnetic signature similar to those associated with buried ordnance recorded during the magnetometer survey of the former RAF Oakington.

Longstanton, Field 7, Home Farm

TL 3940 6710 (BUFAU Report Project 1587)

S. Paul

The earliest activity of site was characterised by several narrow Saxo-Norman silt filled gullies, which formed enclosures and plot boundaries. A large NW-SE aligned boundary ditch was established during the 10th-11th century, and re-established during the 13th-14th centuries. Post-dating the gullies, the western part of the site was dominated by a series of NE-SW aligned plough furrows and an associated hedge or fence line, which was aligned with an earlier Saxon gully. A number of settlement-related features were recorded in the eastern part of the site, consisting of two medieval ditches and several large pits and postholes. Several small postholes and possible beam slots were also recorded in this area, suggesting the presence of one or more structures.

Longstanton / Oakington and Westwick, Longstanton and Oakington Airfield Phase III (2006)

TL 3936 6344 & TL 4105 6562 (CAU Report 755)

C. Evans, D. Mackay and G. Appleby

A third phase of fieldwalking, geophysical survey and trial trench evaluation was undertaken on the site of the proposed Northstowe settlement, assessing areas that had been unavailable during earlier seasons. A previously identified flint scatter near the Oakington Brook was found to be largely Mesolithic in date, and it is suggested that a precursor of this watercourse might have acted as an 'access-corridor' through the

landscape. Targeted trenching was carried out on two sites identified through geophysical survey on the airfield. The first consisted of a ring gully, postholes and an outer ditch, dating to the Middle/Late Iron Age, and as an open settlement is unusual compared to other settlements of this date identified during the project. The second site is a diffuse, multi-period agglomeration, including a later Bronze Age/Early Iron Age ditch system, with evidence of Roman settlement activity nearby.

At St Michael's Mount, reputedly the site of a bishop's palace, geophysical survey and evaluation trenching revealed the foundations of a probable 16th - 17th century stone-footed building. The building post-dated dense 10th-15th century settlement remains, which would have formed part of the original village core of Longstanton St Michaels. The function and nature of the stone-footed building is not clear, although it probably relates to a moated enclosure that was present on the site during the 19th century.

Longstanton / Oakington and Westwick, Longstanton and Oakington Airfield

TL 4015 6780 (CAU Report 781)

D. Mackay

A watching brief during the investigation of magnetic anomalies recorded archaeological deposits in two areas, within or close to already identified sites. These comprised a layer of silt clay containing Roman pottery that was sealed by 20th levelling deposits from the construction of the airfield, as well as a small undated ditch of probable pre-medieval date. The test pit survey did indicate areas of truncation, particularly around the main hangers and to the north of them, as well as identify areas of Second World War rubbish dumping.

Melbourn, Back Lane

TL37934401 (Archaeological Services and Consultancy Report)

N. Wilson

Further investigation revealed that the features previously interpreted as a possible palaeochannel, were two large ponds containing decayed peat deposits in their base. No finds were recovered from the ponds, although environmental samples were taken for further analysis. Two further medieval wells were exposed, together with a large N-S orientated ditch and two pits which contained 12th - 13th century pottery. A number of small postholes were also excavated, but produced no dating evidence or evidence for layouts.

Milton, Fen Road (2006-7)

TL 4846 6279

D. Booth

During October 2006 and 2007 a systematic field walking survey of Long Meadow was carried out by 6th form students of the Perse and Hills Road schools, under the supervision of CAM ARC. At the same time a systematic metal detecting survey was undertaken by volunteers. Over 25 kg of Roman pottery sherds were found on the recently ploughed field, with two

concentrations clearly observed. The largest concentration covered an area 100m x 50m on the west side of the rectangular field, in an area where linear crop-mark features had already been recorded from aerial photographs and magnetometer survey. The pottery comprised a mixture of coarse and fine wares, including Samian and Horningsea wares. A fragment of Roman ribbed glass was also recovered, suggesting a high status presence at the site. A smaller concentration was recorded at the south end of the field, which comprised coarse wares, mortaria and pudding stone quern fragments. A number of Roman metal artefacts including several coins, a silver ring and copper alloy brooch were found dispersed across the field by metal detection, the full assemblage of which is awaiting analysis. This field walking survey strongly indicates the need for excavations to establish the archaeological status of the field which at present suggests a significant Roman site.

Milton, Fen Road (2006-7)

TL 4833 6276 (Archaeology Rheesearch Group Report)

I. Sanderson

Two areas of geophysical survey were undertaken in conjunction with fieldwalking at the site. Magnetometer survey on the area of the moat revealed a number of features, including two N-S orientated linear features, tentatively suggested to be the ditches of a trackway. A curvilinear feature and strong linear anomaly were recorded in the eastern half of the survey, the latter suggested to represent the line of the medieval moat, with a possible entrance way and other features at the northern end of the surveyed section. An area of strong responses was noted in the southern part of Long Meadow, possibly reflecting an area of disturbed soil containing quantities of fired material, tentatively suggested to be building foundations. Survey of the northern extent of Long Meadow revealed a series of small ditched enclosures, which correspond to features recorded from aerial photographs.

Milton, Landfill

TL 4608 6268 (CAM ARC)

T. Phillips

Open area excavation revealed evidence of Iron Age and limited Roman activity. Several large Iron Age water holes were the most significant features encountered, containing a mixture of Middle and Late Iron Age pottery. Wood preservation was particularly good; one water hole in the centre of the site contained many pieces of coppiced wood, a worked beam with mortise joints and a log ladder (radiocarbon dated to 2510 +/- 35 BP). The form of the water holes suggested both human and animal use. Other Iron Age features included a ditch, several groups/lines of post holes and discrete pits. The density of features suggests settlement activity although its core may lie beyond the boundaries of the site. An area of intensive quarrying on a part of the site where the geology was more sandy produced a few sherds of Roman pottery and may relate to the surfacing of the Roman Road

'Akeman Street' directly to the west.

Milton, NAPP Cambridge Science Park Phase 1

TL 4649 6204 (CAU Report 762)

J. Hutton

The earliest features revealed during evaluation consisted of a pit containing a single Neolithic flake and a further pit containing Late Bronze Age/Early Iron Age material. A small Romano-British ditch was recorded, together with traces of furrows of probable post-medieval date. The evaluation also provided evidence that the area was used as a wartime depot for the storage and maintenance of armoured vehicles, probably amphibious vehicles called Landing Vehicles Tracked (LVT), and may have been used in preparation for the D-Day landings.

Milton, New Park and Ride

TL 4680 6310 (CAM ARC Report 928)

R. Casa-Hatton, S. Cooper, D. Hounsell and S. Macaulay

Previous work had indicated the presence of prehistoric and Roman archaeology. Excavation identified an extensive Iron Age settlement with later Roman occupation, characterised by multi-phased ditched enclosures, round houses, granaries and pits (including large watering holes one of which contained a fully preserved log ladder radiocarbon dated to 2255 ± 35 BP). In addition to the Iron Age and Roman remains a medieval windmill was also discovered on the site, immediately adjacent to Butt Lane.

Oakington and Westwick, St Andrew's church

TL 4150 6477

T. Reynolds

A 1x1m test pit was excavated to a depth of 0.6m within the footprint of a proposed parish building within the churchyard. The upper deposits were of graveyard soil and comprised disturbed sediment containing human bones, coffin fittings, and fragments of glass, ceramic and ironwork. Below this was discovered an undisturbed deposit of early medieval date.

Oakington and Westwick, Oakington Recreation Ground, Queens Way

TL 1626 4572 (CAM ARC)

R. Mortimer

Seventeen burials were excavated, and are provisionally dated to the later 6th century. Two further burials were recorded during evaluation and remained unexcavated; two more were recorded in a watching brief on a service trench, bringing the total number to twenty-one. The sample includes both sexes and all age groups. Eight of the burials contained multiple grave goods, the most common being twinned saucer brooches with strings of beads, chiefly amber. Bone combs, wrist clasps, square-headed and great square-headed, annular and disc brooches were also recovered. Four of the burials held a limited assemblage of grave goods, a knife or single brooch, and five contained either no grave goods or a single pot sherd.

The burials belong to a larger cemetery of un-

known extent, partly excavated in 1994 (PCAS 1997) when twenty-five burials, including a single cremation, were recorded. The burials are set within a palimpsest of prehistoric, Roman, Early to Late Saxon and medieval ditches.

Oakington and Westwick, Slate Hall Farm (2006)

TL 3956 6339 (Oxford Archaeotechnics Report)

A. Johnson

A magnetometer survey was carried out to define the layout and extent of a Romano-British settlement site detected during earlier evaluation. The focus of the archaeological site is confined to the northern tip of the field with only ephemeral traces extending south and southwestwards. The principal enclosure measures c. 120x70m and contained several internal subdivisions. No evidence to indicate the presence of an access track approaching from the nearby Roman road was identified.

Offord Darcy, Cotton Wind Farm

TL 2333 6415 (OA Report 3774)

A. Simmonds

Evaluation recovered a small quantity of Late Iron Age and Roman pottery from the ploughsoil surface, probably derived from manuring. A concentration of Late Saxon pottery was also recovered from the same area, possibly indicating occupation in the vicinity, although no associated remains were observed in the nearby trenches. A series of ditches were recorded, which correspond with field boundaries depicted on the 1st Edition Six Inch Ordnance Survey map of 1891, and are likely to have been established during the enclosure of the parish.

Offord Darcy, 79 High Street

TL 2199 6651 (Wessex Archaeology Report 63401.02)

V. Birkbeck and P. Reeves

An excavation recovered a small finds assemblage of prehistoric to post-medieval date, largely dominated by post-medieval artefacts. The excavated remains comprised a possible curvilinear enclosure ditch, which was tentatively dated to the early medieval period. The majority of features dated to the post-medieval period, consisting of 15 sub-rectangular features of variable size and a single sub-circular pit. The function of these features is uncertain, although they bear a close resemblance in form, layout and density to early 19th century brick earth pits in Southampton, and on this basis they are suggested to represent ad hoc, small scale quarrying of gravel.

Old Weston / Winwick, Winwick to Old Weston water pipeline

TL 1037 7932 (Air Photo Services Report 2007/08)

R. Palmer

Aerial photographic assessment recorded ridge and furrow cultivation along much of the pipeline corridor. A series of earthworks surviving in low relief were mapped to the east of the B660 in Winwick, including property boundaries, trackways and possible house plots.

Over, Needingworth Quarry

TL 3866 7385 (CAU Report 813)

M. Vander Linden and C. Evans

A third phase of evaluation and preliminary excavation was undertaken across a c.105 ha area in advance of quarrying. Palaeoenvironmental modelling revealed a wetland landscape, crossed by three palaeochannels, with a single gravel island and two sand ridges, which form two long narrow islands of dry land. All archaeological activity was found on these higher areas, concentrated into seven zones. The first zone was located on the northern half of the gravel island, and comprised a group of three barrows. The barrows varied between 20 and 27m in diameter, and all appeared to be constructed of turf, without a surrounding ditch. Dating is confirmed by the discovery of Middle Bronze Age pottery, cremated bones and worked flints during the cleaning of the surface of one of the barrows. Three undated parallel ditches, possibly part of a later prehistoric field system, were recorded to the west of the barrows, together with two unurned cremations. A fourth barrow was identified at the contact point between one of the sand ridges and the gravel island. This one was 30m in diameter, with a gravel mound and surrounded by a quarrying ditch. A third zone of activity was marked by the discovery of a previously unknown fifth barrow in the extreme eastern part of the site. The barrow was between 21 and 25m in diameter, with a gravel mound and remains of a quarrying ditch 1m wide on its eastern side.

Zones four and five were located on the western part of the Godwin ridge. A mixed flint assemblage of Late Mesolithic to Late Neolithic date and a small pottery assemblage of Late Neolithic to Early Iron Age wares was recovered within samples taken from the buried soil. The heavily fragmented remains of a small individual were discovered on the north edge of the ridge, and suggested to be of Iron Age date based on parallels with evidence from previous excavations. An undated pit or posthole containing frequent burnt stone, and a small pit containing burnt clay and a mixed assemblage of flint and bones were recorded, tentatively suggested to be of Neolithic date. Zone six was located further eastwards along the Godwin Ridge, and was notable for the presence of a high concentration of archaeological features. The remains comprised three aligned ditches on a N-S axis, a small group of pits, two postholes and an isolated pit containing sherds of a Late Iron Age jar, interpreted as a possible ?Late Iron Age settlement. Mesolithic/Neolithic worked flint was also recovered from soil samples in this area. Zone seven was located on the Godwin Ridge at the northern limit of the evaluated area, and was characterized by a high concentration of worked flint of Late Mesolithic to Late Neolithic date and a small pottery assemblage of Early/Middle Bronze Age pottery recovered from soil samples.

Papworth Everard, Land to the West of St Peter's Church

TL 2815 6271 (CAM ARC Report 983)

T. Lyons

Work undertaken between Cow Brook and St Peter's Church, revealed evidence for Late Saxon and early medieval activity, in the form of ditches and a cobbled surface at the bottom of the slope to the northwest of the church. On higher ground further south was a medieval hollow way, as well as evidence for medieval or post-medieval enclosure.

Papworth Everard, Summersfield (2006-7)

TL 2859 6241 (Essex County Council Report 1579)

M. Pocock

Evaluation found seven areas of significant archaeological remains dating to the Mesolithic, Middle Iron Age, Roman, Late Saxon, medieval and post-medieval periods. The most significant were a late Roman enclosure farmstead and an area of probable Late Saxon settlement, situated in the northwest part of the site, on a spur at the end of a low hilltop, overlooking the Cow Brook and St Peter's Church.

Papworth Everard, Papworth Business Park Plots 7 and 9

TL 2920 6246 (AS Report 2891)

C. Hallybone and C. Pole

Further evaluation revealed a series of regularly spaced shallow gullies and linear features on a N-S alignment, with a single E-W gully. A single sherd of pottery of suggested Iron Age date was recovered from the features, together with sparse ceramic building material. A possible interpretation of the ditches as the remains of medieval ridge and furrow is suggested, although the evidence is not conclusive.

Peterborough, Paston, Manor Drive

TF 1964 0288 (CAM ARC Report 998)

T. Fletcher

This excavation sought to clarify the nature and extent of two phases of Roman settlement recorded by previous CAM ARC evaluation and investigations by Birmingham University (BUFAU). The work identified the approximate location of the extent of the settlement and provided yet further evidence of building activity during the Roman period. Evidence of an Iron Age enclosure was also recorded. Additional trenches confirmed the limits of settlement and a watching brief close to the Car Dyke revealed no archaeology.

Peterborough, Dogsthorpe, Wesleyan Road

TF 1910 0160 (CAM ARC Report 938)

S. Cooper

Evaluation revealed important remains of a large Middle to Late Iron Age settlement. These included a possible farmstead with a number of field boundaries, a possible roundhouse, a few pits and a kiln/industrial feature. Subsequent excavation found a series of boundary and enclosure features characteristic of a Middle to Late Iron Age farmstead. Several quarry pits and a large, unlined well were recorded along

with ring ditches and a crouched inhumation. The settlement appeared to occupy the headland on the edge of a possible paleochannel. No evidence for occupation later than the Iron Age was recorded.

Ramsey Abbey Gardens, 6 Wood Lane

TL 292 852 (CAM ARC Report 959)

L. Muldowney

A large pit or substantial ditch, dating to the 15th to 16th century, was sealed by thick garden-type soil which developed from the 18th century onwards.

Ramsey, 43 Hollow Lane

TL 2940 8481 (Archaeological Services and Consultancy Report 928/RHL/2)

N. Wilson

Evaluation within the probable medieval abbey precinct recorded a number of features, including pits, small gullies and two north-south ditch alignments, some of which contained abraded sherds of medieval pottery. A line of postholes along the eastern side of one ditch was interpreted as a probable fence line. Two conglomerations of heat-fused bricks were recovered from one of the ditches, probably kiln wasters or part of the structure of a brick or tile kiln, suggesting the presence of a kiln in the immediate vicinity of the site. Tudor tile kilns have been recorded in the vicinity during earlier investigations in the 1970s, together with features interpreted as clay extraction pits to the immediate north of the site. Also recovered from one of the ditches were several sculpted and moulded blocks of Barnack limestone, likely to have originated from Ramsey Abbey following its dissolution in 1539.

Soham, St Andrew's Church

TL 5932 7317 (English Heritage Research Department Report Series 15/2008)

M. Bridge

Ten timbers from the nave roof, including one replacement jackpost supporting the westernmost truss of the nave roof, were sampled and assessed for suitability for dendrochronological dating. Five of the roof timbers were dated, and given a most likely felling date of AD 1477-1509, while the replacement jackpost came from a tree felled in winter AD 1626/7.

St Ives, Crownstreet Mews

TL 3132 7140 (CAM ARC Report 967)

G. Bailey

Evaluation revealed extensive medieval and post-medieval features, mainly pits and ditches relating to buildings fronting East Street to the north and Broadway to the south. Subsequent excavation found evidence for various industrial and craft activities, including medieval butchery and bone working.

St Ives, Orchard House, Houghton Road

TL 2991 7235 (Wessex Archaeology Report 65440.01)

J. Wright and A. Manning

An evaluation recorded an undated cremation burial and extensive evidence for medieval/post-medieval ridge-and-furrow.

St Neots, Bushmead Road (2006)

TL 1641 5931 (OA Report)

D. Stansbie

Excavation revealed a Middle Iron Age enclosure with associated ditches and pits, which produced an assemblage of animal bone and pottery. The enclosure represents the remains of a small settlement, probably on the periphery of a larger settlement already recorded to the north.

St Neots, Former Youth Centre, Priory Road

TL 518190 260610 (CAM ARC Report 947)

N. Wright

The presence of three ditches suggests that this area was in agricultural use during the medieval/post-medieval periods. The work did not find anticipated evidence for Anglo-Saxon activity, nor any remains relating to the Benedictine priory (established by the 12th century) which may have been removed by later truncation.

St Neots, 42 Market Square

TL 1829 6017 (CAM ARC Report 965)

S. Cooper and M. Muldowney

A series of deposits and features were revealed dating from at least the 12th century. These include a possible fish tank/tanning pit, cultivation and make-up layers. Similar features were identified during an evaluation at 46 Market Square, suggesting that the area was used for such purposes throughout the medieval period.

Steeple Morden, Station Quarry

TL 307 393 (OA Report)

Laura Piper

Following on from an excavation and fieldwalking in 2006 ('Fieldwork in Cambridgeshire 2006'), an excavation on behalf of OMYA UK Ltd uncovered a substantial Roman ditch that had previously been identified through aerial photography. It is likely to have formed part of a boundary, but its shallow-sided, flat-bottomed profile means that the possibility that it is a sunken trackway cannot be ruled out. Two sets of building foundations were identified on the site in the form of parallel trenches. These trenches are likely to have contained wooden beams and, in the case of the larger set, whole logs, which would have been utilised for foundations of the structures. No evidence of the function of these buildings was identified, but the fact that only two can be seen over such a large area and that there is no sign of enclosure ditches or rubbish deposition suggests that they were used intermittently for short periods of time as, say shepherds' huts.

There is no further evidence for human activity until the post-medieval period, as the area was kept as heathland throughout the medieval period at least until 1816. Another ditch, though undated, may have formed a post-medieval field boundary. A modern foundation trench and posthole may have been associated with World War II activity in the area. The post is likely to have held a set of lights for the guidance of aircraft back to RAF Steeple Morden, the function of the foundation trench is less certain.

Stilton, 20 Church Street

TL 1615 8938 (Northamptonshire Archaeology Report 07/169)

Y. Wolfram-Murray

The earliest feature recorded during evaluation was a large shallow hollow containing a sterile fill, possibly a pond or watering hole for livestock. A farm track, visible on aerial photographs, was identified in the northwest corner of the site, the use of which may date back to the post-medieval period. Two ditches of post-medieval date were recorded to the east of the track. A spread of demolition rubble, possibly from former farm buildings and a boundary wall, was observed over a large area of the site.

Stow Longa / Tilbrook, Stow Longa to Tilbrook pipeline

TL 0955 7022 (Air Photo Services Report)

R. Palmer

Aerial photographic assessment recorded two groups of ditched features within the pipeline corridor. One comprised a linear straggle of enclosures and other ditches following the ridge of higher ground on the west side of the former airfield. A second group of ditched features, probably enclosures, was recorded to the southeast of Stow Longa village. Traces of medieval fields were evident over a large proportion of the pipeline corridor, whilst slight earthwork remains on the west side of Stow Longa may represent evidence earlier settlement. The hard standing and tracks of the WWII airfield were also mapped, and the munitions storage area identified.

Stretham / Wilburton, Proposed Mereham development (2006)

TL 4939 7386 (Archaeological Services Durham University Report)

S. Roberts and D. Hale

Approximately 40% (78ha) of the proposed Mereham development area was sampled via 69 north-south transects of magnetometer survey. Geophysical anomalies indicative of settlement features were located in two areas, and evidence for a cluster of pits and a ring ditch was also revealed.

Stretham / Wilburton, Mereham phase II

TL 4967 7377 (OA Report)

K. Wheaton

A second phase of evaluation provided evidence for a Roman farmstead or settlement located to the north-east of Red Hill Farm. Some features also produced Late Bronze Age to Late Iron Age pottery, suggesting the settlement may have had an Iron Age precursor. Saxon pottery was also recovered from the area, indicating the use of the site may have continued in use into the Late Saxon period. A small redeposited assemblage of Mesolithic and later Neolithic/Early Bronze Age flint work was also found. To the south-west of Red Hill Farm, evaluation trenches encountered a concentration of features containing Later Bronze Age - Iron Age pottery, including a possible cremation vessel. All in all, the results demonstrated a

good correlation between the geophysics reports and archaeological features, although the geophysics underrepresented the below ground remains.

Stretham, Tiled House Farm

TL 5225 7320 (Archaeology Rheesearch Group Report)

I. Sanderson

Resistivity and magnetometer survey were conducted over part of the Tiled House Farm scheduled monument. An area of low resistance associated with a pottery field drain was recorded, in addition to linear features, which correspond to cropmark features recorded on aerial photographs.

The Stukeleys, Hinchingsbrooke Sports Ground

TL 22735 71795 (CAM ARC Report 996)

D. Wheeler

This excavation, approximately 500m to the east of the Bob's Wood site (excavated from 1997 onwards) demonstrated a small but focused Iron Age presence. The ditches and pits discovered suggested that the site was in an area of agricultural hinterland on the edge of the main settlement.

The Stukeleys, New Children's Centre, Hinchingsbrooke

TL 2214 7198 (CAM ARC Report 930)

A. Pickstone

Further excavations at this site make a significant addition to a continuing programme of archaeological investigation at Bob's Wood that began in 1997. The new work revealed elements of a series of later Iron Age field systems and enclosures and a heavily truncated pit. East Midlands Scored Ware type pottery dating to around 300–100 BC was recorded from a ditch terminus.

Sutton, Red Lion Lane

TL 4446 7874 (CAM ARC)

G. Bailey

Evaluation uncovered a large Roman ditch, probably a boundary, dating to the 3rd century AD. Other small scale medieval activity was revealed.

Swavesey, Covell's Drain

TL 3503 6916 (CAU Report 767)

K. Murrell

An evaluation recorded a concentration of archaeological features in the northern half of the site, in an area of known cropmarks. The remains comprised of a series of enclosures and field system ditches, with associated droeways and a possible roundhouse. Pottery from the excavated features was almost entirely of 3rd to 4th century AD date. A small number of fragments of Roman roof and box flue tiles were also recovered, suggestive of a building of some status in the nearby area. The absence of any direct evidence for occupation combined with the large number of field system ditches and drove ways indicate this was an area of agricultural activity, possibly associated with a nearby farmstead or villa.

Thriplow, Land east of Church Street (2003-7)

TL 4410 4679 (Archaeology Rheesearch Group Report)

I. Sanderson

An ongoing programme of resistivity and magnetometer survey was undertaken in paddocks to the east of Church Street during 2003-7. The survey recorded the location of the ring ditch, and a previously unknown rectilinear enclosure immediately to its west. Further curvilinear and linear features were recorded in the field to the north, suggestive of enclosure/boundary ditches.

Thriplow, Land east of Church Street

TL 4432 4681 (Cambridge Archaeology Field Group Report)

R. Scarle

Small scale excavation was undertaken on the site of a rectilinear enclosure immediately adjacent to the barrow excavated by Trump in the 1950s. The enclosure had been identified during magnetometer survey by the Archaeology Rheesearch Group in 2005, which revealed potential entrances on north and east side. Excavation confirmed the presence of a break in the enclosure circuit on the east side, together with a pit which may indicate a structure associated with the entranceway. Roman pottery and animal bone, together with small quantities of ceramic building material and oyster shells, were recovered from the enclosure ditch, with a notable higher density of finds being recovered from the eastern arm/entranceway area. The pottery suggests a main phase of activity during the 2nd century AD, with the enclosure going out of use in the later 2nd or 3rd century AD. While the function of the enclosure remains a mystery, its placement adjacent to the upstanding barrow suggests a potential association.

Whittlesford, Bath House Field (2003-2007)

TL 4522 4752 (Archaeology Rheesearch Group Interim Report)

I. Sanderson

A programme of magnetometer and resistivity survey was undertaken in the field north of the Scheduled Roman settlement site to locate any subsurface remains relating to antiquarian findings at the site. A concentration of building materials was also evident on the surface of the field during the survey. Ordnance Survey maps from 1836 onwards record the presence of three or four tumuli, known as the "Chronicle Hills", which are reported as being levelled in 1818. In a document dating to 1850, Maynard mentions the discovery of a tessellated pavement, a hypocaust and part of a bath with attached water pipe from the same area. The resistivity survey shows a complex of building foundations in the central part of the site, including two distinct rectilinear structures. More detailed survey of the structure on the left revealed an aisled structure, approximately 9m x 8m and with an aisle width of 1.8m. Magnetometer survey also demonstrated a complex array of anomalies, including possible trackways. An area of strong magnetic responses

coincided with the greatest concentration of building material in the southern part of the site, although no clear features were readily discernible.

Whittlesey, 23 Bassenhally Road

TL 2708 9763 (CAM ARC Report 942)

S. Cooper

Despite the proximity of this site to the Fen Causeway, no Roman remains were identified although observations were hindered by the high water table. Post-medieval boundary ditches were found and relate to backplot development.

Whittlesey, Finkle Lane

TL 2652 9740 (Archaeological Project Services Report 66/07)

M. Wood

Excavation revealed a sequence of field systems, pits and tanks dating from the 12th century through to deposits associated with modern development. Evidence for potential burgrave plots, domestic rubbish pits and possible leather-working tanks was present, spanning the medieval (12th - 15th century) and post-medieval (16th - 18th century) periods. The most intensive phase of land use occurred in the mid 15th to 16th century, which correspond to a period of known expansion and associated wealth in Whittlesey, marked by the construction of a nearby manor house and renovation of the parish church. The site continued in use until the modern period, with the field systems periodically redefined until the 18th century.

Whittlesey, Stonald Field

TL 2634 9795 (Archaeological Project Services Report 84/07)

K. Murphy

An evaluation revealed evidence for prehistoric and undated remains in the western part of the site, while post-medieval boundary and drainage ditches were located in the southern area. Extensive evidence for modern disturbance was uncovered, with machine stripping and modern dumping being particularly severe towards the north.

Wilburton, Land south of 4 Car Pond Lane

TL 4835 7496 (Heritage Network Report 392)

G. Saunders

Evaluation revealed a series of boundary and enclosure ditches of late pre-Roman Iron Age to early Romano-British date. A medieval boundary ditch and associated gully were also observed, together with other features of 18th -19th century date, including a ditch, two pits, and at least two large ponds.

Wilburton, Mereham New Community

TL 489 730 (OA Report)

Kate Wheaton

Oxford Archaeology carried out a second phase of field evaluation of land at Wilburton on behalf of CgMs Consulting ('Fieldwork in Cambridgeshire 2006'). This completed the evaluation started in July 2006. An additional trench was also excavated on

the request of Cambridgeshire County Council. The evaluation trenches were targeted at anomalies revealed by geophysical survey, and the whole exercise formed part of a phased programme for evaluation for the site. The recovery of redeposited flints of possible Mesolithic, Neolithic or Early Bronze Age hinted at brief occupation of the higher ground. Much of the evidence uncovered related to a possible late Iron Age farmstead, which continued and expanded through to the late Roman period at the west of the development area. Pottery and a limited amount of fired clay associated with hearths reinforced the conclusion that the activity represents late Iron Age and Roman period rural settlement. Pottery also suggested middle/late Anglo-Saxon activity:

Willingham, High Street

TL 4040 7037

T. Fletcher

Settlement-related activity during the Middle to Late Saxon period included posthole structure(s), cesspits and boundary ditches. Remains found towards the eastern edge of the excavation area may relate to the Early to Middle Saxon settlement identified by excavation in 1996. Significant finds include an Anglo-Saxon spear and a possible sword.

Amongst the ditches was a wide (over 3m) and deep (over 1m) example located in the northeast corner of the site. This appeared to be making a sharp near right-angled turn, close to a possible entrance. Evidence for an internal mound or bank was identified in section immediately to the east of the ditch. Finds from the fills of the ditch included a complete cow skull.

By the medieval period the influence of the High Street is suggested by a boundary ditch that lay parallel with it. The excavated area otherwise appears to have been open ground, interrupted only by small-scale quarrying activity, which continued on a slightly larger scale into the post-medieval period. A row of rectangular pits parallel with the High Street may indicate a hedge or line of trees at the rear of a property.

Willingham, Land north-west of Willingham

TL 3968 7131 (Northamptonshire Archaeology Report 07/172)

J. Brown

An examination of aerial photographs, followed by geophysical survey and trial trench evaluation revealed field enclosure ditches of probable Roman origin. These form part of a larger network of field systems known from cropmarks in fields to the north and west of the site.

Wimpole, Brickend

TL 3378 5170 (Archaeology Rheesearch Group Report)

I. Sanderson

Further geophysical survey was undertaken at Brickend, to investigate the presence of buildings shown on historical maps of the area. A rectangular

anomaly of 18mx6m was identified, along with possible traces of an earlier trackway.

Wimpole, Wimpole Park (1999-2006)

TL 336 510 (Cambridge Archaeological Field Group Report)

M. Coles

A series of small excavations have been undertaken within the grounds of Wimpole Hall to locate and investigate features depicted on historic maps and revealed through geophysical survey. Excavations in 1999 revealed the brick foundations of one of the two 18th century pavilions, which were located at the north end of the bowling green. The foundation trenches of 18th century garden walls, shown on Bridgeman's plan of 1721, were recorded in 2000. Investigations in 2001 failed to locate the supposed site of a fountain depicted on a 1708 drawing by Kipp, although did locate a brick cistern overlying a substantial ditch. The ditch, which contained redeposited clay and medieval pottery, may represent the northern arm of moats surrounding the former house, which are shown on Hare's map of 1638. Excavations in 2002 and 2003 focussed on the site of the Castello d'Acqua, a late 18th century ornamental water reservoir that supplied the hall. Trenches located brick foundations, but did not identify two plinths depicted on Soame's drawing of the structure. Earlier features were also identified, including pits, a possible ha-ha and a substantial ditch of probable medieval date. Further investigations were undertaken in 2005 and 2006 to locate a foundation depicted on an engraving by Kipp and Knyff in 1707, which was probably built for Lord Radnor as part of his refurbishment of the house and gardens in the 1680s. The base of the fountain was found to be constructed in brick, as a 14m diameter retaining wall with a thick deposit of grey clay on the exterior. Following the fountain's demolition, a brick conduit had been had been constructed on the floor of the basin. To the north, abutting the basin wall was a brick built square chamber fed by a wooden pipe with a lead end plate. Although not fully excavated, there is some evidence that the construction of the basin cut earlier features, possibly earlier garden walls, which may belong to a garden constructed for Thomas Chicheley between 1640 and 1686.

Wisbech, 11 & 12 High Street (2006)

TF 4613 0963 (English Heritage Research Department Report Series 75/2006)

P. Smith

An assessment of two grade II listed buildings was undertaken. Both buildings have been vacant for 10 years, and deemed priority A on the Historic Buildings at Risk register for 2001. Internal inspection of the buildings suggested that both were built at the same time during the early 18th century, although no 12 had its façade rebuilt or refaced in the late 18th or early 19th centuries. Both buildings are four stories high, and represent the combination of two architectural traditions, with a Georgian front range and a more traditional 17th century vernacular style rear range.

While the ground floor of both buildings has been stripped out for use as modern retail premises, the upper three floors retain their plan form and external structure on the top three floors.

Wisbech, Clarkson Monument

TF 4606 0962 (English Heritage Research Department Report Series 33/2007)

J. Minnis

A historical analysis was undertaken of the Clarkson Monument, which was erected in 1881 to commemorate the work of the anti-slavery campaigner Thomas Clarkson (1760-1846), who was born in Wisbech. The monument, which was designed by Sir George Gilbert Scott, comprises a Gothic canopy with an octagonal spire, 68 ft 3 inches in height, with a square base. The spire encloses a 7ft statue of Clarkson in a classical robe, holding a scroll in one hand and the fetters of a slave in the other. The canopy is constructed of red Ancaster stone, the statue of white Ancaster stone.

Woodditton, Land north of School Road (2006)

TL 6650 5966 (AS Report 2192)

A. Grassam, A. Munding, K. Trott and T. Woolhouse
Following evaluation earlier in 2006, open area excavation was undertaken in the area of the proposed new stable block, revealing a series of parallel and intercutting linear features and sparse pits. Although the features produced pottery of prehistoric and 15th - 18th century date, the finds were highly abraded, and it is thought probable that the features are post-medieval/modern plough scars. One recut linear features is thought to be a boundary ditch shown on historic Ordnance Survey maps, while the pits may be associated with quarrying.

Woodditton, Land north of School Road (2006)

TL 6690 5981 (AS Report 2193)

A. Grassam, A. Munding and P. Weston

A programme of monitoring and recording was also undertaken at five areas across the site, identifying 13 features. The features comprised seven linear features, four pits, a probable dewpond and a posthole, which contained a small assemblage of pottery dating from the Early Bronze Age to Late Iron Age.

Desk-based assessments were undertaken at the following sites:

Cambridge, Land at Young Street

(CAM ARC Report 926)

Chatteris, New Road

(CAM ARC Report 985)

Ely, Walsingham Way

(Albion Archaeology Report 2007/118)

Gamlingay, Land off West Road

(AS Report 146/07)

- Hemingford Grey, London Road**
(CAM ARC Report 994)
- Huntingdon, Whitehills**
(AS Report 2935)
- Isleham to Mildenhall water pipeline**
(NAU Archaeology Report 1240)
- March, Land north of Gaul Road**
(Archaeological Project Service Report 146/07)
- Offord D'Arcy, Cotton Wind Farm**
(CGMS Consulting Report)
- Papworth Everard, Papworth Hospital**
(RPS Report)
- St Neots, Land north of Loves Farm**
(Archaeological Services and Consultancy Report 1009/LSN/1)
- Sawston, Dales Manor Business Park**
(CAM ARC Report 984)
- Sawtry, Land off Gidding Road**
(Phoenix Consulting Report PC296a)
- Stow Longa to Tilbrook, Anglian water pipeline**
(CAM ARC Report 964)
- Sutton, Elan Business Park**
(Halcrow Group Report)
- Thorney, Wryde Croft Wind Farm**
(CAM ARC Report 960)
- Wicken, Wicken Vision Area**
Cambridgeshire Archaeological Unit Report 759
- Winwick to Old Weston Pipeline**
(CAM ARC Report 952)
- Wisbech, Cromwell Road /South Brink**
CAM ARC Report 993
- Wisbech, Agricultural College, Elm High Road**
CGMS Consulting Report
- Wisbech, Isle College, Ramnoth Road**
CGMS Consulting Report
- The following sites produced little or no archaeological evidence:**
- Alconbury, Alconbury airfield (2006)**
TL 2037 7702 (Archaeological Services University of Durham 1441)
- Alconbury, Stangate Business Park**
TL 1857 7882 (CAU Report 789)
- Bottisham, Queens Court, Downing Close**
TL 5450 6060 (Heritage Network Report 564)
- Bottisham, Hilton Park Care Centre**
TL 5516 6018 (Archaeological Services and Consultancy Report 991/BHP/2)
- Brampton, Land to the rear of 44 High Street**
TL 2105 7092 (AS Report 2892)
- Cambridge, Botanic Garden**
TL 4556 5727 (CAU Report 785)
- Cambridge, 28 Carlton Way**
TL 4490 6038 (Cambridge Archaeology Field Group Report)
- Cambridge, 12A Cameron Close**
TL 4558 6135 (AS Report 2943)
- Cambridge, 69-77 Ditton Walk**
TL 4735 5965 (CAM ARC Report 976)
- Cambridge, Three Crowns House, Hills Road**
TL 4567 5742 (Foundations Archaeology Report 532)
- Cambridge, Homerton College**
TL 4590 5617 (OA Report)
- Cambridge, Land between Huntingdon Road and Histon Road (2006)**
TL 4370 6073 (Northamptonshire Archaeology Report 06/157)
- Cambridge, King's Hedges Triangle**
TL 4562 6178 (CAU Report 758)
- Cambridge, Perse School, Porson Road**
TL 4494 5584 (AOC Archaeology Group Report)
- Cambridge, St Andrews School**
TL 4704 6069 (CAM ARC Report 997)
- Cambridge, St Faith's playing field, Latham Road**
TL 4499 5660 (CAU Report 791)
- Cambridge, 32 Scotland Road, Chesterton**
TL 5462 2599 (CAM ARC Report 944)
- Cambridge, Leys Lodge, Union Lane**
TL 4614 5993 (Archaeological Services and Consultancy Report 972/CUL/2)
- Caxton, Firs Farm, St Peter's Street**
TL 3001 5805 (AS Report 2905)
- Duxford, Project Hook (2006)**
TL 4845 4522 (Cotswold Archaeology Report 06112)

- Elm, Church of England Primary School*
TL 547 306 (CAM ARC Report 941)
- Ely, Market Street*
TL 5410 8046 (CAM ARC Report 946)
- Ely, Land Adjacent to Ely House, 1 Redman Close*
TL 5497 8172 (NAU Archaeology Report 1313)
- Gamlingay, Land off West Road*
TL 2347 5204 (Stratascan Report J2299)
- Godmanchester, East Chadley Lane Cycleway*
TL 2465 7074
- Great Shelford, Granham's Road*
TL 4621 5286 (Archenfield Archaeology Report 92)
- Great Shelford, Granham's Road*
TL 4620 5292 (Archaeophysica Report GGS071)
- Hemingford Grey, London Road*
TL 3067 7019 (CAM ARC Report 994)
- Horningsea, The Lodge*
TL 4968 6361 (Archaeology Research Group Report)
- Houghton & Wyton, The Elms, Thickett Road*
TL 2861 7211 (CAM ARC Report 950)
- Huntingdon, Land off California Road*
TL 2437 7292 (CAM ARC Report 979)
- Huntingdon, Moorhouse Drive*
TL 2433 7321 (CAM ARC Report 978)
- Huntingdon, Primrose Lane Hospital*
TL 2430 7207 (CAM ARC Report 995)
- Kimbolton, Land at Constable Leys*
TL 0984 6813 (Archaeological Services and Consultancy Report 921/KCL/2)
- Linton, 9 High Street (2006)*
TL 5587 4664 (AS Report 2093)
- Littleport, Redmere Farm*
TL 6402 8696 (CAU Report 796)
- Little Paxton, Primary School*
TL 1890 6239 (CAM ARC Report 962)
- Madingley, 28-32 High Street*
TL 3962 6062 (CAU Report 770)
- March, Gaul Road*
TL 4060 9690 (Air Photo Services Report 2007/21)
- March, College of West Anglia, March*
TL 4023 9636 (CAU Report 778)
- March, Yarrow Close*
TL 4065 9732 (CAM ARC Report 943)
- Melbourn, Land adjacent to 6 Vicarage Close*
TL 3831 4491 (Heritage Network Report 410)
- Melbourn, 45 Water Lane*
TL 3834 4405 (Archaeological Project Services Report 092/07)
- Pampisford, Dixon International Group, Brewery Road*
TL 4930 4840 (Essex County Council Report 1779)
- St Ives, East Street*
TL 3145 7135 (Archaeological Project Services Report 22/07)
- St Ives, Orchard House, Houghton Road*
TL 2991 7235 (Stratascan Report)
- St Neots, Longsands College*
TL 1911 6072 (CAM ARC Report 961)
- St Neots, Waterloo Farm, Berkley Street, Eynesbury*
TL 1866 5932 (AS Report 2918)
- St Neots, Land between West Street and Tan Yard*
TL 1823 6046 (Heritage Network Report 448)
- Sawston, Bellbird Primary School*
TL 4877 4945 (CAM ARC Report 981)
- Sawston, Bellbird Primary School*
TL 4877 4944 (Cranfield Forensic Institute Report)
- Sawston, Dale Way (2006)*
TL 4888 4976 (AS Report 2077)
- Snailwell, All Weather Track, Chippenham Gallops*
TL 649 666 (CAM ARC Report 982)
- Soham, Brewhouse Lane*
TL 5966 7338 (Archaeological Project Services Report 046/07)
- Soham, Land to the rear of 11-17 Townsend (2006)*
TL 5884 7433 (AS Report 2150)
- Stapleford, Green Hedges School*
TL 4740 5193 (CAM ARC Report 949)
- Steeple Morden, The White House, 66 Hay Street*
TL 2871 4293 (CAM ARC Report 932)
- Teversham, 750-754 Newmarket Road*
TL 4854 5916 (AS Report 2874)
- The Stukeleys, Plot 4002, Hinchingsbrooke Business Park*
TL 2208 7249 (Heritage Network Report 433)

***Warboys, Broadpool Farm, High Fen Straight Drove
(2006)***

TL 3434 8357 (Archaeological Project Services Report
106/06)

Water Newton, A1 lay-by

TL 1143 9693 (PreConstruct Archaeology Report 07-
338)

Whittlesey, Station Road

TL 2714 9675 (Archaeological Project Services Report
45/07)

Wimblington, Norfolk Street

TL 4148 9226 (Archaeological Project Services Report
132/07)

Wimpole, Outlook Field, Wimpole Estate

TL 3380 5117 (Archaeology Rheesearch Group
Report)

Wisbech, Land off Cromwell Road

TF 4527 0846 (Archaeological Project Services Report
48/07)

Wisbech St Mary, Land at High Road, Guyhirn

TF 3984 0348 (Archaeological Project Services Report
130/07)

Wisbech St Mary, Home Lane, High Road, Guyhirn

TF 3970 0318 (Allen Archaeological Associates
Report)

***Woodditton, Newmarket Lower Links treatment
works***

TL 6343 6090 (Archaeological Project Services Report
095/07)

Reviews

Tim Malim and Sue Oosthuizen

A Woodland Archaeology: Neolithic sites at Haddenham and Marshland Communities and Cultural Landscapes from the Bronze Age to the present day

Christopher Evans and Ian Hodder 2006

McDonald Institute Monographs, Cambridge. xxi + 389pp. 189 illustrations, 102 tables; & xxv + 509 pp. 280 illustrations, 160 tables.

These two large volumes document the work of Cambridge University's Haddenham project, a seven year programme of fieldwork to investigate two exceptionally important Neolithic monuments (a causewayed enclosure and long barrow) and their immediate hinterland, as well as the subsequent changing cultural use of the landscape (including Bronze Age burials, Iron Age settlement, and Romano-British shrine) in response to severe changes in environmental conditions over several thousand years. The location of the Haddenham Delphs, which form part of the gravel terraces of the Great Ouse where it enters the fens, situated on the margins of the Isle of Ely and the Cambridgeshire fen edge, places it in an area particularly sensitive to climatic change and rising water levels. Although principally site-focused, the publications place the sites in their contemporary landscape context, a study which has also benefited from 15 years of developer-funded exposure of buried landscapes on the Huntingdonshire and Cambridgeshire Ouse terraces. Widespread ethnographic analogies from around the world are included as specialised insets to help with interpretation of prehistoric fenland phenomena, by using such studies to demonstrate the variability of human affinity to local environments and the symbolic adaption of natural features, as well as illustrating more ephemeral events such as communal gatherings.

Twenty years after the termination of fieldwork it is excellent to see such fulsome results presented in the format of a detailed, conventional archaeological report supported by excellent graphics, which flies in the face of the profession's debate on the need to reduce publication to synthetic overviews with data confined to an archive! Although not always the easi-

est narrative to read, here we have chapters containing the data from in-depth analyses, together with the strategy, methodology and logic by which interpretation has been reached, so that a fully informed, critical assessment of the research and conclusions can be made by the reader. The project also exemplifies the benefits that can be derived from a fusion of experienced field archaeologists, working with teams of enthusiastic workers and students, and operating within the sphere of university-based research: the publications have an extensive list of contributors in addition to the main authors, many of whom were then research students and who are now established senior academics. The crafting together of university training excavations, government work scheme grants, and English Heritage funding demonstrates how a creative approach to project organization can lead to valuable archaeological research – an innovative approach further exemplified by the pragmatic use of a dinghy during the excavations to ferry diggers across the Ouse, cutting down on a long road journey!

A Woodland Archaeology is structured in an orthodox manner, with chapters setting the scene and then concentrating on landscape surveys and site excavations, sub-divided into the results from each season's fieldwork. Artefact and ecofact analyses are presented as individual data-sets, and then drawn together in overview discussions. Of particular interest to me was the fascinating study and reconstruction of the long barrow's timber chamber. The final parts of the volume examine parallels for the monuments and their place within the eastern region (the size of Haddenham's causewayed enclosure at 8.75ha testifies to its regional significance), as well as with the Thames Valley and Wessex areas. A rather eclectic vision of Neolithic community is given by comparison to three paintings by Pieter Breughel. The title refers to a constant theme of the book, a life in the woods and the transformation of the landscape from woodland through initial clearings, with later development to cultivated plots and mobile forest pastoralism. The architecture and symbolism of the two monuments are seen in terms of the influence that a life amongst trees would bring, with limited visibility, a forest wall at the edge of human

clearance paralleled by the palisades of the causewayed enclosure, and the entrusting of the dead to the bowels of a tree as represented by the bark-faced exterior of the mortuary chamber.

There is also much discussion on territories with a useful comparison of the distribution of causewayed enclosures and artefact densities set against their topographical contexts. The riverside nature of the Haddenham sites is reflected in a longer catchment area of 25km than those projected for more upland causewayed enclosures and long barrows (12.5–15km), and the importance of the river as a major route of communication is emphasised. The size of the Neolithic population that would have constructed the causewayed enclosure is estimated at 300–600 with parallels drawn to the Huron of North American temperate forests living at a ratio of 24 people per square kilometre. A final theme that is explored in the discussion is that of increasing inundation, a shifting wetland/dryland boundary, and suggestions are made to the possibility for folk memory of the drowning of Doggerland. The location and design of these early Neolithic monuments are interpreted as having derived from local landscape factors such as the river, because until their construction there was no local tradition for a special place or type of monument on which to model these new Neolithic structures.

Marshland Communities is a more diffuse and fragmented volume, a consequence of its subject matter which covers excavations of the later prehistoric and historic components of the Delphs landscape, and a documentary study of its post-medieval drainage. The volume is structured chronologically and chronicles the shifting emphasis between ritual and domestic use of a diminishing area of dry land. The earlier chapters are divided into detailed reports of principal elements, such as Bronze Age barrows and enclosure, Beaker pit and lynchet system, Iron Age shrine and settlement enclosure complex, as well as ancillary domestic and stock enclosures and field systems as part of the wider Iron Age landscape. This shows development from temporary and open settlement closely tied to dry land communities, to permanent enclosed settlements with looser links to other communities. At a regional level this is explored in terms of the boundary between the Alyesford-Swarling culture south of the Ouse and the more conservative fenland culture north of the Ouse.

The intensive study of the Haddenham V Iron Age enclosure and its phased re-use exemplified by several roundhouses, forms one of the two major themes of the second volume, and a series of studies attempt economic and social reconstruction of the community suggesting a 15 member household, with ample land (30–35ha) for 300 sheep and sufficient arable cultivation to support the population at more than self-sufficiency. Settlement would have been at the 2.5m contour, just above seasonal water meadows.

The re-use of the Snow's Farm Bronze Age barrow for the construction of a Romano-British shrine (Haddenham III) and its associated artefactually rich deposits including plentiful evidence for sheep

sacrifice, forms the second major theme. This site is described as a fenland "tell" and incorporates John Bromich's 1950s investigations (as well as a fascinating biography of John Bromich as an inset), and some extracts of the way in which local amateur enthusiasts thought about their buried landscape.

The final three chapters discuss the changing landscape in Roman and post-medieval times, and a discussion on communities, boundaries, settlement hierarchies and places of ritual practice, environmental and landscape sequences, social fabric and loss of its cohesion at periods of stress in a marginal environment. The Roman chapter plays host to publication of the results from the contemporary WEA investigations of the Willingham fen edge, including a valuable reassessment of ceramic dating showing that contrary to previous interpretation there was no catastrophic hiatus in the 3rd century, and that the shrine on the Delphs was located in the "outlands" for settlement that had retreated to the upland. It also provides fresh evidence on the direction of the Roman canal of Car Dyke in this area, linking Cottenham with Willingham Mere, and then on to the Huntingdonshire fen edge at Colne.

The chapter on land reclamation provides a useful comparison from historical sources and more recent communities for the authors' interpretation for earlier communities based on the archaeological evidence which is explored in the final chapter. This covers issues such as consistency in the densities of fen edge occupation and land-use (stocking and yields), presence of squatters versus rights of common grazing for upland communities or those "up-Ouse", long-term continuation of drainage systems, transhumance models leading to "strategic procurement within a niche environment" and establishment of permanent settlement with local sub-stations. The final section has a retrospective lament for shortcomings because of constraints in data and the methodologies of the day (innovative though they were for the 1980s). In my opinion the authors and contributors have little to be concerned about, as these volumes are a tribute to their intellectual, organizational and field archaeological skills, from which all those interested in the study of the fenland landscape will greatly benefit.

Tim Malim
SLR Consulting
Shrewsbury

A Village on the Nene, Stamford

Alan G. Clark 2007

Spiegel Press, 440 pp., 146 illus b/w & colour, £24.95

Alan Clark's enormous book is a treasure trove for the local and regional historian, whether amateur or professional. It is stuffed to the gunnels with transcriptions from an astonishing range of original documents which combine to encapsulate the social and economic history of Elton in Huntingdonshire, especially, (but not exclusively) in the post-medieval period; manorial accounts, inventories, wills, letters, reminiscences, note-books, photographs from family albums and so on. Engagingly written, the book provides a vivid history of a community that might otherwise be unremarked and is a testament to Mr Clark's diligence in gathering information over the past thirty years.

There are twenty chapters altogether, each one meticulously referenced. While two deal with the medieval period (the Ramsey manor, and the history of the church), the remaining eighteen discuss a wide-ranging set of topics from demography to Parliamentary enclosure, the Poor law, the introduction of the railways, and industry amongst other topics, interspersed with the personal histories – some tragic – of some of Elton's inhabitants over the past two to three hundred years. Each chapter contains much original source material, and is often well illustrated with old photographs of the village and its people.

I have only two points of issue with the book. The first is that there is no clear map of the village in which the relationship between the different parts of the village is properly laid out, with some indication of how it has changed over time. The second is the disservice done to the author in the printing of the maps. They have clearly been printed from electronic files that are too small, and they are therefore fuzzy and difficult to read. The photographs, by contrast, are generally good.

This is not a scholarly local history, nor does it aim to be one. It is, in the best sense a 'local' history. It is beautifully written and accessible, and will, I am sure, be an inspiration to other local historians both inside and outside Cambridgeshire and Huntingdonshire, demonstrating what is possible when sources are carefully organised and interpreted. For this reader, at least, a visit to Elton is imminent.

Susan Oosthuizen

Books received:**Farming on the Edge: Archaeological Evidence from the Clay Uplands West of Cambridge**

Joe Abrams and David Ingham 2008

EAA 123, Albion Archaeology

ISBN 978 0 9556546 0 2, £25.00

A series of excavations along the A428 to the west of Cambridge has provided an insight into the changing use of the ridgeway.

Saints In the Landscape

Graham Jones 2007

Tempus ISBN 978 0 7524 4108 5, £16.99, Every church has a dedication – but what is the significance of this dedication? This book will enable you to find out.

**The Sheriffs of Cambridgeshire and Huntingdonshire
A brief history**

Elizabeth Stazicker 2007

Cambridgeshire County Council

ISBN 978 19044 52201, £11.95

The office of county sheriff is the oldest office in England. Using a chronological structure this book discusses the private and public lives of our sheriffs.

Books to watch for:**The Romans in the East of England Settlement and Landscape in the Lower Nene Valley**

Stephen Upex 2008

Tempus, ISBN 978 0 7524 4118 4 £19.99

The Witches of Warboys An Extraordinary Story of Sorcery, Sadism and Satanic Possession

Philip C. Almond 2008

I.B. Tauris. ISBN 978 1 84511 508 1 £18.99

Notes on Contributors

MICHAEL CHISHOLM, Emeritus Professor. An academic career at Oxford, Bedford College London, Bristol and lastly Cambridge, where he was Professor of Geography from 1976 to 1996 when he retired. His long-term interests focused on contemporary issues of regional economic development. Has served on several public bodies, including the Social Science Research Council (1967-72). His interest in the Fens and navigation was triggered by being Chairman of the Conservators of the River Cam and writing a history of that body for the tercentenary in 2002, and it was this interest that led to the Old Plough.

ALISON CONNOR has worked in British field archaeology since 1981, and is Project manager at CAM Arc (now Oxford Archaeology East). She has focused on the post-Roman period in both rural and urban contexts and has directed sites in London, Leicester, Nottingham and Manchester as well as numerous rural projects in the Midlands and East Anglia. Most recently she has been managing excavations in Huntingdon Town Centre.

CRAIG CESSFORD has been a professional archaeologist since 1990. He is currently employed at the Cambridge Archaeological Unit of the University of Cambridge and specialises in medieval and later urban archaeology.

NINA CRUMMY is a small finds specialist and is perhaps best known for her work on the material from Colchester. She is a Fellow of the Society of Antiquaries and Visiting Research Fellow at the University of Reading.

CHRISTOPHER EVANS is the Executive Director of the Cambridge Archaeological Unit of the University of Cambridge, which he co-founded together with Ian Hodder in 1990. He has directed a wide variety of major fieldwork projects, both abroad (Nepal, China & Cape Verde) and in the UK, most recently publishing the results of the Haddenham project in 2006; he was elected a member of the Society of Antiquaries of London in 2001.

PHILOMENA GUILLEBAUD was born in Cambridge in 1926, and read Economics at Girton, but spent almost all her working life at the United Nations, mostly in New York. After retirement, she returned to Cambridge where she became interested in local history and especially the developments which have taken place since the 1805 enclosure of the medieval West Fields of Cambridge.

DAVID INGHAM has worked as an archaeologist in Cambridgeshire and the surrounding counties since 2001. He joined Albion Archaeology in 2002, where he is now a Project Officer specialising in post-excavation assessment and analysis. He had previously published *Farming on the Edge* (2008 with Joe Abrams, published by EAA) and is on the editorial committee of the Bedfordshire Archaeology journal.

MARK KNIGHT is Senior Project Officer with the Cambridge Archaeological Unit of the University of Cambridge. He specialises on large-scale prehistoric landscape projects, most recently in the Flag Fen basin. His work also involves analysis and publication of Neolithic and Bronze Age pottery, and especially refitting studies.

ROBERT LIDDIARD is Lecturer in Landscape History at the University of East Anglia. His research interests include high-status landscapes of the Middle Ages. He is currently working on an AHRC funded project examining landscape development in Northamptonshire.

ALICE LYONS is a Roman pottery specialist based in Norwich. She is currently working as a Post-Excavation Project Officer for CAM ARC, dealing with a range of publication projects.

TOM PHILLIPS is a Site Supervisor at CAM Arc (now Oxford Archaeology East). He specialises in prehistory and is currently working on a major site at Milton, dating to the Iron Age and earlier.

JUDITH ROBERTS worked as Project Manager for CAM Arc for many years, and is now based in Durham.

ELIZABETH SHEPHERD POPESCU is the Post-Excavations and Publications Manager at CAM Arc (now Oxford Archaeology East), and specialises in urban sites as well as cemetery and castle studies. A field archaeologist by training, she has worked on numerous excavations in Britain and abroad, most recently in Romania.

CHRISTOPHER TAYLOR was formerly on the staff of the Royal Commission on the Historical Monuments of England. He contributed to the Commission volumes on West Cambridgeshire (1968) and North-East Cambridgeshire (1972) before moving on to other projects and places. His last position with the Commission was as head of the Archaeological Survey for England. Since retiring he spends much of his time studying those aspects of his adopted county that he omitted from *The Cambridgeshire Landscape* (1973)

STEVE WILLIS is head of the Classical and Archaeological Studies Department at the University of Kent, Canterbury. His main areas of expertise include the archaeology of settlement, society and material culture in the western Roman provinces, as well as Iron Age and Roman ceramics.

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Abbreviations

CAM ARC	Archaeological Field Unit, Cambridgeshire County Council (now Oxford Archaeology East)
<i>Ant.</i>	<i>Antiquity</i>
<i>Antiq. J.</i>	<i>Antiquarians Journal</i>
<i>Arch. J.</i>	<i>Archaeological Journal</i>
BAR	British Archaeological Reports
BUFAU	Birmingham University Archaeological Field Unit
CAU	Cambridge Archaeological Unit
CBA	Council for British Archaeology
CRO	County Record Office, Cambridge
CUCAP	Cambridge University Committee for Aerial Photography
CUL	Cambridge University Library
CUP	Cambridge University Press
CUULM	Cambridge University Unit for Landscape Modelling
EAA	East Anglian Archaeology
HAT	Hertfordshire Archaeology
HER	Cambridgeshire Historic Environment Record, formerly Cambridgeshire Site and Monuments Record (SMR)
HMSO	Her Majesty's Stationery Office
HRO	County Record Office, Huntingdon
NMR	National Monuments Record, Swindon
OUP	Oxford University Press
PCAS	<i>Proceedings of the Cambridge Antiquarian Society</i>
PPS	<i>Proceedings of the Prehistoric Society</i>
PRO	Public Record Office
RCHME	Royal Commission on Historic Monuments (England)
VCH	<i>Victoria County History, Cambridgeshire</i>
VCHH	<i>Victoria County History, Hunt</i>

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