

---

# Proceedings of the Cambridge Antiquarian Society

---

(incorporating the Cambs and Hunts Archaeological Society)

Volume XCIX  
for 2010

1996  
-2010



---

## Recent Publications of the Cambridge Antiquarian Society

---

### 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, Litlington*  
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 XCVII, 2008: Price £12.50 for members, £14.50 for non-members

- Christopher Evans and Mark Knight: *Further Investigations at Arbury Camp, Cambridge: The Eastern Entrance—A Monumental Architecture*  
David Ingham: *Iron Age settlement by the Dam Brook at Scotland Farm, Dry Drayton*  
Daniel Stansbie: *Excavation of a Middle Iron Age enclosure at Bushmead Road, Eaton Socon, Cambridgeshire*  
Steven Willis, Alice Lyons, Elizabeth Shepherd Popescu and Judith Roberts: *Late Iron Age/Early Roman Pottery Kilns at Blackhorse Lane, Swavesey, 1998–99*  
Tom Phillips: *Iron Age Ditches and an Anglo-Saxon Building near the Mile Ditches, Bassingbourn, TL 3294 4335*  
Nina Crummy and Tom Phillips: *A Zoomorphic Roman Handle from New Street, Godmanchester, TL 5246 2704*  
Tom Lane, Elaine L Morris and Mark Peachey: *Excavations on a Roman Saltmaking Site at Cedar Close, March, Cambridgeshire*  
Aileen Connor: *A Romano-Saxon Farmstead and possible 12th-century Dovecote or Windmill: Community excavations at Spring Close, Boxworth, TL 350 645*  
Christopher Taylor: *New work on old sites: Somersham and Pampisford revisited*  
Craig Cessford: *Excavation of the Civil War bastion ditch of Cambridge Castle*  
Michael Chisholm: *The Old Plough: a neglected property of Ely Porta Manor*  
Robert Liddiard: *Living on the Edge: Commons, Castles and Regional Settlement Patterns in Medieval East Anglia*  
Philomena Guillebaud: *West Cambridge: the two World Wars and the inter-war lull*  
Elizabeth Shepherd Popescu and Sarah Poppy: *Fieldwork in Cambridgeshire 2007*  
Tim Malim and Sue Oosthuizen: *Reviews*  
Chris Jakes: *Recent Accessions to the Cambridgeshire Collection*

### Proceedings XCVIII, 2009: Price £12.50 for members, £14.50 for non-members

- John Pickles, Peter Gathercole, and Alison Taylor: *Mary Desborough Cra'ster, 1928–2008*  
Leo Webley and Jonathan Hiller: *A fen island in the Neolithic and Bronze Age: excavations at North Fen, Sutton, Cambridgeshire*  
Aileen Connor: *A fen island burial: excavation of an Early Bronze Age round barrow at North Fen, Sutton*  
Hella Eckardt with Amanda Clarke, Sophie Hay, Stephen Macaulay, Pat Ryan, David Thornley and Jane Timby: *The Bartlow Hills in context*  
Stephen Yeates: *Senuna, goddess of the river Rhee or Henney*  
Scott Kenney: *A reappraisal of the evidence for the 'northern arm' of the Fleam Dyke at Fen Ditton*  
Laura Piper and Andrew Norton: *An excavation at Station Quarry, Steeple Morden, Cambridgeshire*  
Duncan Mackay: *Excavations at Scotland Road/Union Lane, Chesterton*  
Aileen Connor: *A curious object from Firs Farm, Caxton*  
Christopher Taylor: *A morphological analysis of Ickleton, Cambridgeshire: an admission of defeat*  
Ken Sneath: *Funerals, the final consumer choice?*  
N James: *The 'Age of the Windmill' in the Haddenham Level*  
K S G Hinde: *Upware and Bottisham sluices*  
Philomena Guillebaud: *Changes in the landscape of west Cambridge, Part V: 1945 to 2000*  
John Pickles: *The CAS Collection of Cambridgeshire 'Sketches'*  
Tom Lyons, Elizabeth Shepherd Popescu and Sarah Poppy: *Fieldwork in Cambridgeshire 2008*  
Christopher Taylor, Christopher Brookes, Evelyn Lord and Sam Lucy: *Reviews*  
Chris Jakes: *Recent Accessions to the Cambridgeshire Collection*

---

**Proceedings of the  
Cambridge Antiquarian Society**

---

(incorporating the Cambs and Hunts Archaeological Society)

**Volume XCIX  
for 2010**

Editors

David A Barrowclough  
Mary Chester-Kadwell

Assistant Editor  
Richard Halliday

Associate Editor (Archaeology) Professor Stephen Upex

**Published by the Cambridge Antiquarian Society 2010**

ISSN 0309-3606

---

## Officers & Council, 2009–2010

---

### *President*

Carenza Lewis MA, ScD, FSA

### *Vice-Presidents*

Susan Oosthuizen MA, PhD, PGCE

Alison Taylor BA, MIFA, FSA

Professor A J Legge, MA

### *Disney Professor of Archaeology*

Professor Graeme Barker MA, PhD, FBA, FSA, MIFA

### *Curator of the University Museum of Archaeology and Anthropology*

Professor Nicholas Thomas BA, PhD, FAHA, FBA

### *Senior County Archaeological Officer*

Quinton Carroll MA MIFA

### *Ordinary Members of Council*

Alan Akeroyd BA, MAAd

(Hunts Loc Hist Soc)

Sarah Bendall MA, PhD, FSA, MCLIP

Derek Booth BSc, PhD, CBiol, MSB

Michelle Bullivant, Dip Archae, PIFA

Alison Dickens BA, MIFA

Christopher Jakes, MCLIP

Stephen Macaulay, BA, MPhil, MIFA

Janet Morris BA

Shirley Wittering, M St

### *Secretary*

Chris Michaelides BA, PGCE, MCLIP

86 Harvey Goodwin Court,

French's Road, Cambridge CB4 3JR

Tel: 07884 431012

email: secretary@camantsoc.org

### *Treasurer*

Cyril Pritchett MA

66 Gough Way

Cambridge CB3 9LN

### *Registrar*

Valory Hurst

43 South End, Bassingbourn

Royston, Hertfordshire SG8 5NL

email: registrar@camantsoc.org

### *Co-Editors*

David Barrowclough MA PhD

Mary Chester-Kadwell MA PhD

Email: editor@camantsoc.org

### *Hon. Librarian*

John Pickles MA, PhD, FSA

c/o Haddon Library

Faculty of Archaeology and Anthropology

Downing Street, Cambridge CB2 3DZ

### *Conference Secretary*

Mark Hinman BA, MIFA

26 Newton Road, Whittlesford

Cambridgeshire CB2 4PF

email: conferences@camantsoc.org

### *Representative of the Cambridgeshire Association for Local History*

Tom Doig PGCE

### *Hon. Auditor*

R E Seaton CIPFA, IIA

---

## Cambridge Antiquarian Society

### Report for the Year 2009

**Membership:** there are now 382 members, 49 Affiliated Societies and 67 subscribing institutions.

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

Gabriel Moshenska	<i>The School Air Raid Shelter: History, Archaeology and Memory</i>
Prof. Stephen Oakley	<i>How Latin Texts Survived from Antiquity to the Age of Printing</i> (In association with the Society for the Promotion of Roman Studies)
Richard Buckley	<i>A Tale of Two Towns: recent discoveries from Roman and Medieval Leicester</i>
Prof. Ronald Hutton	<i>The History of Prehistory: Megaliths and the Modern Imagination</i>
Dr Catherine Hills	<i>Skeletons in the Garden – Romans and Anglo Saxons at Newnham College</i>
Ben Robinson	<i>Revealing Peterborough – New Explorations in an Ancient Cathedral City</i>
Dr Stephen Alford	<i>Finding Nicholas Berden: the career of an Elizabethan spy</i>
Prof. Simon Keynes	<i>John Mitchell Kemble (1807–57): Apostle, Revolutionary, and Anglo-Saxonist</i>
Richard Mortimer & Alex Pickstone	<i>Further Excavations at the War Ditches, Cherry Hinton, Cambridge</i> (In association with the Prehistoric Society)

In addition the following two conferences were held:

21st November 2009	<i>Recent archaeological work in Cambridgeshire</i>
17th April 2010	<i>Past Relations: different approaches to the dead over time</i>

**Excursions:** The Programme for 2010 consisted of the following visits:

***Chatham Historic Dockyard, Saturday 15 May:***

One of the country's foremost naval dockyards for 300 years, Chatham has been in the care of the Historic Dockyard Trust since 1985. As well as three historic vessels – HMS Gannet (1878), HMS Cavalier (1944) and HM Submarine Ocelot (1962) – it has a spectacular Victorian Ropery and a galaxy of other permanent and temporary exhibitions and displays, including 'The Wooden Walls' (a recreation of the dockyard in 1758) and the RNLI Lifeboat Collection. It also has the largest single concentration of listed buildings (military, civil and religious) in the UK.

***Cherry Hinton, Saturday 26 June.***

A morning was spent exploring the historical and archaeological landscape of Cherry Hinton Hall and its surroundings, under the guidance of Ms Michelle Bullivant. Outwardly Victorian, the park nonetheless has many features that bear witness to former land uses and industrial activity. Also investigated was the Lime Kiln Hill area and the newly-open to the public East Pit.

***Spalding, Lincolnshire, Wednesday 14 July.***

The highlight of this excursion was a visit to the Spalding Gentlemen's Society, founded in 1710 and one of the oldest learned societies in the country. The Society has the UK's second oldest museum collection, containing many rare items of both local and national interest, and a fine library.

***The medieval riverside at Ely, Wednesday 15 September.***

The riverside was a centre of activity in the Middle Ages attracting trades dependent on the river, and those requiring water such as brewing. The area was developed after the diversion of the river to its present course, probably in the twelfth century, thereby incorporating Ely into the fenland river network.

This walk, led by Mrs Anne Holton-Krayenbuhl, explored the area between the river and Broad Street, bounded by Waterside to the north, looking at sites of former watercourses, hithes, and buildings. The tour also included two medieval houses in Broad Street.

***Moggerhanger Park, Bedfordshire, Wednesday 6 October.***

Relatively little-known, perhaps due to its long period of use as a local authority TB sanatorium and then orthopaedic hospital (from 1919 to 1987), Moggerhanger was designed by Sir John Soane for Sir Godfrey Thornton, a director of the Bank of England, and built between 1790 and 1816. Listed Grade 1, it is regarded as perhaps the best complete surviving example of Soane's work, and epitomises many of his architectural ideas. The grounds were laid out by Humphry Repton. Now in the care of a Trust, which stepped in to avert the threatened demolition of the house and construction of a housing estate on the site, this excursion enabled members to see the current state of an ongoing and ambitious programme of restoration.

## Cambridge Antiquarian Society Accounts for the Year Ended 31/12/2009

Registered Charity 299211 • Founded 1840

<b>PAYMENTS</b>		<b>2008</b>	<b>2009</b>
	Lectures: Publishing Programme	332.53	310.00
	Expenses	255.44	401.07
	Vol XCVI Delivery	1418.33	
	Proceedings Vol XCVII Publication	6399.28	
	Proceedings Vol XCVII Delivery	911.14	(b)
	Proceedings Vol XCVIII Publication		7692.41
	Proceedings Vol XCVIII Delivery		1083.29
	Conduit	1050.36 (a)	1005.00 (a)
	Conference: March	944.69 (a)	898.35 (b, c)
	: November	437.67 (a)	300.00
	Excursions	2147.09 (a)	285.03 (b)
	Mailings: Delivery Charges	504.65	156.56 (b, c)
	Subscriptions (CBA, Rescue, CRSoc)	102.00	104.00
	Haddon Library: Conservation	100.00	100.00
	Office Expenses, Web Site, Misc	376.17	347.75
	Emolument: Registrar	250.00	250.00
	Publicity		532.65
	Insurance	221.60	241.05
	From capital: new web site	894.83 (b)	1121.25 (h)
	Small Grants Scheme	<u>500.00</u>	<u>100.00</u>
	Sub-Total	16895.78	14928.41
	Purchase of Investments	6000.00	
	<b>Total Payments</b>	<b><u>22895.78</u></b>	<b><u>14928.41</u></b>
<b>RECEIPTS</b>		<b>2008</b>	<b>2009</b>
	Subscriptions: Members & Societies	7110.00	6908.50
	Tax Reclaimed	720.71	779.65
	C.U. Archaeology Dept.	800.00	800.00
	Proceedings Vol XCVI: Grants	2369.00	
	VolXCVII: Grants	3370.00	
	VolXCVIII: Grants		2090.00
	Conduit	486.96	162.60
	Conference: March	1197.10	1813.00
	: November	386.00	505.00
	Excursions	1924.25	312.00
	Sales of Publications	173.48	135.90
	Royalties, Misc	416.00	208.05
	Investment Income (gross)	997.59	1174.05
	Interest: NSB (gross)	<u>812.02</u>	<u>67.41</u>
	<b>Total Receipts</b>	<b><u>20763.11</u></b>	<b><u>14956.16</u></b>
	less Payments (excluding Investment of capital adjusted below)	<u>22895.78</u>	<u>14928.41</u>
	<b>Cash Surplus/Deficit (-)</b>	<b>-2132.67</b>	<b>27.75 (d)</b>
	<b>Fixed Interest Treasury Stock:</b>		
	Capital investment	6000.00	
	less excess cost on purchase/re-investment over maturity values	-997.06	-571.32
	<b>Surplus/Deficit (-) Income over Expenditure</b>	<b><u>2870.27</u></b>	<b><u>-543.57</u></b>
<b>STATEMENT OF ASSETS</b>			
	Cash Funds: Current A/C	2611.26	2571.60
	: Deposit A/C	23265.03	23332.44 (e)
	Treasury Stock at maturity values	<u>18363.84</u>	<u>17792.52</u>
		<u>44240.13</u>	<u>43696.56 (g)</u>
	<b>Accumulated Fund</b>		
	At beginning of year	41369.86	44240.13
	<b>Surplus/Deficit (-) Income over Expenditure for the Year</b>	<b><u>2870.27</u></b>	<b><u>-543.57</u></b>
	At end of year	<u>44240.13</u>	<u>43696.56</u>
	Planned Future Expenditure		9840.00 (f)

### 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. The cost of mailing details to members has been attributed to the event.
- b. A credit of £894.83 with Mailing Distributor arose in 2008 and was used in 2009.
- c. Adding the attributable postage credit makes the 2009 figures comparable to earlier years.
- d. This figure is influenced by a credit with the mailing distributor (b) and the exceptional expenditure on redesigning the Web site (h); excluding these amounts the surplus from the normal activities of the Society in the year 2009 is £254.17.
- e. In 2005 the Council reviewed the policy for the reserves held by the Society and concluded that the cash funds less liabilities (f) should be maintained in the range £10,000 to £20,000; on 31 December 2009 the reserves were £16,064
- f. Planned expenditure; PCAS Vol XCIX £8000, Ladd's Bequest (g) £840, Small Grants £500 and a grant of £500 to Cambridgeshire Archives towards the cost of purchasing the Fen Drainage Papers; total £9,840.
- g. Includes Ladd's bequest earmarked for events associated with Huntingdon; with interest the sum is now £840.
- h. Exceptional expenditure on the design of a new Web site.

---

## Contents

---

Note on 'Mary Desborough Cra'ster, 1928–2008' published in <i>PCAS</i> XCVIII (2009), pp. 7-10	6
A Middle Bronze Age Cremation Cemetery on the Western Claylands at Papworth Everard Nicholas Gilmour, Natasha Dodwell and Elizabeth Popescu	7
Further excavation of a late Iron Age settlement at Scotland Farm, Dry Drayton David Ingham	25
Excavations at Castle Street Christopher Evans and Letty Ten Harkel	35
Early Bronze Age, Iron Age and Roman pit deposits at Bluntisham, Cambridgeshire Adrian Burrow and Andrew Mudd	61
Roman, Anglo-Saxon and medieval settlement at Stow Longa and Tilbrook (Huntingdonshire) Rob Atkins	75
Earthwork Survey at Huntingdon Mill Common Michael Fradley	89
Saxon and Medieval activity at Scotts Close, Hilton Thomas Woolhouse	97
A medieval clunch-working site at Fordham Road, Isleham, Cambridgeshire Andrew A. S. Newton	103
Small sites in Cambridgeshire Pip Stone for Archaeological Solutions	113
Medieval enclosures and trackways at Coles Lane, Oakington, Cambridgeshire Andrew B. Powell	121
The medieval network of navigable Fenland waterways I: Crowland Michael Chisholm	125
The Old Rectory Kingston: A Short Note on its Origins Susan Oosthuizen	139
Tea and Delicious Cakes: in conversation with Dr Pamela Jane Smith author of <i>A 'Splendid Idiosyncrasy': Prehistory at Cambridge 1915–50</i> David A. Barrowclough	145
The CAS Collection of Cambridgeshire 'Sketches': Part 2 John Pickles	155
Fieldwork in Cambridgeshire 2009 Sally Thompson, Hazel White, and Elizabeth Shepherd Popescu	161
<i>Index</i>	173
<i>Abbreviations</i>	180
Recent Accessions to the Cambridgeshire Collection Chris Jakes	181

---

# A Middle Bronze Age Cremation Cemetery on the Western Claylands at Papworth Everard

by Nicholas Gilmour, Natasha Dodwell and Elizabeth Popescu

with contributions from Emily Edwards, Val Fryer and P. D. Marshall.

Illustrations by Crane Begg and Séverine Bézie

---

*The clay uplands of Cambridgeshire, upon which the village of Papworth Everard lies, are beginning to be recognised as fertile areas that attracted populations from the earliest times. A Bronze Age cremation cemetery containing 41 identifiable individuals found close to a stream is amongst the largest of its type known in the region. The cremation vessels are of the Middle Bronze Age Deverel-Rimbury tradition. Bayesian analysis of radiocarbon dates suggests that the cemetery was in use from 1430–1310 cal BC (95% probability) to 1380–1240 cal BC (95% probability). Of note is the fact that, where two individuals were identified within a cremation deposit, these were always an adult buried with an infant or juvenile.*

## Introduction

Between December 2005 and April 2006 Cambridgeshire County Council's Archaeological Field Unit, CAM ARC (now Oxford Archaeology East) carried out excavations along the line of a proposed bypass which now runs around the village of Papworth Everard, c. 16km to the north-west of Cambridge (Fig. 1). The southern end of the bypass forms a junction with Ermine Street (the modern A1198; at TL 278 627), while its northern end joins the same road just to the north-west of the village (at TL 290 620). The bypassed section of Ermine Street runs through the centre of the village.

Eight areas forming a rough T-shape were examined during the excavation and revealed the remains of a substantial Iron Age and Roman field system in the western part of the site. A single Iron Age cremation and a probable Roman inhumation were found either within or near Area 2. Further to the south-east lay an area of thick colluvial and alluvial deposits within a narrow stream valley. During evaluation it was not feasible to excavate through the complete depth of this material, which was therefore targeted for further work during the excavation (Area 4). It was here that the Bronze Age cremation cemetery was found.

## Geology & Topography

The cemetery lay at a height of c. 40m OD, just above the base of a gentle valley in which a small stream known as the Cow Brook flows (Fig. 2). The cremations were placed within a series of deposits related to the filling of a channel, 2.2m in depth, consisting of a thin topsoil and two fairly thick subsoils. The upper subsoil was a substantial (c. 1m thick) layer of colluvial material and the lower subsoil a mixture of material washed into the bottom of the valley from further up slope together with other deposits possibly introduced by the periodic flooding of the stream. Below this the natural geology of the valley consists of exposed upper Jurassic clays and limestones which are overlain by glacial deposits and grey mudstone. The later glacial deposits are predominantly chalky Boulder Clays (British Geological Survey 1993).

The level from which the cremations were cut was difficult to determine, although they may have been dug from a level at the base of the subsoil, some 1.2m below the present ground surface. It is highly probable that the cremations were cut into an actively eroding slope and that similar processes to those which buried them could have truncated them: the fact that one urned burial survived to only 0.10m deep indicates the degree of truncation and highlights the possibility that some burials may have been completely removed. Medieval and post-medieval agricultural activity may have increased the down slope movement of material.

## Cemetery Layout and Position

On the top of the slope overlooking the cremation cemetery a series of rectangular pits were identified in Areas 2 and 3. Four of these ran in a line from north-east to south-west, with a fifth pit lying parallel further to the east. The pits were between 2.5m and 3.45m long, 0.50m and 0.63m wide and between 0.14m and 0.44m deep. While most examples had been truncated by ploughing, pit 2088 was better preserved. This contained a significant quantity of charcoal, including

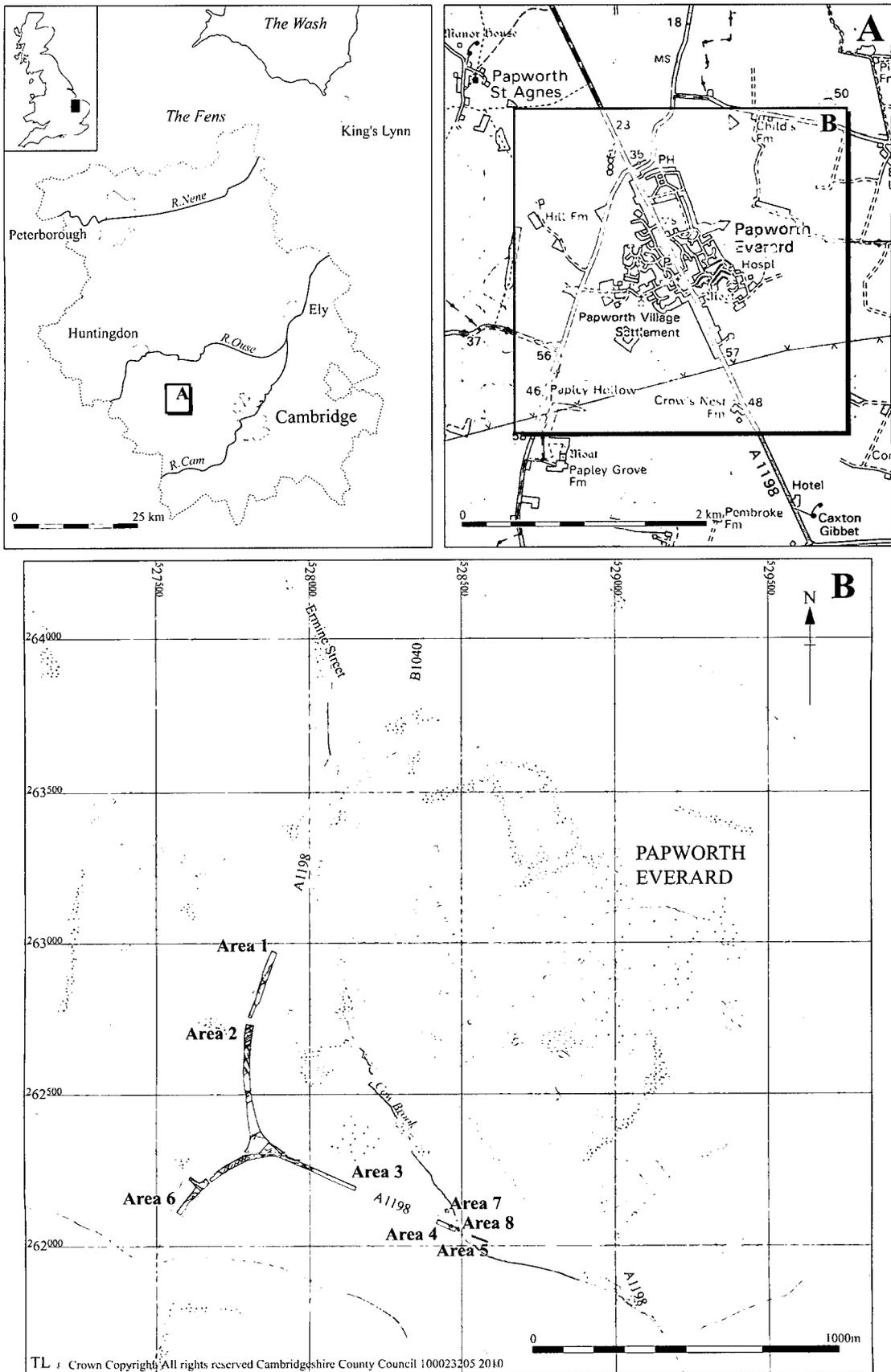


Figure 1. Site location.

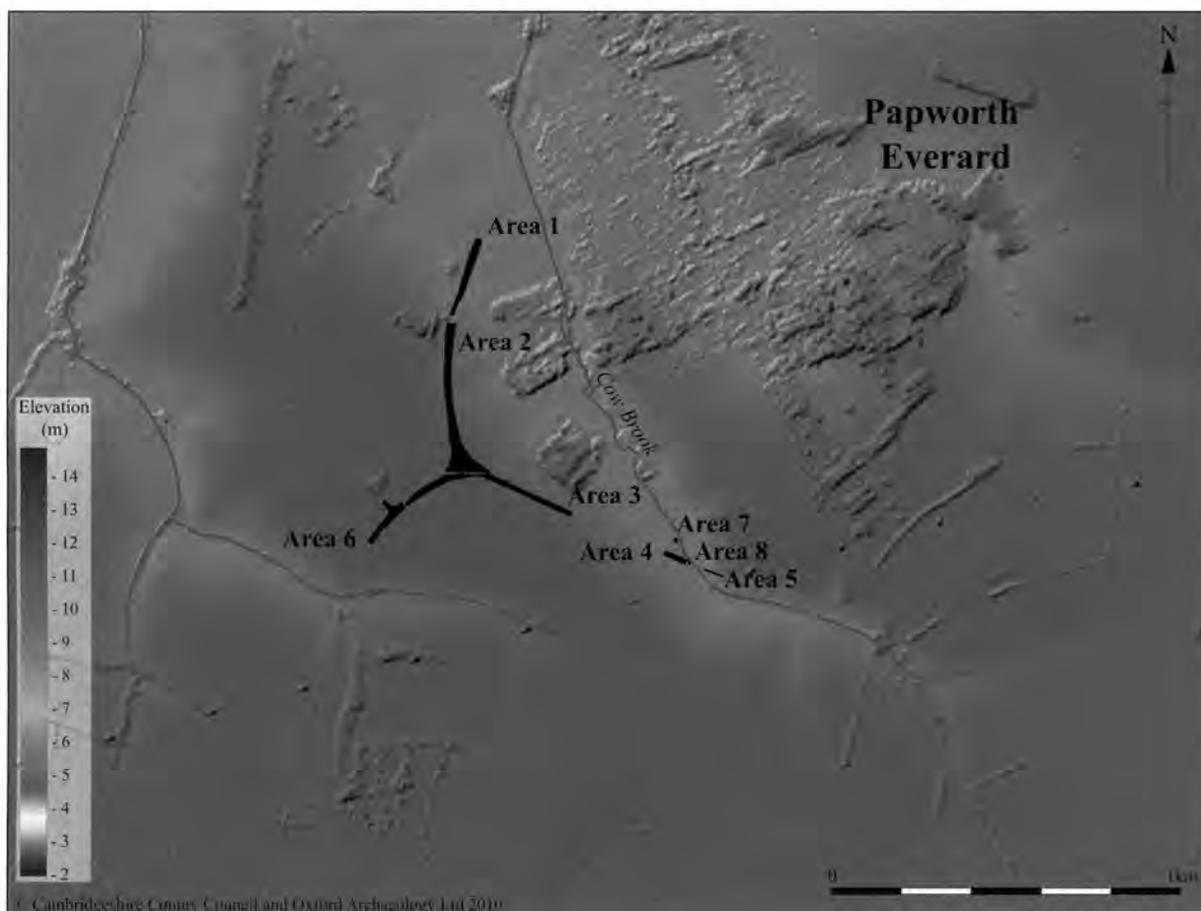


Figure 2. Terrain model, showing the location of the excavated areas.

the remains of a single large timber running along its length, above which was a fragment of red deer antler (radiocarbon dating of which proved unsuccessful). No other finds were recovered from any of the pits. Two radiocarbon dates obtained from charcoal from pit 2088 yielded dates of 1460–1290 cal BC (95% probability; SUERC-26406) and 1440–1260 cal BC (95% probability SUERC-26407). Given the similarity of these dates to those obtained from the cremations and the landscape position of the pits in relation to the cemetery, it is possible that they are related. Although burning was suggested by the remains found in pit 2088, no cremated bone or other debris was found to support an interpretation as pyre sites.

The cemetery, surrounded by hills on all sides, lay in a sheltered position within the modern landscape. Its western boundary appeared to follow the line of a ditch (1601), which mirrored the alignment of the stream immediately to the east, forming a parallel boundary (Fig. 3). The boundary ditch was recorded over a length of 11m, with a rounded terminus at its southern end (the northern end disappeared beyond the limit of excavation). The ditch was typically 1.05m wide and 0.20m deep with a gently concave profile. Its fill of firm mid-orange/brown silty clay appeared to be largely naturally derived from the surrounding soils. This material yielded a small fragment of

Late Iron Age pottery which was probably intrusive, however the possibility of this ditch being later than the cemetery cannot be ruled out. At its southern end, the ditch truncated a sub-circular pit (1605), measuring 0.95m in diameter. Its silty clay fill contained charcoal, but no dateable finds. The combination of terminus and pit or tree bowl may be significant, with the ditch possibly respecting an existing feature in the landscape.

The excavated part of the cemetery occupied c. 12m by c. 6m and consisted of 65 separate features, up to 33 of which represented burial deposits, within which up to 44 individuals were placed (Table 1). The group included 14 urned or possible urned cremations, 14 unurned cremations, numerous pits containing possible unurned cremations or pyre debris and a few postholes, all aligned in a band running from north-west to south-east (Figs 3 and 4), reflecting the position of the boundary features on either side.

The full extent of the cemetery was not entirely revealed to the north, where it continued beyond the limits of excavation. No pattern was apparent in the distribution of pits containing cremations and/or pyre debris across the cemetery, although a number of possible arcs and clusters are evident on the site plan (Fig. 3). Examination of the human skeletal remains identified a cluster of immature burials and depos-

**Table 1.** Descriptions of features within the cremation cemetery, by feature type. \* Total weight of bone. Where there are adult & immature individuals in the same context the minimum weight of the immature bone is given in brackets  
\*\* includes cremated bone from 1959 and 1961 but not extra 3g cremated bone from fill 1962 which was not sent to specialist.

Cut no.	Fill nos	Feature/deposit type	Depth (m)	Diameter (m)	Bone weight (g)	Age and sex	Notes
1724	1720, 1721, 1722, 1723	Urned burial (wooden/organic container)	0.30	0.35	644	Adult	Truncated by machine.
1861	1860, 1877 1878	Urned burial	0.14	0.22	9	Subadult/adult	Six indeterminate lumps recovered containing some pottery, mud and charcoal.
1872	1868, 1869, 1870, 1871	Urned burial	0.40	0.40	662*	Adult & infant (11g min)	Pottery did not survive lifting.
1883	1882, 1911, 1912	Urned burial	0.28	0.40	2	Subadult/adult	102g more bone missing, from fill outside pot. 232 sherds of pottery recovered (1,339g), including three rim sherds, two refitting, and one body sherd with horizontal cordon. 362 g of crumbs.
1903	1899, 1900, 1901, 1902	Urned burial	0.17	0.45	838	Adult	Cremation placed above curved body sherds, possibly the wall of a jar.
1910	1908, 1909, 1917, 1953, 1954, 1969	Urned burial	0.38	0.58	525	Adult	28 lumps of mud collected, containing cremated bone and possible pottery fragments.
1916	1913, 1914, 1915	Urned burial	0.24	0.26	106	Adult	42 sherds of pottery recovered (27g). 10 g of crumbs. One 1g fragment of a pointed rim.
1925	1922, 1923, 1924	Urned burial	0.30	0.31	341	Adult	Pottery did not survive lifting.
2039	2037, 2038, 2095	Urned burial	0.22	0.40	338	Adult	1 sherd of pottery (3g), as well as 14 g of crumbs and 14 lumps of mud, containing some sherds, charcoal and cremated bone.
2043	2041, 2042	Urned burial	0.20	0.16	381	Adult ?female	Cut by 2039. 4 sherds of pottery (6g).
2049	2062, 2063, 2064, 2139	Urned burial	0.25	0.35	355*	Adult and infant/juvenile (1g min)	Some bone mixed with 2257. Ten sherds of pottery recovered (35g), including 3g of crumbs and the remainder body sherds.
2099	2096, 2097, 2098	?Urned burial	0.33	0.52	488*	Adult ?male & older infant (2g min)	97g pot from sample, 6 sherds hand collected (8g), 44g of crumbs.
2181	2180	Urned burial	0.10	0.40	39	Older infant/young juvenile	Pottery did not survive lifting.
2185	2182, 2183, 2184	Urned burial	0.25	0.37	711*	Adult & older infant/younger juvenile (8g min)	Cuts 2257. Pottery did not survive lifting.
1782	1781	Unurned burial	0.12	0.40	260*	Adult ?female & older infant/young juvenile (11g min)	Immature bone in sample 113, from eastern half of pit.
1787	1783, 1784, 1785, 1786	Unurned burial	0.26	0.72	858	Older subadult/young adult	
1845	1841, 1842, 1843, 1844	Unurned burial	0.46	0.50	690*	Young/middle adult & older infant (14g min)	
1874	1874	Unurned burial	0.03	0.20	74	Adult	Possibly not a cut feature.
1881	1879, 1880	Unurned burial	0.20	0.48	120	Middle adult ?female	
1890	1887, 1888, 1889	Unurned burial	0.17	0.40	895	Young adult	
1898	1895, 1896, 1897	Unurned burial	0.19	0.42	187	Adult	
1987	1986	Unurned burial	0.07	0.32	446	Adult	Some pottery, possibly truncated urn.
1991	1988, 1989, 1990	Unurned burial	0.30	0.47	657	Young/middle adult ?female	Some pottery, possibly degraded urn.
2048	2046, 2047	Unurned burial	0.16	0.32	248	Adult	Cut by 2045
2072	2070, 2071	Unurned burial	0.28	0.00	229	Adult	Cut by 2075
2075	2073, 2074	Unurned burial	0.37	0.45	1063	Young adult ?female	Cuts 2072
2179	2177, 2178	Unurned burial	0.23	0.30	211*	Adult & older infant (14g min)	
2257	2255, 2256	Unurned burial	0.27	0.00	1798*	Adult ?male & older infant (121g min)	Cut by 2049 and 2099. Includes bone from fill 2139 of 2049. 1g of indeterminate crumbs of pottery.
1740	1739	Redeposited pyre debris	0.23	0.55	0	-	
1744	1742, 1743	Redeposited pyre debris	0.30	0.50	4	Subadult/adult	Bone from basal fill.
1764	1763	Redeposited pyre debris	0.20	0.50	55	Adult	
1767	1765, 1766	Redeposited pyre debris	0.23	0.54	0	-	
1780	1778, 1779	Redeposited pyre debris	0.17	0.35	0	-	
1840	1839	Redeposited pyre debris	0.27	0.50	22	Subadult/adult	
1855	1854	Redeposited pyre debris	0.22	0.49	18	Subadult/adult	Fragments of fired clay in sample.

**Table 1, continued.** Descriptions of features within the cremation cemetery, by feature type. \* Total weight of bone. Where there are adult & immature individuals in the same context the minimum weight of the immature bone is given in brackets. \*\* includes cremated bone from 1959 and 1961 but not extra 3g cremated bone from fill 1962 which was not sent to specialist.

Cut no.	Fill nos	Feature/deposit type	Depth (m)	Diameter (m)	Bone weight (g)	Age and sex	Notes
1965	1963, 1964	Redeposited pyre debris	0.23	0.37	2*	Subadult/adult & infant (<1g)	
1976	1974, 1975	Redeposited pyre debris	0.35	0.40	4	Juvenile/subadult/adult	
1978	1977	Redeposited pyre debris	0.20	0.47	39	Adult	
1994	1992, 1993, 2158	Redeposited pyre debris	0.40	0.40	289	Adult ?female	
1997	1996	Redeposited pyre debris	0.20	0.20	75	Adult	Cut by 2067
2045	2040, 2044	Redeposited pyre debris	0.19	0.30	64*	Middle/mature adult & infant/ juvenile (4g min)	Could be fill surrounding urn in 2043
2067	2065, 2066	Redeposited pyre debris	0.29	0.70	53	Subadult/adult	Cuts 1998 and 2101.
2101	2100	Redeposited pyre debris	0.15	0.30	5	Subadult/adult	
2131	2129, 2130	Redeposited pyre debris	0.40	0.29	<1	Unidentifiable	
2134	2132, 2133	Redeposited pyre debris	0.49	0.32	8	Juvenile/subadult/adult	
1826	1823, 1824, 1825	Unurned burial/ Redeposited pyre debris	0.20	0.42	>1	Infant/juvenile	
1857	1856	Unurned burial/ redeposited pyre debris	0.11	0.32	2	Infant	
1859	1858	Unurned burial/ redeposited pyre debris	0.11	0.41	94	Adult ?male	
1867	1865, 1866	Unurned burial/ redeposited pyre debris	0.15	0.50	3	Immature/unidentifiable	
1876	1875	Unurned burial/ redeposited pyre debris	0.25	0.45	224	Middle/mature adult	
1892	1891	Cremation related feature/ deposit	0.23	0.00	2	Subadult/ adult	Cut by 1894
1894	1893, 1962	Cremation related feature/ deposit	0.25	0.70	8**	Subadult/adult	Cut by 1898, tiny amount of fired clay in sample.
1957	1955, 1956	Cremation related feature/ deposit	0.18	0.55	<1	Unidentifiable	
1959	1958	Cremation related feature/ deposit	0.15	0.30	Unknown	-	Sample included with 1894, contained some cremated bone.
1961	1960	Cremation related feature/ deposit	0.14	0.30	Unknown	-	Sample included with 1894, contained some cremated bone.
2012	2011	Cremation related feature/ deposit	0.21	0.18	>1	Not sent to specialist	
2117	2116	Cremation related feature/ deposit	0.13	0.20	<1	Unidentifiable	
1738	1737	Other feature	0.27	0.39	0	-	
1906	1905	Other feature	0.13	0.44	0	-	Quartzite pebbles
1971	1970	Other feature	0.10	0.09	0	-	
1973	1972	Other feature	0.11	0.10	0	-	
2115	2114	Other feature	0.14	0.20	0	-	
2119	2118	Other feature	0.23	0.07	0	-	



its of pyre debris, including immature individuals in double burials, forming an arc to the south-east (1782, 1826, 1845, 1857, 1867 and 1872), and a mirror arc 5m to the north-west (1916, 1957, 2048 and 2181).

Features were generally more dense in the north-western part of the area examined, where many intercut each other. While it is possible that these intercutting examples represent family groups, the density of features in this part of the site makes this suggestion highly tentative. The general lack of intercutting amongst the other cremations suggests that the graves would have been marked in some way, for instance with small mounds, stakes or stone markers.

The cremations and related deposits are discussed below with reference to the classifications defined by McKinley (2004).

### The Cremation Pits and Pyre Debris

#### *Urned burials*

This category encompasses burials where the burnt bone is contained within a vessel or probable vessel, or placed on sherds of pottery, although the fragile nature of the majority of urns at Papworth Everard meant that in some cases they were difficult to identify. Some 14 examples were identified (13 in or associated with ceramic vessels, one in a possible wooden/organic container; Figs 5–7). The urned examples were set within steep-sided and flat-based roughly circular cuts, between 0.10m and 0.40m deep and between 0.16m and 0.58m in diameter, with fairly steep, concave, sides and steep U-shaped profiles (e.g. pit 1885, Fig. 8, Section 354). Generally, the pits into which the urns had been placed were slightly larger than the urns themselves, although in some instances the pot fitted snugly against the cut edge. Distinguishing between natural and redeposited natural backfilling the cut was often problematic and in some instances the true cut may not have been identified. Where it existed, the gap between the cremation vessel and the pit cut was backfilled with either redeposited natural or pyre debris.

Typically each cremation (both urned and unurned) consisted of a lower layer of dark, fine ash, mixed with the underlying silty clay, containing little cremated bone. This layer may have resulted from the smaller, finer particles migrating downward through the main cremation fill and becoming mixed with the underlying natural deposit through post-depositional processes. Above this layer was the true cremation deposit consisting of heavy black ash mixed with substantial quantities of very burnt and calcined, white, fairly fragmented human bone. This was usually sealed by a dark black/orange, ashy, clayey silt, consisting of the surrounding natural colluvial/alluvial soil, incidentally mixed with ash from the cremation.

#### *Unurned burials*

Unurned burials are defined as those in which the burnt bone is deposited in a small pit. The bone is

usually found in a concentration, often at the base of the pit, suggesting that it was originally placed in an organic container such as a bag or basket which did not survive. This concentration is normally sealed with redeposited pyre debris or natural sub-soils. A total of 14 examples of unurned burials were identified and again were all roughly circular in plan, between 0.20m and 0.72m in diameter and between 0.03m and 0.46m deep with fairly steep, concave, sides and steep U-shaped profiles.

#### *Redeposited pyre debris*

Pyre debris is predominantly charcoal with small quantities of burnt bone, burnt flint, fired clay and sometimes fuel ash slag (McKinley 1997, 137), often described on site as 'ash dumps'. This was found in the backfills of urned and unurned cremation burials and as formal deposits in intentionally cut features. Distinguishing between redeposited pyre debris and disturbed or truncated unurned burials can be difficult. Nineteen features were identified as redeposited pyre debris, contained within pits of broadly the same size and shape as the cremation burials, although appearing to have served a different function. These features were filled with deposits of black ash that contained very little burnt bone and which were sometimes, but not always, sealed by a layer of redeposited natural soil. It seems likely that these features were dug to contain pyre debris, collected and deliberately buried within the cremation cemetery.

#### *Unurned burial/redeposited pyre debris*

This category includes features within the cemetery where there is no adequate description on the context sheet, or where there was no concentration of bone but the deposit had been seriously truncated. Five such features were identified at Papworth Everard, again in the form of circular or sub-circular pits with depths ranging from 0.11m to 0.25m.

#### *Cremation related feature/deposit*

This deposit type includes redeposited cremated bone, but where the circumstances of deposition are uncertain. Seven such examples, again in the form of fills of circular or sub-circular pits, were found at Papworth Everard.

#### *Other features*

Six features contained neither significant quantities of charcoal nor cremated bone and may represent post-holes. Most of these 'structural' features consisted of a concave pit with a central, well-defined post-pipe that comprised decayed and burnt, ashy wood. They measured between 0.07m and 0.44m in diameter and 0.10m and 0.27m deep. It is possible that these features indicate the position of pyres, although they did not appear to form any obvious pattern. Alternatively, they may have acted as markers.



Above, Figure 5. Cremation pit 1883 during excavation.



Left, Figure 6. Cremation pit 1870.

## The Cremation Urns

Emily Edwards

### Introduction

An assemblage of 312 sherds (1,450g) of pottery was recovered. While some of the cremation urns survived, many were evident during excavation as little more than areas of staining and a few crumbs of degraded pottery. The urns were of poorly fired clay and were in an extremely soft and fragmentary state, meaning that most did not survive excavation and lifting. The majority of the surviving pottery came from feature 1883 (232 sherds, 1339g; Fig. 5), the remainder

coming from ten other features. As observed in the ground, the vessels were typically 0.42m in diameter and 0.35m tall, with fairly straight sides (Figs 5 and 6). Most of the rims appeared to have been truncated. None of the urns had bases when analysed, probably as a result of post-depositional processes (see below). No visible residues were noted.

### Fabrics

Three fabrics were identified containing voids (probably leached fossil shell), ferruginous pellets or sand. Most vessels were made from the leached fabric and the raw materials were probably procured locally as naturally tempered clay deriving from the exposed

fossiliferous Upper Jurassic clays that form the narrow valley within which the site lies. The opening materials within the other fabrics are also likely to have been derived locally. The identification of Middle Bronze Age vesicular fabrics is paralleled at Newark Road, Fengate (30km north of Papworth Everard), where the solid geology consists of the same Upper Jurassic clays. Here, sherds from ditch deposits were analysed and thin-sectioned and found to have been manufactured from soft friable vesicular fabrics (Williams 1980, 87–104). One of these fabrics had originally derived from fossiliferous clay such as Kimmeridge or Oxford (Upper Jurassic clays). Shell fabrics also formed a significant proportion of the Middle Bronze Age assemblage from Grimes Grave in Norfolk (Ellison 1988, 40).

#### Forms

Very little diagnostic material was present amongst the surviving sherds, with the exception of two refitting rims and a single rim sherd from urned burial 1883, a cordon-decorated sherd from the same pit and a pointed rim sherd (1g) from pit 1916. A sherd from pit 2039 (3g) may have been part of a base. Body sherds from urned burial 1883 refitted to reveal large chunks of a vessel profile. Although during excavation this appeared to be a relatively straight-sided jar, the sherds themselves reveal a sub-biconical shape more akin to those from Coneygre Farm, Nottinghamshire (Allen *et al* 1987, 195–199, figs 6–10). The sherd decorated with a horizontal cordon is apparently all that remains of a band observed to circumnavigate the upper half of the vessel before lifting, parallels for which come from the Coneygre Farm assemblage (*ibid.*, 10, fig. 7) and from Pasture Lodge, Lincs. (*ibid.* 14 and 20, fig. 14; 4 and 10, fig. 16). Similar vessels also occur within the Middle Bronze Age assemblage from Grimes Graves, Norfolk (Ellison 1988, fig. 24.66).

#### Vessel size and cremation deposits

Although the assemblage was too fragmented for any information on urn size to be extracted, site photographs of several vessels (including those which did not survive excavation) were sufficiently detailed to permit certain highly tentative estimates to be made (Table 2). Allen *et al* identified a tendency, within Bronze Age cemeteries within the East Midlands, for younger people to be buried in pots of smaller capacities than those of older people (Allen *et al* 1987), although it should be noted that the criteria by which 'urned cremations' at other sites were so identified is unclear.

#### Decoration and surface treatment

The worn condition of the pottery surfaces made identification of original surface treatments impossible. A row of marks on one body sherd from pit 1883 may be interpreted as impressed dots, which are paralleled within the Coneygre and Frieston (Lincs.) assemblages (Allen *et al* 1987, 212).

#### Manufacture

Refitting sherds suggest that the vessels were built using vertically joined, thin flat slabs. This was also noted at Coneygre Farm (Allen *et al* 1987, 216). Rims were very roughly finished, leaving some initial uncertainty as to which sherds were coil joins and which were rims.

Although bases were not identified during excavation of the cremation pits, it seems unlikely that the vessels were not given bases during manufacture. As recorded on site, the vessels appear to have been evenly broken or eroded and most identified lower base sherds have hackly fractures of some age, suggesting that the bases had broken away in antiquity. Given that the site was wet and prone to flooding, the most likely explanation is that the pottery (which is typically very low fired) had partly reverted to clay. The soil at Papworth is also relatively acidic, which will have caused some degradation of the pottery and especially of any calcareous inclusions within the matrix of the sherds (such as shell). The alternative, that the bases were deliberately removed prior to burial, does not appear likely in this case.

#### Deposition

One feature appears to have contained pottery sherds which were not part of an intact vessel at the point of deposition. Pit 1903 contained a cremation placed over a series of curved intact sherds which may represent the wall of a jar. Brück convincingly argues that the accompanying of cremation burials by such sherds of pottery may be suggestive of a rite involving burning and breaking, symbolising the ending of a person's life and the termination of relationships with others (Brück 2001, 152; 2006, 301). The evidence at Kimpton, in Dorset, suggested that vessels were smashed at the pyre side or into the pyre. Brück gives the example of one cremation burial at this site in which an arc of sherds surrounded the cremation deposit; on refitting, these formed one side of a vessel. Analysis of the scatter revealed that the vessel had been broken elsewhere and the sherds collected for deposition. At

Table 2. Table comparing possible size of six most intact vessels with age of individual buried within.

Feature No.	Possible Size	Cremation Deposit
1861	150 mm diameter, 140 mm height,	Subadult/adult
1872	300 mm diameter, 350 mm height	Adult and infant
1883	200 mm diameter, 250 mm height	Subadult/adult
1916	250 mm diameter, 240 mm height	Adult
1925	300 mm diameter, 300 mm height	Adult
2049	200 mm diameter, 250 mm height	1 or 2 individuals, adult and infant/juvenile

Itford Hill, East Sussex an incomplete vessel accompanying a burial was matched with a sherd from the contemporary settlement 90m to the south.

#### *Dating*

The pottery recovered from Papworth Everard is considered to be related to the later middle Bronze Age Deverel-Rimbury Tradition, largely understood to have a currency stretching from 1500 to 1000 BC.

#### *Conclusions*

The pottery from Papworth is very fragmented and in a fragile condition. Those few diagnostic sherds present within the assemblage as analysed, in conjunction with the fabrics described above, find parallels within other Middle Bronze Age cemeteries within the region. The variable degree of completeness of the ceramic deposits at Papworth is typical of many strands of evidence associated with cremation deposits as described by Brück and others (Brück 2006, 30–9; Parker Pearson 2005, 108; Bradley 2007, 197–202; McKinley 1997).

#### *Wooden and Organic Containers?*

A single cremation (1724, Fig. 7) was originally interpreted as being deposited within a wooden or other organic container. Processing of the soil samples taken from this deposit, however, resulted in the recovery of a number of ceramic fragments and it appears probable that this actually represents a highly degraded pottery urn. The visible remains demonstrated that the container was 0.30m in diameter, 0.20m tall and 1cm thick. In profile the sides were slightly shallower and had a slightly more concave

profile than that of the other pottery urns. The base had partially survived and was fairly flat.

Amongst the unurned burials, feature 1845 showed the clearest signs of the presence of an organic container. The cremated bone in this feature was deposited in a tight ball-shaped cluster, suggesting that it had been placed in an organic bag.

#### **The Cremated Remains**

*Natasha Dodwell*

#### *Methodology*

During excavation all deposits containing cremated bone, and those fills surrounding cremation urns or sealing concentrations of cremated bone in unurned burials, were subject to 100% recovery as whole earth samples which were appropriately processed. All samples were wet sieved, through 10mm, 5mm and 2mm sieves and all extraneous material was removed from the >5mm fraction. Osteological analysis followed procedures for cremated human bone outlined by McKinley (2002 and 2004). All bone >5mm was examined and sorted and weighed by body part (e.g. skull, axial skeleton, lower limb, upper limb, limb and unidentifiable). The residue from the 2mm–5mm fraction was scanned and identifiable elements separated. A proportion of each sample was floated for retrieval of any charred plant remains. Although the fragile nature of the cremation vessels meant that it was not possible to lift the urns and excavate them off-site, distinctions between upper and lower fills of pots were possible (e.g. pit 1925, Fig. 8, Section 361).



*Figure 7. Cremation pit 1724, showing the burnt remains of the cremation vessel.*

Due to the fragmentary nature of the cremated bone most of the normal osteological techniques for ageing and sexing individuals could not be used. Size and robusticity of bone fragments were initially utilised to identify immature from adult remains, the age of immature individuals being assessed from the stage of dental development and eruption (Brown 1985; Ubelaker 1989). With adults, refining the age was far more problematic and where this has been attempted the degree of suture closure of the skull has been examined (Meindl and Lovejoy 1985). In consideration of these limitations, the following age categories are used:

infant	0–4 years
juvenile	5–12 years
subadult	13–18 years
young adult	19–25 years
middle adult	26–44 years
mature adult	45 years +

There may be overlaps between categories, such as subadult/adult, or a broad category, such as adult, where insufficient evidence was present. Amongst the immature individuals it was often possible to narrow/sub-divide the age category. No attempt was made to sex immature individuals. The sex of adult individuals was ascertained where possible from sexually dimorphic traits of the skeleton (Buikstra and Ubelaker 1994) but any determinations should be treated with caution. As a result of the degree of fragmentation, sex was based on a single diagnostic element e.g. an orbital rim or occipital protuberance, hence ?male and ?female.

#### Demography

Within the 28 features identified as burials (urned and unurned) a minimum of 33 individuals were identified (Table 3). A further 3 individuals (all immature)

were more tentatively identified, but their presence is probably the result of contamination of contexts from intercutting features. Several if not all of the deposits which have been classified as 'unurned burials/redeposited pyre debris' may in fact be disturbed unurned burials. If these five features are included then the minimum number of individuals rises to 38 (41 maximum) from 33 burial features. Given that the cemetery almost certainly continued outside of the excavation area, all the figures given here represent only part of the cemetery.

Despite the comments about the effects of truncation noted earlier, several burials remained relatively undisturbed and complete: urned burials 1872, 1903, 1910, 1916 and 1925 and unurned examples 1787, 1845, 1881, 1890 and 1991. Several of the features, particularly in the north-west of the cemetery, intercut leading to mixing/contamination of some of the deposits.

Amongst the features positively identified as burials a minimum of six individuals (18.2% of the minimum cemetery population of 33 individuals) died at or before 12 years old. This increases to a minimum of 23.7% of the cemetery population if one includes the individuals from deposits classified as unurned burials/redeposited pyre debris (n=38). Amongst the cremated bone deposited in 'burials' 4 individuals (12.1%) died before 5 years old. This proportion is far less than one would expect in a 'normal' population but similar to figures from other Bronze Age cremation cemeteries such as the Kings Hill cemetery, Broom, Beds. where the figure was 9% of the cemetery population (Dodwell 2007).

The paucity of immature remains is a common phenomenon in archaeological cemeteries of all periods but it is important to stress that immature individuals were afforded the rite of cremation – the youngest individual identified at Papworth Everard (in 2179) died at c. 3 years ±12 months. At Kings Hill, Broom (Dodwell 2007), cremated bone fragments from a

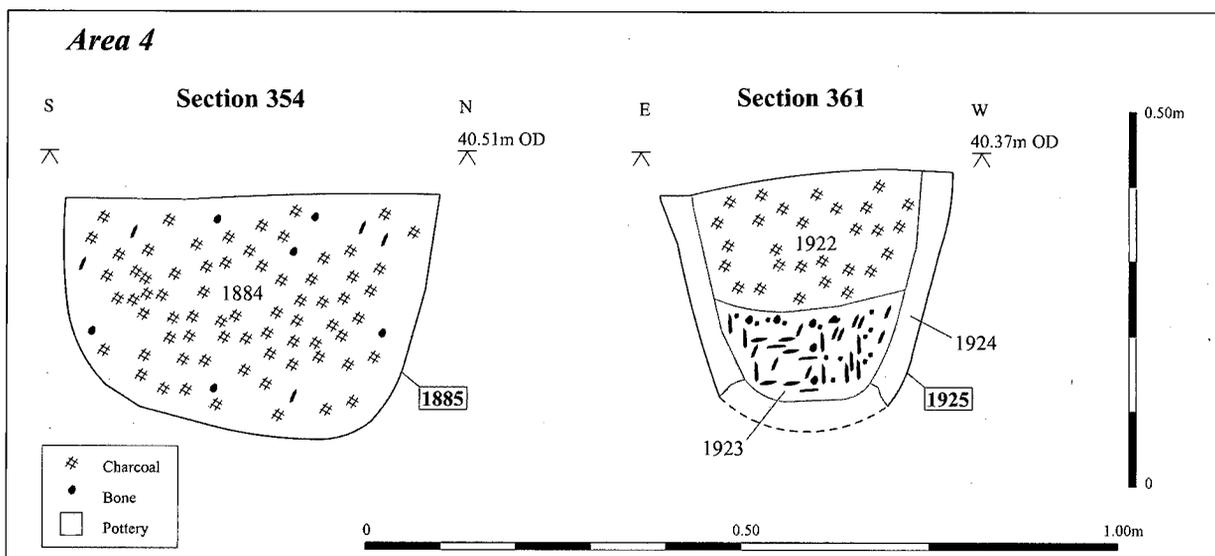


Figure 8. Sections across pits 1885 and 1925.

neonate/young infant were identified and it is possible that individuals of a similarly young age lie amongst the unidentifiable fragments at Papworth Everard. In addition, the fragility of immature bone may predispose it to destruction in acidic soil or loss as a result of disturbance. Interestingly the small quantities (1–3g) of immature bone fragments which were identified in features 1826, 1857 and 1867 (all classified as unurned burials/redeposited pyre debris) were mixed with large quantities of charcoal suggesting that the fragments were difficult to collect from the pyre site and were scooped up with a quantity of pyre debris. This phenomenon was also observed in one of the features at the King's Hill cremation cemetery.

Amongst the features positively identified as burials, one (c. 3%) individual was an older subadult/young adult, two (c. 6%) were subadult/adult and 24 (73%) were adult. The proportions are near-identical, one (c. 2%), two (c. 5%) and 28 (68%) respectively if the individuals identified in the deposits classed as unurned/pyre debris are included.

These crude demographic figures show that proportionately fewer immature individuals and more adults have been recorded here than at two other contemporary cremation cemeteries. Amongst the burials at Papworth Everard c. 18% of the individuals identified died before 12 years old and 73% as adults, compared to 30% and 48% at Pasture Lodge Farm, Lincs. (Allen *et al* 1987), and 32% and 48% at Kings Hill, Broom, Beds. (Dodwell 2007). These differences are unlikely to be significant given the fragility of immature remains, their presence in potentially non-burial contexts and the large quantity of unidentifiable bone.

### Sexing

The small quantities of bone, the lack of diagnostic elements and the degree of fragmentation greatly inhibited the sexing of the deposits containing adult bone. It must be stressed that the sexing is tentative and based on a single diagnostic element. Bone from only nine features could be tentatively sexed; six as ?female (1782, 1881, 1991, 1994, 2043 and 2075) and three as ?male (1859, 2099, 2257). Amongst the features containing ?female burnt bone, one is an urned burial, four are unurned burials and one is redeposited pyre debris. Amongst the features containing ?male burnt bone one is an urned burial, one is an unurned burial and one is unurned/redeposited pyre debris.

### Double Burials

Unfortunately it is not possible to distinguish between deliberate dual cremation or burial, and the accidental inclusion of fragments of burnt bone, which were not collected from an earlier cremation on the same pyre. At Papworth Everard, eight burials contained the cremated remains of two individuals (see Table 4). It could be argued that three of these (2049, 2099 and 2185) have been contaminated with stratigraphically earlier material from an adjacent burial (2257) however the other five (1782, 1845, 1872, 2179 and 2257) would appear to be confirmed examples. All of the confirmed examples are unurned burials except for 1872.

In addition to the burials the remains of two individuals were identified in 1965 and 2045, deposits of pyre debris. Where two individuals were identified in a single deposit, it was always an adult buried with an infant or juvenile, and given the limits of sexing cremated remains, where it was possible to assign a sex,

**Table 3.** The number of individuals identified in each age category by feature type. The figure in brackets includes individuals identified in deposits that could derive from an earlier features and therefore represents a maximum figure.

Age Category	Urned burials	Unurned burials	Total no. from burials	Unurned/pyre debris	Total No. of individuals from all features
Foetus/neonate	-	-	-	-	-
Neonate/young infant	-	-	-	-	-
Infant	1	-	1	1	2
Older infant	0 (1)	3	3 (4)	-	3 (4)
Older infant/young juvenile	1 (2)	1	2 (3)	-	2 (3)
Young juvenile	-	-	-	-	-
Infant/juvenile	0 (1)	-	0 (1)	11(2)	
Juvenile					
Older juvenile/young subadult	-	-	-	-	-
Immature	1	1			
Subadult	-	-	-	-	
Older subadult/young adult	-	1	1	-	1
Subadult/adult	2	-	2	-	2
Young adult	-	2	2	-	2
Young/middle adult	-	2	2	-	2
Middle adult	-	1	1	-	1
Middle/mature adult	-	-	-	11	
Mature adult	-	-	-	-	-
adult	118	19	1	20	
<b>Total no. of individuals</b>	<b>15 (18)</b>	<b>18</b>	<b>33 (36)</b>	<b>5</b>	<b>38 (41)</b>

one of the adults was ?female and two were ?male. It is relatively easy to distinguish adult from immature bones, however the adult/child burial phenomenon may be real and if so raises interesting questions with regard to funerary practices and the social organisation of the living. Given the fragmentary nature of the burnt bone it is possible that burials containing the remains of two or more adults were present on the site but were not recognised. In addition second individuals, or more of the second individual identified, may be present in the 'unidentified' human bone recovered from most of the features.

#### *Pyre technology and cremation ritual*

Most of the bone fragments recovered were a creamy, buff-white colour, indicative of full oxidation. A few fragments from six deposits (features 1910, 2045, 2049, 2075, 2099 and 2185) showed slight variations in colour from grey to blue/black (charred). The bone most often identified as charred was the femoral shaft. The variations in colour suggest minor inconsistencies in the degree of oxidation; either fragments falling away from the main heat source to the edge of the pyre or becoming buried in fuel ash. The bone fragments in 1782 and 1859 have a weathered, chalky appearance.

#### *Weight of bone*

Studies of modern western cremation practices have determined that the weight of collectable (>2mm fraction) cremated bone anticipated from an adult cremation ranges from 1000g to 2400g depending on the sex and build of the individual (McKinley 1993). McKinley (1989) has outlined the numerous factors, such as the efficiency of collection from the pyre and the depositional environment, which may affect the quantity of bone recovered, but it is generally recognised that the entire burnt body was very rarely, if ever, collected for burial. At Papworth Everard only bone >5mm was sorted from the heavy residue and weighed. This will obviously mean that the weights of bone analysed will be less than those expected

even before taphonomic factors are introduced. It is particularly important to stress this as during analysis it was noted that in twenty features the 2mm–5mm residue was almost entirely bone. Most of these unsorted but bone rich-residues weigh between 100–300g but unurned cremation 2257 contains over 1.5kg of bone rich material in the smaller unsorted fraction.

From both disturbed and undisturbed single adult urned burials (n=7), the range of bone weight was 106g–838g with a mean of 453g. From both disturbed and undisturbed single adult unurned burials (n=9), the range of bone weight was 74g–1063g, with a mean of 435g. If it is assumed that both types of burial at Papworth Everard have been disturbed/truncated to the same degree, the mean weight of bone recovered from single adult urned burials is greater than that recovered from unurned burials, but not significantly so. Amongst the undisturbed adult urned burials (n=4) the range remains the same with the mean falling by one gramme (452g). This figure is similar to that recorded amongst the undisturbed urned burials (481g) in the cremation cemetery at Coneygre Farm, Notts. (Allen *et al* 1987). Amongst the undisturbed adult unurned burials (n=3) at Papworth Everard the range decreases to 120–895g but the mean weight increases to 557g. Even accounting for the weight of bone in the 2mm–5mm fraction it would seem that most of the burials only a token amount of bone was collected and interred.

No data exists on expected weights of bone for immature human cremated bone, partly because the modern cremation process is so efficient that often little or no bone survives. Immature human bone does, however, survive the cremation process in archaeological contexts even though it was undoubtedly far harder to collect from the pyre than adult remains. The weight of bone recovered from the urned burial containing an older infant/young juvenile (2181) was only 39g. Where immature bone could be separated from adult fragments in the double burials, the most bone recovered was 121g (from unurned burial 2257).

**Table 4.** Summary table of features containing cremated bone from more than one individual (the number and age category in brackets represents an individual that is possibly intrusive).

Feature	Type	No. of individuals	Age	Total weight of bone	Weight of bone from immature individual (minimum)	Relationship with other burials
1782	unurned	2	Adult ?f & older infant/juvenile	260g	11g	
1845	unurned	2	Young/middle adult & older infant	690g	14g	
1872	urned	2	Adult & infant	662g	11g	
1965	Redeposited pyre debris	2	Subadult/adult & infant	2g	<1g	
2045	Redeposited pyre debris	2	Middle/mature adult & infant/juvenile	64g	4g	cut by 2045 & cuts 2048
2049	urned	1 (2)	Adult (& infant/juvenile)	355g	1g	cuts 2185 & 2257
2099	?urned	1 (2)	Adult ?m (& older infant)	488g	2g	cuts 2257
2179	unurned	2	Adult & older infant	211g	14g	
2185	urned	1 (2)	adult (& older infant younger juvenile)	711g	8g	cut by 2049
2257	unurned	2	Adult ?m ? older infant	1798g	121g	cut by 2049 & 2099

It is highly probable that more immature bone is present amongst the unidentifiable bone fragments.

#### Fragmentation

McKinley (1994) has argued convincingly that bone fragment size is dependent on factors such as the efficiency of the pyre, the depositional environment and methods the excavation and post-excavation processing. Amongst the urned burials the maximum dimension of bone fragment recorded was 60mm (from 2185) and amongst the unurned burials the maximum fragment was 63mm (from 1890). The maximum from most of the burial deposits was relatively low at <40mm. Amongst all of the urned adult burials, both disturbed and undisturbed (n=7) the majority of bone was recovered from the 5–10mm residue (51–74%). The exception to this was burial 1724 where 52% was recovered from the 10mm sieve fraction. Similarly, amongst all of the unurned adult burials (n=8), the majority of the bone was recovered from the 5–10mm residue (54–75%). These figures are almost identical in terms of the 'undisturbed adult burials'; 51–67% of the bone in urned burials (n=4) and 54–75% in unurned burials (n=3) was recovered from the 5–10mm sieve fraction. The true percentages are likely to be slightly lower since only teeth and identifiable skeletal elements from the 2mm fraction were included in the total weights.

These figures highlight two points. Firstly, that the bone from all contexts was extremely fragmentary, restricting more precise identification of individuals and skeletal elements. There is almost no evidence for the deliberate post-depositional fragmentation of cremated bone from burials of any period in Britain (McKinley pers. comm.) and the chalky appearance of some of the bone fragments and the poor survival of trabecular bone suggest that the small fragment size is the result of taphonomic processes, namely the acidic nature of the burial soil. Secondly, there is no difference in the bone fragment size in the urned and unurned burials; one might expect that the bone fragment size might be larger in the urned burials as a vessel should afford some protection from the surrounding soil. However, given the extremely poor survival of the cremation urns (some survive only as stains in the ground) it could be argued that their presence, in terms of protection against the acidic soil is inconsequential.

#### Conclusions

Cremated human bone was identified in both urned and unurned burials, and adults of both sexes and immature individuals were interred. No pyre site was identified in the area of excavation but several features containing pyre debris were recognised, which suggests that its deliberate disposal was significant in the funerary ritual. The funerary rite relating to children is interesting; immature remains were identified in all categories of funerary feature, however only one true single burial was identified, the urned burial (2181). All other burials were double ones; adult and immature remains interred in vessels

or as unurned burials. Very small quantities of immature remains were identified in features classified as unurned/redeposited pyre debris (1826, 1857 and 1867) suggesting that collecting the bone fragments from the pyre was difficult but necessary.

#### Radiocarbon Dating

P. D. Marshall

Fifteen radiocarbon age determinations were obtained on samples of the cremated human bone. The samples were submitted to the Scottish Universities Environmental Research Centre (SUERC), East Kilbride, and prepared following the method outlined in Lanting *et al* (2001). The results are given in Table 5, and are quoted in accordance with the international standard known as the Trondheim convention (Stuiver and Kra 1986). They are conventional radiocarbon ages (Stuiver and Polach 1977). A Bayesian approach has been adopted for the interpretation of the chronology of these samples (Buck *et al* 1996). This approach incorporated stratigraphic data to attempt to give a chronology to the burials within the cemetery. The model employed excluded SUERC-14639 as a statistical outlier. This model provides estimates for the start of cremation activity of 1430–1310 cal BC (95% probability) and probably 1410–1340 cal BC (68% probability) and the end of activity of 1380–1240 cal BC (95% probability) and probably 1350–1270 cal BC (68% probability).

The span of use of the cemetery is estimated at 1–140 years (95% probability) and probably 1–80 years (68% probability). It is likely, however, that the estimate for the use of the cemetery tends to suggest that activity continues for longer than it really did; the 'wobble' in the calibration curve between c. 1400–1300 cal BC (Reimer *et al* 2004) means that it is not possible to distinguish between activity only being in the early or later part of that period.

#### Environmental Evidence

Val Fryer

Plant remains from the cremations and related pyre debris were relatively sparse, although tubers of onion couch (*Arrhenatherum* sp.) did occur within all but three of the thirty samples studied. Seeds/fruits of grasses and grassland herbs, including indeterminate small legumes (Fabaceae), goosegrass (*Galium aparine*), persicaria (*Persicaria maculosa/lapathifolia*), ribwort plantain (*Plantago lanceolata*), dock (*Rumex* sp.) and vetch/vetchling (*Vicia/Lathyrus* sp.), were also recorded along with three very poorly preserved cereal grains. Three samples (from cremations 1840, 1859 and 2048) contained wetland plant macrofossils including spike-rush (*Eleocharis* sp.) fruits and blinks (*Montia fontana*) seeds. Charcoal/charred wood fragments were common or abundant throughout, along with indeterminate root, rhizome or stem fragments. Other plant macrofossils included indeterminate

buds, thorns and tuber fragments. Although burnt bone fragments were present within all of the cremation deposits examined, other materials occurred very infrequently, with fragments of black porous and tarry material possibly being residues of cremation processes (i.e. possible cremation slag; Henderson *et al* 1987). The small size of the surviving charcoal fragments meant that species could not be identified.

The material recovered from the cremation deposits is almost certainly derived from both uprooted plant materials gathered for used as kindling or fuel and from plants burnt *in situ* beneath the pyres. Similar assemblages have been noted from a number of contemporary cremation deposits from sites excavated throughout Lowland Britain. The material from Papworth Everard suggests that grassland conditions were locally prevalent throughout the Bronze Age period, with very limited evidence for marginal damp grassland habitats, nearby agricultural activity or incursive scrub growth.

## Discussion

### Regional context

The newly discovered cemetery is amongst the largest of its type in East Anglia, despite the fact that it was not completely excavated. The King's Hill cemetery, Broom, Bedfordshire (containing 44 burial deposits; Cooper and Edmonds 2007, 95) and the Butcher's Rise Ring Ditch cemetery in Cambridgeshire (32 cremations; Evans and Knight 1998) provide examples of comparable size. Many other cremation cemeteries of similar date in the region contain less than 20 cremations. Examples include those at East Carleton, Norfolk (9 cremations; Wymer 1990), Fordham

Bypass (14 cremations; Mortimer 2005) and Witton One and Two, Norfolk (13 and 16 cremations respectively; Lawson 1983). These small sites probably represent a household or family plot, used only briefly by one or possibly two generations (Brück 1999). The Papworth Everard cemetery adds to an increasing number of larger cemeteries which may have been used by larger populations, were longer lived or were used by communities that favoured cremation and deposition in a cemetery.

### Cemetery layout

The Papworth Everard cemetery follows a clear linear alignment, which matches that of the ditch beside it: the southern point of the burials notably respects the butt end of the ditch. The same north-west to south-east alignment is followed by the line of a small seasonal stream, which currently flows approximately 100m to the east. Cemeteries arranged in a linear fashion with respect to earlier field systems have been recorded elsewhere, such as King's Hill, Broom, Bedfordshire (Cooper and Edmonds 2007, 95) and Eye (Patten 2004, 50). The Papworth Everard cemetery adds to the growing corpus of linear cemeteries which respect earlier boundary alignments. These boundaries are often parts of landscapes which themselves have long histories, where boundaries reference earlier monuments (e.g. Cooper and Edmonds 2007, 38). The positioning of cemeteries with reference to boundaries can, therefore, be seen as another element in the reworking and continued use of existing landscapes in the past.

Although no evidence for contemporary occupation was identified during the excavation, or on a large area opened to the east of the road corridor by the Cambridge Archaeological Unit (R. Patten pers. comm.), this does not rule out the presence of settle-

**Table 5.** Radiocarbon results of cremated human bone. Calibrated dates have been calculated using the calibration curve of Reimer *et al* (2004) and the computer program OxCal (v3.10) (Bronk Ramsey 1995; 1998; 2001).

Laboratory code	Fill no.	Context Interpretation	$\delta^{13}\text{C}$ (‰)	Radiocarbon Age (BP)	Calibrated Date (95% confidence)	Posterior Density Estimate (95% probability)
SUERC-14622	1722	wooden/organic container cremation 1724	-17.7	2985 ±40	1380-1080 cal BC	1390-1270 cal BC
SUERC-14623	1785	unurned cremation 1787	-22.3	3080 ±35	1430-1260 cal BC	1400-1290 cal BC
SUERC-14627	1841	upper fill of unurned cremation 1845	-18.3	3010 ±35	1390-1120 cal BC	1390-1270 cal BC
SUERC-14628	1869	urned cremation 1872	-21.5	3080 ±40	1440-1250 cal BC	1400-1290 cal BC
SUERC-14629	1887	upper fill of unurned cremation 1890	-22.3	3075 ±35	1430-1260 cal BC	1400-1290 cal BC
SUERC-14630	1896	unurned cremation 1898	-18.3	3075 ±35	1430-1260 cal BC	1400-1290 cal BC
SUERC-14631	1900	urned cremation 1903	-22.9	3045 ±35	1410-1210 cal BC	1400-1280 cal BC
SUERC-14632	1909	urned cremation 1910	-23.9	3130 ±35	1500-1310 cal BC	1410-1300 cal BC
SUERC-14633	1989	unurned cremation 1991	-22.4	3085 ±35	1430-1260 cal BC	1400-1290 cal BC
SUERC-14637	2042	urned cremation 2043	-20.7	2995 ±35	1380-1120 cal BC	1390-1270 cal BC
SUERC-14638	2063	urned cremation 2049, cuts 2257	-22.9	3090 ±35	1440-1260 cal BC	1380-1270 cal BC
SUERC-14639	2071	unurned cremation 2072, cut by 2075	-24.0	2935 ±35	1270-1020 cal BC	-
SUERC-14640	2074	unurned cremation 2075, cuts 2072	-20.3	3045 ±35	1410-1210 cal BC	1400-1280 cal BC
SUERC-14641	2183	upper fill of cremation 2185, cut by 2257	-20.6	3055 ±40	1420-1210 cal BC	1400-1310 cal BC
SUERC-14642	2256	unurned cremation 2257, cuts 2185 and cut by 2049	-21.9	3040 ±40	1420-1130 cal BC	1390-1290 cal BC

ment nearby. The fabric of the vessels in which the cremations were contained suggest local manufacture, the cemetery probably serving a relatively local community.

It is possible that the location of the cemetery or specific deposits within it, were marked by posts. Notches cut into the side of four of the burial pits in the cremation cemetery at King's Hill, Broom were interpreted as markers, allowing subsequent burials to be positioned immediately adjacent to them (Cooper and Edmonds 2007, 98). While none of the possible postholes identified at Papworth Everard appeared to be directly related to an individual deposit, four of the six possible postholes occur in the vicinity of a tight cluster of inter-cutting features. Although effectively hidden in the modern landscape, the cemetery's position next to a boundary ditch and potentially marked by posts suggests that it was not intended to be concealed.

The rectangular pits in Areas 2 and 3 are difficult to parallel in Middle Bronze Age contexts. Two pits of similar date and dimension, containing significant quantities of charcoal and burnt stone, have recently been recorded at Brigg's Farm, Thorney (Pickstone and Mortimer, in prep.). They were interpreted as having an industrial function, perhaps related to salt making. Other similar pits, although of Late Iron Age date, were recorded in direct association with a cremation cemetery on the route of the A27 Westhampnett Bypass, West Sussex (Fitzpatrick 1997, 18–32). Here they were shown to be pyre sites, with trenches acting as flues helping to increase the temperature of the fire (*ibid.*, 18). The pits at Papworth may be related to the cremation process, although no cremated bone was recovered from them: in this respect, it is of note that one of the pyre features identified at Westhampnett contained as little as 0.8g of bone (*ibid.*, 29) and not all of the fill of the Papworth features was retained for environmental processing. Alternatively, they may have served some industrial process, though evidently very unlikely to be salt making so far from a source of salt water. It is also possible that these pits formed a segmented boundary feature, or even supported structures of some kind. Whatever their true function, they appear to have formed part of the same landscape of which the cemetery was a part and their location on the top of the slope overlooking the cremation cemetery may well be significant.

### *The Burials*

It has been shown that, in southern England, the majority of cremation cemeteries comprise fewer than 40 burials, with an average of between 10 to 30 (Ellison 1980, 117). Bearing in mind that the entire extent of the cemetery at Papworth Everard was not excavated, the total number of burials here is high. Similarly, the total proportion of burials within vessels (42%) is high, given the average of 24% for contemporary cemeteries calculated by Robinson (2007, 22). Whilst it is tempting to suggest some sort of special status for the individuals provided with a pottery vessel in the grave, this does not appear to be based on age and it

was not possible to determine sex. It is interesting to note, however, that the majority of the urned burials occur in clusters (2049, 2185 and 2099; 2039, 2043 and 1916; 1883, 1903 and 1861) which may indicate a relationship between these burials. Similar clusters were evident in the cremated remains, with double burials restricted to the southern arc (1782, 1845 and 1872) and the cluster of urned burials at the northern limit of excavation (2049, 2185 and 2099). This latter cluster may, however, be the result of pits 2049, 2185 and 2099 cutting pit 2257, which contained the strongest evidence for a double burial, redistributing bone into these features. If this is the case, the only instance of a double burial within a vessel is that from 1872. This may indicate a degree of chronological patterning with unurned and double burials predating urned burials, although the evidence for this is slight.

While the identification of a wooden/organic vessel remains equivocal, it is likely that in some of the deposits referred to as unurned burials the cremated bone was deposited within an organic container. The cremated bone in feature 1845 was tightly packed, suggesting that it had been deposited in a bag. Similar deposits have been identified in other Middle Bronze Age cremation cemeteries, such as that at Butcher's Rise, Cambridgeshire (Evans and Knight 1998, 25). At Sutton, an Early Bronze Age cremation burial and adjacent pit were found beneath a mound. The pit had a void around the sides and base of the cut, perhaps indicating the presence of an organic container, within which possible pyre debris had been placed in a basket(s) or wooden bowl(s) (Connor 2009, 40).

There were no grave or pyre goods noted across the cemetery at Papworth Everard, apart from three fragments of unidentifiable burnt animal bone, possibly sheep/goat, recovered from the upper fill of unurned burial 2072. Similar deposits of animal bone have been noted at other Middle Bronze Age cemeteries, such as that at Butcher's Rise, Cambridgeshire (Evans and Knight 1998, 31) and King's Hill, Broom (Cooper and Edmonds 2007, 97).

A large number of radiocarbon dates were obtained for the burials at Papworth Everard and this allowed for meaningful statistical analysis to determine the use life of the cemetery. This was estimated at between 1–140 years (95% probability) and probably 1–80 years (68% probability). The lack of other sites in this region with such comprehensive dates prevents comparison of this use-life. It is of note that this cemetery was perhaps in use for a maximum of six generations and probably considerably less than this. If further cemeteries were subjected to such scientific dating techniques, then some of the assumptions inherent in population modelling (e.g. Evans and Knight 2001, 101) could be addressed.

### *The Western Claylands during the Bronze Age*

It has traditionally been assumed that clay soils were not heavily exploited in the past, due to their perceived poor quality (Mills and Palmer 2007, 7). Recent archaeological investigations have, however, started to demonstrate the extensive use of clay soils

for both farming and habitation during the Iron Age and Roman period. This is particularly true of the western claylands of Cambridgeshire, seen traditionally as the 'cold wet claylands' (Fox 1923, 7), outside the preferred areas of habitation along the river gravels and fen edge. This view was still current until quite recently. Several recent large scale excavations have, however, provided ample evidence for Iron Age and Roman habitation, although such evidence has not yet been forthcoming for the Bronze Age. For example, although a large area of c. 30ha was stripped at Loves Farm, St Neots, no significant Bronze Age remains were identified (Hinman in prep.). Large scale excavations in advance of the development of Cambourne and along the route of the new A428 also failed to identify evidence for Bronze Age activity beyond two possible pits (Wright *et al* 2003, 91; Abrams and Ingham 2008, 17).

The general lack of extensive field systems and visible settlement activity in this part of Cambridgeshire does not necessarily imply that the area was not occupied during the Bronze Age: the paucity of remains may simply reflect the fact that the area was less densely populated. Several narrow undated ditches identified in other parts of the Papworth Everard site may in fact represent the remains of a Bronze Age field system. The presence of a relatively large cremation cemetery initially appears incongruous. The site is, however, located at the head of a valley, providing ready access to the Great Ouse Valley. This is a location which has long been identified as that most likely to have sustained early occupation (Fox 1923, 63).

It is also possible that the lack of field systems identified on the claylands relates to the type of agriculture being practised. With heavy clay soil being more difficult to work for arable crops before the advent of new farming techniques, it is possible that the claylands were instead used for grazing. The act of creating field systems is frequently interpreted as a way to increase the productivity of land (e.g. Yates 2007, 120). In the case of livestock farming, this is achieved as access to overgrazed land can be restricted in order to allow the grasslands to recover, although such a system is only necessary when livestock numbers reach a level where overgrazing may become a problem (Pryor 2001, 82–83). If there was no such pressure on the more sparsely inhabited western claylands then the need for field systems would be reduced.

## Conclusions

While in many ways the Papworth Everard cremation cemetery is typical of other Middle Bronze Age cremation cemeteries known in the region, its location on Cambridgeshire's western claylands is thus far unique. While these clay uplands were fertile and reliable, arable agriculture here was hard, labour intensive work. As a result it is likely that this area only became permanently settled over a long period of time and that there may well have been low level, temporary and/or seasonal use of the landscape

by a small group of people. The Papworth Everard cemetery may then indicate repeated use by small to moderate populations of socially tightly knitted mobile and seasonal agriculturalists. This concept tallies with the suggestion that Bronze Age cremation cemeteries reflect wider social changes, particularly in terms of alterations in agriculture and settlement (Bradley 1981, 103). Bradley has suggested that increasing pressure on land at this time led to the opening up of new agricultural areas (such as this clay upland region) and that cemeteries, often used as 'social markers', began to be placed on this type of land as the concept of land ownership became more established (1981, 104).

## Acknowledgements

The authors would like to thank W. S. Atkins Consultants Ltd who commissioned the archaeological works and the Department of Transport, Cambridgeshire County Council who funded the excavations. Thanks are also extended to Jacksons Ltd, the on-site contractors, who greatly assisted during the course of the works. The project was managed by James Drummond-Murray. Dan Hounsell directed the field work with the assistance of Emma Nordstrum, Kathy Grant, Gareth Rees, Louise Bush, Tom Eley, Tom Lyons, Gemma Tully, Adam Loden, Chris Faine, Ian Hogg, Dave Brown, Dave Strachan, Spencer Cooper, Claire Martin, Helen Stocks, Andy Corrigan and James Fairbairn. Thanks are also extended to Dave Mullins (Oxford Archaeology South) for his comments on early drafts of this paper. This article was prepared for publication by Elizabeth Popescu.

**Cambridge Antiquarian Society is grateful to Cambridgeshire County Council for a grant towards the publication of this paper.**

## Bibliography

- Abrams, J and D Ingham 2008 *Farming on the Edge: archaeological evidence from the clay uplands west of Cambridge*. EAA123
- Allen, CSM, MN Harmen and H Wheeler 1987 *Bronze Age Cremation Cemeteries in the East Midlands*. PPS 53: 187–221
- Bradley, R 1981 'Various Styles of Urn: Cemeteries and Settlement in Southern England c. 1400–1000BC', in R Chapman, I Kinnes and K Randsborg (eds), *The Archaeology of Death*: 93–104. Cambridge: CUP
- Bradley, R 2007 *The Prehistory of Britain and Ireland*. Cambridge: CUP
- British Geological Survey 1993 *Huntingdon, England and Wales Sheet 187, Drift edition*. 1:50 000 Series
- Bronk Ramsey, C 1995 *Radiocarbon Calibration and Analysis of Stratigraphy: The OxCal Program*, *Radiocarbon* 37: 425–30
- Bronk Ramsey, C 1998 *Probability and dating*, *Radiocarbon* 40: 461–74
- Bronk Ramsey, C 2001 *Development of the Radiocarbon Program OxCal*, *Radiocarbon* 43 (2A): 355–363

- Brown, WAB 1985 *Identification of Human Teeth*. Dorking: Adlard & Son Ltd, Bartholomew Press
- Brück, J 1999 Houses, Lifecycles and Deposition on Middle Bronze Age Settlements in Southern England, *PPS* 65: 145–166
- Brück, J (ed) 2001 *Bronze Age Landscapes: Tradition and Transformations*. Oxford: Oxbow
- Brück, J 2006 Fragmentation, Personhood and the Social Construction of Technology in Middle and Late Bronze Age Britain. *Cambridge Archaeol J* 16:3: 207–315
- Buck, CE, WG Cavanagh and CD Litton 1996 *Bayesian Approach to Interpreting Archaeological Data*, Chichester: Wiley
- Buikstra, JE and Ubelaker DH (eds) 1994 *Standards for the collection from human skeletal remains*. Arkansas Archaeological Survey. Research Series No. 44. Fayetteville: Arkansas Archaeological Survey
- Connor, A 2009 A fen island burial: excavation of an Early Bronze Age round barrow at North Fen, Sutton. *PCAS XCVIII*: 37–46
- Cooper A and M Edmonds 2007 *Past and Present. Excavations at Broom, Bedfordshire. 1996–2000*. Oxford: Oxbow
- Dodwell, N 2007 Bronze Age cremation burials. In Cooper, A. and Edmunds, M. *Past & Present, Excavations at Broom Bedfordshire*. Oxford: Oxbow Books: 91–98
- Ellison, AB 1980 Deverel-Rimbury Urn Cemeteries: The Evidence for Social Organisation. In JC Barrett, and R Bradley (eds) *Settlement and Society in the Later British Bronze Age*. *Brit Archaeol Rep Brit Ser* 83: 115–126
- Ellison, A 1988 'Bucket-Shaped Vessels of the Deverel-Rimbury Tradition'. In Clutton Brock, J. *Excavations at Grimes Graves, Norfolk 1972–1976*. Fascicule 2. British Museum. 25–51
- Evans, C and M Knight 1998 *The Butcher's Rise Ring-Ditches: Excavations at Barleycroft Farm, Cambridgeshire 1996*. Cambridge Archaeological Unit Report No. 283
- Evans, C and M Knight 2001 'The 'Community of Builders': The Barleycroft Post Alignments' in Brück, J (ed). *Bronze Age Landscapes: Tradition and Transformations*. Oxford: Oxbow. 83–98
- Fitzpatrick, AP 1997 *Archaeological Excavations on the route of the A27 Westhampnett Bypass, West Sussex, 1992 Volume 2: the cemeteries*. Salisbury: Wessex Archaeology Report No. 12
- Fox, C 1923 *The Archaeology of the Cambridge Region*. Cambridge: CUP
- Henderson, J, RC Janaway and JR Richards 1987 'Cremation slag: a substance found in funerary urns', in A Boddington, AN Garland and RC Janaway, *Death, Decay and Reconstruction: approaches to archaeology and forensic science*. Manchester: Manchester University Press: 81–100
- Hinman, M in prep. *Iron Age to Early Saxon Settlement at Love's Farm, St Neots, Cambridgeshire*. EAA
- Lanting, JN, AT Aerts-Bijma, and J van der Plicht 2001 Dating of cremated bones, *Radiocarbon* 43: 249–54
- Lawson, AJ 1983 *The Archaeology of Witton, Near North Walsham, Norfolk*. Gressenhall: EAA 18
- McKinley, JI 1989 'Cremations: expectations, methodologies and realities'. In CA Roberts, F Lee, and J Bintliff, (eds) *Burial Archaeology. Current research, methods and developments*. Oxford: *Brit Archaeol Rep Brit Ser* 211: 65–76
- McKinley, JI 1993 Bone Fragment Size and Weights of Bone from Modern British Cremations and the Implications for the Interpretation of Archaeological Cremations. *Int J Osteoarchaeology* 3: 283–287
- McKinley, JI 1994 Bone Fragment Size in British Cremation Burials and its Implications for Pyre Technology and Ritual. *J Archaeol Sci* 21: 339–342
- McKinley, JI 1997 Bronze Age 'Barrows' and Funerary Rites and Rituals of Cremation. *PPS* 63: 129–145
- McKinley, JI 2002 'The analysis of cremated bone'. In M Cox and S Mays (eds). *Human Osteology in Archaeology and Forensic Science*. London: Greenwich Medical Media Ltd. 403–421
- McKinley, JI 2004 'Compiling a skeletal inventory: cremated human bone. In M Brickley and JI Mckinley (eds) *Guidelines to the Standards for Recording Human Remains*. IFA Paper No. 7: 9–13
- Meindl RS and CO Lovejoy 1985 Ectocranial Suture Closure: a revised method for the determination of Skeletal Age at Death Based on the Lateral-Anterior Sutures. *American J Physical Anthropology* 68: 57–66
- Mills, J and R Palmer 2007 *Populating Clay Landscapes*. Stroud: The History Press Ltd
- Mortimer, R 2005 *Neolithic, Bronze Age, Iron Age and Romano-British Occupation Along the Route of The Fordham Bypass, Fordham, Cambridgeshire. Post excavation assessment*. Cambridgeshire County Council Archaeological Field Unit Report No. 816
- Parker Pearson, M 2005 *Bronze Age Britain*. London: Batsford
- Patten, R 2004 *Bronze Age & Romano-British Activity at Eye Quarry, Peterborough: Phase Three*. Cambridge Archaeological Unit Report No.268
- Pickstone and Mortimer in prep. *The Archaeology of Brigg's Farm, Prior's Fen, Thorney, Peterborough*. Oxford Archaeology East Report No. 1094
- Pryor, F 2001 *The Flag Fen Basin. Archaeology and Environment of a Fenland Landscape*. Swindon: English Heritage.
- Reimer, PJ, MGL Baillie, E Bard, A Bayliss, JW Beck, CJH Bertrand, PG Blackwell, CE Buck, GS Burr, KB Cutler, PE Damon, RL Edwards, RG Fairbanks, M Friedrich, TP Guilderson, AG Hogg, KA Hughen, B Kromer, G McCormac, S Manning, C Bronk Ramsey, RW Reimer, S Remmele, JR Southon, M Stuiver, S Talamo, FW Taylor, J van der Plicht, and CE Weyhenmeyer 2004 IntCal04 Terrestrial radiocarbon age calibration, 0–26 Cal Kyr BP, *Radiocarbon* 46: 1029–58
- Robinson, I 2007 *Middle Bronze Age cremation Practice in East Anglia: Continuity and Change in Cemetery form and Development*. Unpublished Masters Thesis for the University of Cambridge
- Stuiver, M and RS Kra, 1986 Editorial comment, *Radiocarbon* 28(2B): ii
- Stuiver, M and HA Polach, 1977 Reporting of 14C data, *Radiocarbon* 19: 355–63
- Ubelaker, DH 1989 *Human Skeletal Remains: Excavation, Analysis, and Interpretation*. Washington DC: Taraxacum Press
- Williams, D 1980 Pottery. In Pryor, FMM *Excavations at Fengate, Peterborough, England: The Third Report*. Northamptonshire Archaeological Society Monograph 1, Royal Ontario Museum Archaeology Monograph 6
- Wright, J, M Leivers, R Seager Smith and CJ Stevens 2003 *Cambourne New Settlement – Iron Age and Romano-British settlement on the clay uplands of west Cambridgeshire*. Salisbury: Wessex Archaeology Ltd
- Wymers, JJ 1990 A Later Bronze Age Cremation Cemetery and Beaker Pits at East Carleton, *Norfolk Archaeol* 41: 74–83
- Yates, DT 2007 *Land, Power and Prestige: Bronze Age Field Systems in Southern England*. Oxford: Oxbow

---

## Proceedings Volume XCIX, 2010

Price £12.50 for members, £14.50 for non-members

### Contents

---

Note on 'Mary Desborough Cra'ster, 1928–2008' published in <i>PCAS</i> XCVIII (2009)	6
A Middle Bronze Age Cremation Cemetery on the Western Claylands at Papworth Everard Nicholas Gilmour, Natasha Dodwell and Elizabeth Popescu	7
Further excavation of a late Iron Age settlement at Scotland Farm, Dry Drayton David Ingham	25
Excavations at Castle Street Christopher Evans and Letty Ten Harkel	35
Early Bronze Age, Iron Age and Roman pit deposits at Bluntisham, Cambridgeshire Adrian Burrow and Andrew Mudd	61
Roman, Anglo-Saxon and medieval settlement at Stow Longa and Tilbrook (Huntingdonshire) Rob Atkins	75
Earthwork Survey at Huntingdon Mill Common Michael Fradley	89
Saxon and Medieval activity at Scotts Close, Hilton Thomas Woolhouse	97
A medieval clunch-working site at Fordham Road, Isleham, Cambridgeshire Andrew A. S. Newton	103
Small sites in Cambridgeshire Pip Stone for Archaeological Solutions	113
Medieval enclosures and trackways at Coles Lane, Oakington, Cambridgeshire Andrew B. Powell	121
The medieval network of navigable Fenland waterways I: Crowland Michael Chisholm	125
The Old Rectory Kingston: A Short Note on its Origins Susan Oosthuizen	139
Tea and Delicious Cakes: in conversation with Dr Pamela Jane Smith author of <i>A 'Splendid Idiosyncrasy': Prehistory at Cambridge 1915–50</i> David A. Barrowclough	145
The CAS Collection of Cambridgeshire 'Sketches': Part 2 John Pickles	155
Fieldwork in Cambridgeshire 2009 Sally Thompson, Hazel White, and Elizabeth Shepherd Popescu	161
<i>Index</i>	173
<i>Abbreviations</i>	180
Recent Accessions to the Cambridgeshire Collection Chris Jakes	181