ESSEX ARCHAEOLOGY AND HISTORY



TRANSACTIONS OF THE ESSEX SOCIETY FOR ARCHAEOLOGY AND HISTORY

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ESSEX

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THE TRANSACTIONS OF THE ESSEX SOCIETY FOR ARCHAEOLOGY AND HISTORY

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THE ESSEX SOCIETY FOR ARCHAEOLOGY AND HISTORY

The Society was founded in 1852 as the Essex Archaeological Society

Its objects are:

- (1) To promote and encourage the study of the archaeology and the history of the historic county of Essex.
- (2) In furtherance of the above to publish the results of such studies in *Transactions* and to disseminate information on matters relating to archaeology and history in Essex through appropriate media.
- (3) To organise conferences, lectures, and visits for the benefits of members and interested members of the public; to educate the wider community in the archaeological and historical heritage of Essex; to co-operate with other bodies on matters of common interest and concern.
- (4) To provide library facilities for Society members and approved members of the public.

Publications

The articles in its *Transactions* range over the whole field of local history. Back numbers are available; list and prices on application to the Librarian.

Members receive a regular *Newsletter* covering all aspects of the Society's activities, news of current excavations and fieldwork, and items of topical interest.

The Library

The library is housed at the Hollytrees, High Street, Colchester, and is extensive. It aims to include all books on Essex history and has many runs of publications by kindred Societies. Members may use the library on any weekday during Museum opening hours on presentation of a signed membership card.

Membership

Application should be made to the Hon. Membership Secretary for current rates. (address inside back cover). A list of officers, with addresses, can be found inside the back cover.

Subscribing Societies in Essex

Billericay Archaeological and Historical Society; Brain Valley Archaeological Society; Chigwell School; Colchester Archaeological Group; Essex Society for Family History; The Friends of Historic Essex; Halstead and District Local History Society; Haverhill and District Archaeological Group; Ingatestone and Fryerning Archaeological and Historical Society; Maldon Archaeological Group; West Essex Archaeological Group; Saffron Walden Historical Society; Waltham Abbey Historical Society; Westcliffe High School for Girls; Woodford and District Historical Society.

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Footnote 11 should read 'The Cole manuscripts are held at the BL Add MSS 5836, and 5811 with the description of Earls Colne in MS 5811 folios 10-33' For all subsequent references to MS 5836 in footnotes 22-3, 31-3, 39, 42, 45, 50-2, 56, 60-3, 68 and 73 read MS 5811.

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Cover illustration: Holy Trinity Church, Bradwell-juxta-Coggeshall, from the south-west. The architectural history of the church is the subject of a major article in this volume (Photo: Warwick Rodwell)

'All's well that ends well': a Late Bronze Age hoard from Vange

by N. Brown

A large Late Bronze Age, Ewart Park phase, hoard was recovered during construction of a new school in 1953. The hoard is part of the major concentration of later Bronze Age metalwork around the mouth of the Thames Estuary. Following its discovery, the hoard had a remarkable history which is outlined, the hoard and its contents are briefly described and discussed, and the implications for Late Bronze Age settlement on London Clay considered. Finally, some suggestions are made with regard to the preservation and recording of discoveries of Bronze Age metalwork.

Discovery and subsequent history

The Vange Hoard was discovered during construction of the Swan Mead School, Vange, part of the early phase of the creation of Basildon new town (Fig. 1). An anonymous account of the discovery preserved in Colchester Museum states:-

'The objects...were found on Friday, 9th October, 1953, while a drainage trench was being excavated. They lay in one compact group within the width of the trench (2'3" wide), the earth immediately surrounding being stained green from the corrosion of the bronze. The ground consists of approximately 12 inches of topsoil with brown clay below (moderate admixture of small round stones and sulphate crystals) and is moist but not saturated during wet weather'.

The account wrongly attributes the objects to the Middle Bronze Age and lists the pieces as:-

'1 Cast Bronze Axe Heads (Celts) with metal loops for thongs	Complete Broken fragments Solid flanged type	2 (Hollow) 7 (Hollow) 1 (Solid)
2 Spear Heads	Broad type with two holes (ornamental only) and engraved ornamental lines	1 (Hollow)
	Pointed thin type.	1 (Hollow)
3 Spear or Arrow Heads	Narrow type (broken). Narrow type with gouge shaped point.	1 (Hollow) 1 (Hollow)
4 Bronze Blade	Fragment, sharpened both edges.	1 (Solid)
5 Square Section hammer head (?) hollow at base.		1 (Part Hollow)

6 Fragments of axe nead	4 (FIOLIOW)
hollow necks.	
7 Rough pieces of bronze	23 (Solid)'

This list gives a total of 43 pieces.

A minute of the Essex County Council General Purposes Committee for 27th October 1953 notes the discovery of the hoard and states,

"...that some of the items have suffered from corrosion but that there are two exceptionally fine socketed celts with their loops, a fragment of what may have been a winged adze, fragments of two types of spearheads and two fragments of mountings with rivets and that the hoard which it is felt dated between 1000 BC and 750 BC is of the West Alpine type'.

The minute also records that,

"...the Chairman of the Committee be authorised to approve arrangements and any expenditure involved as he may deem fit for the purposes of having the articles cleaned by an expert".

and that,

casting metal (all sizes).

"...pending a decision as to it's eventual disposition the finer pieces in the hoard be exhibited in County Hall' and further that 'Permission be given for photographs of the hoard to be taken on behalf of the Essex Archaeological Society'.

Enquiries in June 1987 revealed no trace of the photographs in the Essex Archaeological Society's records, and it may be that the photographs were not taken. The description of the hoard in this minute appears more accurate than the earlier account and to have been written by an archaeologically informed individual, quite possibly William Pollitt of Southend Museum who had been active in recording the archaeology, especially Bronze Age metalwork, of south Essex and south-east Essex in particular since the 1920s. The description of the hoard as of 'West Alpine type' seems rather antiquated for the mid 1950s, but was widely used, including by Pollitt, two or three decades earlier (e.g. Pollitt 1935; Francis 1931).

A further minute of the General Purposes committee for 26 October 1954 records a decision to display some of the objects in a cabinet in the Council Chamber Lobby and a few pieces at Swan Mead Primary School, Basildon. The hoard was then



Fig.1 Vange hoard. Location Map

apparently deposited in the County Record Office. A minute of the Library, Museum and Records committee of 17 January 1977 states that the hoard was deposited in the Record Office for safe keeping in November 1953 but that "...some of the best pieces were lent...for display at the school in October 1954 and others were for some years on display outside the Council Chamber". The minute goes on to say that some items were lent to the Colchester and Essex Museum for examination recording and cleaning in August 1967, and that a representative of the museum had been to the school to list the items there.

The minute further records the decision:-

'That the Vange Hoard referred to above, other than the items on display at the school, be formally deposited in the Colchester and Essex Museum on indefinite loan for public display'.

The Colchester and Essex Museum Annual Report for 1976-77 records the Vange Hoard as having been deposited by the Record Office in 1976, but by this time two axes were in the collections at Southend Museum, although there seems to be no record of how they got there. Perhaps they are the 'two exceptionally fine socketed celts' noted in the minute of 27 October 1953. If Pollitt provided these comments, this would establish a link with Southend Museum.

During 1976 Chris Couchman of the then recently established, Essex County Council Archaeology Section attempted to trace the contents of the Vange Hoard as part of the background research for a paper given to the first conference on Essex archaeology organised by Essex County Council in 1978 (Couchman 1980).

A letter dated 4 January 1977 written to Couchman by the then curator of the Colchester and Essex Museum, appears to refer to the original list of objects; and notes that there are far more, and different objects present than are listed. He also records the poor state of many of the pieces noting '... it is possible they have disintegrated during cleaning, particularly as there was a very unfortunate accident over the cleaning: it was left soaking a while when my previous conservator left and I did not catch up with it quite quickly enough; however, even so I do not think that it can account for all of this'. The two axes at Southend Museum, though generally complete, are deeply pitted with corrosion. As these two objects did not suffer in the cleaning accident at Colchester, and given the corrosion damage noted in the minute of 1953, it seems likely that much of the corrosion damage occurred rapidly after the hoard's discovery.

In the 1980s three hoards (Wickham Bishops I and II and Chigborough) were discovered and reported to County Council Archaeology Section. the In considering how best to publish these hoards, it was thought desirable to undertake metallurgical analysis, and that such a publication might usefully be extended to include the Vange hoard and a hoard of copper ingot fragments from Hanningfield. Accordingly, Peter Northover of Oxford University was contacted with regard to metallurgical analysis, and grant aid was sought to cover the costs of the metallurgy and illustration. In the event, insufficient funds could be obtained either from grant aid or the County Council's own resources, and accordingly the scope of the publication (Brown and Northover forthcoming) was reduced by excluding the Vange hoard. However, a draft catalogue was produced and the metallurgical samples taken, the results of these are incorporated into the discussion of the other three hoards (Brown, Crowe and Northover forthcoming). During this process enquiries were made to the Essex Society for Archaeology and History regarding the photographs mentioned in the minute of 27 October 1953 (above). However, no photographs could be found and it is uncertain if the hoard had in fact ever been photographed. At about this time Ken Crowe of Southend Museum was preparing a catalogue of Bronze Age finds from south-east Essex, and made enquiries at Swan Mead school with regard to objects from the Vange hoard, but without success. There matters rested, until the mid 1990s when Pat Connell, then the County Council Archaeology Section's Education Officer, undertook some work with the children of Swan Mead school, and was shown a display box containing objects from the Vange hoard. This provided renewed impetus to finally bring the hoard to publication. The objects at the school had suffered some corrosion over the previous 40 years and were in urgent need of conservation. This was carried out at Colchester Museum, and the present report and its accompanying illustrations were prepared, all this work being funded by Essex County Council. It was also decided to reunite all the objects from the two museums and the school and deposit them at a single place. Southend Museum is now the most appropriate place for such finds from the Basildon area, and all the objects have been deposited there. In accordance with current best practice, full legal title has been granted to the museum and at the same time the County Council adopted a formal policy to donate all archaeological finds, together with full legal title, recovered from land in its ownership, to the relevant museum for the area.

Hoard Catalogue

- 1. Socketed Axe. Mouth missing, sides curve smoothly to a moderately expanded cutting edge. Casting flash on sides largely smoothed away. Sub-rectangular socket section. Surfaces cracked and pitted with corrosion with large areas eaten away. ? Needham (1986) Class A1. Wt. 116g.
- 2. Tip of socketed axe. Sub-rectangular socket section. Remaining sides curve smoothly to a moderately expanded cutting edge. Cutting edge heavily damaged, all surfaces very badly pitted with corrosion with no surface patina surviving. Wt. 56g.
- Socketed axe. Mouth missing, concave sides curving to expanded cutting edge, lower stump of side loop survives, with trace of casting flash blade and blade edges heavily damaged. All surfaces pitted with corrosion. Internal rib, Ehrenberg (1981) Type 5A. Needham (1986) Class A1, Schmidt and Burgess (1981) ? Isle of Harty variant. Wt. 70g.
- Tip of socketed axe, concave sided with widely expanded blade. Badly affected by corrosion, cutting edge of blade entirely missing. Where they survive, surfaces are smooth and only lightly pitted with corrosion. Needham (1986) Class A1. Schmidt and Burgess (1981) ? Isle of Harty variant. Wt. 37g.
- 5. Socketed axe. Mouth missing, sub-rectangular socket section. Fairly straight sided somewhat

wedge shaped form, unexpanded blade. Lower stump of loop survives. Top of surviving side appears to have been bent and crushed in antiquity. All surfaces very badly pitted with corrosion. Needham (1986) Class A1, appears similar to Schmidt and Burgess (1981) Type Everthorpe. Wt. 48g.

- 6. Lower part of socketed axe, sub-rectangular socket section. Sides curve smoothly to a widely expanded blade. One side of the blade is far more heavily worn than the other. The faces are very heavily pitted with corrosion, the sides are less badly affected. Part of one internal rib, Ehrenberg (1981), type 5A survives. Needham (1986) Class A1. Wt. 188g.
- 7. Tip of socketed axe, expanded blade. Relatively unaffected by corrosion. Wt. 41g.
- Tip of socketed axe, expanded blade, one side of the blade is heavily damaged by corrosion. Wt. 61g.
- Tip of socketed axe surviving to base of socket, expanded blade, most of the cutting edge is missing the piece is badly affected by corrosion. Wt. 65g.
- 10. Tip of socketed axe, expanded blade. Very badly affected by corrosion. Wt. 30g.
- 11. Tip of socketed axe, slightly expanded blade. Very badly affected by corrosion. Wt. 62g.
- 12. Tip of socketed axe, narrow bladed very heavily corroded, particularly on one face. Wt. 51g.
- 13. Mouth of socketed axe, square section. Heavy mouth moulding, prominent casting flash survives on one side, stump of side loop on the other. All surfaces heavily pitted with corrosion. Internal rib of Ehrenberg (1981) Type 5A present on surviving side. Wt. 83g.
- 14. Blade fragment of small socketed axe base of socket present. Heavily corroded. Wt. 7g.
- 15. Mouth fragment of socketed axe, socket probably of sub-rectangular section. Heavy mouth moulding, slight moulding below. Prominent casting flash. Interior heavily pitted with corrosion. Wt. 20g.
- 16. Mouth fragment of socketed axe, socket probably of sub-rectangular section. Double mouth moulding. All surfaces badly affected by corrosion. Wt. 22g.
- 17. Mouth fragment of socketed axe, sub-rectangular socket section. Heavy mouth moulding. Some corrosion pitting of surfaces. Wt. 29g.
- Two joining mouth fragments of socketed axe, sub-rectangular section. Double mouth moulding, stump of side loop level with lower moulding. Single internal rib survives. Very badly corroded. Wt. 12g.
- 19. Two joining fragments of socketed axe, subrectangular section. Double mouth moulding, stump of side loop level with lower moulding. Quite prominent casting flash, surfaces badly pitted with corrosion. Wt. 13g.

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Fig. 2 Vange hoard. Socketed axe fragments

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Fig. 3 Vange hoard. Socketed axe fragments

- 20. Part of mouth moulding of socketed axe, probably of sub-rectangular section. Part of an internal rib survives. Wt. 8g.
- 21. Part of mouth moulding of socketed axe. Moulding prominent with casting flash on top and ? scar left by removal of feeder. Part of second moulding and casting flash survive below mouth moulding. Wt. 13g.
- 22. Part of mouth moulding of socketed axe with part of internal rib surviving. Wt. 10g.
- 23. Part of mouth moulding of socketed axe. Very badly corroded. Not illustrated. Wt. 8g.
- 24. Part of mouth moulding of socketed axe. Wt. 6g.
- 25. Mouth moulding of ? socketed axe with raised area which may be a partly smoothed off scar left by a feeder. Wt. 4g.
- 26. Mouth of socketed axe, very badly corroded. Wt. 7g.
- 27. Mouth of socketed axe, very badly corroded. Not illustrated. Wt. 4g.
- 28. Mouth of socketed axe, badly cracked and pitted with corrosion. Wt. 7g.
- 29. Mouth of socketed axe, with double mouth moulding. Not illustrated. Wt. 5g.
- 30. Mouth of socketed axe, badly corroded. Not illustrated. Wt. 4g.
- 31. Side loop from socketed axe. Not illustrated. Wt. 3g.
- 32. Fragment of mouth of socketed axe, double mouth moulding, with stump of side loop emerging from lower moulding. Wt. 8g.
- Fragment of socketed axe, with stump of side loop emerging from a very slight moulding. Wt. 7g.
- 34. Fragment of socketed axe with double moulding. Stump of side loop emerging from just above the slight lower moulding, casting flash. Wt. 11g.
- 35. Fragment of socketed axe with stump of side loop, badly corroded. Not illustrated. Wt. 3g.
- Fragment of socketed axe pitted with corrosion with part of a moulding surviving and internal rib. Not illustrated. Wt. 7g.
- 37. Two joining fragments of socketed axe, bent and broken in antiquity, badly corroded. There is a row of three sub-circular indentations on the surviving face; owing to the poor condition of the fragments it is uncertain whether these are part of the casting, or the result of subsequent damage. Wt. 22g.
- 38. Fragment of axe socket bent and twisted in antiquity; corrosion damage particularly to surviving face. Wt. 28g.
- 39. Fragment of axe socket, very badly pitted and cracked with corrosion. Not illustrated. Wt. 10g.
- 40. Fragment of axe socket, very badly pitted and cracked with corrosion. Not illustrated. Wt. 4g.
- 41. Fragment of axe socket, with some heavy corrosion damage. Not illustrated. Wt. 8g.
- 42. Fragment of ? axe socket, extensively pitted with corrosion. Not illustrated. Wt. 4g.

- 43. Fragment of axe socket, extensively pitted and cracked with corrosion. Not illustrated. Wt. 3g.
- 44. Fragment of axe socket, extensively pitted and cracked with corrosion. Not illustrated. Wt. 5g.
- 45 Fragment of axe socket, extensively pitted and cracked with corrosion. Not illustrated. Wt. 2g.
- 46. Fragment of ? axe socket, extensively pitted and cracked with corrosion. Not illustrated. Wt. 4g.
- 47. Fragment of ? axe socket. Not illustrated. Wt. 3g.
- 48. Fragment of ? axe socket extensively cracked and pitted with corrosion. Not illustrated. Wt. 4g.
- 49. Small fragment of ? mouth moulding of socketed axe. Not illustrated. Wt. 1g.
- 50. Small fragment of ? axe socket. Not illustrated. Wt. 2g.
- 51. Small fragment of ? axe socket. Not illustrated. Wt. 2g.
- 52. Small fragment of ? axe socket extensively pitted with corrosion. Not illustrated. Wt. 3g.
- 53. Small fragment of ? axe socket pitted with corrosion. Not illustrated. Wt. 3g.
- 54. Small fragment of ? axe socket extensively pitted with corrosion. Not illustrated. Wt. 2g.
- 55. Small fragment of ? axe socket extensively pitted with corrosion. Not illustrated. Wt. 2g.
- 56. Small fragment of ? axe socket extensively pitted with corrosion. Not illustrated. Wt. 2g.
- 57. Small fragment of ? axe socket extensively pitted with corrosion. Not illustrated. Wt. 3g.
- 58. Small fragment of ? axe socket extensively pitted with corrosion. Not illustrated. Wt. 1g.
- Small fragment of ? axe socket exterior extensively pitted with corrosion. Not illustrated. Wt. 1g.
- 60. Small fragment of ? axe socket exterior extensively pitted and cracked with corrosion. Not illustrated. Wt. 1g.
- 61. Small fragment of ? axe socket surfaces extensively pitted with corrosion. Not illustrated. Wt. 3g.
- 62. Very small fragment possibly from socket of axe. Not illustrated. Wt < 1g.
- +63. Socketed Axe. Mouth moulding with second moulding below it from which springs a side loop. Sub-rectangular socket sections, with internal ribs of Ehrenberg (1981) type 5a. Sides fairly straight, curving gently at the blade end to a slightly expanded cutting edge. All surfaces pitted and scarred with corrosion, entire cutting edge missing, traces of casting flash survive, there is a single pellet moulding surviving on one face. Needham (1980) class A2. Schmidt and Burgess (1981) ?Variant Bilton. Wt. 168g.
- +64. Socketed Axe. Prominent mouth moulding with second moulding below from which springs the remains of a side loop. Sub-rectangular socket section, with internal ribs of Ehrenberg (1981) type 5a. Sides slightly flared widening more rapidly towards the expanded cutting edge. All

LATE BRONZE HOARD FROM VANGE



Fig.4 Vange hoard. Miscellaneous items, spear and sword fragments

surfaces pitted and scarred with corrosion. Traces of casting flash survive. The less damaged face has three quite slight ribs descending from the lower mouth moulding. Needham (1986) class B. Wt. 198g.

- *65. Socketed Axe. Mouth moulding with second moulding below from which springs a side loop. Ribbed wing ornament on both faces springing from lower moulding. Sub-rectangular socket section's internal rib of Ehrenburg (1981) type 5b. Sides gently flared to slightly expanded blade. Surfaces pitted with corrosion; lumpy corrosion also badly affects one side and one face. Where patina is preserved, on the other face, slight dimpling resulting from hammering can be discerned around the blade bevel. Needham (1986) class A. Wt. 183g.
- *66. Socketed Axe. Blade and lower body only, sub rectangular socket sections. Sides quite straight, flaring towards expanded cutting edge. All surfaces affected by lumpy corrosion. Casting flash and stump of side loop survive. Needham (1986) class A. Wt. 135g.
- *67. Socketed Axe. Blade and lower body only, out-rectangular socket sections. Sides flare to expanded cutting edge. One face very badly affected by lumpy corrosion, patina on other faces shows slight traces of hammering. Casting flash has been thoroughly and smoothly removed. ? Needham (1986) class A. Wt. 99g.
- *68. Socketed Axe. Blade and lower body only. Badly affected by lumpy erosion, one face preserves large areas of smooth patina, expanded cutting edge with very slight blade bevel. ?Needham (1986) class A. Wt. 56g.
- *69. Socketed Axe. Mouth only. Prominent rather bulbous mouth moulding, with second, thin moulding immediately below from which springs the stump of a side loop. Pairs of very slight pellet mouldings survive on both faces. Needham (1986) class A2. Wt. 57g.
- 70. Faceted axe, three non-joining fragments probably from the same axe. Flat topped trumpet shaped mouth moulding, lower part of side loop survives. Blade and faces badly damaged by corrosion. Needham (1986) Class D1. Schmidt and Burgess (1981) Type Meldreth. Wt. 83g.
- Winged adze, butt missing, wings on one face almost completely removed, stump of loop survives. Heavily pitted with corrosion. Wt. 80g.
- 72. Head of socketed hammer, each side has a curved shoulder where the socket narrows, upper part of socket missing. Working face is heavily worn on one side, with some corrosion damage. Both faces are bent out and cracked, at the point where the upper part of the socket has been broken off in antiquity. There is heavy corrosion damage to one face and one side.Wt. 69g.

- 73. Fragment of square sectioned ? hammer socket. Interior and exterior of one face heavily pitted with corrosion. Wt. 14g.
- 74. Two joining fragments of socketed gouge, blade end broken off probably in antiquity, heavily cracked and pitted with corrosion. Wt. 8g.
- 75. Fragment of curved socket, possibly from socketed gouge, heavily cracked and pitted with corrosion. Wt. 8g.
- 76. Fragment of mouth of curved socket, with slight moulding, possibly from gouge. Wt. 3g.
- 77, Two joining fragments of socketed gouge, heavily
- 78 pitted with corrosion. Wt. 10g.
- *79. Socketed gouge. Slender with slightly expanded, probably plain circular mouth although the extent of corrosion makes this uncertain. Extensive corrosion damage, upper part of socket filled with corrosion. This form of gouge is the most common form frequently occurring in Ewart Park phase hoards (Needham 1986; Sealey 1987) Wt. 44g.
- 80. Fragment of curved socket possibly from gouge. Not illustrated. Wt. 3g.
- Fragment of socket heavily pitted with corrosion. Not illustrated. Wt. 4g.
- Fragment of socket heavily pitted with corrosion. Not illustrated. Wt. 4g.
- Fragment of socket heavily pitted with corrosion. Not illustrated. Wt. 3g.
- *84. Curved backed fragment, one edge completely missing surface survives on one side only, other side deeply pitted with corrosion ? Sickle. Wt. 7g.
- *85. Sickle. Fragment from the tip of a sickle some corrosion damage traces of the edge level survive at the tip and cutting edge. There is a prominent rounded ridge towards the back of the blade which is snapped off immediately above the ridge. Wt. 17g.
- *86. Tubular object much cracked and pitted with corrosion. Circular/oval cross section, casting seems intended to be hollow but is filled with grey, hard- packed substance which can be scratched with finger nail producing very fine dust. ? Loop of bugle shaped object. Wt. 9g.
- *87. Spearhead. Fragment of blade with prominent round midrib, badly affected by corrosion. Wt. 9g.
- *88. Spearhead. Tip of spearhead bent in antiquity and with recent break, badly affected by corrosion. Round midrib defined by slight grooved lines. Wt. 49g.
- *89. Spearhead. Fragment of blade with round midrib, some corrosion damage, clear edge bevel. Wt. 9g.
- 90. Socket fragment from ? spear socket with single slight moulding below mouth, casting flash present, part of one peg hole survives. Heavily pitted with corrosion, particularly on interior. Wt. 8g.

LATE BRONZE HOARD FROM VANGE



Fig. 5 Vange hoard. Sword fragments, knife fragments and casting waste

- 91. Fragment of spear socket part of one peg-hole survives, surfaces deeply pitted and cracked with corrosion. Wt. 10g.
- 92. Fragment of circular sectioned ? spear socket. Wt. 3g.
- 93. Fragment of circular sectioned ? spear socket. Not illustrated. Wt. 2g.
- 94. Fragment of circular sectioned ? spear socket exterior heavily pitted and cracked with corrosion. Not illustrated. Wt. 2g.
- 95. Sword blade fragment. Full width of blade only survives in one small area here there is a prominent rounded midrib and slight edge bevels

survive. The blade is double edged; the back edge although heavily corroded appears to be slightly curved, giving a sickle like appearance, but this seems entirely the result of corrosion. The other edge is mostly corroded back to the centre of the blade. The tip is missing and the end is rounded by corrosion. The whole object is heavily pitted with corrosion. Needham (1986) Class A. Wt. 60g.

96. Sword blade fragment. Most of the cutting edges missing, heavily pitted and damaged by corrosion. The broad flat mid-rib appears to slope evenly to the edge bevels. The blade has

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Fig. 6 Vange hoard. Copper ingot fragments

been bent at the top in antiquity. Ewart Park type, Needham (1986) Class A. Wt. 97g.

97. Sword blade fragment. Broad flat midrib, cutting edges missing, heavily damaged by corrosion only a small part of original surface survives on one face. ? Ewart Park type, Needham (1986) Class A. Wt. 14g.

Sword blade fragment. Some corrosion damage to both faces, however large areas of original surface survive. Broad flat midrib separate from the edge levels by shallow hollows. Linear striations present on both faces particularly near the edge bevels. Ewart Park Type, Needham (1986) Class A. Wt. 53g.

LATE BRONZE HOARD FROM VANGE



Fig.7 Vange hoard. Copper ingot fragments

- 99. Sword blade fragment, very heavily corroded both cutting edge missing, tip broken off and rounded by corrosion, broad flat midrib. Wt. 48g.
- 100. Sword blade fragment, so heavily pitted with corrosion that the blade edges and all surface detail has been removed. Not illustrated. Wt. 17g.
- *101. ? Sword. Blade fragment with rounded midrib very badly affected by lumpy corrosion bent in antiquity. ? Ewart Park type Needham (1986) Class A. Wt. 37g.
- *102. Sword. Blade fragment with broad rounded midrib, much corrosion damages, one edge completely destroyed, bent in antiquity. One blade face has area of smooth patina showing edge level separated from mid-rib by slight hollowing. Ewart Park type. Needham (1986) Class A. Wt. 43g.
- *103. Sword. Blade fragment, broad rounded midrib, much affected by lumpy corrosion. Ewart Park type Needham (1986) Class A. Wt. 30g.
- 104. Sword hilt fragment. One side missing the other side concave, curving to a sharp shoulder above deep square ricasso notch. The ricassi are backed by mouldings. A single groove curves from either shoulder to meet and flank the midrib. One complete rivet hole survives with part of another on the damaged side. A notch at the top of the fragment may be the bottom of a slot in the hilt, both sides pitted by corrosion. Carp's Tongue type. Needham (1986) Class B. The midrib appears to be of Needham's (1986) variant 1, rounded and emphasised by steep sides rising from the flanking grooves. Wt. 102g.
- 105. Sword blade fragment. Both cutting edges missing, surfaces deeply pitted with corrosion, smoothly curved midrib with part of flanking groove surviving. Carp's Tongue type. Needham (1986) Class B, blade variant 2. Wt. 21g.
- *106. Sword blade fragment. Both cutting edges missing much affected by lumpy corrosion. Broad rounded midrib defined by two grooved lines. Carp's Tongue sword Needham (1986) class C, blade variant 2. Wt. 32g.
- *107. Sword. Fragment of hilt of socketed sword, blade snapped off at junction with hilt, one side and much of socket badly affected by corrosion, part of a single rivet hole survives. Wt. 25g.
- *108. Knife. Fragment of socket and blade from Thorndon type knife, very badly affected by corrosion. Part of a rivet hole survives on one side of the socket. Wt. 32g.
- *109. Blade. Fragment of blade with recent break, all form and detail removed by corrosion. Width and thinness of the blade would suggest a knife rather than a sword blade. Not illustrated. Wt. 10g.
- 110. Unidentified fragment, extensively damaged by corrosion, one face ? flat the other concave there is an edge bevel on one side, part of a hole survives. Wt. 5g.

- 111. Unidentified fragment, extensive corrosion damage no edges survive, single hole Wt. 2g.
- 112. Unidentified fragment, no original edges or surfaces survive, cross section flat tapering to rounded edges and blunted point. May be a heavily corroded sword blade fragment. Not illustrated. Wt. 17g.
- 113. Casting jet with conical reservoir and single feeder. The feeder appears to have a bifurcated end, however, the curved indentation between the two ends appears to be damage, rather than a direct result of the casting. There is a large casting flash around two sides of the feeder, presumably the result of seepage of metal into a gap between gate and mould. The flash along the long side of the feeder has been bent inward. Sample point not indicated as it is on reverse of view shown. Wt. 37g.
- 114. Casting jet with conical reservoir and stumps of two feeders and scar where third (? 115) has broken off. Wt. 58g.
- 115. Small conical object possibly the stump of a feeder, rather like those on 114, broken from a casting jet. Not illustrated. Wt. 1g.
- 116. Small rod of triangular section with concave sides, both ends are recent breaks. Probably some kind of sprue, flash or other trimmed off casting waste. Wt. 2g.
- 117. Small rod of triangular section with concave sides, and one flat and the other end is a recent break. Probably some kind of sprue, flash or other trimmed off casting waste, perhaps same as 116 but does not join. Wt. 1g.
- 118. Small rod of triangular section with two concave sides the other flat. One end is a recent break. Probably some kind of sprue, flash or other trimmed off casting waste, similar to, but more substantial than, 116 and 117. Wt. 3g.
- 119. Casting waste, thin curved irregular fragment. Not illustrated. Wt. 2g.
- Casting waste, thin sub-circular, curved section one surface has irregular concentric grooves.. Not illustrated. Wt. 1g.
- 121. Large piece from centre of ingot; columnar growth from base; horizontal shrinkage cavities between growth from top and bottom surfaces; sample cut from base (towards edge of ingot). Wt. 593g.
- 122. Section from edge towards centre of shallow ingot; ? some columnar growth from base; top surface porous; horizontal shrinkage cavities below limited growth from surface; sample cut from base towards centre of ingot. Wt. 272g.
- 123. Similar to 122 but ingot has steep sides with thickness maintained across whole section; more numerous cavities; sample from top, near outer side of ingot. Wt. 256g.
- 124. Section from outer part, including edge, of definitely plano-convex ingot; columnar growth

from base; horizontal shrinkage cavities, in places very close to top surface; sample taken from base, centre. Wt. 155g.

- 125. Shallow, flat ingot (cf. 2, 3); vertical edges; welldefined meniscus; columnar growth from base; shrinkage cavities near top; some enlarge downwards; sample from base, centre. Wt. 206g.
- 126. Flat, shallow circular plano-convex ingot; large section of edge survives; surface has partially flowed back over setting surface from edge of ingot; very large shrinkage cavities, enlarged downwards in part; some columnar growth but by no means clear; sample from top about 25 mm from edge. Wt. 452g.
- 127. Section from outer part of plano-convex ingot (but not including edge); columnar growth from base and top; growth down from top surface rather greater than in other examples; welldefined, very flat shrinkage cavities; ? some marks of hot chiselling and hammering; sample from base near outer part. Wt. 457g.
- 128. ? Probable section from edge to near centre of shallow ingot with marked meniscus; edges sloped, making clear angle with base; columnar growth from base; horizontal shrinkage cavities very near surface; some edges possibly distorted by chiselling; sample from base about 20 mm in from edge. Wt. 357g.
- 129. Section including edge of plano-convex ingot; heavily gassed with many large and irregular cavities; no clear pattern to growth; sample from base about 20 mm in from edge. Wt. 412g.
- 130. Sector of small, very shallow plano-convex ingot; porous surface and smooth base; a few small cavities; no clear growth pattern; sample taken from outer edge. Wt. 106g.
- 131. Section from outer part of plano-convex ingot, not including edge; columnar growth from base; some shrinkage cavities close to top; rough surface. Wt. 413g.
- 132. Piece of shallow plano-convex ingot, including edge; meniscus; many cavities; no clear growth pattern; sample from top about 25 mm from edge. Not illustrated. Wt. 34g.
- 133. Piece from outer part of shallow plano-convex ingot; columnar growth sloped to edge; some cavities; sample from a little below top surface, towards centre. Not illustrated. Wt. 74g
- 134. Section from centre of moderately thick ingot; clear columnar growth; horizontal shrinkage with one large cavity, otherwise dense; sample from base. Not illustrated. Wt. 98g
- Section from shallow ingot/cake; growth pattern unclear; very porous (and dirty?); sample from one surface. Wt. 73g.
- 136. Small piece from edge of shallow plano-convex ingot; many cavities; some columnar growth; sample from top surface near edge. Not illustrated. Wt. 20g

- 137. Piece from outer part of ingot of moderate thickness; clear columnar growth from both surfaces; shrinkage line at about 1/3 thickness from top; sample from top towards centre. Not illustrated. Wt. 155g.
- Small section towards centre of shallow ingot; columnar growth but orientation not clear; dense; sample from one surface. Not illustrated. Wt. 17g.
- 139. Section towards edge of plano-convex ingot; clear columnar growth; few cavities; no clear shrinkage horizon or joint line; sample from bottom towards centre. Not illustrated.
- 140. Section from edge of ingot with many large cavities; meniscus; no clear growth pattern; sample from near top surface towards the edge. Not illustrated. Wt. 26g.
- 141. Section from edge of shallow ingot with vertical side; columnar growth; large horizontal shrinkage cavity; sample from top near edge. Not illustrated. Wt. 53g.
- 142. Section near edge of shallow ingot; cavities; no clear growth pattern; shrinkage horizon close to upper surface; sample from mid-thickness towards edge. Not illustrated. Wt. 26g.
- Section from edge of shallow ingot; rough columnar growth; shrinkage horizon close to top surface; sample from edge. Not illustrated. Wt. 39g.
- 144. Section from centre of shallow ingot; growth pattern uncertain; sample from one surface. Not illustrated. Wt. 32g.
- 145. Fragment of shallow ingot; sample from one surface. Not illustrated. Wt. 4g.
- 146. Section from centre of shallow/medium thickness ingot; columnar growth; shrinkage horizon close to top surface; equiaxed growth from top ?; sample from top. Not illustrated. Wt. 34g.
- 147. Sections from edge of shallow ingot; shrinkage horizon close to top surface sample from top thickness towards centre. Not illustrated.Wt. 20g.
- 148. Section from centre of shallow ingot; smooth surface; some horizontal shrinkage below top surface but growth is not clearly columnar; sample from base. Not illustrated. Wt. 122g.
- 149. Section from near edge towards centre of shallow ingot; some irregular cavities; columnar growth, especially close to edge where it is directed from edge; sample taken from top near edge. Not illustrated. Wt. 120g.
- 150. Section from edge of thick plano-convex ingot; many cavities, especially in lower surface close to edge (wet mould?); meniscus; rough surface; clear columnar growth; sample from lower surface, near edge. Wt. 150g.
- 151. Section from outer part of plano-convex ingot of moderate thickness; columnar growth; clear horizontal section below shallow growth from top surface; large cavities close to edge; sample from base towards edge. Wt. 181g.



Fig. 8 Vange hoard. Copper ingot fragments

- 152. Section from near? centre of plano-convex ingot; growth pattern unclear but it is possible that growth from upper and lower surfaces is nearly equal; ingot dense with few if any large cavities; sample from base. Wt. 164g.
- 153. Probably small piece of very shallow ingot with meniscus on upper surface, columnar growth and very prominent horizontal shrinkage; sample from top surface towards centre. Not illustrated. Wt. 23g.
- Section from edge of shallow plano-convex ingot; many cavities; growth pattern not clear; sample from top towards centre. Not illustrated. Wt. 75g.
- Section from shallow ingot; location uncertain; cavities; some columnar growth pattern; sample from ? top towards centre. Not illustrated. Wt. 148g.
- 156. Small section from edge of shallow plano-convex ingot; rough lower surface; columnar growth; cavities; horizontal shrinkage at about 1/3 thickness from top; sample from edge. Not illustrated. Wt. 61g.
- 157. Section from edge of plano-convex ingot; meniscus; horizontal shrinkage; blistered surface; sample from mid-thickness towards edge (cut from horizontal shrinkage cavity). Wt. 208g.
- 158. Section from near edge of plano-convex ingot of medium thickness; dense; clear columnar growth

but no clear horizontal shrinkage; columnar growth sloped towards edge; sample from top about 25 mm from edge. Not illustrated. Wt. 124g.

- 159. Section from edge of shallow plano-convex ingot; meniscus; large cavities; columnar growth sloped to edge; horizontal shrinkage; sample from edge. Not illustrated. Wt. 125g.
- 160. Piece of shallow ingot with parallel top and bottom surfaces; some columnar growth visible; no horizontal shrinkage; small cavities Not illustrated. Wt. 45g.
- 161. Small elliptical plano-convex cake of bronze with smooth surface with meniscus; probably set in bottom of crucible; parts broken (?hammered) away; sample from edge. Wt. 200g
- 162. Very small shallow cake of ?copper; rough bottom surface; top smooth, hammered with some cracking; sample from edge. Wt. 54g
- Piece from plano-convex ingot, including edge; many cavities and no clear growth pattern; sample from edge. Not illustrated. Wt. 58g.
- 164. Irregular piece of bronze; possible piece of casting jet or partially remelted scrap; sample from one corner. Wt. 40g.
- 165. Possible edge of small, shallow ingot; dense; smooth upper and lower surfaces (set in crucible?); sample from one corner. Wt. 32g.

- 166. Section from edge of plano-convex ingot; many large cavities; columnar growth directed from edge rather than base?; very shallow growth from surface with line of cavities below; surface shows small blisters; sample from top towards centre. Not illustrated. Wt. 114g.
- 167. Large section from edge of shallow plano-convex ingot with meniscus at edge; columnar growth from base; some very large cavities; sample from edge. Wt. 211g.
- 168. Small piece from edge of small copper cake; smooth surface with meniscus; possibly set in crucible; sample from edge. Wt. 13g.
- 169. Section from outer part of plano-convex ingot but not including edge; large cavities; some columnar growth; rough surface; sample from outer part at mid-thickness. Not illustrated. Wt. 107g.
- 170. Section of shallow to medium thickness planoconvex ingot, not including edge; well defined columnar growth from both surfaces; horizontal shrinkage cavities; surface at one edge deeply curved; this does not appear to be the meniscus at the edge of the ingot but may relate to the breaking up of the ingot; sample from top. Wt. 151g.
- 171. Section of plano-convex ingot with vortex close to edge; columnar growth; clear horizontal shrinkage cavities below surface; also other very large, irregular cavities; sample from base towards centre. Wt. 231g.
- 172. Section of plano-convex ingot including edge; very clear columnar growth from base; shallow growth from surface; very clear horizontal shrinkage cavities; blistered top surface, rough base; sample from top about 50 mm from edge. Wt. 393g.
- 173. Section including edge of sub-plano-convex ingot with steeply sloped side; good columnar growth; rather irregular cavities; no clear horizontal shrinkage; blistered and crack surface, one crack running deep into ingot; sample taken from middle. Wt. 151g.
- Section including edge of plano convex ingot, horizontal shrinkage cavities, other large cavities. Some blistering of top surface rough base. Not sampled or illustrated. Wt. 151g.
- + Object originally at Southend Museum
- * Object from Swan Mead School
- On the illustrations indicates the metrological sample

Discussion

The Vange hoard appears to be a typical example of the hoards of the Ewart Park phase in south-east England and is comparable to many such hoards from around the Thames Estuary. The range of objects present in the Vange hoard includes objects of wide distribution and typical of the Ewart Park phase (Needham 1986)

together with south-eastern axes, southern English ribbed axes and objects from the loosely defined Carp's Tongue Complex (Needham 1986). A number of types amongst those listed by Burgess (1968 appendix V) as typical of Carp's Tongue Complex hoards are present in the Vange Hoard. The sickle fragments (Nos 84 and 85) are additional to those listed by O'Connor (1980, 177, List 136 map 52). Of particular interest is the Winged Adze (No. 71); only three other such objects are recorded from this country (O'Connor 1980). Two are from separate hoards, found in Shoebury and one is from North Kent (O'Connor 1980, 160, List 121, Map 47); the Vange example with its broad squat profile and side loop is probably of French origin (O'Connor 1980, 160), and complements the tight cluster of Winged Adze findspots around the Thames Estuary. This clustering around the Thames Estuary is further emphasised by the fragment of socketed sword. These items, more common than winged adzes, have a wide distribution in Britain with a clear eastern bias (O'Connor 1980, list 160). The Vange piece joins examples from Leigh, Essex, Dartford (Brailsford 1947) and Minnis Bay (Worsfold 1943) both in Kent, forming a concentration on both sides of the estuary. The presence of large quantities of copper ingots is characteristic of many of the local hoards (Buckley et al. 1986, Brown et al. forthcoming) and typical of many Ewart Park phase hoards in south east England. However, there is an interesting range of variation, with some hoards entirely or almost entirely composed of ingot fragments, other hoards, like Vange, have numerous ingot fragments and many other items. There are also hoards with a few ingot fragments and hoards with none.

The catalogue presented above is far longer than the list of material in the original account of the discovery, a discrepancy noted by Colchester Museum in 1977 (above). It seems likely that the original account did not present a complete list and there is certainly some confusion in identification e.g. gouges thought to be spearheads, no mention of the adze etc. In addition it is likely that fragmentation of objects due to corrosion since 1953 has increased the number of items. More worrying is the spearhead which the original list described as 'Broad type with two holes (ornamental only) and engraved ornamental lines'. Taken at face value, this sounds like a description of a large basal looped spearhead, and nothing like a basal looped spear appears to be present in the Vange Hoard. Such an object would pre-date the Vange hoard and none is known from the other Ewart Park phase hoards of south-east Essex, although this need not preclude the presence of such a piece, as earlier objects sometimes occur in later hoards. However, this problem may be illusory, given the confusion of the original list with even gouges regarded as possibly spearheads. An object like No. 88 could easily be described as 'broad' and it does have engraved ornament, albeit just a single line. If, say object No. 91 had originally been part of the same spearhead the peg-holes might have been thought

ornamental. It is interesting that the original description speaks of 'holes' rather than loops. Finally if an object as relatively unusual as a basal looped spearhead had actually been present, it seems likely that the more archaeologically informed description of 27 October 1953 would have specifically mentioned it. This account does note the presence of two types of spearhead but this may be accounted for by the difference between No. 88, from a spearhead with a fairly tall flame shaped blade and No. 89 from a rather more stumpy form.

The account of the discovery of the Vange hoard states that the objects 'lay in one compact group'. This sounds similar to the manner in which the recently recovered Great Wasketts II hoard was deposited (Abbott pers. comm.). The careful observation of the disposition of the objects during recovery of the Great Wasketts II hoard (about 3 km north of Vange), may indicate that it had been packed into a bag or other perishable container. It seems likely that the Vange hoard had also been buried in a bag. The presence of casting jets, small fragments of sprue and runners indicate a fairly direct connection between the Vange hoard and production of metal objects. The reason behind the deposition of bronzes either as single objects or as hoards is clearly complex (e.g. Needham 1990; Bradley 1990). At one extreme, we might see deposition as serving ritual or symbolic purposes, at another utilitarian ends. That neat distinctions between the functional and the ritual do not apply in prehistory is almost a platitude, but one surprisingly often ignored. The Vange hoard clearly relates to the practice of metalworking, but, in common with other hoards, place of deposition, choice of object included, arrangement of the objects and many other factors, may have carried symbolic significance. The striking manner in which the ingot fragments and other items of the recently recovered hoard from Withersfield, Suffolk (Anon 1996) were arranged in the ground is a graphic reminder of this possibility. Unfortunately, information regarding the original disposition of the Vange hoard objects is not available. However, comments made by the finder of Gt Wasketts II indicate that the objects of that hoard were arranged with some formality.

Both the Vange and Great Wasketts II hoards were recovered from heavy London clay subsoils and emphasise once again the range of evidence for Late Bronze Age exploitation of claylands in Essex (Brown 1988a; 1996). It is instructive to consider this further, whilst late Bronze Age settlement in the Boulder Clay areas is now quite well understood, occupation on the London Clay is only tentatively suggested (Brown 1996, 32), and the London Clay is commonly regarded as a barrier to prehistoric settlement and communication (e.g. Sealey 1996, 50). In fact, the range of metal finds from the Basildon area; single finds (SMR 7063), small hoards (Great Wasketts I) and large hoards (Vange, Gt Wasketts II), and the kinds of objects they contain, are comparable to those from the gravel and brickearth covered terraces further east (Couchman 1980; Wymer and Brown 1995). Furthermore, as the discussion above indicates, they are an integral part of a general distribution around the Thames estuary. North of Basildon, also on London Clay, the concentration of Late Bronze Age finds around Wickford, which includes actual settlement evidence, is considerable (Couchman 1980, Brown 1986). This evidence indicates that the London Clay Zone between the Thames marshes and the upper Crouch basin around Wickford was occupied in much the same way as the Southend peninsula to the east.

However, it is true that the findspots in this London Clay area are not so numerous as those from the terraces to the east. A number of factors may explain this; there is a long history of archaeological recording in the Southend area (Wymer and Brown 1995), but no similar tradition exists in the Basildon area. The nature of development around Basildon has not been conducive to archaeological discovery. The widespread inter-war plotland development was piecemeal, largely lacking infrastructure and involved little large-scale earth movement. The creation of Basildon New Town in the 1950s and early 60s took place before effective mechanisms for archaeological recording prior to development existed. When an archaeological service was established as part of the County Council in the mid 1970s, the Sites and Monuments Record, the core tool for all its functions (Gilman 1996) was initially created from existing records, the Basildon area thus appeared as largely devoid of prehistoric finds. This was compounded by the fact that London Clay does not produce good cropmarks, and one of the primary means of discovering new archaeological sites has been aerial photography. The absence of evidence could be neatly explained by the geographically determinist view that London Clay was not conducive to prehistoric settlement, supported by the extraordinarily persistent notion that bronzes can be regarded as 'isolated' or stray finds somehow unconnected to settlement patterns (Bradley 1996, 44). Thus a self perpetuating cycle existed; the absence of finds demonstrated that the London Clay was largely unoccupied during the Bronze Age, and since the London Clay was largely unoccupied there would be little point in seeking further sites or finds. Having broken away from this cycle, the challenge for the future must be to seek ways to explore the extent and character of prehistoric settlement in the area.

The extraordinary history of the Vange hoard demonstrates the difficulties in dealing with such finds and the importance of an adequate record made soon after discovery. The accompanying chart (Fig.9) shows the number of recorded hoards in Essex by decade, apart from the first hundred years when finds were so few as to make such plotting pointless. Prior to 1840 finds were very few, these finds and those of the 1840s are probably linked to the antiquarian interests of particular individuals. When these people moved, died, or changed their interests, recording stopped, hence the dearth of finds in the 1850s and 1860s. From the late



RECOVERY OF BRONZE AGE HOARDS IN ESSEX

Fig. 9 Recovery of Bronze Age Hoards in Essex

19th century through to the 2nd World War, growth in mineral extraction and building work, coupled with a rather more organised recording of finds based largely (but not entirely) at Colchester and Southend Museums, led to a fairly consistent pattern of discovery and recording. The sudden increase in hoard finds in the 1940s reflects discoveries made during wartime airfield construction etc., and reconstruction/development in the immediate post-war period. The decline thereafter is probably the result of the almost complete mechanisation of mineral extraction and construction work, which made recognition of hoards and other finds far less likely. The almost exponential growth through the 1970s, 1980s and early 1990s is the result of metal detector use (e.g. the finds reported on by H. Major in a shorter note in this volume, also from Vange). About one third of all the finds of Bronze Age hoards made in the last 250 years have occurred in less than 25 years since 1970, and more hoards have been recorded in the first half of the 1990s than in any previous decade; furthermore, this only relates to recorded finds; many go unrecorded. It is salutary to recall that, of all the hoards noted in Fig.9 prior to 1970, only those housed in museums survive for study, those in private ownership can no longer be traced. Acquisition of this material by the relevant museum is the best means of

ensuring survival. Given that many recent finds are retained in private possession, the importance of making a full record when such finds are reported is further emphasised (in effect 'preservation by record'). The numerous hoards and single items published in this journal over the last fifteen years or so are a tribute to the efforts made to achieve this. However, the burden on the resources of the various archaeological bodies within the county is very great and likely to grow.

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Prehistoric and Romano-British Activity at the William Edwards School, Stifford Clay Road, Grays; excavations 1997

by N. J. Lavender

with contributions by N. Brown, R. Tyrrell, T.S. Martin, H. Martingell, P. McMichael and H. Walker

Archaeological investigation to the east of the Assembly Hall at the William Edwards School identified a number of features and finds indicating prehistoric and Romano-British activity. The features included ditches, pits, postholes and a possible well. Residual flint artefacts including Mesolithic microliths and a Neolithic arrowhead were recovered. A single medieval feature was identified.

Introduction

The proposed construction of a new assembly hall, six classrooms and three garages at the William Edwards School, Grays threatened an area of known Bronze Age, Iron Age and Romano-British archaeological activity. Because of this an archaeological evaluation was recommended by Essex County Council Planning Department's Archaeological Advisory Group and conducted during March 1997 by Philip Clarke of the Essex County Council Field Archaeology Group.

The evaluation located several features of prehistoric and Roman date. It was therefore decided that the whole of the development area should be investigated. The northern part of this area, covered in tarmac with sheds and containers, would be subject to a watching brief during construction work. The second stage of work, excavation of the area under grass and flower beds, took place during April 1997 under the directorship of the author.

The site and its environs

The site lies on relatively flat land at the eastern edge of the school property, at a height of 22m OD (Fig. 1). Approximately 140m to the south lies a shallow dry valley, running from east to west towards a large, apparently natural, pond surrounding Primrose Island. To the north, beyond the A13 cutting, the ground falls away gradually towards the Mar Dyke.

The natural geology consists of Upper Chalk, overlain by Woolwich Beds (clays, sands and gravels). In the immediate area of the site the sand is relatively coarse with common pebbles.

The William Edwards School was constructed on the site of a Middle Iron Age to Romano-British farmstead (Essex Sites and Monuments Record (ESMR) 5167 - 5170). The site was identified from aerial photographs (Fig. 2) and during building work in 1960-62, rescue

excavations were conducted (Bannister 1962; Turner 1988; Godfrey 1995). The main ditches of the settlement were examined, along with three circular structures. The site appears to have gone out of use around 400AD, with no evidence of later activity.

During the 1970s, a large part of a Roman storage jar was recovered from the silts of the Primrose Island pond. Turner (1988) comments that the condition of this vessel suggests that it had not been disturbed since its deposition, and that the pond was probably extant in Roman times.

In addition to the school site, there is a great deal of cropmark information for the area adjacent to that of the farmstead. A possible ring ditch and linear features (ESMR 14639) lie to the south and south-west of the development area. To the east is a Scheduled Ancient Monument (SAM 174) comprising cropmarks indicative of settlement, field systems and burials of prehistoric, Romano-British, Saxon and medieval date (ESMR 5237 - 5346).

The photograph showing the cropmarks upon which the plot was based has not been traced in the collections of the ESMR, the Royal Commission on the Historic Monuments of England or Cambridge University Committee for Aerial Photography. The photograph was probably, therefore, taken by a local flyer and never accessioned to an established collection (Strachan 1997).

Evaluation

A single trench, 20m long and 1.5m wide, was excavated obliquely across the development area, from north-west to south-east. Topsoil was removed using a small mechanical excavator with a toothless bucket. The exposed surface was then cleaned by hand and all features sampled and recorded.

A layer of dark material (23) below the topsoil appears to have been a dumped deposit of modern date, containing modern concrete, tarmac and a fragment of Roman tile. This material could be discerned as lying in a square-sided cut running north-south across the area and is almost certainly Bannister's trench. There was no indication that any features exposed by Bannister had been excavated, but several features had been damaged and apparently not recognised. In particular, features F5 and F13 (below) had been severely truncated. The east-



Fig. 1 William Edwards School, Grays. General site location © Crown copyright 87584M.



Fig. 2 William Edwards School, Grays. Position of excavation relative to school building and cropmarks

west ditch identified by Bannister was almost certainly one of these two gullies, but there is no evidence to indicate which.

Few of the features identified in the evaluation trench could be dated with any confidence. A pit (F1) towards the north-western end of the trench, however, produced a large quantity of Late Bronze Age pottery. This feature was roughly circular, c.1m in diameter, 0.44m deep and slightly irregular in profile. A fragment of saddle quern and a possible quern rubber were also recovered from its fills.

Two gullies crossed the evaluation trench to the south of F1. The more northerly, F13, contained sparse Late Bronze Age or Early Iron Age pottery. Its upper fills had been truncated by Bannister's trench. F5, 3.5m to the south had been similarly damaged. No pottery was recovered from its fill, but during the subsequent excavation (F115, below) an early Roman date was obtained for this feature

At the south-eastern end of the trench a gully or small ditch (F18) was recorded on a north-south alignment. It had a broad V-shaped profile, 0.73m wide at the top, and a narrow, flat base. A few sherds of possibly Early Iron Age pottery came from this feature.

A small pit (F6) cut by F13, 0.45m in diameter, and a stakehole (F8) also lay within the evaluation trench. Neither feature produced any finds. Two further linear features (F20 and F22) on a north-south alignment, also crossed the trench. The relationship between these ditches was obscured by Bannister's trench (which had failed to recognise them), but was identified during the later excavation.

Excavation

Prehistoric features

One of the earliest features on the site was probably the large pit (F78) in the south-western corner. This pit had a diameter of between 2 and 2.50m and was around 1.20m deep. The sides were vertical, and there appears to have been a timber revetment. The rotted remains of three small stakes and stains suggestive of further timbers were recorded in the base of the feature. An orange gravel with abundant small stones (96), had a vertical inner edge, which would be consistent with being contained behind a wattle lining (Fig. 6.2). It seems possible that F78 was a well, although the exact positions of the surviving timbers (Fig. 5) are not entirely consistent with that of the uprights for a revetment. Furthermore, the fills of the feature show signs of shallow recutting. If F78 was a well, apparently it was not used as such throughout its life, but was probably backfilled and later reused as a pit. Finally, the entire feature was levelled by a layer of orange sand (79). The only artefact recovered from this feature was a large, undiagnostic flint flake from context 104.

No dating evidence was recovered from the fills of F78, but the levelling layer, 79, was cut by an oval pit



Fig. 3 William Edwards School, Grays. Plan of all archaeoligical features. The limits of the evaluation are shown by the limits of the dot and dashed area oriented north-west/south-east within the main excavation

(56). This shallow pit, 1.9m by 0.66m and 0.22m deep, contained c. 1700 g of burnt flint and 42 pieces of worked flint. No other finds came from this feature, but the lithics suggest a Bronze Age date. Thus the earlier feature, F78, must have been Bronze Age or earlier.

Several other features contained flint but no other artefacts, and two are certainly early on stratigraphic grounds. Ditch F53, the terminal of which was recorded towards the eastern limit of excavation, was 1m wide and 0.20m deep. The excavated segment contained only eight pieces of worked flint. Ditch F53 was cut by ditch



Fig. 4 William Edwards School, Grays. Plan of prehistoric features

F44, which curved slightly from the north-east to the west. It was 1.7m wide, 0.44m deep and produced 86 pieces of worked flint and 485 g of burnt flint. The worked flint from these features was very mixed, and the Mesolithic and Neolithic material is assumed to be residual because of the inclusion of Bronze Age pieces.

Feature F68, at the eastern edge of the excavation, appears to have been a pit. However, very little of this feature lay within the excavated area. Eleven pieces of worked flint, and an impressive c. 2.9 kg of burnt flint were recovered from what was possibly a very small part of this feature. The top of F68 was cut by F70, a shallow,



Fig. 5 William Edwards School, Grays. Plan of possible prehistoric well, F78

narrow gully on the same alignment as F18, the gully that had produced a few sherds of possibly Early Iron Age pottery during the evaluation. The edges of this gully were very hard to determine against the fill of F68, but it appeared to turn through a right angle towards the east.

Approximately 3.50m to the north of the corner of F18/70 lay the right-angled corner of gully F27 (segment 59). This feature ran northwards on the same north, south alignment as F18/70 for at least 11m before passing beyond the limit of excavation. These two gullies probably represent the western sides of a pair of rectangular enclosures most of which lie within the fields of Bloomfields Farm. The fills of F27 yielded 3 pieces of undiagnostic worked flint and no other

finds. Its size and orientation suggest that it may be contemporary with F18.

The relationship between gully F13 and pit F1 was unclear. As excavated, the gully seemed to curl around the south and west sides of the pit, apparently deliberately respecting it. This appears to be the result of truncation and root disturbance from a flower bed that overlay the site at this point. Projecting the edges up to ground level, it is clear that one feature would have cut the other. The pottery from pit F1 was clearly of Late Bronze Age date, whilst that from F13 was less diagnostic and may have been Early Iron Age. It seems probable, therefore, that the gully originally cut the upper fill of the pit.



Fig. 6 William Edwards School, Grays. Sections

The eastern terminal of gully F13 had been completely eradicated by the Roman ditches F20 and F22. Gully F53, was of suitable profile and size to be a continuation of the alignment.

A further feature, the large shallow pit F47, cut by Roman ditch F22, may also be prehistoric. It produced Bronze Age flintwork, but no other finds.

Roman features

The two north-south aligned Roman ditches recorded during the evaluation were excavated in four additional segments. The relationship between the two features was now clarified and F20 shown to be the earlier on both stratigraphic and ceramic evidence. F20 ran for 11m from the northern limit of excavation, before terminating in segment 75. Its eastern edge was truncated by F22, but it was probably between 1.3 and 1.5m wide and 0.25m deep. It was, however, rather irregular, with gentle unevenly sloping sides and a rounded base. Residual Early Iron Age pottery was recovered from its fill.

Ditch F22, which truncated the eastern edge of F20 along its whole recorded length, appears to have been an Antonine recutting or replacement of the earlier, probably Flavian, feature. It continued south beyond segment 71/75 up to the southern limit of the site. This later ditch was generally narrower than F20 (varying between 0.65m and 1.1m), deeper (0.35m) and with a sharper profile. In segment 45 the profile was a very sharp V-shape.

Further excavation of F5 (as F115) produced Roman pottery of later 1st- to early 2nd-century date. The gully was shown to extend roughly 6m west from F20, the relationship with which could not be established because of the truncation. It had a bowl-shaped profile c. 1.1m wide and 0.18m deep. There was no indication that it continued to the east of F22.

One further feature of confirmed Roman date, F114, lay at the south end of the trench. This comprised the terminal of a narrow ditch or gully on a north-south alignment. A narrow slot, probably for an electric cable, ran through it on the same axis. Early Roman pottery was recovered from both the feature and residually from the cable trench. The sides were steep, and the shape of the base destroyed by truncation from the cable trench. It was 0.68m wide and *c*. 0.25m deep. It is conceivable that this feature represents a continuation of F20 following a gap of 4m, although it is slightly offset to the west, and appears to be narrower.

F103, a small irregular pit to the south of F115, contained early Roman pottery. This feature was very heavily disturbed by animal burrows, and by root activity from the former flower bed.

Medieval Features

Only one feature, F65, a small posthole 0.5m in diameter and 0.12m deep, produced medieval pottery, suggesting a date in the mid 13th century.

Undated Features

A scatter of small pits and postholes produced no dating evidence. Few of these could be assigned dates on stratigraphic evidence. Only F76 is assumed to be pre-Roman on the grounds that it was heavily truncated on its eastern side by F21.

The excavated material

Prehistoric pottery N. Brown

A small quantity (165 sherds weighing 1.573kg) of pottery was recovered from the excavations. The pottery has been recorded using a system (details in archive) devised for prehistoric pottery in Essex (Brown 1988a, 263). The majority of the material (70% by sherd count and 74% by weight) derived from pit 1. The pottery from context 2 (pit 1) includes part of the lower walls and base of a small coarse jar, a large part of the walls of a coarse jar with heavy finger wiping on the exterior, part of a hook rim jar (Fig. 8.1), two rims, possibly from 'form A'(Brown 1988a and b) jars, (Fig. 8. 2,3) and a rim sherd of a fine bowl (Fig. 8.4). A Late Bronze Age, c. 9th century BC, date would be appropriate. Part of a small coarse bowl and a fineware sherd from context 3 are probably contemporary. An unstratified rim of an angular fineware bowl (Fig. 8.5) may be contemporary or rather later. A few sherds from contexts 14, 17 and 21 in a flint-and-sand-tempered fabric, might be somewhat later, perhaps Early Iron Age.

Catalogue of illustrated sherds

- 1. Hook rim jar, rough exterior, smoothed interior.
- 2. Rim of jar, concretion on exterior, cable pattern on top of rim.
- 3. Rim of jar.
- 4. Everted rim of bowl, smoother interior, concretion on exterior.
- 5. Rim and shoulder of carinated bowl, smoothed surfaces.

Late Iron Age and Roman pottery

T.S. Martin

Summary Excavation yielded 161 sherds (1,657 g) of Late Iron Age and Roman pottery from eleven contexts. A total of eight feature-fills contained material of this period, the bulk of which comprised ditches and gullies. These feature-fills accounted for 72.4% of all pottery by weight. The volume of pottery from the site is, however, not commensurate with intensive domestic activity. Although much of the pottery consisted of undiagnostic bodysherds, there was sufficient datable material to suggest a mainly pre-Flavian to Trajanic date-range for the period of occupation. Antonine pottery was present, but later Roman pottery was completely absent.

The pottery by context

The pottery was classified using the Chelmsford typology published Going (1987; 2-54) which is now standard for all Essex County Council sites. The analysis was concerned with identifying the variety of fabrics and forms, and providing dating evidence for feature-fills. All pottery was quantified by sherd count and weight by fabric. Quantification of forms was not thought worthwhile. The following ten fabrics were identified (numbers in bold after Going 1987):-

BSW	Misc. 'Black-surfaced' wares	-
CLB	Colchester buff ware	27
ESH	Early shell-tempered ware	50
GROG	Grog-tempered fabrics	53
GRS	Sandy grey ware	47
?NKG	?North Kent grey wares	32
RED	Misc. Oxidised red wares	21
STOR	Storage jar fabrics	44
CGSW	Central Gaulish samian	60
WCS	Misc. white- or cream-slipped sandy red wares	15



Fig. 7 William Edwards School, Grays. Plan of Roman, medieval and undated features

The dating evidence

Apart from context 116 (the top fill of gully F115), no other context produced anything like a large- or medium-sized assemblage; consequently, the dating of many of the features is not firmly established. However, several feature-fills did contain some diagnostic sherds which provide a reasonable indication of dating. Having said this, only two features, gully F115 and F103, are dated by vessel form out of a total of seven. A further feature

contained residual Roman pottery in association with later material. There was also a marked absence of residual Prehistoric pottery in contexts with Late Iron Age and early Roman material. Where dating is possible, most of the excavated contexts fall within a broad mid 1st to early 2nd century AD date band, only ditch F31 is later. This feature appears to have been infilled sometime in the second half of the 2nd century. The dating evidence is summarised in Table 1.



Fig. 8 William Edwards School, Grays. Prehistoric pottery

Table 1: Summary of the Roman pottery dating evidence. *This feature also contained post-Roman pottery. Late Iron Age and Roman pottery was also recovered from context 9 (layer), 24 (unstratified) & 111 (fill of modern cable trench).

Feature	Context	Pottery	Comments & dating
F31	29 (top fill)	Fine ware: ?f31 (CGSW). Coarse wares: Fabrics STOR & GRS.	The Samian evidence suggests a possible possible Antonine date.
F34 ditch	33 (primary fill)	<i>Coarse wares:</i> Fabrics CLB, RED, GRS & ESH.	The range of fabrics present are typical of 'early Roman' horizon.
F45 ditch	46 (single fill)	<i>Coarse ware:</i> Fabric GRS.	Not closely datable. Roman.
F65* p/h	64 (single fill)	<i>Coarse wares:</i> jar G (GRS); Fabric GROG.	Not closely datable. Roman.
F74 ditch	75 (single fill)	<i>Coarse wares:</i> Fabrics GRS.	Not closely datable. Roman.
F103 gully	102 (single fill)	<i>Coarse ware:</i> jar G5.2 (ESH).	This feature contained a pre-Flavian to Flavian jar form.
F114 gully	113 (single fill)	<i>Coarse wares:</i> Fabrics RED, GRS & ESH.	The range of fabrics present are typical of 'early Roman' horizon.
F115 gully	116 (top fill)	Coarse wares: jars G5.2 (ESH), G19.2 (BSW), G (BSW); Fabrics ?NKG & GRS.	This feature contained a pre-Flavian to Flavian jar form as well as material which could stretch the date range into the early 2nd century.

Pottery of intrinsic interest

Two pieces fall into this category and are illustrated below (Fig.9, nos. 1 and 2).

- Lid-seated jar type G5.2 with graffito. A common Early shelltempered ware form. Context 102, fill of Gully F103.
- 2. Unusual rim form variant of a ring-necked flagon. The frilling is more common to tazze than flagons. Miscellaneous cream-slipped sandy red ware. This example was recovered from the fill of a modern cable trench. Context 111.



Fig. 9 William Edwards School, Grays. Roman pottery

Discussion

The bulk of the pottery is almost certainly associated with a postconquest occupation phase with 'Belgic' Grog-tempered pottery largely absent even though Romanised Black-surfaced wares tempered with a mixture of sand and grog are well represented (this is essentially Going's fabric 45). This is perhaps what would be expected from a site that falls within Thompson's Zone 2 which marks the Essex side of the Thames estuary from Kent and Central and North Essex (Thompson 1982, 9). Here, Grog-tempered wares are principally associated with cemeteries, while the pottery from settlements is usually made with shell and sand temper. Indeed, Shell-tempered wares datable to the 1st and early 2nd century AD appear to be present in some quantity at this site. The situation at William Edwards School, however, is in marked contrast to that at Ship Lane Aveley, where Grog-tempered wares are well represented on a site where burials are presently unknown (Martin forthcoming).

Forms typical of the early Roman period present at the William Edwards School site include several Early shell-tempered lid-seated jars (Going 1987, G5.2; Thompson 1982, C5-1) and a Black-surfaced ware jar with a recurved profile and narrow cordon (G19.2). The latter form had a mid 1st to early 2nd century floruit. An example of a Early shell-tempered ware lid-seated jar has an incised graffito cut on the shoulder prior to firing (Fig. 9.1). It has been suggested that these may represent pseudo-Roman numerals or perhaps tally marks as not all vessels were provided with them (Jones 1972). Vessels of this type are common to South Essex, contra Thompson's assertion that this is chiefly a Hertfordshire, Bedfordshire and Buckinghamshire form (Thompson 1982, 245), as Leary has pointed out that these are the principle jar form on Thames-side sites in the 1st and 2nd centuries AD (Leary 1995, 97 and Fig. 72.1). The form was produced at Mucking (Jones and Rodwell 1973, Type F) and Gun Hill, West Tilbury (Drury and Rodwell 1973, Fig. 17.103) and is also known at North Shoebury (Leary 1995, 97 and Fig. 72.1), Ardale School (Thompson 1988, 88) and Orsett (Rodwell 1974, Fig. 6. 13) in Thames-side Essex for example. Outside Thames-side Essex their distribution is sparse but have been recorded at Woodham Walter in a fabric tempered with a mixture of shell and grog (Rodwell 1987, Fig. 16.29-30), Coggeshall (Gurney 1988, Fig. 8.3), Chelmsford (Going 1987, 23) and Great Dunmow (Going and Ford 1988, 65), for example.

A Central Gaulish samian ware f31 bowl recovered from the top fill of Ditch 31 suggests that this feature was probably infilled sometime in the Antonine. This is the latest datable piece from the site. A Miscellaneous. white- or cream-slipped sandy red ware ring-necked flagon top was recovered from the filling of a modern cable trench (Fig. 9.2). This unusual vessel was decorated with a band of tazza-like frilling and may be dated to the early Roman period. It is possible that this may be a Hadham product, although the fabric is not sufficiently diagnostic to identify its production site. The remaining pottery was not particularly diagnostic, comprising small quantities Sandy grey ware, Colchester buff ware, ?North Kent grey ware, Misc. Oxidised red ware and Storage jar fabric bodysherds.



Fig. 10 William Edwards School, Grays. Flintwork

Medieval pottery

H. Walker

Two sherds of pottery, weighing 6g, were excavated from context 64 (post-hole F65) comprising one abraded sherd of early medieval ware, dating from the 10th to 13th centuries, and one sherd of plain, unglazed Mill Green fine ware, dating from the mid-13th to mid-14th centuries.

Flint

H. Martingell

Summary

A total of 297 worked flint artefacts was recovered from the areas of evaluation and excavation. In this report both groups of material are considered together.

Area A (Figs 3-4)

This is the most significant area. It consists of a group of features on the east of the site from which came 39% (116 pieces) of the total number of flint artefacts. Most are from a curving east-west ditch segment, F44 (86 pieces), which is cut by a Late Bronze Age gully, F124/F18 and also from a ditch terminal F53 (8 pieces); a pit F68 (11 pieces), a medieval post-hole F65 (8 pieces) and a gully corner, F27, segment 59 (3 pieces).

Only Area A produced early prehistoric tools and could be the western edge of an early prehistoric working floor. This was superceded by later prehistoric, mainly Bronze Age, knapping areas.

Mesolithic c. 8000 - 3500BC

The earliest diagnostic tools are three microliths. All were recovered as residual finds in later contexts. Two are obliquely blunted microliths and are projectile points of the Early Mesolithic. The first microlith (Fig. 10.1, context 52) came from Area A F53 and the second (Fig. 10.2, context 24) from surface cleaning. The third is a Later Mesolithic geometric microlith, a triangle (Fig. 10.3, context 43) and is also from Area A, F44.

Neolithic c. 3600 - 1500BC

The petit tranchet arrowhead (Fig. 10.4, context 43) is a form of transverse arrowhead and can be found in Neolithic contexts from

about 3600 - 2400BC. This arrowhead was also found in Area A F44 and was the only complete Neolithic tool from the site. A small, rough and broken disc/'tortoise' core was another Neolithic artefact recovered, this time from the centre of the site (evaluation context F22). Part of a bifacial tool, probably a single piece sickle roughout, came from unstratified context 24, surface cleaning. As with the Mesolithic flint, all were residual in later contexts.

Blades: About 40 blades and bladelets were collected; some punch struck. Twelve were from Area A and the remainder from other parts of the site. There is one complete broad blade 82mm in length from gully F102. Some of the blades will be Mesolithic and the rest are Neolithic.

Cores: Twelve cores have either single platforms, two opposing or two adjacent platforms and should represent the remains of the blade cores. Five of these are from Area A F44. Again, these could be Mesolithic or Neolithic in date and are residual.

Bronze Age - MBA and LBA/IA c. 1500 - 800BC

The Middle and Late Bronze Age artefacts have been called 'tools of convenience'. These industries, on the whole, consist of suitably sharp pieces of flint that were picked up and used without modification in preference to making specific tools. This description fits the remaining artefacts, cores, flakes and 4 tools from all features within the site. The clustering effect of the Bronze Age flint material within and around Area A; the pit F1 towards the west of the excavated area; pits F56 and F47 in the south; and the group of features in the centre, which include pit F60 and post hole F76, is probably due to human activity other than knapping. The material is very varied, there are no conjoins and only 5 cores are recognisable. Most of these finds were recovered from Bronze Age contexts.

Scrapers: The 2 Bronze Age scrapers came from the evaluation trench feature F22. One scraper (Fig. 10.5, context 21) is a 'thumbnail' and has some damage. The second, from context 23 (Fig. 10.6), is a very fine end scraper and is made on a large, mainly cortex covered, flake.

Piercers: A fine Late Bronze Age piercer on a flake (Fig. 10.7, context 3) comes from pit F1. A small triangular sectioned, pointed piece, which has a much smoothed and worn appearance, was probably part of another Late Bronze Age piercer and is from Area A F44.

Retouched Pieces: Only 4 artefacts could be described as retouched. The Late Bronze Age truncated blade (Fig. 10.8, context 9), residual in F22 is rather worn. The three remaining have minimal amounts of fine, continuous edge retouch. They could be from any period.

Denticulate: This is a large, flaked, converging irregular blade from context 48 in pit F47. It is slightly patinated. It may be waste from an earlier period that has been reutilised.

'*Naturally Backed Knife*': This is a straight blade, 80mm in length, with cortex along one long edge opposing the sharp edge. It is from fill 48 of pit 47. Blades like this occur in many mixed assemblage groups of material.

Utilised Waste: A few waste pieces have traces of wear. For example a 'Clactonian' type notched block, residual in post-hole F65 has crushing along the notched edge, and from post hole F76 there is a large thick flake with a blade like edge which has scalar damage. These are typically Late Bronze Age convenience tools.

Cores: From Area A, F44 came the largest artefact from the entire assemblage. It is a core much like a chopper chopping tool in appearance. Originally a large oval flint cobble, approximately 170mm long; it has had flakes removed along its length leaving a zigzag sharp edge along one side with cortex covering the remaining surface. The flakes removed were large, on average 80mm long. The remaining 4 cores and fragments of others belong to the bashed lump category.

Flakes: A feature of this assemblage is the greater number than usual of large flakes. They are mostly secondary, that is with small amounts of cortex remaining on the dorsal surface. Some are thinning flakes. This suggests the manufacture of tools as well as the removal of flakes for casual use.

Conclusions

The lithic artefacts support the dating for the prehistoric features without being able to contribute any further information about the prehistoric occupation or mineral utilisation of the area. However, there is remarkably little natural damage on these flints, which suggests that despite the Roman and later activity they may not have been greatly disturbed and are not far from their original place of deposition.

Miscellaneous finds

R. Tyrrell

Perforated clay slabs

An unstratified cleaning layer produced a fragment of flint-tempered perforated clay slab. These artefacts, whose function is unknown, are late Bronze Age, and have been found at a number of Essex sites. Mucking North Ring (Bond 1988, 49-50), Springfield Lyons (Major, in prep.) and North Shoebury (Barford 1995, 126) all produced slabs.

'Belgic bricks' (Fig. 11)

Two corner fragments were found. The function of these objects is not fully understood. They were first identified by Wheeler and Wheeler (1936, 178), among the Belgic finds from Verulamium, and were regarded as early bricks. No evidence for such a use has ever been found and they probably had a variety of uses as oven furniture, pot stands and the like. A complete 'brick' was found at Ardale, Area B (Major 1988, 94, fig. 82,3) in a similar fabric to the ones from this site.

- 1. A rectangular corner fragment with well defined edges, and three flat surfaces, with a wiped finish. The fabric has sparse fine sand and a little vegetable tempering. 160g (102) Fill of gully 103 [Flavian pottery]
- A rectangular corner fragment with rounded edges in a light orange, vegetable-tempered fabric. 134g (29) Fill of ditch F31 [Antonine pottery]

Fired clay object (Fig. 11)

A fragment of a disc-shaped spindle whorl was found in a post hole. This very small, lightweight spindle whorl may be Late Iron Age.

 Part of an abraded, disc-shaped spindle whorl in a buff clay with coarse brown sandy inclusions. 6g (98) Fill of post hole F99.

Fired clay

Ten small fragments of fired clay were found, 124g from two prehistoric ditches, and 232g from a gully and a post hole with Roman pottery. None of the pieces showed any signs of wattling, although they are probably structural. The early material is sandy and very friable with only one surface, whereas the Roman fragments are better preserved, particularly the two vegetable-tempered fragments.

Tile

Two fragments (100g) of Roman tile were recovered, both in an abraded, soft, orange-red fabric. One came from a disturbed layer, the other from Roman ditch F31.

Stone (Fig. 12)

Not illustrated . A fragment of a well cemented, ferruginous sandstone saddle quern with a well worn grinding surface. The original shape was probably oval and the side has been pecked vertical. The underside, though unworked, has smooth patches where it sat on a hard surface. L230mm, W108mm, Th72mm (2) Pit F1 [Late Bronze Age pottery]

4 A rectangular rubbing stone in decayed sandstone, possibly Kentish. There are few signs of wear on the grinding surface but the original surface is not present. (2) Pit F1 [Late Bronze Age pottery]



Fig. 11 William Edwards School, Grays. 'Belgic bricks' (1, 2) and spindle whorl (3)

Not illustrated. A small irregular fragment of a lava quern. (9) Unstratified.

The coins

P. McMichael

Two coins were recovered from the spoil-heap during metal-detector scanning. The soil matrix in which they were found suggests that they came from the top of either ditch 20 or 22 during topsoil removal. This is, however, by no means certain.

- 1. Roman Coin: 'Gloria Exercitus' [2 Figures & 2 Standards]; damaged and worn. Date: 330s, Constantine. Copper alloy.
- Roman Coin: 'Gloria Exercitus' [2 Figures & 1 Standard]; copy, damaged and worn. Date: 341-346, Constantius II. Copper alloy.

Conclusions

The principal result of this small excavation has been to illustrate the archaeological potential of the area. The early prehistoric flint-knapping area was probably only the edge of a much larger spread. Equally, the prehistoric and Romano-British features are likely to be peripheral to a main focus to the east, within the area of cropmarks.

Prior to the excavation no activity earlier than the Late Bronze Age was observed at the school. To a large extent, this is reflected by the absence of any Mesolithic or Neolithic *features* from the 1997 trench, in spite of the considerable number of flint artefacts of those periods. The nucleus of the earlier prehistoric activity, possibly including settlement, almost certainly lies to the east, within the grounds of Bloomfields Farm. The presence of the possible flint-working floor is of particular interest, especially since it appears to have been used during both the Mesolithic and Neolithic periods. Too little of Area A, however, lay within the trench for any detailed conclusions to be drawn. The disturbance of the

working floor during the Bronze Age has also destroyed any possibility of spatial analysis that might have been undertaken.

Late Bronze Age and Early Iron Age features complement Bannister's finds of pottery and loomweights from the 1960-62 excavations. Once again, however, the true focus of activity appears to be beyond the eastern limits of the site, associated with the apparent enclosures on that side.

Bannister located evidence of both Late Iron Age



Fig. 12 William Edwards School, Grays. Worked stone

Brown, N. 1988b

and late Roman occupation. The north-south Roman ditch alignment appears to be a long-lived boundary, established during the later part of the 1st century AD and surviving at least into the middle or late 2nd century. Probably it is related to the Late Iron Age and Roman farmstead identified during the construction of the school. Evidence of late Roman occupation of the site was present in the form of the two 4th century coins. Although no pottery or features of late date was recovered from the excavation, Bannister had found 3rd and 4th-century pottery during his investigations.

There is no obvious correlation between the cropmarks and the features excavated. The east-west gullies 5 and 13 appear to be aligned with one of the ditches shown in aerial photographs. Bannister's observations indicate this was a single ditch that he observed during construction works. It is likely that he saw one or other of these features (his trench truncated both), but it is impossible to tell which one.

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Author; N.J.Lavender, Essex County Council Planning Division, County Hall, Chelmsford CM1 1LF

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A Late Bronze Age settlement on the
A Late Iron Age and Roman site at Shillingstone Field, Great Sampford

by A. Garwood

with contributions by P.J. Cott, T.S. Martin, H. Major, P. McMichael and H. Walker

A resistivity survey of a suspected Roman site at Shillingstone Field, Great Sampford identified a magnetic anomaly which covered a wide area and was thought to represent a building. Subsequent trial evaluation uncovered a single prehistoric ditch, Late Iron Age field boundaries and rubbish pits, and two parallel ditches which represent part of a Roman field system in use up to the late 4th century AD. Pottery evidence suggests that the main period of activity occurred in the 4th century. An unusual late 4th-century pottery assemblage has been analysed in detail.

The magnetic anomaly identified by the resistivity survey was caused by a change in the natural surface geology and was not due to archaeological activity. Although the trial trenching did not uncover any structural evidence, the presence of roof-tile and box-flue tile, combined with the wealth of ceramic evidence and coins recovered over the years by both the Sampford Society and metal detectorists, suggests that a villa or substantial farmstead existed at the southern end of Shillingstone Field.

Introduction (Fig. 1)

This report describes the results of an archaeological evaluation undertaken by Essex County Council Field Archaeology Unit at the request of the Sampford Society, to investigate a geophysical anomaly and finds concentrations associated with a possible Roman settlement site at Shillingstone Field, Great Sampford.

Situated in north-west Essex, Great Sampford lies 5km north-east of Thaxted, and to the east of the Roman road between Great Dunmow and Radwinter. The site is located to the north-west of the village nucleus and to the west of Howe Lane. At a height of 87m OD, Shillingstone Field comprises c. 12 hectares of arable land which slopes progressively south and southeast to the bottom of the Pant valley. The natural surface geology of this area is a diverse mixture of Boulder Clays, Brickearth and Sands and Gravels laid down during the Anglian glaciation.

The area at the southern end of Shillingstone Field has produced over many years large quantities of Roman metalwork, including coins, brooches and other finds. For two years it had been the focus of metaldetector rallies to raise funds in aid of the restoration of the parish church. Over 100 coins are known to have been recovered during these rallies, of which some were recorded by members of the Sampford Society. However, it seems probable that these artefacts represent only a small percentage of the overall finds recovered as all finds were retained by the metal-detectorists. Finds recovered from the surface of Shillingstone Field and recent fieldwalking carried out in late 1997 by the Sampford Society has yielded significant quantities of Roman and prehistoric pottery and Roman tile, including *tegulae, imbrex,* box-flue tile and *tesserae*.

In April 1996, a geophysical survey by resistivity was conducted by P.J.Cott in the area that yielded the greatest concentrations of finds. This failed to produce good results. A second phase of survey, undertaken further up the field to the north-west, uncovered a highresistance anomaly running approximately north-west to south-east for a minimum of 70 metres. It was thought by the angular nature of parts of the anomaly that structures and possibly *in situ* collapsed roofing might be present.

Resistivity survey (Fig. 2)

P.J. Cott

Survey method

The survey area was marked out and then aligned using an electricity pole and a pylon in the middle distance for reference points. The survey was carried out using a Geoscan Research Resistivity Meter RM4 with a Geoscan Data Logger DL10. 20m survey squares were set out and readings were taken at 1m intervals using the zig-zag method of survey. In total, six 20m squares were surveyed, taking 400 individual readings per 20m square.

The range of readings from the raw data varied from a low of 20 ohms to a high of 65 ohms. These readings represent a damp and well-coagulated soil, which displayed none of the usual problems caused by the presence of stones and flints as has been encountered on other sites in East Anglia.

The survey plots are presented using the grey-scale method, in which the computer programme allocates a shade of grey to of the 400 readings per square. High readings, representing a probable presence of building materials appear in black, while low readings, which indicate an absence of these materials or possibly a ditch, appear in white. No contrast factor was used, so



Fig. 1 Shillingstone. Site location © Crown copyright 87584M.



Fig. 2 Shillingstone. Plan of resistivity anomaly

the plot shade scale varies linearly from the maximum to the minimum value.

Results

The resistivity plot shows a wide linear anomaly running roughly north-south, with other lesser anomalies to either side. The width of the main feature is approximately 10m at its narrowest point. This response is much wider than would be expected from a buried wall, even if there were rubble lying adjacent to it. The length of the feature is 55m as plotted, although it is evident that the southern end was not reached. It is also possible that the feature extends further north-east.

The anomaly could represent a building although there is no evidence of wall foundations to give a definition to the response. Alternatively, the feature could be purely geological. At the time of the survey, however, the suggestion of a linear geological feature was considered the less likely interpretation, given the probable association of the feature with the quantity of Roman finds recovered from the field. A low resistance linear anomaly running north and cutting the main anomaly on its eastern side, is present at point A. This may be a field drain, ditch or the result of deep ploughing.

The survey was successful in that a large run of positive anomalies was revealed in part of the field identified from earlier investigations. The results show that there is an area of high resistance running across the field, which may represent the presence of a building. As a result a programme of trial trenching was carried out to test the survey results in detail.

Trial trenches (Fig. 3)

Six trial trenches (A-F) were excavated across and in the area of the geophysical anomaly, under the direction of the main author. A further trench (G, Fig. 1) was excavated to the south-west of the main group and in the area of the artefact concentrations uncovered by metal-detectorists. Specifically trench G was cut to determine whether these artefacts represent the site of genuine archaeological activity or that their location is purely the result of colluvial action. Furthermore it was thought that the possible route of a Roman road extending north-west from Thaxted and running to the west of the village may be present in this area of Shillingstone Field.

A distinct change in the natural surface geology from boulder clay to a band of sand/gravel was encountered in both trenches E and F. This geological change is interesting as its limits correspond closely to the anomaly revealed in the resistivity survey. From this evidence it seems very likely that the anomaly was in fact geological and not due to concentrations of activity of an archaeological nature.

Prehistoric (Figs 3 and 5)

A small shallow ditch (42) in trench E was the only feature on site that could be dated to the prehistoric period. Measuring 0.75m wide and 0.18m deep, the ditch contained a single silty fill which produced two joining body sherds of undatable prehistoric pottery and pieces of worked flint. No other features that produced evidence pre-dating the Late Iron Age were present on site. The small amount of worked flint recovered suggests slight Neolithic activity in the vicinity.

Late Iron Age (Figs 3, 4 and 6)

A large ditch (7), aligned north-east to south-west was recorded in trench C. It was 0.47m deep and 1.48m wide with moderately steep edges and a flat base. Its fills (5 and 6) produced sherds of Late Iron Age pottery. Ditch 7 extended to the north-east into trench B, where it was recorded as ditch 15. Here the ditch was considerably shallower and produced no diagnostic dating evidence, although given the absence of Romanised fabrics, the ditch can be dated to the Late Iron Age. Along the northern side of ditch 7, and cut by it, was a series of intercutting rubbish pits (34, 36, 38 and 40). Excavation of the pits recovered no diagnostic dating evidence although the fill of pit 36 (35), did produce fragments of bone and worked flint. Although no conclusive date can be attributed to the pits, their stratigraphic relationships suggest that they must have predated the final infilling of ditch 7 in the Late Iron Age.

Early Roman (Figs 3, 4)

Two features are tentatively dated to the early Roman period. A ditch (11) aligned north-west to south-east across trench C continued to the south-east, appearing in trench D as ditch 30. Excavation of the ditch in both trenches revealed a similar profile and fills. The ditch was moderately steep-sided with a relatively flat base. The fill of ditch 11 (10) produced a small amount of early Roman pottery, while the secondary fill of ditch 30 (28) yielded a small largely undiagnostic group to which a tentative early Roman date may be assigned.

A single small pit (18) uncovered in trench F can also be dated to this period. Moderately steep-sided with a concave base, the pit contained two fills (16 and 17). A small assemblage of early Roman pottery was recovered from context 16. To the south-west of pit 18 was a further pit (20) from which undiagnostic Roman pottery was recovered. The proximity of these pits suggests that they may be contemporary.

Late Roman - late 3rd to 4th century (Figs 3, 5 and 6)

This period is represented by two features, a large boundary ditch (9) and a sizable but shallow rubbish pit (32). Ditch 9 was present within the extended eastern end of trench E and appeared to the south in trench F as ditch 3. The ditch, which was aligned north-west to south-east, had steeply cut regular edges and a concave base, and measured 2.41m wide and 0.82m deep. Ditch 9 contained four fills (22, 23, 24 and 25), of which context 23 produced a small assemblage of late 3rd to 4th-century pottery. In trench F, rubbish pit 32 was situated immediately north-east of the ditch. The pit, which measured 3.44m in length and 0.48m in depth, was shallow-sided with a flat base, and its fill (31) produced pottery of the late 3rd century.

Late Roman - late 4th century (Figs 3, 5 and 6)

The latest feature recorded on site was the re-cutting of ditch 9. This latest ditch cut (21) contained a single silty fill (8) which produced large amounts of late 4thcentury pottery dated to after c. AD 370. The presence of this material in the re-cut suggests that the ditch was maintained and in use right up to the late 4th century. Also recovered from fill 8 was a wide range of finds, including butchered animal bone, roof and box-flue tile, daub, flint, oyster shell, iron nails and a spindle whorl made of Roman tile. The character of the finds and the presence of building materials such as roof tile, box-flue tile and daub from the re-cut also suggests that at a point during the latter part of the 4th century, a building or other structure from which these materials derived



Fig. 3 Shillingstone. Trench location





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Fig. 5 Shillingstone. Plan of trench E



Fig. 6 Shillingstone. Section through ditches 7 and 9

was demolished. Layer 4 in trench F, which sealed the fills of both pit 32 and ditch 3, also produced a comparable range of forms and fabrics as those recovered from re-cut 21 of ditch 9.

Modern (Figs 5 and 6)

The presence of the site in isolated farmland away from the village or any substantial development meant that little evidence of modern activity, other than that connected with modern farming practices was encountered on site. A mole-drain (27) aligned on a slightly different orientation to that of ditch (9) and which cut both the north-eastern facing slope of ditch (9) and the fill of re-cut (21) was present in trench E.

Two features from the evaluation did not produce finds and therefore could not be dated. These comprised a shallow ditch (13) in trench A and a small pit (44) in trench E. As ditch (13) does not align with present field boundaries, it may be tentatively suggested that it is archaeologically significant. However, the stratigraphic relationship between pit (44) and the subsoil, which it cut and which sealed all other features on site, suggests that this pit certainly post-dates the Roman period.

Medieval and post-medieval pottery was present on site, although it mainly occurred in unstratified deposits or as an intrusive element in earlier features.

Late Iron Age and Roman pottery T.S. Martin

Introduction

A total of 660 sherds (7,796 g) of Late Iron Age and Roman pottery was recovered. Of this, only 277 sherds (but weighing 5,199 g) were found in feature fills. The pottery was classified using the Chelmsford typology published by Going (1987, 2-54) which is standard for all Essex County Council sites. Analysis was primarily concerned with identifying the variety of fabrics and forms, and providing dating evidence for features. All pottery was quantified by sherd count and weight by fabric, with the material from ditch 21 also being recorded using Eves. This provides the data from which useful comments concerning assemblage characteristics, the changing patterns in pottery supply and the overall quality of the evidence can be made. The following fabrics were identified (numbers after Going 1987 in parentheses):

LATE IRON AGE AND ROMAN ACTIVITY AT SHILLINGSTONE

Feature	Fill/Status	Pottery	Dating
Ditch 7	5 (primary)	Misc. pottery: Fabrics ESH and GROG.	LIA
Ditch 7	6 (top)	Misc. pottery: jar G18 type (GROG).	LIA
Ditch 9	23 (tertiary)	Misc. pottery: bowl-jar E6.2 (GRS); G21 - b/s (GRS); Fabric HAR.	L3-4th century
Ditch 21 (recut of 9)		8 (single)Misc. pottery: dishes B6.2 (NVC, GRS, HAB & BSW), B1.2 (NVC), B1 (GRS, HAB, BB1 & GRF); bowl C8 (NVC); mortaria D - b/s (OXRC), D6 (OXWS); bowl-jars E4 (RED), E6.2 (GRS), ?E6 (HAX); jars G27.2 (LSH), G24.2 (GRS), G44 (STOR), G9 (GRF), G34 (GRS), G36.2 (BSW).	L4th century
Ditch 11	10 (single)	Misc. pottery: jar G44 type (STOR); Fabrics BUF & BSW.	'?Early Roman'
Pit 18	16 (top)	Samian: ?f18 (TSG - ?SGSW); Misc. pottery: Fabrics COLB & VRW.	'Early Roman'
Pit 20	19 (single)	Misc. pottery: Fabric STOR.	Undated
Ditch 30	28 (top)	Misc. pottery: beaker H1 - b/s with barbotine dots (RED); Fabrics COLB, BSW & GRS.	'Early Roman'
Pit 32	31 (single)	Misc. pottery: dish B6.2 (GRS); bowl-jar E (HAX); Fabrics BSW	L3-4th century
Layer 4	-	Misc. pottery: dishes B6.2 (GRS, HAB & BSW), B1.3 (BSW), B1.2 (NVC), B1 (GRS); bowl-jars E6.2 (BSW), E6 (HAX); jars G21 (GRS), G26 (HAX), G27.1 (LSH), G27.2 (LSH); Fabric OXRC.	L4th century

Table 1. Summary of the dating evidence from all features and layers with Roman pottery	(residual	pieces excluded
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Black-burnished ware 1	40
Misc. black-surfaced wares	
Unspecified buff wares	31
Colchester buff wares	27
Early shell-tempered ware	50
Fine grey wares	39
Grog-tempered wares	53
Sandy grey wares	47
Hadham black-surfaced ware	35
Hadham grey wares	36
Hadham oxidised red wares	4
Late shell-tempered ware	51
Misc. Iron Age coarse wares	
North Kent grey wares	32
Nene Valley colour-coat	2
Oxfordshire red colour-coat	3
Oxfordshire white wares	25
Oxfordshire white-slipped wares	13
Misc. oxidised red ware	21
Rettendon ware	48
Storage jar fabrics	44
Samian (all)	60
Verulamium region white ware	26
	Black-burnished ware 1 Misc. black-surfaced wares Unspecified buff wares Colchester buff wares Early shell-tempered ware Fine grey wares Grog-tempered wares Sandy grey wares Hadham black-surfaced ware Hadham grey wares Hadham oxidised red wares Late shell-tempered ware Misc. Iron Age coarse wares North Kent grey wares Nene Valley colour-coat Oxfordshire red colour-coat Oxfordshire white wares Oxfordshire white wares Misc. oxidised red ware Extendon ware Storage jar fabrics Samian (all) Verulamium region white ware

Summary of the pottery dating evidence

Overall, the dating evidence is not of the finest quality, with only one well-dated stratified context (Table 1). Although most of the featurefills contained largely undiagnostic sherds, there was sufficient dating evidence to place all but one of the stratified contexts with pottery into one of four date-bands. These were as follows:

- Late Iron Age
- Early Roman
- Late 3rd to 4th century
- Late 4th century+

Ditch 7 appears to be the earliest feature. It contained small amounts of early shell-tempered ware and grog-tempered ware which points to a Late Iron Age date. A further three features, ditches 11 and 30 and

pit 18 produced small quantities of mainly undiagnostic sherds whose overall character suggests that they would not be out of place early Roman horizons. These dates, largely based on the presence of fabrics rather than forms, may be applied to the infilling or disuse of these features. The bulk of the pottery reaching the site at this time appears to have been derived from mainly local sources (e.g. sandy grey wares and black-surfaced wares), supplemented by small quantities of ?South Gaulish samian, Colchester buff ware and Verulamium region white ware.

Judging by the absence of B2 and B4 type dishes and G5.4 and G5.5 jars in sandy grey wares and black-surfaced wares, for example, there would appear to have been something of a hiatus on site within the period spanning the early/mid 2nd to early/mid 3rd century. These forms are ubiquitous in Essex in the Hadrianic/Antonine period and one would expect to find them in significant quantities on sites occupied in this period. The absence of B5 dishes also indicates a lack of activity well into the mid 3rd century. The reasons for this may be because of the small-scale nature of the excavations or a genuine reflection of the absence of Hadrianic to mid 3rd-century pottery being discarded in the area excavated. This general absence of Hadrianic/Antonine period pottery is just as much a feature of the unstratified pottery as it is of the material recovered from feature-fills. A single East Gaulish samian mortarium body sherd in layer 4 is the only sherd from the site that requires dating to this period and this is in association with material which shows that it is unequivocally residual

The next period of occupation commenced in the late 3rd century at the earliest and is represented by the silting up and probable disuse of ditch 9 and the fill of pit 32. Supply appears to have remained principally from local sources, but by now no new samian or Verulamium region white wares were reaching the site. At this time Hadham oxidised red ware makes an appearance as would be expected on sites of this date, although the only identifiable forms were small numbers of bowl-jars. The most readily datable forms which belong to this period are the E6.2 bowl-jar (ditch 9) and B6.2 the dish (pit 32) in sandy grey ware.

Towards the end of the 4th century, ditch 9 was recut by ditch 21; this is the best dated episode on site. Overall, ditch 21 contained very

little that is obviously residual except for a sherd of Late Iron Age grog-tempered ware. The absence of anything that has to be 2nd or 3rd century reinforces the view that there was something of a hiatus on site in this period. Pottery supply in this period includes a variety of Nene Valley colour-coat dishes which first appear in the 4th century, late shell-tempered ware G27 jars, and Oxfordshire red colour-coat and white-slipped ware, none of which are securely attested in Essex prior to c. AD 360/70. These fabrics, however, are relatively unimportant compared with the volume of local grey wares. Also of this general period is layer 4. It contained a comparable range of forms and fabrics to those recovered from ditch 21. The amount of pottery from these two contexts accounts for a total of 565 sherds (85.6%) or 6714 g (86.1%). It would seem then that there is ample evidence for continued activity right to the very end of the Roman period and that the main period of occupation was also in this period.

The late 4th-century group from ditch recut 21

A fairly substantial group of sherds (4.5 kg; 6.31 Eve) found in the filling of the recut of ditch F9 are remarkable because of the virtual absence of residual material (nothing apart from a single abraded grog-tempered ware body sherd which is excluded from the following discussion and quantification tables). Because of this, the group has strong potential to provide an important insight into late Roman ceramics. This group may be dated securely to the period around *c*. AD 360/70 on analogy with Chelmsford (Going 1987, Ceramic Phase 8) on the evidence of both forms and fabrics.

The high ratio between weight and Eve figures in favour of the latter suggests that the group is also particularly well-preserved (Table 2) and compares well with the Late Shrine group at Great Dunmow (Going and Ford 1988, Table 2), the late 4th-century pit group F421 at Buildings Farm, Great Dunmow (Wallace 1997), and groups from ditch T71/80 and gully S35 at Chelmsford (Going 1987, Table 8) in this respect. All the evidence thus points to deposit which accumulated over a relatively short period of time. This is unusual in latest Roman groups which are highly prone to contamination from pottery of earlier phases where, more often than not, they come at the end of long sequences of occupation. Shillingstone Field is unusual in this respect in that the main period represented ceramically is the later 4th century. For this reason this group is highlighted as being of regional significance and reported on in detail here.

Although this assemblage is smaller than the two late groups from Great Dunmow (Table 2), it does appear to be less fragmented. This, coupled with the virtual absence of heavy-walled vessels like amphorae and storage jars, suggests that any statistical bias in favour of any particular ceramic type will be minimal and the validity of any conclusions drawn will not be compromised. Moreover, Willis (1996) has shown that quite consistent results can be obtained from even smaller groups. Analysis of the range of forms and the variety of fabrics allows several significant observations to be made regarding fabrics and trade, and assemblage composition.

Site	Date-range	Wt (kg)	Eve
Shillingstone Field (ditch F21)	late 4th century	4.5	6.31
Great Dunmow (Late Shrine group 272)	c. 350-390+	9.8	7.83
Great Dunmow (Buildings Farm pit 421)	<i>c</i> . 360/70	6.1	6.88
Chelmsford (ditch T71/80)	360-400+	11.3	7.03
Chelmsford (gully S35)	388-400+	8.1	6.75

Table 2. Comparison of latest Roman group sizes from Essex

The fabrics

Black-burnished ware 1 (BB1) (Fig. 8, No.4)

9g; 0.06 Eve (0.95% Eve)

This fabric is not well represented at Shillingstone Field; a single sherd, belonging to a plain rimmed B1 dish. Its presence in groups of this period is to be expected judging by its prevalence in Ceramic Phase 8 contexts at Chelmsford (Going 1987, Table 9).

Misc. black-surfaced wares (BSW) (Fig. 8, No.5)

630g; 0.86 Eve (13.62% Eve)

Of the black-surfaced wares, a number of fine pieces could, with some confidence be assigned to the Hadham industry. Other vessels, often much coarser by comparison, could not. Essentially, these sherds form the late continuation of Going's fabric 45 with their sparse, almost incidental grog-tempering. The forms present included B6.2 dishes and a G35 type jar. There was also a further jar rim that was unclassifiable.

Fine grey wares (GRF) (Fig. 8, Nos. 3 & 20)

259g; 0.68 Eve (10.77% Eve)

Bowl-jars (E6.1) comprise the main fine grey ware form, though some dishes (B1.3) and jars (G9.3) were also recognised. These fabrics appear to be much less important compared to the sandy grey ware fabrics.

Sandy grey wares (GRS) (Fig. 8, Nos. 6, 7, 9-11, 13-15, 17 & 21-4) 2,305g; 3.16 Eve (50.07% Eve)

Sandy grey wares comprised the main fabric group and included a wide range of forms. This is in marked contrast with the Late Shrine group and Buildings Farm at Great Dunmow, where grey wares formed relatively minor assemblage components (Going and Ford 1988, 70; Wallace 1997, Table 2). A striking feature of the group is the large number of bead and flange-rimmed (B6.2) dishes. Jars, however, are poorly represented by comparison, but include the ubiquitous G24 and G21 (with shorter than usual neck) types where form is identifiable.

Hadham black-surfaced ware (HAB) (Fig. 8, Nos. 1, 2, 8 & 16) 380g; 0.71 Eve (11.25% Eve)

A number of sherds, mostly open forms, are assigned to this fabric, which is probably from the Hadham kilns. The range of forms represented includes plain (B1) and bead and flange-rimmed (B6.2) dishes. There were no bowl-jar or jar forms recognised. At Shillingstone this fabric is more prevalent compared to either the Late Shrine group or Buildings Farm, Great Dunmow.

Hadham grey wares (HAR) (not illustrated)

132g; 0.23 Eve (3.64% Eve)

A number of fine grey ware sherds can be attributed to the Hadham industry. Forms are not readily identifiable, however. Compared with the late Great Dunmow and Chelmsford groups this fabric is underrepresented.

Hadham oxidised red wares (HAX) (not illustrated) 169g; 0.08 Eve (1.26% Eve)

Both open and closed forms were present, but the sherds were generally in too fragmentary state to identify form with any certainty apart from the rim of a B6.2 dish and a bowl-jar type rim. Compared with the late Great Dunmow and Chelmsford groups this fabric is poorly represented.

Late shell-tempered ware (LSH) (Fig. 8, No.25)

36g; 0.16 Eve (2.53% Eve)

Unusually for assemblages of this period, late shell-tempered fabrics formed an insubstantial group of wares. The only form represented comprised a G27.2 jar. This is in marked contrast to the Late Shrine group at Great Dunmow where a greater volume of this ware and with it, a much wider range of forms were identified (Going and Ford 1988, 70). The volume of late shell-tempered ware at Shillingstone



Fig. 7 Shillingstone. The correlation between the diameters of dish types B1 and B6.2 in ditch 21. (Left hand scale diameter of vessels in mm; bottom scale, number of vessels

Field is, however on a par the Buildings Farm, Great Dunmow (Wallace 1997, 76).

Nene Valley colour-coat (NVC) (Fig. 8, Nos.12 & 18)

95g; 0.19 Eve (3.01% Eve)

Surprisingly, this fabric appears to be under-represented. The only forms noted were exclusively open forms, B1and B6 dishes, and a C8 bowl, in marked contrast to the with the Late Shrine group at Great Dunmow (Going and Ford 1988, 66). Perhaps surprisingly, no 'castor box' fragments were found as was also the case with the Late Shrine group at Great Dunmow. Apart from the lower body sherd of a beaker, this vessel class was also absent, again surprisingly so considering that this is one of the main suppliers of beakers into Essex in the 4th century. However, while Going and Ford note that the assemblage of Nene Valley products was substantial at Great Dunmow, most of it was pulverised (Going and Ford 1988, 66). These differences may be chronological and, or more likely, functional.

Oxfordshire red colour-coat (OXRC) (not illustrated) 6g

Single abraded sherd only, from a mortarium of uncertain form.

Oxfordshire white wares (OXW) (not illustrated) 14g

Single sherd only, from a mortarium of uncertain form.

Oxfordshire white-slipped wares (OXWS) (Fig. 8, No.19) 86g; 0.16 Eve (2.53% Eve)

A single vessel was represented by the upper half of a D6 mortarium (Young 1977, type WC5). Although most of flange was missing, the vessel was in reasonably good condition. At Chelmsford, Going (1987, 5) noted that this fabric only occurs in mid to late 4th-century contexts.

Misc. oxidised red wares (RED) (not illustrated)

11g; 0.01 Eve (0.15% Eve)

These are barely represented at Shillingstone Field and may be residual. However, the only form present is a bowl-jar (type E4) which is more common to later contexts.

Storage jar fabrics (STOR) (not illustrated)

426g; 0.01 Eve (0.15% Eve)

A number of body sherds and the fragment of a rim were found. The rim, however, was not sufficiently diagnostic to identify the vessel form. At Chelmsford, Going noted a recovery in the quantities of storage jar fabrics in the late 4th after something of an early 4th-century trough (Going 1987, 9). This does not appear to be the case at Shillingstone Field.

Discussion: pottery supply to Shillingstone Field, c. AD 360/70

Fabrics and trade

Compared to both Great Dunmow groups, the assemblage from Shillingstone Field ditch 21 comprises a relatively limited range of fabrics; there are 15 compared with 21 at the Late Shrine, Great Dunmow, and 23 at Buildings Farm. To a large extent this may be due to the presence of obviously residual material in the Great Dunmow groups. Compared to Ceramic Phase 8 contexts at Chelmsford there does seem to be a much narrower range of fabrics even among the latest Roman types (Going 1987, table 9) which may reflect either site status, geographical location, or a combination of both.

The Shillingstone Field assemblage contains no imported pottery at all; there is a complete absence of amphorae and residual samian, for example. This is almost certainly the result of the absence of any evidence for intensive occupation at an earlier period. Regional Romano-British wares are also scarce, being confined to small amounts of BB1, Oxfordshire, Hadham, ?South Midlands shelltempered and Nene Valley colour-coated wares. Colchester kiln products (both colour-coats and buff wares) are notable absences. On the other hand, although Oxfordshire products are not wellrepresented there is a wide range of fabrics present. Another interesting assemblage characteristic in terms of the range and quantities of fabrics are the low amounts of late shell-tempered wares and Hadham wares in marked contrast to the Late Shrine group. There is also an absence of pottery with Romano-Saxon decoration. Vessels with this type of decoration were produced by the Hadham manufactory and are often present in late assemblages as at Buildings Farm, for example (Wallace 1997, fig. 22.6). This may in part be a reflection of the unusually small quantities of Hadham products recovered from ditch 21. Colour-coats of all types are poorly represented.

Although grey wares dominate the assemblage, there is no Rettendon ware. A low showing for this fabric, which generally has a central Essex distribution, is to be expected given the geographical location of Shillingstone Field. There may be some chronological implications here as this fabric has been identified on the site, albeit unstratified, given Going's suggestion that this fabric generally had a early to mid 4th-century *floruit* (Going 1987, 10). The low incidence

of Late shell-tempered ware is perhaps more likely to be a chronological feature. Wallace (1997, 76) has cited this possibility in relation to the Buildings Farm group. On balance, this perhaps points to a period of deposition very late in Chelmsford Ceramic Phase 7 or very early in Ceramic Phase 8 for the Shillingstone Field material.

Assemblage composition

The assemblage has two outstanding features: an absence of flagons and platters, and a significant bias towards dishes rather than jars and bowl-jars as demonstrated in Table 3. Beakers and bowls are also barely represented, while the sole supplier of mortaria is the Oxfordshire industry. The bias in dishes is not affected by the apparent absence of B2 and B4 types given that the production of none of these vessels is thought to have extended beyond the early/mid 3rd century. The overall impression of a virtually total absence of residual material in ditch 21 is further enhanced by the presence of a B2 dish in Hadham oxidised red ware (cf. Wallace 1997, fig. 22.3) and a Hadham black-surfaced ware B4 type dish in the Buildings Farm pit group (Wallace 1997, 76). The plain-rimmed dish type B3.2 which was the most common open form at Chelmsford in this period is also absent, while the fully flanged B6.2 types in a minority at Chelmsford are by far the most common of the two types represented at Shillingstone field. It is possible that this bias towards dishes has something to do with the site function, but to explain this phenomenon along the lines of a table (dishes) versus cooking (jars and bowl-jars) dichotomy seems improbable because of the lack of beakers. Perhaps this deposit, given the presence of mortaria, may be associated with initial food preparation rather than either cooking or consumption.

It has been suggested that plain-rimmed dishes and their flanged counterparts may have been used as casseroles. Gillam noted, with reference to BB1 vessels, that although the range of diameters between the two types was not precisely the same, there was nonetheless a considerable degree of overlap (Gillam 1976, 70). At Shillingstone the flanged B6.2 type was far more common (3.39 Eve) compared with the plain-rimmed B1 type (0.54 Eve). Moreover, while there was some overlap between the diameters of these types, particularly at the lower end of the scale, the overall correlation was poor (Fig. 7). This may imply that vessels of these types that were reaching the site in the later 4th century were not necessarily intended to be used as casseroles. Whether this has anything to do with the size of the sample is something which requires further research.

Catalogue (Fig. 8)

Dishes

- No. 1 HAB B1.3 with all over horizontal burnishing. Slightly abraded.
- No. 2 HAB B1.3 with all over horizontal burnishing. Unabraded.
- No. 3 GRF B1.3 with all over horizontal burnishing. Unabraded.
- No. 4 BB1 B1.3 with internal horizontal burnishing and exterior reserved zone. Fragmentary but unabraded.
- No. 5 BSW B6.2 with all over horizontal burnishing. Unabraded
- No. 6 GRS B6.2, burnt but unabraded.
- No. 7 GRS B6.2 with faint horizontal riling under flange. Unabraded.
- No. 8 HAB B6.2 with all over horizontal burnishing. Unabraded.
- No. 9 GRS B6.2, burnt and slightly abraded.
- No. 10 GRS B6.2, unabraded.
- No. 11 GRS B6.2 with light horizontal burnishing. Unabraded.
- No. 12 NVC B6.2, burnt and very fragmentary.
- No. 13 GRS B6.2, unabraded.
- No. 14 GRS B6.2, fragmentary but unabraded.
- No. 15 GRS B6.2, fragmentary but unabraded.
- No. 16 HAB B6.2, with all-over horizontal burnishing. In relatively poor condition but unabraded.
- No. 17 GRS B6.2, fragmentary but unabraded.

Fabric								For	rm								Totals	% Eve
	B1.2	B1.3	B6.2	C8	D6	D	E 4	E6.1	E	G9.3	G21	G24.1	G27.2	G35	G	H?		
BB1	-	0.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.06	0.95
BSW	-	-	0.20	-	-	-	-	-	-	-	-	-	-	0.65	0.01	-	0.86	13.62
GRF	-	0.29	-	-	-	-	-	0.28	-	0.11	-	-	-	-	-	-	0.68	10.77
GRS	-	0.01	2.63	-	-		-	0.05	-	-	0.26	0.70	-	-	0.28	-	3.16	50.07
HAB	-	0.17	0.47	-	-		-	-		-	-	-	-	-	-	-	0.71	11.25
HAR	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.23	-	0.23	3.64
нах	-	-	0.01	-	-	-	-	-	0.07	-	-	-	-	-	-	-	0.08	1.26
LSH	ж	-	-	Ξ	н	ж	-	-	-	-	ж	-	0.16	=	-		0.16	2.53
NVC	0.01	-	0.08	0.10	-	8 — 3	-	-	-	-	-	-	-	-	-	Х	0.19	3.01
OXRC	-	-	-	-	-	Х	-	-	-	-	-	-	1 - 2		-	-	Х	-
oxw	-	-	-	-	ж	Х	-	-	-	-	-	-	-	-	-	-	X	-
oxws	-	-	-	-	0.16	-	-	-	-	-	-	-	-	-	-	-	0.16	2.53
RED	-	-	-	-	-	-	0.01	-	-	-	-	-	-	-	-	-	0.01	0.15
STOR	-	-		-	-	-	-	-	-	-	-	-	-	-	0.01	-	0.01	0.15
Totals	0.01	0.53	3.39	0.10	0.16	х	0.01	0.25	0.07	0.11	0.26	0.70	0.16	0.65	0.53	x	6.31	-

Table 3. The pottery from ditch 21, context 8 quantified by Eves (X = form present but not represented by a rim)

LATE IRON AGE AND ROMAN ACTIVITY AT SHILLINGSTONE



Fig. 8 Shillingstone. Late Roman pottery group

Not illustrated. B1.2, NVC, fragmentary - rim only; B1.3, GRS, fragmentary and abraded; B1.3, HAB, with all over horizontal burnishing. Fragmentary but unabraded; B6.2, HAB, with all over horizontal burnishing. Fragmentary but unabraded; B6.2, HAX, fragmentary - rim only, flange missing.

Mortarium No 19 - C

No. 19 OXWS D6, fragmentary - flange broken.

Bowl-jars

No. 20 GRF E6.1 with horizontal exterior burnishing. Unabraded.
No. 21 GRS E6.1, fragmentary - rim only, but unabraded.
Not illustrated. E4, RED, fragmentary and abraded; E6.1, GRF, fragmentary - rim only, but unabraded; E, HAX, fragmentary - rim only.

Bowls

No. 18 NVC C8, abraded - rim only.

Jars

- No. 22 GRS G21.1 with band of external horizontal rilling. Unabraded.
- No. 23 GRS G24.1, fragmentary but unabraded.
- No. 24 GRS G24.1, unabraded with 3 notches on rim
- No. 25 LSH G27.2, fragmentary but unabraded.

Not illustrated. G35, BSW, fragmentary - rim and non-joining body sherds; G9.3, GRF, fragmentary - rim only; G (misc. unclassifiable jar rims), GRS (x6), HAR (x2), BSW, STOR.

Conclusions

The pottery evidence indicates some Late Iron Age and early Roman activity, albeit on a small scale judging from the quantities of material being deposited. It may mean, however, that the focus of the early settlement lies elsewhere. This may be also true of the Hadrianic and Antonine periods which are barely represented, if at all, ceramically. Pottery was again being discarded in recognisable quantities from the late 3rd century onwards followed by a substantial increase towards the end of the century. By far the largest amount of material came from contexts which may be securely dated to the late 4th century. This appears to have been the optimum period of pottery discard. Both the late 4th-century groups (ditch 21 and layer 4) are of regional importance because of the virtual absence of contamination from earlier pottery. The evidence for pottery usage and supply in this period showed a number of significant departures from other broadly contemporary groups which cannot be explained fully in terms of chronology or geographical location. There is, however, clearly, excellent potential for future research which might help explain these differences in a far more cogent manner.

Medieval and later pottery

H. Walker

A very small amount of medieval and post-medieval pottery totalling 98g was recovered from surface contexts in trenches E and F. The earliest material is a beaded rim from an early medieval ware cooking pot, perhaps dating to the 12th century. Some of the sandy orange ware sherds may be medieval, and featured sherds include a cavetto, or turned over rim from a cooking pot/jar which may belong to the first half of the 13th century. Also of interest is a sherd of ?14thcentury buff ware which may have a Suffolk origin and reflects Great Sampford's proximity to Suffolk. Post-medieval pottery comprises sherds of post-medieval red earthenware, none of which is closely datable, and a possible flowerpot fragment. The presence of this pottery may indicate activity during the medieval and post-medieval periods but could just as easily be the result of spreading midden material on to the fields.

Miscellaneous finds

H. Major

Stone

The only definitely worked stone was a fragment of a millstone grit quern (probably reused), a type of stone most likely to occur in later 2nd-century or later contexts, recovered from ditch recut 21 (context 8), dated to the late 4th century. In addition there were three dubiously identified worked pieces, all from Late Iron Age or early Roman contexts: a possible whetstone made from a natural pebble from pit 20 (context 19), and two pieces of stone which appear to have been deliberately shaped, but are of unknown purpose from ditch 7 (contexts 5 and 6). One may have been used as a post-pad.

Brick and tile

177 fragments of brick and tile were recovered, weighing a total of 13,548g. All was Roman bar a single small fragment of post-medieval tile from context 4 (surface cleaning). Roman tile was recovered from seven contexts, two of which were unstratified. The other contexts represented material from two late Roman features, pit 32 and ditch 3/9. The largest group of material came from deposits above pit 32 and ditch 3 (contexts 2 and 4, a total of 104 sherds), but only two fragments of tile actually came from the fill of the pit. The largest amount from a stratified context came from the recut 21 in the top of ditch 9 (context 8), with a single fragment from the third fill of ditch

9 (context 23).

The fabrics present were mostly hard, and fine textured with few inclusions, although there was also a sandy fabric present, and a small amount of a fabric with sparse chalk inclusions. The sparsity of chalky tile is perhaps surprising, given the location of the site, and that all the baked clay from the site contained chalk fragments.

The material consisted mainly of roof tile (89% of identifiable sherds), with eight fragments of brick, and three fragments of box flue tile, one dubious. Some of the brick, which came mainly from context 8, had mortar on the broken edges, and had evidently derived from a masonry structure. The amount of box flue tile present was insufficient to suggest the presence of a bath-house close by.

Context 8 included a piece of *tegula* chipped into a rough disc, 60-68mm in diameter, and 20mm thick. Another possible disc (but very abraded) came from context 4. Such discs are not uncommon, but it is their function is uncertain. Suggested uses include pot-lids, crude weights, or large counters; however, following a recent find of a set of similar discs, made from storage jar, at Colchester, an alternative interpretation is that they are possibly components of a child's stacking toy.

Other finds

No identifiable metal objects were found, apart from iron nails. The remainder of the material mostly comprised iron strip and sheet fragments, but included one small fragment of copper-alloy moulding waste.

A small amount of baked clay was recovered, all in the chalky fabric typical of daub from the north of the county, and probably derived from the walls of a building. Three contexts contained minor quantities of oyster shell, in poor condition.

Worked flint

Owen Bedwin

A total of eleven pieces of worked flint were found, but offered little scope for dating. Two blades and a flake with retouch, struck from prepared cores, suggest Neolithic activity, but all were unstratified.

Animal Bone

P. McMichael

A total of 283 pieces of animal bone, from 12 contexts and weighing 3,617 g, was examined. The bone was in good condition, although a large proportion was fragmentary. Five species were positively identified: *Equus, Bos, Cervus, Ovis* and *Canis.* There was also a goose-sized bird. Much of the bone in context 8 showed signs of butchery. Five pieces of worked bone including one small piece of bone and four pieces of worked antler were also present in this context.

Note on two sherds from fieldwalking

C.J.Going has noted the following two sherds recovered, not from the excavation, but from fieldwalking at Shillingstone (Fig. 9);

- 1. Rim decorated with face mask. Hadham ware, 4th century.
- 2. Rim sherd, Saxon.

Conclusions

The archaeological evaluation uncovered evidence of Late Iron Age and Roman activity, including field boundaries and pits dating from the Late Iron Age, plus two parallel ditches which represent a Roman field system still in use up to the late 4th century. A single prehistoric ditch was also found. These boundaries imply that this area has been farmed since the prehistoric period and that activity on site extended to the late Roman period and beyond. Its topographical location, on a south-facing slope of a river valley, its good drainage and fertile soils, and supply of local water emanating from a natural spring to the north of the evaluated area all suggest this site would have provided an ideal environment for early settlers. The pottery suggests limited activity during the early Roman period



Fig. 9 Shillingstone. Two sherds from fieldwalking. 1: Hadham ware sherd with face mask. 2: Saxon rim sherd

and at its nadir during the early/mid 2nd to early/mid 3rd century AD, with the most intense period of occupation occurring during the 4th century AD.

Although the evidence recorded in the trial trenches does not in itself conclusively show that there was a settlement, the character of the materials recovered, including box-flue tile, roof tile, nails and daub, imply that there was a settlement, such as a farmstead, nearby. Furthermore, the considerable size of the pottery assemblage from the evaluation and the wealth of ceramic material and coins recovered over the years by both the Sampford Society and metal-detectorists, further supports this suggestion.

However, only small quantities of building materials, such as Roman brick and tile were present in the topsoil and subsoil layers. This is unusual as one would expect large concentrations of tile from a site such as a farmstead or villa to be brought to the surface by ploughing. It may therefore be suggested that the building materials, which were a precious commodity in an area devoid of local building materials, were as with many Roman sites, robbed out and re-used locally.

The location of this postulated settlement remains unknown, but further systematic field-walking, geophysical survey and aerial photography should be able to identify it.

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Author; Adam Garwood, Essex County Council Planning Division, County Hall, Chelmsford CM1 1LF.

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A Saxon building at Chadwell St. Mary: excavations at Chadwell St. Mary County Primary School 1996

by N. J. Lavender

with contributions by V. Fryer and P. Murphy, P. McMichael, S. Tyler and P.E.J. Wiltshire

Archaeological investigation at Chadwell St. Mary County Primary School revealed a sunken-featured building dating to the 6th century. Other features included two pits to the north of the building and a series of intercutting pits at its south-west corner. Environmental evidence from the building has provided information about the natural environment and agricultural economy during the sixth century.

Introduction

The site (NGR TQ 6450 7854; Fig. 1) lies within an area of known Palaeolithic and Romano-British activity on the third terrace (Corbets Tey formation) of the River Thames. Numerous finds of Palaeolithic flint artefacts including hand-axes have been located in the area (Essex Sites and Monuments Record [ESMR] number 1776). To the south there is a record of 115 Palaeolithic hand-axes and flints, reputed to have been recovered from gravel workings (ESMR 1719). There is, however, some doubt regarding their true provenance, and it is possible that they came from Chadwell Heath, near Romford.

To the south of the site an area of tessellated flooring was located, probably indicating a Romano-British villa (ESMR 1717) and an associated scatter of Romano-British pottery (ESMR 1718). A Roman coin was also recovered from nearby (ESMR 1777).

Whilst no Saxon activity has previously been recorded at Chadwell St. Mary, settlement, including sunken-featured buildings, is known at Orsett (Hedges and Buckley 1985), Orsett Cock (Milton 1987; Carter forthcoming), Mucking (Hamerow 1993) and Gun Hill, West Tilbury (Drury and Rodwell 1973). Saxon cemeteries have been recorded at Orsett, North Stifford (Wilkinson 1988) and Mucking (Hamerow 1993).

The site was originally evaluated in July 1996, according to a brief prepared by Essex County Council Archaeological Advisory Group. The aims of the project at that stage were to establish the extent, character and date of any archaeological deposits and to provide information as the basis of any future mitigation strategy. In particular, it was expected that the evaluation would identify elements of Romano-British settlement; in the event only a few residual Roman artefacts were located. Trenches were cut within the footprint of the proposed new school hall and the area of the resited car park, then respectively a tarmac playground and a grassed area (Fig. 2).

The identification of a Saxon sunken-featured building during the evaluation necessitated further work during the first half of August 1996. Both evaluation and the follow-on work were carried out under the direction of the author.

Evaluation

Five trenches (Fig. 2, A-E), covering an area of *c*. 104m2, were excavated. All of the trenches were stripped of topsoil and recent overburden onto the top of the natural subsoil, using a mechanical excavator with a toothless bucket. The overlying layers were on average a total of 0.45m deep. The trenches were then cleaned, and the archaeological features excavated, by hand. Archaeological features were identified only in trenches B and C; trenches A, D and E were found to be sterile.

Only one feature was recorded in Trench B; a pit or posthole (F5) against the southern limit of excavation. It was oval in plan at the top, oriented north-west/southeast and measured 0.8m by at least 0.4m. The deepest part of the feature (the north-west end) was 0.27m deep, circular and resembled a posthole. It is possible that the shallower part represents the digging out of a post. No further features were located.

Trench C measured 11m by 1.6m (Fig. 2); a single feature (F9) was encountered and excavated by means of a sondage, 1m wide, parallel with the trench edges. Initially it was believed that this feature was a ditch which terminated within the six metres between Trenches C and D. The sides, however, proved to be very steep and the base almost flat. The presence of two post-holes, cutting the edges and base on opposite sides of the feature, together with the presence of Early Saxon pottery and a spindle whorl, suggested that it might be a sunken-featured building.

Excavation of the sunken-featured building

Trench C was subsequently expanded to encompass an area c. 60m2 in order to examine F9 and its immediate surroundings more completely (becoming Area C in Fig. 3). Following this it was clear that the section drawn across the building was almost exactly central to its long axis (Fig. 4.1)



Fig. 1 Chadwell St. Mary County Primary School. Site location. © Crown copyright 87584M.



Fig. 2 Chadwell St. Mary County Primary School. Trench lay-out

The rest of the building was then divided into quadrants, three of which were fully excavated (northeast, south-east and south-west). Soil samples were taken from all fills substantial enough to do so without fear of contamination from other contexts. One layer of fill (17) within the building was composed of a sandy silt with large quantities of charcoal. This was sampled in its entirety and examined for organic remains. The results indicate that cereal processing was conducted at the site, and that the area comprised a certain amount of heathland during the Saxon period (see Charred plant macrofossils, below). In addition to the transverse section already drawn (Fig. 4.1), the longitudinal section of the building, apart from a central gap of 1m, could now be recorded (Fig. 4.2).

The building was 4.6m long, with an average width of 3.5m, although this varied slightly along its length. Its depth at the intersection of the two sections was 0.85m. The sides were very steep, nearly vertical on the north side. Three post-holes were located, one at the east end (F36) with a base 1.40m below the top of natural, and one approximately central to each side. That on the north (F22) was 1.1m deep, and that on the south (F23)

1.25m deep. No posthole was located at the west end to complement F36, but would probably have been located in the unexcavated quadrant. An indentation in the southern edge of the building, east of F23, may have been a further posthole. This contained only fill 16, and did not penetrate the natural below the base of F9; it is possible that secondary posts may have existed without penetrating the natural, and that this indentation represents the remains of one.

Apart from context 21, a very silty and uneven deposit at the base of the feature, the fills within F9 show signs of having been deliberately backfilled rather than being allowed to accumulate naturally. The postholes of the sunken-featured building were sealed by contexts 16 and 20. This indicates that, following the use of the building, any reusable timbers were removed before the commencement of backfilling.

Few artefacts were recovered, and apart from a residual Roman coin, tile, and prehistoric flint from 12 and 17, comprised almost entirely pottery. The spindle whorl and loomweight were both recovered from context 21, which may have accumulated either during the use of the building, or very quickly afterwards.



Fig. 3 Chadwell St. Mary County Primary School. Detailed plan of Area C

The edges of the south-western quadrant of feature F9 were very unclear because of a series of earlier features (F39, 41 and 43), almost certainly pits. F9 cut through the fills of these features. To the south of F9 it was possible to discern the latest pit running into the limit of excavation, but it was not observed in Trench E, *c*. 2m to the south. Three sherds of Early Saxon pottery

were recovered from the surface of F39, but no finds were produced by any of these features when excavated.

Two further features were recorded in Area C. F27 was a shallow pit, 1.8m long, 1m wide and 0.18m deep whose fill contained Saxon pottery. To the north of F27, running under the limit of excavation, was another small pit, F31, *c*.0.75m in diameter. No finds were recovered



Fig. 4 Chadwell St. Mary County Primary School. Sections through the Saxon sunken-featured building. For location of these sections see Fig 3

from either of the fills of this feature, but soil samples taken from it yielded cereal and wild plant remains, as well as some evidence of industrial activity (see Charred plant macrofossils, below).

The Finds

The Anglo-Saxon pottery

S. Tyler

Summary

A total of 1.04 kg of Early Saxon pottery came from contexts comprising the fills of sunken-featured building F9, pit F27 and from the surface of pit F39. The pot fell into three fabric groups: (1) vegetable-tempered; (2) sand-tempered and (3) tempered with roughly equal amounts of sand and vegetable matter. The vegetable-tempered pot (i.e. tempered with chopped dried grass, straw or animal dung) formed by far the largest group, indicating a 6th-century or later date for the assemblage. *Fabrics*

Three fabrics are present:

- 1. Vegetable tempered: this accounts for 940g (77 sherds) out of the total weight of 1044g of pot. The particles are mostly large (greater than 2mm in length) and density is mostly abundant. The tempering agent is most likely to have been coarsely chopped grass or straw and the potter seems to have used a handful of the straw to wipe the inner surface of the pot in several instances, e.g. Cat. no. 5. There is a very small amount of sand present in this fabric, but it should be seen as a natural occurrence in the clay rather than an added temper.
- 2. Vegetable and sand-tempered: this accounts for only 58g (11 sherds) of pot. In this fabric the amount of sand is judged to be significantly greater than in fabric 1 and therefore can be viewed as an added tempering agent along with the vegetable matter; this is, of course, subjective.
- 3. Sand-tempered: this accounts for 46g (10 sherds) of pot.

Catalogue of pottery (Fig. 5) Figure ContextDescription

Sunken-featured building F9

- 5.1 6 Two joining rim sherds. Upright rounded rim from a small cup or bowl. Medium soft, black fabric with common vegetable temper and common small quartz-sand. Wt. 8g.
- 5.2 12 Rim sherd. Everted, flaring, slightly flattened rim, probably from a hollow-necked globular jar. Medium

soft, black fabric with common vegetable temper. Wt. 13g.

- **5.3** 12 Rim sherd. Flaring, rounded rim, probably from a globular or sub-conical jar. Medium hard dark grey fabric with common vegetable temper and sparse small quartz sand. Surfaces grass-wiped. Wt. 4g.
 - 12 23 sherds (including one neck sherd and one base sherd) probably from two or three vessels in a soft, black fabric with abundant vegetable temper. The outer surface colour varies considerably from black to orange-buff, therefore suggesting more than one vessel is present; however the fabric is consistently heavily vegetable-tempered with sparse quartz-sand (the latter probably occurring naturally in the clay source). Wt. 211g.
 - 12 Two body sherds of medium hard fabric with abundant vegetable temper and a burnished outer surface. Interior is grass-wiped. Wt. 38g.
 - 12 Nine body sherds of medium quartz-sand-tempered fabric. Variations in colour suggest that at least three vessels are present. Wt. 44g.
- 5.4 13 Neck/body sherd from a small slightly carinated bowl. Hollow neck coming up to an everted(?) rim (missing). Medium soft fabric with abundant vegetable temper. Surfaces patchy buff/brown. Core black. Wt. 12g.
- 5.5 13 Two body sherds from a large ?jar or ?bowl. Hard fabric with abundant vegetable temper. Outer surface burnished dark reddish-brown. Interior has very pronounced grass-wiping. Wt. 60g.
 - 13 Five sherds (including one large flat base, abraded) from at least three vessels with abundant vegetable temper. Wt. 101g.
 - 13 One body sherd. Medium hard fabric with abundant small to medium quartz-sand temper. Wt. 2g.
 - 13 Two body sherds. Burnished outer surfaces. Hard black fabric with common vegetable and common small to medium quartz-sand temper. Wt. 14g.
 - 15 Four body sherds in abundant vegetable-tempered medium hard fabric. Three sherds are reddish-brown to black throughout; one sherd has a more distinctive buff surface and black inner core; therefore there are possibly two vessels present. Wt. 62g.
 - 16 A single body sherd in a medium hard, black fabric with abundant vegetable temper. Exterior burnished. Wt. 4g.
- 5.6 17 Rim sherd. Rather uneven, abraded, slightly everted, rounded rim. Hard fabric with sparse vegetable temper. Surfaces buff. Core dark grey. Wt. 8g..
- 5.7 17 Rim sherd. Upright rim, flattened on top, from a small bowl or jar. Medium hard, black fabric with common vegetable temper and common quartz-sand; sparse large quartz sand inclusions. Wt. 4g.
 - 17 Six sherds (including two neck sherds) of a medium hard vegetable-tempered pot. Surfaces brown; core black. Abundant vegetable temper. Wt. 52g.
 - 17 Two body sherds from a ?globular cooking pot. Interior has carbonised residue. Hard fabric with common vegetable temper. Exterior buff-brown. Interior and core black. Wt. 20g.
 - 17 Sixteen lower body/base sherds from a large thinwalled ?jar. Much of the interior surface abraded away. Medium hard fabric with abundant vegetable temper. Exterior part-burnished. Two sherds join. Wt. 131g.
 - 18 Six body sherds in a medium hard fabric with abundant vegetable temper; probably from at least three vessels. Some sherds have grass-wiped interiors. Exterior colours vary from orange-buff to dark grey. Cores and interiors vary from black to grey (with one exception where the interior is orange-brown). Wt.

103g.

- 21 Three body sherds from two vessels. Hard fabrics with abundant vegetable temper. Two sherds are black throughout; the other has grass-wiped reddish-orange to reddish-grey exterior, black interior and core. Wt. 54g.
- Pit F29
- 28 Five body sherds (joining). Hard fabric with common vegetable and common small to medium quartzsand. Exterior surfaces reddish-brown, interior and core black. Wt. 28g.
- 28 Body sherd from a large vessel. Hard fabric with abundant vegetable temper. Exterior reddish brown. Core black. Interior grey and grass-wiped. Wt. 6g.
- Pit F39, Surface cleaning
- 37 Three body sherds (joining) in a hard dark grey fabric with abundant vegetable temper. Exterior smoothed and part-burnished black over reddishbrown margin. Wt. 65g.

Context	Number of sherds	Weight (g)
6	2	8
12	36	310
13	11	189
15	4	62
16	1	4
17	26	215
18	6	103
21	3	54
28	6	34
37	3	65
Totals	98	1044

Table 1 Statistical analysis by weight and sherd count per context

Discussion

This assemblage is significant in that the overwhelmingly dominant fabric is heavily vegetable tempered; other fabrics occur in insignificant quantities. This fact is highly suggestive of a date in the sixth century or later (Hamerow 1993, 22-59). Little of the pot is diagnostic, the few distinguishable forms do not help with dating: globular pots and jars (nos 2; 3; 5; ?6) with everted, rounded rims are not closely datable within the Early Saxon period; nor are small cups and bowls with more upright rims (nos 1 and 7). Only no. 4 gives some indication of a sixth-century rather than later date with its carinated shoulder; a feature found in earlier contexts at nearby Mucking (Hamerow 1993).

It is worth noting that despite the abundance of coarse vegetable tempering, several of the pots have highly burnished outer surfaces (e.g. no. 5); a feature also noted at Mucking (Hamerow 1993).

Conclusions

This is a pottery assemblage of a fundamentally domestic nature, typifying the range one would expect from a sixth-century sunken-featured building.



Fig. 5 Chadwell St. Mary County Primary School. Saxon pottery



Fig. 6 Chadwell St. Mary County Primary School. Saxon spindle whorl (1) and loomweight (2)

The coin

P. McMichael

A single coin was recovered from the excavation . This was of Roman date and residual in context 12 (upper fill of F9):

'Follis' of the Tetrarchy (288-312 AD). 9 g; copper alloy, 25mm diameter.

Obverse: Head facing right. Legend: "...AUGG"; Reverse: worn/obscured.

Textile processing objects

S. Tyler

A small ceramic spindle-whorl (Fig. 6.1) and half of a fired clay "American doughnut-shaped" loomweight (Fig. 6.2) were recovered from the lowest fill of F9. Neither of these objects is particularly distinctive, but they are both consistent with the 5th-7th century date of the pottery.

Charred plant macrofossils and other remains

V. Fryer and P. Murphy

Introduction

Thirteen samples were submitted for quantitative analysis: eleven from the fills of the sunken-featured building (F9:samples 1 - 3 and 6

- 13) and two from the fills of a pit to the north of the building (F31; samples 4 and 5).

Methods

The samples (all approximately 15 litres in volume) were processed by machine flotation and the flots were collected in a 500 micron mesh sieve. The dried flots were sorted under a binocular microscope at low power. Plant macrofossils were preserved exclusively by charring. Identifications were made by comparison with modern reference material.

Results

Charred plant macrofossils and other materials from the samples are listed in Table 2. Modern contaminants (fibrous and woody roots, seeds/fruits and arthropods) were present in all samples. Preservation was in general poor: grains and seeds were often 'puffed' and distorted, chaff remains were fragmentary and many specimens were coated with fine sediment. Some well-preserved material was, however, present in Sample 1 (Context 17) from F9. The *Hordeum* (barley) grains from this context included at least one specimen with an angular cross-section, clearly a hulled grain and one twisted asymmetrical grain from a lateral spikelet. Some of the rachis nodes from this context retained their glume bases, the lateral ones diverging markedly from the rachis axis. The presence of six-row hulled barley (*Hordeum vulgare*) may thus be established.

Samples 4 and 5 (F31) were very charcoal-rich. Most samples from both F9 and F31 included some possible industrial residues: solidified globules of fused vitreous/siliceous material, possible slag and some small fragments of coal (the latter presumed intrusive). Solidified droplets of tarry material and porous 'cokey' material, probably derived from the partial combustion of plant residues at high temperatures were also present.

Discussion

Samples 2, 3 and 6-13, fills of the sunken-featured building F9, contained low densities of poorly preserved charred plant remains. Most of the cereal remains were unidentifiable, but crops present included *Hordeum* sp (barley), *Secale cereale* (rye), *Triticum dicoccum* (emmer), *Triticum aestivum* (bread wheat), *Avena* sp. (wild or cultivated oats) and a cotyledon of a pulse crop (pea, bean, vetch). Charred weed seeds and culm fragments occurred sporadically.

SAXON BUILDING AT CHADWELL ST MARY

Table 2. Plant macrofossils and other remains

Sample no	1	2	3	4	5	6	7	8	9	10	11	12	13
Context no	17	17	17	30	33	12	12	13	13	10	10	21	24
Cereals and other crop plants		17	17	02	00	12	14	10	10	15	15	21	54
Careal indet (grains)	01	7			1	16	0			0		4	11
Cereal indet. (grains)	21	1			1	16	8		1	3		4	11
Cereal indet. (rachis internodes)	6					2							
Cereal Indet. (basal rachis internodes)													
Avena sp. (grains)	26	1		2			101					1	1+1ct
Avena sp. (floret bases)	2												
A. fatua L. (floret base)	1												
Hordeum sp. (grains)	11	2	1cf	3	1	2	3	1cf	1		1	2	4
Hordeum sp. (rachis nodes)	46	7							1cf				1cf
Hordeum sp. (basal rachis internodes)	4												
Hordeum sp./Secale cereale L.(rachis nodes)	23	3				1	1cf						
Secale cereale L. (grains)	7+2cf	2			2cf	1cf		2cf					
Secale cereale L. (rachis nodes)	8												
Triticum sp. (grains)		7			2	2	1cf		1				4
Triticum sp. (rachis nodes)	4												
T dicoccum Schubl. (dume bases)													1
T aestivum type (rachis podes)		2										1	1
Large Eabaceae indet		2					1 coty						-
Dryland borbo							TCOLY						
Anthomic potulo I	10												
Anthemis colula L.	10			1									
Asteraceae Indet.	1	1											
Atriplex sp.	4			2	1		2					1cf	
Brassicaceae indet.	2cf												
Bromus sp.	9												
Chenopodium album L.	28				1	2							
C. ficifolium Sm.	1cf												
Chenopodiaceae indet	25	3		1	1				1				1
Small Fabaceae indet				1cf	1							1cf	
Fallopia convolvulus (L.) A.Love	2cf	1cf										10100	
Malva sp.	10	3			3		1						
Medicago/Trifolium/Lotus sp	11	1 cf	3 cf		0	1	,						
Mentha sp		101	501										
Persicaria maculosa Grav/Planathifolia (L.)Grav	2												
Plantago langoalata L	3												
	8												1
Small Poaceae indet.	3		3		1					2			
Large Poaceae indet.	5	2	1				1						2
Polygonum aviculare L.	3				2					1			
Polygonaceae indet.													1
Ranunculus acris/repens/bulbosus	5												
Rubiaceae indet.	1												
Rumex sp.	4				1						1		1
R. acetosella L.	4cf										1		
Sherardia arvensis L.	2												
Spergula arvensis I	1												
Stellaria graminea I	6												
S media (L.) Vill	0						- 1						
							1						
Visia/Lathurus an	4-6						1						
vicia/Lainyrus sp.	ICT												
Trees/snrubs													
Corylus aveilana L.													1
Malus sylvestris (L.) Miller	1												
Rubus sp.	1												
Plants of wet soils													
Carex sp.	20	1			1cf								
Eleocharis sp.	3cf												
Scirpus sp.	1cf												
Other plant macrofossils													
Calluna vulgaris (L.)Hull (capsules)	11												
Charcoal	XXX	XXX	XX	XXX	XXX	XXX	XXX	XXX	XX	XX	XX	XXX	XXX
Charred root/rhizome/stem	Y	Y	~~~	x	x	, , , , , , , , , , , , , , , , , , ,	¥		707		~~~	Y	AAA
Ericaceae indet (stem)	×	^		^	~		^					^	~
Indet outprodes	X			0	^								×
Indet. cum nodes				2									
Indet. Inflorescence frags.	X		-		-								
Indet. seeds	36	7	2	4	2		2	1	2			1	
Indet. thorns	5				2								
Pteridium aquilinum (L.) Kuhn (pinnule frags)	1												
Other													
Black porous cokey material	х	х				х		х	х		х		
Black tarry droplets				х						х			
Ferrimanganiferrous concretions	XX												
Siliceous/vitreous material	х	x				х				x		x	X
?Slag		x		х		х	x		x	х	х		
Small coal frags.		x		x		х	x	х				x	
Volume of flot (litres).	0.2	0.1	0.1	0.2	0.3	0.1	0.1	<0.1	0.1	<0.1	<0.1	0.1	0.2
% of flot sorted	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Interpretation of such a 'background scatter' is problematic, particularly since Early Anglo-Saxon deposits at this site included abraded Roman pottery sherds and a coin (above). The possibility of some residual charred material being present, relating to nearby Roman activity, has to be considered. The emmer glume base from sample 13 (context 34) could represent a late record of this crop or could be residual. Hitherto the only post-Roman record from Essex is from an Early Anglo-Saxon cremation at Springfield Lyons, Chelmsford (Murphy 1994), where residuality could be discounted.

Context 17 (sample 1) was a discrete layer rich in charred plant material within the fill of the building (F9), apparently representing a single depositional event. The two main cereals represented were barley and rye, with some indeterminate wheat and oats, which definitely included wild oat (*Avena fatua*). Both grains and chaff fragments (rachis nodes and floret bases) were present. Both included a proportion of poorly preserved unidentifiable material, which precludes precise determination of chaff: grain ratios. Nevertheless, there was clearly an excess of barley and rye chaff over grains, and wheat was represented only by rachis nodes. Oat grains were more abundant than floret bases, but this could have resulted from differential combustion during charring. The overall proportions of the cereal remains imply that the samples represent processing waste, which still included a proportion of grain.

The relative abundance of charred 'weed seeds' supports this interpretation. The list of dryland herb taxa included species characteristic of more than one habitat. Anthemis cotula (stinking mayweed) is an arable weed particularly prevalent on heavy clay soils (Kay 1971), whilst Rumex acetosella (sheep's sorrel) and Spergula arvensis (corn-spurrey) are weeds typical of acid sandy soils. Some of the herb species present are nowadays more typical of grassland than arable, including Ranunculus sp(p) (buttercups) and Plantago lanceolata (ribwort plantain), though inefficient tillage may in the past have permitted persistence of grassland species in arable fields (Hillman 1981, 145-6). The sample also included some taxa generally found on wet soils: Carex sp(p) (sedges), Eleocharis sp (spike-rush) and Scirpus sp (club-rushes etc). The presence of charred capsules of Calluna vulgaris (ling), indeterminate Ericaceae stems (heather family) and pinnule fragments of Pteridium aquilinum (bracken) indicates an input of material from heathland vegetation, presumably in the vicinity of the site.

Other charred plant macrofossils from the samples included a fragmentary seed of apple (*Malus sylvestris*) and fruitstone of *Rubus* (probably bramble), which plainly are likely to represent human food wastes, and some charred thorns. Wood charcoal was not notably common in this sample.

In summary, this is a very mixed assemblage, including cereal processing waste, heather and bracken, material derived from wetland vegetation and probable food waste. Interpretation is difficult, but it could represent a mixture of flooring material and/or thatch from a nearby building which had been partly burnt before disposal in the fill of F9.

The flots from samples 4 and 5 from the pit F31 were composed almost entirely of wood charcoal, together with sparse cereal remains and seeds of dryland and wetland herbs. Solidified tarry droplets, possible small slag fragments and coal fragments were present in sample 4 (32, the upper fill), but not more commonly than in many other contexts at the site. In the basal fill, 33 (Sample 5), such material was not noted. There is therefore no reason to suppose that this feature was related to industrial activity, and the significance of the charcoal from it remains uncertain.

Information on Early Anglo-Saxon agriculture and environmental conditions is still very poor in Essex and, indeed, eastern England generally, so the results from Chadwell St Mary make a useful addition to a sparse data-set. This is mainly because most large-scale excavations at settlement sites of this period were undertaken before extensive sampling for retrieval of charred plant material became routine, and subsequently excavation has been focused on cemeteries or, at settlement sites, has been on a restricted scale. Studies of plant impressions on pottery have provided some information (e.g. at Mucking (Van der Veen 1993 and references to other sites, therein), West Stow (Murphy 1985) and Spong Hill (Murphy 1995b)). The latter two sites also produced a few samples of charred material, as did more recent excavations at Redcastle Furze, Thetford (Murphy 1995a) and a cemetery at Springfield Lyons (Murphy 1994). In summary, the results suggest that impressions, overwhelmingly dominated by impressions of barley, probably do not give a reliable impression of crop production. Crops represented by charred remains from these sites, taken together, comprise emmer, spelt, bread wheat, six-row hulled barley, rye, oats, pea, horsebean and possibly flax. A point of critical interest is the presence of emmer (reported from Springfield) and spelt (at Springfield, West Stow and Mucking). Spelt was the main Roman wheat crop in Eastern England, and emmer commonly occurs at low frequencies in samples from Roman sites. The presence of these wheats in Early Anglo-Saxon contexts suggests continuity of production, though it remains to be seen how widespread this was. The single glume base of emmer from F31 (context 34) at Chadwell St Mary is unfortunately not reliably of Anglo-Saxon date (see above). There is clearly a need for large-scale sampling at a site of this period in Essex.

Samples of this type are unlikely to produce much information on the surrounding landscape, though the presence of charred remains of ling and bracken imply the proximity of heathland. Heathland, growing on poor, shallow, acid soils developed on sands and gravels of the Thames terraces was formerly widespread in south Essex as, for example, at Orsett and Mucking Heaths, and some areas still survive (Jermyn 1974, 40). The extent of heaths in the Anglo-Saxon landscape of the area is unclear. The only pertinent pollen diagram is that from the Mar Dyke (Scaife 1988), which shows slight rises in percentages of *Calluna* (to well under 5% of total arboreal pollen (excluding alder) + herbs) probably of later prehistoric and Roman date, with a decline thereafter. Sediments post-dating 1540 + 80 BP (HAR-4525) were unfortunately not analysed.

Palynological evidence

P.E.J. Wiltshire

Standard methods were used and twenty transects of each sample slide were scanned. Relative abundance is shown by '+' with '+++' being the most abundant and '+' relative low or just present. The figures for overall abundance are on a five point scale with 5= abundant and 1 = very sparse. The same scheme is used for preservation, with 5 = well preserved and 1 = very poorly preserved.

Palynomorphs were not abundant in any of the samples and most were corroded and crumpled so that it was impossible to identify them. The taxa in the above schedule comprise only those which could be positively identified.

The preservation was rather inconsistent within the upper two samples, with individual grains of the same taxa being both

Table	3	Summary	of	palvnoi	logical	enidence
Inon	2.	Summery	01	parynor	osicui	concret

Depth (cm)	70	75	80
Microscopic Charcoal	+	+	+
Trees/Shrubs			
Alnus	+		
Corylus-type	+		+
Herbs			
Aster-type	+	+	+
Cyperaceae		+	
Lactuceae	+	+	+
Lamium-type		÷	
Plantago lanceolata	++	+	+
Poaceae	+++	++	++
Ranunculus-type	+		
Sinapis-type		+	
Relative abundance	3	2	1
Preservation	2	2	1

moderately well and very poorly preserved. This might indicate that there had been mixing of the sediment. The palynomorphs in the lower sample were consistently poorly preserved which suggests that even if the sediment had been mixed originally, it might have been *in situ* for a longer period than the upper ones.

There has obviously been a massive loss of pollen and spores and this is common in well aerated sediments and/or where microbial activity is high. There was little evidence of microbial pitting in the remaining palynomorphs and the samples were remarkable in that virtually no microbial remains were found. It is possible, therefore, that oxidation might have been the dominant agent in pollen decay. Pollen and spores are often badly preserved when there is alternate wetting and drying of sediments, possibly because redox potentials and other aspects of sediment chemistry fluctuate with variations in hydrology.

Although the palynomorph assemblages are relatively poor and little is known about the taphonomy of the sediment, it can be seen that the spectra reflect open conditions. The dominant taxon was Poaceae (grasses) and other herbs characteristic of grassland/pasture/field edges and possibly open, disturbed soils.

The only woody taxa found were *Corylus*-type (hazel) and *Alnus* (alder). Both plants are prolific producers of well-dispersed pollen, and might, therefore, have been growing some distance away from the site of accumulation. Both fare better on relatively nutrient-rich, moist soils and might have been growing in the marshy area of the Thames floodplain. The presence of Cypercaceae (sedges) might also indicate wetter soils although there are also species which grow well on drier ones, so care must be taken in assigning them to specific habitats and soils without further evidence.

There is no indication whatsoever of arable cultivation or heathland from these samples. Pollen of Ericaceae (heathers) is very distinctive and relatively resistant to decay. The overall impression is of a very open landscape with, perhaps, the occasional shrub or tree. The source of pollen from herbaceous plants would be consistent with this type of habitat.

Conclusion

The investigation at Chadwell St. Mary County Primary School has demonstrated the existence of an early Anglo-Saxon settlement on the edge of the scarp overlooking the Thames floodplain. The extent and character of this settlement are unknown, since only one structure was located. There is, however, environmental evidence (charred plant macrofossils, above) that cereal-processing was taking place on site.

The sunken-featured building is a common element in early medieval English rural (and to a lesser extent urban) settlement. Whilst larger, post-built surface structures or 'halls' occur on most sites, sunken-featured buildings appear to dominate, numerically if not physically, the rural settlements. There were 69 at West Stow, Suffolk (West 1985) and 210 at Mucking (Hamerow 1993), although in both cases they represent more than one phase of settlement.

First occurring during the late fourth or early fifth century, the English sunken-featured building is derived from continental examples. From the middle and late Saxon periods they become less common, and disappear from the archaeological record altogether during the thirteenth to fourteenth century, except in Somerset and Ireland, where more recent examples are known (Laver, and Danachair, both cited in Rahtz 1976). On the continent they also appear to have gone out of use during the thirteenth century (Grimm, cited in Beresford and Hurst 1971).

The function of sunken-featured buildings remains unclear, and the evidence suggests that they had many uses. Some may be cellars, possibly belonging to buildings of greater size; others, however, actually had hearths in or on their bases, which suggests that they were open to the roof. There is evidence that some examples had wooden floors at, or near, ground level. Many examples are associated with textile manufacture. Hut 15 at West Stow had nearly 100 loomweights on the floor; at Upton, Northants, loomweights were found in the base which were threaded on sticks, having fallen from racks or cupboards. Ahrens, cited by Rahtz (1976), considers that the humidity of a semiunderground environment may have been deliberately sought for weaving. Other examples were clearly houses (the reconstructions at West Stow indicate how spacious and pleasant such structures could be). Other suggested functions range from barns to apiaries.

The recovery of a spindle-whorl and a loom-weight from Chadwell St. Mary would suggest that the building may have been used for weaving, but the quantity of the material is too small to draw any firm conclusions.

Early Saxon sites in Essex are not common, amounting to less than 20 settlements and a similar number of cemeteries. Mucking with its large number of buildings is unusual both locally and nationally, since few sites have produced more than 10 sunken-featured buildings, and the majority only single examples. Most Essex examples are in the south of the county: Mucking (Hamerow 1993), West Tilbury (Drury and Rodwell 1973), Orsett Cock (Milton 1987), Barling (Buckley 1977) and Temple Farm, Southend (Brown and Arscott 1986) all of which possess a varying number of sunkenfeatured buildings. The closest to Chadwell St. Mary was that at West Tilbury (Gun Hill Farm) c. 1.5 kilometres to the south-east. Orsett Cock lies c. 3 kilometres to the north of Chadwell St. Mary and Mucking c. 4 kilometres to the north east. Two seventhcentury barrows belonging to a seventh-century inhumation cemetery were recorded during excavations at the Orsett Causewayed Enclosure, 2km to the north (Hedges and Buckley 1985; Tyler 1996).

Taken with the settlement and cemetery evidence from further east, in the Southend peninsula, it is apparent that much of the Early Saxon settlement of Essex was concentrated along the edge of the Thames estuary. Contact with similar settlements in North Kent, has been demonstrated by the swords and jewellery from Prittlewell (Tyler 1988; 1996), and the jewellery from Springfield Lyons (Tyler 1987 and in prep).

The location of the site would offer a variety of landscape types conducive to settlement. The welldrained acidic sandy soils would provide good arable land, as well as heathland (attested by ling and heather) suitable for grazing. The wetlands of the Thames flood plain would be exploited as summer pasture, as well as providing rushes and sedge for thatch and flooring. Wild fowl would also be available in these wetlands. No significant conclusions are possible from the limited evidence that was recovered from the excavation. However, the site draws attention to an important area of evidence. As noted above, most of the major excavations at Saxon settlements in eastern England took place before environmental sampling became routine. The charred plant material from Chadwell St. Mary demonstrates the need for the controlled excavation and environmental sampling of Early Saxon settlement deposits.

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Author; Nick Lavender, Essex County Council Planning Division, County Hall, Chelmsford, CM1 1LF

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Holy Trinity Church, Bradwell-juxta-Coggeshall: A Survey of the Fabric and Appraisal of the Norman Brickwork

by Warwick Rodwell

with contributions by Paul Drury, Sharon Cather and David Park

A detailed archaeological survey of the fabric of Bradwell church was carried out in 1995, followed by an analysis and reconstruction of the architectural development of the building. Owing to its remarkable state of preservation, the church retains much evidence bearing on construction techniques in the mid-12th century: particularly notable are the surviving oak caps to numerous putlog holes (reused roof shingles?). The church is also remarkable in having all its primary dressings executed in contemporary brick, which is of the type generally supposed to have been made at Coggeshall abbey. The brickwork, its date of manufacture, and historical context are re-assessed. The architectural history of the church in the 13th to 15th centuries is also of interest and is briefly discussed.

INTRODUCTION

'Here is a mine of information as to what a village church in a remote rural district anciently was.' (Hamilton 1884, 86)

Setting and previous study

Bradwell is a little-known parish in eastern central Essex, on the south bank of the river Blackwater, midway between Coggeshall and Braintree. In order to distinguish it from the more notable Bradwell-on-Sea, the descriptive '-iuxta-Coggeshall' or, occasionally, '-by-Braintree' has long been applied. The placename is derived from a copious spring, or 'broad well', which rises just north of Bradwell Hall (Fig. 1). Holy Trinity church lies at a road junction 100 m south of the hall, which is the seat of the only manor in the parish. There is no other habitation within 1 km, and no evidence to suggest that there has ever been a nucleated village at Bradwell: this is a classic example of the isolated hall-church complex, a settlement form for which Essex is especially noted.¹

Bradwell was not individually identified in the Domesday Survey, and it is generally supposed that in 1086 the manor was subsumed under one of the complex entries for Kelvedon. The earliest mention of the place by name is in a Subsidy Roll of 1238, and an entry for a priest here is recorded in the Feet of Fines for the following year (Reaney 1935, 282). The living of the church is a rectory, appendant to the manor. Unfortunately, none of this is of assistance in studying the origins and early history of the manor or of the church: on architectural-stylistic grounds, Holy Trinity has generally been assigned to the first half of the 12th century. It can hardly be doubted that the church in the Middle Ages was a proprietary adjunct of the manor.

The church is a small Norman structure of simple rectangular form, built of mixed rubble and having claytiled roofs (Figs 2 and 3). Since the church has always served a small and scattered population there has neither been a need, nor probably the finance available, to enlarge the basic structure or to rebuild it lavishly. Such improvements as were made over the centuries were low-key: a timber belfry and a timber-framed porch were added, the roof was reconstructed, and several new windows were provided in the later Middle Ages. However, the Norman masonry shell, complete with both its doorways and several windows, remained intact. The original fabric was almost devoid of architectural embellishment, and the walls were fully plastered, both internally and externally.

No less remarkable than the very survival of the church in its primary form, is the fact that it was not subjected to a vigorous campaign of restoration in the 19th century. Bradwell is truly one of those 'churches the Victorians forgot' (Chatfield 1979). It is the only good example in Essex. A small amount of restoration was undertaken in 1905 by the rector, the Revd T.H. Curling (Curling 1906), and a contemporary painting shows the survival of a fine, box-pewed interior.² Thomas Curling was an antiquary-cleric, and his restoration was conservative.³ Regrettably, the internal furnishings were considerably depleted by mid-20th-century alterations.

When the surveyors for the Royal Commission on Historical Monuments visited Bradwell in 1913, the church was still comprehensively rendered, so much so that in the published inventory the walls were simply described as 'probably of flint-rubble' (RCHM 1922, 12). The presence of recycled Roman brick and tile in Essex churches was invariably noted by the RCHM, but no mention of it was made in the case of Bradwell, and therefore presumably none was observed. The roundheaded north doorway was described as 'early twelfth century', and the south doorway was noted as being of



Fig. 1 Dispersed settlement at Bradwell-juxta-Coggeshall, with the hall and church complex on the 100-ft terrace above the river Blackwater. From the 1924 edition of the 1:10,560 Ordnance Survey map

similar form, 'but of brick'. Presumably part of the brick-built outer arch was visible within the porch, where the rendering was defective. The wording suggests that the RCHM investigator probably thought the brickwork to be of late or post-medieval date; in any event, its true significance as a Norman product was clearly not recognized.

A partial restoration of the fabric occurred in the 1950s, and it is understood that the external rendering was stripped in c. 1951, leaving only a triangular patch within the roof space of the porch. A small amount of cement pointing was then crudely inserted into cracks and other defective areas but, mercifully, no comprehensive treatment of the wall surfaces was attempted. The removal of the rendering revealed that the dressings of all the Norman windows, doorways and quoins were of red brick. At the time, this was locally supposed to be Roman, and entered the literature as such. Pevsner (1954, 85) described the primary features of the building as 'all Norman with Roman brick trim'. However, the late M.R. Hull, a distinguished Romanist, visited the church in c. 1960, and discovered that the bricks were medieval. He wrote in the Victoria County History, 'The alleged Roman tiles in this building are medieval, of the distinctive type made and used at Coggeshall Abbey' (VCH 1963, 52).

But still the 'Roman' tradition lingered (*cf.* Pevsner 1965, 97). In 1971, whilst carrying out archaeological investigations on nearby Rivenhall church, where the primary dressings are all of Roman brick, the present writer was informed by the rector that Bradwell church was also well endowed with Roman brick dressings. However, upon visiting Bradwell it was immediately apparent that Hull's identification of the bricks was correct, although there were some scattered pieces of genuine Roman brick and tile in the fabric which he had evidently overlooked.

In 1972, in an attempt to relieve rising dampness in the fabric of Bradwell church, a drainage trench was dug around the entire building, exposing the bases of the walls and much foundation work. The upcast from this trench yielded innumerable scraps of medieval brick and roof tile, as well as the occasional sherd of medieval pottery. The work was carelessly executed, and left incomplete for many years.⁴ Consequently, the foundations and lower parts of the walls deteriorated significantly, and much repair and repointing have subsequently been carried out.

There were less than thirty names on the parish electoral roll in the mid-1970s, and the future of Bradwell church was uncertain. Redundancy appeared to be looming. Attention was drawn to Bradwell's



Fig. 2 Holy Trinity Church, Bradwell-juxta-Coggeshall, from the north-west in 1996

outstanding archaeological interest, and it was suggested that the church may be 'the only substantial example of



Fig. 3 The church from the south-west

Norman brick-building in England' (Rodwell and Rodwell 1977, 98). At the same time, the late Cecil Hewett (1974, 80) recognized that the bell-turret was in part also Norman, it having previously been dismissed as 'late sixteenth or early seventeenth century' (RCHM 1922, 13).

Local interest in Bradwell church was rekindled in the late 1980s, leading to the inception of a long-term, gentle repair programme. In 1992, the head of the north-east chancel window, which was collapsing, was dismantled and rebuilt. This provided an opportunity to examine the masonry core, and to confirm the sequence of structural features hereabouts; recording was undertaken by Dr David Andrews. In order to facilitate the repair it was necessary to remove and refix part of the medieval wallpainting on the window splay, which was carried out by the Courtauld Institute of Art, under the direction of Dr David Park. Subsequently, a detailed archaeological survey of the church fabric, which forms the subject of the present report, was put in hand.

The structure of Bradwell church is now in moderately good condition, and is well cared for. For a recent restatement of the overall significance of the church, see Rodwell and Park 1993. Considering its intrinsic interest, Bradwell church has been the subject of remarkably little research, or scholarly writing. Its first guidebook was only published in 1991 (Guthrie 1991).





Fig. 5 Elevation drawings of the north and south walls, emphasizing structural breaks and Marginal arrows [<>] indicate the level of the



putlog holes; thin horizontal lines mark building-lifts. All stone other than flint is shown. e first seasonal break in building the church.



Fig. 7 Elevation drawing of the west wall, emphasizing structural breaks and putlog holes.



Fig. 6 Elevation drawing of the east wall, emphasizing structural breaks and putlog holes.

Archaeological survey

The survey was carried out in May 1995, and was funded by English Heritage. Its purpose was to record and interpret the existing fabric before any further repairs or repointing took place. The project involved the preparation of a ground plan of the church at 1:50 scale (Fig. 4), and elevations of the four external wall faces at 1:20 scale (Figs 5-7). The elevations were largely drawn from rectified photographs taken by David Guthrie, supplemented by hand measurement.

Owing to the small size of the rubble used to build the church, and the variable amounts of mortar still adhering to the masonry (mostly the residue of rendering) the outlines of the individual stones are often blurred, and many are effectively concealed to such an extent that they cannot be meaningfully illustrated. This applies most especially to the rounded flints, which comprise the bulk of the rubble. Bricks and tiles, with their crisper edges, are better defined. The same applies to the numerous nodules of ferricrete (a ferruginous conglomerate), but for a different reason: this material is so friable that weathering tends to release mortar from the stone.

It was therefore decided that flints would not be individually drawn in the survey, except where they crucially define a feature or filling. This selectivity has a beneficial effect upon the illustrations by highlighting all the non-flint material, and presenting a clear picture of the building-lifts in the structure. While the form of the later medieval windows is shown in the elevations, no attempt has been made to depict fine detail. The window frames and tracery are both distorted and heavily eroded, and their features have been substantially restored in Portland cement.

While the initial aim of the survey was to record and analyze the exposed Norman fabric, in order to establish its precise extent, physical condition and archaeological significance, the later medieval work was accorded a similar level of scrutiny. The history of the building is more complex than at first appears, and a proper understanding of its development can only be achieved through a holistic approach. Thus, a visual analysis of all the materials and mortars visible in the exterior wall faces was undertaken, irrespective of date. The results are presented as a series of colour-coded elevations (Figs 8-10).

Internally, both the fabric of the church and its furnishings are of considerable interest, but were not included in the original survey brief. They are however noted, where relevant, in this report. The fittings and furnishings deserve a detailed study of their own, as does the timber belfry.

General description of the church

Externally, the church is a plain rectangle of coursed rubble construction, with the quoins formed entirely in

medieval brick and tile. There are no projections, except for a low, brick buttress which was added to the southeast angle in the late 18th century. Nor is there any structural demarcation between nave and chancel, although the division is expressed by a slight step between their roofs.

The roofs are medieval and are covered with plain clay tiles; a squat, timber-framed belfry and brooch spire, all weatherboarded, rise from the west end. A 14thcentury timber-framed porch, founded on dwarf walls, stands in front of the main (south) entrance (Fig. 41).

The Norman north and south doorways to the nave are dressed with brick, as are the original windows, of which there are several complete and fragmentary examples. Later window openings (14th and 15th century), together with a priest's door in the south side of the chancel, are variously dressed with Caen stone, clunch and Upper Greensand. A small quantity of medieval glass remains in the tracery lights (Hamilton 1884, 86-8).

Internally, the walls retain much of their medieval plaster, and the church possesses some noteworthy wallpaintings. There is 13th-century polychromy on the upper part of the east wall, and several of the window splays in the north and south walls retain 14th-century decoration. The paintings, which were uncovered in 1905 by Curling (1906, 36-8), were commended both by the RCHM (1922, 12) and by Pevsner (1965, 97). Other traces of colour, as well as a nimbed head near the north door, confirm that there are more paintings waiting to be uncovered.

The north doorway was infilled in the 18th century with a skin of brick, up to arch-springing level. Above is a semicircular window containing leaded glazing set within a framework of Georgian glazing bars. There is an externally hinged shutter (Fig. 22).

A photograph of *c*. 1900, hanging in the vestry, shows the nave filled with pine box pews, the screen in a more fragmentary condition than now, and the royal arms of Charles II suspended over the entrance to the chancel. There was also a fine pulpit with an inlaid tester in the south-east corner of the nave (*cf.* Curling 1906, frontis.). The pulpit has been superseded, the screen restored, and the pews replaced by oak benches. These have been partly reconstituted from surviving late medieval fragments.

The floor throughout the church is at one level, and is mostly paved with yellow and pink stock bricks of 19th-century date. The central alley is in herringbone pattern, while the chancel floor bricks are laid in straight rows, half-bonded. The pews are set on areas of pineblock flooring, laid herringbone fashion. Two areas are separately treated, being paved with glazed medieval tiles. These all appear to have been salvaged and relaid. One area is in the south-west corner of the chancel, beneath the rector's stall. A few tiles have also been set on the window sill behind the stall. The other area is a rectangle, centrally at the west end of the church, adjoining the font.⁵ Most tiles are now worn smooth, but both patterned and plain glazed types are represented, and all are likely to date from the 14th century. For further details of the tile types, see below.

Also set into the floor are two brass indents, and a few ledger slabs in poor condition. One of the latter, of which only the lower half remains, is of especial significance. It is a coffin lid with an incised effigy and marginal inscription (Christy and Smith 1903, 5-7).⁶ The figure is identifiable as a priest, and the fragmentary inscription includes the date 1349. Unfortunately, there is no record of the name of the rector of Bradwell at the time of the Black Death. The chancel contains some splendid monuments, the most notable being the large altar tomb which stands in front of the east window. This double monument was erected by the Maxey family, *c*. 1624 (Chancellor 1890, 301-3).

The altar stands in front of the Maxey monument and is raised on a large timber dais, edged on three sides with a gated communion rail. The rail is of oak and has turned balusters; it is late 17th century. In the south-east corner of the chancel is a 15th-century piscina; next to it were the sedilia, built into the window reveal.⁷

The font is a curious and somewhat inelegant concoction, but of considerable interest nonetheless.⁸ It lies off-axis, at the west end of the church. The bowl is of Barnack-type limestone, 12th century in date, and originally square in plan. The corners were subsequently cut off, somewhat roughly, to produce a regular octagon (Guthrie 1991, pl. opp. 13). Immediately below the rim is a discrete band of chevron ornament between two parallel lines. This is not quite the same on all four faces: for example, on the west the ornament looks more like nailhead, and on the east there is an additional rope-moulding below. These differences may suggest that the decoration on the rim-band was discontinuous, and that there was an emphatic break at each corner, perhaps associated with a carved head.

The bowl is mounted on an octagonal base of red brick, constructed *in situ*. This has a bold, bolection-moulded plinth; the short stem has a single blind quatrefoil cut into each of the faces; and there is a moulded upper section which supports the bowl. This base dates from the early 16th century; the mutilation of the Norman bowl is contemporaneous. The oak font cover is Jacobean. The only other example of a brick-built font in Essex is at Chignal Smealey, but that is plainer (Paul 1986, 56). While many Perpendicular fonts have sunk quatrefoils in the faces of octagonal bowls, it is rare to find them on the stem: locally, this is seen only at Thorpe-le-Soken (Paul 1986, 194).

The undamaged faces of the bowl retain traces of limewash and pink paint; these decorative materials are not found on the truncated corners. It would not have been intended for the brick base to be visible in its present naked form. A thin skim of lime plaster would have concealed the brickwork, and doubtless also the exterior of the hacked bowl.

THE NORMAN CHURCH

Ground plan and foundations

The original plan comprised a simple unbuttressed rectangle of masonry, without structural subdivisions or excrescences (Fig. 11). Any partition between nave and chancel must have been of a less substantial material, presumably timber. The only openings at ground level were a pair of opposed doorways in the north and south walls.

Owing to a setting-out error, the plan is not a perfect rectangle. Externally, the north wall is 19.0 m (62' 3") long, while the south wall is 19.3 m (63' 4"). The discrepancy of one foot points to a simple error of measurement. The west wall is 8.42 m (27' 8") long, and the east wall was probably the same, although it has now spread slightly as a result of ground movement at the south-east angle.

The north and south walls are 0.94 m (3' 1") thick, while those to east and west are only 0.88 m (2' $10^{1}/2^{"}$) thick. The walls rise directly from a simple rubble foundation which has an offset of *c*. 15 cm all round the building; this coincided with contemporary ground level. There is probably a similar offset internally, which has not been seen. The foundation is of the usual mid-Essex type, being a trench, some 1.2 m (4 ft) wide, filled with mixed rubble, laid roughly in bands, in an aggregate of sand and clay with some lime-mortar used in the uppermost layer.

The foundation was not laid level, and its top followed the lie of the land: hence there is a fall in the offset of c. 0.5 m from west to east.⁹ It is likely that all or most of this fall was reflected in the surface of the floor internally. Sloping floors were common in churches in the early Middle Ages.

Materials observed in the foundation are mostly flint nodules, but include some pieces of sarsen boulder, Roman brick and tile, and a single lump of Hertfordshire Puddingstone, evidently part of a Romano-British quern.

Walls and their constructional features

The walls rise directly from Norman ground level; there are no plinths, string-courses or offsets in the superstructure. The difference in thickness between the side and gable walls reflects the need to contain the lateral thrust exerted by the roof, which may have been of collared or scissor-braced construction, and without tie-beams. At the western corners the walls stand to a height of 3.7 m (12 ft) above the foundation offset, whereas the eastern corners rise to $4.1-4.2 \text{ m} (13^{1}/_{2}-14)$ ft) (Fig. 12). This increase in height had the effect of bringing the wall-tops nearer to the horizontal. In the event, there was still a slope of c. 10 cm along the length of the church roof from west to east (Fig. 13). Also the top of the north wall stood 8-10 cm higher than the south wall. Neither discrepancy would have been structurally significant, or noticeable, in practice.
HOLY TRINITY CHURCH, BRADWELL-JUXTA-COGGESHALL



Fig. 8 Elevations of the north and south walls, colo



ur-coded to illustrate the use of different materials.



Fig. 9 Elevation of the east wall, colour-coded to illustrate the use of different materials.



Fig. 10 Elevation of the west wall, colour-coded to illustrate the use of different materials.



Fig. 11 Ground plan of the Norman church, with reconstructed fenestration. A possible arrangement for the added timber belfry outside the west end is indicated

The Norman wall-top has been preserved with exceptional clarity throughout the length of the church as a consequence of later heightening. There was no step at eaves level between the nave and chancel roofs, and no tie-beam housings or other disruptions in the eaves line. Both gable ends indicate a roof pitch of 50 degrees (Fig. 12). At the two western corners there is clear evidence that the gable projected above the general roof-line. This demonstrates that the original roof covering abutted a parapet and did not oversail the gable-top as it does today. At the east end there is no comparable evidence for a gable parapet, and it must be doubted whether there was one. It may be that the upstanding masonry of the west gable was intended to support a small bell-cote.

Building lifts

Since the walls of the church have not, for the most part, been raked out or repointed, a large area of the original Norman rubble-work and its bonding mortar is openly displayed. Two important constructional features are immediately apparent. First, there is a strong element of linearity in the masonry coursing. Individual bands of different materials stand out, as do thin lines composed of tile fragments and tiny pieces of stone. Close inspection reveals that there are hairline cracks in the mortar between these bands. The cracks are in fact bedding joints between consecutive constructional stages, or 'lifts', in the masonry. Junctions between lifts are frequently observed in buildings made of small rubble set in lime mortar; the phenomenon was first studied in detail at Hadstock church (Rodwell 1976).

At Bradwell, it is possible to trace many of these lifts for considerable distances along the walls and, because of their regularity, courses can usually be interpolated where a later window or other disturbance has broken the physical continuity of the line. The best preserved evidence is in the east wall, where many lifts can be traced across its full width (Figs 6, 12 and 14), and in the north wall (Figs 5 and 13). The upper parts of the west gable are the least clear, owing to the residue of a partial re-rendering. The preserved lines in the north and south walls reveal how the masons gradually increased the heights of individual lifts towards the east end, in order to compensate for the slant of c. 50 cm on the foundations. By the time the wall-top was reached, all but 10 cm of this ground-fall had been compensated for.

Continuity of most lifts can be traced from one face of the building, through a quoin, to the adjacent face, demonstrating that the whole structure was raised simultaneously in a series of horizontal bands. There is little hint of discontinuity in lifts, or of masonry courses stepping up towards the corners of the church; nor is there any sign of 'humping' as lifts approached the heads of windows and doorways. These are significant pointers to the method of construction. The masonry was not free-built, for which it would have been necessary first to raise the corners and other integral features, before infilling with rubble-work (Rodwell 1989, 137-9).

Instead, the evidence points firmly to the use of shuttering. Boards about one foot wide would have been fixed horizontally (probably supported off the scaffolding) against the inner and outer wall faces. Bradwell church was of perfect form for shuttered construction, since there were no offsets or projections to the walls in either the horizontal or the vertical planes. Once a full complement of shuttering boards had been assembled and erected, the two sets (inner and outer) could simply be slid up and propped, lift by lift, as the work progressed.

The heights of individual building lifts vary from 18 cm to 30 cm, or more. In many areas of the church there is still a thin residue of rendering adhering to the walls, which obscures the evidence for the lifts. Without removing this it is impossible to be certain whether the apparent spacing of 40-50 cm between some of the lifts in the higher reaches is trustworthy. It is highly unlikely that individual lifts would have been as deep as this, and intermediate breaks almost certainly still await detection. Modern repointing around the bases of the walls has completely obscured the original construction in the lowest 50-60 cm.



Fig. 12 Simplified elevations of the east and west walls of the church, showing surviving Norman features, including building-lifts and putlog holes. The positions of missing windows are indicated in outline



Fig. 13 Simplified elevations of the north and south walls of the church, showing surviving Norman features, including building-lifts and putlog holes. The positions of missing windows are indicated in outline



Fig. 14 Masonry coursing and building-lifts, prominently visible in the east wall. The north-east quoin is mainly constructed of half-bricks of Coggeshall type

A single lift represents one work-shift, and that would normally be a day. The evidence consistently points to there being nineteen or twenty lifts between the foundation offset and wall-plate level. Although detection of lifts in the gables is difficult under current conditions (i.e. unscaffolded), there must have been about another twenty to the apex. Estimating the length of time taken to erect the masonry shell of Bradwell church is not a particularly fruitful exercise, since it cannot be ascertained how many gangs of masons worked alongside one another. One gang alone might raise the east or west wall by one lift in a single day. But to raise the entire circuit of the building by a lift in one day would have required about six gangs working simultaneously. Mortar-setting time between lifts has to be allowed for, as well as time for periodic operations such as forming doorway and window arches, erecting scaffolding, and constantly repositioning shuttering. Non-working feast days, inclement weather and perhaps delays in the supply of materials, would all have an effect on the total time-span of the project.

Close scrutiny of the walls, and of the quoins, failed to reveal any excessively thick bedding-joints at the junctions of lifts, which would have provided compelling evidence for seasonal breaks in the construction. There are, however, ephemeral hints in the side walls of one such break at about mid-height. In the south wall, west of the doorway at arch-springing level, a slightly thickerthan-usual bed was observed: here, a spread of mortar had been trowelled to a smooth surface, and rounded on the outer edge. A similar detail occurs in the chancel, between the doorway and the south-east window; here, it is one lift higher.

A third instance was noted mid-way along the north wall of the nave, and it is again at the springing level of the door-arch. Finally, a fourth occurrence was recorded in the north wall at the junction between nave and chancel, but here the thickened joint is two lifts lower down. Given that the four pieces of evidence are spread around the church, but are so close together in the vertical dimension, it seems highly likely that they represent a genuine hiatus in construction.

It is therefore reasonable to posit that the erection of the masonry shell, up to eaves level, was achieved in two building seasons. In view of the considerable volume of further work involved to raise the gables, it may be argued that a third building season should be admitted. Erecting the shell of Bradwell church in a three-year period would not have been an onerous assignment, given adequate manpower and a constant supply of materials.

Scaffolding

The second constructional feature which attracts special notice at Bradwell is the series of short pieces of thin oak boarding built horizontally into the walls. Closer inspection shows that there is an infilled socket in the masonry immediately beneath each board: these are former putlog holes, which define the tiers of scaffolding used in the construction of the church (Fig. 15). Since all the holes are now blocked and the internal walls are plastered, it is impossible to determine whether the putlogs passed right through the walls – simultaneously serving both internal and external scaffolds – or whether their ends were merely embedded to a depth of, say, 25-30 cm. The former is more common.

Putlogs were set into the walls as building proceeded, and had to be withdrawn upon completion of the work (very occasionally they were sawn off, and the stumps left *in situ*, but no evidence of this has been noted at Bradwell). Hence it was necessary to cap each putlog end, in order to prevent fresh mortar from settling around the timber and embedding it immovably. In many Essex churches the cheeks of putlog holes were formed from squarish pieces of stone, or brick fragments, and a brick (usually Roman) was laid on top as a cap. There are numerous local examples, yet at Bradwell a different approach to putlog-hole formation was employed, for which at present no analogue has been found.

First, no serious attempt was made to form squared cheeks to the putlog holes; second, and more remarkable, bricks and tiles – although fairly plentiful on this site – were not used as putlog caps. There is but a solitary case, in the south wall of the nave, of a medieval brick being employed as a putlog cap. In all other instances a thin, flat timber cap was provided. Twentyseven surviving examples have been noted, others have been lost, and some may still be concealed.

The caps are not a miscellany of pieces of timber, but most if not all were clearly obtained from a single source. They appear to be sections of riven or hewn oak planking, 2 cm in thickness. Lengths vary from 28 to 60 cm, but most are in the region of 30-35 cm. Nearly half of the timbers taper longitudinally in thickness: some diminish gradually from 2 cm to less than 0.5 cm along their length. The clean finish and taper are both deliberate, but are demonstrably irrelevant to the use of these timbers as putlog caps. They must be relict from some previous activity, and two possibilities suggest themselves. First, they could be old roof shingles, salvaged from the previous church on the site. Alternatively, long tapers suggest end-splicing, and it is just possible that the putlog caps were made from planking that was prepared for boat building.¹⁰ The river



Fig. 15 Examples of original putlog holes with surviving oak caps in the west wall (2.2 m above SD). In both cases the putlog rested on a building-lift, and after the timber was withdrawn the hole was infilled with flints set in a slightly lighter mortar.

A Putlog hole north of window. The rectangular stone forming the right-hand cheek is a sarsen pebble. B Putlog hole south of window. The cap is 40 cm long, and its tapered profile is apparent Blackwater is only 300 m north-east of the church.

The putlog holes are currently all blocked with masonry. Some of the fillings are later medieval, or modern, but a few are undoubtedly Norman. The practice of dismantling scaffolding and immediately blocking putlog holes with stones and mortar of identical types to those used in the adjacent walling is well attested in early medieval rubble buildings. This practice clearly occurred at Bradwell, where several putlog holes are still effectively disguised, even though the timber cap is visible.

Without excavating the holes, it is impossible accurately to deduce the dimensions of the putlogs, or to ascertain their cross-sectional form. However, in general terms it can be said that the holes are rectilinear in section, rather than circular, and that the putlogs were no more than 15 cm (6 ins) across in either direction, and mostly less. The indications point to the use of prepared timber, not branchwood or saplings. It also seems clear that the putlogs were withdrawn – and hence retained for future reuse – and were not sawn off flush with the wall face, as was sometimes the case when sapling timber was used.

Sufficient evidence remains in the walls to enable a reconstruction of the Norman scaffolding scheme used at Bradwell (Figs 16 and 17). First, it can be deduced that there were nine bays of scaffolding along the north and south sides, and four across each end. Bay pitch varied from 2 m to 3.2 m, according to the exigencies of the work. The gable-end bays, and those embracing the doorways to the church, measured 3 m (10 ft), or a little more. The remaining bays on the north and south were mostly pitched between 2.2 m and 2.4 m in length, indicating that the scaffolding was nominally planned on a module of 7-8 ft. Arrangements at the four corners were strikingly regular, with the first putlogs, in each direction, occurring at 1.2 m (4 ft) along the wall. This establishes that the corner bays were the first to be set up, that they were 8 ft square, and that the scaffolding projected 4 ft from the face of the building.

Two scaffold lifts were erected along the side walls, and a further three on the gables. The tiers of putlog holes were stepped-in as the gable diminished. The evidence is best preserved in the west wall, where the first four lifts are traditionally spaced at c. 1.2 m (4 ft) intervals. At the east end the lift heights were increased slightly, partly compensating for the fall of the land.

At the same time, it is noticeable in the long walls how the putlog holes associated with a single lift are in line, but are not strictly level; hence, the ledgers and the scaffold platform itself were allowed to slope gently. In many instances putlog holes do not occur vertically above one another in adjacent lifts, but are slightly staggered, showing that the putlogs were lashed, alternately, to opposite sides of the standards. The purpose of that was to aid stability in the scaffolding. Staggering can also result from the use of bent putlogs or standards. The reason for the wider bays at the doorways was to prevent congestion: there would have



Fig. 16 Plan of the church, showing the reconstructed layout of the original scaffolding (external) used for its erection

been a constant stream of men and materials passing through these restricted openings.

The evidence from Bradwell is useful in confirming that the traditional modules used in timber scaffolding, well into the 20th century, were already established by the 12th century. In summary, scaffolding was erected as far as possible in bays 8 ft long by 4 ft wide, and the ideal vertical lift was also 4 ft.

Building Materials

The walls are built largely of Essex flint, utilising both quarried material (black flint with a white cortex) and that obtained by surface collection from fields and river beds (patinated brown flint). Doubtless a large proportion of the flint was recycled, being salvaged from Roman or Anglo-Saxon structures in the locality. Occasional pebbles of sarsen (sandstone) and other geological anomalies from the gravel beds were incorporated (Fig. 15A). A considerable quantity of ferricrete or gravel-stone was employed throughout (Robinson 1988). This visually distinctive material is sometimes also known, misleadingly, as 'ironstone' and 'puddingstone'. It was used in the lower and in the uppermost regions of the building, but is largely absent from a wide band in the middle zone (Figs 18 and 19). This low-grade building material is a distinctive feature of Saxo-Norman and Norman churches in north-east Essex, and in certain other areas of south-east England (Potter 1987, fig. 6).

Many pieces of recycled Roman brick and tile are present, mostly in the lowest one-third of the walls. The fragments, which are all relatively small and include *tegula, imbrex* and hypocaust flue-tile, often occur at the junctions between building lifts where they were used as levelling material. One piece of brick in the east wall has a large lump of pink Roman mortar attached. The occasional nodule of septaria (derived from the London Clay beds) is probably also recycled Roman material. Several pieces of volcanic lava from the Rhineland have been noted: they are the remains of quern stones, and are likewise probably of Roman (rather than medieval) origin. The same applies to a fragment of Millstone Grit from Derbyshire, and two pieces of Hertfordshire conglomerate (Puddingstone).

No dressed freestone has been noted in the Norman fabric, with the exception of the threshold slab in the north doorway. Here, a single piece of oolitic limestone of Barnack type, 1.32 m long by 12 cm thick, was set into the foundation so that its upper face was level with the offset, and there formed the threshold. The door jambs rise directly from the slab, which is *c*. 22 cm in width, and there can be no doubt that it is the original step (Fig. 21). The northern edge of the slab (now exposed in the drainage trench) has a very slight batter and is diagonally tooled. To have used this block of dressed limestone so wastefully can only imply that it was recycled. The evidence is consistent with the suggestion that the slab was previously a grave-cover of early Norman date.

The threshold of the south doorway is now of York stone, and is a 19th-century renewal. However, adjacent to this, and set into the brick floor of the south porch, is a worn piece of Barnack-type limestone, 65 cm long by 25 cm wide. This is almost certainly a portion of the original doorstep which – presumably for reasons of antiquarian interest – was retained and set into the porch floor (which is otherwise wholly of 19th-century yellow brick). We may suspect that in the 12th century a single limestone grave-slab was cut longitudinally and converted into two doorsteps.

Without exception, the material employed to form the dressings of the quoins, doorways and windows of the church was red brick of a distinctive medieval type and fabric. The occasional fragment of medieval brick



Fig. 17 Reconstruction of the original scaffolding scheme in relation to all four elevations of the church

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Fig. 18 West elevation, showing the banded distribution of ferricrete (dark stone). The Perpendicular window is a modern renewal

is also to be found in the rubble walling, and in a single instance a part-brick was used as the cap for a putlog hole (south wall). The brickwork, which is related to that at nearby Coggeshall abbey, is discussed in detail below (p. 102).

Fragments of medieval roof tile were used to pack the triangular gaps between the bricks that formed the arches of the windows (Fig. 25). A course of similar tiles – or sometimes two courses – was also used to level the tops of the north and south walls, in preparation for bedding the wall-plates.¹¹ Few complete tiles are visible in the fabric, and it is thus difficult to ascertain their type or full dimensions. They average 1.8-2 cm in thickness; the width appears to be 18-19 cm, and lengths of 30 cm and 33.5 cm have been noted.¹² There is little doubt that the material is roof tiling of the nibbed variety, although no nibs are visible in the wall surfaces at Bradwell. Large nibbed tiles close to these dimensions have been recorded at Cressing Temple (Ryan and Andrews 1993, 97).

The matrix of the Norman masonry is a fairly hard lime-mortar, of yellowish-buff colour. It is clean and competently mixed, using coarse local sand with an admixture of river gravel (averaging 3-5 mm across, with occasional pebbles up to 10 mm). A small amount of crushed cockle shell was also added as temper.¹³ The lime was well burnt, with few lumps visible, and very

little charcoal present. Occasional woodchips – accidental inclusions from carpenters' activities – have been observed. There is little variation in colour or texture throughout the building. However, a slightly finer and paler mix, without the gravel aggregate, was selected for bedding the brick dressings.¹⁴ Medieval and later masons often worked with two mortar mixes simultaneously. Exceptionally for the 12th century, this is a robust mortar; sandy and earthy mixes are more commonly encountered.

The use of medieval bricks

As Hull observed, the vast majority of bricks used in the church are of a distinctive type that has long been associated with the Cistercian abbey at Little Coggeshall, 4 km east of Bradwell. The fabric, dimensions and special forms employed are all distinctly different from the local Romano-British tradition. The singular interest of the medieval brickwork at Coggeshall abbey was first recognized in the mid-19th century (Cutts 1858, 167-9).

The bricks found at Bradwell are mostly of a mellow orange-red colour and their edges present an evenly textured, fine sandy surface, with occasional hints of knife trimming. Unlike the average Roman brick, they are not particularly hard-fired and some are sufficiently soft for the outer skin to have fallen away, revealing a



Fig. 19 Detail of west gable, showing the high-level window and the linear distribution of ferricrete. Photo: David Guthrie

friable, sandy core which is almost invariably reduced in colour to dark grey. In underfired examples the core tends to have a muddy brown appearance. Hard-fired bricks generally have a partially reduced surface, grey and blotchy. Occasionally, splashes of green or brown syrupy glaze are seen on the edges.

Special features of the fabric of Coggeshall bricks have previously been commented upon (Firman and Firman 1967, 305). They have 'abundant angular grains of quartz and flint, averaging about 1 mm in diameter, evenly distributed throughout a very fine-grained matrix. The lack of intermediate-sized grains suggests that this is an artificial mixture.' Hence, 'as early as the twelfth century some brick-makers were aware of the value of adding sand to plastic clay to reduce the shrinkage on drying and burning. One of the outstanding features of Coggeshall bricks is the precision with which they have been moulded and their lack of subsequent distortion.' Generally, the outer oxidized skin is consistently thin all round the brick, and the junction between it and the reduced core is sharply defined (Firman and Firman 1967, pl. 9E). The contrast between Coggeshall products and most other medieval bricks in Essex is striking, and points to a high level of technical competence at an unexpectedly early date.

For a summary of the brick types and sizes employed at Bradwell church, see Fig. 46.

Architectural Detailing

Quoins

The number of brick courses in each quoin varied according to the incline of the foundation, ranging between 54 in the south-west and 67 courses in the north-east quoin. The bricks used were probably all of one type – the medieval 'great brick' – measuring an average 33 x 16 x 5 cm (13 x $6^{1/4}$ x 2 ins). There are modest variations in the dimensions, and the thickness ranges from 4.5 to 5.5 cm. In the north-east quoin are four bricks that appear to be complete, although only 25.5 cm (10 ins) long, and the south-east quoin contains an exceptional example measuring 36 x 19 x 6 cm (14¹/₄ x 7¹/₂ x 2 ins).

It is noticeable in all four quoins that the bricks in the uppermost seven to fifteen courses are harder fired and darker in colour, often with a blotchy grey surface. Some have a patchy glaze on their edges. These bricks may all be from a single batch.

The great majority of the brickwork in the quoins is composed of only half-bricks, there being less than two dozen complete specimens altogether.¹⁵ It is as though the masons deliberately broke the bricks in order to make the supply go further (Fig. 14). In the lower levels there are hints that the principle of bonding brickwork to coursed rubble was partially understood. In several instances we find two or three courses of half-bricks followed by a single whole-brick course, but this bonding pattern was not pursued rigorously. Sometimes a second fragment was laid in the same course as, and adjacent to, a half-brick, as though to create a pseudobond (Fig. 20).

Doorways (Fig. 21)

The north and south doorways are of similar construction although differing in size. Each has round-headed outer and rear-arches of brick, and there is a substantial rebate near to the outer face, against which the original door closed. The reveals are squarely built, not splayed. The jambs of the south doorway are 18 cm deep (from exterior to rebate) and are formed with square-edged bricks, laid with an obvious regard to bonding.¹⁶ The bricks are a little larger than most of those used in the quoins, being 33 x 17.5 x 5.5 cm (13 x 7 x $2^{1/4}$ ins), although some are nearly 6 cm thick. The outer arch comprises a single ring of bullnosed bricks, measuring $20+(?) \times 18 \times 5.5$ cm.

The north door, on the other hand, has both its jambs and its outer arch formed with bullnosed bricks (Fig. 24). Moreover, they are double bullnosed: not only is the outer arris rounded but so too is that forming the closing-rebate. The jambs again exhibit careful bonding, and the outer arch is a single brick ring (Fig. 22). The



Fig. 20 Part of the south-west quoin built of Coggeshall 'great bricks'. Most are half-bricks, but occasional complete examples provide a hint of bonding

doorway has an 18th-century brick blocking and part glazing, which prevents detailed examination of the Norman bricks, but it would appear that two sizes were in use. The reveal is 21 cm deep, which seems to be the length of a double bullnosed brick. If so, the dimensions are 21 x 18.5 x 5 cm ($8^{1}/_{4}$ x 7¹/₄ x 2 ins). Narrower bricks are used in alternate courses in the jambs, and they appear to be 21 x 12.5 x 5 cm ($8^{1}/_{4}$ x 5 x 2 ins).

Both doorways have rear-arches of square-edged bricks, the full dimensions and bonding of which are obscured by wallplaster. A horizontal ledge, 2-3 cm wide, occurs at the springing point in each reveal, its function being to support the timber centring that was temporarily necessary to form the arch and soffit. Although the doorways are of differing widths, the springing-line of both is at the same level. The springing of the outer arches begins at 1.91 m (75 ins) above threshold level, and the rear arches at 2.12 m ($83^{1}/_{2}$ ins). In both instances, the interface between the reveal and the top of the foundation is exposed *c*. 25 cm above present floor level (section, Fig. 21). The foundation was cut away when the floor was lowered, at an uncertain date (probably in the late Middle Ages).

The outer arch of the north doorway preserves



Fig. 21 Details of the exposed brick outer openings of the Norman south and north doorways of the nave, together with a section through the latter

interesting constructional evidence. The jambs were raised to their full height, and integrated with the adjacent rubble masonry, but before the centring for the arch could be erected the walling to either side was raised by a further lift. The masonry of this lift was stopped just short of the door opening; the arch was then built, filling in the gaps to either flank (Fig. 21). A thin layer of mortar was spread over the extrados of the completed arch, before the whole was encased by the next lift of rubble-work. The sequence is clearly defined because a finer and slightly paler mortar than the norm was used for the arch construction (Fig. 23).

An intriguing and so far unexplained feature is the squared balk of oak which is built into the eastern jambs of both doorways. In each case the depth of the block is equal to that of the jamb; on the south side it is located 10 cm above the mid-height point, and on the north it is 10 cm below (Fig. 24). No evidence for any original fixings to these blocks can be seen. On the south side the block has been used as the ground for attaching the existing late medieval door catch. There is no comparable detail on the north, where the block is a piece of reused timber with a redundant peg-hole in one face. While both timbers now finish flush with their respective reveals, it is possible that they were sawn off in the late medieval period (when the present south door was fitted). Previously the blocks may have projected slightly beyond the face of the reveal, into the doorway itself, and there formed the anchor for a closing or locking device.17

Windows (Fig. 25)

The pattern of original fenestration is largely preserved, and what has been lost can be reconstructed with a reasonable degree of confidence. The windows were all small, round-headed and built of special bricks which have external chamfers and internal splays. No consistent attempt was made to bond the bricks of the jambs with the adjacent rubble-work. Turning smalldiameter arches was difficult with bricks as thick as these, and two expedients were employed. First, a few bricks were hacked longitudinally, to make them more voussoir-like. Second, pieces of medieval roof tile, 2 cm thick, were used as wedges, to fill triangular gaps.



Fig. 22 The Norman north doorway, with 18th-century blocking. *Photo: David Guthrie*



Fig. 23 Detail from the arch of the north doorway, showing the curving joint between the fine mortar used to bed the bricks and the coarser mortar used in wall construction

It should be noted that the windows did not have individual sills: the brick jambs merely rose off the underlying course of flints (always the top of a building lift). This is in marked contrast to the usual arrangement seen locally in 11th- and 12th-century churches, where window openings made of Roman brick had sills of the same material (*cf.* Rivenhall: Rodwell and Rodwell 1985, 133-7). Nor is there any evidence for early glazing, or shutters. Indeed, it seems likely that the Norman windows never received glazing before they were superseded in the 14th century. Internally, the windows have broad splays and semicircular rear-arches, all now plastered.

NAVE

The nave was lit laterally by four windows arranged symmetrically on the north and south. They were set relatively high in the walls, a not uncommon feature of the period. The two windows west of the doorways are intact and are now glazed (they were blocked in the later Middle Ages, and were only reopened in modern times). The two lights in the eastern part of the nave were both destroyed when the new Decorated windows were inserted. In the south wall, however, one mutilated brick jamb partially survives (Fig. 38), and in the north wall the outline of a removed jamb is ghosted by the packing around the inserted medieval window, and the tips of three of the bricks belonging to the arched head remain in situ. As might be expected, the western reveals of the Decorated windows in the nave incorporate the splays of their predecessors.

The four Norman windows were evidently all of similar form and dimensions (Figs 26 and 28). The apertures measured 20 cm (8 ins) wide, by 71 cm (28 ins) from sill to springing-line. The external openings were formed from bricks with a plain chamfered angle. Many of the bricks are fragmentary, but the principal lengths used were 32 cm and 26 cm $(12^{1}/_{2} \text{ and } 10^{1}/_{4} \text{ ins})$; they are 4.5 to 5.0 cm thick $(1^{3}/_{4}-2 \text{ ins})$; the 55-degree



Fig. 24 The east jamb of the north doorway, showing bullnosed bricks and the inclusion of a baulk of oak

chamfer averages 4.5 cm in length. Many of the bricks in the south-west window are evidently complete, but only 22 cm long; their breadth is at least 13 cm (probably 16 cm). Owing to the internal splays being plastered, it is impossible to establish the breadth of the bricks with certainty. There are, however, four incomplete examples of special window-splay bricks which are kept in the church; these indicate a breadth of 16 cm (Fig. 46). The angle of the internal splay is 65 degrees, and the absence of a rebate suggests that the openings were not intended for glazing.

Finally, there is the question of early windows at the west end of the church, the only part of the building where real uncertainty obtains. There are potentially two levels of fenestration to consider. A large Perpendicular window (in modern copy form) now occupies the centre of the west wall (Fig. 18), and its insertion has completely destroyed any original low-level window here.

Turning to the second level, there is a surviving window high up in the gable: it is odd in two respects (Fig. 19). First, it is broader and squatter than all the others that are extant in the church, and, secondly, it is positioned at an unnecessarily high level (higher than



Fig. 25 Elevation details of the principal surviving Norman windows. *I* West end, upper level; *2*, *3* East end, upper level; *4* Nave, south-west; *5* Chancel, north-west; *6* Nave, north-west

the pair in the east gable) if its function was to let light into the nave. Surely the purpose of this window was to illumine a separate space enclosed within the roof, and if so that points firmly to the presence of a high-level chamber or gallery here. The window is constructed with chamfered bricks, like all the others, and measures 29 cm ($11^{1/2}$ ins) wide, by 60 cm (24 ins) high to the springing-line. The aperture, which appears never to have been glazed, is filled by a perforated oak board; although of recent vintage, the board may replicate an ancient arrangement. Two circular windows in the west end of St Peter's, Barton-upon-Humber, still retain fragmentary late Saxon slotted oak boards (Rodwell 1986, 165).

CHANCEL

This was also lit by four windows in the side walls. Evidence for two exactly similar windows to those in the nave is preserved in the western part of the chancel, one each in the north and south walls. The north-west window is intact, but is blocked internally. The site of the south-west window can be seen externally above the Decorated priest's door, where a patch of crude rubble infilling defines its outline. Curiously, the dressings have been totally stripped from the external face, except for the very tips of three bricks; inside, nothing is visible.

The westerly location within the chancel of the two windows just described points to the probability that there were originally a further two, which were superseded by Decorated windows, towards the eastern end of the church. The internal splays of the lost northeast and south-east windows are potentially incorporated in the reveals of their 14th-century successors. Indeed, corroborative evidence for the original north-east window was found in 1992 when repairs were carried out to the masonry.¹⁸ The chancel was additionally lit from the east, where there were two tiers of fenestration: one at the same level as the side windows, and the other in the gable. Substantial remains of the two windows in the upper tier are preserved, although blocked, showing that they were again similar to those already described. The only difference is that these gable windows were two brick courses shorter in the jambs. Their appearance is thus more squat (Fig. 27). Internally, the rear-arches and splays were exposed in 1905 by the partial removal of the blocking.

The lower tier has been almost totally destroyed by later fenestration, but both the geometry and the surviving remains indicate that there were originally three windows here. Fragments of one jamb of the southernmost light remain, indicating that it was generally similar to the windows already described in the nave and chancel. The extant tips of two of the arch bricks confirm that the opening was of similar height (Fig. 31). Internally, the northern edge of its reveal is defined in the wallplaster. The centre light of the triplet has been totally removed by a large Perpendicular window, but the position of the northern light is clearly marked by a patch of infilling on the outer wall face. This infill does not, however, provide an exact ghost of the original, owing to the fact that there was an intermediate (13th-century) phase of fenestration in the east gable which is discussed below.

The spacing points to the likelihood that the windows of the lower tier in the east wall were slightly wider than those in the side walls, to give increased light and hence prominence to the sanctuary. Whether the central light was a little taller than those flanking it cannot now be ascertained with certainty, but it is highly likely. The extant west window may provide the clue for reconstructing the widths of the three destroyed windows in the east wall. It has thus been used as the

basis for the reconstructions shown in Fig. 12.

It is to the late 12th century, or perhaps the early 13th century, that the oldest surviving wallpainting in the church must be assigned. The painting in question is preserved high up on the east wall, in the splay of the small southern window. Here, the reveals and soffit are lined-out in imitation of ashlar work, and on the angle of the rear-arch is painted a shaft and capital of proto-stiffleaf type. Thus the simple fenestration of the east wall was enhanced by *trompe l'oeil* painting so as to give an exaggerated impression of architectural sophistication.

Red lines on a white ground were used to indicate ashlar-work; and added emphasis was given to the window rear-arch by doubling the painted lines.

Wall Finishes

Until *c*. 1951 the exterior of the church was fully rendered, and it has generally been assumed that the covering which was removed at that time dated from about the 17th century. The only rendering that was not stripped was a roughly triangular area on the south wall of the nave, above the doorway and within the roof of the porch. It is immediately apparent upon inspection that most of the extant rendering – a skim less than 1 cm thick – is older than the 14th-century porch which abuts it. Careful examination of all the wall surfaces has revealed several other, tiny, patches of intact rendering. These are of various dates and mixtures, but a general picture of the history of surface treatment can now be built up.

It has already been remarked that there are many areas where the Norman building-lifts are obscured by residual traces of early lime-mortar rendering. This material is visually identical to the Norman mortar used in the construction of the walls, and is distinct from later medieval and more recent mortars. Moreover, the adhesion and integration of the rendering with the core mortar suggests that the latter was not fully cured when the outer skim was applied. In at least one instance the skim passes over the filling of an original putlog hole, indicating that as the rendering was applied (working from the eaves, downwards), the scaffolding was also removed and the scars of its attachment carefully concealed.

The rubble-work of the walls was therefore thinly rendered from the outset, and it remains to consider the situation in regard to the brick dressings. While it could be argued that the careful construction of the doorways implies an intent to display the brickwork, the haphazard nature of the quoin construction militates against this. Furthermore, all the brickwork is flush with the rubble walling and, unlike many later medieval stone dressings (including those at Bradwell), no rebate was created as a stop for the rendering.

The conclusion must be that the entire exterior of the Norman building was rendered, *ab initio*. Fortunately, a small amount of original rendering over brickwork survives to confirm the point. Evidence is preserved in three areas. First, the surviving rendering above the south doorway is partly original, and laps over the brick arch. Secondly, the Norman window to the west of the porch retains a small patch of rendering on its western jamb, running across the chamfer. It is also worth noting that this window, uniquely, has several flints built into its jambs, immediately below the springing of the arch (Figs 25.4, 28 and 29). Presumably the mason was short of chamfered bricks and, knowing that the structure was to be rendered, simply completed the tops of the jambs with whatever came to hand. Thirdly, small areas of rendering survive on the jambs of both the high-level Norman windows in the east wall (Fig. 25.2, 3). The skim is preserved not only on the outer face of the brickwork, but also on the chamfers and into the reveals. These upper lights were infilled with masonry in the late 14th or 15th century, when the present east window was installed, thus fortuitously trapping and preserving the original rendering within the reveals. Finally, when the head of the north-east chancel window was rebuilt in 1992 it was noted that some of the Norman bricks which had been recycled in the 14th-century masonry retained original rendering on their edges.

The Norman rendering, like the mortar used in the construction, was of high quality and was durable. In cross-section it is a cream-buff colour, evenly textured, and mixed with fine sand. Render that was applied over brickwork took the form of a thin skim, 3-5 mm in thickness. Where preserved in the window reveals, the external surface is hard, smooth and well trowelled; the colour is orange-buff. Whether this is natural patination, or the result of an overall application of sepia-coloured limewash is uncertain. The former is more probable.

In general terms, it is likely that the church was fully rendered, limewashed and painted with a rectilinear grid of thin lines in imitation of ashlar construction. The thin and expertly applied rendering around the openings meant that the chamfers and bullnoses of the bricks were not only accurately reflected, but that the arrises were sharpened and the pseudo-moulded effect was possibly further enhanced by the use of paint.

Internally, the church was fully plastered, but to what extent it was initially decorated is unknown: all the surviving wallpaintings are secondary.

The problem of the roofs

The present roofs are of 14th-century date, but whether they incorporate any Norman timbers cannot be established without a thorough examination: as a general premise, it seems unlikely that the materials from a substantial oak roof would have been entirely discarded when they were only two centuries old.

Although the pitch of the Norman roof has been established (50 degrees), its form is unknown. It has been shown that the west gable had an upstand, and was therefore presumably parapeted. The east gable, seemingly, was not. Although the later medieval roof has



Fig. 26 Norman north-west window of the nave. Note the projecting end of a reused beam from the belfry incorporated in the raising of the wall

a physical break on the line of the chancel screen, the continuous eaves point to the likelihood of the entire Norman church having been roofed as one. While there has long been a tacit assumption that rural Norman churches in Essex were thatched, this must be questioned in view of the presence of clay roofing tiles in the primary fabric of the walls at Bradwell and elsewhere. Oak shingles are another possible form of covering.

Three anomalies in the structure of the west end suggest that this was more complex than might initially appear. First, the upstanding gable (reflecting the full wall thickness) argues for the presence of a bell-turret. Secondly, there is the surviving window in the gable which, it is argued, lit a high-level chamber rather than the body of the nave. In view of the widespread evidence for upper chambers in Anglo-Saxon and Norman churches, there is no difficulty in accepting that one formerly existed here. A priest's lodging is a possible interpretation in this instance.

The third anomaly is the pair of horizontal slots, or housings, in the west wall at eaves level, indicative of features set firmly into the base of the gable (Fig. 12). The housings have long been packed with medieval tiles: whatever they originally held was extracted. The form of these features is more consistent with their having been for timber rather than for stone. They cannot be satisfactorily interpreted as, for example, sockets for limestone kneelers to the gables. Two possible explanations may be offered.

The evidence is consistent with a horizontal pair of

projecting timbers – one pointing north, the other south – measuring 20 x 30 cm in cross-section, and embedded in the gable to a depth of 75 cm. It might be posited that the projecting ends of the timbers were carved with human or animal forms, in the tradition of the stone *prokrossoi* found on many Anglo-Saxon and Romanesque churches. Evidence for similar features at the east end is slight.

Alternatively, two short sole-plates could have been set into the haunches of the gable when the timber belfry was first added outside the west end; their function would have been to support the corner posts.

MEDIEVAL ALTERATIONS TO THE CHURCH

The belfry

Cecil Hewett has advanced a claim that the present timber-framed bell-turret, which sits on a portal-frame over the west end of the nave, is in part a Norman structure (Fig. 30). He assumed that the turret is basically in its original position, although it was jacked up in the 14th century when the level of the nave roof was raised. He further maintained that the turret was a component of the primary structure, citing as evidence the stumps of 'the original Norman transom-beam' which project from the north and south walls (Hewett 1974, 80-1; also Hewett and Watkin 1994, 124). Unfortunately, this beam is a reused timber, it is not housed in Norman masonry, and makes no sense as a supporting member for the present turret. Furthermore, some of the timbers in the lower sections of the turret are markedly weathered, which could not have occurred in their present location.

A full-scale study of the bell-turret is needed, but all indications point to its being secondary to the nave. Nor is it necessarily Norman: the use of notched lap-joints would equally admit a date in the earlier part of the 13th century. There are further complications which demonstrate that the turret cannot be accepted as a simple addition of later Norman or Early English date: the weathered timbers and the anomalous 'transombeam' would remain unexplained by positing such a simple sequence. Moreover, there is an important piece of evidence externally in the form of a pair of large postholes, which cut through the foundation offset of the west wall (Figs 7 and 11).

The holes, which are 4.1 m $(13^{1}/_{2}$ ft) apart and symmetrically disposed about the gable, must have held upright timbers in the region of 40 cm square. Clearly unrelated to scaffolding, they point to the former presence of a free-standing timber-framed structure abutting the west end of the church. It may have been square or rectangular in plan, and there must originally have been at least a quartet of earth-fast posts. The positions of the two missing western postholes are likely to have been lost as a result of later grave digging on the



Fig. 27 The east gable, showing the blocked remains of the two upper Norman windows and the traceried head of the Perpendicular window which was probably inserted in 1389. *Photo: David Guthrie*

site. There can be little doubt that a western belfry was added to the church, and it was from this that the components of the present bell-turret were later salvaged.

The east wall

If any of the lateral windows in the church were enlarged at an early stage, the evidence has been removed by the existing 14th- and 15th-century fenestration. In the east wall, however, a different situation obtains and there are clear indications of an intermediate phase of window provision. Here, the three lights of the lower tier were enlarged in the 13th century. Evidence for the two outer lights is preserved, but the centre light has been totally lost and its architectural history is a matter of inference.

It has already been noted that the Norman southern light had been mutilated, so that only its south jamb and reveal remained (Fig. 31). They became incorporated in a larger opening. The level of the sill was lowered, the head was raised, the aperture was more than doubled in width (to c. 57 cm) and a new north jamb was built in brick. The height of the enlarged opening was 1.52 m (60 ins) to springer-level. The arch has been lost: whether it was round or pointed cannot now be ascertained, but the latter may reasonably be assumed (Fig. 32). The new north jamb survives in its entirety and its bricks are of Coggeshall type, but are not quite

identical to those in the Norman fabric. They appear to be 28 cm long, and are up to 5 cm in thickness. Unfortunately, it is now uncertain whether they were chamfered like the earlier window bricks, the evidence having been removed by a rebate $(3.5 \times 3 \text{ cm})$ cut *in situ* to receive a much later timber frame or shutter. A chamfered aperture is more likely than a squared one.

The northern window of the triplet was evidently similar, but neither its arch nor its jambs has survived. The whole structure has been removed, leaving only a 'ghost' in the form of an irregular scar infilled with rubble. The entirely lost centre light would almost certainly have been a little taller, so as to constitute a typical graduated triplet of the early 13th century. On a larger scale, the east window of St Nicholas's church, Little Coggeshall, exhibits such an arrangement and dates from *c*. 1220. Its lights are formed with moulded bricks (Watkin 1996). The lack of mouldings and paucity of surviving detail at Bradwell make it difficult to date the refenestration of the east wall, but the general composition is consonant with work in the closing years of the 12th century, and the first quarter of the 13th.

Although the two lights in the upper tier of the east wall were unaffected by the alterations, they evidently did not remain in use in the 13th century, and the apertures were blocked. The filling of the southern light has been removed during one of the modern restorations, to display its painted reveals, but the



Fig. 28 Norman south-west window of the nave. Specially formed window bricks, chamfered and splayed, were used here, giving rise to the consistent shape and lack of bonding. See Fig. 46, no. 6

northern light remains blocked. Painted across the internal blocking, is a vertical 'barber's pole' in yellow and black. Such decoration is reminiscent of the 13th century. Clearly, this is later than the false ashlar painted in the window reveals (see above).

Raising the roof

An increased sense of height within the church was, for some reason, deemed necessary in the early years of the 14th century, and this was achieved by raising the north and south walls by 60 cm (2 ft). The increase was slightly more on the south because the Norman wall-tops were not quite at the same level: this discrepancy was corrected before the new roof was built. The gables were correspondingly raised, but there were no parapets. At about the same time, the floor at the west end was lowered by c. 15 cm, creating a step at each doorway. This reduction may have been accompanied by a modest amount of levelling-up at the east end, in order to eradicate the slope that was inherent in the floor.

That the levelling operation took place as early as the 14th century is implied by the two surviving patches of medieval floor tiling: one at the west end of the nave, and the other just east of the chancel screen. These paving remnants, which seem to be at least partly *in situ*, contain stencilled tiles of 14th-century Essex types (for details, see p. 110). Further confirmation is provided by the early 16th-century brick-built font base, which is

also at the level of the tile pavement.

Raising the roof was carried out in two separate operations, first the nave, and later the chancel. In each case, work on the roof preceded the introduction of new windows.

Nave Roof

Scaffolding was erected: putlogs were laid across the old wall tops, and the new masonry was built over them. There were four putlog settings on the south and three on the north. Remarkably, in all seven instances a thin oak cap was used, exactly as in the Norman work. An eighth cap of this period occurs in the west gable, at haunch level. The idea of using oak putlog caps must simply have been copied from the earlier work. Indeed, it would appear from the vertical alignment of several of the new putlogs with the old (three instances in the south wall and one in the north) that some of the Norman holes were rediscovered and opened up. That would account for the occurrence of later medieval fillings in Norman putlog holes.

It is also likely that a small number of new putlog



Fig. 29 Detail of the south-west window of the nave, showing the use of two flint nodules in place of bricks. Small patches of original lime rendering survive on the chamfered arris, especially over the lower flint nodule

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Fig. 30 Perspective view of the bell-turret at Bradwell from the south-east, in its present form (after Hewett 1974). Note the stump of the redundant beam projecting just above the window

holes were cut into the north and south walls. There is, for example, a pair of infilled sockets flanking the 14thcentury nave windows, both north and south. But the siting and symmetry of these sockets is more suggestive of an association with the windows themselves rather than with the roof; the mortar in these particular fillings also points to a connection with the windows.

Next, the quoins of the nave were built up to the required height, using some roof tiles but mainly thin flat bricks of a type not seen elsewhere in the church. The bricks in the south-west quoin measure 21 x 11 x 3.2 cm ($8^{1/4} \times 4^{1/4} \times 1^{1/4}$ ins), are hard fired and mostly dark grey in colour; in the north-west quoin they are 26 cm ($10^{1/4}$ ins) long. Occasional glaze splashes have been noted. The new quoins survive at three of the corners of the nave (the north-east angle is not preserved). Hence, for the first time, the east end of the nave was expressed in the masonry structure (Fig. 8).

At the same time as the quoins were raised, flint rubble in a white lime mortar matrix was laid as the main walling material. Shuttering was again probably used, but there are no discernible building lifts within the raised section. The oak top-plate which, it has been argued, came from the dismantled western belfry, was reused as a 'transom-beam' close to the west end of the nave. The beam was, perhaps deliberately, centred over



Fig. 31 East wall, showing remains of the brick-built jambs of the southernmost window of a triplet. The few courses remaining of the left-hand jamb are original Norman work, while the much taller right-hand jamb is part of the Early English enlargement. One of the small Norman windows of the upper tier is seen above the arch of the Perpendicular window

the Norman windows; moreover, it was set on a true level, which means that while the timber was 20 cm above the Norman wall-top on the south side, it was only 10 cm above on the north. Clearly not part of the new roof structure *per se*, and having no connection with the bell-turret in its present form, the purpose of a beam in this position remains enigmatic. The date at which it again became redundant is likewise unknown. When that happened, the entire length of beam traversing the nave was cut out, leaving only the terminal stumps (Figs 5 and 33).

The new nave roof comprised nineteen raftercouples, of which the westernmost was flush with the outer face of the gable. Much of that couple has now been lost through decay. Internally, the roof was of seven cants and underdrawn with a lath-and-plaster ceiling, a common arrangement in medieval Essex. There is the usual triangular framing at the eaves, comprising rafter, sole-piece and ashlar-piece; the pitch is 50 degrees. The sole-piece is jointed to a single wall-plate set on the midline of the wall. There is also a moulded timber (a false plate) fixed to the inner face of the wall. Three integral tie-beams span the nave: the central beam is well moulded and carries a crown-post. The moulded detail



Fig. 32 Reconstruction of the east wall, to show the suggested Early English window arrangement

is similar to that on the head of the rood screen, suggesting contemporaneity.

A curious feature has been noted at the overhang of the eaves. Here, the joint between each rafter and its sole-piece is visible, and in the lateral faces of all the sole-pieces, close to the wall, is a gouged housing (Fig. 34). Evidently wattles were sprung into these housings, so spanning the gaps between adjacent rafter-couples. A single wattle, close to the wall face, could not have supported a plastered soffit to the eaves: its position is more suggestive of a cornice fixing. But there is no precedent for external plaster cornicing in the 14th century, and the wattles must somehow have been associated with the support of a soffit.¹⁹

Chancel Roof

It is not known for how long the nave stood with its new high roof, while the chancel retained its original, lower roof; but the replacement of the latter did not follow immediately upon completion of the former. Different gangs of artisans were involved, and the time interval is likely to have been in the order of several decades.

In due course, the chancel walls were raised to the same height as the nave, again using flint rubble in a matrix of white mortar. The eastern quoins were built up, not with bricks but solely using roof tiles. The quoins were well bonded in both directions. The material all seems to be pegtile, measuring on average $26 \times 16 \times 1.2$ cm ($10^{1}/_{4} \times 6^{1}/_{4} \times 1/_{2}$ in). These dimensions accord with those of other 14th-century pegtiles in the locality (*e.g.* at Cressing: Ryan and Andrews 1993, 97). Numerous tiles were also embodied in the masonry of the raised walls. The use of a very large number of whole and undamaged roof tiles merely as walling material seems profligate, especially at this early date. There are no visible putlog holes in the added masonry at the east end of the church, and nothing useful can be said concerning the method of scaffolding employed.²⁰

The new chancel roof is of seven cants and was originally ceiled, like the nave, but it has no tie-beams. There are fifteen rafter-couples, with the easternmost set flush with the outer face of the gable. The internal wallplate projects slightly, and has a plain underside chamfer. An additional, anomalous truss – perhaps of later date – was inserted at the junction between the nave and chancel roofs. The pitches of the two roofs are different, the latter being only 45 degrees; this is remarkably low for the 14th century. Minor differences in carpentry technique are evident between nave and chancel: thus, the tenons on the outer ends of the sole-pieces (where they join the rafter feet) are shouldered all round, whereas the comparable joints in the nave roof have their tenons shouldered only on two sides. The components of each rafter-couple in the chancel roof are numbered at eaves level with large Roman numerals. No such numbering is present in the nave.

Finally, on the chancel roof there are no wattle housings in the sides of the sole-pieces, but in 1992 Dr Andrews discovered auger holes in the upper faces of the wallplate (around each ashlar-piece), and in the solepieces (Fig. 35). These are not pegholes, and are not drilled right through the timbers. They presumably contained rods associated with a vertical wattle infill, but the arrangement is odd since it implies that there was a triangular panel of wattle-and-daub in the base of each rafter couple.

Later medieval fenestration and other features

Given the small size of the church, it is perhaps surprising that eight new traceried windows were inserted into its walls in the 14th and early 15th centuries. They are of slender construction and have suffered serious distortion as a result of localized ground movement. Because the frames and tracery are made from soft stone-types they have also weathered badly and have been extensively patched with Portland cement; this unsympathetic repair probably took place in the 1950s or '60s. The main doorways, however, were not modernized in the later Middle Ages, although a small priest's door was inserted in the chancel.

At the time when the side walls were raised, the Norman fenestration (including the Early English modification in the east wall) was still generally in use: traceried windows were not introduced at Bradwell until the 14th century. In all but one instance it can be demonstrated that the insertion of the existing large windows took place after the church had been heightened.

Decorated (Fig. 8)

Stylistically, the earliest traceried window is that at the north-east corner of the chancel. It has two main, ogee-headed lights with trefoil cusping, and tracery lights which are of a common reticulated design. The frame has a low, two-centred (almost segmental) head and no hood-moulding (Fig. 36). The material used is a fine-grained cream limestone, almost certainly Caen stone. Many of the blocks are small and skimpy, and several exhibit evidence of having been reworked. The stone is probably all recycled. Later medieval dressings made from recut Caen stone have been noted elsewhere in the locality, including at Rivenhall church (Rodwell and Rodwell 1985, 149). A date of c. 1320-30 is suggested for this window. It has thin, internal ferramenta and a



Fig. 33 Projecting stump of the redundant transverse beam from the belfry, in the south wall of the nave

small amount of medieval glass in the tracery.²¹

The rear-arch and head are plain plastered and without stone dressings, mouldings or chamfers. The arch is now somewhat distorted, but was probably of three-centred form. This is the shortest of the medieval windows, its head being markedly below the eaves-line of the Norman chancel. There is every possibility that the window was inserted before the walls were raised; it was neatly cut into the Norman masonry. The mortar used for the insertion is closely similar in colour and texture to the original Norman work, but is distinctly



Fig. 34 Northern eaves of the nave roof, looking east. All the sole-pieces have short wattle-grooves in their lateral faces, which apparently relate to a 14th-century soffit



Fig. 35 Sketch of the foot of a rafter-couple in the chancel roof (north side). Unusually, there is a series of auger holes in the wallplate and sole-piece. (After D.D. Andrews)

different from that found in the other secondary windows. Owing to structural movement, the window head and the rubble masonry above it were in a state of collapse and a partial rebuild was carried out in 1992, removing the archaeological evidence for the structural sequence.

The near-identical pair of two-light windows at the east end of the nave were the next to be inserted. Their design was also based on reticulated tracery. The ogee-headed main lights have cinquefoil cusping; and the centre tracery light is an irregular trefoil, all contained within a frame having a low segmental head without a hood-moulding (Figs 37 and 38). The unusual trefoil is based on the lower half of a quatrefoil-reticulation which has been given extra cusps (*cf.* Fig. 36).

The rear-arches are segmental and have plain plastered jambs, without stone dressings (*cf.* north-east chancel window). Both nave windows have stepped sills. All three window reveals carry wallpaintings: standing figures on the splays and a roundel on the soffit.

It is curious that, although so similar, the setting-out details were not identical in both nave windows. The main lights are from the same template, but a tighter radius was used for the segmental head in the north window, with the consequence that the spandrels are differently shaped from those on the south side. Additionally, in the north window the spandrels are cusped: effectively each is a quarter-reticulation. A date of *c*. 1320-40 is suggested for these windows. They both have internal ferramenta, and a little medieval glass in the tracery lights.²²

The nave windows were neatly cut into the rubble walls, and set in hard whitish mortar (which does not match that of the raised wall top). Oyster shells were used as packers. The masonry frame, which is of Caen stone, stands proud of the wall face and has a shallow rebate for plastering around its external margins. When these windows were inserted the adjacent rubble walling was clearly still rendered.²³ Traces of multiple layers of limewash remain on the masonry.²⁴ The blocks of Caen stone used are all small, and several exhibit remains of redundant chamfers and mouldings relating to their previous history.

Again of similar date and material is the 14thcentury priest's doorway in the south wall of the chancel. The two-centred arch is chamfered and rebated; there is no hood-moulding (Fig. 39). The doorway has a threshold composed of three pieces of reused Barnack-type limestone. That too was doubtless salvaged material. Superimposed on this is a 19thcentury threshold of brick-on-edge. The rear-arch has plain, square reveals and a pointed head with a small chamfer. The rear-arches of the doorway and the adjoining south-west window are structurally integrated, but probably not contemporaneous.

Inside the door is a 19th-century brick step down to the chancel floor. The door, which is of tongue and-groove boarding and internally ledged, is grained, and probably dates from the late 18th century. Long strap hinges bearing zig-zag decoration are fixed to the ledges.



Fig. 36 The 14th-century north-east window of the chancel, after the 1992 reconstruction of the masonry above the head. *Photo: David Guthrie*



Fig. 37 The 14th-century north-east window of the nave. The heightening of the wall above is clearly visible. *Photo: David Guthrie*

The two south windows of the chancel must follow next in the sequence. They are each of two cinquefoilheaded lights with curvilinear tracery above. The two are basically similar in design, but the south-east window is slightly wider than its neighbour, and thus its features are squatter. The only significant difference between them is that the central quatrefoil in the southwest window is augmented by a pair of decorative bosses projecting from its smaller foils (Fig. 40).

The heads of these two windows are four-centred and surmounted by a stilted hood-moulding. The stone used is Upper Greensand, now heavily eroded and patched with cement. Interestingly, in the south-east window just two blocks of Caen stone were employed in the jambs. Possibly this points to the same workshop as that which previously produced the reticulated windows in recycled Caen stone. Upper Greensand, although much less durable, was the common material used for dressings in this locality in the 14th century. The reararches have simple plastered splays with segmental heads. The latter have small chamfers.

Some of these windows contain medieval glass in the tracery lights, and all are fortunate in having their original ferramenta preserved.

Contemporary with the south chancel windows is the timber-framed porch, with its scissor-braced roof (Guthrie 1991, opp. 2). The original cusped bargeboards remain on the gable (Fig. 41). The sides comprised seven panels of open, ogee-headed tracery below a moulded cornice. The heads remain, but the mullions were superseded by turned oak balusters (and an intruded top-rail) in the 17th century. The tracery detailing is so similar to that in the 14th-century windows that a close association between carpenter and mason is implied. On the west side of the porch, the propeller-like motif (a circle flanked by two foils: Fig. 42A) is precisely matched in the south chancel windows (cf. Fig. 40). On the east side, the trefoils nestling between the ogival heads (Fig. 42B), are a compressed version of the tracery in the north nave window (cf. Fig. 37).

The porch's foundation was revealed during drainage works: it comprised a shallow trench-filled footing of flint rubble in lime mortar, capped by several layers of pegtile at ground level. Oak sill-beams, into which the superstructure was jointed, formerly rested on these tiled caps. The decayed sill-beams were cut out and replaced by brickwork in the 19th century.



Fig. 38 The 14th-century south-east window of the nave, with uncusped tracery spandrels (*cf.* Fig. 37). The segmental head has become distorted through settlement. Note the fragment of brickwork alongside the left-hand jamb, which is relict from the Norman window. *Photo: David Guthrie*



Fig. 39 Priest's doorway, in Caen stone, inserted in the south wall of the chancel.

Perpendicular (Figs 8-10)

There are three Perpendicular windows of closely similar, but not identical, design. Each has two, or three, cinquefoil-headed main lights supporting super-mullions and foiled tracery lights, all under a pointed head.

The east window is the most complex, having three main lights, four trefoil-headed tracery lights, and a quatrefoil in the apex (Figs 27 and 43). There is no hood-moulding. The window is of clunch, now badly decayed; and, externally, three-quarters of the masonry is concealed by cement. The window is set in cream lime-mortar. The rear-arch has a pointed head and plain splays.

The west window, of two main lights and two trefoilheaded tracery lights, has a hood-moulding (Fig. 18). The entire window, a replacement of the 1950s, is in oolitic limestone. It is believed to be a true copy of the medieval original which was, apparently, of clunch. Internally, the window has plain splays and a slightly dropped, two-centred rear-arch with a hollowchamfered arris.

The north-west window of the chancel is almost identical to that in the west gable, except that the tracery lights are cinquefoiled. It has a hood-moulding and label-stops in the form of male and female heads. The window frame is made of clunch, so too are its head-



Fig. 40 The 14th-century south-east window of the chancel, with original ferramenta and medieval glass in the tracery lights. *Photo: David Guthrie*

stops, although much patched with cement; the hoodmoulding is however of Barnack limestone. The window is set in a soft cream mortar, which is the same as the matrix of the blocking in the adjacent Norman window. The pointed rear-arch has a hollow chamfer on the arris, and the splays are plain.

By chance, documentary evidence has survived which must relate to the construction of one of the Perpendicular windows. It is contained in a summons, issued by John Hende, in respect of an unfulfilled contract. The details have previously been published (Goodes 1939), but without attempting to relate the contract to the fabric of the building.²⁵ Sir John Hende held the manor of Bradwell in the late 14th century, but was not patron of the living.²⁶ Apparently, he commissioned a London mason by the name of Thomas Aylmer, in 1389, to construct a new window in the church, for which he was paid five marks (£3 6s 8d). Hende was not satisfied with Aylmer's work, and in 1395 sought legal redress in the sum of ten pounds.

'Thomas Aylmer, mason, was summoned to answer John Hende, citizen of London, in a plea that whereas the said Thomas for



Fig. 41 Timber-framed south porch with scissor-braced roof and original cusped bargeboards. The turned balusters are 17th century

reconstructing well and sufficiently a certain window of a certain length and breadth in the church at Bradwell-by-Coggeshall, of stone and lime, within a certain time for a certain sum, paid to the said Thomas by the said John at Bradwell-by-Coggeshall, the said Thomas did not have that window constructed in the aforesaid form within the aforesaid time, to the damage of John, 101.

Whereof John, by Richard Waltham, his attorney, says that Thomas on Monday after the close of Easter, 12 Richard II [19 April 1389], undertook to reconstruct a certain window 14 ft long by 10 ft wide, in the church of Bradwell-by-Coggeshall, of stone and lime, well and sufficiently, for the said John within a certain time, to wit, before the feast of St Michael then next following, for a certain sum, to wit 5 marks...the said Thomas did not construct the said window in the form aforesaid within the said time...whereof John said he had damage to the value of 101., and thereof produced suit.

There is no window in Bradwell church of the dimensions given. The side walls could not accommodate a window 14 ft high, which means that it can only have been intended for one of the gable-ends. The scale of the window was too grand for the west wall, especially in view of the fact that the portal frame carrying the belfry had been erected here. The only plausible explanation is that Sir John Hende commissioned a new east window for the chancel. However, at 11 ft by 7 ft, the present east window falls far short of the specified dimensions, and it is certain from the undisturbed Norman masonry that there has never been a window here measuring 14 ft by 10 ft (4.3 m by 3 m).

The existing east window is of a common three-light design, which had a long life, from the late 14th century to the mid-15th. It is entirely feasible for this design to date from c. 1390, especially if it was the work of a London mason. The options are, therefore, either that Aylmer failed to build a window at all at Bradwell, or that he constructed this undersized one. The latter is

more likely, and the confirmatory clue is found in Aylmer's reply to the summons.

'And Thomas came in person and defended... said that he well and sufficiently reconstructed the window aforesaid of stone and lime, in the form aforesaid, before the feast of St Michael aforesaid, and is ready to verify the same, whereof he begged judgment.

And the said John said that Thomas did not well and sufficiently reconstruct the said window, or ordered it to be constructed, as John has above alleged, and begged enquiry by the country. And Thomas likewise?

The Sheriff failed to summon a jury, and the case was adjourned. The outcome is not known. Nor is it clear why it should have taken Hende five years to bring the case against Aylmer. A possible explanation may however be offered. Although Hende held Bradwell Hall, and was buried in the church in 1418, he obviously did not live permanently in the parish. He was described in the summons as 'citizen of London', where he was Lord Mayor in 1391 and 1404. His life as a prominent London citizen would have eclipsed his rural interests, and it is entirely feasible that he did not visit Bradwell for several years. Aylmer, or a mason acting on his behalf, would have been aware that he was working for a wealthy, absentee patron, and thus there was a temptation to skimp on the work.

It will be noted that, in his response to the Sheriff, Aylmer insisted that the window had been constructed on schedule, but it is interesting that he did not confirm it was to the specified dimensions. We may, therefore, suggest that the present undersized east window is the product of the commission of 1389. The dimensions stipulated for the new window indicate that it should probably have been of four lights, rather than three, and the tracery pattern would thus have been considerably more complicated. The kind of window which Hende had in mind might have been akin to that in the east end of the south aisle at St Botolph Aldersgate, London (Schofield 1994, fig. 22).²⁷ Nothing of consequence is known about Aylmer's career as a mason; he died in 1407 (Harvey 1987, 11).

In the south-east corner of the chancel is an ornate piscina, probably of the early 15th century (Guthrie 1991, opp. 14). It has a four-centred arch with cinquefoil cusping, set under a square label, with foliate-decorated spandrels. The arch is chamfered and has brooch stops; rosettes are carved in relief on the chamfers. The label carries a stooling for a poppyhead finial (missing). The basin is in the form of a moulded semi-octagonal bracket, with the mutilated remains of a male head. The hollowing of the bowl is quatrefoiled in plan.

There are no sedilia, but the sill of the south-east window is finished with a flat stone slab which projects slightly into the chancel, and is chamfered on the lower arris. This must have served as the sedilia, and may well be 14th century in origin. Both the piscina and sedilia are too high in relation to chancel floor level for practical use.²⁸ Consequently, there must have been a significant alteration in levels at the east end of the church in the later Middle Ages. The floor is currently at about the original Norman level, and the sanctuary must have that the extant building was erected *de novo* in the Norman period, without incorporating fabric or foundations of a previous structure on the site. The plan, proportions and general design should therefore be truly representative of contemporary churchbuilding practice. Virtually all the medieval parishes of Essex were in existence – and provided with churches – well before the close of the 11th century. Most local churches originated as late Anglo-Saxon stone buildings which were progressively adapted and extended in the Norman and later periods. Because Bradwell is so markedly different, it is a candidate for positing the survival of an Anglo-Saxon timber predecessor into the 12th century.

DESIGN

The orientation of the church and plan of the graveyard are further indicators of a fresh Norman layout. First, the church is aligned on a true east-west axis, and not in sympathy with the prevailing local topography (Fig. 1). The latter is reflected in the roads and the Hall, and were the church on pre-Norman foundations it would, almost certainly, have conformed likewise. Concern for a liturgically correct, as opposed to topographically convenient, orientation was a Norman predilection. Secondly, the graveyard is of near-rectangular plan, with the church placed squarely at the centre. Again, this smacks of Norman planning. Nearby Faulkbourne provides a close analogue, and in both instances the area of the churchyard is almost two-thirds of an acre.

Apart from building rubble, the sole feature in the fabric of Bradwell church which must surely be derived from an earlier structure is the Barnack limestone slab – doubtless a grave-cover – that was cut up and used for the door thresholds. Unfortunately, the stone provides no dating evidence beyond the fact that the diagonal tooling suggests it is Norman. Slabs of this type and material are known in the locality from the early 12th century: *e.g.* Rivenhall (Rodwell and Rodwell 1993, 18). Medieval grave-covers were frequently recycled as building material within a generation of their manufacture.

The simple rectangular plan of the church, although slightly distorted by an error in laying out the foundations, displays the use of a mensural system in its design based on a unit akin to the statute foot. In this respect Bradwell differs from late Anglo-Saxon buildings in the area, where measurement was based on the Northern foot (Rodwell and Rodwell 1985, 91; Rodwell 1986, 157). In accordance with the usual practice of the period, the foundation-trench was set out by the builders using the centre-lines of the walls as their guide. The length of the church was 60 ft and the width 25 ft. Although not expressed in the ground plan, the ratio of the sub-division between nave and chancel was 35:25 feet.

While elevation details were sometimes linked proportionally to the plan, in this case they were not. Although insufficient data exist for sweeping generalizations to be made, there are indications that the elevations of Norman churches were often separately contrived, and not generated from the ground plan. Such was the case at Bradwell. The mensural proportions of the design are readily appreciated by reference to the plan and south elevation (Figs 11 and 13). The eaves height above door threshold level is 12 ft. The axis of the doorway is 15 ft from the west end, with the south-west window located midway (*i.e.* $7^{1}/_{2}$ ft from the corner). Although the nave-chancel division was not physically expressed in the masonry, the south-east window of the nave was nevertheless $7^{1}/_{2}$ ft from the notional dividing-line.²⁹

Moving on to the chancel, the south-west window was 10 ft from the divide, and the lost south-east window was a further 10 ft east (as near as can be estimated from the internal splay). That leaves $7^{1}/_{2}$ ft between the window and the south-east corner of the chancel, balancing exactly the distances of the nave windows from their respective corners. Turning now to the east elevation, we find that the outer windows of the lower triplet were also $7^{1}/_{2}$ ft from the corners of the building. The distance between centres of the three lights was $6^{1}/_{2}$ ft, which is the same as the measurement between the two windows of the upper tier.

In summary, the elevations of the nave were designed so that its windows were symmetrical about its corners, and the fenestration of the chancel was weighted towards the east end – thus giving luminary prominence to the position of the altar – but a balanced distribution of windows around the eastern corners was still achieved.

CONSTRUCTION AND MATERIALS

Turning to constructional issues, Bradwell provides an exceptionally rare instance where the complete Norman scaffolding scheme for the exterior can be adduced with near certainty (Figs 16 and 17). At least 58 putlogs must have been set into the walls, although the holes for 15 have been lost owing to later works. Remarkably, of the 43 that have been recorded not less than 27 still retain their original oak caps (and others may lie hidden behind mortar and patching); only one putlog hole has a brick cap.

The free end of each putlog was lashed to a vertical pole (standard), which was set into a hole in the ground. The standards defined the bays and were linked by horizontal poles (ledgers) at each lift. So much can be asserted with confidence. There was presumably an additional element to the scaffold in the form of diagonal bracing, which would have been essential to prevent the whole structure from racking and collapsing. The arrangement of corner putlogs implies a scaffold depth of four feet.

The interior of the church had also to be scaffolded during construction, but the putlog holes are now concealed behind plaster. If through-putlogs were used, as is likely, the individual timbers would have been cut to a length of about ten feet. The average intended bay length (i.e. span between standards) was eight feet. However, owing to the exigencies of the church plan, and the need to keep the doorways clear for the passage of men and materials, some scaffold bays were as much as ten and eleven feet in pitch. Medieval scaffolds were decked out with hurdles, and it is often supposed that a single hurdle spanned the gap between adjacent putlogs. That would be feasible if the putlogs were less than five feet apart, but a span of eight or ten feet would be out of the question. The implication is clear: the hurdles were supported, not on the putlogs, but mainly on the ledgers. Hence, there had to be not only ledgers connecting the standards, but also a line of them close to the church wall (carried on the putlogs, as shown on Fig. 16). That way, the hurdles were supported across their width, the span being only 3-4 ft.

The inner ledger had another important function, as the principal support for the shuttering that was used in the construction of rubble walling. While putlog holes are a common sight in medieval walls, they are seldom recorded in detail, or analyzed for the information that they can yield on building methodology. The late Saxon church at Rivenhall, also rubble built and using shuttered construction, appears to have had its putlogs spaced at 10 ft intervals, again leaving no doubt that the hurdles must have been supported on parallel ledgers (Rodwell and Rodwell 1985, fig. 91). On the other hand, at Bradwell-on-Sea putlog holes in the walls of the early Saxon church are more closely spaced, being between 4 ft and 7 ft apart (Rodwell 1986, fig. 105). Hurdles might just have spanned the larger gaps with the aid of some *ad hoc* propping. Nevertheless, there can be little doubt that parallel ledgers were in use here too, once again on account of the shuttered construction.

The mixture of building materials in the Norman church is interesting, suggesting that the great majority of the stone was secondhand, if not third-hand. The reused Roman tile is especially telling in this respect. Had a nearby Roman ruin been freshly quarried for building materials a greater quantity of tile would be in evidence and, more significantly, complete and nearcomplete examples would be expected. As it is, Bradwell church contains only small pieces of tile, and mixed in with these are other identifiable relics of Romano-British settlement, such as querns of Rhenish lava, Millstone Grit and Puddingstone. This is a classic example of low-grade building materials being scavenged or recycled more than once. The flints and sarsen pebbles too have come from various sources: some could have been collected in the locality, from the fields and river beds. Others, which ultimately came from a greater distance, may nevertheless have been grubbed out of Roman foundations in the immediate locality. In the 12th century, supplies of Roman building materials in Essex were rapidly reaching exhaustion. Church architecture provides eloquent documentation of this demise.

It is only the ferricrete (ferruginous conglomerate) that stands out as being potentially freshly quarried

stone (originating in the Stour valley), but even so its occurrence in Bradwell church is curiously sporadic. Either cartloads of fresh ferricrete were arriving on site at the same time as loads of materials from other sources, allowing them to be mixed, or else the ferricrete too was being reclaimed.

Ferricrete does not appear to have been widely used as a building material in north-east Essex in the Roman period, and there is little occurrence of it in definite Anglo-Saxon contexts.³⁰ The earliest use of a substantial quantity is in the Saxo-Norman chancel at Inworth church. Thereafter, many Norman churches display large amounts of ferricrete in their fabrics, sometimes in concentrated horizontal bands that suggest it was consciously employed to decorative effect (*e.g.* at Marks Tey and Great Bentley). If so, these buildings were not fully rendered.

At Bradwell no attempt was made to create decorative bands with different materials: everything was piled into the walls, just as it arrived on site. The bulk of the unequivocally Roman material occurs in the lowest one metre of construction. Ferricrete is scarce in the first few lifts, then there is a band of about one metre in which it is prolific (1.2 m in the east wall). Above that, the virtual absence of ferricrete from a zone 1.6 to 1.8 m high all around the church, basically at mid-height, attests a hiatus in its supply (Figs 8-10).

The side walls of the chancel were completed to eaves level before a fresh supply of ferricrete was available, but in the two uppermost lifts of the nave it reappears in quantity. This is a useful indicator of building logistics, demonstrating that the whole church was not raised by one lift at a time, but that differential progress was being made by separate gangs. The simplest explanation for the observed phenomenon is that as the masons approached eaves level the supply of material (basically flint) was dwindling, with the result that the gangs working on the nave were withdrawn, leaving those engaged on the chancel to use up the remaining stone stock. That could have coincided with a natural break at the close of a building season. When work resumed a fresh supply of ferricrete was to hand, and this was used, inter alia, to complete the nave walltops and to raise both gable-ends.

It has been noted that slight evidence for a temporary capping-off of the north and south walls exists at mid-height, and that construction over two seasons is thereby implied. It has further been argued that the gables were the work of another building season. The foundations are likely to have been laid in a separate, initial season, allowing a little time for them to settle before being loaded. The general indications point, therefore, to the erection of the masonry shell of Bradwell church over a period of four years. Working at such a rate probably required no more than two gangs of men.

The walls could not have received the thrust of a heavy oak roof until the lime-mortar had cured for some months; hence roofing is likely to have been another year's work. A full season must be allowed for erecting the roof trusses (which would have been prepared in a woodyard and brought to the site in disassembled form), for tiling, and for plastering the church both inside and out. In sum, the indications all point to a period of about five years for the erection of the church.

Unfortunately, nothing can be said about the Norman roof, since none of the structural carpentry seems to have reused in later work. The nature of the roof covering also raises interesting speculation. Clay tiles were clearly present on the site when the church was being built, perhaps pointing to their use here at an early date. Oak shingles are the most likely alternative.

None of the material used in the rubble walling was suitable for dressings: although flint quoins were sometimes constructed in the 11th century - as in the tower at Little Bardfield church - the practice ceased in the Norman period. Essex had a long tradition of recycling Roman bricks for the dressings of churches, beginning at Bradwell-on-Sea in the mid-7th century. Prodigious quantities were salvaged and recycled between the 10th and early 12th centuries, but when the ready supply became exhausted new sources of suitable dressing materials were sought. Barnack-type limestone and Caen stone began to appear in northern Essex around the end of the 11th century, but were rare before the mid-12th. One of the earliest examples is Faulkbourne church, a rather grand proprietorial foundation of the late 11th century with all its dressings in Barnack stone.

Many Essex churches of the middle and later Norman era employed English limestone, sparingly, for dressing windows and doorways. However, in the Coggeshall area a novel solution was developed to overcome the absence of good local stone and the exhaustion of recyclable Roman materials: a new supply of Roman-type bricks came into production. This was a logical and economically sound response to a perceived need. Moreover, the 'Coggeshall range' was tailor-made to suit the latest architectural fashion. When Roman bricks were used to dress windows and doorways, chamfers and bullnoses had to be cut by hand, whereas in Coggeshall bricks such details were integrally moulded, as in Continental brickwork.

The exterior of Bradwell church was fully plastered and, in all probability, limewashed and outlined with paint to simulate the appearance of a plain ashlar building. Despite their smart appearance, Coggeshall bricks were not generally meant to be seen. At St Nicholas, Little Coggeshall, where bricks were prolifically used as dressings, the church was originally plastered both inside and out (Beaumont 1890, 101).

It is suggested that the west gable may have carried a small bell-turret, and there could well have been an external demarcation between nave and chancel in the roof line, especially if it was tiled. Although churches that were structurally, but not necessarily functionally, single-celled were doubtless commonplace in the Norman period, few Essex examples can be cited. Both Easthorpe and Little Braxted were small churches of comparable status and size, their only real difference being an apsidal termination to the east end. At Easthorpe the opposing nave doorways are preserved: they are simple, round headed and built of Roman brick. As at Bradwell, the south doorway is wider than the north. Of similar plan is the church at Little Tey, but there the Norman doorways are dressed with limestone, a reflection of the changing attitude to materials and masoncraft in the second quarter of the 12th century. Developments in window design are also evidenced at Little Tey: squatter proportions and stone dressings (with, interestingly, the occasional piece of Roman brick coursed in with the stone).

Very few churches preserve a complete scheme of Norman fenestration in the east wall, but the indications are that three, or five, small openings arranged in two tiers were not unusual. Sometimes there was also an oculus in the apex of the gable. Bradwell certainly had five windows, but whether it was also given an oculus cannot now be determined, owing to the loss of the apex masonry. The heavily restored east end at Rainham church exhibits a tiered arrangement of five lights, plus an oculus (RCHM 1923, 117; Godman 1905, 36).

It has been argued that an enclosed upper chamber is likely to have been built within the western part of the nave. Few Norman west ends survive intact, but Faulkbourne provides a comparable example of a gable light as well as having windows at a lower level. At Little Tey, too, the Norman gable light survives, and a similar arrangement seems to have obtained at Little Braxted, before the church's restoration. Our understanding of the nature and functions of upper chambers and galleries in the west ends of Anglo-Saxon and Norman churches is very inadequate.

DATING

Dating the Norman work at Bradwell is the hardest task of all. Decorative Romanesque masonry is entirely absent from the fabric, and the limestone bowl of the font – cut down from a square to an octagon in the 16th century (RCHM 1922, pl. p. xxiv; Paul 1986, 48) – is the only moulded feature earlier than the 14th century. Decoration is confined to a small band of chevron ornament just below the rim, although it seems possible that there were once carved heads, or other embellishments, on the four corners that have since been hacked away. The font bowl probably dates from somewhere in the first half of the 12th century. However, the font could have belonged to a previous church on the site, and does not therefore provide dating evidence for the present structure.

Other cut-down Norman font bowls in Essex are found at Ashdon, Little Maplestead and Strethall (Paul 1986, 31, 134 and 186). At Naughton, Suffolk, a square bowl of the late 12th century was similarly reduced to an octagon (Cautley 1954, 57-9).

Bradwell church has usually been assigned to the 'early 12th century' (*e.g.* RCHM 1922, 12), wisely

without attempting to be too specific. Superficially, there is no reason to dissent from that view, and various indicators pointing to the early or middle, rather than the later, years of the century should be noted. A pre-12th-century date is not sustainable.

- (i) The use of brick to form dressings. Although the bricks are all medieval at Bradwell, they are employed in precisely the same manner as Roman brick had been in buildings of the 10th to 12th centuries. By the mid-12th century limestone dressings were becoming popular, especially for outlining windows. Little Tey provides a touchstone of *c*. 1130-50.
- (ii) Small chamfers are not usually seen in the 11th century, but are ubiquitous in window apertures of the early and mid-12th century in the region.
 The new bricks were made ready chamfered, in recognition of contemporary requirements.
- (iii) The tall, narrow proportions of both the doorways and the windows at Bradwell are strikingly reminiscent of the openings found in many local churches of the 11th century and the beginning of the 12th (*cf.* Rodwell and Rodwell 1985, 136-7). In the second half of the latter century window apertures were becoming wider, both in actual measurement and in proportion to their height.

In sum, a date in the second quarter of the 12th century would seem most likely. The temptation to link Bradwell church to the building of Coggeshall abbey – and thereby to conjure up a more precise date – must be resisted for two reasons. First, Bradwell was never owned by the abbey, and, secondly, the date at which brick began to be used at Coggeshall is currently a matter of guesswork.

Early English

Two improvements to the fabric are archaeologically detectable. First, the enlargement of the fenestration in the east wall. A graduated triplet of plain lancets, akin to that seen at Little Coggeshall church (but more widely spaced), was doubtless created. Fairstead preserves a similar arrangement, as does Easthorpe (RCHM 1922, 92 pl.). If any other windows were simultaneously enlarged at Bradwell the evidence has been wholly removed. At the same time, it is likely that the church received its first wallpaintings. The purpose of the painting on the east wall, at least, was to enhance the architecture by adding *trompe l'oeil* detail.

The second improvement took the form of a freestanding timber-framed belfry, erected outside the west end of the church. This structure presumably held three or perhaps four bells of modest size. Its original form and date remain enigmatic. Detailed study of the extant timberwork would shed further light on the history of the belfry (Fig. 30).

Two options may be considered: first, the structure

could have been no more than a low-level bell-cage of the type exemplified at East Bergholt, Suffolk. But this lacks conviction, firstly because such cages are only known in the later Middle Ages, and secondly because the extant turret components would not fit a structure based on a module of $13-13^{1/2}$ ft (the spacing between the postholes against the west wall). The second option is that Bradwell was given a full-scale western belfry, based on four earth-fast posts. A similar structure has been posited on archaeological evidence at West Bergholt (Turner 1984).

This solution, too, presents a problem. Structurally, it is clear that nothing substantial was tied into the fabric of the west gable, and a tall, four-post turret on a base only 13 ft square would have been unstable, even though the bell-cage would have been stepped-in from the base-frame. If, however, it is posited that the two surviving post-sockets did not mark the external corners of a turret, but belonged to an inner quartet of posts, then a larger belfry of stepped construction is implied. Such belfries are well attested in Essex (see, generally, Hewett 1962). Stock and Blackmore provide examples of the square plan, while Navestock and West Hanningfield represent a group with cruciform bases.

The plan of the Blackmore belfry merits closer scrutiny (Fig. 44). The 15-ft square central tower is based on a quartet of posts, and is 'aisled' on all four sides. The span of each aisle is half that of the central square, and the overall dimension of the structure is slightly greater than the external width of the nave. If we



Fig. 44 Plan of the western timber belfry at Blackmore church (after Godman 1905). The outer frame is slightly wider than the Norman nave, which is of similar width to Bradwell

apply the same design principles to Bradwell an interesting result is obtained. On the evidence of the postholes, the pitch of the central quartet is fixed at $13-13^{1/2}$ ft; add to this a pair of outer aisles, each equivalent to half of that pitch, and the overall north-south dimension of the structure would be fractionally greater than the external width of the Norman nave.

In proportion to the mass of the church, a rectangular belfry would seem appropriate at Bradwell, as reconstructed in Fig. 11. A close analogue may be found in the belfry of similar plan at West Bergholt (Hewett in Turner 1984, 52). That began its existence as a fully external structure, but was later enveloped by a westward enlargement of the nave.

At Bradwell, there is one crucial piece of evidence to support the suggestion of a broad-based belfry: it is Hewett's 'transom-beam'. This was a timber not less than 8.6 m long which was reused in the 14th century to span the west end of the nave, supporting either an upper floor or the resited bell-turret. The length of the timber was such that its ends protruded through the north and south walls. Both ends can be seen to have an empty mortice in the soffit face, and a single peghole for securing the tenon. On the south side of the church the beam has been trimmed, so that the mortice is now cut open (Fig. 33); and on the north the end is steeply chamfered.

The timber was clearly once a tie-beam or a topplate from a framed structure that was virtually the same width as the present nave (externally). It is an ideal candidate for the top-plate of the ground stage of a timber belfry. Today, only the ends remain embedded in the side walls, the main span of the beam within the nave having been cut out. Presumably the western belfry was dismantled in the 14th century, and immediately reerected more-or-less in its present form.

Provisionally, it is suggested that the Early English work dates from the first half of the 13th century.

Decorated

The next modification was, almost certainly, the installation of a new window with reticulated tracery in the north wall of the chancel. There then followed a series of improvements, beginning with the raising of the nave roof. Why the old one should have been discarded, when it was no more than 200 years old, is problematic. An unrecorded disaster – such as fire – is a more likely cause than natural fatigue.

The new roof took the form of a trussed-rafter structure of seven cants; it was internally ceiled. This was the most common roof type in Essex churches in the 13th and 14th centuries. While it has been assumed that the present arrangement of the western belfry dates from the same time, further study of the carpentry is required to confirm this. However, if the transverse beam at the west end of the nave came from the freestanding belfry, as posited, it follows that the original belfry was dismantled before work began on raising the nave walls, the timber being firmly entrapped by the added masonry.

The provision of two large new windows in the nave followed next, but was not structurally part of the wallraising operation. The most interesting aspect of the windows is the fact that they are made of reused Caen stone. The same applies to the slightly earlier north-east chancel window, and the priest's doorway in the south wall. Precisely where the latter came in the sequence cannot be determined. While Caen stone was imported in the Norman period for dressings on castles and monastic houses, it is not often found as newly quarried material in Essex churches after the 12th century. Obviously, the Caen stone did not originate in features at Bradwell church, and must have been reclaimed from elsewhere. An exactly similar situation was discovered at Rivenhall church, where Caen stone was reused in fifteenth-century contexts (Rodwell and Rodwell 1985, 146, 151-2). Recycling limestone and recutting mouldings was evidently a serious local component of the stonemasons' industry.

Raising the chancel roof followed that of the nave and, although it too was given a seven-cant form, there are sufficient differences to show that there was a time lapse and that another gang of carpenters was at work. It is slightly odd that improved lighting was not provided in the south wall of the chancel at the same time, but there is no hint of this.

There then came several new features: the two windows in the south wall of the chancel, and the timber-framed south porch (Hewett 1974, fig. 38). Tracery details link the windows and porch. There may not have been a long interval between this phase and the previous work, but the materials and design of the windows are distinctly different.

Finally, the floors were at least partially tiled, and a series of new paintings executed on the walls. The use of a distinctive type of floor tile with stencilled patterns exemplified a local trait that had its floruit in the second quarter of the 14th century (Drury 1993, 10-12). A single fragment of rare mosaic tile points to the likelihood that discrete panels of this material were incorporated in the chancel floor or sanctuary steps.

Stained glass of high quality was introduced into the new windows at about the same time. Unfortunately, little of the medieval glass survives today, but a fresh study of it is needed (*cf.* Hamilton 1884).

The date of all this work seems to be in the second quarter of the 14th century. Thereafter, the interior of Bradwell church would have presented a unified and up-to-date decorative ensemble.

Perpendicular

Three new windows were installed between the late 14th century and the middle of the 15th, in the east and west gable walls, and in the north-west part of the chancel. The east window probably dates from 1389. Curiously, the north-facing chancel window was embellished with a pair of head-stops. The male head on the east appears to have a pair of pomegranates slung around the neck

(now restored in cement), while the western head is female. One wonders whether these represent Christ and the Virgin Mary.

Also of the 15th century are the piscina, the chancel screen and rood loft, and the south door, while at the end of the period came the reconstruction of the font. The cutting down of the Norman bowl and its remounting on a decorative brick column may not have occurred until the early 16th century.

General (Medieval)

Some general comments on the relative elaboration of windows and doorways seem appropriate. First, in the Norman church, the south doorway was larger than that on the north, which is commonplace and may be taken to suggest an order of importance, or it may be purely convention. Unusually, in this instance, the north doorway is slightly better detailed than its counterpart: it has bullnosed brickwork all round the outer opening, whereas in the south doorway this feature occurs in the arch alone.

Second, in the early 14th century, it was the north side of the chancel that first received a traceried window, hinting at greater prominence than the south. Then the provision of new nave windows raised another, admittedly very subtle, imbalance: the spandrel lights were cusped only on the north. These modest elaborations may indicate that, as far as the patron was concerned, the north was the more important side. He resided in Bradwell Hall and would thus have approached the church from the north. His private pew was probably on that side too.³¹

Upgrading the south elevation belongs to the next Decorated phase, when two new windows were inserted in the chancel and at the same time a fashionable timber porch was added in front of the doorway. These improvements were clearly directed towards the public face of the church.

Finally, the three Perpendicular windows tell their own story. Those in the east and west ends are fairly plain, whereas the north-west chancel window has slightly finer detailing, a limestone hood-moulding and a pair of carved label-stops. The latter are the only examples of medieval figural sculpture on the building. Again, we may suspect that this elaboration was directly related to the position of the manorial pew.

Post-Medieval

The fabric of the church exhibits very little evidence of post-Reformation interference. The 17th-century replacement of the oak mullions in the porch with turned balusters, and the infilling of the lower parts of the medieval windows with a few courses of brickwork, are the only obvious modifications. The brick infilling in the north and south windows dates from the 18th century, being associated with the introduction of high box pews. The greater depth of infilling in the east window relates to the construction of the Maxey monument in c. 1624. The patch of brickwork visible in

the east wall, just above ground level, may mark the blocked entrance to the Maxey vault, which is presumably under the chancel floor (Fig. 9).³²

Internally, a succession of modifications has occurred to the furnishings, since the 16th century, and the wallpaintings were obliterated with limewash.

Medieval brickwork

Post-Roman brick making was introduced to eastern England from the Low Countries, sometime around the middle of the 12th century. Early medieval 'great bricks' are found, in small quantities, on a limited number of monastic and high-status secular sites in Essex and beyond: essentially, they are a phenomenon of the east coast, from the Thames to the Humber (Firman and Firman 1989, fig. 1). Unfortunately, few bricks have been recovered from securely dated contexts.³³

'Great bricks' vary somewhat in fabric and dimensions. They were obviously produced locally, and several distinct groupings are identifiable in Essex (for the first general review of early brickwork in the county, see Ryan 1996, ch. 4). A few shaped bricks and other oddities have been reported from disparate sites in the county, but there is nothing comparable to the sophisticated 'architectural' range found in the Coggeshall area (Fig. 45; Ryan 1996, fig. 1).

The distinctive brickwork visible in the extant buildings of the Cistercian abbey at Little Coggeshall has generated much interest amongst architectural historians since Cutts (1858) first drew attention to it, and Coggeshall has widely been regarded as the earliest post-Roman brick-production site in England (*e.g.* Beaumont 1890, 101; Lloyd 1925, 3; Gardner 1955; Wight 1972, 25-6, 260-2). The re-introduction of brickmaking has thus been tacitly linked to the Cistercians, but the supposed connection has never been logically argued.

Little Coggeshall abbey was founded in 1140 as a Savigniac house, and it was only after the collapse of that order in 1148 that it was transferred to Cîteaux (VCH 1907, 177). If the Cistercians imported skilled brickmakers and set up kilns at Little Coggeshall it is highly improbable that bricks would have been in production before the 1150s. Dates of *c*. 1160-70 have been suggested for the earliest incidence of brickwork at the abbey; but even then the evidence is equivocal. Ryan (1996, 94) suggests an overall date-range for the Coggeshall production of *c*. 1160-1225.

There has been no systematic excavation at the abbey, but the discovery of segmental bricks on the site of the conventual church led to the hypothesis that they had been used in the piers (1.2 m diam.) of the Norman nave arcades (Gardner 1955, 24). Plain bricks were laid on the floor and in the bench-tops of the chapter house; dating this latter structure is problematic, but it is unlikely to be earlier than *c*. 1170. Architectural bricks occur in profusion in the abbey guest-house, *c*. 1190, and in the *capella extra portas*, *c*. 1220. This eventually



Fig. 45 Distribution of Coggeshall-type bricks in north-east Essex. Solid symbols indicate use of bricks for dressings; open symbols indicate use as rubble became the parish church of St Nicholas, Little Coggeshall (Beaumont 1890, 101-2).

If brick production was in the hands of the Cistercians, it is reasonable to assume that the initial output would have been directed towards the building needs of the abbey, and not to the provision of materials for proprietary churches that were unconnected with the abbey or its estates. Yet the earliest known use of Coggeshall-type bricks is at Bradwell church, the erection of which is held - on stylistic-architectural evidence - to be in the second quarter of the 12th century. It is particularly unfortunate that there is no objective dating available for the church, and the danger of introducing a circular argument is all too obvious. On face value, it is virtually impossible to reconcile the production of bricks at Coggeshall abbey from, say, 1160 onward with an appearance at Bradwell church sometime before the middle of the 12th century.

Nevertheless, the bricks found at Coggeshall abbey and at Bradwell church are inextricably linked, both by form and by fabric. Unfortunately, no detailed study of Coggeshall brickwork has yet been undertaken, and there are many unresolved questions, particularly concerning dimensions and chronology. New architectural types (or 'specials') continue to be discovered, although mostly not in primary contexts. The dimensions and forms of some of the Bradwell bricks are closely matched at the abbey site, but others are different. The majority of the plain 'great bricks' used in the quoins at Bradwell are identical to those at the abbey. The fabrics too are indistinguishable, and their singular composition ensures that these bricks cannot be confused with any other product of Roman or medieval date in the locality.

In 1967 the Firmans advanced the suggestion that

Coggeshall bricks were a highly skilled product, based on a specially prepared mixture of clay and sand (Firman and Firman 1967), but they have subsequently acknowledged that the mixture could be natural. If so, the Coggeshall brickmakers probably obtained their raw material from solifluction deposits, somewhere in the Blackwater valley (Firman and Firman 1989).

Rectangular bricks with one, or two, plain chamfered corners occur at Coggeshall abbey and other sites, but seemingly not at Bradwell. There, the window dressings appear to be formed with special reveal-bricks which not only have a chamfered arris, but are also splayed to suit the internal angle of the reveal (Fig. 46). The single- and double-bullnosed bricks found in the two doorways at Bradwell are a rarity. While it is not difficult to appreciate the use of the single-bullnosed brick - as an imitator of the quadrant-moulded voussoir which is found in some Romanesque arches - the double-bullnosed brick is a less familiar form. This type cannot have been intended for the use to which it was put in the Bradwell doorways. Double-bullnosed bricks could have been created for use in pilasters and in the innermost orders of double-sided arches. Gardner failed to illustrate bullnosed bricks, but mentioned their existence in the guest-house at the abbey (Gardner 1955, 26)). Ryan omitted bullnoses entirely from her typology of Coggeshall bricks (Ryan 1996, fig. 1). Window-splay bricks and several other special forms were also overlooked.

It is readily apparent that there was a standard great brick, and the nominal ratio of length-to-breadth was 2:1. A smaller size was also produced, being two-thirds the length of the standard. The special window-splay bricks – again in two sizes – were made from the basic module, and the same applies to chamfered bricks and



Fig. 46 Axonometric views illustrating the range of Coggeshall bricks recorded at Bradwell church. Great bricks: 1 Large; 2 Standard; 3 Two-thirds standard; 4 Small. Window-splay bricks; 5 Standard;
6 Two-thirds standard. Bullnosed bricks: 7 Single; 8 Double; 9 Two-thirds double. Plinth: 10 Plain chamfer
other types not found at Bradwell. The implication is clear: brick sizes were designed with regular bonding in mind. However, it is all too obvious that the masons working in 12th-century Essex were not versed in the art of brick building: that was a foreign skill. Hence, by and large, masons used new bricks in the same way as they had been accustomed to laying reclaimed Roman bricks.

During the 1970s the present writer carried out a systematic search for both Roman and early medieval brickwork in the churches throughout northern and central Essex. The results showed that Coggeshall-type bricks occurred in a restricted area, and a preliminary distribution map was published (in Drury 1981, fig. 91). Subsequent research has filled out, but not significantly changed, the picture (Fig. 45), and there can be little doubt that the material in question was the output from a single atelier. At present, we have no indication how many production sites were involved, but it, or they, must have been somewhere in the vicinity of Coggeshall. Brickearth and river sand from similar geological deposits were widely available in the area; consequently the brickyard could have moved from one site to another, in response to the demands of individual building projects.

In view of the fact that the earliest appearance of these distinctive bricks seems not to be at the abbey itself, it is proposed that they should simply be labelled 'Coggeshall brick' (*i.e.* not 'Coggeshall abbey brick', as often used hitherto). Even this may, in due course, prove misleading. It must be mentioned that a kiln or furnace of some sort was discovered on the outskirts of Coggeshall, at Tilkey, in the 1840s and that its structure incorporated moulded bricks of a type found at the abbey (Cutts 1858, 182).³⁴ However, the description of the feature does not readily suggest a medieval brick kiln, and 'early brick wasters' have been found on another site (Drury 1981, 139, n. 4). At present, there is no palpable

evidence for a 12th/13th-century factory site.

Cistercians, with their The acknowledged predilection for tile paving, certainly provide an attractive peg upon which to hang the Coggeshall brick industry, but to do so involves putting some strain on architectural chronologies. Moreover, if the Cistercians imported brick-makers from the Low Countries to Coggeshall, we might enquire why they did not do likewise at other English houses. Their second foundation in northern Essex was Tilty abbey (1153), where brickwork would have been equally useful in the construction, but there is no sign of it in that locality (apart from some reused Roman material).35 The third Cistercian house was in the far south-west of the county, at Stratford Langthorne (Fig. 45). This foundation, like Coggeshall, was acquired from the Savigniacs in 1148. Medieval 'great bricks' have been found on the site, but they are plain and of uncertain date. Demonstrably, there is nothing comparable to the architectural range of Coggeshall bricks at Tilty, Stratford Langthorne, or any other monastic house in Essex.

Further doubts about the supposed Cistercian origin of the Coggeshall brick industry must be raised in view of the absence of typical Cistercian floor tiling at the abbey, a point first noted by Gardner (1955, 31). Although mosaic tile pavements appear in French Cistercian abbeys from c. 1190 (Norton 1986, 231), and subsequently in many areas of England, nothing related to that early tradition has been found at Coggeshall. Admittedly, the site of the church has not been extensively explored, but the chapter house where decorative tiling might be expected - had only plain square pavers on its floor. A few pieces of crude, 14th-century mosaic tile are recorded from the locality (including Coggeshall abbey and Bradwell church: see below), but they are irrelevant to the period under consideration.

Table 1. Summary of brick sizes and types from Bradwell church (Fig. 46)

Туре	Size (cm)	Used in	Date
Great brick (large)	36 x 19 x 6	SE quoin	C12
Great brick (standard)	33 x 16 x5	all quoins	C12
Great brick (standard, var.)	33 x 17.5 x 5.5	S doorway	C12
Great brick (²/₃ standard)	25 x 15 x 5	NE quoin (4 exx.)	C12
Great brick (small)	21 x 11 x 3.2	nave quoins (raising)	C14
Single chamfer(?)	28 x ? x 5	E window	C13
Chamfer & splay (standard)	32 x 16 x 4.5	nave windows	C12
Chamfer & splay (²/₃ standard)	22 x 16 x 5	nave windows	C12
Single bullnose	20? x 17.5 x 5.5	S doorway	C12
Double bullnose	18.5 x 21 x 5	N doorway	C12
Double bullnose (²/₃)	12.5 x 21 x 5	N doorway	C12

A cruder and entirely different kind of pseudomosaic work is encountered in the floor at Little Coggeshall church, the surviving *capella extra portas* (Gardner 1955, pl. 14; Norton 1986, 248, n. 44). In fact, the floor is not made of tiles (in the generally accepted sense of the word), but of moulded bricks: it would be more accurately described as a 'brick mosaic'. Again, this is not relevant to the early history of Coggeshall brickwork.

If the Cistercians were not responsible, could the Savigniacs have introduced brick-makers to Essex in the 1140s, establishing an individualistic factory that paid no heed to subsequent developments in Cistercian ceramics? And if so, why only at Coggeshall and not at Stratford Langthorne? The more the Savigniac/Cistercian connection with early Essex brickwork is probed, the less plausible it appears. It may be that the chance survival of so much brickwork at Coggeshall abbey in late 12th- and early 13th-century contexts has lured scholars into accepting a definitive association which is more apparent than real.

The conclusion must be that brick-making is unlikely to have come to Coggeshall directly in company with a monastic order: more probably it was an independent, speculative development in the medieval building industry. That Coggeshall brick, technically accomplished as it is, could have been a spontaneous local invention of the early to mid-12th century is too implausible to merit further discussion, and an external agency has perforce to be invoked to explain its appearance. One wonders, could brickmakers have arrived in east-central Essex for some other prestigious construction project in, say, the second quarter of the 12th century, and subsequently found a ready market for their products as Coggeshall abbey was being built? There are no major royal or secular building projects recorded in the district during the period in question, but the absence of evidence does not provide a definitive answer.

A hitherto unexplored possibility is that the Knights Templar were responsible for the introduction of brick making. Although their headquarters were at Holborn, London, their most important preceptory in England, founded in 1136, was at Cressing which is 6.5 km westsouth-west of Coggeshall (Fig. 45). All the early buildings of the preceptory – with the exception of the two notable timber-framed barns – have long gone, and hence their masonry dressings have been lost. Coggeshall-type bricks have recently turned up during excavations on the site, but nothing can yet be said about the structures in which they were originally used (Ryan and Andrews 1993, 94).

It is interesting to speculate as to what might have been used at Cressing Temple for masonry dressings in the 1130s, bearing in mind that all building materials for this *de novo* foundation had to be brought on to the site. Almost certainly, supplies of reusable Roman brick in the locality were long since exhausted, having gone into Anglo-Saxon churches. The options were twofold: either to import limestone over a long distance, or to obtain a fresh supply of locally made brick. Although incapable of proof, it is not inconceivable that the foundation of Cressing preceptory provided the impetus to seek out foreign brick-makers.

One of the most intriguing questions arising from the study of Coggeshall bricks, is why they turn up, in small quantities, on an ever-increasing number of sites. Very few fragments have been found in post-medieval contexts, and their occurrence cannot therefore be explained as incidental inclusions in rubble carted from Coggeshall abbey after the Dissolution. On the contrary, it is clear that the overwhelming majority of Coggeshall bricks reached their present destinations in the Middle Ages, although not necessarily immediately following manufacture. The Bradwell bricks were undoubtedly new when they were built into the church. This contrasts with nearby Rivenhall, where there is no meaningful structural context for the use of Coggeshall brick, yet no less than three sizes of plain 'great brick' and seven architectural types have been found in excavations adjacent to the church (Rodwell and Rodwell 1993, 7-8).

It is difficult to locate examples of Coggeshall brick in structures which are confidently assignable to the 12th century, apart from Bradwell church and the abbey itself. The use of Coggeshall bricks in coursed rubblework at Great Leighs church is particularly interesting, for here they occur in the lowest stage of the round tower. The quantity is small, and Roman bricks are mixed with the medieval, but the context is primary and undoubtedly datable to the second half of the 12th century. This tower is further distinguished by having a plait-motif used in the stone hood-moulding of its west doorway: it has been shown that the detail originates in Schleswig-Holstein, and no other occurrence of it has been noted in England (Heywood 1988, 173, fig. 71). It may be no coincidence that north Germany is the homeland of some of the earliest medieval brickwork in north-west Europe. This is a potential indicator that brickmakers came to Essex, along with other artisans from Europe, without the direct involvement of any specific religious order.

After Bradwell, the most extensive occurrence of Coggeshall brick is in Great Braxted church, where the quoins of the tower and the chancel are made almost entirely of it. Here the use is early 13th century. At Fairstead church the quoins of the west tower and the dressings of the chancel doorway are all of Coggeshall brick. The date of the tower has been claimed as early 13th century, but it may belong to the end of the previous century. Small quantities of brick occur in the dressings of several other late 12th-century churches, including Little Leighs, Barnston and Boreham.

Coggeshall-type moulded bricks are also found in the 12th-century newel stair at Fyfield church (Ryan 1996). This is an anomaly for which there is currently no satisfactory explanation, Fyfield lying well outside the nucleus of the Coggeshall distribution (Fig. 45).

The latest known use of Coggeshall brick in a

structural context is in the south arcade at Copford church: here, chamfered bricks were employed for the inner orders of one of the arches in the late 13th century (RCHM 1922, 76). But this may be misleading: it is likely that the medieval bricks were recycled, since they occur in company with reused Roman bricks. Finally, it may be noted that Coggeshall brick occurs in small quantities in at least a further thirteen local churches.³⁶

Although other sporadic occurrences of early medieval brick are known in Essex and Suffolk, these are not closely related to the Coggeshall types, in terms of fabric or dimensions. Moreover, they are plain and were not intended to reproduce architectural mouldings. Outside the Coggeshall area, there are only two substantial survivals of *in situ* brickwork antedating the 13th century. The first is at Polstead church, Suffolk, where the arches of the nave arcades are turned entirely in plain 'great bricks' (Kennett 1990; Haward 1993, 322-3). These semicircular arches, of two square orders, are carried on stone piers with decorated capitals. A date around the middle of the 12th century is implied (probably pre-1163). The dimensions of the bricks average 25.5 x 15 x 3.7 cm (10 x 6 x $1^{1/2}$ ins). Elsewhere in the church there are yet smaller bricks, and some undoubted Roman material too.

The second occurrence is at Chipping Ongar church, Essex, where plain 'great bricks' were coursed into the rubble walls, used as dressings for the north nave doorway, and set on edge to form a relieving arch over the monolithic limestone head of a narrow window. The church has been assigned to the late 11th century (RCHM 1921, 52), but this is optimistic and a date nearer the middle of the 12th century is suggested. Either way, the brickwork is extremely early and on morphological considerations the building would appear to be contemporary with Bradwell-juxta-Coggeshall church. The dimensions of the Ongar bricks average 38 x 19 x 3.8 cm $(15 \times 7^{1/2} \times 1^{1/2} \text{ ins}).^{37}$

The source of the Polstead bricks is unknown: they may constitute an isolated occurrence, or they may be part of a so-far unrecognized distribution in south-east Suffolk. The church at Chipping Ongar was associated with Ongar castle, and thus a context for the arrival of early brick on the site may be established. Neither, however, includes special-purpose bricks of the 12th or 13th centuries: in that respect the Coggeshall types are unique in the region.

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Author: Dr W.J. Rodwell, The Old Vicarage, Downside, Chilcompton, Somerset, BA3 4JQ

Appendix 1

Wall paintings

by Sharon Cather and David Park

Introduction

Bradwell church is notable for its splendid series of 14thcentury wall paintings, described by Pevsner as 'aesthetically of the highest quality' (Pevsner 1965, 97), but it also retains important paintings associated with the early Gothic and late medieval phases of the building. All of this painting seems to have been uncovered during the restoration by the Revd. T. H. Curling in 1905, who recounted that until that time the walls were covered with whitewash. He then

'determined to make some personal experiments in the removal of the whitewash...[and] was rewarded by discovering two paintings in the window south of the nave. The other paintings were discovered partly by the workmen, partly by myself and my friend, Mr. Stephen Warner ...The whole of the north wall of the nave was covered with paintings but...it was impossible to preserve any except the little head of a cherub' (Curling 1906, 36-7).

In his account of the wall paintings that came to light, Curling includes only the 14th-century scheme in the Decorated windows, the head of the 'cherub', and 'high up on the east wall of the chancel...an angel with outstretched wings'. There is no mention of the considerable remains of decorative painting in the chancel, including that on the unblocked Romanesque window in the east wall. Given the absence of any subsequent documented programme of uncovering, it is likely that Curling simply confined his descriptions to the figure-subjects, omitting as insignificant purely ornamental painting.

The rationale for exposing the resulting assemblage of fragments of schemes from at least three periods eludes the modern observer. Much painting must have been destroyed wilfully or carelessly in the quest for earlier remains, and the unblocking of the Romanesque window creates a palimpsest of architectural periods to match that of the wall paintings. Curling's account of the stripping of the screen - whitewash, lath and plaster, black-letter texts and Commandments all went - suggests that it is his legacy. What is perhaps clearer is that much painting must remain concealed. Mercifully, for whatever reason, the treasure hunt was curtailed.

Despite the wealth of phases represented in the exposed paintings, the one period from which no painting is known is the first, that of the early or mid 12th century. Rodwell has



Fig. 47 Chancel, east wall: Romanesque window with early Gothic decoration. (*Copyright Courtauld Institute*)



Fig. 48 Chancel, north-east window, eastern splay: Throne of Mercy Trinity (detail). (*Copyright Courtauld Institute*)



Fig. 49 Nave, south window, eastern splay: Incredulity of St Thomas (detail). (*Copyright Courtauld Institute*)

convincingly demonstrated that the rubble and brick exterior was originally rendered, but it is unlikely that the external plaster of such a modest church was decorated with masonry pattern or other ornament. By contrast, it is likely that the interior, with largely uninterrupted wall surfaces, would have been painted with an extensive and coherent programme of christological and other subject-matter typical of the period, though doubtless much less elaborate than the approximately contemporary scheme in the bishop's chapel at nearby Copford (Park 1993).

13th century

The earliest visible painting at Bradwell is in the southern of the two small Romanesque windows high up in the chancel east wall (Fig. 47). Originally, this window formed part of a group of five lights, their disposition and proportions reconstructed by Rodwell on the basis of the archaeological evidence. In the early Gothic period, the lower three were enlarged, while in the 15th century the central light was destroyed by the insertion of the large Perpendicular window, accompanied by the blocking of the remaining windows. Presumably during the repairs and investigations of 1905, the upper southern window, which preserves its Romanesque proportions, was excavated and the well preserved early Gothic painted decoration exposed. No doubt further remains of the 13th-century scheme - and perhaps the original Romanesque layer beneath it - survive in the windows that remain blocked.

The unblocked window retains paintings on its splays and soffit, though the base of the northern splay was destroyed by the 15th-century window. Although there are no visible remains of the scheme extending on to the east wall, the surface surrounding the unblocked window has never been carefully examined. Despite considerable loss, the essential components of the early Gothic fictive architectural scheme survive. Masonry pattern of single horizontal and double vertical lines, the latter consistently differentiated as one dark and one light line, covers the splays and the soffit where the courses narrow and converge toward the window opening. The outer edge of the soffit is articulated by fictive voussoirs, composed of alternating red and yellow blocks, divided by double red lines, and separated from the adjacent masonry pattern by a white border. Most interesting, however, is the fictive column which notionally supports the voussoirs. It is composed of a narrow yellow shaft, prominent red and yellow astragali from which spring simple forms intermediate between volute and foliate, and which are painted in red against yellow and highlighted in white. These are surmounted by a wide rectangular abacus, banded in white, yellow and red, which matches the width of the voussoirs.

Ornament of fictive voussoirs combined with masonry pattern is typical of the early Gothic period, and is recorded for example on windows of the capella ante portas of Tilty Abbey (RCHM 1916, 321; Park 1986a, 195-7). As at Bradwell, such decoration was often used to embellish and update earlier Romanesque architecture. At Great Canfield, two of the large 12th-century windows in the chancel east wall were painted in the mid 13th century with masonry pattern which extends across the wall - as well as stylised foliage (Tristram 1950, 333-4, 518, pl. 170). Although Essex provides no known parallel for an imitation column in window decoration, comparable examples dating from c. 1200 and later in the 13th century either survive or are recorded at some six sites, and a further two examples date from about the beginning of the 14th century. One of these late examples is also the most elaborate. The west window of the refectory of Bushmead Priory (Beds.) is embellished by early 14th-century decoration in which the fictive capitals, with serrated foliage and carefully detailed astragal and abacus, extend appropriately on to both the splay and the wall. Predictably, the capitals support an imitation arch of voussoirs in alternating red and buff. Surprisingly, on the soffit the width of the arch is halved by the inclusion of a band of foliate ornament which also, improbably, springs from the abacus (Park 1986b, 73, pl. 8).

Despite similarities to some of the earlier examples, the Bradwell column does not provide sufficient stylistic evidence to allow a precise dating. It may be compared, for example, to the columns at the edges of the reveals of the lancets in the nave of Ampney St Mary in Gloucestershire (Tristram 1955, 134), where the three volutes of the capitals are disposed symmetrically on each face and at the angle, presumably the original arrangement at Bradwell. However, the Ampney St Mary decoration is simultaneously less architectonic, executed only in simple outline, and significantly later, dating from c. 1300. Elsewhere, two recorded examples provide further comparisons: a column capital on an Early English lancet in the chancel at Westwell (Oxon) apparently had three tiers of paired volutes, while another at St Twynells (Pembrokeshire) imitated stiff leaf (C.A.B. 1859, pls. opp. pp. 269 and 270). Both examples seem particularly simplified, though it is difficult to assess whether that is largely a function of the crude 19th-century engravings from which they are known. Surviving examples in a grander building, the chapter house of Dryburgh Abbey of c. 1200, perform a similar function, with simple capitals painted over initial incised drawing at the springing of the arch (Redman 1997, 11-12, pl. 23).

Perhaps the most instructive parallel for Bradwell is provided by the extensive and elaborate, though unpublished, decorative scheme in the chancel of Ewenny Priory (Glamorganshire), dating from *c*. 1200 and embellishing fenestration datable on documentary evidence to between 1116 and 1126 (Thurlby 1988). The ambitious Ewenny scheme unifies the Romanesque three-light elevation using the Bradwell components – masonry pattern, fictive voussoirs and columns - but adds segmental arches, which spring from the capitals on the lower flanking windows to span the intervening surfaces. Here, the masonry pattern is a robust double red-line design, enriched with tendrils emerging from the vertical joints; it extends throughout the windows and across the wall, forming a continuous backdrop for the more assertive architectural elements. The column shafts are red and extend equally on to splay and wall surface, the width of the shaft apparently adjusted to the height of the window, so that the central higher shaft is proportionately broader. The capitals have a prominent astragal, foliate ornament in red and white, and terminate in a heavy red abacus, outlined in white and ornamented with white dots. On each of the windows, this



Fig. 50 Nave, south window, soffit: Agnus Dei. (Copyright Courtauld Institute)



Fig. 51 Chancel, east wall: 15th-century cloth of honour to north of window. (*Copyright Courtauld Institute*)

abacus forms the base for the springing of the fictive voussoirs, in characteristic alternating red and yellow. On the area of the wall between the windows, however, painted segmental arches spring improbably from the broad astragal of the flanking windows, tangle with the foliate ornament of the capital, and come to rest on an extra astragal provided at that level on the columns that flank the central window. This curious innovation results in a new rhythm of arcuation, both of height and form.

Clearly, the early Gothic transformation of the stolid Romanesque architecture at Ewenny is mirrored at Bradwell. At Bradwell, however, the updating involved architectural alterations – the enlargement of the lower windows – as well as painted decoration. As at Ewenny, it is reasonable to assume that the Bradwell decoration was extensive, and, as noted above, it seems likely that further areas remain concealed.

14th century

The most conspicuous and important of the various painting schemes is that of the 14th century, now exposed on the splays and soffits of three Decorated windows, in a band across the upper part of the chancel east wall, and as a small fragment near the north door. A programme of scientific investigation and conservation by the Courtauld Institute in 1991-3, funded by the Chase Charity, was confined mainly to stabilisation and other remedial treatment of the exposed paintings on the Decorated windows. The conservation was occasioned by the obvious instability of the painted soffit of the north-east window of the chancel, where the most significant intervention was undertaken. Here, structural investigations indicated that the rubble walling above the soffit was so degraded that there was an imminent risk of collapse. Therefore, the window was shored with a counterform and the walling above the soffit rebuilt from the exterior, resulting in the discovery that the window incorporated part of the western splay of the original Romanesque window.

The eastern splay of this chancel window is painted with a Throne of Mercy - or Gnadenstuhl - Trinity (Fig. 48). This iconographic type comprises God the Father enthroned, Christ crucified, and the Holy Spirit descending in the form of a dove, and was the dominant form throughout Europe from the Romanesque period onward. Remarkably, what appears to be the earliest known example, of c. 1090, is the recently discovered wall painting above the chancel arch at Houghton-on-the-Hill in Norfolk (Park and Heywood 1997). At Bradwell, the monumental, rigidly frontal figure of God the Father occupies virtually the entire available space, and supports the cross with the crucified Christ, represented on a markedly smaller scale. Although only fragments of the dove survive, there is enough to discern that it is in a characteristic position, descending from the upper left with its head close to Christ's.

On the soffit of this window is an abbreviated Doom, similar to the 13th-century example in a comparable position on one of the nave windows at nearby Easthorpe, which, however, continues down on to the splays (Tristram 1950, 540, pl. 172). Christ displaying his wounds is enclosed in a mandorla at the centre, flanked by angels bearing the Instruments of the Passion; the better-preserved western angel gazes up at Christ and holds the cross and the crown of thorns. On the western splay, and unidentified before the recent conservation programme, is the Noli me Tangere. Although the Magdalene has virtually disappeared, the swaying figure of Christ - holding the staff of Resurrection and reaching down to deflect the Magdalene's touch - is readily recognisable, and painted on the same scale as the figure of God the Father opposite. Christ's elegant swaying pose is particularly closely paralleled in the early 14th-century Peterborough Psalter (Sandler 1974, fig. 55). The identification of this post-Resurrection subject lends further credence to Sheingorn's suggestion that the decoration of this window may have been associated with a temporary Easter Sepulchre on the north side of the chancel (Sheingorn 1987, 137), though presumably the prominent depiction of the Trinity on the eastern splay at least partly reflects the dedication of the church itself.

Both the eastern nave windows retain painting belonging to this scheme. On the eastern splay of the southern window is an elegant figure of Christ who holds the staff of Resurrection with its fluttering banner across his body with his left hand, and, with his right, guides that of the kneeling Thomas to his wound (Fig. 49). Most of the figure of Thomas has been lost, but even in its fragmentary form this representation of the subject is again especially closely paralleled in the Peterborough Psalter (Sandler 1974, fig. 58). Interestingly, it also shares the pose of Christ and the overall composition with the Noli me Tangere in the chancel. On the soffit of this window the Agnus Dei is enclosed in a roundel surrounded by vinescroll (Fig. 50), while on the western splay is St James the Great. The saint is shown holding his scrip and bourdon, though without the pilgrim's hat sometimes included in representations of this period. He is depicted on a smaller scale than Christ opposite, the space above occupied by the repetitive decorative motif of triple red dots that forms the background for both splays. Yet he is on the same scale as the kneeling figure of St Thomas, and this, together with the Agnus Dei attribute of St John the Baptist on the soffit, indicates that the programme of this window was conceived as primarily hagiographical rather than christological.

Much less remains of the programme on the opposite window on the north side of the nave. On the eastern splay, little can be discerned except the head of a canopy. On the soffit, however, is a roundel enclosing a bird, revealed during the recent conservation work as the eagle symbol of St John the Evangelist holding a scroll. As with the corresponding Agnus Dei on the southern window, it was surrounded by a vinescroll, though both the western area of the soffit and the western splay are covered with whitewash and have not been investigated. The pairing on these windows of John the Baptist, simultaneously the last prophet and the first saint, with John the Evangelist, one of the first called and best-loved of the disciples, occurs frequently in medieval programmes (Ayers 1998, 37-8, 62). The eucharistic Agnus Dei represents the sacrifice of Christ, and thus the gift of grace, while the eagle, which flies closest to heaven, denotes the Evangelist's privileged understanding of the message of Christ.

On the nave walls, the only significant fragment of the 14th-century scheme now visible is the small head high up to the west of the north door. Although described by Curling as the 'head of a cherub', it is doubtless that of a Christ Child originally carried by a figure of St Christopher. Almost ubiquitous in parish churches from the 13th century onward, St Christopher was typically represented above or beside one of the nave doorways so that the image was readily visible; thus, a much-damaged figure of the saint occurs next to the north door in the early 14th-century paintings recently discovered at Little Tey (Curteis, this volume). As at Little Tey and in numerous other schemes of the period, it is likely that a miscellany of diverse subjects, such as the Three Living and the Three Dead, occupied the nave walls, and it is entirely possible that some of this painting may still survive under the later whitewash. Small exploratory tests undertaken in 1991-92 showed that the painting on the nave windows continues on to the adjacent wall surfaces.

On the chancel walls, the only area of 14th-century painting now exposed is high up on the east wall, comprising remains of double-line masonry pattern with an upper border of red and white wave pattern enriched with circles, similar to, but somewhat more elaborate than, the borders dividing the splays from the soffit in the southern nave window. At the north end of the wall, this border can be seen sloping down to follow the line of the ceiling. This 14th-century layer has been heavily keyed for the application of the later medieval plaster which still covers much of the east wall, and no doubt more of the scheme survives underneath.

One of the most striking features of the 14th-century paintings is the darkened areas, particularly the face of Christ in the Incredulity of St Thomas (Fig. 49). Scientific examination showed that the palette includes not only red and yellow ochres, but also vermilion and lead pigments, of which the last have altered to a dark form. Both vermilion and leadbased pigments would have been applied with an organic medium, making them more vulnerable to loss due to obliteration and to amateur uncovering. Much of the painting that survives represents only the initial underdrawing and blocking out of forms. Undoubtedly the paintings would have been far more colourful, and thus more comparable to the contemporary stained glass that filled the windows. Altered lead pigments are particularly common in the flesh areas of early 14th-century paintings in East Anglia, with some of the most striking examples at Little Wenham just across the Suffolk border. The use of lead pigments, however, occurs at least as early as the Romanesque period, as in the figure of an apostle of c. 1140 at Little Easton, and numerous instances of their alteration have been identified (Welford 1991). For red lead, the transformation to the darkened form (plattnerite) seems to occur in two stages: first, alteration to white lead (cerussite) and then to dark brown plattnerite. This has been observed in the Romanesque wall paintings of St Gabriel's Chapel, Canterbury Cathedral, where a grey veil of cerussite has formed over the red lead layers (Cather and Howard 1994, 149, pl. 12). The same phenomenon is evident at Bradwell, including areas of a greyish veil in the Incredulity of St Thomas.

Stylistically, the elegant poses of the Bradwell figures and the triangular swag of broad fold drapery descending from the knees of God the Father in the Trinity, fit comfortably in the second quarter of the 14th century. The same is true of the decorative motifs, such as the foliate scrollwork in the background of the Doom, paralleled in paintings such as those of c. 1340 at South Newington in Oxfordshire (Tristram 1955, 226-9, pl. 16a). The naturalistic foliage on the soffits of the nave windows finds close parallels in the contemporary stained glass surviving in these windows, while comparable leaves also occurred in the lost painting of the Deadly Sins at Felsted, dating from about the middle of the century (Benton 1923-5, pl. opp. 32). The arrangement of the nave soffit motifs in roundels surrounded by vinescroll is particularly closely paralleled in the south arcade scheme of Evangelist Symbols at Little Witchingham (Norfolk), though in these slightly later paintings of c. 1360 the roundels are elaborated by cusping and the vinescroll with bunches of grapes (Pevsner and Wilson 1997, 601). There is no doubt that all the window paintings at Bradwell belong to a single scheme, executed in the second quarter of the century and in all probability coeval with the surviving tiles and glass of the period. Overall, this point undoubtedly marked the moment of greatest elaboration in the development of the church.

15th century

Whatever the original extent of the 14th-century programme, the subsequent alterations to the fenestration – two later Decorated windows inserted in the chancel south wall, and Perpendicular windows at the west and east ends and in the chancel north wall – would have necessitated adjustments to the painted decoration. Although there are substantial remains of late medieval painting on the east wall of the chancel, they cannot be dated precisely though they may well be at least partly coeval with the large window that was inserted there. To the south of this window is the upper part of a large and elaborate canopy, painted in black outline with yellow and white, and decorated with trefoil creating and other motifs. This canopy presumably framed a figure, and may be only partially uncovered; lower down the wall, immediately to the south of the Maxey monument, is further painting which seems to be in the same style, in black outline with areas of yellow and white, though adjacent patches of black paint frame an 18th-century mural tablet.

More extensive remains of late medieval painting survive to the north of the window, though the central area is now lost or concealed by whitewash (Fig. 51). The painting consists of a red ground decorated with rows of small white stencilled rosettes, bordered above and at right – where it follows the jamb of the 15th-century window - by an exuberant border of fleshy yellow and white foliage which spirals round a crimson rod. The rosettes are of a size and form common in the painted decoration of late medieval screens in East Anglia (Vallance 1936, pls. 174, 187, 206-8), while the border type is frequently found in stained glass and other media from the early 15th until well into the following century, and is therefore not closely datable; prominent examples occur in the mid 15th-century glass at Combs in Suffolk (Woodforde 1950, pl. XLII).

Centred above this decoration is the upper part of an angel, with yellow hair and wings, while the red ground continues on to the adjacent part of the north wall and retains traces in a darker red of what may be a brocade pattern. This decoration seems, therefore, to show an angel supporting a cloth, presumably as the background for a sculpture. Angels supporting a cloth of honour are frequently associated with images of the Virgin, as in a 15th-century niche at Great Ellingham (Norfolk) with its painted backdrop to a carved image of a seated Virgin and Child now lost (Tench 1923-25, 345-6, pls. opp. 341 and 345). By the late Middle Ages, all parish churches must have had at least one image of the Virgin; already in 1287, Exeter synodal legislation recommends the provision of such an image in every parish church (Binski 1995, 50). Essex examples dating from earlier in that century still survive in wall painting - behind the altar at Great Canfield (Tristram 1950, 518, pls. 170-1) - and in sculpture: a polychromed wooden image apparently from Langham now in the Victoria and Albert Museum (Williamson 1995, 114, ill. 174). Moreover, the position of the Bradwell painting to the north of the altar also suggests that the Virgin was represented. Positioning of the image on or against the east wall of the chancel, to the north of the altar, seems to have been typical, and two early 14th-century examples survive across the Suffolk border. At Little Wenham is a magnificent wall painting of the Virgin and Child, while at Brent Eleigh only the elaborate painted backdrop complete with censing angels survives of what must originally have been a combination of wall painting and sculpture (Binski 1995, pl. 44a and b).

Finally, considerable remains of decorative painting were uncovered on the 15th-century rood screen during Curling's restoration work. No remains of medieval painting were found on the western face of the screen, but the upper zone would have been hidden by the projecting rood loft gallery, from which the singers would have been able to see into the chancel through the small trefoil openings. Similar openings survive in the screen at Llanelieu, Breconshire (Vallance 1936, 23, 68, pl. 33), which however is painted with simple ornament and surmounted by a painted backdrop to a carved rood. The plastered typanum above the Bradwell screen is very likely to have had a similar rood composition, of the type which occurs in eastern England at Kingston (Cambs.) and elsewhere. Painted decoration on the Bradwell screen survives only on the eastern face, and is merely decorative, consisting of highly stylized red and white flowers scattered over a green ground. During the Curling restoration, painting was discovered on the front but was removed in the search for an earlier scheme. It consisted of the Commandments and other texts, facing the congregation like those on the nave east wall at Theydon Mount (RCHM 1921, 234), and is the only

significant painting – apart from a 17th-century Royal Arms now hanging at the west end – recorded from the post-Reformation phases of the church.

Appendix 2

The medieval floor tiles by Paul Drury

Around 400 medieval floor tiles survive reset in two areas of the floor, one at the west end of the nave, the other at the west end of the chancel on the south side; more appear to be under the rector's stall. Most are very worn, having totally lost their surface, and were probably so when they were discovered, presumably during the restorations of 1905 and later. A smaller selection, with clearly surviving designs, was reset in the cill of the western window on the south side of the chancel, where they were noted by Curling (1906, 36). There is also a collection of loose tiles and other building materials in a chest at the west end of the nave.³⁸

GROUP 1: Line-impressed and stencilled group

The majority of the relaid tiles appear to belong to this group. They are typically c. 120 mm square, 21-25 mm thick, in a red sandy fabric, usually with a grey core; the edges are slightly undercut, the sanded bases normally smoothed after removal from the form. All the patterns present at Bradwell are stencilled, the technique imposing a simplicity in design. They comprise:

Four-tile patterns

Fig. 52

These are mostly variations of the very common foliate roundel; no. 6 is a traceried roundel.

1	5 examples
2	19 examples
3	3 examples
4	5 examples

- 5 1 example
- 6 1 example

Single-tile pattern

7

A rose within a roundel; 2 examples

Repeating pattern

8 3 examples

Border tiles

Designs 9 and 10 were clearly intended to work together; the reversed-out design 11 presumably also had a corner version, but no examples have yet been found. The guilloche, 12, is rather more sophisticated.

- 9 2 examples10 6 examples
- 11 1 example
- 12 7 examples

There are numerous examples of glazed plain piles of this group, both brown and cream (glazed over a white slip), and of tiles with the surface entirely worn away. These plain tiles were normally laid with joints at 45 degrees to the walls, in 'carpet strips' separated by borders parallel to the long axis of the floor, hence the presence of many plain and worn tiles scored for breaking, and broken, diagonally into two or four triangles, to form the abutments of 'carpets' against borders.

At other sites, decoration on tiles of this group includes single, large line-impressed motifs, and zoomorphic designs with the fine details added by impressing a sharply-cut die on the stencilled outline. All three forms of decoration occur, for example, in the assemblage at Rivenhall church (Drury 1993, 10-12). They are found over an extensive area of northern Essex, southern Suffolk and south-eastern Cambridgeshire; locally, apart from Rivenhall, they are known from Great Coggeshall church (but not the abbey), Inworth and Witham. Their source is unknown, but the distribution pattern (Drury 1981, fig. 93), suggests that it lay somewhere in the Stour valley. Dating evidence is sparse, but a substantial production period centred on the middle of the 14th century seems likely. At Rivenhall, tiles of this group were tentatively associated with the extensive alterations to the church completed in the 1320s. There is as yet no evidence as to whether the use of the simplest form of decoration alone is chronologically significant.

GROUP 2: Line-impressed mosaic, probably Coggeshall

A single fragment (Fig. 52.13), in a coarse red sandy fabric, 25 mm thick, sanded base. The surface is worn, with a pale green glaze over a slip; lines faintly scored before firing indicate that it belongs to a pictorial panel rather than a repeating pattern.

Pictorial panels of this kind, normally set within larger areas of line-impressed mosaic tiling, are probably best known from the surviving floor of Prior Crauden's chapel at Ely, of *c*. 1324-25 (Keen 1979, esp. figs 4-6). Here, however, the presence of but a single fragment in so large a collection of medieval material suggests that one, or at most a small number, of picture panels may have been set into a floor of much less expensive material. The obvious location would be in the chancel, before the altar.

Line-impressed mosaic has a wide distribution in England, and the sequence of development of the regional styles is not yet clear. The group to which Ely belongs has a distinctive fabric quite unlike Essex material, and occurs as far south-east as Tilty Abbey, but no further. Other line-impressed material, apparently of local origin, is known from north-west Essex, extending as far south-eastwards as Chelmsford. But the most likely affinity of this fragment is with material from Coggeshall Abbey, which includes both two-colour and line-impressed mosaic (for the latter, see Dampier 1864, 50), the latter having no die-links with the other groups in the region. Quite possibly this material belongs to an early period in the introduction, dissemination and indeed development of line-impressed mosaic, when tiles were primarily manufactured by itinerant craftsmen for wealthy patrons. The presumed panel at Bradwell is probably a minor consequence of major production at Coggeshall; the date is probably in the early 14th century.

GROUP 3: The Drinkstone group

Tiles c. 120 mm square, normally 20-23 mm thick, in a hard orange to red sandy fabric containing red flecks, and often partially reduced; the edges are undercut, often acutely so, the bases smooth or sanded. The design was produced by the slip-over-impression technique, in which the surface of the slip occasionally remains below that of the tile, but more often appears as a virtual inlay, 0.5-1.0 mm deep. Surface colours are generally reddish-brown and yellow-buff, with a lustrous glaze where unworn.

- 14 A perching bird, within what would appear as a diaper pattern in repetition. One example; also known from
- Drinkstone, Suffolk (Sherlock 1980, des. 95).
- 15 A pelican in her piety; 3 examples.

This group takes its name from the small collection relaid in the north-east corner of the nave floor of Drinkstone Church, which, in addition to zoomorphic designs like those represented here, includes fine geometric patterns and heraldic designs (Sherlock 1980, des. 83, 86, 95, 124, 125). These finely wrought tiles are found sparsely across north-west Essex, west Suffolk and south Cambridgeshire; locally, examples are known from Coggeshall Abbey and Feering church. Their

HOLY TRINITY CHURCH, BRADWELL-JUXTA-COGGESHALL



Fig. 52 Medieval floor tiles. 1-12 Stencilled group; 13 Line-impressed mosaic; 14-15 Drinkstone group; 16 Inworth line-impressed group. Scale 1:4

source is uncertain, but a waster fragment probably of this group was found built into the tile kiln excavated at Radwinter (Webster and Cherry 1980, 262), to which it probably came, from no great distance, with the pegtile wasters which were the main building material of the kiln.

Dating evidence is similarly tenuous. Part at least of Drinkstone church was rebuilt in 1340 (Cresswell 1896), following which they may have been used there. One tile in the series shows a merchant mark, which does not seem to have been common before the late 14th century (Girling 1964). The Radwinter kiln was last fired, on archaeomagnetic evidence, in 1420 ± 20 , but could have been built 30 or 40 years previously.

A late 14th-century date for the group is therefore likely, placing them among the latest decorated tiles to be produced in East Anglia. Their quality, of both design and execution, also sets them apart from the products of the far more numerous late 13th- and early 14th-century manufactories of the region, like Danbury (Drury and Pratt 1975).

GROUP 4: The Inworth line-impressed group

Tiles *c*. 118 mm square, in a red fabric, often rather reduced. Since all are *in situ*, other details are unknown.

16 one example

These tiles, known only from Bradwell and Inworth parish churches, some 7 km apart, were probably produced by a local tilery in crude and simplified imitation of a line-impressed and stencilled group design illustrated in Drury 1993, fig 5.5. A late 14th-century date seems likely.

GROUP 5: Plain Flemish

Tiles c. 115 mm square, glazed dark green (plain) or yellow (over slip), with 5 nail holes; another fragment, perhaps from a larger tile, has a mottled green glaze. Since they are *in situ*, other details of these tiles are unknown.

Plain coloured Flemish tiles, distinguishable from local products by the holes caused by the nailed board used to grip the tiles during trimming, are common in southern and eastern England between the later 14th and mid-16th centuries, substantially filling the gap left by an apparent decline in production within the region. The smaller sizes tend to belong earlier in the date range.

Discussion

The overwhelming majority of floor tiles present belong to the Line-impressed and Stencilled group, and there can be little doubt that a substantial part, at least, of the interior of the church was paved with these tiles in the 14th century. Of the other groups, only the fragment of a mosaic pictorial panel could predate the main paving work, but it is hard to see how it could have been used in an otherwise unpaved floor. Perhaps one or more of these panels provided a high quality contribution to the chancel floor, the stencilled tiles being used elsewhere, as a cheaper version of the Prior Crauden's chapel flooring where line-impressed mosaic was used for general paving (Keen 1979, pl. 20). If so, the whole campaign is likely to belong to the 1320s or '30s.

The later tiles, present in small numbers, probably reflect subsequent, smaller-scale, embellishment and making-good after alterations or because of heavy wear, to which stencilled tiles are particularly vulnerable. The number of distinct groups of medieval tiles, all probably within the 14th century, is unusual for a parish church of modest size: compare Rivenhall with just three, one of which was of 15th- or 16thcentury date (Drury 1993). This may reflect a wider programme of incremental work to the fabric of the church during the 14th century.

Notes

- 1. It is, however, worth noting that the buildings, yards and closes of Bradwell Hall extend over a much larger area than might be expected for a modest rural manor. On the Tithe Map (1839), no fewer than twenty separate structures are shown, in addition to the hall itself (ERO: D/CT 45B). This may hint at a more extensive medieval settlement than has hitherto been supposed. Unfortunately, the hall was completely rebuilt after a fire in 1879, and huge agricultural sheds have replaced the traditional farm structures. The old hall appears to have been 16th century, with later embellishments (Mason 1901).
- The painting of 1908, by A.B. Bamford, depicts a panoramic view, looking east. It was published as the frontispiece to the volume containing Curling 1906; it is also reproduced in Bond 1908, 126. For a more restricted photographic view of 1913, see RCHM 1922, opp. p. 34.
- Curling was rector of Bradwell, 1901-12; Secretary of the Essex Archaeological Society, 1903-23, and President in 1944, the year of his death.
- 4. Unfortunately, the trenching was not archaeologically supervised. Some pieces of brick and tile were collected, and are now kept in an oak chest at the west end of the church. They include several items of special interest.
- Oddly, earlier accounts mention only the few tiles on the chancel window sill. It would appear that the two areas on the floor must have been concealed from view until sometime after 1913.
- 6. The slab was also listed, without comment, in F.A. Greenhill,

Incised Effigial Slabs, 2, 3. (London, 1976).

- 7. The sill has since been built up, so that only the front edge of the seat can be seen; there were probably never any divisions between the sedilia.
- 8. RCHM 1922, 13, pl. p. xxxiv. Paul 1986, 48.
- All elevation drawings are marked with the site datum [SD], which is the top of the threshold slab in the south doorway (Fig. 5). This roughly corresponds to the level of the foundation offset in the west wall.
- 10. If this hypothesis holds true, it is odd that so many of the caps should have been made from spliced ends. The only way to prove that the caps were former shingles would be to locate the fixing holes, but that would involve removing timbers from the walls.
- 11. In 1992, Dr Andrews observed that the top of the Norman north wall was finished with a thick layer of mortar, but he did not see any evidence for the bedding of original roof timbers.
- 12. A complete example in the north-west quoin measures 30 x 18 x 1.8 cm.
- 13. A fragment of ormer(?) shell was also noted.
- 14. During the 1992 repair, Dr Andrews observed that, in the wall core, the mortar was unusually hard, orange-brown, and appeared to contain brickearth. On the surface, this has leached-out, revealing the paler colour of the lime and sand constituents.
- 15. There are six whole bricks in the south-east quoin, six in the north-west, and four in the south-west quoin.
- 16. Parts of both jambs are obscured by modern notice boards; the bottom of the east jamb is also partly covered by the porch bench.
- 17. It must however be acknowledged that there is no specific evidence to confirm that either block has been shortened *in situ*.
- 18. Dr Andrews noted the springing of the eastern jamb of the lost window, and also found curved fragments of limewashed wallplaster which had presumably come from its soffit.
- 19. Wattle housings are sometimes found in wallplates and ashlarpieces, for closing the eaves internally: *e.g.* West Bergholt church (Andrews 1996). For a different arrangement, see the chancel roof at Bradwell (below).
- 20. A single, blocked putlog hole was found in 1992, when the window head at the north-east corner of the chancel was rebuilt. Inf. Dr D.D. Andrews.
- In the head of the main eastern light is a glazier's inscription: W.J. Gosling Coggeshall 1912.
- 22. In the main eastern light is a glazier's inscription: Arthur Brasier Coggeshale Gla[s]r 1833. See Guthrie 1991, opp. 11.
- 23. The masonry is spalled and has been variously patched. Glazed medieval floor tiles were used to repair the east jamb of the south window. Two tile types are present, measuring $135 \times 135 \times 30$ mm and $110 \times 110 \ 20$ mm, respectively. The jambs carry various graffiti, including *WN*, on the east side (17th-18th century).
- 24. The limewashing is post-medieval, because it fills various dated graffiti on the jambs of the north window. These include: *TT 1753* and *IL 1753*.
- The following extracts are taken from the transcript published by Goodes. The original document is in the P.R.O.: De Bianco Roll 537, m.349d, 18 Rich. II.
- 26. The patronage was then in royal hands (Newcourt 1710, 2, 82).
- 27. The Aldersgate window, which was destroyed when the church was rebuilt in 1790-91, dated from *c*. 1400.
- The sedilia are 1.15 m, and the piscina bowl 1.35 m, above present floor level.
- 29. The interface between nave and chancel could well have been expressed by markings in the rendering, or by painting.
- 30. Contra Potter 1987, 167-8.
- The patronage of the living passed from the king to the lord of the manor of Bradwell towards the end of the 14th century.
- 32. An internal offset, just above floor level (Fig. 4) may also relate to the vault entrance. Moreover, its construction may have given rise to the subsidence which has occurred at the south-east corner of the church, necessitating the addition of a crude buttress.

- 33. E.g. the Augustinian abbey at Waltham Holy Cross (Huggins 1972, 111).
- While the placename 'Tilkey' undoubtedly refers to a medieval tile 34. kiln (Reaney 1935, 367), this does not provide confirmation that brick or tile was produced on the site in the 12th century. Medieval and later tile kilns were not uncommon in the Blackwater valley, and some certainly existed in the Coggeshall area.
- 35. Ryan (1996, 29) mentions a possible fragment of medieval brick from the site, but this does not constitute evidence for early Cistercian brickmaking at Tilty, as she claimed. The complete absence of medieval brick in the surviving remains of Tilty abbey and its capella extra portas is more telling: Andrews and Gilman 1992.
- 36. Bocking; Earls Colne; Great Coggeshall; Great Tey; Little Tey; Rivenhall (Rodwell and Rodwell 1985, 145); Shalford; Springfield; Stisted; Ulting(?); West Bergholt (Turner 1984); White Colne; and Witham. See further Ryan 1996, 26-9.
- 37. Ongar was entirely overlooked by Ryan (1996).
- The whole collection was studied and tracings of the designs 38. made in May 1983. Some additional items have, however, appeared in the chest since that time.

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Peasants in Essex, *c*. 1200-*c*.1340: the influences of landscape and lordship¹

by Jennifer Ward

Over the past forty years, historians of medieval society have become increasingly aware of the importance of examining material other than documents. Obviously written records remain crucial for the discussion of the peasantry, both the royal government records such as Domesday Book and the taxation records of the thirteenth and early fourteenth centuries, and the estate records which concentrate on the individual manor, or the larger royal, baronial or ecclesiastical estate of which the manor was just a part; all of these demonstrate the subjection of the peasantry to varying degrees of lordship. Yet this material needs to be supplemented by evidence from the landscape in which the peasantry lived and worked in order to see how far it had an effect on peasant fortunes, as compared with other considerations such as the exercise of royal, seignorial and ecclesiastical power. The peasantry's dependence on these factors and on the environment is closely interrelated.

Essex was a well settled county by the time of the Domesday Survey with a diverse settlement pattern of nucleated and polyfocal villages, hamlets and isolated farmsteads. The pattern of settlement has to be viewed in the long term, and the expansion of knowledge of prehistoric and Roman Essex has made it clear that the diverse settlement pattern had its roots before the Roman invasion of AD 43.² Archaeological excavation and work on timber-framed buildings are elucidating thirteenth-century settlement and highlighting the variety of buildings in hamlets and villages. At one extreme is the isolated hut excavated at Molehill Green on the Stansted Airport site.³ A farm of middling status has recently been excavated at Stebbingford Farm in Felsted.4 Timber-framed houses of various sizes and status have been examined and dated by the form of the joints used by the carpenters to peg the timbers together;5 some of these are likely to have belonged to substantial peasants while others were the homes of knights and gentry. The great landholders of the county had a visible presence not only in their castles and religious houses, but also in their great barns such as those built in the early thirteenth century at Cressing and the earlier example at Coggeshall.6

The evidence from settlement and buildings points to diversity, not only in settlement type, but in the condition of the inhabitants, and indicates that peasants enjoyed varying levels of fortune. In order to get a better idea of this it is important to look at the landscape itself, and to think in terms of pays, or landscape regions, rather than of the county as a whole.7 In Essex there is considerable variety of soils and physical features. The landscape of the county can be said to be approximately divided by the Roman road from London to Colchester. Some of the best farmland in Essex is found on the river-terraces along the River Thames. There is very little chalk in the county; there is a small outcrop at Purfleet and Grays, and rather more in the extreme north-west. The chalk soils can be shallow, but are freedraining and alkaline, and quite fertile. Much of the area to the south and east of the London to Colchester road is covered by London clay which is very heavy and difficult to cultivate; it is sticky when wet and liable to crack when dry. The London clay in north-east Essex is however less heavy and more fertile. The area of London clay includes the coastal marshlands which were very important for pasture in medieval and early modern times, and is bordered by a line of Bagshot hills running through Tiptree, Danbury and Fryerning to High Beech which rise to 330 feet and where the soils are easy to cultivate but of low fertility; there is another Bagshot ridge further south. North and west of the London to Colchester road lies the boulder clay area which extends beyond the county into Suffolk and Hertfordshire. On the whole this is a more fertile area and the chalky boulder clay produces a loam rather than a clay.8 These are essentially broad guidelines and individual places inevitably show soil variations.

When the evidence of the landscape is related to the Domesday Survey, it is apparent that parts of the county were already well exploited by 1086. This was notably the case with sheep pasture on the marshes, as on Canvey and Wallasea Islands where pasture was apportioned among the neighbouring parishes.9 Woodland was extensive especially in west Essex, but there was little in the south-east and in parts of the north of the county.10 When Domesday plough-teams and population are mapped, an approximate correlation is found between plough-teams and soil types. Uttlesford hundred in the north-west had the highest number of plough-teams (thirty-five to forty-five per square mile); this is the hundred which includes the chalk area. The boulder clay hundreds of Clavering, Harlow, Dunmow, Freshwell, Hinckford and Witham, and the area of lighter London clay in Winstree and Tendring hundreds had twenty-five to thirty-five plough-teams per square mile, while all other parts of the county had less than twenty-five. The highest density of recorded population was in Uttlesford hundred with thirteen to the square mile, and in Dunmow and Hinckford with twelve; this corresponds to the area with the largest number of freemen and sokemen. All other parts of the county had a density of between five and eleven. The most flourishing parts of the county in 1086 were the northwest and the area round Colchester.¹¹

The population in England grew rapidly in the twelfth and thirteenth centuries, and an interdisciplinary approach, based on fieldwork and documentary research, adds to our understanding of this phenomenon. As far as Essex is concerned, fieldwork has hardly started, but the field survey completed for north-west Essex points to a number of new settlements as well as the growth of loosely nucleated villages, as at Strethall, Chrishall and Elmdon.12 On the boulder clay in particular, there are a large number of settlements styled Green, Tye and End, and these may well have been part of the colonising process of the twelfth and thirteenth centuries. Work done in East Anglia has shown that Green settlements were unusual before the twelfth century, and the earliest pottery found dated from c.1100. These areas could certainly have been used as commons at an earlier date, with the rise of population leading to the development of settlements. These were peripheral settlements; it was found in East Anglia that it was rare to have a church on a Green and this also seems to be the case in Essex.13 To take one example from the centre of the county, at Matching in 1086 there may well have been three foci, round Matching Hall and the church, at Housham Hall and at Brent Hall. Probably as a result of clearance of woodland in the twelfth and thirteenth centuries, small settlements grew up at Carter's Green, Matching Tye and Newman's End, and the main village came to be sited at Matching Green.14

Documentary research indicates extensive assarting (the clearance of land for farming), involving mainly the colonisation of woodland although there was some inning (reclamation) of marshland. The reduction of woodland and the rise of population were apparent in some places in Domesday Book; on John nephew of Waleran's manor at Elsenham, the woodland for 1,300 swine of 1066 had been reduced to woodland for 1,000 in 1086, while the number of bordars had risen from one to twelve, the rest of the recorded population remaining the same at eight villeins and five serfs.¹⁵ This type of assarting is found all over the county, especially before c.1250. Saffron Walden, like Elsenham, saw a reduction of woodland between 1066 and 1086, and an examination of the fields points to a link between soils and colonisation. The soils in the parish comprise chalk, alluvium and heavier glacial drift, and it is the latter area which is more wooded and where the pattern of enclosed fields indicates colonisation.16 At Lawling in the east of the county a survey of 1310 points to extensive assarting in the wooded hamlets of the

manor.¹⁷ A considerable amount of assarting took place in west Essex, and here it is sometimes possible to date its progress. The surveys of the dean and chapter of St Paul's cathedral, London, in 1181 and 1222 show that at Chingford the area of demesne arable had expanded from 145 to 180 acres, while the tenants' lands in 1222 consisted of about 250 acres of arable together with thirty-five acres of old assarts, and twenty of new.¹⁸

Much of the county comprised royal forest, land which was not necessarily wooded, but which was subject to the king's forest law. In 1204, the men of Essex paid 500 marks (the mark was worth 13s. 4d.) and two palfreys for the disafforestation of the area north of Stane Street, the road running west from Colchester through Braintree and Great Dunmow into Hertfordshire;19 in future, the unpopular and punitive forest law was no longer to operate in this part of the county. It was only after 1327 that the royal forest became confined to south-west Essex.²⁰ Although fines for assarting were levied when the royal justices carried out a visitation of the forest, this does not seem to have deterred colonisation, and in some cases the area taken from the forest was considerable.21 In 1189 Richard I granted Waltham Abbey about 1,000 acres of assarts, in Epping, Waltham, Sewardstone, Nazeing and elsewhere,22 and pardoned the bishop of Ely for 186.5 acres of assarts in Hadstock and 246.5 acres in Littlebury.23 The initiative seems often to have been taken by the peasants themselves, as appears in the case of Havering. Here, the assarting produced both large and small holdings, but the emphasis elsewhere was usually on small, and this probably reflects peasant initiative and the difficulty of the terrain particularly in London clay areas. To judge from the St Paul's surveys, most of the assarts at Navestock were small, while at Wickham St Paul's they ranged from the exceptionally large holding of fortyeight and a half acres to the tiny allotment of just one rod. At Epping, there was a settlement of smallholders on Epping Heath by c.1235 where more than half the holdings comprised about two acres.24

Assarting slowed down in the later thirteenth century, probably a sign that the limits of marginal land had been reached. Havering was an exceptionally large manor stretching from Hornchurch marsh bordering the River Thames inland to the village of Havering-atte-Bower; it included the settlements of both Romford and Hornchurch. The soils range from alluvial marsh in the south, to glacial gravels which were easy to cultivate but not very fertile, and to heavy London clay in the north. It is significant that this northern area has remained wooded into modern times.25 Many wetter sites such as Navestock Common would have been avoided by medieval farmers; this common still survives although it used to be much larger.26 Substantial areas of forest remained (and some still remain) in west Essex, a sign that there were limits to the assarting efforts of land-hungry medieval peasants. In any case, woodland remained an important means of livelihood to the peasantry as a source of pasture, building materials, wood-crafts and charcoal-burning, not to mention poaching.²⁷

By means of assarting it is likely that substantial new areas were taken into cultivation, but because of the rise of population a large number of peasants would have found it hard to make a living from their land. The number of smallholders all over the county, together with the evidence for divided holdings, points to landshortage. Population figures are difficult to estimate, but there is no doubt that the increase was considerable. At Havering, the direct tenants of the Crown and the wealthier sub-tenants numbered 368 in 1251, as compared with the figure of eighty-seven tenants in 1086. Allowing for poorer sub-tenants as well, it has been estimated that Havering had a population of between 1,800 and 2,000 in the mid-thirteenth century.28 At High Easter, the 119 tenants of 1086 had grown to 226 about 1328, suggesting a population of between 1,000 and 1,200.29 Smallholdings were widespread throughout the county; of the 226 tenants at High Easter, seventy-nine held less than two acres, while at Thaxted in 1348 sixty-six out of 139 tenants held five acres or less, forty-eight of them holding between one and three acres.30 The extent to which holdings were subdivided varied. Of the customary virgate holdings at High Easter, only one was held by a single tenant, seventeen were each held by two men, nine by three men, and three by four. However, at Hatfield Broad Oak about the same time, six of the customary virgate and half-virgate holdings were each in the hands of one man, while sixteen were each held by up to ten people.³¹

In view of the pressure on land, it is essential to look not only at types of land and their uses to peasant society, but also at physical features and especially at lines of communication. The growth of markets can be regarded as an aspect of colonisation, and could have a real bearing on the fortunes of peasants. The smallholders at Epping Heath may well have benefited from the grant to Waltham Abbey in 1252 of a market and fair there.32 It is significant that the numerous markets created in the county were associated with small towns, which would cater for agricultural communities, or with villages; the only town of any size was Colchester which however did not grow rapidly before the fourteenth century. Essex was well supplied with markets; R.H. Britnell has listed seventy-eight markets in the county before 1350 of which twenty-four were probably founded before 1200 and a further thirtyseven received market licences from the Crown between 1200 and 1274.33 The markets were fairly evenly spread throughout the county, although there were none close to Colchester, probably because of Colchester's larger hinterland. Of the sites chosen those with good communications stood the best chance of surviving until the early modern period. The Rivers Lea, Roding, Thames, Crouch, Blackwater, Colne and Stour served the west, south and east of the county; otherwise Roman roads continued in use such as Stane Street and the road from London to Colchester, together with a network of smaller roads. Markets are found along all the main lines of communication, often at regular intervals, such as Romford, Brentwood, Ingatestone, Stratford, Chelmsford, Borham, Witham, Kelvedon and Colchester along the London to Colchester road, and Barking, Rainham, Aveley, West and Grays Thurrock, West Tilbury, Corringham, Fobbing, Hadleigh and Prittlewell on or within a short distance of the River Thames. These markets provided an opportunity for peasants as well as lords to buy and sell, and the growth of the London food market has to be borne in mind together with local opportunities for business.34

In the twelfth and thirteenth centuries, therefore, the Essex landscape provided peasants with the chance of new land for cultivation and with opportunities to trade. These were expanding activities which affected the whole of the county. Certainly peasants experienced differing fortunes; the contrast in the assarted holdings between smallholders and a relatively few men with a substantial holding bears this out. Can we however go further and differentiate between particular parts of the county in order to see whether there are different levels of wealth and whether these are linked to factors in the landscape?

The assessments for taxes on movable goods (i.e. personal property as distinct from land and buildings) down to 1334 provide a county-wide survey, giving the assessment of each vill and often the names of individual taxpayers and their personal assessments. It was only in 1334 that the tax was levied as a lump sum imposed on each vill; before then, each tax was separately assessed. Whatever the method of assessment, most of the tax was paid by the peasantry. These records have their drawbacks. They do not record total wealth, and it is generally agreed that they underrated taxable wealth. Most of the Church's movable wealth was excluded as the Church was taxed separately. With the 'poor' being exempt, a large number of inhabitants were never listed. There is no way in which a real check can be made on individual vills. It is only rarely that the detailed local assessment survives in addition to the enrolled copy, and, even when it does, it is not necessarily informative; its very survival may be an indication that the assessment was suspect.35 However, in spite of these limitations, the tax assessments remain the most useful available guide to the relative distribution of wealth in the county.

Looking at individual vills, a comparison can sometimes be made with estate surveys near in date to the tax. The surveys ordered by John de Bohun earl of Hereford and Essex about 1328 can be compared with the tax assessments for the twentieth of 1327, and they show that it was the more substantial tenants, free and unfree, who paid the tax. Some tenants had been successful in building up composite holdings; at Hatfield Broad Oak, William de Flemstede paid 3s. 6d. in tax, held half a virgate and seven acres of free land, one-twelfth of a virgate of customary land, and about two acres freely of the land of the akermen (smallholders), while Warin de Dunmawe paid one shilling in tax and shared half a virgate of customary land with four others, an unfree holding among the akermen, and had one messuage and two stalls in the market.³⁶ However, it has to be remembered that the estate surveys were primarily concerned with landholding and obligations to the lord, not with movable wealth. There are not always clear correlations between the two, and factors are presumably concealed of which we know nothing. Why was it, for instance, that on about half of the virgate holdings at High Easter only one man of the several holders paid tax?³⁷ Was he paying on behalf of the others, or was he paying because he also held land elsewhere in the manor and on different terms?

The wealth of the county can best be assessed by a comparison based on the hundreds. In view of the possibility of widespread evasion of a particular tax and the likelihood of variation in assessment methods, two taxes will be used for the comparison, the twentieth levied in 1327, and the fifteenth and tenth of 1334.³⁸ The introduction of quotas for each vill in 1334 was designed to eradicate corruption, and certainly raised more money in Essex.

Comparisons are based on the amount of taxable wealth per square mile in each of the Essex hundreds, and there is a remarkable correlation between 1327 and 1334 (table 1). In contrast with the situation in Domesday Book, the wealthiest hundred was Chafford in central south Essex bordering the River Thames. The second wealthiest was Rochford in the south-east corner, and the third was Hinckford in the north. There were landscape reasons for these ratings; the fertile river-terraces and the marshland had been developed, and advantage taken of the potential for marketing, the Thames being the route towards sales in London or Flanders; this part of Essex was renowned for its cheeses at least down to the Elizabethan period.39 Hinckford was a fertile boulder clay hundred. This combination of trading potential and agricultural development was crucial, and the absence of these two factors accounts for the relative poverty of the hundreds at the bottom of the table, Tendring, Winstree, Dengie and Thurstable, all of which bordered the North Sea, had a soil mainly of London clay, and seem to have had poor communications with the rest of the county. The hundreds of west Essex where there had been considerable assarting but where large amounts of forest remained were midway in the pecking order; Becontree and Waltham benefited from urban development and nearness to London, Ongar was less favourably placed. This variation within as well as between hundreds can be attributed to soil and communications. In Becontree hundred there is an enormous difference in the 1327 density of taxpayers per square mile between East Ham with 18.2 and Woodford with 3.9. The difference is equally marked in Chafford hundred with densities of 11.1 at Grays Thurrock, 6.2 at South Weald and Brentwood, and 5.2 at Stifford.

Landscape and wealth can be seen to be related, but the figures indicate that it is essential to look at other factors as well. Why was Hinckford apparently so much wealthier than other boulder clay hundreds, especially as it had relatively little urban development? Why were Uttlesford and Freshwell rated at no. 14 in 1327 and no. 13 in 1334, having been the wealthiest part of the county in Domesday? To try to answer these questions, it is important to look at the nature of lordship and at opportunities open to peasant society.

The thirteenth and early fourteenth centuries were an age of demesne farming and lords were exploiting their lands and making their profits with the labour services, rents and other obligations of their customary and free tenants. The available surveys show that this was happening widely in Essex, and inevitably this put constraints and pressure on the peasantry. Manors such as High Easter, Hatfield Broad Oak and Thaxted had a hierarchy of free and unfree tenants whose services were related to their status and to the amount of land which they held. There are however other factors concerning lordship which require emphasis, one being the expansion of the lord's demesne by means other than assarting. This would have an adverse effect on those peasants who were forced to give up their lands, just as it did on military tenants who were squeezed out. The Clare earls of Gloucester followed this policy on many of their demesne manors in the second half of the thirteenth century, including Great Bardfield where they were accumulating small amounts of rent and land, and at Claret in Ashen.⁴⁰ The number of smallholders all over the county by c.1300 may well have been due to a shortage of land suitable for farming, and the situation may easily have been exacerbated when the lord's demesne came to take up an undue proportion of the available arable. At High Easter in 1328, the demesne was estimated at 898 acres one rod, and the customary tenants held 29.75 virgates, or 892.5 acres as the survey stated that the virgate contained thirty acres. The majority of the rest of the holdings were small, and purprestures (encroachments on the waste) were so tiny that they were rarely measured; thus Geoffrey le Parker held two plots of land at a rent of threepence halfpenny, and seven acres at a rent of one shilling.41 Lords were probably also taking an undue share of other resources such as meadow; this was a matter of complaint against the abbot of Waltham who was accused of having too large a share of the rich meadows along the River Lea.⁴²

As well as the accumulation of demesne land, the creation of parks by lords may well have put pressure on the peasantry. At Thaxted, the three parks, Great Park, Little Park and Oldefrith, took up at least 989 acres, 15.8% of the area of the parish.⁴³ Parks were a particularly widespread phenomenon in Essex. L. Cantor has listed over one hundred parks in the county between the eleventh and fifteenth centuries of which the majority were created before the Black Death.⁴⁴ Quite apart from the love of hunting, the desire for

Hundred	Size,	1327,total	1327,	1334,total	1334,	
	Square	taxable	taxable	taxable	taxable	
	miles	wealth	wealth per	wealth	wealth per	
			sq. mile		sq. mile	
		£	£	£	£	
Chafford	54.2	772	14.2	872.25	16.1	
Rochford	78.3	1,088	13.9	1,164	14.9	
Hinckford	168.3	2,304	13.7	2,512.50	14.9	
Chelmsford	132.4	1,760	13.3	1,804.50	13.6	
Harlow	47.2	618	13.1	629.25	13.3	
Clavering	19.2	250	13	268.5	14	
Becontree	84	1,052	12.5	1,022	12.2	
Waltham	36.1	445	12.3	445.5	12.3	
Witham	59.2	729	12.3	765	12.9	
Lexden	112.8	1,35	12	1,376	12.2	
Ongar	88.3	938	10.6	994.5	11.3	
Dunmow	79.9	838	10.5	908.25	11.4	
Barnstable	115.7	1,147	9.9	1,203.75	10.4	
Uttlesford						
and	138.1	1,325	9.6	1,439	10.4	
Freshwell						
Tendring	131.6	1,249	9.5	1,335.75	10.2	
Dengie	93.2	863	9.3	914.25	9.8	
Winstree	32.5	262	8.1	292.5	9	
Thurstable	35.4	252	7.1	278.25	7.9	

Table 1 Assessed Taxable Wealth in Essex

variety on the menu, and the acquisition of a status symbol, the park offered several possibilities for profit through the sale of pasture, pannage, sale of nuts, use as arable, and the management of its timber; Oldeparke in High Easter was valued at £10. 13s. in 1328.⁴⁵ Many of the licences for the creation and enlargement of parks were issued in the late thirteenth century when it is likely that pressure on land was at its most intense. This may well be a reason why parks were broken into, as at Matching where the creation of the park by Thomas de Arderne in 1229 reduced the amount of open woodland; the park-keeper was attacked in 1278, and a large number of men were accused of breaking into the park in 1320.⁴⁶

Not every manor had an energetic and demanding lord. M. McIntosh's work on Havering has shown how land could be accumulated by tenants in a manor where the Crown can be described as a relaxed landlord. As elsewhere in Essex, the manor had large numbers of smallholders, but an elite peasantry emerged, taking advantage not only of the opportunities of assarting but of legal advantages of tenants on the ancient demesne of the Crown.⁴⁷ Certainly freemen and ancient demesne tenants had advantages in law not available to serfs, but it is questionable whether free smallholders would have been able to take advantage of these.

Men with larger holdings would have been in a

stronger position and during the thirteenth century some freemen had substantial farms with holdings of over one hundred acres; in 1279 at BelchampSt Paul Martin de Suthmere held 245 acres and had twenty-two tenants of his own.48 It was the freemen who could take advantage of the royal courts to buy and sell land. In 1222 at Navestock Nicholas de Hoo, described as the heir of the widow Gunnora, held forty acres for rent; he was probably the same man who in 1235 paid seven marks for thirty-four acres of land in Navestock.49 Two of the Navestock taxpavers in 1327, John de Solariis and William Clement, had been involved in land transactions in the royal courts in the previous thirteen years.⁵⁰ The evidence suggests that where lordship was lax and where tenurial advantages existed better-off tenants could take advantage of the situation. Probably as a result the gulf between rich peasants and smallholders widened, casting doubt on the wisdom of referring to all these men as peasants, or of relying on tenurial categories. There are strong parallels between some of the better-off and the yeomen of the fifteenth and sixteenth centuries.

Did some peasants enjoy the opportunities of alternative employments to be found in villages and hamlets? If the poll tax returns of 1381 are examined for the hundred of Hinckford, they point to a substantial craft presence in a number of villages. Sturmer for instance had smiths, fullers, carpenters, shoemakers, and a tailor, while Sible Hedingham had a fuller, tiler, smith, tailors, drapers and carpenters.51 Was there a similar craft presence in thirteenth-century villages, and could these trades help to explain how smallholders survived? The only attempt to answer this question so far has been made by M. Gervers who has analysed the occupational names relating to the textile industry in late twelfth and thirteenth-century charter sources.52 His analysis of the location of textile manufacture, as opposed to marketing, has shown that this was concentrated round Colchester, and in north central Essex, especially in the hundred of Hinckford, and in Freshwell hundred near to the Hinckford border; apart from this, there is little sign of manufacturing activity in the hundreds of Freshwell and Uttlesford. This availability of extra employment may well explain the wealth of Hinckford hundred in 1327 and 1334; as said earlier, all three hundreds mentioned had the advantage of fertile boulder clay for farming. Yet the question still remains as to why this development happened in Hinckford rather than elsewhere. One possible explanation lies in weak manorial control, a point emphasised by Joan Thirsk in discussing the development of the early modern cloth industry.53 Manors in Hinckford hundred were small in 1086, and there were large numbers of freemen and sokemen; this combination was still present in the thirteenth century and beyond. Peasants may well have found that not only could they take advantage of their tenurial position, but also develop alternative employments with little reference to lords.

In examining the peasants of thirteenth-century Essex, in all their variety, landscape appears to have had a definite influence on their fortunes; the availability of land, the nature of the soil, the lines of communication, and the possibilities for trade all played their part. Yet it would be fatal to take landscape on its own, since conditions for the peasantry were undoubtedly influenced by patterns of manorial development, the nature of tenures, manifestations of lordship, whether intense or lax, and by the role of the royal courts. Other factors which we are rarely able to glimpse also have a bearing, such as the weather, family size, and individual skills and abilities. In order to understand and elucidate the complexity of peasant development an interdisciplinary approach is essential, and an obvious conclusion to be drawn from this study is that it is one which can be taken much further in the future.

Author: Jennifer Ward, 51 Hartswood Road, Brentwood CM14 5AG

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Late medieval building remains in Saffron Walden: excavations to the rear of 33-35 High Street, Saffron Walden

by R. Clarke

with contributions by M. Germany and H. Walker

Archaeological investigation in advance of a residential development to the rear of 33-35 High Street, Saffron Walden uncovered the stone foundations of a late medieval (15th to 16th century) building. Some evidence that this building may have replaced an earlier (13th to 14th century) earth-fast timber structure was also found.

A possible buried soil containing pottery dating from the 13th to 14th century was partially investigated to the west of the late medieval building, and a late medieval horizon was identified in the northern part of the development area.

In the post-medieval period the ground-level in parts of the site was artificially raised, perhaps coinciding with the construction of industrial buildings to the north of the development area. The foundations of a large building dating from the 18th or 19th century were also revealed. Small quantities of residual Roman and Saxon pottery were present.

Introduction

During April 1997 an archaeological evaluation was conducted at 33-35 High Street, Saffron Walden (Figs 1 and 2) by Essex County Council Field Archaeology Group in response to a planning application by Jaygate Homes Plc for a residential development. An initial desk-top study utilising cartographic evidence (Fig. 3) was carried out followed by an evaluation involving the excavation of three trenches.

The results of the evaluation established the archaeological importance of the site and an additional stage of work was undertaken in September 1997. This involved exposing more of the late medieval building remains and the excavation of a previously inaccessible area in the north-east of the site.

The archaeological brief for the excavation required limited investigation of key areas of the site with an emphasis on *in situ* preservation of features and deposits not directly affected by the development. The groundplan of the late medieval foundations identified during the evaluation was to be exposed, with no detailed excavation, prior to their preservation beneath a thick geotextile material in an area which is to be a garden. All fieldwork was carried out under the direction of the main author.

The site archive and finds (SW32 97) are stored at Saffron Walden Museum. A full detailed description of the site is contained in the evaluation and excavation reports (Clarke 1997a and b).

Location and Geology

Saffron Walden lies in a side valley of the river Cam in north-west Essex, close to the county borders with Suffolk and Cambridgeshire. The surface geology comprises chalk, with a possible band of alluvium to the south of the site.

The development site (TL 5365 3845) lies within the area of the medieval market town. Buildings fronting onto the medieval High Street stand to the east and the site is bounded by Park Lane to the south. Gardens, retaining walls and Victorian buildings mark the western and northern limits of the site.

There is a gentle slope westwards from the High Street, from c.52m to c.50m OD. Terracing is present, with a noticeable difference (up to 2m, both higher and lower) in ground levels between parts of the development area and adjacent plots to the north and west.

Archaeological and historical background

Saffron Walden (Essex Sites and Monuments Record (ESMR) 0408) had its origins in the mid to late Saxon period and developed into a prosperous market town during the medieval period. By the later medieval period (13th to 15th centuries) the town had become a major centre for the cloth trade, and was famous for the production of the saffron dyestuffs from which its name derives. There is some evidence of earlier settlement of prehistoric, Iron Age and Roman date in the general area.

The castle, around which the town developed, is believed to have been founded in the late 11th-century by the de Mandevilles. Following an initial phase of urban development in the 12th-century, further expansion in the early to mid 13th-century included the creation of a rectilinear street-plan in an area to the south of the castle bailey. This was enclosed by a large defensive ditch, which still partially survives as an earthwork to the south of Gibson Close, known as the Repell or Battle ditches (ESMR 0443). This expansion may have been associated with the grant of a new charter in 1236. A more detailed discussion of the history of Saffron Walden can be found in the Essex Historic Towns Survey (Medlycott 1997).

The development area is situated at the southwestern edge of the 12th-century nucleus, but is within the more extensive 13th-century planned town (Fig. 1).



Fig. 1 33-35 High Street, Saffron Walden. General site location. © Crown copyright 87584M.



Fig. 2 33-35 High Street, Saffron Walden. Site plan with trench lay-out. © Crown copyright 87584M.

Saffron Walden has a large number of surviving late medieval buildings, but archaeological investigation has added relatively few well-dated sequences to improve our knowledge of the medieval town. This is due partly to the small scale of much of the archaeological work, and partly also to recent disturbance or truncation of medieval strata.

Cartographic and documentary study by M.Germany

A desktop assessment of the development area was undertaken in advance of trial-trenching, to establish the location of previous buildings on the site. A pictorial representation illustrating the development of the site in plan since 1758 was created (Fig. 3). The sources for this were the Audley End estate maps from 1758, c.1825 and c.1828 (ERO: T/M 123, T/M 141 & D/DQy 25 respectively), the Ordnance Survey 25" to 1 mile maps from 1877 (1st), 1879 (2nd) and 1921, and the Ordnance Survey 1:2500 maps from c.1980 and c.1995. The sequence shows the approximate location of most, but probably not all, of the major buildings and boundaries since 1758.

Two plots, or 'burgages', can be identified on the 1758 plan. The first plot, in the south-east corner, was defined by Boundaries I and III (now 33-35 High Street). The second plot, to its immediate north, was defined by Boundaries III and VI (now 27-29 High Street). The first plot was sub-divided into two halves by Boundary II and the second plot was sub-divided into one half and two quarters by Boundaries IV and V. Both plots were c.180 feet wide, both half-divisions c.90 feet wide, and both quarter divisions c.45 feet wide.

By 1825 Boundary II had disappeared and Boundaries IV, V and VI had been realigned. Building C had been replaced by Building I, Building B by J, Building D by K and Buildings E and F by courtyard building L. Block H had also been replaced by tenements M and N.

By 1877, very few of the 1758 buildings were still standing. The destruction of Building I had permitted the realignment of Boundary III, and Buildings M and N and realigned Boundaries IV, V and VI had been removed to make way for Buildings O, P, Q and R. This pattern then remained fairly constant until 1921, when courtyard building L was replaced by two semi-detached houses, and until the early ?1980s when nos 33-35 High Street were demolished to make way for a new supermarket. Nos 27 and 29 High Street, to the north of the supermarket, however, are still standing and are Grade II listed buildings dating from the 16th century.

The plot measurements on the 1758 map are significant because they are indicative of medieval town planning. As the town's population grew, each burgage would have been sub-divided in response to a growing demand for a frontage on the High Street.

Two episodes of medieval town planning have already been identified in Saffron Walden (Bassett 1982, 20 and 25 and fig. 8). The first episode, along Church Street and Castle Street, appears to have been based on tenement widths of 30 feet. It was probably laid out in the early 12th century and was possibly related to the town's first market. The second episode, to the east and west of the High Street, appears to have been based on a grid of 12 perch squares. It was possibly laid out in the early 13th century, at the time the *magnum fossatum* was excavated.

Of the two, it seems the more likely that the two aforementioned plots are related to the grid of 12 perch squares, though this is not certain. It is equally possible that the two plots belong to a different system, which was laid out subsequently. In the late 19th/early 20th century, the remains of a stone wall foundation were discovered in a contractor's trench in the garden of 'Park Side' (33-35 High Street) by Guy Maynard. It was 'several feet thick' and was aligned north-south, parallel with the adjacent High Street. It was constructed from mortared flints and pebbles and may have been part of a substantial masonry structure (ESMR 0482; Bassett 1982, 107).

Excavation

Two stages of work were undertaken, in April and September 1997. Although relatively little handexcavation was carried out, the archaeological investigation identified a stratified sequence of activity on the site ranging from the ?Roman to the modern period.

The aims and methods of the investigation were largely based on the known information about the site's development from the cartographic study and documentary evidence. The evaluation stage of the project targeted some of the buildings on the 1758 map, but was designed chiefly to locate the masonry wall identified by Guy Maynard and assess the survival of medieval deposits within the development area.

A compacted, discoloured cryoturbated chalk was exposed in the eastern part of the development area, at 50.2m OD. Natural chalk was revealed at various depths (between 48.7m and 46.2m OD) across the site in engineer's test-pits, and in some of the key areas of archaeological investigation.

Three trenches (A-C) were initially excavated. The complexity and abundance of the medieval and postmedieval strata located by the evaluation trenches necessitated a selective approach to the recording. Key areas, which would provide the most information about the site's development, were chosen for more detailed investigation. These comprised the late medieval mortared flint foundations and associated deposits, and several boundaries and other features.

The second stage of work involved the excavation of two more trenches (D and E). Trench D was effectively an extension to Trench B, whilst Trench E was located in an area in the north-east of the development. The latter area had previously been inaccessible due to the presence of brick retaining walls, trees and a significant disparity in ground level. Trench D was to determine the extent of survival of the late medieval building identified in the evaluation and Trench E was to investigate a small building (G) on the 1758 map extract.

Roman (1st to 4th century)

Roman pottery was present in deposits located towards the middle of the development area in evaluation Trench A. The pottery was found in two of several thin buried soils investigated by a small box-section (Fig. 6.2). One of the deposits (99) contained a sherd of Roman pottery and a struck flint, whilst another sherd was residual in a later (early 13th century) context (90). It is possible that deposits (108) and (109), which are below (99), are

















Fig. 3 33-35 High Street, Saffron Walden. Development of the site since 1758. © Crown copyright 87584M.

the fills of a shallow cut, as they sloped down towards the east against the natural slope of the ground, which is to the west. No finds were retrieved from (108) and (109), and so dating of these deposits is not possible, although their stratigraphic relationship below the ?Roman layer (99) suggests that they could be Roman or earlier. It is possible that these deposits are the fills of a large, probably shallow, cut feature such as a ditch, of which only a small part of the western edge was exposed by the box-section.

A single sherd of Roman pottery was also collected during the second stage of work from the surface of an unexcavated post-hole (168) located to the south of the late medieval building in Trench D (Fig. 4). This pottery is likely to be residual as the post-hole cut chalk surface 223 which appears to be a layer associated with Building 1, of late medieval date.

Early-mid Saxon (5th to 8th century)

Two sherds of ?early to mid Saxon pottery were found in late medieval contexts in Trench E. Although the sherds are residual, the evidence indicates activity in the vicinity of the site during the Saxon period.

Medieval (13th to 14th century)

The earliest structural remains appear to be medieval (13th-14th century) in date, and comprise a post-hole (141) and a slot or gully (01), both of which cut the discoloured ?natural chalk (Fig. 6.1). These features were located in Trench B and are probably part of the foundations of an earth-fast timber building.

The presence of a building of this date is not unexpected given the site's location within the area of the 13th-century planned extension to the south of the early medieval nucleus (Fig. 1).

The evidence for medieval (and late medieval) buildings was concentrated in the eastern half of the development area, in proximity to the High Street and Park Lane frontages. Towards the western end of the site, where the depth of stratigraphy increased, buried soils were present (Fig. 6.2). The uppermost (90) of these dates from the 13th century, and may represent a yard or open space for cultivation

Late medieval/Tudor (15th to 16th century)

Building 1 (Figs 4, 6 and 7, top)

The medieval timber building was replaced in the late medieval period by a more substantial structure with mortared-flint foundations. Both buildings are located in an area without structures on the 1758 map extract (Fig. 3), which suggests that any medieval or late medieval buildings in this area were demolished prior to 1758.

The walls were relatively well preserved despite being located at less than 0.3m in places below the current surface. The building was orientated north-east to south-west, at right angles to the High Street. The total surviving length of the exposed foundations was 11.5m, and the width 5.3m, indicating that the building was quite large. No evidence of a western wall was found, possibly as a result of post-medieval cellaring, although it is possible that the building was open-ended.



Fig. 4 33-35 High Street, Saffron Walden. Detailed plan of building 1

A dark yellow sandy gravel (156), overlain by a layer of unmortared flint nodules (155), was identified in a small sondage against internal wall 117 (Figs. 4 and 6.3). These layers are probably construction or levelling surfaces over the demolished medieval timber building. No foundation cuts for the walls were visible in this sondage or a larger sondage through the floor levels against wall 02. The apparent lack of recorded foundation cuts could conceivably be a result of the limited nature of the investigations within the building.

Several internal walls (117, 145 and 146), two external walls (02 and 191) and the base of a small garderobe (05) were recorded. The walls were constructed of flints and pebbles within a friable mortar. The flints and pebbles were generally of medium size and roughly faced on the exposed surfaces, and of more irregular size and less densely packed in the core. A mortar-like plaster (10mm thick) was present on most of the internal faces.

The narrow width (0.3m) of the internal walls and the external southern wall suggests that they are foundations for a timber-framed superstructure. Fragments of daub were recovered from internal deposits butting against the walls. The daub contains vegetable tempering and frequent flecks of chalk with the surface roughly brushed with a 0.5mm grey layer. It is possible that the daub originates from the walls of a room but is likely to come from an inconspicuous position such as behind a door or window moulding.

The full surviving length of external wall 02, the most substantial of the walls, was exposed (Fig. 4). The average width of the wall was c.0.5m, although the western half was wider and appeared to have several rectangular or square hollows of various sizes and depths cut into its sides at irregular intervals. It is possible that these voids represent later alterations such as post-settings. Another interpretation is that the narrower part of the wall is the original width and that the wider portions represent buttresses. The wider parts do not appear to be mortared, and are on the external side of the building and so could be a form of structural reinforcement.

Other slight changes in the build were visible along the length of wall 02. The most notable of these was a possible blocked doorway in the eastern half of the wall, and a change in width to the west of partition wall 117. A large post-hole appears to have been cut through the c.0.8m-wide blocked doorway at a later date and may represent a phase of re-building or repair. A fairly large post-hole (225) was also cut through partition wall 117 about halfway along its length. The post-hole was not excavated but its presence again suggests a phase of rebuilding.

A small irregular channel was cut through the wall to the immediate west of its junction with 117. It is probable that the gully was cut when the building had fallen into disuse, although it is possible that it may have been a drain added whilst the building was still standing.

A small rectangular cess pit 05 for a garderobe was inserted into the north-east corner of the building,

truncating the eastern end of wall 02. The cess pit was also built of flints, bonded with a cement-like mortar. The majority of the backfill of this feature was excavated, revealing a rendered surface on all internal faces.

A sequence of probable floor levels was partially preserved in the north-east corner of the building against wall 02, overlying a metre-wide mortared flint foundation off-set for the wall. The deposits were quite thin, comprising bands of intermittent tile overlying silt and clay layers, the latest of which (92) had a reddish discolouration and frequent flecks of charcoal which may indicate burning. Fragments of vegetable-tempered daub were also present in this layer, of which one piece was burnt grey. Truncation of these layers was evident in section and could relate to a clearing of the earlier floorlevels prior to the laying of the latest floor (Fig. 6.1).

This floor was formed by a thick deposit of yellow chalky clay (116=07), and was observed to extend within the confines of the exposed walls and is probably the final occupation horizon before the demolition of Building 1. It is possible that this layer was deposited during a phase of alterations, when the addition of features such as the garderobe were made. After the deposition of (116=07) another internal wall, 145, was added between walls 146 and 117 (Figs 4 and 7, top).

A chalk layer 223 which butted against wall 191 was partially revealed on the southern side of Building 1 and may be a contemporary external surface.

The western edge of a large circular chalk-filled feature was recorded in plan to the immediate east of Building 1, to cess pit 05, and is probably a well.

A layer containing sherds from the same (14th to 16th century) vessel were recovered from cleaning over wall 02 and from a late medieval layer (185) cut by several features identified in the north-east of the development-site. This suggests contemporary activity in the two areas, which appear to be separate plots to the rear of the High Street on the 1758 map extract.

The entire building was demolished to the level of the foundations which were then sealed beneath a layer of chalk (Fig. 7, top).

Wall 74

A wall (74) of similar mortared flint construction was found to the south-west of Building 1 in Trench C (Fig. 2), which had been re-used as the foundation for a 19thcentury brick wall. The line of wall (74) appears to correspond to that of Building A shown on the 1758 map to front onto Park Lane. Although no direct dating of the wall was possible, the presence of associated deposits similar to those encountered with the late medieval walls to the north suggests that all the flint walls may belong to the same period of development.

Dating

Dating of the building foundations was hampered by the lack of directly associated dating material, and the limited nature of the investigation. However, pottery retrieved from internal floor levels falls into the daterange of 14th to 16th century. Finds from later structural additions and the demolition sequences were of a similar date, suggesting that the building was constructed and demolished within the date-range indicated by the pottery.

Post-medieval

Phase I (Fig. 7)

A phase of wholesale clearance and levelling occurred in the early post-medieval period, denoted by a band of



Fig. 5 33-35 High Street, Saffron Walden. Detailed plan of building 2



Fig. 6 33-35 High Street, Saffron Walden. Selected sections

chalk of varying thickness traceable across most of the length of the site. The chalk overlay the demolished late medieval walls, floor levels and associated deposits. No definite activity attributable to the period immediately following the levelling was identified, although it is feasible that building F shown on the 1758 map (Fig. 3) was constructed at this time. The area to the east of it may have become a yard sealing the demolished foundations of Building 1.

In the north-eastern part of the site (Trench E) activity in the earlier post-medieval period was characterised by the erection of possible timber structures with associated floors, pits and ditches. These features were not excavated, but post-date late medieval layer 185 (Fig. 5).

A large sub-rectangular feature (188) partially surrounded by the remains of a brick wall appears to approximately correspond with building G on the 1758 map extract. The feature is of a smaller size than building G although it is possible that 188 is a backfilled cellar, perhaps of building G. Surface finds collected from 188 indicate a late 18th or early 19thcentury date for the in-filling or disuse of this feature. This is comparable to the date suggested by the cartographic evidence which indicates that building G disappeared between the dates of the 1758 and 1824 maps. The function of this building is not known, although its small size and back-yard location suggests that it was an out-house or store.

Phase II (Fig. 7, middle)

A further phase of redevelopment, indicated by a band of chalk overlying layers containing demolition debris, was also identified in the southern part of the site. This could relate to the demolition of building F which occurred between the dates of the 1758 and 1825 maps.

The changing boundaries of the development area indicated by the cartographic evidence was illustrated in the archaeological record. Post-holes (?relating to fences), boundary ditches and retaining walls dating from the 17th, 18th and 19th centuries were recorded (Fig. 2), some of which correspond well with the boundaries shown on the relevant map extracts.

In the late 18th or early 19th century, extensive redevelopment appears to have taken place with the levelling and backfilling of existing features in the northeastern part of the site, which were then sealed beneath a general layer (178=187) (Figs 5 and 7, bottom). This activity may have been associated with the construction of Building 2 which was probably built in the late 18th or early 19th century.



Fig. 7 33-35 High Street, Saffron Walden. Selected sections

Building 2 (Figs 5 and 7, bottom)

The trench-built mortared-flint foundations of a large building were uncovered in the north-east of the development area. Finds removed from the cement-like mortar comprise a clay-pipe stem and a sherd of glazed 18th to 20th-century pottery.

A row of four square mortared brick and flint plinths were partially exposed to the north of, and parallel to, wall 166, and the surface of a further two similar structures were recorded to the north of these. The ground could not be further reduced in this part of the site due to the presence of a very tall brick warehouse (dated 1868) which formed the northern boundary of the plot.

The plinths probably formed the bases of structural supports for a roof, and possibly also an upper storey. Several floor-levels (216) were identified in the main west-facing section, including a thin chalk layer, which were probably associated with this building.

The building appears to pre-date the 1868 building to the north, and its foundations are cut through deposits containing 17th to 18th-century pottery, suggesting that Building 2 was probably of 18th to mid 19th-century date. The cartographic research did not identify a building on this part of the site, which suggests that Building 2 was constructed and demolished between the dates of two of the maps. The most likely dates are between the 1758 and 1825 maps (Fig. 3), when a sub-division of this part of the plot appears to have taken place and the time-gap is sufficiently long for such changes to have occurred.

The map extracts from the 19th century indicate successive rebuilding along the Park Lane frontage in the southern half of the development area. This evidence was supported by the archaeological remains encountered in Trench C of the evaluation. Although some evidence for earlier buildings was present, the majority of features are 19th century and can be related to the construction of building B following the demolition of building A.

A final phase of levelling and consolidation was apparent below the existing concrete surface and is probably relatively modern.

The finds

Roman pottery

by T.S. Martin

Four sherds (two Hadham redware and two greyware) of Roman pottery were retrieved from Trenches A and D. Three of the sherds are residual in medieval and later contexts; one of the sherds occurred in a deposit with a flint flake and was sealed beneath a 13th to 14th-century layer.

Saxon pottery

by S. Tyler

Trench E produced two sherds of Saxon pottery residual in later contexts. The pottery had a fairly hard fabric with abundant organic temper and belonging anywhere in the period AD 450 to 750, but most likely towards the end of this date range, given the total absence of any other temper.

Medieval and post-medieval pottery

by H. Walker

A total of 5.5kg of pottery was excavated from 46 contexts and has been classified according to Cunningham's typology (Cunningham 1985, 1-16).

Medieval pottery

Medieval pottery was present in a post-hole and ?slot in Trench B and in possible buried soils in Trench A. The latter (buried soil 90) comprises a sherd of early medieval shell-tempered ware and a slipcoated sherd of very coarse sandy orange ware, perhaps dating to the early 13th century.

The pottery from Trench B appears to be slightly later, comprising sherds of medieval coarse ware dating to the 12th to 14th centuries and, in post-hole 141 (fill 101), a sherd of slip-coated green-glazed sandy orange ware, in the style of mid-13th to mid-14th century Mill Green ware.

Sherds of medieval coarse ware and sandy orange ware also occur in deposits associated with Building 1, namely floor layers 92 and 100, stone-lined cess pit 05 (disuse fill 08), and demolition layer 116. The sandy orange ware is hard and largely unglazed. One sherd is slippainted and a base fragment shows an internal glaze. This is probably late medieval sandy orange ware, belonging to the 15th/16th century. Other contexts with pottery dating to the late medieval period include unstratified contexts 110 and 122 which produced single sherds of 'Tudor Green' ware dating principally to the late 15th century. A sherd of unattributed unglazed stoneware from pit 112 (fill 111) may also be late medieval.

The second phase of investigation in the area of Building 1 (Trench D) produced similar late medieval material comprising further sherds of sandy orange ware, including a beaded bowl rim. Cleaning inside Building 1 (context 162) produced single sherds of late 14th to 15th-century Langerwehe stoneware and another sherd of 'Tudor Green' ware. Cleaning over the walls (context 163) produced slightly later pottery including a sherd of Surrey-Hampshire white ware and part of a post-medieval red earthenware cup and flanged bowl rim dating perhaps to the second half of the 16th century. A sherd of buff ware with internal limescale from cleaning context 169 may also be late medieval.

Pottery of a similar date was excavated from the lower deposits in the sequence to the south of the Building 2 in Trench E. ?Medieval horizon 185 produced sherds of late medieval buff ware from the same vessel as that from cleaning context 169 in Trench D. Layer 184 and context 186, surface finds from an unexcavated ditch, both produced sherds of late medieval sandy orange ware, including a flanged bowl rim with chalk flecks in the fabric. However the pottery from layer 184 may be residual, as ?equivalent layer 187 produced pottery dating to c.1700.

Post-medieval pottery

In Trench A, sherds of 17th-century black-glazed ware were excavated from the surface of pit 112 and from post hole 19. Eighteenth-century pottery was excavated from the fills of ditch 14, the latest of which comprises a white salt-glazed stoneware saucer rim and moulded plate rim, both showing scratch blue decoration and most likely dating to

the third quarter of the 18th century.

The latest pottery from the wall sequence (Building 1) in Trench B is a Frechen stoneware jug rim dating from the later-16th to 17th centuries. The ditch sequence in trench B (ditch 22) produced slightly later pottery comprising creamware and transfer-printed pearlware dating up to the early 19th century.

Relatively large amounts of post-medieval pottery were excavated from Trench E. Deposits cut by the foundations for Building 2 produced moderate amounts of 17th to early 18th century pottery comprising black-glazed ware sherds from context 170, Metropolitan slipware from context 189 and tin-glazed earthenware from context 179. Pottery of this date was also excavated from context 171 where a greater variety of mainly table wares were found, comprising sherds of Westerwald stoneware, fragments from a tin-glazed earthenware drug jar and plate, and a Chinese porcelain tea bowl and saucer. All finds are typical of a group of this date. The latest pottery is a sherd of pearlware precluding a date before 1779. A sherd of late 18th to 20thcentury yellow ware was excavated from wall 166 (Building 2).

In the sequence of make-up layers, post-medieval pottery first appears in layer 187 where sherds from a blue-painted ?Lambeth tinglazed earthenware vessel was found, dated by its design to c.1700. Context 188, a feature cutting ?medieval horizon 185 produced later pottery similar to that found in a ditch (22) in Trench B.

The largest quantities of pottery came from machine-excavated make-up deposits 160 and 172 from which the most recent pottery is early 19th to 20th century, although 17th to 18th-century pottery already described above, there are sherds of Frechen stoneware, a sherd of Westerwald stoneware from a ?lion chamber pot, and sherds of Staffordshire-type combed slipware and manganese-glazed buff ware. Also of interest is a black-glazed sherd with unusual applied slip decoration in the manner of Cistercian ware, although this is almost certainly a local product.

The 19th to 20th-century pottery from deposits 160/172 comprises both utilitarian wares and tablewares. Forms comprise cylindrical stoneware bottles, bowls in yellow ware and slipped kitchen earthenware, and what appears to be a jelly mould but with three legs. Table wares comprise transfer-printed pearlware and ironstone in floral and scenic patterns as well as in willow-pattern. Bedroom wares comprise a transfer-printed chamber-pot rim.

Perhaps the latest pottery excavated came from the building foundations in Trench C where finds include a flowerpot made by Richard Sankey and Sons of Bulwell near Nottingham. The firm was founded in 1855 and ceramic flowerpots continued in production until the early 1980s. The foundations therefore date from the second half of the 19th to 20th centuries.

Discussion

The presence of late medieval pottery is of interest, as so far little pottery of this date has been found at Saffron Walden despite the fact that the town reached its peak during the late 15th century (Eddy and Petchey 1983, 82). The fabric of the medieval coarse ware and sandy orange ware are different in appearance to those found in central Essex and this has been noted in other assemblages from the town (unpublished). Such an example is the sandy orange ware bowl with chalk inclusions, pottery with a similar fabric was found at nearby Thaxted (Andrews 1989, 113) and may have a local origin as this part of Essex overlies chalk deposits.

The sherd of black-glazed ware with applied slip decoration is not the first example of unprovenanced slipware to be found in the town as several were found during excavations at Market Row (unpublished). The pottery supply to Saffron Walden may have more in common with the neighbouring counties of Cambridgeshire and Suffolk than it does with central Essex.

Brick and Tile

by P. Ryan

Brick

The greater part of the brick is of 19th-century date.

A few fragments of unusual brick were found in wall 145 (119) and

levelling layers 32 and 89. They are orange or brown in colour; very irregular in general form; with very rounded irregular arrises; striated upper surfaces; rough and creased faces and rough bases, which features taken together indicate a Tudor or pre-Tudor date. Unfortunately none of these bricks were complete so that all three dimensions could not be obtained; widths vary between 90 to 110mm and thickness between 40 to 45mm.

Flooring Bricks

A number of flooring bricks were found in context 95 (unstratified). Measuring $190 \ge 85-90 \ge 50-55$ mm, they are cream with small orange rounded patches; regular in general form with sharp irregular arrises where these survive; have striated upper surfaces and smooth bases. Most of these bricks have one or both stretchers faces worn. Unworn faces are slightly creased or smooth. One unworn stretcher face has pink and cream kiss marks. A 19th-century date is indicated.

Maltkiln Floor Support Tiles

Several fragments of maltkiln floor support tiles occur in brick drain 78 and unstratified contexts 95 and 125. As one edge of these tiles shows signs of wear yet broken edges were encrusted with mortar these fragments had been re-used. Similar tiles can be seen in the 19th-century maltkiln at Boyes Croft, Great Dunmow. They were also found in the garden at Cressing Temple but it is possible they had been obtained for use as edging in the garden rather that re-used when the maltkiln there became redundant.

Floor Tiles and Pammets

Fragments of 19th-century floor tiles are pammets were found in contexts 95 and 96. A very worn fragment of floor tile with under cut knife-trimmed edges is amongst the material from context 95. The base is sanded and the core reduced. A small patch of cream slip remains on the upper surface.

Roof Tile

The roof tile from the site is mainly of the pegtile-type. One fragment from a pantile were identified in context 127 and a fragment from drain 22 (fill 21) may be medieval in date but the evidence is not conclusive. There is also part of a pantile in context 98.

Miscellaneous finds

by H. Major and R. Tyrrell

Metalwork

There was a small amount of metalwork, comprising a copper-alloy token of Hanns Schultes (1550-1596), a perforated fragment of sheet copper alloy, a William III half penny, a piece of copper-alloy wire, a late medieval thimble, and a lead weight of unknown date. A single bladed iron clasp knife was found in ditch 14 and a fragment of horseshoe came from post-hole 141 which also contained medieval (13th to 14th century) pottery. All but one of the 20 iron nails came from late post-medieval contexts.

Daub

Eight fragments of daub came from two late medieval contexts and may have come from the internal partitions of a timber-framed building, with the 1949g of mortar and the lumps of mortared flints, from its stone footings.

Stone

An unstratified fragment of oolitic limestone may have derived from a wall facing; the surface was poorly finished, and this may have been discarded prior to actual use. A fragment of a Rhenish lava quern or millstone, re-used as building rubble, was also found. This was unstratified, and could be either medieval or post-medieval.

Other Finds

There were also 23 oyster shells, and one mussel, 46 sherds of 18th and 19th-century glass (including a possible piece of cullet), wine bottles and small medicine bottles, eight sherds of window glass, and 26 fragments of clay pipe. The clay-pipes were 18th century where datable and one of the two pipe bowl fragments had the maker's mark on the heel, of which only the first letter (R) was legible.

Animal bone

by P. McMichael

Three hundred pieces of animal bone were examined from 26 contexts weighing a total of 6,567g. The bone was in excellent condition, though a proportion was fragmentary. Six species were positively identified: *Equus, Bos, Cervus, Sus, Canis* and *Ovis.* There were also some bones from large [e.g.: goose] and medium [e.g.: chicken/duck] sized birds.

Of interest was the large number of mainly unfused sheep bones in Context 170, some with cut and chop marks associated with butchery. This collection of 139 metapodial bones showed approximately 28 Sheep [Lambs] killed at 6 to 9 months old and 10 killed after 20 to 24 months. Such a uniform group suggests the presence of a local butcher's shop/abattoir in the late 17th or 18th century.

Discussion

Although the archaeological investigation was very limited in terms of actual excavation, the results are of significance. The relative complexity of the archaeological strata recorded by the excavation is not unexpected in an urban context. The evidence is important, however, as many previous investigations in Saffron Walden have not identified evidence of a comparable nature. Time did not permit extensive detailed excavation of the stratigraphy, and efforts were concentrated upon in situ recording and minimal excavation of key areas for phasing purposes. From this it was possible to reconstruct an outline of the site's development from the medieval period to the present day, against a backdrop of the more general development trends within the historic town.

The presence of small quantities of Roman and Saxon sherds of pottery are not unusual in Saffron Walden. The distribution of previous finds in and around the town indicates that the Roman settlement was located to the west of the later medieval nucleus of Saffron Walden (Medlycott 1997). There is some indication that there may have been a small Roman fort on the site of the later Anglo-Saxon cemetery to the south-west of the development in the area of Abbey Lane and Gibson Close (Bassett 1982).

The stratigraphy encountered on the site was over 1.5m deep in places and represents an almost continuous sequence of occupation and activity through the medieval and post-medieval periods. Despite successive phases of redevelopment in the postmedieval and modern periods, the medieval archaeology was well preserved beneath the overburden over the majority of the development area.

The survival of the early strata is probably a result of limited building activity, indicated by the cartographic evidence (Fig. 3), in the eastern and central parts of the site in recent times. Extensive disturbance from 19th and 20th-century foundations for buildings formerly fronting onto Park Lane was present in the southern half of the site, although some evidence for earlier structures and associated deposits had also survived. In the northern part of the site post-medieval make-up layers had increased the ground level by almost 2m, sealing and preserving earlier deposits.

The late medieval building (Building 1) identified by the excavation lay behind buildings fronting onto the High Street (Figs 2 and 4). The foundations are probably for a timber-framed building, which may have been open ended to the west, perhaps for storage or keeping of livestock. It is possible that Building 1 was contemporary with nos 27-29, which are still standing and listed as dating from the 16th century, and are on a similar alignment. A possible interpretation is that Building 1 was part of a small complex of buildings extending back from the High Street frontage. The function of Building 1 was not determined, although its location suggests a transition between domestic and more utilitarian activities.

The presence of the garderobe cess pit reflects a more general trend in the late medieval period, to fit internal garderobes, designed for regular cleaning, in many of the wealthier town houses. In the aftermath of the plague there was a natural inclination to maintain a level of domestic cleanliness, reinforced by contemporary medical theory which associated odour with disease (Platt 1994).

It is feasible that the flint foundations are those observed by Guy Maynard in a contractor's trench in the garden of 'Park Side' (33-35 High Street) in the late 19th or early 20th century. The foundation recorded by Maynard was 'several feet thick', much wider than the walls uncovered by the excavation. A possibility is that Maynard observed the garderobe, which has thin walls, but in plan its overall dimensions are quite substantial. The presence of a ceramic drainage pipe which truncated the western wall of the garderobe may support this.

In the late medieval period Saffron Walden became the major centre for the production of the saffron crocus, which was used to produce dye, and the town played an important role in the East Anglian cloth trade (Medlycott 1997). The presence and location of the late medieval building perhaps supports the historical evidence as it is indicative of increased pressure on 'prime' land (close to the High Street and the medieval core of Saffron Walden) in a period of economic prosperity.

Relatively small amounts of late medieval pottery have been found during previous excavations at Saffron Walden despite the fact that the town reached it peak in the late 15th century. The fabric of the medieval coarse ware and sandy orange ware from this excavation are different in appearance to those found in central Essex and this has been noted in other assemblages from the town. The pottery supply to Saffron Walden may have more in common with the neighbouring counties of Cambridgeshire and Suffolk, suggestive of a north-west Essex 'pottery zone', especially as pottery of a similar fabric type was also found at nearby Thaxted (Andrews 1989,113).

The late medieval building appears to be located just outside the outer bailey of the medieval town (Fig. 1), which is believed to lie somewhere on the lines of Freshwell Street and Myddleton Place at this point (Medlycott 1997). No evidence for the outer bailey ditch was found during the further archaeological work, although investigation ceased at the late medieval horizon which may have sealed earlier deposits. The location of the late medieval building suggests that it would have been unfeasibly close to the outer lip of the ditch, although it is possible that at this point the ditch was back-filled and built over in the late medieval period. Another possibility is that the outer bailey ditch ran further to the south and west and that the site is situated just inside the medieval town boundary.

In the early post-medieval period Saffron Walden appears to have grown quite slowly, with the in-filling and sub-division of existing plots (Medlycott 1997). The archaeological evidence from the northern half of the development area seems to support this as some small-scale building (?including building G on the 1758 map) and other activities appear to have taken place here in the 17th or 18th centuries. The finds from this part of the site represent a fairly typical assemblage of discarded domestic waste, although of interest was the large number of mainly unfused sheep bones some with cut and chop marks associated with butchery. The bones were those of approximately 28 lambs killed at 6 to 9 months old and 10 killed after 20 to 24 months, suggesting the presence of a butcher's shop or abattoir nearby in the late 17th or 18th century.

In the late 18th and early 19th centuries, Saffron Walden became a major centre for the Essex malt industry. The excavation uncovered a large building dating from this period (Building 2), with associated ground-levelling, in the northern half of the development area. The building was probably demolished during the late 19th century when the ground-level was further raised, which may relate to the construction of the maltings and associated buildings in the plot to the north of the development area.

The southern half of the site, along the Park Lane frontage, was subject to successive change and redevelopment from 1758 to the present day, illustrated by the cartographic evidence and supported by the archaeological record. This evidence reflects the general trend in the post-medieval development of Saffron Walden which often took the form of the refurbishment or replacement of individual buildings (Medlycott 1997).

The former supermarket building, which replaced the earlier property on the corner of Park Lane and High Street, has since been demolished to make-way for the modern housing development which prompted the archaeological investigation.

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The uncovering and conservation of the medieval wall paintings at St James the Less, Little Tey

by Tobit Curteis

The recent programme of conservation in the small 12thcentury church of St James the Less at Little Tev, revealed two unusual and interesting schemes of wall paintings, dating to the 13th-century and the 14th-century respectively. On the walls of the apse, an extensive 13thcentury Passion cycle was discovered, as well as fragments of a later painting, indicating that a similar narrative cycle had been painted there in the following century. Elsewhere in the church, fragments of other 13th-century paintings were uncovered, including scenes of Adam and Eve and of two unidentified saints. Of the 14th-century paintings, the most interesting discovery was the Virgin and Child on the south wall and the previously uncovered Three Living on the north wall. Although many of the paintings were fragmentary, it is clear that both the 13th and 14th-century schemes were of an unusually high figurative quality.

Introduction

Although small fragments of medieval wall painting are regularly uncovered in medieval churches, the discovery of complete narrative schemes is far less usual. Therefore, the discovery in the 1980s of an extensive scheme of wall paintings in the parish church of Little Tey, near Colchester, was of particular significance.

Situated at the north end of the village, the church of St James the Less is a simple single-celled structure, constructed of flint rubble with limestone dressings for the doors and windows, and incorporating a number of quoins of undressed pudding-stone. Although the main structure of the building is 12th century, a number of windows were inserted in the 14th century, and the level of the roof has been raised. The church was also restored in the 19th century when the east window was replaced.

During the 1960s, the internal walls of the church were decorated with a synthetic non-porous paint, which had since deteriorated very badly. By the 1980s, the loss of the modern paint had begun to reveal areas of what appeared to be two schemes of early wall painting, and some important sections of the paintings were uncovered by Jane Rutherfoord, at this time.

Pre-conservation survey

A detailed examination of the church was carried out in 1995, in order to assess the nature and extent of the surviving wall paintings as well as their current condition and the possibilities for their full uncovering and conservation. This survey showed that a band of the original lime and sand render, c.165cm in width, survived on all of the internal walls, at a height of c.194cm above floor level. Below this level, the original plaster had been lost and replaced with a modern lime mortar dado, while the area above was repaired with a mud and straw render.

The initial uncovering tests in the area of original render revealed at least two schemes of wall painting of different dates, both of which appeared to extend around all of the walls. On stylistic grounds, as well as their relationship with the architectural structure of the church, it appeared likely that the schemes dated to the 13th and 14th-centuries respectively. The fact that a scene of the Last Supper had been partially exposed on the north wall indicated that the earlier of the two schemes included at least part of a Passion cycle. However, it was far from clear at this early stage whether the later scheme followed the same narrative structure or if the paintings were of an entirely different type. At the west end of the north wall, a number of very small fragments of paint were found, which appeared to be part of a much larger scheme of decoration, which had been almost entirely destroyed.

The structure of the 13th-century paint layer was relatively simple, with the pigment layer applied on a single limewash ground over an uneven, but fine layer of lime render. The 14th-century painting was applied directly over the previous scheme, on a single fine layer of limewash. Above this were a number of layers of limewash, and a single layer of blue distemper followed by at least three layers of brown distemper. Most recently applied, in 1966, was the layer of slightly grey Walpamur,¹ a synthetic emulsion paint. In all, there appeared to be approximately 12 separate paint and limewash layers above the render.

The paint analysis showed that the palette used for both the 13th-and 14th-century paint schemes was fairly similar, containing red and yellow ochres in an organic medium.² In addition, the 14th-century scheme contained some areas of a lead pigment which had converted from its original colour to dark brown or black. The paint layers of both schemes were found to be relatively fine ($c.15-25\mu$ m) in comparison to the limewash layers ($c.150-300\mu$ m), making them particularly vulnerable to mechanical damage. It was also noted that in a number of areas the pigment layers appeared to lack cohesion. Analysis of pigment samples taken from some small fragments of what appeared to be later paint work on the north wall, showed the use of vermilion and green verditer.

The analysis of the blue pigment in the later distemper showed it to be artificial ultramarine. Although artificial ultramarine was first synthesised in the first half of the 19th-century, it was not commercially produced as an artists pigment until the 1850s, and it was presumably later still that it began to be used as a cheap pigment in distemper. As a result, it was possible to tell that all the layers above the blue layer, including all the brown distemper layers, were later than the mid 19th century. Therefore, in areas such as those in the apse, where the brown distemper was applied directly onto the 13th-century paint layer, it can be concluded that all the paint layers between the 13th and the 19th centuries had been lost.

Since its application, the Walpamur had shown signs of extensive delamination and flaking over much of the area of the church. This had caused large areas of the lower coatings to delaminate and flake, including in some areas the original paint layers. It appears that in order to prepare the wall surface for past redecoration, extensive preparatory scraping down and cleaning was carried out. In some cases, this seems to have been extremely vigorous, with extensive damage throughout the layer structure and a characteristic linear scarring on the plaster layer. The most notable example of this is in the apse, where the preparation of the surface for the brown distemper had removed all layers above the 13th-century paint scheme. As a result, in most sections of the apse, the distemper was applied directly over the badly damaged 13th-century paintings. In the few small areas where patches of limewash survived, acting as an intervention layer, the 13th-century painting survived in better condition. However, in most other areas, there was extensive surface abrasion.

Conservation Programme

In many cases where wall paintings are discovered in situations similar to this, it is considered the best conservation practice to leave them covered, and merely to record their presence and ensure that they are not deteriorating. However, Little Tey was considered to be an exception as it was the covering layers themselves which were to a large extent responsible for the paintings' deterioration. Therefore, it was decided that the layers of limewash, distemper and modern paint should be removed, in order that the paintings could be exposed and conserved. Significant sections of the paintings, including the Last Supper and the Three Living and the Three Dead were uncovered by Jane Rutherfoord in the 1980s. The main programme of uncovering and conservation was undertaken by Tobit Curteis Associates in 1996. The stabilisation of the paint layers was considered to be the primary aim of the

conservation work once they were uncovered. In conjunction with this, the areas of damage were repaired and losses were treated with a tinted limewash in order to reduce their visually disruptive appearance. At no point was retouching or reconstruction of the paintings undertaken.³

The Paintings

The wall paintings are described in a clockwise order, beginning with those over the north door. In order to allow easier identification of the different sections of painting, the walls of the church have been divided into twelve sequentially numbered areas (Figs 1 and 2).

North Wall (Areas 1 and 2)

Although the painting in the area around the north door is very badly damaged, a fragmentary 14th-century painting of St Christopher is clearly visible. The Christ Child sits on the shoulder of the saint, with an orb in his left hand and his right hand raised in a blessing. Interestingly, he appears to have a scalloped rather than a crossed halo (Plate 1). The figure of St Christopher is extremely fragmentary with only a section of the head and bearded face readily visible, though fragments of his dark drapery can be seen on the plaster below. Paint analysis demonstrated that the black pigment was a converted lead pigment. Above and to the right of the figures is a border of contemporary vine scroll, painted partly on a fine lime mortar repair with which it appears to be contemporary.

In the area above and to the right of the north door, a series of fragments of later wall paintings were uncovered, which appeared to date to at least three different periods. Although the earlier of the fragments might be figurative, it is possible that the later fragments are the remains of decorative frames for biblical texts.

To the east of the north door, in Area 2, the most important painting is the scene of the Three Living and the Three Dead, which has been dated to the early 14thcentury on stylistic grounds. The wall painting, which is very similar to that found at St Mary's, Belchamp Walter, also in Essex, shows distinct similarities to the example in the Psalter of Robert de Lisle (British Library, Arundel Ms 83 II) of $c.1310.^4$ The right hand side of the painting, which would have contained the figures of the Three Dead, has been lost due to the insertion of a window with simple Y tracery, characteristic of c.1320.

While much of the 13th-century render survived in this area, the only feature which is clearly visible is the fleur-de-lys border which runs above the window to the right. However, the most interesting area of 13th-century painting is on the lower part of the wall below the main painting. This shows the top of a second decorative border, similar in design to that seen in the upper area, and is the only surviving indication of how the lower edge of the painting would have been decorated.⁵







Fig. 1 Little Tey church. Internal elevations showing general areas of wall paintings, plus plan of church


Fig. 2 Little Tey church. Internal elevations indicating outline wall paintings



Plate 1. The Christ Child on the shoulder of St Christopher, on the north wall of the nave. (Photo copyright: Tobit Curteis Associates)

The Apse (Areas 3 to 6)

The walls of the apse are decorated with a cycle of 13thcentury paintings depicting the Passion of Christ. The first scene, shows the Last Supper, while to the right, is the Washing of the Feet. The paintings in this area are by far the most complete and retain the most interesting figurative details. Although the two scenes are clearly differentiated by the alternating background of red and light pink, figures in the Last Supper encroach on the Washing of the Feet, giving an impression of progression in the narrative cycle.

The iconography of both scenes is not unusual for the period. In the Last Supper, Christ sits at the centre of the table with St John asleep on his breast and the other disciples on either side (Plate 2). His left hand is held out to Judas who kneels on the other side of the table with his head bent back and his arms outstretched. In the Washing of the Feet, Christ is seen kneeling before St Peter, holding his foot above a raised water basin, and with his left hand raised to admonish Peter for his reticence. Peter has his left arm upraised in surprise, while the rest of the apostles look on. An almost identical representation occurs in a manuscript of c.1220-30, at Emmanuel College, Cambridge (MS25, folio II).6 Interestingly, in the manuscript, Christ has the towel over his shoulder in the more conventional manner, while in the wall painting, the towel is hung over a rail at the back of the scene.

The trefoil devices in the upper border (Plate 3), which is particularly clear in this area, is very similar to that found on the nativity cycle at St Clement's, Ashampstead, in Berkshire, which has been dated to the early to mid 13th-century.7 Such an early date for a Passion cycle, makes the scheme of paintings at Little Tey a particularly rare example.

While very little 14th-century painting is seen over the Last Supper, a particularly interesting area was discovered on the Washing of the Feet. On the right hand side of the scene, superimposed over the figures of the Disciples, is the outline of a single standing figure, in a long robe. Small fragments of a dark robe, similar to that of St Christopher in Area 1, were also found. When analysed these were found to contain converted lead pigments. Although these remains are only fragmentary, they are of particular importance in showing that 14thcentury figurative painting had definitely been carried out in the apse.

To the left of the Last Supper there were large losses in the original plaster, which had been repaired using various mud straw and other renders. It is noteworthy that to the east of the repairs, the trefoil border was painted significantly below the wall plate, while to the west, it is higher and far closer to the original wall plate. The only explanation for this appeared to be that when it was painted, there was a physical barrier between the nave and the apse, and therefore there would not have been the visual continuation which we have today. Whether such a barrier was structural or merely a wooden screen is not clear, but, there is a corresponding loss on the other side of the apse in area 6.

In area 4, to the right of the Washing of the Feet, the scenes of the Betraval and the Flagellation were among the most significant discoveries of the recent programme. Like the previous scene, the iconography is typical of the period, with the central figure of Christ being kissed by Judas. To the right is St Peter with the sword in his right hand, with which he cuts off the ear of the high priest's servant, Malchus, who crouches on the left hand side. Behind them are the figures of the soldiers, one of whom holds an axe, and the evil-looking profiles of the high priest's followers. The depiction of the scene on the verso of the folio of the Emmanuel College manuscript mentioned above, contains many of the same groupings, although in this case the layout is a little different. However, the similarly between many of the figures and objects is noteworthy.8

To the right, the scene of the Flagellation had suffered far worse loss and only the fragmentary halo of Christ could be seen on the left of the scene. The figure of his tormentor, who is wearing a knee length tunic above bare legs and has his left arm raised, stands to the right of Christ. To the right of the Flagellation is what may be a fragment of the Christ Carrying the Cross. Most of this scene has been lost as a result of the enlargement of the east window.

Most of the 14th-century painting in this area had been destroyed. However, one particularly interesting area was found over the lower half of the figure of Christ in the Flagellation. This fragment of painting appears to show two crossed legs, dressed in buskins, and may therefore be the fragment of a figure of Pilate in a 14thcentury depiction of Christ before Pilate. If this were the

MEDIEVAL WALL PAINTINGS AT ST JAMES THE LESS, LITTLE TEY



Plate 2. The central section of the Last Supper on the north wall of the apse. (Photo copyright: Tobit Curteis Associates)

case, it would be particularly important as, in conjunction with the scene of the three Marys at the Sepulchre described below, it would indicate that there was a 14th-century repainting of the Passion, rather than a series of individual subjects.

To the right of the east window, in area 5, are scenes of the Crucifixion, the Entombment and the Three Marys at the Sepulchre. Although it is badly damaged, the painting of Crucifixion is particularly striking. The iconography is more complex than usual, and includes the figures of Longinus (with the lance) and Stephaton (with the sponge of vinegar). This layout is more clearly seen in a contemporary manuscript at the Blackburn Museum and Art Gallery.9 At Little Tey, the figure of St John adopts an unusual stance with his right hand held up under his cloak, in the manner shown in a watercolour of the wall painting of the Crucifixion at Bapchild Church in Kent. Unfortunately, due to the enlargement of the east window, the figure of the Virgin as well as most of Longinus has been destroyed. Above the figurative scene is the fleur de lys band, which was also found to be in relatively good condition.

To the right, is a badly damaged 13th-century scene assumed to be the Entombment, due to the small shrouded or cowled head which appears at the base of the painting. Fragments of a second head looking down at the figure were also found. Further to the right, adjacent to the window is the scene of the Three Marys at the Sepulchre. The three obvious wimpled figures and the seated angel date to the 14th century. However, close examination shows a second set of figures, slightly above these, which are clearly part of the 13th-century scheme. This is particularly interesting as both the 13thand the 14th-century paintings appear to be depicting the same subject. In conjunction with the fragments on the previous scenes, this appears to indicate quite strongly that there was indeed a second, later Passion cycle painted over the 13th-century scheme.

In Area 6, adjacent to the window is the scene of the Harrowing of Hell. The haloed Christ is depicted standing in front of the large open mouth of Hell (whose eye can be seen above the open mouth). The souls of the Damned, which were presumably painted coming out of the mouth, have deteriorated so badly that they are no



Plate 3. Detail of the decorative border above the Last Supper. (Photo copyright: Tobit Curteis Associates)

longer visible. However, what can be seen is a small yellow demon which is jumping out of the mouth towards Christ.

To the right is the scene of Noli Me Tangere. The lower part of the kneeling Magdalene is clearly visible,



Plate 4. The Virgin and Child on the south wall of the nave. (Photo copyright: Tobit Curteis Associates)

as is the lower section of Christ's robe. However, most of the upper bodies are destroyed, and only Christ's head and the top of the pennant staff can be seen. Although the scene is difficult to read in its current condition, comparison with the very similar example in the rolls of the Velletri, Museo Capitolare,¹⁰ clearly demonstrate the layout of the scene. Further to the right is a single bare leg from an unidentified scene.



Plate 5. The Virgin and Child at Little Wenham. (For comparative purposes, this plate has been printed in reverse.) (Photo copyright: Tobit Curteis Associates)



Plate 6. The figure in the soffit of the window in the south wall. (Photo copyright: Tobit Curteis Associates)

Like its counterpart on the north wall, the western side of area 6 has been repaired with various mud straw renders. The level of the fleur de lys band also rises significantly in area 7, indicating the presence of a physical barrier at the time of painting.

South Wall (Areas 7 to 9)

Immediately to the right of the window is a very fine depiction of the Virgin and Child, with the Child, who is holding a orb, sitting on the hip of the crowned Virgin (Plate 4). The Virgin can be seen to be holding the stem of a lily in her very delicately painted left hand. A rather similar but more sophisticated depiction of *c*.1300 can be seen at Little Wenham Church, in Suffolk (Plate 5). As with the Three Living and the Three Dead, with which it is contemporary, the scene has been cut into by the insertion of a later window.

The 13th-century figure in the soffit of the window between areas 7 and 8 wears a white undershirt with a red cloak over its left shoulder (Plate 6). While most of the facial and other linear details, including the halo, have been lost, the figure retains most of its bright yellow hair. Due to the lack of detail, the identification of the figure is not clear. However, it is possible that it is one of a series of paintings of saints or martyrs which would originally have adorned all of the 12th-century windows.¹¹ On the eastern splay of the window is a second similarly dressed figure also with yellow hair. However this figure, who holds what appears to be a scroll in its left hand, is wearing a red robe over its right shoulder. The outside edge of the window is decorated with a chevron pattern painted in light pink, which has deteriorated significantly. Although the details of the figure differ, this same form of painted decoration on the soffit and splays of windows is seen at Easthorpe Church in Essex and at Barfreston Church in Kent.

Although the level of damage in area 8, to the east of the windows is relatively high, much of the 13th-century render was found to have survived and fragments of painting were uncovered. In the area adjacent to the window, the remains of the figures of Adam and Eve were discovered. Of the two, both of whom are naked, the figure of Eve is most visible. The structure of the breast and lower ribs are similar to that seen in the far earlier example at Hardham Church in Sussex. The ribs and upper chest of the bearded figure of Adam are also visible. Above the south door are fragments of at least two further figures. That on the left appears to be an angel, while the only other clearly visible figure is bearded. Given it's juxtaposition with the previous scene, it would appear likely that it is the Expulsion from the Garden of Eden. The broken fleur de lys border can be seen running above both scenes, indicating that they are part of the 13th-century scheme.

To the right of the door, much of the original render has been lost. The only surviving section of 14thcentury painting is a fragment of the figure of Mary Magdalene, which should be viewed in conjunction with the figures to the west of the structural wooden post in area 9. These two fragmentary figures are identified as St Margaret and St Catherine.12 The figure of St Margaret is in the west corner and can be identified by the small dragon at her feet and her long crossed staff. In style, she is similar to the figure of St Margaret at Little Wenham Church in Suffolk. To her right, adjacent to the wooden post, are the remains of the upper part of a figure of St Catherine holding a wheel, again similar to the figure of that saint at Little Wenham. On the basis of this grouping of figures, the small red circle in area 8 can be identified as the top of the pot of ointment held by the Magdalene.

Conclusions

The discovery of two such interesting schemes of wall paintings is certainly an uncommon event. What makes the paintings of particular interest, apart from their exceptional artistic quality, is the opportunity on stylistic and architectural grounds to date them relatively closely. The similarity between the ubiquitous fleur de lys border seen in the earlier of the two schemes and the same design at Ashampstead, suggests that they are very close in date. The latter paintings have been dated to the early to mid 13th century, which by implication makes the paintings of the Passion cycle at Little Tey almost unique in Essex. The similarities between the scene of the Three Living and the Three Dead on the north wall and the example in the de Lisle Psalter of c.1310 are also striking. Given that the wall painting must post-date the Psalter by some time and must predate the Y-tracery window, (the insertion of which destroyed the figures of the Three Dead), this leaves a very limited period, in the early 14th century, when they could have been executed. This would make the Three Living and by implication the other parts of this scheme extremely early examples of their type.

Acknowledgements

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Author; Tobit Curteis, 36 Abbey Road, Cambridge CB5 8HQ.

Notes

- Purcell, Miller, Tritton & Partners, Specification for St James Church, Little Tey, Essex. Conservation of the Wall Paintings, Job No.7763, February 1993/January 1994. P1, Para. 110.
- Tobit Curteis Associates, Condition Survey and Revised Proposals for the Conservation of the Wall Paintings, St James the Less, Little Tey, Essex, (unpublished) October 1995.
- A full account of the materials and techniques used for the conservation of the wall paintings is included in the conservation report. Tobit Curteis Associates, Uncovering and Conservation of the Wall paintings, St James the Less, Little Tey, Essex, (unpublished) August 1996.
- Sandler, L.F. *The Psalter of Robert de Lisle*, London & Oxford 1983, p.42, pl.5.
- 5. Area 2 was uncovered prior to the current programme.
- Morgan, N. J. Early Gothic Manuscripts (1) 1190-1250, Oxford 1982, pl.176.
- Tristram, E.W. English Medieval Wall Painting, The Thirteenth Century, Oxford 1950, pp.501 - 502.
- 8. The similarly between the lamps is striking.
- Morgan, N. J. Early Gothic Manuscripts (2) 1250-1285, Oxford 1988, Pl.303.
- 10. Op. cit. Morgan, 1988, Pl.127.
- None of the other 12th-century windows retained any traces of painting.
- 12. I am grateful to Sharon Cather of the Courtauld Institute of Art for identifying this sequence of figures.

The life and times of a rural schoolmaster: Richard Stokes of Ongar Academy

by I.L. Williams

Introduction

The town of Ongar lies in south-west Essex, on a spur between the River Roding and Cripsey Brook. Its High Street forms part of the road between Great Dunmow and Stratford which follows the Roding valley for much of its course. About 1.5km north of the town this road is crossed by the highway between Chelmsford and Epping, which had been turnpiked as far east as Writtle in 1787. The full name of the town, Chipping Ongar, indicates its early importance as the market centre for the area. The town never became a chartered borough, the market remaining in the hands of the Lord of the Manor until 1841 (VCH, 155). The population of the town increased steadily during the first half of the nineteenth century, from 595 in 1801 and 678 in 1811 to 867 in 1861, shortly after Richard Stokes's retirement (Porter 1877, 26). Ongar had no industry, and was largely dependent on trade. In 1798 the town was able to sustain 48 occupations, including those needed by a rural community (blacksmith, miller), dealers in local produce (maltster, corn factor), a full range of shops (grocer, tea dealer, tallow chandler), and professional services (surgeon, attorney, auctioneer, land surveyor). The needs of the ladies of the town were supplied by the woollen and linen drapers and the staymaker, while their husbands kept accounts with the brandy merchant and the watchmaker (UBD, 176). By 1823 the services had been augmented by a bank and a fire insurance office, the number of schools had doubled, and three milliners had set up business in the town (Pigot 1823-4, 286). Twenty-five years later Ongar was described as being 'partially paved, lighted with gas and amply supplied with water' (Lewis 1849, 478). The prosperity of the area, and so also of the town, lay in the supply of agricultural produce to London, particularly dairy produce and hay (Brown 1969, 30,39). Although the turnpike road did not pass through Ongar, by the end of the eighteenth century the town was already connected to London by two waggons and three coaches a week (UBD, 175/6). In addition to the London trade, farming in Essex benefited greatly from the rise in prices caused by the wars of 1793 to 1815. Writing in 1807, Arthur Young noted that 'Such has been the flourishing state of agriculture for twenty or thirty years past that scarcely an estate is sold, if divided into lots of forty or fifty to two or three hundred a year, but is purchased by farmers, who can certainly afford to give far more for

them than almost any other persons, as they can turn them to the highest advantage by their own cultivation'. Rents had risen on an estate in Roxwell from 7s 6d in 1764 to 16s (Young 1807, 40, 73). Even the farm labourers prospered. In 1794 it was reported that so many of them had enlisted in the army that there was a 'scarcity of hands', and in the Ongar area those remaining could demand a minimum wage of 14s per week (Brown 1969, 131).

Richard Stokes was born in the nearby village of High Ongar in 1788, the third child of Jonathan and Sarah Stokes (Essex Record Office (hereafter ERO) D/P 68/1/3). Jonathan farmed at Chivers Hall in the village, though he had been born on his father's farm at Shelley. The family had always been part of the farming community of west Essex, but Jonathan's children were able to take advantage of the increasing opportunities for trade and commerce which were available in England by the end of the eighteenth century. Apart from Richard with his school, Edward was apprenticed to a hatter, two spinster daughters became professional embroideresses with their own emporium in Brighton, and another two girls married John West, the Chipping Ongar coach proprietor, and his brother Thomas, a tallow-chandler of Stratford Broadway. Jonathan died early in 1810 at the age of 59, the Chelmsford Chronicle of 9th March reporting: 'On Saturday last died Mr. Stokes, a respectable farmer of High Ongar, leaving a numerous family to lament his loss.' (ERO T/B 171/14). The family was indeed numerous; all Jonathan and Sarah's ten children had survived infancy, only two had married before Jonathan's death, and five of the children were still under 18 in 1810. Jonathan had made his will a month before his death, carefully providing for Sarah, while dividing the bulk of his estate among their children. Richard received the only large cash bequest, the sum of $\pounds 200$, as well as a share of the residue of the estate after his mother's death. When Sarah eventually died in 1843 each of the surviving children received another $\pounds 150$ (Public Record Office (hereafter PRO)) IR26/160). It may have been the legacy from his father which finally decided Richard to set up his own educational establishment, since it was less than six months after probate of Jonathan's will was granted that he placed an advertisement in the Chelmsford Chronicle of 11th January 1811:

EDUCATION: CHIPPING ONGAR, ESSEX. R. STOKES Respectfully acquaints his Friends and the Public, that his Academy for the Board and Education of twenty young Gentlemen, will open on Monday, 21st instant.

Terms, Twenty Guineas per Annum (ERO T/B 171/15).

It was a good time to open a school. The prosperity of the area during the Napoleonic Wars, coupled with the increasing tendency of local farmers and tradesmen to send their sons to boarding school, rather than to local day schools, meant that there was a ready supply of prospective pupils for such an Academy. There was already a charity school in Ongar, whose master also took in fee-paying pupils, but Stokes does not seem to have foreseen any difficulty competing with him (Brown 1996, 133, 134). In a handbill which Stokes produced to advertise the opening of his school he stated that a 'separate Apartment' would be available for the 'Instruction of Young Ladies in Writing, Arithmetic and Dancing'. This evidently produced no response, for nothing more is heard of the girls, and Ongar Academy remained exclusively a school for boys (Karr and Humphrey 1976, 36).

The Academy

It is not known where Stokes himself attended school, but it is likely that, as was the case with J.E. Adams, the Sheffield schoolmaster, he stayed on as an assistant master at the school where he had been a pupil (Adams 1853, 8). In a handbill produced for the opening of the school, Stokes states that he has had 'several Years' Practice in the Art of Teaching', which implies that he started at a very young age by today's standards (Karr and Humphrey 1976, 36). This was not, however, unusual in the eighteenth and early nineteenth centuries. Joseph Lancaster, the pioneer of monitorial training, which later evolved into the pupil teacher system, started teaching at the age of fourteen, and had opened his own school in Southwark by the time he was twenty (Aldrich 1995, 5). Many schoolmasters started their training as monitors. In his evidence to the Select Committee on Education, J.T. Crossley of the British and Foreign Schools Society stated: 'We select the monitors from among the boys who have passed through the course of instruction in the school, and who, consequently, are well acquainted with the business. We give them other instruction for an hour a day, on those points which we wish to have their influence to be felt in the school' (Parliamentary Papers 1834, IX, 82). By the end of the eighteenth century the proprietorial school was a flourishing institution. It appealed particularly to the middle classes, offering a more practical education than the old endowed Grammar schools, which were in many cases in severe decline: Colchester Royal Grammar School has been referred to as 'nothing but an educational sham' by the 1830s, while at Pocklington in Yorkshire the school was totally moribund, with the schoolroom being rented out to a carpenter (Davidoff and Hall 1987, 236; Sands and Hamworth 1951, 71). When Nicholas Carlisle attempted to survey the Grammar Schools of England and Wales in 1818, he received no reply at all from three of the ten Essex schools (Carlisle 1818). Many of the early private schools were run by dissenters, who often had no access to education in endowed or charitable foundations.

During the early years of the nineteenth century the numbers of private schools continued to increase. The demand for secondary education was expanding, as the opportunities for clerical employment rose, and the private schools were better able to meet this demand than the endowed schools, since they were able to offer a more flexible curriculum (Roach 1986, 108). Many of the new clerical positions arose as a result of the increase in national and local government, particularly in the administration of the Poor Law. In rural areas such as west Essex, the supervision of this administration was in charge of just those farmers and small tradesmen who were beginning to appreciate the need for more sophisticated clerical and financial competence in their own business record keeping (Brown 1969, 30). That the majority of pupils at the Academy were drawn from such a background can be seen from the list of his patrons which Richard Stokes used on a handbill of circa 1853 (Karr and Humphrey 1976, 39). There are 65 names listed, and occupations or status have been determined for 56. Seventeen of these were farmers, and a further 21 were shopkeepers or small businessmen. Only seven were of private means, while twelve were professional men. These private schools were almost all proprietorial: conducted for profit by the owner who was also the head or only teacher. The youngest pupils were seven or eight years old, having been taught at home or in dame schools until that age. Boys usually left at the age of 14 to 16 to take up apprenticeships or enter business with their parents (Davidoff and Hall 1987, 235). In 1841 Ongar Academy had only six pupils under the age of ten, and no boys over 14, while in 1851 there were only three boys under 10, and seven boys aged 14 and over. Up to the 1840s the majority of Stokes's pupils were from Essex families. The 1841 census included the question 'whether born in the County', to which 32 out of 47 of the boys replied 'Yes'. The next census ten years later asked specifically for birthplace, and this shows that the boys were beginning to come from a wider area. While 13 of them had been born in Essex, an equal number were from London or Middlesex, and the other four had been born in Buckinghamshire, Worcestershire, Cornwall and Newfoundland. In the 1861 census, taken after Stokes had retired, but when most of the pupils would still have joined the school under his mastership, the majority of the boys, 23 out of 29, were from London or Middlesex (PRO HO 107/336/15, 3-5; HO 107/1771, 267-8; RG

6/1067, 34-6). Numbers at the school fluctuated over the years. Stokes expected to be able to teach 20 boys when he opened the Academy in 1811. By 1833 the Academy was reported to have had only 13 pupils (Parliamentary Papers 1835 (62) XLI). The school reached its largest extent under Stokes's ownership in 1841, when it had 47 pupils, after which the number dropped to 30 in 1851. In 1861, shortly after Stokes retired, the number of pupils was 29. John Shoveller of Portsmouth considered that the optimum number of boys in a school was between 20 and 40, though with the higher number two assistants would be needed (Shoveller 1824, 46). Among Stokes's pupils in 1851 were three of his nephews, Edward Stokes, son of his brother Edward, the London hatter, Richard Stokes, son of his brother Thomas, who had taken over Chivers Hall at High Ongar on his father's death, and Henry West, son of his sister Mary Ann. Parents preferred to send their children to schools run by relatives, hoping, often successfully, to receive a reduction in fees, as well as closer attention to the needs of their children (Davidoff and Hall 1987, 239).

One particular difficulty which presented itself to most schoolmasters, and which probably caused more financial disasters than any other, was that of obtaining the payments due to them (Aldrich 1995, 69). As Henry Hunt remembered, 'When I left this school, Mr. Cooper, the master, came round during the holidays, as was customary, to collect his bills' (Hunt 1820, 46). In July 1825 Rev. H.E. St. John wrote to the Rev. E.G. Meyrick, the proprietor of a school in Ramsbury, Wiltshire, admitting that he owed him $f_{.90.8s.5d.}$ for schooling for his three sons since Christmas 1821, 'besides £9 what I believe I owe you for till Xmas 1821'. He continues 'I will send you something as soon as I can, but I have so many things to buy at this time...' (Wiltshire and Swindon Record Office (hereafter WRO) 31/1). The Ramsbury school was superior to Ongar Academy both in its aspiration as a 'boarding school for the sons of the middle classes' and in its clientele, which in 1818 included the grandson of the Earl of Limerick. Nevertheless, Meyrick had no less difficulty than the proprietors of more modest establishments in collecting his debts. The actual amounts that parents were prepared to pay is a wellresearched subject, since so much evidence has survived in the form of school bills in family papers, as well as proprietors' advertisements in the press (Roach 1986, 117). Stokes stated in his opening advertisement that his fees would be 20 gn. per annum, though this is at variance with his handbill of the same date, which states the fees as twelve shillings per quarter for the basic curriculum, with Geography and Astromony at two gn. per annum, and other 'extra' subjects 'on the usual Terms' (ERO T/B 171/15; Karr and Humphrey 1976, 36). It may be that the lower fee was only for tuition, and did not include a charge for boarding, since it is more in line with the 13s. per quarter which W.J. Wright of Margaretting was charging for tuition only in

1867 (ERO D/DU 276/7). A later, undated, handbill for Ongar Academy states the fees as 24 gn. per annum, with one guinea entrance, and washing at 2 gn. per annum. This handbill also warns parents that 'A Quarter's Notice, or Payment of Terms for One Quarter, is expected previous to every young Gentleman's removal from the Academy'. By the early 1850s Stokes was charging $\pounds 30$ per annum for boys under 12 years old, $f_{...,35}$ for those over twelve, and $f_{...,50}$ per annum for 'parlour Boarders' (Karr and Humphrey 1976, 36). These fees appear to be about the average for a school of its type. In 1827, Willliam Barnes was charging 22gn. at Mere in Wiltshire. When he moved to the larger town of Dorchester in 1835 his fees had risen to 22gn. for those under 12 and 24 gn. for those over, and by 1844 he was charging $f_{.30}$ (Hearl, 1966, 22,115,176). Two of the sons of Charles Sperling of Great Maplestead were attending Ashford Grammar School in the 1840s. The fees at that time were 30 gn. per annum for the older boy and 25gn. for the younger. The bill which Sperling received at Christmas 1843 also contained items for books and stationary (including 5s. for a volume of Ovid, and 1s. for 'Ince's History'), washing and shoemending, hair-cutting and medicine, and weekly allowances of pocket-money for the boys, amounting to 4s.6d. each for the half year (ERO D/DSe 33).

Many schoolmasters conducted their business in rented property, as the capital cost of buying a large enough building was beyond their means (Aldrich 1995, 42). Here Richard Stokes was fortunate. His elder brother Jonathan was already a substantial farmer in Stapleford Abbotts, and was able to buy suitable premises in the High Street in Chipping Ongar, which Richard rented at the outset (ERO Q/RPI 716). He was later able to acquire a portion of the freehold, but it was not until Jonathan died in 1853 that Richard became the sole owner of the building (PRO PROB 11/2181). The other major cost of setting up a boarding school was that of equipping it. In 1827 William Barnes was charged $\pounds 2$ 8s. 0d. for '4 Bedsteads for the Scholars', as well as $\pounds 2$ 2s. 0d. for a desk 13ft. 4in. long. Each bed was equipped with a mattress, a bolster, sheets and a 'mingled Counterpane' costing in all £1 6s. 5((Hearl 1966, 43). Stokes paid Richard Noble £,1 3s. 4d in 1831 for bookshelves for the dining room (ERO D/DU 413/1). By 1830 Stokes was the owner of enough freehold property in Ongar to be able to vote in that year's Parliamentary election, when he voted for the successful candidates Charles Callis Western and Sir John Tyssen Tyrell (Poll Book 1830). When the county constituency was divided by the Reform Act, Chipping Ongar became part of South Essex. In the subsequent election of 1832 Stokes again voted for the successful candidate, Robert Westley Hall Dare, by virtue of owning 'freehold houses at the north end of Chipping Ongar' (Poll Book 1832). Both Tyrell and Dare were Tories, while Western has been described as 'a Whig, but not an extreme reformer' (Stenton 1976, 101, 387;

Thorne 1986, 516). Jonathan bequeathed not only his share of the school building to Richard, but also a cottage which he owned in Chipping Ongar. From these legacies Richard had to pay various sums to his brothers and sisters, totalling \pounds 700 (PRO PROB 11/2181).

Housekeeping at the school was the province of Stokes's wife, Elizabeth, daughter of Thomas Shadrack, who he had married in 1823 when he was 35 years old; she was only 18 (ERO D/P 124/1/7). Elizabeth received a dowry of $f_{.800}$ on her marriage, and further considerable property on the death of her father in 1828. In his will Thomas Shadrack also forgave Richard Stokes 'all the debt or debts now owing by him to me' (ERO D/DU 276/1). The female 'assistants' who are to be found on the census entries for the school in 1841 and 1851 may have been employed in helping Elizabeth run the house rather than assisting in the teaching. In each case the young lady in question was a niece of Richard's, in 1841 Emma Young, daughter of his sister Jane, who had died at an early age, and in 1851 Jane West, daughter of his sister Sarah and John West, the Ongar coach proprietor. Stokes and his wife had no children, so needed only modest accommodation for themselves, the assistants and domestic staff. The boys would have required a schoolroom, a dining room, and bedrooms or a dormitory. The present top floor of the school building, which was used as the boys' dormitory in the early years of this century, was not added until much later in the nineteenth century, so it is not possible to say where the boys slept. It is likely that few of them had a bed to themselves. The prospectus of Standard Hill Academy in Nottingham stated that no more than two beds were placed in a room, and generally two boys slept in each bed (Wadsworth 1942, 72). A school at Mere Vicarage in Wiltshire was able to advertise in 1832 that "each pupil will have a separate bed", but at Ongar Academy, even in the 1850s the younger boys were still having to share beds. Stokes's handbill of the period includes among the 'Extras' a charge of One Guinea per annum for a separate bed for Junior pupils (Hearl 1966, 43; Karr and Humphrey 1976, 39).

The schoolroom was often in need of attention from Richard Noble, a builder and neighbour of the Academy who carried out much repair and building work for Stokes, and who seems to have been engaged in running repairs on the premises on almost a weekly basis. In December 1828 he was repairing the schoolroom floor and making a new platform for the desks; in September 1829, putting new hinges on the schoolroom door; in October 1830, easing the schoolroom windows; in April 1832, fixing the pot on the schoolroom chimney (ERO D/DU 413/1). Noble and his men could turn their hands to almost any task: repairing Venetian blinds, putting a new seat in the privy, stopping up rat-holes in the cellar, putting up and taking down bedsteads, making a new towel roller, and the ubiquitous 'sundry jobs'. Richard Noble performed similar maintenance tasks for James

Lane at Fyfield Academy (ERO D/DU 413/2). The school was able to supply some of its own food, Noble's building accounts mentioning a cattle crib and dairy house (and making guards for the trees in the field, presumably to stop the cows harming them), a cucumber frame, chicken coops and a malt mill. Boys may well have been better looked after in the dining room than legend would believe. Henry Hunt remembered that at his old school 'The scholars were better fed than taught ... ', while at Ackworth in Yorkshire the boys were given a pot of beer each lunchtime, the size of the pot depending on the age of the pupil (Hunt 1820, 41; Hunt 1942, 91). In the summer of 1830 Stokes required Noble's services for a more substantial piece of work. A separate set of accounts in the ledger book is headed 'To the alteration of Building to Connect the House and Schoolroom'. Other items are intersperced with the building accounts, but the job seems to have taken about 21/2 months and cost in the region of $\pounds 90$.

One big advantage which parents saw in the proprietorial schools was their small numbers and their attention to the individual needs of the pupils. The grammar schools tended to be larger, to give little direct supervision to the boys, and to 'encourage' learning only through the liberal use of the rod, whereas in the best private schools, the aim was to 'stimulate by the hope of praise and the fear of censure' (Shoveller 1824, 51). Moreover, parents feared that their sons could come under malign influences in such an unsupervised atmosphere. As Joseph Priestley wrote, '...it is well known that most of our public schools in England are in such a situation, that a young person runs the greatest risque of having his morals corrupted in them' (Priestley 1778, 50). It was, however, in their curriculum more than in any other respect that the proprietorial schools differed from the endowed schools. They were able to offer subjects such as science, modern languages and land surveying. John Shoveller described his establishment in Portsmouth as a 'classical' school, but he included mathematics and science in his curriculum (Roach 1986, 126). At the school run by Jeffery Whitaker at Bratton in Wiltshire from 1725, which had many local tradesmens' sons among its pupils, Latin, English, Penmanship, Arithmetic, Merchants' Accounts, Geometry, Use of the Globes [Geography], Drawing and Surveying formed the curriculum (Haycock 1991, 83). In 1807, the Salisbury and Winchester Journal advertised a school at Mere in Wiltshire where young Gentlemen 'will be boarded and instructed in the Latin and English Languages, Writing in the different hands, Arithmetic through all its branches with the Mathematics and Bookkeeping' (Hearl 1966, 22). Although Stokes could only offer a basic education in 1811 (even Geography was 'extra'), by the 1850s his handbill reads: The Course of Instruction embraces the Greek, Latin, French and German Languages, Penmanship, Arithmetic in all its branches,

with Merchants' Accounts, Land-Surveying, and Algebra, the Mathematics, Geography, Astronomy, and History; thus including every subject that may be considered necessary for a sound Classical, Mathematical, or Commercial Education (Karr and Humphrey 1976, 35).

Only the Sciences seem not to have been in demand in rural Essex, in contrast to Nottingham, where in 1808 the Standard Hill Academy possessed a microscope, electrical machine, air pump, a prism, barometer, thermometer, quadrant, and an orrery (Wadsworth 1941, 66). Even in this field, however, the pupils of Ongar Academy received some instruction. In a letter home to his brother in 1847, Walter Barlow wrote 'Tomorrow and the following day we are going to have two lectures on Electricity and Galvanism by Mr. Thornthwaite, a lecturer from London' (Barlow n.d., 50). The field which Stokes rented from his mother-inlaw could have been used for practical exercises in surveying. A pupil at Ackworth School recalled that:

I made one of several boys who would be taken out by the Master on to some of the Farm Lands occasionally, to have practical lessons in the latter science [Land surveying], carrying with us the 'Rod' or 'Pole' staff and 'Gunter's Chain' of 100 links, with other paraphernalia for accomplishing our work which we made notes of and then had to enter in our Ciphering Books, - on our return to the school room... these Ciphering Books commencing with 'Notation' and 'Numeration' were all preserved and sent home with each boy on his leaving school, carrying through all his acquirements in the Mathematics as far as he had gone (Hunt 1942, 183-4).

A similar arithmetical exercise book has survived among the papers of Stokes's father-in-law, Thomas Shadrack. It belonged to one R. McNarry, a pupil of W.J. Wright of Margaretting (ERO D/DU 276/7). The school field may also have been used for sporting activities. Stokes realised the value of open-air exercise for his pupils, his handbill of 1811 assuring parents that as well as a 'spacious and convenient Schoolroom' he also provided an 'appropriate Play-ground'. Although Stokes does not mention playground equipment, illustrations of similar schools show climbing frames, parallel bars, rope swings and various other apparatus (ERO D/DSe 29). John Shoveller considered that boys should devote 5 hours a day to such exercise and to meals, with 9 hours for study and 10 for sleep (Shoveller 1824, 130). At Milk Street Academy in Sheffield, twelve hours a week were devoted to mathematics and accounts, and six to English grammar. Penmanship was taught for one or two hours every morning, as well as for three hours in the afternoon on four days a week. It was interspersed with reading, with 11/2 hours every Saturday morning devoted to recitation from memory. Geography,

drawing and French were each allowed three hours a week (Abraham 1805, 56).

Good, clear handwriting was essential in the era before the invention of the typewriter, and Henry Hunt recalled that one of his schoolmasters, Mr. Alner, 'was a remarkably good penman and accountant' (Hunt 1820, 49). Stokes paid particular attention to penmanship. The surviving copybook of one of his pupils, John Shipman, is a fine example of the kind of writing which was expected of an educated man, and the way in which it was taught. It may have been Shipman's holiday task, since the first page reads "Specimens of penmanship written by John Shipman at Ongar Academy Christmas 1818", while the last tells us that "The Vacation will terminate on Monday the 18th of January 1819". The other three large pages consist of copies of aphorisms (ERO D/DU 276/8). Although Religious Instruction does not appear on the curricula of any of the schools, boys were expected to attend church (or chapel) each Sunday, and in the handbill which Stokes produced in the 1850s he stated that his 'course of instruction [was] based upon Christian principles' (Hearl 1966, 74; Karr and Humphrey 1976, 37). In March 1831, Richard Noble sent in a bill for 'putting fences round pew in church to prevent books getting down'. One can imagine the boys, during a long sermon, relieving their boredom by seeing just how far a book could be eased over the back of a pew before it clattered over onto the floor in front. The previous year Noble had put 'Boards for Children's Hats under Seats at Church' and charged Stokes 7s. for the carpenter, planks of deal and nails (ERO D/DU 413/1).

The College of Preceptors

Most school proprietors needed some assistance in their teaching. In 1851, the assistant master at the Academy was Augustus Noble, son of the Richard Noble the builder, who had earlier been a pupil of Richard Stokes. The 1851 Census listed him as a 'teacher of languages'. Ten years previously the assistant had been William Casford (PRO HO 107/1771, 276; HO 107/36/15, 3). For a few years in the 1830s Stokes's assistant had been John Parker, who moved from Ongar to found his own school, Trafalgar House, in Brighton (Chapman 1985, 10). It was through Parker that Richard Stokes was introduced to the group of young, enthusiastic schoolmasters and proprietors who were determined to raise the standard of private education in England, particularly by the introduction of proper training for teachers, with examinations to test their competence. The group met in Brighton to discuss various aspects of teaching practice, and after several such informal meetings a provisional committee was formed, with Henry Stein Turrell of Montpelier House School, Brighton as its chairman and John Parker as secretary (Gosden 1972, 218; Aldrich, 1995, 96). Stokes was a member of this committee, and as such attended the inaugural meeting of the College of Preceptors, held at the Freemasons'Tavern in Great Queen Street, London. This was just south of Bloomsbury, where the College was to have its premises from its foundation until the 1970s. The meeting, which was held on 20 June 1846, was attended by 300 men, 60 of whom were immediately enrolled as members of the College. The provisional committee was elevated to the status of Council, with H.S. Turrell as its President (Chapman 1985, 21; Aldrich 1995, 97). The Calendar of the College of Preceptors for 1846 fully reported the meeting. The principal motion was moved by Mr. Gunton of Soham and seconded by Richard Stokes:

That, in the opinion of this meeting, it is desirable for the protection of the interests both of the Scholastic profession and the public, that some proof of qualification both as to the amount of knowledge, and the art of conveying it to others, should be required,...of all persons who may be desirous of entering the profession;...

The Calendar also shows that Richard Stokes had also become the honorary secretary of the Local Board for Ongar (British Library (hereafter BL), 732.d.45). In 1849 the College obtained its Royal Charter, which defined its object as

...promoting sound learning and of advancing the interests of Education, more especially among the middle classes, by affording facilities to the teacher for the acquiring of a sound knowledge of his profession and by providing for the periodical session of a competent Board of Examiners to ascertain and give certificates of the acquirements and fitness for their office of persons engaged or desiring to be engaged in the Education of Youth, particularly in the Private Schools of England and Wales...

Although the College of Preceptors never achieved its first aim, that of becoming the sole professional body for teachers in private schools, its examinations for teachers, and later for scholars, have always been well subscribed to and respected. Its failure to become the sole regulatory body for teachers, such as the British Medical Association became for doctors, was due in part to internal wrangling within the organisation itself, but above all to the fact that teaching quite quickly became a salaried occupation rather than a profession of independent practitioners (Gosden 1972, 18). There was also, at first, a certain amount of mistrust on the part of parents towards examinations in which the performance of teachers was to be assessed by the fellow members of their own organisation (Montgomery 1965, 64). Despite this, the College held its first examinations for teachers in January 1847. The only two compulsory subjects were Bible History, and the Theory and Practice of Education. Other subjects offered by the

candidates (24 of whom passed out of an unknown number of entrants) included Classics, Mathematics and Commerce (Aldrich 1995, 106). The 'Theory and Practice' paper was set by H.S. Turrell. As a founder member, Richard Stokes was not required to pass an examination. The by-laws of the College allowed that all school proprietors who had joined before January 1847 were automatically awarded the rank of Member of the College of Preceptors, and could use the initials M.C.P. Assistant masters became Associates (A.C.P.). The term 'Member' was later replaced by 'Licenciate'. Fellowship of the College was at first granted on the grounds of 'a very lengthened period of probation in connection with the highest attainments', but was later to be gained only by examination (Educational Times 17, 103; Aldrich 1995, 98). Stokes was elected a Fellow of the College in June 1852 (ACP, Council Minutes, 19 June 1852). Examinations for pupils were first held by the College in December 1850, and thereafter twice yearly. They quickly became recognised as the equivalent of the Local Examinations of Oxford and Cambridge Universities, but there is no evidence that pupils of Ongar Academy were entered for them during the mastership of Richard Stokes. The Minute Book of the Council from 1848 to 1854 has survived, and shows that Stokes was not very regular in his attendance, although he did chair Council meetings on several occasions (e.g. ACP Council Minutes, 4 January 1851). At the meeting of 10 April 1852 he was, with others, removed from the Council for having not attended meetings for more than six months, but he was immediately nominated for one of the resulting vacancies. He was re-elected to the Council at its following meeting in May. The Council met monthly to discharge the general business of the College, such matters as the payment of bills, the relationship between the College and its landlord, and the conduct of its examinations. For many of its concerns, the Council appointed special sub-committees, examinations, finance, and the efficacy of Local Boards being typical subjects for separate discussion. Stokes seems to have avoided becoming a member of any of these committees, except that formed in 1852 'to reconsider the place of examinations for Assistant Masters in Commercial Schools' (ACP Council Minutes, 10 January 1852).

In October 1847 the first issue of the *Educational Times* appeared, a 'Monthly Stamped Journal of Education, Science and Literature'. Although it had no formal connection with the College of Preceptors until 1861, it fully reported meeting of the College Council and its General Meetings, as well as giving selections from its examination papers and lists of successful candidates. It gave reports of the meetings of other bodies of teachers, such as the Educational Institute for Scotland and the Assistant Masters' Association. Its views were closely allied to those of the College in such matters as the education of women (in favour) and corporal punishment (against). It also published letters from 'those who would reform the educational establishment, and from those who had suffered at its hands' (Aldrich, 1995, 102). The reports by the *Educational Times* of the General Meetings of the College seem to be their only surviving record, since they are alluded to in the Council Minute Book only in the most general terms. It is thus in that journal, that there are to be found the only verbatim reports of the views of Richard Stokes on educational matters. During the discussion on the report of the Council to the Half-yearly Meeting of 27 June 1850,

Mr Stokes expressed his opinion, that the College should impress upon Parents the necessity of interesting themselves more particularly in the Education of their children; to enquire diligently and minutely into the fitness of the Educators to whom they committed so important a trust; and to assist by their authority, influence, and active cooperation, in the moral, religious, and literary training of their offspring. A deep thinker, a keen observer, one of the greatest poets and finest authors of antiquity, speaking of his own education, alludes to his father in these terms;-

"Ipse mihi custos incorruptissimus omnis Circum doctores aderat." (*Educational Times*, 3, 35)

Here Horace (Satires I, iv) praises his father for himself accompanying his son to school, rather than leaving the task to a slave, as was the usual practice. It is not only the aptness of the quotation which is significant. Stokes obviously assumed that his audience, although composed largely of those who regarded their schools as having a practical and commercial bias, were still well versed in the Classical authors. When, three years later, the Half-yearly meeting was discussing the examination of teachers, Stokes pointed out

the disadvantages, pecuniary and moral, which resulted to the properly qualified teacher, from the existence of pretenders to the art of teaching – men who made it their boast that the less they knew of any subject, the better they taught it, – and hoped to see examinations made compulsory. (*Educational Times*, 4, 70)

Present-day teachers would agree with Stokes on this issue.

The Chipping Ongar Vestry

In addition to his involvement with the College of Preceptors, Richard Stokes was active in the public life of Ongar, particularly in the field of local and church government. Throughout the time that Stokes was living in the town, Ongar was administered by a Public Vestry, except for about three years in the 1820s when a Select Vestry was set up. Minute books survive for the period 1780-1863 (VCH, 168). Stokes attended a Vestry meeting for the first time less than a month after the opening of Ongar Academy, on 5 February 1811. Meetings were held monthly at that time, mainly to approve the accounts of the Overseer of the Poor (ERO D/P 124/8/2). In the early years of the century one of the Overseers was Thomas Shadrack, Stokes's future father-in-law, but in 1819 a permanent Overseer was appointed, at a salary of f_{15} per annum. The office of Overseer of the Poor had always been one which parish ratepayers disliked, and avoided filling if they could. Since the sixteenth century every parish had been responsible for maintaining its own poor citizens, and the cost of this became an increasing burden upon the ratepayers (Reeve and Morrison 1989, lvii). By the end of 1821 the Chipping Ongar Vestry was seriously alarmed at the financial state of the parish. The Overseer's accounts had not been properly kept for a number of years, rates were higher than they should be because so many people did not pay their demands, and the parish was constantly in debt. The Vestry resolved to appoint a permanent committee to audit the accounts, and directed the Overseer to use a properly printed ledger, cash book, rate collectors book etc. Stokes was appointed a member of this committee. Three months later on 6 March 1822 the committee reported that the parish was in debt to the extent of about £200. It proposed that an extra rate of 2s. in the f_{i} per month should be levied, and that creditors should receive 5s. in the f_{i} per month until the debt was cleared. The Vestry meeting of 17 April 1823, with Richard Stokes in the chair, appointed a new Assistant Overseer, who was to continue with the new way of composing the accounts, which was deemed a 'good and intelligent' method. The meeting also resolved unanimously that 'the thanks of this Meeting be given to Mr. Stokes for his able and impartial Conduct in the Chair and for the Business of the Day as on all former Occasions in the affairs of the Parish'. The Vestry was also much concerned with the administration of the parish Poorhouse. In February 1828 it was proposed that a 'fit and competent person' should be appointed as Governor or Master. Stokes also proposed a motion that the Poorhouse should be enlarged, but this was not carried. At the next meeting various proposals were put forward for its 'better management', including a book to be kept listing all the inmates, with their ages and dates of admission and discharge. Stokes proposed that the Master was to promote 'Cleanliness, Industry, Frugality, Sobriety, Peace and Piety' among the inmates, and to prevent the contrary vices of 'Sloth, Idleness, Wastefulness, Intemperance, Discord and Immoral language'. On no account were cards, dice or gambling to be allowed. The Master was to read prayers to the inmates twice a day, all able-bodied inmates being required to attend, and all were to attend the Parish Church or another place of worship every Sunday (ERO D/P 124/8/3).

In March 1828 Richard Stokes was elected churchwarden for the first time; he continued in this office until March 1836, when he proposed William Boyer to replace him. The duties of churchwardens were rather more onerous in the early nineteenth century than they later became. As far as the church was concerned, they had to fulfil all the duties which are now shared among the members of the parochial church council. They were ex-officio members of the Vestry, and their duties included ensuring that the Lord's Day was properly observed in their parish, particularly in respect of manual labour and the visiting of ale-houses during Divine Service (Nutt and Gosling 1734, 43 passim). Under the provisions of the Act of 1782 "for the better relief and employment of the poor", which allowed several parishes to unite in building a common workhouse, Richard Stokes proposed a motion to the Vestry:

that this parish do henceforth in conjunction with any Parish or Parishes within 10 miles of the Workhouse to be erected in virtue of an Act of Parliament made and passed in 22 Geo3 Chap 83:- adopt in all respects the Provisions, Rules, Orders and Regulations prescribed by the said Act for parishes uniting for these Purposes; and that a convenient Workhouse and other Buildings and necessary conveniences shall be immediately provided at or near the Town of Chipping Ongar and accommodated for the purpose mentioned in the said Act.

An amendment was then moved, and carried, that consideration of the proposal should be postponed for three months. It was in fact several years before the Vestry again deliberated on the possibility of a united Workhouse (ERO D/P 124/8/3). There were various occasions on which the Vestry passed an amendment to a motion, that discussion of a subject should be postponed until a later date. It seems to have been a way of avoiding acrimonious discussion of a possibly contentious issue, without a visible rebuff to the proposer of the original motion. For most of the time that Richard Stokes was a churchwarden the parish rate remained at 6d. in the pound, but in September 1831 it rose to 9d. in the pound. Perhaps as a result of this, the Vestry of 18 April 1832 unanimously declared that the parish rate assessment was unfair, and a committee was appointed to assist the churchwardens and Overseer in reassessing the parish. As a result of this, Stokes was newly assessed for a total of £38, of which £20 was for the school house, $f_{,8}$ for the cottages which he owned, and f_{10} for the rented fields. This assessment lasted for only five years, until September 1837, when a new assessment increased the rateable value of the premises owned or occupied by Stokes to £71. However, the poundage was decreased to 3d. By this time Stokes was present at few Vestry meetings. He took the chair for the last time on 13 June 1854, and did not attend at all from June 1856 until he retired.

Retirement

It was not only the Chipping Ongar Vestry which saw less of Richard Stokes as the years passed; he attended very few meetings of the College of Preceptors after 1854. His old friend John Parker had given up teaching on becoming Secretary of the College, and moved to London, where he and his family occupied part of the building which the college rented as its headquarters (Aldrich, 1995, 100). Parker had always been one of the strongest supporters of the idea of teaching becoming a self-governing profession, and was one of those who travelled to Manchester in October 1848 to address a meeting on the objects of the College of Preceptors, with particular reference to its application for a Royal Charter (Educational Times 14, 31-35). He was later one of those who was responsible for the booklet published by the College, 'A suggestive manual on the theory and practice of Education' (ACP, Council Minutes, 24 August 1850). Unfortunately, he seems to have been less able as an administrator, and by the end of 1856 was intent on resigning. Stokes formed a committee to collect subscriptions for a testimonial for him, but seems not to have been particularly successful (Chapman 1985, 47). He hung on for another two years, during which time the Council seems to have become increasingly displeased with his performance, but they finally reported his departure to the General Meeting of the College in January 1859: 'Into the details of the causes and consequences of this official change the Council do not now enter, farther than to state that, on the 27th November last, Mr. Parker, having received his salary up to Christmas, discontinued his attendance as Secretary' (Educational Times 137, 37).

Stokes may have felt that he too had had his day, and at some time in 1859 he sold the Academy and moved to Brighton, where several members of the family were living. His staff and pupils presented him with a handmade chess set on the occasion of his retirement (Karr and Humphrey 1976, 39). Despite the considerable sums which Stokes's wife brought to their marriage, he appears to have been in some financial difficulty by the time he retired. His brother James wrote to him on 12 April 1860 '...when you were at Ongar you said you would pay my Money in February and would meet me at Stratford [home of their sister Mary Ann] but I have heard no more from you, I trust you will pay me my just Rights and I ask for no more,...'. Writing to his brother Edward a few days later, James says, '.... I had a letter from Brother Richard of the same import as yours Stating he would sell his Freeholds at Ongar and relieve Himself from all debts...If his Estate is all Morgaged as I fear it is, when all Expences and all debts are paid he wont have much left'. Part of the difficulty seems to have involved the will of John Stokes, Richard's uncle. Richard, together with his brothers and sisters, was a residuary legatee, but although John had died in 1818 and his wife Isabella in 1831, his estate and the trust which he had created could not be wound up until the death of Richard's cousin Elizabeth in 1857 (Karr and Humphrey, 1976, 41; PRO, PROB 11/1605). Richard remained at Brighton for the rest of his life, though family letters record his visits both to Essex and to his brother Edward, who had retired to Baldock. After his wife Elizabeth died, he wrote to one of Edward's daughters that they had 'lived for upwards of 43 years together in unbroken harmony and affection' (Karr and Humphrey 1976, 41). Richard outlived Elizabeth by seven years. He died at Brighton on 10 July 1875, and was buried in her grave in Brighton Cemetery.

Conclusions

When asking whether Richard Stokes was a good schoolmaster, it must be remembered that Ongar Academy had a remarkably long life for a proprietorial school. As J.C.Bruce remarked, at the Jubilee Dinner of the school in Newcastle founded by his father, 'It is not a usual thing, Mr. Mayor, for a school unsupported by public funds to subsist for more than half-a-century, especially in the same spot.' (Williamson 1903, 296). Not only did Richard Stokes remain proprietor and head teacher of Ongar Academy for 48 years, but the school, although later changing its name to Ongar Grammar School, continued on the same site until the beginning of the last war (VCH, 171). His few known pronouncments on his profession show a progressive outlook, which is confirmed by his long association with the College of Preceptors. The letters sent home by Nathaniel and Walter Barlow appear to have been written by boys who were happy in their situation. Nathaniel described incidents in school life to his brother: 'We have two or three of your old schoolfellows here, Master Williams who continues as clownish as ever and frequently gets several severe raps and knocks by the younger gentlemen for treading on their toes...' The boys were also allowed to join in the occasional excitements which life in the small town allowed: Nathaniel's letter continues: 'There was a few days back a wild beast show which was exhibited for a few days. Inside of which was an enormous large whale measuring upward of an hundred feet and about 20 feet wide. There was also a skeleton of a Peruvian chief and his wife.' (Barlow n.d., 50). Although none of Stokes's pupils are known to have achieved fame after their time at Ongar Academy, at least a good number of them or their parents were satisfied enough with the education he provided to allow him to use their names on his brochure. Perhaps the last word should be left to his pupils. Boys do not normally indulge in banter about those who they despise or dislike. The school end-of-term ditty, which has survived through four generations of a family now living in central Canada, seems at the very least to display a certain affection for their headmaster:

> This time tomorrow where shall I be Not in this Academy And if I am I'll play my pranks And kick old Stokes's bandied shanks.

Acknowledgements

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Author; Mrs I.L.Williams, 7 Chandler Close, Devizes, Wilts SN10 3DS

Abbreviations used in the text

- ACP Archive of the College of Preceptors, deposited at the library of the Institute of Education, University of London
- UBD Universal British Directory, Vol. 4 (1798)
- VCH Victoria County History of Essex, Vol. 4

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	Chipping Ongar (Chipping Ongar, 1877)	Thorne, R.G.	The House of Commons 1790-1820, V
Priestley, J.	Miscellaneous Observations relating to		(London, 1986)
	Education (Bath, 1778)	Wadsworth, F.A.	'Two Nottingham schools', Trans.
Reeve, M., and	The Diaries of Jeffrey Whittaker,		Thoroton Soc. of Nottinghamshire XLV,
Morrison, J.	Schoolmaster of Bratton, 1739-41		(1942)
	(Trowbridge, Wilts, 1989)	Williamson, J.B.	Memorials of John Bruce Schoolmaster in
Roach, J.	A History of Secondary Education in		Newcastle-upon-Tyne and of Mary Bruce
	England 1800-1870 (London 1986)		his Wife (Newcastle-upon-Tyne, 1903)
Sands, P.C., and	A History of Pocklington School	Young, A.	A General View of the Agriculture of the
Hamworth, C.M.	(London, 1951)		County of Essex (1807)

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A Revised Bibliography of the Publications of John Horace Round

by W.R. Powell

INTRODUCTION

John Horace Round (1854-1928) ranks high among the English historians of the past century. He produced no great work of synthesis like Stubbs's Constitutional History or Maitland's History of English Law, nor was he an elegant stylist. But he brought new insights to Anglo-Norman studies, including Domesday Book, the introduction of knight service into England, military architecture, and place-names. He also made important contributions to the history of later periods: on the origin of Parliament, the Elizabethan navy, and the 17thcentury Civil Wars. He set new standards for genealogists and local historians, particularly in Essex, London and Sussex. He was prominent in many collaborative enterprises, notably the Pipe Roll Society, the Dictionary of National Biography, the Complete Peerage, and above all, the Victoria County Histories. As Honorary Historical Adviser to the Crown in Peerage Cases he used his influence to keep abeyance claims under control, and thus to defend the reputation of the House of Lords. His researches for that purpose produced several brilliant papers on peerage law and history.

Tirelessly quarrying and shaping material from original sources, and challenging accepted theories, Horace Round laid firm foundations for later scholars, as can be seen in the footnotes to any learned work on the Domesday Survey, Anglo-Norman feudalism, manorial history, or the peerage. The full extent of his influence may not even now be fully appreciated. For example, he inspired Josiah Wedgwood to write *Staffordshire Parliamentary History;*¹ and Wedgwood went on to launch the *History of Parliament*, which is today providing biographies of all our M.P.s since the 13th century.

Most of Round's work appeared in journals, some of them long extinct and difficult to locate except in great libraries. Densely packed with detail, it does little to help the reader by rehearsing facts already established. For all these reasons it is easily overlooked – as happened some years ago in the case of a learned article submitted to *Essex Archaeology and History*. But Round blazed so many trails and planted so many signposts on the way that he is a wonderful guide to those following in his footsteps.

The great number and the diversity of Round's

writings was first revealed in the Bibliography compiled in 1930 by William Page.² That contains about 670 publications.³ It also lists some unpublished material: in typescript, four volumes of official reports on peerages and baronetcies, and in manuscript about 50 papers written for the *Essex Archaeological Transactions* and two for the *Sussex Archaeological Collections*.⁴ Sixteen of the items listed by Page are classified as 'Separate Publications'. The other items are drawn from 38 different journals or works of reference.

The present Bibliography contains about 960 items, of which 940 come from 45 different periodicals or serial works.5 Some 290 of the new items were not listed by William Page. Many of them appeared anonymously but can be identified from Round's records.6 Over half of them come from three periodicals which were not searched by William Page: The Athenaeum, St. James's Gazette, and the Essex Review. Horace Round may have obtained his entrée to the first two journals through his aunt Eliza Smith, who had many friends among writers and journalists.7 The Athenaeum, a weekly, was the leading literary journal.8 It published at least 126 items by Round between 1883 and 1913.9 St James's Gazette was a London evening daily with strongly Conservative sympathies and literary interests.¹⁰ Round contributed to it frequently from 1885 to 1888, and then occasionally until 1898 or a little later.¹¹ He wrote mainly on current affairs, but nine reviews and eight other items were sufficiently academic to be included in the present Bibliography.12 The Essex Review, founded in 1892, was 'an illustrated quarterly record of everything of permanent interest in the county.' Between 1895 and 1924 Round wrote for it seven notes and three short articles, all on local history.

Of the other new items the most notable relate to Round's work for the *Victoria County Histories*. Page's Bibliography credits him, as author or part-author, with a total of 21 articles, in 15 volumes. But a closer scrutiny shows that between 1900 and 1914 he helped to produce, as author, editor or learned reader, no fewer than 42 volumes of the *V.C.H.*¹³

Fourteen new items come from the *Encyclopedia Britannica*. Round's contributions to *EB* seem to have begun with the 9th edition in the 1880s, but the 11th edition (1910-11) has been searched for the present Bibliography (see item **33.2**). That contains 36 articles, including those not listed by William Page.¹⁴ Six new

items come from the *Complete Peerage*, reflecting - and by no means exaggerating - the help which Round gave to G.E. Cokayne in preparing the first edition, and to Vicary Gibbs in the second.

Round's generous assistance to fellow scholars appears in several other items not previously recorded. During the 1880s he collaborated with Joseph Foster in three genealogical works, and with Frederick Furnivall in a fourth.15 With Foster, an industrious self-taught compiler, Round kept in touch for many years.16 With Furnivall his association was short-lived. Furnivall's edition of The Fifty Earliest English Wills (4.2) acknowledges Round's help several times.17 This was the only occasion when the two men, very different in interests, temperament, and politics, worked in double harness. A curious feature of this episode in Round's career is the fact that one of his fellow workers was Karl Marx's daughter Eleanor, who transcribed the wills for Furnivall's book.18 She was already a Socialist agitator, while Round had recently published an anti-Socialist tract entitled The Coming Terror. Whether he ever met Eleanor Marx, or was aware of her political work, is not known.

Most of the other new items come from the Academy, the Essex Archaeological Transactions, and Notes and Queries. Those journals were examined for William Page's Bibliography, but he omitted some pieces from them, presumably because they were brief or because their authorship was not known. Six items from the Essex Notebook have been included as typical of Round's newspaper articles on local history. That book contains a selection of articles, most of which had originally appeared in the Colchester Essex Standard between October 1884 and October 1885.¹⁹ In his early years Round published many notes and letters in that newspaper, and others in the Brighton and Sussex Daily Post.²⁰ But a large proportion concern current affairs and are beyond the scope of this Bibliography.

One hundred and seventeen (41 per cent) of the new items are reviews, of which 92 appeared in the *Athenaeum*, 13 in the *Academy*, 9 in *St. James's Gazette*, and one each in the *Morning Post*, the *Antiquarian Magazine*, and the *Bookman*.

Most of the posthumous items are new to this Bibliography. They include a series (51.15 to 51.18), issued since 1993 under our Society's Publications Development programme.

The Bibliography omits the unpublished papers and reports listed by William Page in **51.2** (pp. lxv, lxxi, lxxiv) but discusses them in the Appendix.

Notable Items

Books

The Bibliography lists nine books, including one published after Round's death. All contain Essex material. The two earliest were both epoch-making. *Geoffrey de Mandeville* (14.1) is a study of the anarchy of

Stephen's reign with a novel technique - the use of royal charters in writing narrative history. *Feudal England* (17.1) presents views, then revolutionary, on the system of land assessment in Domesday Book, largely based on the 'Inquisitio Comitatus Cantabrigiensis' and other satellite surveys. It also argues that knight service did not, as previously thought, develop gradually from preconquest tenures, but was introduced into England by William the Conqueror. *The Commune of London* (21.2) sheds new light not only on the early history of London but on Saxon settlement and place-names in Sussex and Essex; medieval warfare; the Conquest of Ireland; and the origin of the Exchequer.

The Calendar of Documents preserved in France (21.1) is an edition of charters illustrating the history of Great Britain and Ireland between A.D. 918 and 1206. While it is a most useful book, it falls short of the highest standards of scholarship. It is based on transcripts made by others many years earlier, and although Round contributed much new material he was not given the resources needed for a thorough revision.

Studies in Peerage and Family History (23.1) deals with the counts of Boulogne as English lords; shows how a family of Norman immigrants took part in William Rufus's conquest of South Wales; describes Henry VIII's management of the House of Lords; and sheds new light on Charles I's Irish policy during the Civil War. Peerage and Pedigree (32.1) contains essays ranging from the Conquest to the 20th century. Here, as so often in his work, Round labours mightily to demonstrate the errors of other men. In doing so he sometimes wastes powder and shot on insignificant targets like Napoleon Parker and his deplorably inaccurate Colchester Pageant of 1909. But in other cases he presents exciting new ideas on important themes, for example in 'The Muddle of the Law', which contrasts the lawyer's view of history with that of the historian.

The King's Serjeants and Officers of State (33.1) is mainly concerned with coronation services, and was published to coincide with George V's coronation. Many of the serjeanties mentioned were endowed with lands in Essex, and the book deserves to be better known here. Round planned at least one other book, but restrictions during the First World War and his own ill-health prevented this. At his death in 1928 he left many items in manuscript, and in 1930 his literary executor William Page published a selection of them, together with a memoir and the Bibliography already mentioned, under the title Family Origins and other Studies (51.2). Two of the studies are of special Essex interest. 'The Mildmay Mystery' relates to a family once prominent in the county. 'The Origin of Essex Parishes', had been one of his presidential addresses to the Essex Archaeological Society (see below).

Pamphlets, periodicals and works of reference

Here, as in his books, Horace Round's best work relates to Domesday Book and Anglo-Norman feudalism. 'The Domesday of Colchester' (**4.10**) foreshadows three seminal papers read at the Domesday Commemoration of 1886 (10.2). Among later items are 'The Domesday "Manor" ', (22.6). 'King John and Robert FitzWalter' (26.8), and a number of articles in *Encyclopedia Britannica* (33.2). As Domesday editor of the *Victoria County Histories* from 1899 to 1908 Round not only wrote the introductions to 12 county sections but also supervised the work on 13 others; for four counties he prepared the Domesday text as well as the introduction.²¹ His own Domesday contributions to the *V.C.H.*, taken together, would make up several substantial books. The Essex section (25.44) is outstanding, in both length and quality.²²

Horace Round's interest in Anglo-Norman castles was personal as well as professional. James Round, owner of Colchester Castle, was his cousin and lifelong friend. From his early days Horace often visited Colchester, and his first separate publication was a history of the castle (4.1).²³ In that booklet he argued that the castle was built by William the Conqueror, and was originally similar in design to the Tower of London. These were revolutionary views at the time, and they were not shared by the leading authority, George T. Clark, whose History of Military Architecture also appeared in 1882. In the following year Round published two articles pointing out many errors in Clark's account of the castle (5.8). He returned to the subject of Norman castles several times in later years (e.g. 14.1, App. O; 25.16), and his views on their origin became generally accepted.24

Round's mastery of the Anglo-Norman period was made possible by the publication, during his lifetime, of original sources previously available only in manuscript. While he was quite at home with manuscripts – unlike his bête noire E.A. Freeman - much of his work was based on records then being printed by the Public Record Office, national or local societies, or independent scholars. He himself took an active part in such publications, usually by providing the editorial commentary. Besides the records already mentioned, he wrote, for the Pipe Roll Society, introductions to twelve of the rolls of Henry II (26.12 to 37.8), to Ancient Charters Previous to A.D. 1200 (10.1) and to Rotuli de Dominabus (35.13). His contributions to the English Historical Review - numbering over 60, between 1888 and 1923 - included several commentaries on 12thcentury records, for example 'A Charter of William, earl of Essex (13.8), and 'Early Charters of St. John's Abbey, Colchester' (23.4). His articles in our Society's Transactions, more fully described below, included a few items of the same kind (e.g. 25.32). He also took a keen interest in the publication, by the Society, of Feet of Fines for Essex, and often emphasised in his writings their value for the Anglo-Norman period, pointing out that Morant made virtually no use of them in his History of Essex.

A large proportion of the items in the Bibliography relate to family history and biography.²⁵ As a genealogist Round was unrivalled. While he himself was especially proud of this, contemporary historians tended to regard it as an aberration from his proper work. Only (Sir) Frank Stenton realized that Round's studies in political and constitutional history sprang from his intimate knowledge of the personal and family relationships of the king and his feudatories.²⁶

Round wrote 79 articles for the *Dictionary of National Biography*, mostly in the earlier volumes (7.25 –7.28). He contributed some 60 articles to the *Genealogist* (1885-1902), 10 to *Collectanea Genealogica* (1881-4), and 40 to *The Ancestor* (1902-05), a journal founded by Round himself and his friend Oswald Barron. Over 30 items with titles of persons or families appeared in our Society's *Transactions* (1887-1996), 20 in the *Encyclopedia Britannica* (33.2), 15 in the *English Historical Review* (1890-1923), and about 40 in other periodicals.

Round's lifelong interest in the peerage sprang from the knowledge that he himself was descended from several noble families, including the Wilmot earls of Rochester, and through them from King Edward III. His contributions to the first edition of the *Complete Peerage* (20.9), and to the second (32.2) are acknowledged in the prefaces and footnotes.²⁷ In the second edition he is also credited as part-author of three appendices (34.2; 35.2; 38.1), and as sole author of one article (51.12).

Round never forgot that the peerage was part of the history of Parliament. In an early article he defended the House of Lords against E.A. Freeman (6.18). His work as Adviser to the Crown in Peerage Cases, besides furnishing material for his later books, inspired an important study of 'The House of Lords and the Model Parliament' (37.2). His paper on John Doreward, Speaker of the House of Commons (36.5) has an Essex as well as a national interest, for Doreward was founder of the eponymous chantry at Bocking (cf. 37.4).

Round's studies of the peerage were not limited to England. Among the earliest were two on the Scottish earls of Mar (4.8; 7.31), and one on the 'Peerage of Scotland and the House of Lords' (4.16). The strange history of the Mar earldom helped to form his view that lawyers do not understand history. He also published several papers on the Irish peerage (3.7; 4.15; 15.22).

Few men have done as much as Round to raise the standards of local history. He had before him the example of the great William Stubbs, his tutor at Oxford, who as an Essex vicar had been a founder of our Society.28 Round's work on the Anglo-Norman period made him familiar with most parts of England, but he was mainly concerned with Sussex, London and Essex. In Sussex, where he lived for most of his life, he was elected an honorary member of the county Archaeological Society, and contributed some 30 items to its journal between 1896 and 1930. Most notable is 'The Battle of Hastings' (21.21). From 1887 to 1903 Round lived in London, and much of his work on the City's history comes from those years. It includes three articles on the origins of the mayoralty (9.3; 9.5; 15.3), and two on early pedigrees (15.24; 16.21).

As lord of the manor of West Bergholt, near Colchester, and a deputy lieutenant of Essex, Round always felt that he belonged to this county. This is reflected in his writings, for those relating to Essex (see Index below) comprise no fewer than 240 items, a quarter of the whole Bibliography. Some 160 of these appeared in our Society's Transactions. He joined the Society in 1884, sat on its Council from 1885 until his death in 1928, and served as president from 1916 to 1921. His contributions appear in every volume of the Transactions (except one) published between 1889 and 1937, and four more have been published since 1993. Many of the items relate to Colchester, including valuable studies of St. Botolph's priory (11.17; 17.29) and of the 'Hamesocne' (43.7). During his presidency he was too ill to travel to Essex but he made a point of writing a paper to be read at each annual general meeting, and he poured into these a lifetime's experience of the sources and problems of local history. 'The sphere of an Archaeological Society', his address in 1916, shows how local history 'can render valuable service even to our national history'. It discusses Norman castles, place-names, burials, and ecclesiastical organization, and includes a section on the open fields of Colchester in relation to Anglo-Saxon settlement (40.11). 'The origin of Essex parishes' (1917) explains that the parishes 'owe their origin and their names to the building of a parish church, and the church was usually built by the lord of the manor beside his Hall' (51.2). In 'Architecture and Local History' (1918) Round urges that 'no one should attempt to write the history of a parish church without acquiring ... a sound knowledge of the parish and of its manorial lords and leading families of the past' (43.14). He adds that 'we must not confuse the Domesday barons and their heirs with those tenants by knight service whom they had enfeoffed upon their lands', and shows that Frederic Chancellor, an authority on church architecture and a former president of the E.A.S., had not grasped this. 'Some Essex Records' (1919), suggests various items that should be considered for publication by the Society (43.18). 'Henry III in Essex' (1920) is a clever piece of detection proving that in November 1235 the king stayed at Witham vicarage and the Bishop of London's house at Braintree (then called Rayne) (51.5).

About 80 Essex items in the Bibliography appeared in journals other than the *Essex Archaeological Transactions*, or as separate publications. They include, besides those already mentioned, 'The Domesday hidation of Essex' (**36.1**), 'The Early Charters of St. John's Abbey, Colchester' (**23.4**), 'The Colchester Mint in Norman times' (**25.20**) and 'The Legend of Eudo Dapifer' (**44.1**), which relates to the so-called Colchester Chronicle. *St. Helen's chapel, Colchester* (**9.1**), a separate pamphlet, was written for the owner, Douglass Round.

Round played a leading part in founding the *Victoria County Histories* in 1899, and for the next nine years he devoted most of his time to it. Besides his Domesday work, he was part-author of the articles on the political and the ecclesiastical history of Essex. For the volume containing those articles (29.11), he was also jointeditor. Round was part-author also of V.C.H. Hertfordshire Families (29.12). For V.C.H. Northamptonshire Families (28.23) he was effectively joint-editor, though not named as such.

Horace Round was a pioneer in place-name study. His essay on Saxon settlement and place-names in Sussex and Essex (21.2) has already been mentioned. In the following year (1900) he read a paper at the Congress of Archaeological Societies on 'The Systematic Study of our English Place-Names' (22.1). This first revealed the possibilities of the subject to Allen Mawer, who in 1923 founded the English Place-Name Society.29 Round became a vice-president of the Society; he also undertook to write the chapter on the 'Feudal Element' in place-names for its introductory volume, but had to withdraw because of illness.30 His continuing interest in the subject can be seen in his paper 'Norse Place-Names in Essex' (45.11), and in many of his other contributions to our Society's Transactions, as well as his Domesday studies. He emphasized the value of topography in place-name interpretation, and was contemptuous of philologists who neglected it.

As a Conservative and an Anglican, Round joined in the current debates on Irish Home Rule and Disestablishment. Some of his writings on these issues are included in the Bibliography because they show how he used history as political ammunition. 'The desertion of the Catalans', draws an analogy between 18thcentury Spain and Gladstone's policy over Ulster (8.32). Round's staunchly Protestant views appear in 'Church Defence' (20.11) and 'Established by Law' (21.11). 'The King's Protestant Declaration' (23.3) was written at the time of Edward VII's accession.

'The Royal Navy under Queen Elizabeth' (16.20) and 'Colchester under the Commonwealth' (22.8), contain substantial research beyond Round's usual field. His interest in military history appears in two notes on the Tower Guards, a London regiment which took part in the siege of Colchester in 1648 (5.23; 6.13).

Round's love of controversy is displayed throughout his writings. His criticisms of E.A. Freeman received no reply from the professor himself, but led to a long debate with his disciples (7.37; 16.18; 21.21). His attacks on Hubert Hall culminated in two privately printed pamphlets (20.1; 21.3). These, though intemperate, were not unjustified; but in assailing H.A. Doubleday (40.3), he went too far, and narrowly escaped a libel action.³¹ A block-buster article against his old friend Walter Rye (44.1), was unbalanced and incoherent. Soon after that one of Round's papers for *EHR* was rejected as too controversial,³² and his long association with that journal came to an end.

The Bibliography lists 178 reviews. Many of them discuss more than one book, so that a total of 235 books are covered. They can be found under most years from 1879 to 1922, but 128 (72 per cent) appear between

1885 and 1898. Since many of Round's reviews were unsigned it is likely that he published others after 1899 (the last year covered by his press-cuttings) which have not been identified. Family history, biography, and genealogy (including church and school registers), local history, and medieval records are the main subjects reviewed. The first review, of Burke's Landed Gentry (1.1) is lively and amusing. In later years Round's style becomes convoluted and abrasive. While he always enjoyed pointing out errors, especially in official publications, he retaliated furiously against authors who had criticised him. But he recognized sound scholarship, and tried not to discourage unpretentious amateurs who had done their best. He sometimes reviewed the same book, anonymously, in more than one journal. Over 40 of his reviews appeared in EHR. In 1895, his peak year as a reviewer, Round surveyed 32

The Bibliography is arranged chronologically to show the development of Round's work.³⁴ It will be seen that he published at least one item every year from 1879 until his death in 1928. Within that period each year has been given a serial number (1 to 50) and each entry a subnumber. Separate books and pamphlets come first in each annual series, followed by periodical items, grouped according to the alphabetical order of the journals' titles. In 1881, for example, two separate items (3.1; 3.2) are followed by items from the *Antiquary* (3.3; 3.4), *Collectanea Genealogica* (3.5 to 3.10), and *Notes and Queries* (3.11; 3.12). Each posthumous item has the serial number 51 and a sub-number.

Items new to this Bibliography are preceded by an asterisk *; those identified from J.H. Round's press cuttings in the Essex Record Office are followed by the

books in 19 articles. Most notable is a well-written, learned and friendly assessment of Pollock and Maitland's *History of English Law* (17.7). His review of *The Life of E.A. Freeman* is inevitably controversial, since the book had attacked Round himself (17.8). Eight calendars of public records are assessed (17.2 (three); 17.10 (two); 17.19 (three). Five reviews deal with books written in French (17.4; 17.6; 17.12; 17.13; 17.24). Round had lived in France as a boy, and was fluent in the language.

One of Round's most valuable contributions to *EHR* is a ten-page review of the first volume of *Regesta Regum Anglo-Normannorum* (**36.3**). While demonstrating his great learning, and pointing out many errors, it does so with restraint and courtesy. A favourable review of C.H. Haskins's *Normans in European History* (**39.5**) elicited a letter of thanks from the author.³³

Arrangement and Annotation of Items

abbreviated catalogue reference Rh (plus a subnumber). Reviews are indicated by a letter ®, followed by the author's name and the book's title. Item **4.4**, for example, is Round's review of H.C. Maxwell Lyte's *Dunster and its Lords*. Items relating to Essex, wholly or partly, and not obviously connected with the county by title or provenance are followed by a dagger †.

Most items relate to a single volume or article, but there are two exceptions. Each volume of the *Dictionary* of *National Biography* to which Round contributed has been given a separate item number, followed by the titles of his articles in the volume. He wrote 79 articles in all, spread over 20 volumes; but 43 of them appeared in the first four volumes (7.25 to 7.28). The *Encyclopedia Britannica*, for which he wrote 36 articles spread over 21 volumes, has a single item number (33.2)

Abbreviations

NOTE. The following abbreviations have been used in the		Chas	Charles
text and the Indexes of the Bibliography, sometimes with the		Coll Gen	Collectanea Genealogica
addition of the letter s to indicate the plural. Those in italics,		comp	completed
e.g. Acad., are titles of journals.		Coll Hist Staff	Collections for the History of Staffordshire,
0			New Series
abp	Archbishop	Cont R	Contemporary Review
Acad	Academy	DB	Domesday Book
AHR	American Historical Review	D/DRh	Essex Record Office, J.H. Round MSS
AMB	Antiquarian Magazine and Bibliographer	DNB	Dictionary of National Biography
Anc	Ancestor	EAH	Essex Archaeology and History
And	Andrew	EAT	Transactions of the Essex Archaeological
anon	anonymously		Society, New Series
Ant	Antiquary	EB	Encyclopedia Britannica
App	Appendix	eccles	ecclesiastical
Arch	Archaeologia	EHR	English Historical Review
Arch J	Archaeological Journal	ENB	Essex Notebook
Arch R	Archaeological Review	ER	Essex Review
ass	assisted by	fam	family
Ath	Athenaeum	Geo	George
bp	Bishop	Gen	Genealogist, New Series
Bull	Bulletin	Geof	Geoffrey
cent	century	Hen	Henry
ch	church	hist	history
chart	charter		

ESSEX ARCHAEOLOGY AND HISTORY

HL	House of Lords	Recs	Records
hund	hundred	Repr	Reprinted
Intro	Introduction	Rev	Revised edition
JHR	J.H. Round	Rh	Essex Record Office, D/DRh (J.H. Round
Jn	John		MSS)
man	manor	Ric	Richard
mon	monument	Rob	Robert
Mon R	Monthly Review	Rog	Roger
N&Q	Notes and Queries	Rom	Roman
Nat \widetilde{R}	National Review	SAC	Sussex Archaeological Collections
Nich	Nicholas	SJG	St. James's Gazette
Nine C	Nineteenth Century	SR	Saturday Review
nonconf	nonconformity	Thos	Thomas
obit	obituary	UL	University of London
OED	Oxford English Dictionary	VCH	Victoria History of the Counties of England
Phil	Philip	vol	volume
polit	political	Wal	Walter
PR	Pipe Roll	Wm	William
Pri	Privately	*	New Item, not in W. Page's Bibliography
PRO	Public Record Office		(1930)
publ	published	+	Relates to Essex. See below: Index of Essex
Quart R	Quarterly Review		Items
R	Reviewed by J.H. Round		

Notes to Introduction

- 1 Staffordshire Parliamentary History, (Wm. Salt Soc. 1919), Preface.
- 2 J.H. Round, *Family Origins*, ed. W. Page (1930), pp. xlix-lxxiv. See below, item **51.2**.
- 3 The exact figure depends on the method of calculation. A few of the items were included in error.
- 4 At least three of the Essex papers had already been published before William Page's *Bibliography* appeared. Many of the others were incomplete, including, in some cases, variant drafts on the same subject.
- 5 Here, also, the exact figures depend on the method of calculation.
- 6 E.R.O., D/DRh Z10/2-6. These MS volumes list JHR's publications from 1879 to 1899. Many of the items are press cuttings; others merely refer to the sources.
- 7 See E.R.O., D/DRh C1.
- 8 Cf. Oxford Companion to English Literature (1985 edn.), 48; Concise Cambridge History of English Literature (1949), 858.
- 9 Only three of the 126 items is dated later than 1900. Any anonymous contributions after that date cannot be identified from Round's records.
- 10 Encyclopedia of the British Press (1992), 503, cf. 453; Haydn's Dictionary of Dates (1898), 770. In 1905 St James's Gazette merged with the Evening Standard.
- 11 (Sir) Sidney Low, editor of *St. James's Gazette* 1888-97, had been a contemporary of Round at Balliol, but never knew him well. In 1928 he wrote: '[Round] was not a brilliant writer, but everything he wrote gave the impression of profound knowledge and a rooted if rather rugged honesty': E.R.O., D/DRh Z8.
- 12 Between 1883 and 1898 Round wrote at least 164 pieces for *St James's Gazette*. Most of them were short notes or letters.
- 13 E.A.T. 3rd ser. xii. 25.
- 14 Three articles listed by Page are not in the 11th edition of *Britannica*.
- 15 For Joseph Foster (1844-1905) see D.N.B. For Frederick J. Furnivall (1825-1910) see: D.N.B.; K.M.E. Murray, Caught in the Web of Words (1977), 87-100.
- 16 For Joseph Foster's letters to JHR. see Univ. London Libr. IHR MS 635.
- 17 *The Fifty Earliest English Wills* (Early English Text Society, 1882), xi, xv, 1-4, 68-71. One of the wills in it (68-72) is that of William Hanningfield of East Hanningfield. Round referred to this in an article written for *E.A.T.* c.1920: see *E.A.H.* 26 (1995), 165, and

172 note 63.

- 18 Fifty Earliest English Wills, xvii; Y. Kapp, Eleanor Marx, i (1972), 172, 187; E.P. Thompson, William Morris (1955), 427 f. and see Index.
- 19 For a list, by Dr. D. Stephenson, of Letters and Articles by JHR. in *Essex Standard*, 1881-90, see *E.A.H.* 12, (1980) 9. For some additional items to 1896, see E.R.O., D/DRh Z10/2-6.
- 20 E.R.O., D/DRh Z10/2-6. JHR. lived in Brighton for all his adult life except for the years 1887-1903, when he lodged in London.
- 21 *E.A.H.* 12 (1980), 37. Twenty-two of these *V.C.H.* DB sections were published between 1900 and 1908, two others appeared later in the series, while a third was issued by the Lincoln Record Society.
- 22 The late Sir Clifford Darby, editor of the *Domesday Geography* series, once remarked to me on the excellence of Round's Essex DB.
- 23 *The History and Antiquities of Colchester Castle*, though published anonymously, is proved by JHR's records to be his work.
- 24 Mrs Ella Armitage, whose *Early Norman Castles of the British Isles* appeared in 1912, revered Round as a master of the subject: London Univ., IHR MS 616, Letters to JHR July 1927.
- 25 Some 280 items have titles of families or persons, and many others are biographical in approach.
- 26 F.M. Stenton: D.N.B. s.v. Round, J.H.; First Century of English Feudalism (1961 edn), 2.
- 27 The footnotes to the 2nd edition of *C.P.* contain at least 135 references to the information which Round himself had sent to the editors, and 1,061 citations of his writings.
- 28 Stubbs also edited the Waltham Abbey chronicle *De Inventione* Sanctae Crucis.
- 29 London Univ. Libr., IHR MS 655, A. Mawer to JHR. 29 Nov. 1921.
- 30 Introduction to Survey of English Place-Names, i (1924), p. vii and endpaper.
- 31 IHR MS 664, f. 76f. (Jan. Feb. 1919).
- 32 Sussex Arch. Soc. Lewes, LFS 90, JHR. to L.F. Salzman, 14 Mar. 1922.
- 33 London Univ. Libr., IHR MS 647, C.H. Haskins to JHR. 27 Jan. 1918.
- 34 William Page's *Bibliography* (see item **51.2**) lists Round's serial publications.

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1.1 (B): BURKE'S LANDED GENTRY. *SR* xlviii. 766. [Unsigned. Listed with cutting in Rh Z10/2. For authorship see also Rh Z/11].

1880

2.1* INDEX TO ILLUSTRATIONS IN SUSSEX ARCHAEOLOGICAL COLLECTIONS VOLUMES i-xxx. SAC xxx. 198. [Listed in Rh Z10/2.]

1881

- **3.1*** CATALOGUE OF COLCHESTER LOAN COLLECTION [Rh Z10/2].
- **3.2** THE COMING TERROR. Brighton, John Beal & Co. 13 pp.
- **3.3** THE WEBSTER PAPERS. Ant iv. 259; v (1882), 279.
- **3.4** TRADITIONS ABOUT OLD BUILDINGS. *Ant* iv. 279; v (1882), 278.
- 3.5 RACHEL, LADY KINGSTON. Coll Gen i. 17.
- 3.6★ COLLECTANEA GENEALOGICA, VOLUME III. Ed. J. Foster, ass by JHR. [See Index, and D/DRh Z10/2].
- 3.7 THE BARONY OF ARKLOW. Coll Gen iv. 42.
- **3.8** BURKE'S DORMANT AND EXTINCT PEER-AGE. *Coll Gen* iv. 49.
- **3.9** ISABELLA HOWARD. *Coll Gen* iv. 52.
- 3.10 SPURIOUS COAT ARMOUR. Coll Gen iv. 53.
- **3.11*** TALLAND: TALLANT: TALLENT. N&Q 6th Ser. iv. 176. [Note on family. Signed JHR].
- 3.12[★] THE WHISKERED INFANTRY OF SWIT-ZERLAND. *N&Q* 6th Ser. iv. 406. [Signed JHR. William III's mercenaries].

1882

- **4.1** THE HISTORY AND ANTIQUITIES OF COL-CHESTER CASTLE. Colchester, Benham & Co. Publ. anon. i + 147 pp.
- 4.2* THE FIFTY EARLIEST ENGLISH WILLS IN THE COURT OF PROBATE, LONDON. Early English Text Society. Ed. FJ. Furnivall, ass by JHR. †
- 4.3* MEMBERS OF PARLIAMENT (SCOTLAND), 1357-1882. Ed. J. Foster, ass by JHR. [Rh Z10/2].
- 4.4* ®: H.C Maxwell Lyte, DUNSTER AND ITS LORDS. *Acad* 19 Aug. [Rh Z10/2].
- 4.5* (8: G.W. Marshall, VISITATIONS OF WILTSHIRE. Acad 30 Sept. [Rh Z10/2].
- 4.6* ®: C.J. Robinson, REGISTER OF MERCHANT TAYLORS' SCHOOL VOL. I. Acad 7 Oct. [Rh Z10/2].
- 4.7 HUGUENOTS IN ESSEX. AMB i. 225.
- **4.8** THE LATER EARLDOM OF MAR. *AMB* ii. 114, 231 [Cf. **7.31**].
- **4.9** ARCHAIC LAND TENURE IN DOMESDAY. *Ant* v. 104.
- **4.10** THE DOMESDAY OF COLCHESTER. *Ant* v. 244; vi. 5, 95, 251.
- **4.11** THE GREAT CASE OF THE IMPOSITIONS. *Ant* vi. 182, 277; vii (1883), 182.
- 4.12 THE POLE FAMILY. Ant vi. 229.
- **4.13** FOOTSTEPS OF THE ENGLISH IN GERMANY. *Ant.* vi. 229.
- 4.14 ULSTER BEFORE 'MY LORDS'. Coll Gen ix. 77.
- **4.15** THE EARLDOMS OF ORMOND IN IRELAND. *Coll Gen* ix. 84.

- **4.16** THE PEERAGE OF SCOTLAND AND THE HOUSE OF LORDS. *Coll Gen* ix. 108.
- **4.17*** THE ANCIENT PERCY TITLES: THE EARL-DOM OF ORMOND OR ORMONDE. N&Q (6), v. 343. [Signed R].
- 4.18* KIKSHAW. N&Q (6), v. 406. [Meaning of word. Signed JHR].
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- **4.20**[★] SLAVS IN ENGLAND. A.D. 1321. *N*&*Q* (6), vi. 9. [Colchester].[†]
- 4.21* FREEDOM FROM SUITS OF HUNDREDS. N&Q (6), vi. 37-8.
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- 4.24* FRANCIS ROUS. N&Q (6), vi. 297.
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- 5.7 THE WHITSUN ALES. Ant vii. 34; xiii (1886), 183.5.8 COLCHESTER KEEP AND MR G.T. CLARK. Ant
- vii. 45, 157.
- **5.9** THE BOOK OF HOWTH. *Ant* vii. 196; viii. 21, 116.
- 5.10 THE HIDE OF LAND IN INDIA. Ant viii. 181.
- 5.11 SUCCESSION THROUGH FEMALES. *Ant* viii. 183, 170.
- 5.12 ST. CHRISTOPHER AS PORTRAYED IN ENG-LAND DURING THE MIDDLE AGES. *Ant* viii. 271.
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- **5.14** ARE THERE TWO EARLS OF MAR? *Coll Gen* xii. 146.
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- 5.18* RACHEL, LADY KINGSTON. N&Q (6). vii. 66.
- **5.19** THE RUTHVEN PEERAGE. N&Q (6), vii. 168, 230, 290, 389.
- 5.20* EXTINCT PEERAGES. N&Q (6), vii. 325.
- 5.21* THE PARLIAMENTARY OATH IN 1689. N&Q (6), vii. 326.
- 5.22* MARKE-TREE: WAINSCOT. N&Q (6), vii. 347. [Meaning of words].
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- 5.24 THE RUTHVEN (OF FREELAND) PEERAGE. N&Q (6), viii. 27.
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- 6.7 'PORT' AND 'PORT REEVE'. *AMB* v. 247, 282; vi. 23, 159, 299.
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- 6.9 PORTS AND CHESTERS. AMB vi. 96, 202.
- 6.10 THAT DETESTABLE BATTLE OF LEWES. Ant ix. 14.
- 6.11 BRITISH OR ROMAN REMAINS NEAR BICES-TER. *Ant* ix. 45.
- 6.12 THE HAWICK SLOGAN. Ant ix. 141.
- 6.13 THE TOWER GUARDS. *Ant* ix. 241; x. 54, 135, 205. [Regiment at siege of Colchester, 1648. Cf 5.23].†
- 6.14 THE EARLIER LIFE OF THOMAS CROMWELL. Ant ix. 286.
- 6.15 MUNICIPAL OFFICES. Ant x. 82; xii (1885), 188, 240; xiii. (1886), 28, 87; xiv (1886). 135. [Includes Colchester].⁺
- 6.16 MAIDSTONE BURGHMOTE. Ant x. 83.
- 6.17 ESSEX AND SUFFOLK. Ant x. 86.
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- 6.19 WICK. Ant x. 230; xi (1885), 183.
- **6.20** THE BARONY OF RUTHVEN OF FREELAND. *Coll Gen* xiii. 167.
- 6.21* TENURES IN ESSEX. ENB 12.
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- 7.6 'PORT OR GATE'. *AMB* vii. 94.
- 7.7 MORE CURIOSITIES OF OFFICIAL SCHOLAR-SHIP. *AMB* vii. 254.

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- 7.17 THE ATTACK ON DOVER. Ant xii. 49, 181.
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- THE SURNAME OF FRENCH. Ant xiii. 182. 8.11
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- BOXLEY ABBEY, KENT. Ant xiv. 87, 230. 8.16
- MOOTHOUSE MANOR. Ant xiv. 180. 8.17
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- 8.29 NOTE ON THE DE LA POLE PEDIGREE. Gen iii. 112.
- 8.30 THE MAR RESTITUTION Gen iii. 125.
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- 9.15 THE BARONY OF DAUBENY. Gen iv. 42.
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- RICHARD I'S CHANGE OF SEAL. Arch R i. 135. 10.4 [Repr. with additions in 17.1].
- THE SUSSEX RAPES. Arch R i. 229. 10.5
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- 10.7 THE SUITORS OF THE COUNTY COURT. Arch R ii. 66.
- THE SOUTH PORCH. Arch R ii. 215. 10.8
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- 10.14* ®: W.R. Fisher, THE FOREST OF ESSEX. Ath 10 Mar. [Rh Z10/4].
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- **10.17* (B):** M. Burrows, THE CINQUE PORTS. *Ath* 3 Nov. [Rh Z10/4].
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- 17.28 RAYLEIGH MOUNT. EAT v. 41; viii (1903), 228.
- 17.29 ST. BOTOLPH'S PRIORY, COLCHESTER. *EAT* v. 69, 103.
- 17.30 PLESHY. EAT v. 83.
- **17.31** HALSTEAD CHURCH. *EAT* v. 103.
- **17.32** NONCONFORMITY IN ESSEX. *EAT* v. 104. [Dedham district].
- 17.33 SOME ESSEX COUNTY FAMILIES. EAT v. 131.
- 17.34 THE ABBEYS OF COGGESHALL AND STRAT-FORD LANGTHORNE. *EAT* v. 139.
- 17.35* HALSTEAD. *EAT* v. 182.
- 17.36 STIFFORD CHURCH. EAT v. 182.
- 17.37 WITCHCRAFT IN ESSEX. *EAT* v. 182. [Tendring hundred].
- **17.38** EARLY ESSEX CLERGY. *EAT* v. 182, 244; vi (1898), 346.
- 17.39 HARWICH AND THE SIEGE OF COLCHESTER. *EAT* v. 191.
- 17.40 THE OLDEST ESSEX CHARTER. EAT v. 243.
- 17.41 YASPEN. *EAT* v. 243 [Double handful. Cf. OED yepsen.]⁺
- 17.42 COGGESHALL IN DOMESDAY. EAT v. 244.
- 17.43 SAFFRON WALDEN. EAT v. 245.
- 17.44 THE MANOR OF RAYNE. EAT v. 246.
- 17.45 COLCHESTER CASTLE. *EAT* v. 247; vii (1900), 117.
- 17.46 THE ARMS OF COLCHESTER. EAT v. 247.
- 17.47* SIR CHARLES LUCAS. ER iv. 131.
- 17.48 OLIVER CROMWELL AND HIS 'STUART' DESCENT. *Gen* x. 18.
- 17.49 THE EARLDOMS OF DOUGLAS AND MAR. *Gen* x. 65, 251.
- 17.50 THE PEDIGREE OF EDWARDS. Gen x. 183.
- 17.51 OUR ENGLISH HAPSBURGS. Gen x. 193.
- **17.52** ARCHIBALD, FIRST DUKE OF ARGYLL. *Gen* x. 255.
- 17.53 LORD ADAM LISBURN. Gen x. 255.

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- 18.7* ROBERT PULLEN. *Ath* 31 Oct. [Rh Z10/6. A 12th-cent. teacher at Oxford].
- 18.8* ®: C.R.B. Barrett, BATTLES AND BATTLE-FIELDS OF ENGLAND. *Ath* 19 Dec. [Rh Z10/6].
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- 18.13 BERBER CORN FESTIVAL, Folklore, vii. 306.
- 18.14 THE PEDIGREE OF WEGG. Gen xi. 19. [Of Colchester.]⁺
- 18.15 THE EARLDOM OF LEICESTER. Gen xi. 63.
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- **18.17** SIR WILLIAM STEWART OF JEDWORTH. *Gen* xi. 127.
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- 18.19 THE ORIGIN OF THE THYNNES. Gen xi. 193.
- 18.20 A VISIT TO QUEEN ELIZABETH. Nine C xl. 619.
- 18.21 SOME EARLY GRANTS TO LEWES PRIORY. SAC xl. 58.
- 18.22 HOLMWOOD, EAST GRINSTEAD. SAC xl. 280.

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- **19.3*** THE FIRST CHARTER OF ST. EDMUND'S BURY, SUFFOLK. *AHR* ii. 688.
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- 21.7* ®: (1) R.W. Goulding, BLANCHMINSTERS CHARITY RECORDS [Stratton, Cornwall]. (2) W. Steward, THE HISTORY OF A BEDFORDSHIRE VILLAGE [Harrold]. Ath 28 Jan. [Rh Z10/6].
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- 21.9* THE COMMUNE OF LONDON. Ath 28 Oct. [Reply to F.W. Maitland's review of 21.2].
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- DICTIONARY OF NATIONAL BIOGRAPHY, 21.12 VOL. LVIII. Urse d'Abetot; Vere, family; Vere, Aubrey de (d. 1141)
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- ®: O.J. Reichel, THE DEVONSHIRE DOMESDAY 21.14 [CHURCHES]. EHR xiv. 403.
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Plate 2. J.H. Round as the 'Authority on Domesday Book' with the *Victoria County Histories* (cf items **28.17** sq). He is depicted in his uniform as deputy-lieutenant of Essex. From *The Sphere* 14 April 1906

- 21.23 THE RAPE OF PEVENSEY. SAC xlii. 237.
- **21.24** HENRY I AT BURNE AND BURNHAM. *SAC* xlii. 238.

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- 23.2* HAINFRIDUS DE ST. OMER DANS LE DOMES-DAY. Bull Historique Trimestriel de la Société des Antiquaires de la Morinie, 10, p. 679. [D. Bates, Domesday Bibliography, no. 3109].
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- **25.26** THE MANOR OF COLNE ENGAINE. *EAT* viii. 192.
- **25.27** ESSEX DEEDS. *EAT* viii. 226. [Dagenham; Havering; Barking].
- **25.28** THE CREFFEILD FAMILY. *EAT* viii. 226.
- 25.29 AN EARLY ESSEX WILL. EAT viii. 227. [Leofwine].
- **25.30** THE CHURCHES OF HIGH ONGAR, STAN-FORD RIVERS, LANGENHOE, AND LITTLE LAVER. *EAT* viii. 227.
- **25.31** THE WARDSTAFF. *EAT* viii. 229. [Hundredal jurisdiction].[†]
- 25.32 A CHARTER OF ALICE OF ESSEX. EAT viii. 329.
- **25.33** TREGOZ OF TOLLESHUNT TREGOZ. *EAT* viii. 330.
- **25.34** WETHERSFIELD, PLESHEY, AND PLESINGHO. *EAT* viii. 332.
- **25.35** THE DESCENT OF THORRINGTON. *EAT* viii. 373.
- **25.36** THE CHURCH AND GLEBE OF WILLINGALE DOE. *EAT* viii. 375.
- **25.37** THE ORIGIN OF THE STEWARTS AND THEIR CHESNEY CONNEXION. *Gen* xviii. 1.
- **25.38** WILLIAM BENTINCK, FIRST EARL OF PORT-LAND. *Gen* xviii 36.
- **25.39** THE PORTS OF BASING AND THEIR PRIORY. *Gen* xviii. 137 [Monk Sherborne priory (Hants)].
- **25.40** THE COUNTESS OF IRELAND. *Gen* xviii. 166. [Eve, countess of Pembroke].
- **25.41** THE PEDIGREE OF RINGESDUNE. *Gen* xviii. 216.
- **25.42** STIGAND, BISHOP OF CHICHESTER. *SAC* xlvi. 234.
- **25.43** AN EARL OF ARUNDEL IN FRANCE, 1188. *SAC* xlvi. 235.
- 25.44 VCH ESSEX I. Domesday: Introduction and Text.
- 25.45* VCH HAMPSHIRE II. Editorial help.

- 26.1 THE EARLY NORMAN JURY. AHR ix. 412.
- 26.2 THE COMINS OF SNITTERFIELD. Anc ix. 146.
- **26.3** THE TRAFFORD LEGEND. *Anc* x. 73.
- 26.4 THE ORIGIN OF THE COMINS. Anc x. 104.
- 26.5 COMYN AND VALOIGNES. Anc xi. 129.
- **26.6** A GREAT MARRIAGE SETTLEMENT. *Anc* xi. 153.
- **26.7** THE OFFICERS OF EDWARD THE CONFESSOR. *EHR* xix. 90.
- **26.8** KING JOHN AND ROBERT FITZWALTER. *EHR* xix, 707.
- **26.9 (B):** G.F. Warner and H.J. Ellis, FACSIMILES OF ROYAL AND OTHER CHARTERS IN THE

BRITISH MUSEUM. EHR xix. 147.

- **26.10 (B)**: Public Record Office, CALENDAR OF THE CHARTER ROLLS VOL I. *EHR* xix. 340.
- 26.11 THE BAYEUX TAPESTRY. Mon R xvii. 109.
- 26.12 PIPE ROLL 22 HENRY II. PRS xxv. Introduction.
- 26.13 THE CHICHESTER INQUEST OF 1212. SAC xlvii. 113.
- **26.14** VCH BEDFORDSHIRE I. Domesday: Introduction and Text.
- **26.15** VCH WARWICKSHIRE I. Domesday: Introduction, author; Text, general editor.

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- 27.1 MR BIRD AND THE TRAFFORD LEGEND. *Anc* xii. 53.
- 27.2 A D'AUBENEY CADET. Anc xii. 149.
- 27.3 A BACHEPUZ CHARTER. Anc xii. 152.
- 27.4 THE HISTORY OF A BLUNDER. Anc xii. 166.
- 27.5 THE BERESFORDS' ORIGIN AND ARMS. Anc xii. 169.
- 27.6 THE JERNINGHAMS. Anc xii. 186.
- 27.7 THE ORIGIN OF THE SHIRLEYS AND THE GRESLEYS. Derbyshire Arch Soc. Jnl xxvi(1904), 22; xxvii (1905), 151.
- 27.8 ®: Colchester Borough Council, CHARTERS OF THE BOROUGH OF COLCHESTER. *EHR* xx. 152.†
- 27.9 THE BURTON ABBEY SURVEYS. *EHR* xx. 275. [Repr with addition in *Coll Hist Staffs* n.s. ix (1906), 269].
- 27.10* REPORT ON THE MSS OF THE DUKE OF RUTLAND, VOL. V. Historical Manuscripts Commission 24.
- 27.11 PIPE ROLL 23 HENRY II. PRS xxvi. Introduction.
- 27.12 BENTON'S PLACE IN SHIPLEY. SAC xlviii. 152.
- **27.13** VCH BUCKINGHAMSHIRE I. Domesday: Introduction, author. Text: general editor.
- 27.14* VCH DERBYSHIRE I. Domesday: general editor.
- 27.15* VCH DURHAM I. Domesday: general editor.
- 27.16* VCH SURREY II. Editorial help.
- 27.17* VCH SUSSEX I. Domesday: Introduction, joint author; Text: general editor.

- **28.1** THE EARLIEST PORTION OF THE TESTA DE NEVILL RELATING TO DEVON. *Devonshire Association Transactions* xxxviii. 313.
- 28.2 ®: J.M. Rigg, CALENDAR OF PLEA ROLLS OF THE EXCHEQUER OF THE JEWS, VOL. I. EHR xxi, 369.
- **28.3** LITTLE CANFIELD CHURCH. *EAT* ix. 101.
- 28.4 CHURCHING CUSTOM. *EAT* ix. 101. [Horndon-on-the-Hill].
- **28.5** ESSEX CHARTERS AT BERKELEY CASTLE. *EAT* ix. 102. [East Tilbury, Newport, Great Chesterford].
- 28.6 EAST TILBURY HOSPITAL. EAT ix. 103.
- 28.7 HORNDON-ON-THE-HILL. *EAT* ix. 180. [Manor of Cantis].
- **28.8*** TOLLESHUNT MAJOR AND COGGESHALL ABBEY. *EAT* ix. 181.
- 28.9 THE 'CURLAI' OF DOMESDAY. EAT ix. 231.
- **28.10** GLANVILLES IN FELSTED. *EAT* ix. 231.
- **28.11** NOTES ON ESSEX FINES. *EAT* ix. 293.
- **28.12** ASHINGDON AND TOLLESHUNT TREGOZ. *EAT* ix. 294.
- **28.13** ASHINGDON *EAT* ix. 413.

- 28.14 PIPE ROLL 24 HENRY II. PRS xxvii. Introduction.
- **28.15 (**1) O. Barron (ed.), VCH NORTHAMPTON-SHIRE FAMILIES. (2) BURKE'S LANDED GENTRY. *Quart R* No. 409, p. 531.
- **28.16** THE BURTON ABBEY SURVEYS. *Coll Hist Staffs* n.s. ix. 269. [Repr. with addition from *EHR* xx (1905), 275].
- **28.17** VCH BERKSHIRE I. Domesday: Introduction, author; Text, general editor.
- 28.18* VCH DEVONSHIRE I. Domesday: general editor.
- 28.19* VCH LANCASHIRE I. Domesday: general editor.
- 28.20* VCH LINCOLNSHIRE II. Editorial help.
- 28.21* VCH NORFOLK II. Domesday: general editor.
- 28.22* VCH NORTHAMPTONSHIRE II. Editorial help.
- **28.23*** VCH NORTHAMPTONSHIRE FAMILIES. Editorial help.
- **28.24*** VCH NOTTINGHAMSHIRE I. Domesday: general editor.
- **28.25** VCH SOMERSET I. Domesday: Introduction and Text.
- 28.26* VCH WORCESTERSHIRE II. Editorial help.

- **29.1** THE CHRONOLOGY OF HENRY II'S CHAR-TERS. *Arch J* lxiv. 63.
- **29.2*** DR WILLIAM GILBERT. Arch J lxiv. 184. [Colchester].†
- 29.3 THE ESSEX SACKVILLES. Arch J lxiv. 217.
- 29.4* ®: E. Dupont, RECHERCHES...SUR LES COM-PAGNONS DE GUILLAUME LE CON-QUERANT. Ath 6 July [Cf. W. Sussex R.O., Add. MS 732 6 July. Cf 30.2].
- 29.5 A PLEA ROLL OF RICHARD I. EHR xxii. 290.
- **29.6** THE ORIGIN OF BELVOIR CASTLE. *EHR* xxii. 508.
- **29.7** ®: L.W.V. Harcourt, HIS GRACE THE STEWARD AND THE TRIAL OF PEERS. *EHR* xxii. 778.
- 29.8 PIPE ROLL 25 HENRY II. PRS xxviii. Introduction.
- **29.9** NOTE ON THE TENURE OF DRAYCOT-UNDER-NEEDWOOD. *Coll Hist Staffs* n.s. x. 3.
- 29.10* VCH BERKSHIRE II. Editorial help.
- **29.11*** VCH ESSEX II. Joint-editor. Ecclesiastical History: joint-author. Political History: joint-author.
- **29.12*** VCH HERTFORDSHIRE FAMILIES. Part-author. Editorial help.
- **29.13*** VCH LEICESTERSHIRE I. Domesday: general editor.
- 29.14* VCH SUSSEX II. Editorial help.

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- **30.1*** THE BATLE ABBEY ROLL. *Ath* 19 Sept.
- **30.2** ®: E. Dupont, RECHERCHES...SUR LES COM-PAGNONS DE GUILLAUME LE CON-QUERANT. *EHR* xxx. 121. [Cf **29.4**].
- **30.3** THE DOMESDAY 'ORA'. *EHR* xxiii. 283. [Coinage. Criticises J. Tait, mistakenly: cf. xxiii. 624}.
- **30.4** TURSTIN DE WIGMORE: TURSTIN FLAN-DRENSIS. *N&Q* (10), x. 250.
- 30.5 PIPE ROLL 26 HENRY II. PRS xxix. Introduction.
- **30.6*** VCH BEDFORDSHIRE II. Editorial help.
- 30.7* VCH HAMPSHIRE III. Editorial help.
- **30.8** VCH HEREFORDSHIRE I. Domesday: Introduction and Text.
- 30.9* VCH HERTFORDSHIRE II. Editorial help.
- **30.10*** VCH RUTLAND I. Domesday: general editor.
- 30.11* VCH SHROPSHIRE I. Domesday: general editor.

1909

- **31.1** A NEW ANGLICAN ARGUMENT. *Cont R* xcv. 75.
- **31.2** SOME TOURS IN ESSEX. *EAT* x. 1.
- **31.3** DR. ROBERT AYLETT. *EAT* x. 26.
- **31.4** BAUD'S BUCK. *EAT* x. 60.
- **31.5** LITTLE HALLINGBURY. *EAT* x. 60.
- **31.6** A WOODHAM FERRERS CHARTER. *EAT* x. 303.
- **31.7** DR. GILBERD'S BIRTHPLACE. *EAT* x. 307. [Colchester].
- 31.8 BAUD FAMILY. EAT x. 347.
- 31.9 HAYDON AND GREAT CHISHALL. EAT x. 348.
- 31.10 WITHAM CHURCH. EAT x. 349.
- 31.11 PIPE ROLL 27 HENRY II. PRS xxx. Introduction.

1910

- 32.1 PEERAGE AND PEDIGREE: STUDIES IN PEER-AGE LAW AND FAMILY HISTORY. London, Nisbet. 2 vols. xxviii + 362 and 408 pp. Vol. I. The Willoughby d'Eresby Case and the rise of the Berties, p. 1. The Barony of Delawarr, 55. Peerage Cases in the Court of Chivalry, 69. The Muddle of the Law, 103. Tales of the Conquest, 254. The House of Lords, 324. Vol. II. Some 'Saxon' Houses, p. 1. The Great Carrington Imposture, 134. The Geste of John de Courcy, 258. Heraldry and the Gent., 307. ⁺ (index).
- **32.2*** COMPLETE PEERAGE. Rev. edn. VOL. I. Assisted editor.
- 32.3 PIPE ROLL 28 HENRY II. PRS xxxi. Introduction.
- **32.4** A SUSSEX KNIGHT'S FEE. *SAC* liii. 183.
- 32.5 ECHINGHAM OF ECHINGHAM. SAC liii. 276.

- 33.1 THE KING'S SERJEANTS AND OFFICERS OF STATE. London. Nisbet. 416 pp.
 I. Introduction, p.1. II. Serjeanty and Knight Service, p. 21. III. Some Features of Serjeanty, 35. IV. The King's Household, 52. V. The King's Sport, 268. VI. Coronation Services, 318. † (index).
- ENCYCLOPEDIA BRITANNICA. 11TH EDIT-33.2* ION. VOL. I. Abeyance; Aids. II. * Arundel, earldom. III. Baron; * Baronet. * Battle Abbey Roll; Bayeux Tapestry; * Beauchamp. IV * Burgh. V. Castle (part); * Castle Guard. VI. * Clare, family. VII. * Court baron. VIII. Domesday Book; Earl; * Earl Marshal. X. Ferrers, family; FitzGerald, family. XI * Geoffrey de Montbray. XIII. Hereward. XV. Knight Service. XVII. Lord Great Chamberlain; Mar, earldom; * Marquess. XVIII. * Mortain; Mowbray, family. XIX. Neville, family. XXI. Percy, family (part); Plantagenet; XXIII. * Register. XXIV. Scutage; Serjeanty. XXV. Stafford, family; * Stanley, family (part). XXVI. Talbot, family (part). XXVII. Vere, family. [NOTE. Some of the above articles by JHR had appeared in previous editions of Encyclopedia Britannica. William Page's Bibliography in Family Origins includes the following articles by JHR in EB which did not appear in the 11th edition: Mandeville, Geoffrey de; Stewart; Viscount. For the MSS of some of JHR's articles for EB see E.R.O., D/DRh Z7.]
- **33.3** THE WEIGHER OF THE EXCHEQUER. *EHR* xxvi. 714.
- **33.4** THE WENLOCKS AND THE UMFREVILLES OF LANGHAM. *EAT* xi. 54.
- **33.5** GAYNES IN UPMINSTER. *EAT* xi. 98.
- **33.6** ESSEX IN THE PIPE ROLLS. *EAT* xi. 147.
- **33.7** GREAT BRAXTED. *EAT* xi. 266.

- 33.8 THE RIVER PANT. EAT xi. 266.
- **33.9** STOW MARIES. *EAT* xi. 267.
- **33.10** HOBRIGE AND GLASENE. *EAT* xi. 267.
- **33.11** THE EARLY LORDS OF SHELLEY. *EAT* xi. 362.
- 33.12 PIPE ROLL 29 HENRY II. PRS xxxii. Introduction.
- 33.13* VCH HAMPSHIRE IV. Editorial help.
- 33.14* VCH MIDDLESEX II. Editorial help.

- **34.1** THE MANORIAL DESCENT OF FRILSHAM. Berks, Bucks and Oxon. Hist Jnl. xviii. 72.
- **34.2*** COMPLETE PEERAGE. Rev. edn. VOL. II. Assisted editor; App. D, 'The Great Offices of State': part-author.
- **34.3** ®: E.S. Armitage, THE EARLY NORMAN CAST-LES OF THE BRITISH ISLES. *EHR* xxvii. 544.
- 34.4 PIPE ROLL 30 HENRY II. PRS xxxiii. Introduction.
- **34.5** THE STOPHAMS, THE ZOUCHES, AND THE HONOUR OF PETWORTH. *SAC* lv. 19.
- 34.6 THE DESCENT OF THE HONOUR OF EAST-BOURNE, SAC ly, 307.
- **34.7*** VCH BEDFORDSHIRE III. Assisted editor.
- **34.8**^{*} VCH HAMPSHIRE V. Assisted editor.
- **34.9*** VCH HERTFORDSHIRE III. Assisted editor.

1913

- 35.1* CORONATION STUDIES. Ath 2 Aug.; 6 Sept.
- 35.2* COMPLETE PEERAGE. Rev. edn. VOL. III. Assisted editor, especially with App. C, 'Medieval Names.'
 35.3 ®: Public Record Office. CALENDAR OF INQUI-
- **35.3** ®: Public Record Office. CALENDAR OF INQUI-SITIONS POST MORTEM. VOL. III. *EHR* xxviii. 156.
- **35.4 (B)**: Public Record Office. CALENDAR OF VARIOUS CHANCERY ROLLS, 1277-1327. *EHR* xxviii. 358.
- **35.5** THE DEBTORS OF WILLIAM CADE. *EHR* xxviii. 522.
- **35.6 (B):** F.M. Powicke, THE LOSS OF NORMANDY. *EHR* xxviii. 768.
- **35.7** GREAT BIRCH, EASTHORPE, AND THE GERNONS. *EAT* xii. 88.
- **35.8** THE MANOR OF THEYDON MOUNT. *EAT* xii. 198.
- 35.9 THE FAMILY OF STRANGMAN. EAT xii. 299.
- **35.10** THE DESCENT OF WEST HORNDON. *EAT* xii. 312.
- **35.11** THE EARLIEST ESSEX MEDICAL MAN. *EAT* xii. 337.
- 35.12 PIPE ROLL 31 HENRY II. PRS xxxiv. Introduction.
- **35.13** ROTULI DE DOMINABUS. PRS xxxv. Introduction. [Dated 1913, but not published before 1916: P.R.O., 1/158, JHR to Maxwell Lyte, 27 Nov. 1915; E.R.O., D/DRh Z7, JHR to Maxwell Lyte, 9 Mar. 1916].

1914

- **36.1** THE DOMESDAY HIDATION OF ESSEX. *EHR* xxix. 477.
- **36.2 (B)**: Public Record Office, CALENDAR OF INQUI-SITIONS POST MORTEM. VOL. IV. *EHR* xxix. 155.
- **36.3** (B: H.W. C. Davis, REGESTA REGUM ANGLO-NORMANNORUM, VOL. I. *EHR* xxix. 347. [Long and penetrating review].
- **36.4 (B)**: Public Record Office, CALENDAR OF INQUISITIONS POST MORTEM, VOL. VIII. *EHR* xxxix. 561.

- **36.5** JOHN DOREWARD, SPEAKER (1399-1413). *EHR* xxix. 717. [Cf. **37.4**].
- 36.6 PIPE ROLL 32 HENRY II. PRS xxvi. Introduction.
- **36.7*** VCH HERTFORDSHIRE IV. Assisted editor.

1915

- **37.1 (B)**: Hilaire Belloc, THE BOOK OF THE BAYEUX TAPESTRY. *EHR* xxx. 109.
- **37.2** THE HOUSE OF LORDS AND THE MODEL PARLIAMENT. *EHR* xxx. 385.
- **37.3** BOOKS BEARING ON ESSEX HISTORY. *EAT* xiii. 12.
- 37.4 JOHN DOREWARD'S CHANTRY, BOCKING. *EAT* xiii. 73. [Cf 36.5].
- **37.5** LIONEL DE BRADENHAM AND COLCHESTER. *EAT* xiii. 86.
- 37.6 WHITE NOTLEY HALL. EAT xiii. 281.
- **37.7** THE NORMAN PEOPLE. *N&Q* (11), xii. 370.
- 37.8 PIPE ROLL 33 HENRY II. PRS xxxvii. Introduction.
 [Dated 1915 but not published before 1916: E.R.O., D/DRh Z7, JHR to Maxwell Lyte, 30 May 1916].
- 37.9 RECENT PEERAGE CASES. Quart R No. 444, p. 49.

1916

- 38.1* COMPLETE PEERAGE. Rev. edn. VOL. IV. Assisted editor, especially with App. D, 'Earldoms created by Stephen and the Empress Maud.'
- **38.2 (B)**: Public Record Office CATALOGUE OF AN-CIENT DEEDS VOL. VII. *EHR* xxxi. 177.
- **38.3** THE DATE OF THE GRAND ASSIZE. *EHR* xxxi 268.
- **38.4** THE SALADIN TITHE. *EHR* xxxi. 447.
- 38.5 BRACTONIANA. EHR xxxi. 586.

1917

- **39.1** THE KNIGHT SERVICE OF MALMESBURY ABBEY. *EHR* xxxii. 249.
- **39.2** ®: G.E. Brooke, A CATALOGUE OF ENGLISH COINS IN THE BRITISH MUSEUM: THE NORMAN KINGS. 2 VOLS. *EHR* xxxii. 430.
- **39.3** ®: Public Record Office, CALENDAR OF IN-QUISITIONS POST MORTEM, VOL. IX. *EHR* xxxii. 453.
- **39.4** (B: H. Le Strange, LE STRANGE RECORDS. *EHR* xxxii. 599.
- **39.5** ®: C.H. Haskins, THE NORMANS IN EUROPEAN HISTORY. *EHR* xxxii. 616.
- 39.6* OLD CHINGFORD CHURCH. ER xxvi. 38.
- **39.7*** THE WORDS 'TOWN' AND 'CAUSEWAY'. *ER* xxvi, 96.
- **39.8** BARONS AND KNIGHTS IN THE GREAT CHARTER. *Magna Carta Commemoration Essays.* (Royal Hist. Soc.), 46.

- **40.1** ®: J. Allenon, HISTOIRE FÉODALE DES MARAIS, TERRITOIRE ET L'ÉGLISE DE DOL. *EHR* xxxiii. 260.
- 40.2 ®: Public Record Office, CALENDAR OF IN-QUISITIONS MISCELLANEOUS, VOLS. I and II. *EHR* xxxiii. 395. [Long review. Corrects errors in indexing Essex place-names.][†]
 40.3 'BARONS' AND 'PEERS'. *EHR* xxxiii. 453.
- **40.3** 'BARONS' AND 'PEERS'. *EHR* xxxiii. 453. [Libellous attack on H.A. Doubleday].
- **40.4** GREAT BIRCH AND THE GERNONS. *EAT* xiv. 76; xv (1921), 243.
- **40.5** THE 'BRIGHTLINGSEA' FAMILY. *EAT* xiv. 76; xvii (1926), 41.
- 40.6 NORTH WEALD BASSET AND THE ESSEX FAMILY. EAT xiv. 111.
- **40.7** THE BISHOP'S 'SOKE' IN COLCHESTER. *EAT* xiv. 137.
- 40.8 WIVENHOE AND GREAT BENTLEY. EAT xiv. 185.
- **40.9** MALGRAVES IN HORNDON-ON-THE-HILL. *EAT* xiv. 185.
- **40.10** AN ABBOT OF TILTEY. *EAT* xiv. 186.
- **40.11** THE SPHERE OF AN ARCHAEOLOGICAL SOCIETY. *EAT* xiv. 193. [Presidential address, 1916. See also **40.15.**]
- **40.12** THE FOUNDER OF STANESGATE PRIORY. *EAT* xiv. 218. [See also **43.13**].
- 40.13 FRYERNING. EAT xiv. 233, 364.
- **40.14** THE ESSEX CLOTHING TRADE. *EAT* xiv. 256. [Great Coggeshall 1320].
- **40.15** BOROUGHFIELD, COLCHESTER. *EAT* xiv. 257, 365; xv (1921), 92 [Further to **40.11**].
- 40.16 THE RT. HON. JAMES ROUND, P.C. *EAT* xiv. 273.40.17 KILLEGREWS ALIAS SHENFIELDS. *EAT* xiv.
- 291; xv (1921), 92; xvi (1923), 95. **40.18** TWO GREAT DE VERE DOCUMENTS. *EAT* xiv.
- 298.40.19 ®: C.T. Flower, PUBLIC WORKS IN MEDIEVAL
- LAW. EAT xiv. 338.†
- 40.20 WILLIAM CHAPMAN WALLER. EAT xiv. 356.
- **40.21** THOBY PRIORY AND FRYERNING. *EAT* xiv. 360.
- 40.22 THE COGGESHALL CLOTHIERS. EAT xiv. 361.
- 40.23 WENLOCKS IN LANGHAM. EAT xiv. 362.
- 40.24 CHANGING LANDMARKS. EAT xiv. 363.
- 40.25 BIRCH 'HALL' IN KIRBY. EAT xiv. 363.
- 40.26* ESSEX CHURCH PLATE. ER xxvii. 149.
- **40.27** THE EARLY HISTORY OF NORTH AND SOUTH STOKE. *SAC* lix. 1.
- **40.28** THE HUNDRED OF EASTBOURNE. *SAC* lix. 126.
- **40.29** THE LORDS DACRE AND THEIR HOO QUARTERINGS. *SAC* lix. 128.

1919

41.1 THE 'TERTIUS DENARIUS' OF THE BOROUGH. *EHR* xxxiv. 62.

1920

- **42.1** THE STAFF OF A CASTLE IN THE 12TH CENTURY. *EHR* xxxv. 90.
- 42.2 CASTLE WATCHMEN. EHR xxxv. 400.
- **42.3** THE EARLY SHERIFFS OF NORFOLK. *EHR* xxxv. 481.
- 42.4* DOVEHOUSES. ER xxix. 199.
- 42.5* HAVERING STOCKS AND WHIPPING POST. ER xxix. 212.
- **42.6** THE NORMAN SEATS OF THE FAMILIES OF BUCI AND COVERT. *SAC* 1xi. 142.

1921

- **43.1** A BUTLER'S SERJEANTY. *EHR* xxxvi, 46.
- **43.2** 'SHIRE HOUSE' AND CASTLEYARD. *EHR* xxxvi. 210. [Cambridge].
- **43.3** THE DATING OF THE EARLY PIPE ROLLS. *EHR* xxxvi. 321.

- **43.4 (B):** W. Farrer, FEUDAL CAMBRIDGESHIRE. *EHR* xxxvi. 249.
- **43.5** THE MILDMAYS AND THIER CHELMSFORD ESTATES. *EAT* xv. 1.
- **43.6** THE DESCENT OF FAULKBOURNE. *EAT* xv. 35.
- **43.7** THE 'HAYMESOCNE' IN COLCHESTER. *EAT* xv. 77.
- 43.8 PRITTLEWELL PRIORY. EAT xv. 91.
- **43.9** COCKET WICK. *EAT* xv. 91.
- 43.10 THE PETRES. EAT xv. 93.
- 43.11 LORD AUDLEY OF WALDEN. EAT xv. 93.
- **43.12** ST. PETER'S CHURCH, COLCHESTER. *EAT* xv. 94.
- **43.13** STANESGATE PRIORY. *EAT* xv. 94. [Adds to **40.12**].
- **43.14** ARCHITECTURE AND LOCAL HISTORY. *EAT* xv. 126. [Presidential address 1917].
- **43.15** STONDON MASSEY AND ITS CHAPELRY. *EAT* xv. 148.
- 43.16 BECKET AT COLCHESTER. EAT xv. 153.
- **43.17** THE LATE DR. LAVER. *EAT* xv. 155.
- **43.18** SOME ESSEX RECORDS. *EAT* xv. 173. [Presential address 1918].
- 43.19 RAYNE AND ITS CHURCH. EAT xv. 272.
- 43.20 CAMULODUNUM. EAT xv. 308; xvi (1926), 55.
- 43.21 LITTLE BIRCH CHURCH. EAT xv. 314.
- **43.22** THE LORDS POYNINGS AND ST. JOHN. *SAC* lxii. 1.
- **43.23** THE EARLY HISTORY OF OVINGDEAN. *SAC* lxii. 197.
- **43.24** THE GLASS IN CHICHESTER CATHEDRAL. *SAC* lxii. 203.
- 43.25 THE FAMILY OF ALLARD. SAC 1xii. 204.
- 43.26 NEW SHOREHAM CHURCH. SAC lxii. 206.

1922

- 44.1 THE LEGEND OF 'EUDO DAPIFER'. *EHR* xxxvii.1. [Attacks W. Rye concerning the 'Colchester Chronicle'].
- **44.2** ®: Public Record Office, CALENDAR OF IN-QUISITIONS POST MORTEM, VOL. X. *EHR* xxxvii. 273.
- **44.3** ®: C.W. Foster, FINAL CONCORDS OF THE COUNTY OF LINCOLN. *EHR* xxxvii. 426.
- 44.4* BARRINGTON OF BARRINGTON HALL. *ER* xxxi. 1.
- 44.5 RADYNDEN. SAC lxiii. 226.
- 44.6 THE KNIGHTS HOSPITALLERS. SAC lxiii. 227.

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- **45.1** 'DOMESDAY' AND 'DOOMSDAY'. *EHR* xxxviii. 240.
- **45.2** ROBERT AYLETT AND RICHARD ARGALL. *EHR* xxxviii. 423.
- 45.3 THE HEART OF ST. ROGER. *EAT* xvi. 1. 136.
- 45.4 ST. BOTOLPH'S BRIDGE, COLCHESTER. *EAT* xvi. 5.
- 45.5 BRADWELL-JUXTA-MARE. EAT xvi. 52.
- 45.6 RAYNE CHURCH. EAT xvi. 54.
- 45.7 PARSLOES, BECONTREE HEATH, SQUIRRELS HEATH, AND DEWES HALL. *EAT* xvi. 88.
- 45.8 THE ADVOWSON OF LANGDON. EAT xvi. 137.
- 45.9 CANFIELD CASTLE. EAT xvi. 138.
- 45.10 COLCHESTER COURT ROLLS. EAT xvi. 144.
- 45.11 NORSE PLACE-NAMES IN ESSEX. EAT xvi. 169.
- **45.12** THE HORNCHURCH ROAD. *EAT* xvi. 178.
- **45.13** CHURCH GOODS. *EAT* xvi. 210. [Hempstead, Stansted Mountfichet].

- 45.14 PLESHY. EAT xvi. 268.
- **45.15** THE ROMAN ROAD FROM COLCHESTER TO MERSEA. *EAT* xvi. 273.
- **45.16** RICKLING. *EAT* xvi. 296.

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- 46.1* BALDWIN OF FELSTED. ER xxxiii. 17.
- 46.2* PRESBYTERIAN ESSEX. ER xxxiii. 28.

1925

47.1 NOTE. Some of JHR's articles in *EAT* xvii and xviii first appeared in parts of those volumes published in 1925. All those in volume xvii are listed below under 1926, and those in xviii under 1928, the years when the title pages of the volumes were issued.

1926

- **48.1** CHALVEDON, KELVEDON AND KELVEDON HATCH. *EAT* xvii. 10.
- **48.2** BERRYFIELD, COLCHESTER. *EAT* xvii. 37. [Location. Roman pavement].
- 48.3 ROMAN REMAINS IN ESSEX. EAT xvii. 41.
- 48.4 THE MAKING OF BRENTWOOD. EAT xvii. 69.
- **48.5** THE GOSHALMS OF EAST TILBURY. *EAT* xvii. 115
- **48.6** THE ESSEX AND SUFFOLK BORDER. *EAT* xvii. 149. [Also in *Proc Suffolk Inst Arch* xviii (1922-4), 244].
- 48.7 NAVESTOCK. *EAT* xvii. 194.

1927

49.1 NOTE. Some of JHR's articles in *EAT* xviii first appeared in a part of the volume published in 1927. They are listed below under 1928, the year when the title page of the volume was issued.

1928

- **50.1** 'GRYME'S DYKE, OR THE OUTWARD TRENCH OF WYLDENHEY.' *EAT* xviii. l.
- **50.2** BYGADES. *EAT* xviii. 60.
- **50.3** ALFLEDENESSE. *EAT* xviii. 63.
- **50.4** THE PAMPHILONS. *EAT* xviii. 137.
- 50.5 COLCHESTER'S FIRST CHARTER. *EAT* xviii. 138.
- 50.6 JARVIS IN BENFLEET. EAT xviii. 229.
- 50.7 THE HARVEST HORN. *EAT* xviii. 229. [Navestock.]
- 50.8 HORLOCK. EAT xviii. 296.
- 50.9 CLEMENTS IN NAVESTOCK. EAT xviii. 297.

1929 and Later

NOTE. Items **51.3 to 51.6** appeared in *EAT* xix (part 1, 1928), probably during JHR's lifetime, but that volume was completed in 1930, when the title-page was issued.

- **51.1*** THE ORIGIN OF THE FINCHES. *SAC* lxx (1929), 19.
- 51.2 FAMILY ORIGINS AND OTHER STUDIES. Ed. William Page, with Memoir and Bibliography. London, Archibald Constable. 1930. lxxiv + 303 pp. Preface, p. v. Memoir, ix. Bibliography, xlix. Historical Genealogy, 1. An Approved Preconquest Pedigree, 13. The Origin of the Cavendishes, 22. The Origin of the Churchills, 33. The Origin of the Walpoles, 43. Neville and Bulmer, 54. The Mildmay Mystery, 60. The Lords of Kemes, 73. The Brodrick Charters, 103. A Huguenot House, 109. The Yarborough Pedigree, 121. The Heneage Fiction, 125. The Granvilles and the Monks, 130. The Mauleverer Concoction and others, 170. The Garter Plates and Peerage Styles, 174. The Barony of Ferrers of Chartley, 190. The Bayeux Inquest of 1133, 201. Reliefs, 217. The Prise of Wines, 237. 'Burh-Bot' and 'Brig-Bot', 252. The Origin of Essex Parishes, 266. [Presidential address to Essex Arch Soc 1917]. Index 275.†
- **51.3** RAMSEY TYRRELLS. *EAT* xix (1930), 51.
- 51.4 BOCKING AND STISTED. EAT xix (1930), 51.
- 51.5 HENRY III IN ESSEX. *EAT* xix (1930), 126. [Presidential address 1920].
- 51.6* INGATESTONE AND MARGARETTING. EAT xix (1930), 128.
- 51.7 CESTREWALD. EAT xix (1930), 170.
- 51.8* AN EARLY RECTOR OF STOCK. EAT xix (1930), 242
- 51.9* SUSSEX IN THE PIPE ROLLS OF HENRY II. SAC lxxi (1930), 97.
- 51.10* THE THURROCKS. EAT xx (1933), 41.
- **51.11*** THE MANTELS OF LITTLE MALDON. *EAT* xx (1933), 254.
- 51.12* COMPLETE PEERAGE. Rev. edn. VOL IX (1936) Art. 'Mortain'.
- 51.13* SHELLOW BOWELLS AND TORRELLS HALL. *EAT* xxi (1937), 25.
- 51.14* THE HORKESLEYS OF LITTLE HORKESLEY. *EAT* xxi (1937), 284.
- 51.15* ESSEX HISTORY FROM CHURCH PLATE. Ed. W.R. Powell. *EAH* 24 (1993), 150.
- **51.16*** THE LIBERTIES OF THE BOROUGH OF COLCHESTER. Ed. and comp W.R. Powell. *EAT* 25 (1994), 72.
- 51.17* SHORT STUDIES IN TOPOGRAPHY AND FAMILY HISTORY. Ed. and comp W.R. Powell. *EAH* 26 (1995), 12. [Medieval Maldon. The Hanningfield Family of East Hanningfield. Wallfleet. Robert Bruce in Essex].
- 51.18* THE COUNTS OF ST. POL IN ESSEX AND KENT. Ed. and comp W.R. Powell. *EAH* 27 (1996), 193. [Great Dunmow; Farnham; White Roding; Dartford].

APPENDIX - REPORTS ON PEERAGES AND BARONETCIES

Between 1901 and 1922 Round, as Historical Adviser to the Crown in Peerage Cases, compiled many official reports, mainly on abeyance claims, for the use of the Attorney General in hearings before the House of Lords Committee of Privileges. In 1911-12 he also reported to the Home Office on claims relating to the official Roll of Baronets. In 1930 Round's own copies of all these reports, in four typescript volumes, together with six envelopes of MS drafts and letters, were deposited by his executors in the House of Lords library. The contents of the volumes are listed in William Page's Bibliography (*Family Origins*, pp. lxxi - lxxiv). More complete versions of all the Peerage Reports, with other papers and letters not in Round's own collection, are preserved in the records of the Treasury Solicitor (P.R.O., TS), of which there is a typescript list.

GENERAL INDEX

NOTE While this is primarily an index of subjects, it also refers to persons and places. Persons are listed under the following headings:,

 ebiography>, <families>, <genealogy>, <peerages>, <royalty>.

 Places are listed under <the names of particular counties of Great Britain>, <London>, under the headings <castles>, <churches>, <Domesday Book>, <monasteries>, <schools and colleges>. There are also headings for <Ireland>, <Scotland>, <Wales>, <France>, <Germany>, <Switzerland>. Round's principal publications, including those in works of reference, are separately indexed, e.g. *Geoffrey de Mandeville, Complete Peerage*. The entries headed <Writers Criticised> are a small selection only. A list drawn up by one of Round's opponents in 1922 contains no fewer than 57 names (*Dr J. Horace Round and his recent attack on Mr Walter Rye*, App. I). For a separate Index to Essex Items see below.

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Author: W.R.Powell, 2 Glanmead, Shenfield Road, Brentwood CM15 8ER

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Work of the Essex County Council Archaeology Section, 1997

Edited by A. Bennett

This annual report enables the Section to publish notes on a number of watching briefs and chance finds made during the year. Summaries of larger excavations, evaluations and intensive watching briefs can be found elsewhere in this volume (p. 194-215).

Reports are arranged in chronological order or, in the case of multi-period sites, under the principal period represented. The Section is grateful to all who have undertaken work on its behalf, especially those museums and individuals who have allowed finds to be published here. The illustrations are by the following: Nick Nethercoat (Fig.1), Betty Gobel (Fig.2), and Roger Massey-Ryan (Fig. 3).

Full details of all sites can be found in the County Sites and Monuments Record (SMR).

Prehistoric

Kirby-le-Soken, Kirby Quay (PRN17619, 17623) Owen Bedwin

During the last 30 years, Mr C. Byford-Smith, a local resident, has regularly collected flintwork, including thumbnail scrapers, a broken knife, a few microliths and many flakes, from a small area of mud $c.50m^2$ eroding from the eastern edge of the saltings at Kirby Quay.

Immediately adjacent to the area of flintwork is an area $c.50m^2$ from which medieval pottery, consisting of jugs and cooking pots, has been eroding.

The edge of the saltings is about 1m high, on a subsoil of grey clay. Occasionally dark grey or black layers of soil can be seen in the eroding face.

Roman

North-west Uttlesford (PRN 17991)

Hilary Major

A number of finds from north-west Uttlesford were kindly lent by their owner for study. They included the five objects described here.

1. Open-work disc brooch (Fig. 1.1) in poor condition, with four lugs, now damaged, with four kidney-shaped perforations and a central applied boss. The pin is hinged. The field is blue enamel, and the enamel on the boss is now very decayed or

missing. This is an example of a rare 2nd-century brooch type; Hattatt (1985, 146, no. 538) illustrates a very similar brooch from Suffolk, with parallels cited from Caerleon and Canterbury.

- 2. Enamelled disc brooch (Fig. 1.2), edge damaged, originally with a sprung pin. The motif is a triskele with a central copper-alloy dot, set in a blue enamel field. The design was possibly in red enamel, now missing. The type, which is likely to be 2nd century, is fairly common, and this brooch is virtually identical to one found near Ipswich (Hattatt 1982, 138, no. 120).
- 3, 4. Two open-work triangles (Fig. 1.3, 1.4) with knobbed apices. One is virtually an equilateral triangle, with fairly slender joining rods, and has a pale green patina. The other has one thicker straight side and two slightly concave sides, and has a dark green patina, the surface now slightly damaged. One knob is slightly bigger than the other two. The knobs of both have slight mouldings at the junction with the rods. The date and purpose of these objects in unknown. The patinas suggest a Late Iron Age or Roman date, and the second example certainly has a 'Celtic' look, and is slightly reminiscent of button-andloop fasteners (Wild 1970), which can have open triangular shanks. A possible parallel (unfortunately unstratified, and possibly incomplete) comes from Richborough (Wilson 1968, 97, no. 141); the latter object is almost the same size as the Uttlesford examples, with one thinner bar. The opposing knob has a moulded top in the form of a triangle with concave sides. It is suggested that it is a faulty casting for a harness ornament, although the objects seem rather small for this purpose. If they are harness fittings, they could perhaps be miniatures, as with the fairly common miniature terrets from sites such as Baldock (Stead and Rigby) 1986, 136, no. 381). However, their interpretation as any sort of harness ornament, miniature or not, must remain doubtful.
- 5. Cosmetic mortar (Fig. 1.5), end-looped, with the loop now missing. The surface is damaged, but it appears to have been plain. The type is 1st-2nd-century AD, and is discussed by Jackson (1985). Surviving length 70mm.

Saxon

North Weald Bassett,

New Pond Spring (PRN 17990) Susan Tyler

An Early Saxon supporting-arm brooch (Fig. 2) was handed to Harlow Museum and subsequently to the author for identification. It is described below:

The brooch is in very good condition, but is minus the pin which was of iron. The corrosion products from which are clearly visible on the headplate, particularly around the pin attachment holes on the two projecting circular side lappets through which the iron axis pin would have originally passed. The headplate is rectangular with decoration comprising deeply-incised horizontal grooves: two along the top edge and a further five grouped together at the bottom of the headplate and continuing onto the bow. The bow itself is long and narrow, its curvature defined by two pairs of incised lines at each end; a central median groove runs along its length. The footplate also is defined by two pairs of horizontal deeply incised lines with facetting above and below. On the back of the brooch the catchplate is complete and all surfaces are in good condition. Length: 41mm; Max. width of headplate: 20mm.

The brooch can be classified using Bohme's classification (Bohme 1974, 10-14) for supporting-arm

brooches (Stutzarmfibeln). Because of its size (headplate less than 25mm in diameter) and its faceted bow with median groove, it falls within Bohme's 'Typ Perlberg'; the majority of which are found in northern Germany and northern Holland. The type can be dated to the first half of the 5th century.

The brooch is another addition to the small, but growing, number of supporting-arm brooches identified in England, several of which have been found in Essex: at Mucking (Jones and Jones 1975, 161, fig. 55, no.8; Bohme 1986, 527-42, fig. 52.7 and 10; Hamerow 1993 61, Fig. 185.1); at Springfield (Tyler 1990, 144-6); at Barling (K. Crowe, pers. comm.) and at Henham (Tyler 1995, 270-1). Their presence in Essex demonstrates that the area was closely linked either by immigration or by trade (or indeed by both) to northern Germany and northern Holland during the early to mid-5th century.

Medieval

Great Horkesley, The Old House,

Old House Road (PRN 17596) Sarah Gibson

During renovation and conversion of a listed Grade II barn dating to the 17th to 18th century, a large quantity of pottery was discovered beneath the floor of the barn.



Fig. 1 Finds from north-west Uttlesford

This apparently lay within a burnt brickearth deposit, which was observed but not archaeologically recorded. The remains of a well were also found.

Some of the pottery on examination proved to be Colchester Ware of probably the 15th to 16th century. Some sherds may be kiln wasters, but it is uncertain whether this was a kiln or some other form of pottery production site.

Post-medieval

Coggeshall, The Mill House, Kings Acre (PRN 17911) Richard Havis

A watching brief was undertaken on the foundations to a new garage. Two sides had been excavated at the time of the visit, and revealed post-medieval deposits sitting on top of natural subsoil. These deposits consisted of a very dark earth containing fragments of post medieval brick and tile.

Great Tey, Cob Cottage, High Street

(PRN 17594)

Sarah Gibson

Located to the rear of a listed Grade II building, a former wheelwright's shop was recorded prior to demolition. It was of two storeys, brick built to first-floor level, then weatherboarded on a timber frame. A brick by the doorway is dated 1875. There was a double door entrance in the west wall, and a single pedestrian door in the south wall. It had a gabled roof with clay pantiles. No fenestration survived in the north wall. Steep stairs on the east wall led to the first floor, where there were two replaced fenestrations. There was a trussed timber roof. There was no evidence of a crane, and no technological features survived.

Outside the front of the house, set into the pavement, is a wheel patten, 2m in diameter and made by Bakers of Colchester for use by wheelwrights.



Fig. 2 An Early Saxon supporting arm brooch from North Weald Bassett

Projects

Aerial Survey 1997 David Strachan

Objectives

The objectives for the year were to continue reconnaissance with the primary aim of locating and recording new cropmarks while developing the use of Global Positioning System (GPS) derived data in both planning flying strategies and in post-reconnaissance location and archive. Funding was made available by The Royal Commission on the Historical Monuments for England (RCHME) to fly both in Essex and Suffolk. In addition, flights over Hertfordshire were funded by the Archaeology Section of Hertfordshire County Council, partly to create a colour oblique record of historic towns to be used by their ongoing English Heritage Historic Towns project. Post-reconnaissance and printing costs were funded entirely by the Archaeology Section of Essex County Council. Prints from the year have been accessioned both to the relevant SMRs and to the National Monuments Record (NMR) at the RCHME offices at Swindon.

GPS

GPS has again proved to be an excellent tool for navigation, recording, and post-reconnaissance analysis in aerial survey of the county. The GPS-derived plots created in 1996 (see Strachan 1997a, 188) indicated areas of high potential for the discovery of new cropmark sites in areas of heavier clay soils in the west of the county. It had been hoped that reconnaissance in 1997 could revisit areas nearby in an attempt to retrieve a high percentage of new sites. Unfavourable conditions, however, resulted in little or no cropmark formation in these areas.

Inter-tidal zone and the coast

A number of inter-tidal sites were targeted early in the season with particularly good results being obtained at "The Nass" fish-weir (PRN 9974), which has been recently dated (Strachan, this volume, 000), and a currently unidentified linear feature, consisting of various stone deposits, occurring just below MLW near Bradwell Power Station. A number of other fishweir sites were targeted, although the available tides did not prove low enough to afford good exposure (Strachan 1997b).

Cropmark archaeology

Information about soil-moisture deficit in early June suggested that cropmark formation would be good over the summer, as did an early, exploratory flight over Essex, Suffolk and Hertfordshire. In June, however, extremely high levels of rainfall, combined with strong winds, resulted in both the recession of developing cropmarks, and extensive crop damage. While cropmarks did appear in certain areas over the season, and were recorded, they did not compare with the exceptional years of 1995 and 1996 (Strachan 1996, 1997a, 1997c).

Essex Mapping Project 1997

David Strachan and Caroline Ingle

Work has continued throughout 1997 on the Essex Mapping Project (EMP), as part of the Royal Commission on the Historical Monuments of England's (RCHME) National Mapping Programme (NMP). The 19 sheets mapped in 1997 brings the total completed to 107 (Fig. 3). The number of records on the MORPH database now stands at 8788, with over 1500 individual records being added during the year. In addition, around 100 new sites have been added to the SMR over the year. This year has seen completion of mapping of the coast and also covered the estuary and much of the valley of the River Stour. For these areas abutting another county complete 1:10000 quarter sheets containing parts of Essex are mapped, although only sites on the Essex side of the border are added to the database (those in Suffolk will, it is intended, be inputted to a Suffolk database when that county is incorporated into a later phase of the National Mapping Programme). A diverse range of sites continues to be plotted, and the following gives a brief outline of some of the features mapped in 1997.

Coastal features

One additional fish weir has been plotted, at Holbrook Bay; on the Suffolk side of the river Stour. This site was originally identified by the Essex aerial survey in 1995; and so far remains the single example outside the Blackwater estuary which has been encountered during the mapping programme. Others are recorded on this estuary from documentary evidence, for example in Harwich Harbour although these were removed in the 19th century as they were proving a danger to shipping. It is probable that the Stour once had an extensive fishing industry, although no other examples have been recorded during aerial survey over recent years, and it is assumed that other sites have been removed by dredging and other development (Strachan 1997b). Compared with the coastline further south there have been few examples of oyster pits recorded, but examples were mapped in the area around Hamford Water.

Although the main concentrations of decoy ponds in the county appears to have been the north side of the Blackwater estuary, a further five have been recorded during 1997 in the north-east of the county around Hamford Water. Four of these (at Peter's Point, Thorpele-Soken (PRN 17236); New Decoy Pond, Thorpe-le-Soken (PRN 17229); Beaumont cum Moze (PRN 17230); and Bramble Island, Beaumont cum Moze (PRN 17372)) have now been largely refilled and/or partly eroded. That at Great Oakley Dock, has now been converted into a reservoir, but photographs of the 1940s demonstrate that it was originally a rectangular pond with six radial and loosely spiralled arms, of similar form to two ponds previously plotted at Tillingham (Strachan 1997a). In his gazetteer of duck decoys in Essex, Glegg (1943, 1944) noted that this pond had gone out of use before 1886. On the 1940s aerial photographs only one arm was visible of the nearby decoy at Beaumont cum Moze (PRN 17372), although according to Glegg it originally also had 6 pipes around a circular pond and was last worked in 1841 'by the widow of Mr Joseph Salmon, who for some years rented the decoy and mansion from the Governors of Guy's Hospital'. It appears that the pipes had been largely obliterated by 1890. The only other decoy listed by Glegg in this immediate area was PRN 17229, New Decoy Pond, which lav in the south-east corner of Horsev Island. It was last worked around 1840 when it was abandoned because of the difficulty of supplying it with fresh water.

In addition to those recognised on the aerial photographs consulted Glegg also lists a number along the south side of the Stour estuary which have not been identified on the aerial photographs: Dovercourt Decoy, Rovdon Hall Decoy, Old Decoy near Jacques Hall, Jacques Hall Decoy, and Pond Hall Decoy, all of which lay within c.1.5 miles of the river. Together with the evidence from the NMP it indicates the importance of wild fowling in this part of the country, and the scale of the industry comparable to that along the Blackwater estuary. A total of 24 decoy ponds have been plotted along the Essex coast, but this is clearly not the full total that originally existed: Glegg lists 35, but as noted this does not include all of those plotted during the NMP project, highlighting the need for further cartographic and documentary research to ascertain a more complete picture in addition to elucidating the history of individual sites. A somewhat different style of decoy pond occurs at Wormingford (PRN 9180, now Wormingford Mere) and, as depicted on OS 1st edition 6" map, has a relatively large pond with no apparent pipes.

World War II Defences

Many of the defensive features in and around Harwich were recorded by the World War II Defences Survey in 1996 (Nash 1997), but additional features have been plotted from aerial photographic evidence. These include a number of trenches and possible gun emplacements on the cliffs and an anti-aircraft battery at Dovercourt. These are complemented by similar defences on the north of the Stour, including slit trenches around the Royal Naval Establishment at Shotley (HMS Ganges) and anti-aircraft batteries at Shotley Gate and Landguard. There is another concentration of anti-aircraft batteries around Hamford Water, in particular in the vicinity of the explosives factory on Bramble Island. The area was also defended from airborne landings by an expanse of anti-glider ditches on the north side of Hamford Water.

Cropmarks

The density of cropmarks has varied greatly across the area covered during the year, reflecting the variation in



Fig. 3 Essex Mapping Project progress to date

the underlying geology. Dense complexes have for many years been recorded on the sands and gravels of the Tendring Plateau and Stour valley. In contrast, away from the river valleys where the subsoil is mainly boulder clay there have been relatively few cropmark sites. This area is one with a relatively long history of aerial survey, in particular by two local flyers, Ida McMaster and Richard Farrands. This probably explains the relatively low number of cropmark sites newly identified by the EMP in this area, apart from former field boundaries (many of which may have been extant when originally flown), and features such as World War II sites' which until recent years have not been systematically recorded for the SMR.

Of particular note is the high concentration of ring ditches, interpreted as barrow cemeteries, and generally presumed to be of Bronze Age date, along the Stour valley upriver from Lawford. Out of a total of 1030 ring ditches plotted by the project over the 107 maps so far completed 175 occur on five map squares within the Stour valley. They include for example a group of ring ditches, now scheduled, at Lawford (PRN 2, SAM 175) one of which is double ditched and partly contiguous with two other ring ditches. Close by, in Lawford Park a round barrow excavated in 1812 produced two urns, whilst further ring ditches are recorded to the south and south-west. It is one of the

few burial mounds in the county visible on the aerial photographs as an earthwork.

Other clusters of ring ditches are recorded at, e.g. Dedham (PRN 2725), where there is a group of 11 ring ditches within a subrectangular enclosure, beyond which lies a second group of eight and further scattered ring ditches. One complete collared urn and several sherds were recovered in the area during excavation of a small gravel pit in 1914, whilst excavation of another ring ditch in 1957 produced two collared urns. One of a group of nine ring ditches at Mount Bures (PRN 9188) was partially excavated in 1971 and produced evidence of cremation burial(s) and pottery, possibly of Bronze Age date.

Further south of the river the recorded Bronze Age cemeteries include that at Ardleigh, partially excavated in the late 1950s following the discovery of urns during deep ploughing in 1955 and subsequently scheduled in 1976. In excess of 100 urned cremations and other unurned cremations were recorded. The area was first photographed from the air in 1959 by R.H. Farrands, the resulting photographs showing ring ditches existing within the urnfield area which F.H. Erith was then able to locate on the ground by differential crop height. Ring ditches excavated by Erith and the Colchester Archaeological Group proved to have mainly Middle Bronze Age origins, mostly producing only a few cremations each, although ring 3 yielded 21 urned and 3 unurned cremations plus fragments of at least 3 other urns. When the cropmarks were replotted, the NMP plot made a number of amendments to the original, including the addition of an additional ring ditch not previously recognised.

A group of 9 ring ditches at Badley Hall, Great Bromley (PRN 2457) are part of a larger complex (see PRN 2460) comprising linear features of field systems and trackways, several other enclosures and a possible henge. The latter lies adjacent to a square enclosure on the north and there is a further group of 16 ring ditches some 400m to the south. Further south again is another wide-ditched circular feature, without entrances. However, although suggested to be a possible henge, recent excavation of other similar cropmark features at Great Bentley and Little Bentley have proven to be in fact medieval/post medieval windmills, whilst finds from trial trenching of two large concentric circular ditches and a smaller ring ditch at Belchamp St Paul suggest a Bronze Age date for these features (see Brown and Germany, below).

Not all of the barrows need necessarily be of Bronze Age date. A possible Saxon date has been attributed to three of a small group of ring ditches at Broomfield Plantation, Alresford (PRN 1906) excavated in 1984. Although the three ring ditches produced no grave goods or bone (because of the acid soil) the size of the ditches (*c*.7.5m in diameter) is closely matched by dated Saxon burials at Orsett and other East Anglian sites.

There are also other possible funerary monuments along the Stour valley including an oblong enclosure at Lawford (PRN 2758) with an entrance centrally placed at the rounded (?eastern) end, interpreted as a small long barrow or mortuary enclosure. At Long Gardens, Mount Bures, aerial survey in 1996 of a possible long mortuary enclosure (PRN 9188) recorded for the first time a row of eight pits along the inside of one side of an open-ended enclosure (Plate 1). There is a further example of a possible mortuary enclosures at Lamarsh (PRN 9237).

Also very evident are the fragments of rectilinear field systems, in some instances associated with trackways, and other enclosures, as noted above at e.g. Great Bromley. For example, at Langham (PRN 2717) is a rectangular enclosure-paddock system situated on the banks of the Stour, and comprising a series of large compounds, and close to the river a smaller enclosure which may indicate a dwelling. The whole complex appears to represent a farmstead, possibly of Romano-British date. The ring ditches at Lawford (PRN 2) lie within a single field of a rectilinear field system which also overlaps with a more fragmentary and less regular field system with associated trackways on a slightly different orientation. Of probably later date on the Boulder Clay areas in particular there are additionally, numerous cropmarks of field boundaries which remained extant until the middle of this century. Many of these are depicted on the OS 1st edition maps but their origin could be much earlier.

Ultimately the recording of each of the individual features onto the Morph database will enable greater analysis and comparison of these across the county on the basis of their morphology, and with excavated and dated examples which do not necessarily appear on the aerial photographs.

Cropmark Enclosures Project

Nigel Brown and Mark Germany

This project is looking at four small circular cropmarks: at Belchamp St. Paul; Great and Little Bentley; and Rivenhall; with the aim of dating the cropmarks and investigating something of their immediate environs. This type of cropmark has commonly been interpreted as hengiform monuments (Priddy and Buckley 1987; Harding and Lee 1987). Great Bentley and Rivenhall were investigated in 1996 (Bennett 1997).

As at Great Bentley, the Little Bentley site produced 12th/13th-century ceramics and appears to be the site of an early medieval windmill. This site had hitherto been regarded as one of the best examples of a cropmark henge in eastern England (e.g. Harding 1995; Holgate 1996). Belchamp St. Paul proved to be prehistoric, as had Rivenhall, but of Bronze Age date; Rivenhall had been discovered to be Neolithic.

Sampling of alluvial/colluvial deposits in the valley of a small stream at Rivenhall, and in the valley of the Stour at Belchamp St. Paul, revealed deep sequences with good environmental data. This will enable something of the original landscape setting of the monuments to be understood. Hitherto such deposits have generally been examined in a rescue context during, for example, road building, and not necessarily close to archaeological sites. This project has demonstrated the possibility of targeting such investigations to investigate archaeological sites and environmental sequences.

Previous summaries: Bennett (ed.) 1997, 196 Archive: Bt.M. and C.M.

Historic Towns Survey

Maria Medlycott

The Essex Historic Towns Survey is examining 31 Historic Towns in Essex, as part of a nation-wide reassessment of the management of the urban archaeological resource, funded by English Heritage. To date the survey is making good progress. The assessment reports for each of the Historic Towns have been finished, and work is just beginning on preparing the management strategies and associated plans. Recent archaeological work within the Historic Towns has demonstrated the usefulness of the assessment phase as a means of identifying areas of archaeological potential, with the discovery of medieval buildings in Saffron Walden, the Roman town defensive ditch at Kelvedon and the medieval town ditch at Castle Hedingham.



Plate 1 Aerial photograph of cropmarks at Long Gardens, Mount Bures, including the possible long mortuary enclosure (PRN 9188)

Industrial Archaeology Survey

Shane Gould

Excellent progress has been made with the project during 1997 with the completion of major programmes of work; since September 1994, 349 'new' sites of an industrial nature have been added to the ESMR. Following the completion of extensive surveys of Essex maltings, lime kilns, historic boundary markers and Second World War Airfields, further reports have now been produced for a further 27 maltings, Essex iron foundries and First World War Airfields. Local societies, post-graduates and individual members of the public are now helping in similar surveys for workhouses, the buildings of the public water supply industry, brick and tile works, and farmsteads on Canvey Island. Once an assessment of all the surviving monuments of a given type have been completed, informed policies can be implemented on their importance, protection and ultimately, preservation.

Iron Foundries in Essex (A. Garwood, E.C.C. Field Archaeology Group). An important part of the farming infra-structure especially during the 19th century, little is known about the location, survival and form of Essex iron foundries. The County Council funded the survey in order to prioritise the resource and formulate an appropriate strategy in advance of any future threat; the results would also inform a national investigation being undertaken by English Heritage.

Thirty sites were eventually identified, but the majority had been demolished without adequate record. The report concluded that Essex retains two sites of potential regional/national importance; the Atlas Works, Earls Colne (PRN 15005) and the Goldhanger Iron Foundry (PRN 15303). The former was established in the 1860s by Reuban Hunt; the foundry dominates the town and the owner adopted a paternalistic attitude providing workers' housing, utilities and public buildings. Much of the original foundry survives including offices, machine erecting shop (Plate 2), foundry and water tower; the key buildings being listed Grade II. A detailed survey has been completed by staff of the E.C.C. Archaeological Advisory Group and the results will inform any future scheme of re-use.

Goldhanger Iron Foundry was instigated by W. Bentall in 1808, but had closed by 1815 when the works was re-located to Heybridge. Many foundries were relatively long-lived and buried examples that retain evidence of early 19th-century practice are comparatively rare. Having identified the site from the

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Plate 2 The Machine Erecting Shop, Atlas Ironworks, Earls Colne

1841 Tithe map, nationally important remains of the ironworks may survive within a field.

World War I Military Airfields (P.A. Doyle). This survey has recently been published as 'Fields of the First - A history of aircraft landing grounds in Essex used during the First World War'. The book and its contents are reviewed below (see p.000).

The Essex Malt Industry Vol.2 (S. Gould, T. Crosby and S. Gibson). The majority of the 24 sites assessed had been converted to alternative uses, but there were notable exceptions. Upper Yeldham Hall Malthouse (PRN 15126) retains a mid 19th-century kiln with firebox, heat dispersing plate and tile floor, whilst at Bush Hall Farm, High Laver (PRN 15280), the first floor of the malthouse is unusual in that it is laid with slate slabs. Detailed site surveys continue to be undertaken within the planning framework in order to inform future schemes of re-use or to make a permanent record of those fixtures/fittings that will be destroyed. Those cited below only offer a brief summary of the findings and synthesised articles will appear in future issues of *Essex Archaeology and History* or *Industrial Archaeology Review*.

St. Faiths Hospital, Brentwood (PRNs 17777-17778). Erected in 1854 as an industrial school for orphaned

children, the building contained dormitories, school rooms, a central hall, workshops and laundry. Much of the internal spatial plan survived and it was possible to identify those areas of the building reserved for particular social groups. Within the central hall a previously hidden biblical inscription has been identified (Plate 3) and the presence of cast iron roundels on the banisters may have been introduced to prevent children sliding down the stairs.

World War One Aerodrome, Stow Maries (PRN 16686). Operating between 1916 and 1919 the airfield retains over 20 buildings including Reception Station, Generator House, Officers' Mess, Regimental Institute, workshops, stores, offices and accommodation blocks, including parts of an unfinished women's hostel. In design terms the buildings are simple and functional, but viewed as a whole their survival is of considerable interest. A measured and photographic survey carried out by the RCHME (1998) will help place the site in its regional and national context thereby aiding any future management strategy.

The following site surveys were also completed in 1997: Occidental Oil Refinery, Canvey Island (PRN 15132)
Waltham Abbey South Site Phase II (PRN 15096)
No. 1 Maltings, Mistley (PRN 15059) Isinglass Factory, Coggeshall (PRN 15406) Stisted Reservoir (PRN 15136) Saltcote Maltings Phase II (PRN 15052)

The results of the survey continue to be publicised through presentations to both local societies and national bodies together with published articles and occasional books.

World War II Defences Survey

Fred Nash

The past year has seen continued advances into the recording of the County's World War Two defence sites. The Howe Street to Springfield gap was completed, with the survey of 55 pillboxes and defensive emplacements along the section of the GHQ (General Headquarters) Line immediately north of Chelmsford.

Recording of the Eastern Command Line from its origin on the coast at Mersea Island to its exit from the County north of Sudbury was a major achievement. In the 30 miles of its path 139 pillboxes, 33 anti-tank barriers (Plate 4), 25 spigot mortar emplacements and a concrete firing post (Plate 5) were surveyed, recorded and photographed. Notable was the outstanding complex of fortifications at Chappel Viaduct. Of the 198 sites along the Eastern Command Line, 90 still survive, a surprisingly high proportion when it is considered that in the Colchester Town area only 9 of the original 56 emplacements remain.

Survey of the Canvey Island to Sandon section of Britain's major line of defence has commenced. Although there were many defence lines built during 1940, the GHQ Line was designed to be the most formidable, and certainly the longest. It paralleled the coast from Bristol to London, and from the Thames at Canvey Island all the way to York. From Canvey it followed Vange Creek to Bowers Gifford marshes, a ready made anti-tank section which was almost selfprotecting. At Bowers Gifford the anti-tank ditch started, which would eventually end at Chelmsford, and here the defences began in earnest. Clearly it was felt that this was a particularly vulnerable area and the pillboxes come thick and fast. More pillboxes have been discovered in the Bowers Gifford/North Benfleet area than in any other part of the County, reflecting the threat of an attack on the Southend area and an armoured thrust inland to London through countryside with little in the way of defensive terrain or natural obstacles.

RAF aerial photographs taken in 1946 have helped to trace the ditch and its defences northwards across the A127 Southend Road. As with all road/ditch junctions, concrete blocks provided the link across the dual carriageway, 24 blocks in all, leaving a gap for friendly traffic. This could be closed with a heavy steel cable anchored to the two inner blocks. Astonishingly, for one of the country's major roadways, one of the five-foot-square blocks still remains in a thicket at the



Plate 3 Religious inscription above a radiator, St. Faiths Schoolk, Brentwood (Photo AOC Archaeology)



Plate 4 A Crenellated wall overlooking East Bridge in Colchester. It was built in October 1941 as a "firing post." Wooden palings were nailed onto the horizontal battens to match the adjacent fencing.



Plate 5 A An anti-tank obstacle at Bures, set between the anti-tank ditch and the railway. It is made from lengths of steel railway line, heated and bent and then set into concrete. Once common, these are now very rare survivors.

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bottom of the embankment; literally a concrete reminder of a time when the construction of a road barrier across the Southend Road was part of Britain's wartime defence system.

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The Society is extremely grateful to Essex County Council for a generous grant towards the cost of publishing this article.

Archaeology in Essex 1997

Edited by A. Bennett

This annual report, prepared at the request of the Advisory Committee for Archaeology in Essex, comprises summaries of archaeological fieldwork carried out during the year. The longevity of many projects often results in a lengthy post-excavation and publication process. The publication of these summaries therefore provides a useful guide to current archaeological research, and the opportunity to take an overview of significant advances. This year 104 projects were reported to the County Archaeological Section (Fig. 1).

Sites are listed by category of work and alphabetically by parish; the directors of excavations, organisations involved and information regarding the location of finds and places of final report are listed, where known. Projects continuing from previous years are indicated by reference to previous summaries in the relevant 'Archaeology in Essex 1900' (N.B. prior to 1992 this report was entitled 'Excavations in Essex 1900)'.

Contributors are once more warmly thanked for providing information. The illustrations are by: Alison Bennett (Fig. 1), and Stewart MacNeil (Figs 2 & 3).

The original summaries, and any associated limited circulation reports, have been added to the County Sites and Monuments Record (SMR) held by the Archaeology Section at Essex County Council, Planning Division, County Hall, Chelmsford CM1 1QH. Regarding sites in the London Boroughs, the sad demise of the Newham Museum Service earlier this year has led to the dispersal of most of its collections, including site archives, to several other London museums. Some material remains in Newham whilst the remaining staff work on it. They are currently compiling a list of where material has gone to, and this list will be passed to the Greater London Archaeological Advisory Service, which maintains the Greater London SMR. The future deposition of those archives which would have been deposited with Newham Museum Service is, as yet, unresolved. In the meantime, enquirers should contact the Greater London SMR, English Heritage London Region, 30 Warwick Street, London, W1R 5RD.

Progress in Essex Archaeology 1997

Introduction

This year the total number of summaries has risen again, with a total of 104 reported here (compared to 92

last year). This reflects the continuing development activity in the county and London boroughs. Evaluations have risen by six to 48, but excavations have fallen from 20 last year to 12 this year. Local societies continue to be involved in projects, having initiated or been involved in eight of the excavation and survey projects reported here, and individual involvement in six of the geophysical surveys.

Given the large quantity of summaries, only the most significant are mentioned in the following period paragraphs.

Prehistoric

Excavation of the fossiliferous Pleistocene deposits at Aveley (49) continued, with further recovery of faunal remains. Potentially important Palaeolithic evidence has come from Purfleet (30), with provisionally attributed Levallois, Acheulean and Clactonian stone artefacts, possibly from a single sequence of lower gravels. Neolithic evidence was recovered from Harlow (23), and further late Neolithic or Bronze Age struck flint has been recovered from Springfield (42). The final season of excavation at Upminster (59) revealed further evidence of late Bronze Age settlement, and also traces of early and late Iron Age activity.

Roman

Colchester is well represented for urban Roman remains with finds of burials (13, 14, 51), the discovery of an extensive cremation cemetery (70), further evidence on the town layout (17, 66), and military remains (67). From Great Chesterford comes further evidence for the Roman fort annex (98), whilst further work at Gosbecks continues to use the different but complementary techniques of geophysical survey (102) and excavation (56), continuing to confirm and interpret the excellent cropmark evidence. Other evidence of Roman settlement comes from Braintree (4), and Great Sampford (22).

Saxon

At Harlow (23) several features of Saxon date were excavated in the area of the Roman villa, showing continuity of occupation or re-use of the site in the Saxon period. Several other sites produced finds of Saxon pottery (see 10, 26, 41, 47, and 60).



Fig. 1 Location of archaeological projects in Essex 1997

Medieval

Further evidence has come on the survival of medieval deposits within the historic towns of Essex. Medieval rubbish pits were found in Epping (20), but no evidence of the contemporary street frontage. At Rayleigh (31), within the castle outer bailey, the earliest deposits were found to date to the 13th century. At Witham (47) several features of 12th- to 14th-century date were excavated.

Outside the historic towns medieval sites investigated included: Noak Hill (55) where further excavation in a suspected area of a Mill Green ware pottery kiln revealed a 14th-century tile kiln; medieval features indicating a possible settlement were found at Romford (34); and evidence of late 13th- to 14th-century farming activity was discovered at Springfield (43).

Post-medieval

In Rochford (32), evidence was seen of the postmedieval development of the market place. Further excavation at Cressing Temple (52) revealed more of the area adjacent to the Tudor 'Greate House'. Structural remains of the original maltings were recorded at Heybridge (55). At Waltham Abbey (60) the development of Longpool as a navigable route in the 16th century was investigated. Building recording continued, included a model farm at Abbess Roding (77), the Isinglass Factory at Coggeshall (79), Beacon Hill Fort at Harwich (82), and the Regional Government Headquarters at Kelvedon Hatch (84).

Evaluations

1. Beckton, Stansfeld Road (TQ 4200 8105)

W.A. Boismier, W.A.

Two trenches both revealed peat deposits underlying alluvium. No dating evidence was recovered. Peat deposits recorded in the vicinity are generally believed to be of Neolithic and/or Bronze Age date, however the peat in trench 2 sealed a deposit of alluvial clay and may therefore be a relatively recent formation.

Archive: contact G.L.S.M.R. for location

2. Birch, ARC site, East of Birch Airfield (TL 924 193)

C. Crossan, C.A.T.

A fieldwalking survey over 6.9 hectares of farmland to the east of Birch airfield recovered large quantities of Roman pottery, tile and building stone. Distribution plots suggest that the sites of at least two buildings lie in the survey area. The date ranges of the keyed tile and pottery indicate occupation from the 2nd to the 4th century.

Archive: C.A.T., to go to C.M.

3. Black Notley, Great Notley Garden Village (TL 742 207)

A. Garwood, E.C.C. (F.A.G.)

Fieldwalking survey produced little evidence suggestive of substantial archaeological remains. Two main concentrations of burnt flint were recovered, one from the south of the area, and the other to the north. Lesser concentrations of burnt flint were present in the immediate area of both main concentrations, as was a single worked flint flake and core. As the assemblage recovered was insubstantial, it can only be tentatively suggested that it indicates domestic activity rather than general activity. No Roman material was recovered, and very little medieval material, indicating that there was no activity during these periods. Concentrations of postmedieval brick, tile and pottery can be attributed to waste disposal.

Previous summaries: Gilman (ed.) 1993, 197; 1994, 241.

Archive: Bt.M.

4. Braintree, 7 Grenville Road (TL 7538 2289)

A. Garwood, E.C.C. (F.A.G.)

Evaluation by trial trenching identified evidence of Late Iron Age and Roman settlement activity and structural evidence in the form of a possible aisled building and a large boundary or roadside ditch dating from the late 2nd to the early 3rd centuries.

A small boundary ditch dating to the Late Iron Age was uncovered in Trench A. The presence of large amounts of LIA pottery within the ditch suggests that this feature was not merely an outlying field boundary, but was within an area of significant settlement activity and may have formed part of a system of property boundaries.

The surviving structural evidence of the building are two large post-pits recorded in Trench C. Their similar size, characteristics and date confirm that post-pits were contemporary features that maybe interpreted as nave posts of a large aisled building. The distance between the pits (6.8m) conform to acknowledged dimensions of aisled buildings, of which the majority are between 5m and 7m wide (Morris 1979). Taking into account these dimensions and the presence of the roadside/boundary ditch immediately to the south, it seems probable that the building respects this boundary and extends to the north-east and into the development area.

The boundary/roadside ditch identified in Trenches B and C may delineate the southern edge of a settlement area. The alignment of the ditch is of interest as it lies perpendicular to London Road and parallel to the minor Roman road E identified during the Fountain excavations (Havis 1993) and may itself be a roadside ditch of another minor road radiating from London Road. Furthermore the distance between the ditch and road E is c.145m, a measurement which can be equated to 4 actus, further suggesting the deliberate spatial planning in this area of Roman Braintree.

Archive: Bt.M.

5. Brentwood, adjacent to North Service Road, Ongar Road and North Road (TQ 5955 9390)

A. Garwood, E.C.C. (F.A.G.)

Six trial trenches were excavated but only identified a single post-medieval pit dating from the 15th-16th century. The site is located behind the backlands and away from the medieval street frontage. The results of the evaluation suggest that medieval occupation on the north side of the High Street did not extend this far, but took the form of ribbon development along the road. The absence of any buried soil horizons across the site, except that recorded in Trench E, suggests that topsoil was removed and the site possibly levelled prior to the construction of the former buildings on site.

Archive: Ch.E.M.

6. Brentwood, St Faith's Hospital, London Road (TQ 5880 9370)

G. Bruce, A.O.C.

Excavation of seven evaluation trenches revealed a single medieval feature and post-medieval features. A pit containing pottery dating to the 13th century was found close to the line of London Road. This was probably originally dug for clay extraction. Garden features associated with the grounds of the Victorian Industrial School, in the form of tree planting holes, were found in almost all trenches located within the boundary of the school. There was also evidence of landscaping along the southern boundary of the site associated with London Road. Trenches outside the school boundary produced evidence of post-medieval ploughing, a possible track and a large pit, which was also likely to have been dug for clay extraction.

Archive: A.O.C., to go to Ch.E.M.

7. Chadwell St Mary, land east of Sabina Road (TQ 6520 7860)

T. Ennis, E.C.C. (F.A.G.)

The development area is located within an archaeologically sensitive area of prehistoric and Romano-British activity on the alluviated terrace gravels of the River Thames. The areas contains and lies immediately west of cropmarks indicative of settlement and/or former field systems (PRNs 1684, 1799 and 14555), and north of an Iron Age/Romano-British settlement site (PRNs 1685-1686).

Thirty-eight evaluation trenches were excavated and all appeared archaeologically sterile. A few potential features excavated all appeared to be of modern or natural origin. No evidence was found for the continuation of Iron Age and Romano-British activity into the development area. Three sherds of late medieval pottery were found.

In a second phase of work, a further eight trenches were excavated across the northern part of the development area. One well-defined pit was excavated containing pottery and worked flint dating to the Early Neolithic period. No other archaeological features were identified.

Archive: T.M.

8. Chelmsford, 17-18 Grove Road (TL 7080 0620) P. Allen, E.C.C. (F.A.G.)

This site lies 25m to the west of the Roman *mansio* and immediately to the south-west of the previously excavated site Z (Drury 1988, 22-34), which suggested that the present site lay at the edge of a gravel approach road leading to the *mansio's* main entrance.

The single evaluation trench located a Roman boundary ditch filled in the late 4th century AD. The ditch ran to the west of the gravel approach road recorded at site Z, and formed a boundary along the mansio's west side, enclosing the *mansio* and its immediate surrounds only. A large amount of building debris from the *mansio* was recovered from the upper fills of the ditch, dating the abandonment and demolition of the *mansio* to the very end of Roman Britain.

Despite the discovery of the Roman boundary ditch, no complex Roman stratigraphy was uncovered.

Archive: Ch.E.M.

9. Chelmsford, Moulsham Lodge (TL 713 055)

M. Germany, E.C.C. (F.A.G.)

An archaeological evaluation by geophysical survey and trial trenching in advance of a large housing development at Moulsham Lodge, Chelmsford has determined that *c*.10 hectares of land, to the immediate south-east of Princes Road, is largely devoid of archaeological features and finds. The few exceptions were three medieval fish ponds, which were mapped by John Walker in 1591, and a small, circular feature which was possibly part of the town's defences during the Second World War.

Archive: Ch.E.M.

10. Chingford, 3A Lea Valley Road, Site A (TQ 3755 9500)

A. Daykin, P.C.A.

Evaluation was followed by excavation and watching brief. Features recorded included Late Iron Age to Roman ditches and pits, postholes of late Saxon or early medieval date, and a medieval ditch and pit. A general overburden was identified as possibly a worked soil horizon. This contained late Iron Age/ Roman pottery and a fragment of loom weight. A layer which may have been dumping for land reclamation was recorded and dated to the medieval period.

Archive: contact G.L.S.M.R. for location

11. Coggeshall, Barnetts Yard, 31 Queen Street (TL 8513 2285)

R. Wardill, E.C.C. (F.A.G.)

Excavation of six trial trenches revealed evidence of prehistoric activity in the north-west of the site. These features included one wide shallow ditch and three probable pits, containing burnt and flaked flint, and two sherds of prehistoric pottery. Later features include a ditch and adjoining gully containing a sherd of early medieval pottery, and two post holes adjacent to Queen Street, the dating evidence for which is poor. A number of post-medieval features were also excavated.

Archive: Bt.M.

12. Colchester, Mercury Theatre, Balkerne Gate (TL 9929 2513)

S. Benfield, C.A.T.

Archaeological work in advance of rebuilding work on the southern edge of the theatre complex consisted of excavating the twelve new pier bases. Below approximately 1m of post-medieval and modern deposits lay up to 2.5m of stratified and quite wellpreserved Roman deposits. The earliest of these included pieces of mid-1st-century military barrack block plinths (as found in 1984 on the Sixth Form College site), clay floors and timber slots. There were also lavers of burnt Boudiccan debris dating to AD 60/61. Following these chronologically were Roman mortar floors, tessellated floors, and a fragment of a coloured mosaic pavement. These floors would conventionally date to the second century AD, when considerable parts of the town were rebuilt in stone. Most of the post-Roman deposits can be assigned to the construction of the theatre, or the garden of the Victorian vicarage which formerly occupied this site.

There were very considerable amounts of loose finds from the excavation - 18 crates of finds, and over 60 "small finds". The 18 crates are made up of bulky finds such as Roman pottery, brick, tile and animal bone. Small finds include bronze items (studs, brooches, buckle, pins, coins), glass and jet bracelet fragments, quern stones, an iron gridiron, a possible baby burial, and a hoard of pottery "gaming counters" which may in fact be a stacking child's toy.

Archive: C.A.T., to go to C.M.

13. Colchester, St Mary's Hospital, Balkerne Hill (TL 991 253)

H. Brooks, C.A.T.

This site has a record of many previous archaeological discoveries, principally of Roman buildings and burials. Excavation of 16 trial trenches on the site of the now redundant hospital revealed stratified Roman remains on the southern edge of the site, very close to the modern ground level. These may be associated with the previously known building 3. In the central part of the site there is evidence for a burnt Boudiccan structure, apparently to the east of the previously recorded building 2. On the northern edge, in the vicinity of the temple-like building 1, another stone structure has been recorded. A single inhumation burial, probably later Roman, found on the eastern edge of the site ties in with previous discoveries of burials on the hospital site, known collectively as the "Union Cemetery". (See below No. 97 for geophysical survey).

Archive: C.A.T., to go to C.M.

14. Colchester, 47 Butt Road (TL 9928 2477)

S. Benfield, C.A.T.

This site lies on the west side of Butt Road, only 30m south of the large Roman cemetery excavated in 1976-89. A small evaluation trench at the rear of the property revealed an inhumation burial, probably late Roman. The shallow depth at which it was found (16cm below modern ground) shows that the site has been terraced.

Archive: C.A.T., to go to C.M.

15. Colchester, 117-9 & 124-5 Hythe Hill (TM 0135 2472)

C. Austin C.A.T.

This site lies close to the church of St Leonard's Hythe Hill, and across the road from 79, Hythe Hill, where post-medieval houses were excavated in 1994-5. Five trenches were opened up to test the presence and survival of archaeological deposits. Three trenches at the rear (north) of the site were negative, but two trenches on the Hythe Hill frontage showed better survival. In one, a medieval or post-medieval masonry wall was revealed. In the second, a post-medieval cobbled surface lying over earlier medieval and post-medieval dumped soils.

Archive: C.A.T., to go to C.M.

16. Colchester, Maternity Hospital, Lexden Road (TL 982 249)

D. Shimmin, C.A.T.

Trial trenching in advance of redevelopment revealed a number of Roman pits. These were not excavated, but surface finds were early to late Roman. The site lies close to the Roman cemeteries which flank the western approaches to the Roman town. The discovery of redeposited cremated bone is therefore not a surprise, but the conclusion must be that the site is too disturbed for any burials to have survived unscathed. A few post holes point towards possible building activity, and gravel seen in section indicates that a Roman road crossed the south edge of the site, or else came very close to it. A watching brief continues.

Archive: C.A.T., to go to C.M.

17. Colchester, Co-operative Stores, Long Wyre Street (TL 9980 2507)

H. Brooks, C.A.T.

This site lies on the southern edge of the Roman town, astride the street separating *insulae* 37 and 38a. There have been many previous discoveries of Roman masonry and tessellated pavements from the vicinity, recorded on the OS 1st edition 1:500 sheet, and in more recently in Hull (1958) and Crummy (1992). In advance of proposed redevelopment which would involve a lower floor slab and pile cap pits, five trenches (T1-T5) were opened up to determine the survival and condition of significant Roman or later archaeological deposits.

It will be convenient to consider the site in three N-S zones. There were no trenches in eastern edge side of the site because this was still an active shop during the evaluation, and access was impractical. However, this area is already heavily disturbed by the cellars of properties along the eastern frontage of Long Wyre Street, and there may be reason to doubt whether much significant archaeological material survives here. The central N-S strip of the site consists of the Roman street separating insula 37 on the west from 38a on the east. The street was picked up in T2 in its expected position. The western part of the site lies centrally within insula 37, where the remains of Roman townhouses would normally be expected. This is in fact precisely what was found. Roman masonry walls were found in situ in T1 on the south edge of the site (where the medieval and Roman strata are deeply buried) and in T5 towards the north, and a robbed wall line crossed T4 running approximately N-S. There was a multicoloured mosaic floor in T5, as well as a Boudiccan horizon and a pre-Boudiccan masonry wall. Roman horizons lay closer to modern ground surface on the north (upslope) edge of the site (T4, T5), and were deeply buried on the south edge (T1, T3).

Archive: C.A.T., to go to C.M.

18. Colchester, Northern Approaches Road (TL 995 267 - TL 990 285)

S. Benfield, C.A.T.

This proposed new road link between Turner Road and the Boxted Road (and ultimately the A12) was evaluated by means of 80 trial trenches totalling over 1.2km and 60% of the linear distance of the road. There were only two areas where significant archaeological remains were discovered. The first was an early Roman ditch and two other features found immediately west of the southern main block of the General Hospital. The second and more substantial was in the grounds of Turner Village, in the southernmost 250m of the road line. This consisted of three late Iron Age or early Roman ditches. These were probably part of a ditched trackway, and may be connected with the Asda Store site (see below No. 71) which lies immediately to the south-east. (See below No. 96 for geophysical survey).

Archive: C.A.T., to go to C.M.

19. Colchester, Westway/Sheepen Place (TL 992 258)

H. Brooks, C.A.T.

An evaluation consisting of six trenches on the car park east of Westway revealed deposits which consisted primarily of the foundations of a recent factory, lying on top of several metres of disturbed Victorian topsoil. The only pre-Victorian remains consisted of a patch of dumped gravel lying over the natural clay subsoil, situated in Trench 3. Finds recovered from the gravel comprised a single abraded probable Roman potsherd and some unidentifiable brick fragments, probably Roman, indicating that the gravel was dumped in Roman times, presumably to raise local ground level. There were many Victorian and 20th-century glass bottles or fragments, and also several Victorian ironstone fragments.

Archive: C.A.T., to go to C.M.

20. Epping, rear of 237-255 High Street (TL 4604 0222)

A. Garwood, E.C.C. (F.A.G.)

Excavation of four trial trenches identified small concentrations of medieval, later post-medieval and modern activity on site. No evidence of a medieval street frontage was encountered during the evaluation, but medieval rubbish pits, dating from the 13th-14th century, were present towards the street frontage in trench A. The presence of these, and the paucity of any other medieval features on site, suggests that the main area of occupation was focused along the street frontage and did not extend into the backplots. However, postmedieval and modern disturbance may account for the absence of ephemeral features dating from this period.

Two ditches identified on site may represent the remains of drainage or boundary ditches, delineating the tenements in the backplots. They are not precisely datable but it seems likely they both predate the early 19th century.

A well with a clay lining and a domed brick capping lies centrally within the backplot. The date of original excavation is unknown; however map evidence indicates that it was probably in existence by 1838 and certainly still in use up to the late 19th century.

Archive: E.F.D.M.

21. Great Leighs, land west of Main Road (TL 7260 1730)

E. Heppell, E.C.C. (F.A.G.)

A fieldwalking survey in advance of a large housing development on land to the west of Main Road, Great

Leighs has not identified any sites of archaeological significance. Artefacts dating to the prehistoric, Roman and medieval periods were recovered but not in great enough concentrations to suggest the presence of archaeological activity. Post-medieval tile and pottery were also recovered, this is probably due to midden spreading or manuring.

Archive: Ch.E.M.

22. Great Sampford, Shillingstone Field TL 6380 3610)

A. Garwood, E.C.C. (F.A.G.) See full report in this journal, p. 33-47.

23. Harlow, land north of Gilden Way (TL 4834 1243)

R. Wardill, E.C.C. (F.A.G.) - Geophysical survey; and R. Masefield, RPS Clouston - trial trenching. Four stages of archaeological field evaluation were undertaken on a proposed housing and tree planting scheme to the north of Gilden Way in Harlow. This area was evaluated in detail as it lay directly to the south of a Scheduled Roman villa. The evaluation consisted of geophysical survey followed by a series of trial trenching. The initial phase of trial trenching identified Roman occupation and Neolithic features. Due to the importance of the findings further trenching and geophysical survey were undertaken, including the area of the Scheduled monument. This trenching identified further Roman and Neolithic material and also occupation of Iron Age date. Several features of a Saxon date were excavated within the Scheduled area indicating continuation of occupation or re-use of the site in the Saxon period.

The Neolithic material was an important find, being very rare in this part of the county. It may be associated to the Neolithic causewayed enclosure at Sawbridgeworth, Hertfordshire to the north of the site. The Iron Age material recovered directly to the south of the Scheduled area would indicate earlier settlement in the vicinity of the Roman building. The Roman occupation consists of a sequence of field boundaries or paddocks indicating an extensive Roman landscape around the Scheduled site. The location of Saxon features or finds within earlier Roman buildings is becoming a more frequent occurrence across Essex.

Previous summaries: Gilman (ed.) 1991, 154-5. Archive: RPS Clouston, to go to H.M.

24. Hatfield Heath to Matching Tye, Rising Main (TL 524 141 - TL 513 119)

M. Germany/A. Garwood, E.C.C. (F.A.G.)

A fieldwalking survey of a proposed rising main has located five sites of possible archaeological interest. These sites include: scatters of worked and burnt flint in the area of Pincey Brook; concentrations of prehistoric, Roman, medieval and post-medieval material near Newman's End; and a site near Matching Tye sewage works that produced concentrations of Late Iron Age pottery, and worked and burnt flint.

An additional 29 sites of possible archaeological, historical and/or architectural interest have been located in the surrounding area by a desktop assessment. These sites include: a small number of prehistoric ring-ditches (PRNs 4520 and 4521); a possible Late Bronze Age/Early Iron Age settlement (PRNs 9128, 9131, 9132); a large number of medieval and post-medieval buildings, such as moated manors and farms; and the 19th-century garden and park of Down Hall (PRN 7374).

Archive: E.F.D.M.

25. Kelvedon, The Gardens Bungalow, Church Street (TL 8586 1847)

R. Clarke, E.C.C. (F.A.G.)

Three trenches identified evidence of medieval activity. This comprised a large pit or well-shaft, and a possible linear ditch running parallel to Church Road. The location of the latter feature suggests that it may have functioned as a roadside ditch or property marker. The ditch contained pottery dating from the 12th to 14th century. The pit/well produced slightly later (14th-century) pottery. The ditch was sealed beneath a bank, 5m wide and 0.7m high. This bank consisted of a layer of topsoil overlying a 0.25m thick deposit of broken bricks, roof-tile and mortar. Pottery sherds collected from the surface of the bank date from the late 17th - early 18th century. A single post hole was also investigated but produced no datable finds. No additional archaeological features were identified during a subsequent watching brief.

Archive: Bt.M.

26. Kelvedon, Star and Fleece, High Street (TL 8646 1912)

T. Ennis, E.C.C. (F.A.G.)

Four trenches were excavated on land proposed for residential development on the site of a former hotel and brewery complex. Archaeological features were recorded in trenches 2, 3 and the north-east end of trench 4 along the south-western edge of the site. Of note were a Late Iron Age ditch and a possible quarry hollow backfilled with a series of Roman deposits dating from the late 1st to the 2nd century in trench 2, and a gravel trackway, probably mid to late 1st-century in date, in trench 4. The trackway was recorded 50-60m to the east of the line of the Roman London-Colchester road, and was aligned south-southwest to north-north-east, converging with the main road further north near the river crossing. To the southeast of this trackway was a ditch backfilled in the latter part of the 2nd century.

In trench 2 were a collection of later features, including medieval postholes (producing a few sherds of

12th- to 14th-century pottery) and a pit backfilled in the 2nd half of the 16th century. A small amount of residual Early Saxon pottery was also recovered.

Archive: Bt.M.

27. Little Bardfield, land adjacent to St Katherine's Church (TL 6555 3074)

A. Garwood, E.C.C. (F.A.G.)

Trial trenching identified the presence of some medieval activity on site. A ditch in Trench C produced pottery dating to the late 12th to early 13th century. This ditch may represent a property boundary or a field boundary. A small ditch or gully in Trench B may be of contemporary date as it lies on the same alignment. A subsequent watching brief on the groundworks for a service road identified a large area of disturbance from the footings of a modern building.

Archive: S.W.M.

28. Newham, former Alcan Works, North Woolwich Road (TQ 4050 7975)

Dr. H. Keeley. P.C.A.

During the course of geoarchaeological evaluation, a single borehole was taken to a depth of 7m. The sediments from this borehole were largely inorganic and homogenous and appeared to be typically estuarine alluvium containing no peat. Pollen was generally well preserved and the profile suggests that sedimentation /accumulation may well have been rapid and that the sediments may relate to the Roman and post-Roman periods. Diatoms were well preserved below the uppermost levels and appeared to represent continuous accumulation in an aquatic environment, in continuous contact with the tidal River Thames.

Archive: contact G.L.S.M.R. for location

29. Newham, Barnwood CT, North Woolwich Road (TQ 4061 8019)

S. Farid, P.C.A.

During evaluation, deposits were recorded relating to a whole sequence of Middle Holocene peat and organic silt/clay formations. Coinciding with an early neolithic fall in sea/river levels, these deposits probably relate to Devoy's (1979) Tilbury III marine regression leading to peat formation which eventually formed to cover the whole area. Vegetation was dominated by oak and lime woodland.

The deposition of Later Holocene silts and clays with a *terminus post quem* of $3,700 \pm 100$ BP formed the final phase of the site. It seems that these deposits were still forming by the 19th century.

Archive: contact G.L.S.M.R. for location

30. Purfleet, Armour Road extension (TQ 5860 7860) C.P. Clarke, E.C.C. (F.A.G.)

A known Palaeolithic site is affected by a proposed

southward extension to Armour Road across North Road (now a public footpath), which follows a ridge of ground between the Greenlands Quarry to the northeast and the Bluelands Quarry to the south-west. Previous work either side of North Road (Bridgland 1994; 1996) has established that the development area lies at the edge of a palaeochannel of the Thames filled by gravels of the Corbets Tey formation, dated to *c*.300,000 years before present, and containing important evidence both of the natural environment and of early human activity.

The evaluation involved cleaning, recording and sampling of limited areas of the existing quarry faces either side of North Road, and significant remains have been identified on both sides of the ridge, with the recovery of artefacts from both the upper and lower gravels. The fossiliferous shell bed on the southern side of the ridge, located by D. Schreve in the north-western corner of Bluelands Quarry, is present in the projected line of Armour Road to the south of the ridge as a layer about 1.5 m thick, thinning below North Road.

Stone artefacts recovered from the upper gravels are provisionally assigned to the Levallois stage, while further artefacts recovered from the lower gravels are provisionally assigned to the Acheulean and Clactonian cultures. If evidence for all of these cultures in a single sequence is confirmed by specialist study, then the evaluation will have identified an extremely important site. The assessment of samples taken for the analysis of faunal and plant remains is still in progress.

Archive: T.M. and N.H.M.

31. Rayleigh, Mill Hall site (TQ 8065 9092)

R. Wardill, E.C.C. (F.A.G.)

An archaeological evaluation was undertaken within the boundaries of the outer bailey of Rayleigh Castle, in the vicinity of the windmill and adjacent hall. Six test pits were excavated, four of which were found to contain archaeological deposits/features. The earliest of these deposits produced finds dated to the 13th century which suggest that the associated features are of a similar date. A large proportion of the evaluation area was found to have been cleared of soils, possibly as the result of construction during recent decades, reducing the likelihood of archaeological remains surviving.

Archive: S.M.

32. Rochford, Land adjacent to 6 North Street (TQ 8766 9054)

R. Wardill, E.C.C. (F.A.G.)

Excavation of a test pit within the garden located on the site of Rochford's medieval market place revealed significant surviving evidence of the post-medieval redevelopment of the site, overlying and cutting earlier non-structural deposits. These earlier deposits probably represent remains associated with the medieval market place which have been substantially truncated by the later development which fronted North Street.

Archive: S.M.

33. Rochford, Westbarrow Farm (TQ 8640 8980)

R. Dale, E.C.C. (F.A.G.)

Sixty-one trenches were excavated to evaluate a site of proposed brickearth extraction. An initial stage of evaluation by fieldwalking survey had previously identified significant concentrations of prehistoric and Roman artefacts, and the trenching was designed to establish the archaeological context of these concentrations. The site lies within an area of great archaeological potential. To the south-west of the site lay a Late Bronze Age and Early Iron Age enclosure, while Neolithic and Iron Age remains have been uncovered to the north-east. An area of possible medieval occupation lies to the north, and Roman cremation burials were recovered from the west of the site.

The first stage of the trenching consisted of excavating 32 trenches in the northern area of the site. These revealed an expanse of archaeology across the whole area. This comprised features of all types with dates ranging from the Bronze Age through to modern times.

The second stage consisted of excavating 29 trenches across the southern area of the site. This had originally been scheduled for work at a later date but the volume of archaeology in the northern area required early evaluation of this area also. The density of features in the southern area was lower than that of the northern area but a similar range of features and dates were recorded.

Archive: S.M.

34. Romford, land west of White Hart Lane, Collier Row (TQ 494 907)

C.P. Clarke, E.C.C. (F.A.G.)

A trial trenching evaluation was carried out on the site of a proposed housing development to the west of White Hart Lane, in an area of suspected medieval settlement. Traces of medieval occupation were found in the northern part of the development area, consisting of a pit and a few shallow cut features, possibly post-holes. The feature group, especially the pit, produced Mill Green ware, dated to the mid 13th - mid 14th century. The low density of features suggests that the development area is close to, but not over, an area of medieval settlement. A watching brief on the house foundations confirmed the absence of further features in this area.

Archive: contact G.L.S.M.R. for location

35. Saffron Walden, 31 Church Street (TL 5387 3860) A. Dickens, C.A.U.

Evaluation consisting of two machine-excavated

trenches was carried out to determine whether the inner bailey ditch of the nearby castle ran across the north of the site. No trace of this feature or anything that might relate to it were found. All the dateable material was 18th century suggesting a fairly limited timespan for the observable archaeological record. Many of the deposits, however, contained quantities of broken 15th-century roof tiles, suggesting that earlier structures had existed nearby and subsequently had been demolished. No structural traces of any earlier buildings were observed. There were two major 18th-century activities. One had truncated the underlying chalk. Later a reverse step had been formed against the slope which had been infilled with a clean soil, perhaps to create a garden. On the upper part of the site part of a large pit was revealed, presumably related to chalk extraction. This appeared to have been used subsequently, perhaps to burn chalk to produce lime. There was evidence of two phases of this later process. No evidence was found of any kiln or other structure related to the process.

Archive: C.A.U., to go to S.W.M.

36. Saffron Walden, County High School, Audley End Road (TL 535 378)

M. Germany/R. Clarke, E.C.C. (F.A.G.)

Investigation by geotechnical survey and trial trenching on part of the school playing fields revealed a single, small, possible ditch. This contained occasional fragments of post-medieval tile and animal bone, and is not closely datable. Modern overburden between 0.5m and 0.8m thick was encountered in the three trenches closest to the school buildings. This overburden comprised layers of redeposited chalk and topsoil, and is probably the result of landscaping for the school tennis and netball courts to the west of the evaluation area.

Archive: S.W.M.

37. Saffron Walden, Elm Grove Car Park (TL 5395 3838)

R. Dale, E.C.C. (F.A.G.)

Three trial trenches were excavated on the site of a disused car park at the corner of Elm Grove and Fairycroft Road. The trenches were placed to avoid root disturbance from the large number of trees in the area and to locate the probable line of the Repel ditches.

All the features revealed were probably modern or 19th century. Most were shallow and ill defined but for a single, well-defined ditch, which may have been a garden feature. The remaining features consisted of two shallow gullies and a pit, which were heavily disturbed by root action, and two modern postholes, one of which was filled with cement.

The area of the site appears to have been terraced as the eastern half of the site rises sharply to *c*.1m higher than the western half, and displays a higher level of modern disturbance. This disturbance included modern brick footings and domestic service pipes. There was no sign of the Repel ditches, which are now thought to lie further to the east, under Fairycroft Road.

Archive: S.W.M.

38. Saffron Walden, 33-35 High Street (**TL 5365 3845**) R. Clarke, E.C.C. (F.A.G.)

See this volume, pp. 122-135

39. Shoeburyness, Old Ranges (TQ 934 845)

T.J. Strickland, G.& P.L.

An archaeological and historic building assessment was undertaken on behalf of the Defence Estate Organisation. The desk-based assessment revealed that the site has been occupied and utilised since early prehistory, however, permanent settlement did not take place until the 9th century when a Danish encampment was established on the promontory. With the ascendancy of the Normans the site returned to its rural state, forming part of the North Shoebury manorial estate and supporting a small population. The rural character of the site was maintained until its establishment as an experimental range station for the Royal Artillery in 1849. The last active unit of the Royal Artillery departed the site in 1975.

The building survey undertaken as part of this assessment produced a comprehensive photographic and written record of all the structures and earthworks, upstanding and demolished, that occupied the site since 1849. The survey revealed that the majority of the upstanding buildings survive in reasonably good condition and that they retain much of their original character.

Archive: G.& P.L., to go to E.R.O.

40. Southend, Wick Farm, Southchurch (TQ 906 872)

M. Germany, E.C.C. (F.A.G.)

Six areas with archaeological potential (A to F) were detected by fieldwalking and geophysical surveys. Areas A to C were found by the field walking survey and areas D to F by the geophysical survey. Area A, to the west of Rebels Lane, was defined by a large concentration of burnt flint. Area B, in the north-east, was defined by burnt flint and prehistoric pottery, and area C, in the south-east, by three sherds of early Saxon pottery. Areas D to F were all found in the vicinity of a cropmark enclosure (ESMR 11100). Area D consisted of three, small enclosures, two of which were rather ill-defined. Area E was made up of several small pits and ditches, and area F of several possible features within the cropmark enclosure. Areas A and B may mark the locations of Late Bronze Age or Early Iron Age settlements, like the Early Iron Age settlement at nearby Fox Hall (ESMR 14861). Likewise, the Saxon pottery may mark the location of a 6th/7th-century settlement. Areas D to F are all undateable, but may be related to the nearby cropmark enclosure. Thin scatters of Roman, medieval and post-medieval pottery were also found by the fieldwalking survey. These scatters were possibly derived from nearby settlement outside the area covered by the survey.

Archive: S.M.

41. Springfield, Beaulieu Park, White Hart Lane (TL 7305 0940)

R. Humphrey, H.A.T.

Trial trenches revealed limited evidence of prehistoric activity within the development area, in the form of pottery sherds from Trenches 7 and 14, and struck flints collected from the topsoil over the site. An isolated ditch, tentatively dated to the prehistoric period due to the nature of the ditch fill, was located in Trench 15 in the north-west sector of the development. This area was previously thought to be of little archaeological potential. The trenches which overlay cropmark plots revealed no archaeological features. The cropmarks may be a product of the mixed drift geological deposits within the development area.

Archive: Ch.E.M.

42. Springfield, land east of White Hart Lane (TL 7360 0925)

R. Humphries, H.A.T.

A fieldwalking evaluation was carried out in advance of the excavation of a balancing pond, immediately adjacent to the above site. A small assemblage of worked and burnt flint was recovered, suggested prehistoric activity peripheral to an occupation site. The struck flint is late Neolithic or Bronze Age in date and similar to flint assemblages recovered previously during evaluation work in the general development area.

Archive: Ch.E.M.

43. Springfield, Ind 1 (TL 7385 0850)

C. Hearne, W.A.

Excavation of 13 trial trenches revealed three areas of archaeological activity:

- In the south-west zone of the evaluation area, on the scarp of the Chelmer valley and slightly downslope on one of the river valley terraces, there were three poorly defined pit and ditch features containing residual Late Neolithic pottery as well as Late Bronze Age pottery with associated worked flint. One micro-retouched blade found in the subsoil in Trench 18 may date to the mesolithic. This evidence suggests the presence of dispersed settlement activity of the Late Bronze Age and possibly earlier, and reflects a continuing pattern of prehistoric activity along the west scarp of the Chelmer valley.
- 2. In the northern part of the evaluation area, to the west and south of Sheepcotes Cottages, three Romano-British field boundary/drainage ditches were located, one of which is positively dated to the

1st-2nd century AD. These ditches suggest outlying field boundaries associated with a possible rural settlement situated outside the evaluation area, close to the Colchester to Chelmsford Roman road.

3. An area to the immediate south of Sheepcotes Cottages included field boundary/drainage ditches and a pit of the late 12th - late 13th century. These features probably represent farming activity associated with a precursor to the present farm buildings, the earliest parts of which are known to date back to at least the 15th century.

Archive: Ch.E.M.

44. Stanway, Abbotstone Phase 1 (TL 945 232)

C. Crossan, C.A.T.

A fieldwalking survey on 5.2 hectares of land east of Bellhouse Farm (scheduled for mineral extraction) recovered a small and widely dispersed sample of Roman tile and brick. Prehistoric activity was represented by a single struck flint flake of possible Neolithic or Bronze Age date.

Archive: C.A.T., to go to C.M.

45. Tendring, Hill Farm (TM 133 237)

E. Heppell, E.C.C. (F.A.G.)

Trial trenching was undertaken to investigate an area of cropmarks consisting of trackways, field systems and enclosures. Around 50% of the features on a cropmark plot provided by Air Photo Services Ltd were located on the ground. The survival of these features varied, with a number of them being very shallow, possibly as a result of deep ploughing.

The earliest feature is a rectangular enclosure to the north-west of the evaluation area, which dates to the middle Iron Age. In addition, the presence of earlier pottery, including from the Bronze Age, indicates the possibility of earlier features which were not identified in the trial trenches.

The focus of the site shifts to the western field by the early Roman period. This was represented by a complex field system with trackways dating to the first and second centuries. Two enclosures may possibly be the sites of farm buildings, although no evidence for this interpretation was found. The pottery evidence suggests that this was a 'high status' site. There is little evidence to suggest occupation beyond the late second century.

Archive: C.M.

46. Wickford, to the rear of The Castle Public House, The Broadway (TQ 7479 9358)

G. Walker, Cw.A.T.

The evaluation area is thought to lie close to the possible junction of two Roman roads, one of which may traverse the site. No archaeological features of any antiquity survived, nor were there any definite traces of Roman metalling traversing the site. Two sherds of residual Saxon pottery, dating between the 5th to 7th centuries, were recovered from what appeared to be either an old river bed or pond associated with the River Crouch, which was filled-in sometime in the 19th or early 20th century.

Archive: S.M.

47. Witham, Chipping Hill Infants School TL 8182 1542)

B. Langton, Cw.A.T.

Evaluation sought to assess if any archaeological deposits associated with either the Late Bronze Age camp, the Saxon *burh*, or the early medieval town were present. Two trenches were excavated, both of which revealed medieval features. Trench 1 contained two ditches, one of which contained a single sherd of 12th- to 14thcentury pottery. The remainder of the features in this trench dated to the post-medieval/modern period.

Trench 2 contained a ditch, a gully, and four pits. No dating evidence was retrieved from the gully or three of the pits. The ditch contained late 13th- to early 14thcentury pottery, and a small assemblage of residual prehistoric material. This material comprised struck flint and a single sherd of pottery, suggestive of prehistoric in the near vicinity. The ditch was cut by one of the pits. Further work is expected at the site.

Archive: Cw.A.T., to go to Bt.M.

48. Writtle, Hylands House (TL 6805 0380)

M. Germany, E.C.C. (F.A.G.)

Several architectural features were uncovered during an archaeological evaluation beneath the double pilasters on the left-hand side of the south face of the building. These features included one of the window-lights from the original c.1730 house. They also included the brick base for the double pilasters which were added in c.1797. No trace of the original basement wall trench was discovered.

Archive: Ch.E.M.

Excavations

49. Aveley, A13 Road Improvement, Purfleet Road (TQ 555 799)

S. Foreman, P. Allen, & D. Schreve, E.C.C. (F.A.G.)

A programme of rescue excavation during construction works on the new A13 trunk road recovered large mammal remains and other environmental evidence from Pleistocene (Ice Age) deposits either side of Purfleet Road south of Aveley. These deposits, known as the Aveley silts and sands, infilled a former channel of the river Thames and belong to the Mucking formation, which corresponds to Oxygen Isotope Stage 7 of the globally applicable deep sea sequence, dated to *c*.200,000 Before Present. The list of mammal species present suggests that the site may be correlated with the famous fossil site at Sandy Lane Quarry, 650m to the north, where near-complete skeletons of a straight-tusked elephant and a woolly mammoth were found, together with important palaeoenvironmental evidence, especially pollen and molluscs. The excavation work on the line of the A13 has added important new evidence to the Sandy Lane sequence, and will help to establish the nature and the sequence of the major environmental changes that have occurred in the region during the last 400,000 years.

A borehole survey during the initial evaluation phase (Bennett (ed.) 1997, 215-6) suggested that the edge of the Mucking formation lay near Purfleet Road, abutting earlier Woolwich Beds. This was confirmed by a series of test pits, which established that the Pleistocene fossiliferous deposits were confined to the west end of the road corridor. A rich organic deposit which had been identified was sampled to assess the potential for recovery of environmental remains.

Further work consisted of excavation of fossiliferous strata in a few control areas during the road construction itself, which involved mechanical excavation of a cutting up to 7m deep. Three successive fossil-rich strata, representing an interglacial episode, have been examined. The uppermost deposit has produced remains of bison (including one nearly complete skeleton), lion, giant deer, mammoth, bear and wolf. The middle deposit, a layer of peat, has produced remains of rhinoceros, and now also of *Felis chaus*, jungle cat. This is the first occurrence of jungle cat in the European fossil record, remains having previously been restricted to the Near East and north-east Africa.

As well as mammal remains, extensive samples have been taken for the analysis of the molluscs and pollen from the site. This material will shed new light on environmental changes during the Pleistocene, and will hopefully answer certain key questions regarding the stratigraphic correlation of interglacial deposits in the region. The representation of the three Stage 7 interglacial deposits within the Mucking formation is of national importance, and may represent an entirely new interglacial episode.

As yet the Aveley deposits have not produced any evidence for early human remains, although these may be found in future investigations. An earlier stratum also exposed in the cutting and dating to about 280,000 Before Present is known from an earlier exposure nearby to contain humanly worked flint.

Previous summaries: Gilman (ed.) 1993, 197; Gilman and Bennett (eds.) 1995, 240; Bennett and Gilman (eds) 1996, 262-3; Bennett (ed.) 1997, 215-6 Archive: T.M.

Final report: Quat. Sci. Rev. and Essex Archaeol. Hist.

50. Colchester, Beverley Road (TL 9861 2485) A.J. Fawn, C.A.G.

Investigation of the triple track road passing through the west cemetery of Roman Colchester has continued throughout the year. Nearly all the road metal at the site was removed during building work in 1928, but evidence of the sand south track and the lightly metalled north track remains. The alignment corresponds to what is thought to be the earliest Roman road to London.

Excavation revealed that a series of pits ran along the south side, presumably for sand and gravel. This was the location of the find-spot of the tombstone of the Thracian cavalryman Longinus, discovered in 1928 and now in Colchester Museum. The current excavations have recovered many fragments of limestone from the memorial, including the carved face, but no definite evidence of his interment. However, the site revealed two inhumations and a redeposited cremation, and a substantial quantity of pottery, tile and other artefacts which should provide useful dating evidence.

Work continues to investigate features on the north side of the road, including the remains of a structure of tile and Purbeck stone, perhaps the base of another memorial.

Archive: C.M.

51. Colchester, Jacklins, 147 High Street (TL 9952 2521)

S. Benfield, C.A.T.

Archaeological observations and excavations at the former Jacklins premises produced a quantity of samian pottery almost certainly originating from the Roman shop destroyed on the site in the Boudiccan rebellion AD 60. The remains of a substantial medieval stone building, probably dating to the Norman period, were also found.

The samian pottery from the shop is of international significance. That recovered here was residual in later medieval and post-medieval contexts to 0.5m below present surface. Destruction levels relating to the original Roman shop were not encountered. Strata observed in two bore-holes would indicate that *in situ* Boudiccan destruction deposits (which would include the remains of the pottery shop) occur at between 1.0-1.5 and 2.0 metres below the present surface.

Archive: C.A.T., to go to C.M.

52. Cressing, Cressing Temple (TL 7995 1857)

T. Ennis, E.C.C. (F.A.G.)

The excavation in 1997 was positioned to study the south-western corner of the Tudor 'Greate House'. Small test excavations earlier in the year had confirmed the presence of brick walls and demolition rubble. Resulting from this a larger area was opened up to be excavated as part of the 1997 Field School.

At the bottom of the excavated deposits was an extensive layer of flint cobbles mixed occasional roof tile fragments, set into the top of the natural brown boulder clay. This layer had been laid down in the late medieval period to form a general yard surface, which sloped down to the south and west. At the foot of the western slope a series of dark grey silty clay deposits, containing a few sherds of late15th- to mid 16th-century pottery, had built up. Above these deposits a thick brown clay deposit appears to have been a deliberate attempt to level up this lower area.

Various wall foundations and remains were observed, but the most obvious feature on the site was the large "L" shaped brick wall footing on a substantial rammed flint foundation, which formed the western end of the front of the Tudor 'Greate House'. This survived to a height of four courses and extended for some 6m north-east and over 4.5m south-east, as exposed in the trench. The north-east leg was just over 1m at its widest, and the south-east footing was c.0.80m in width. At the corner of this structure a deeply founded brick buttress had been added extending around both sides of the corner. There was evidence that this buttress replaced an earlier one. Within the building itself was a mixed soil and rubble levelling deposit which would have underlain the floor.

Between the buttressed corner of the 'Greate House' and the masonry structure to the west was a gap within which a series of cobble surfaces mixed with hard-core deposits appeared to have been deliberately laid down. Pottery from these deposits suggests a 16th-century date, making them broadly contemporary with the Tudor brickwork. It is likely that this area was used as a route way into the complex, and perhaps the structures each side formed a large gateway.

Along the far western edge of the site was a curving brick drain, running north-south, with low sides and two surviving courses of an arched brick roof. Pottery from the backfill of the drain suggests it went out of use sometime in the 17th century.

In the area south of the 'Greate House' was a further series of contemporary or later cobble surfaces. At the top of this sequence was a curving linear band of gravel with a deposit of brown loam on its western side. This probably represents a path with the remnant of a garden soil.

The latest features on site included a cut directly below the topsoil that closely followed the line of the 'Greate House' walls. This represents a previous, unrecorded investigation of the footings, likely to have been carried out before 1995.

Previous summaries: Gilman (ed.) 1989, 61-2; 1990, 130-1; 1991, 153; 1992, 103; 1993, 204-5; 1994, 249; Brown and Flook 1990; Robey 1993a, 1993b; Gilman and Bennett (eds) 1995, 247-9; Bennett and Gilman (eds) 1996, 267-8; Bennett (ed.) 1997, 218 Archive: E.C.C., to go to Bt.M.

53. Great Tey, Teybrook Farm (TL 8886 2515)

A.J. Fawn, C.A.G.

A previous report had described the apparently tripledtracked Roman road with four ditches, leading off the A120 in a north-north-easterly direction across Teybrook Farm. The investigation has now switched from the minor crossing of the Tey Brook to the area where the cropmarks of the four ditches disappear from aerial photographs. A later feature appears to have cut through the road. It is an excavation 1-2m deep and is perhaps a mill- or fish-pond, which would have been fed from Roman River. Astle's plan of Great Tey based on a survey of 1660 shows adjacent fields having names which support this conjecture. It also shows that the feature had even then been filled in and was a meadow.

Limited excavation of one of the several other cropmarks near the road confirmed that it is a ring ditch. No evidence for the date of construction of the feature has appeared, but destruction may have been as early as the Roman period.

Previous summaries: Bennett (ed.) 1997, 220 Archive: C.M.

54. Heybridge, Saltcote Mill (TL 8739 0787)

A. Garwood, E.C.C. (F.A.G.)

The archaeological excavation on the site of the proposed residential development at Saltcote Mill successfully located the structural remains of the original late 18th/19th-century maltings building. Excavation in two areas (A and B), across the main body of the building and in the area of the kiln identified the three main load-bearing walls of the malthouse, internal features such as brick plinths and a floor surface, the foundation and lower courses of both the drying kiln and linking building and the presence of associated brick-built drains.

Excavation revealed two separate phases of construction. The central and eastern walls of the original malthouse were recorded, together with the drying kiln and linking building which were aligned centrally on it. In a second phase the malthouse was enlarged by the addition of a new range on its western side. The western extension of the building is suggested predominantly by changes in both building materials and construction technology, but primarily by the stratigraphic relationships between the walls of the two phases.

Dating evidence of brick typologies and the limited cartographic evidence available, suggests that it is unlikely that the malting was constructed before the latter part of the 18th century and was probably built in the earlier part of the 19th century. At some point during 1922 to 1958 the malting was demolished, but not before it shared the same site and presumably operated in tandem with the standing malting for at least 25 years. Some residual medieval pottery was recovered. Trenches C and D excavated toward the south and west of the site uncovered no evidence of suspected prehistoric activity.

Archive: C.M.

55. Noak Hill, Weald View, Paternoster Row (TQ 5340 9405)

R. Mackley, R.H.F.A.G.

Small-scale excavation in 1996 produced over 3,000 sherds of Mill Green ware, suggesting the presence of a

pottery production kiln in the vicinity. Following a magnetometer survey by English Heritage, the possible location of a kiln was identified, about 20m south of the earlier excavation. It was decided that full excavation of the whole area was beyond the capability of the group, so just the south-east quadrant, of 3m square, was tackled. It was thought that this area might contain the stokehole.

Excavation revealed a damaged, truncated kiln chamber lying west to east, constructed with tile fragments laid horizontally. This is not dissimilar to the way the Danbury kilns were built (Drury and Pratt 1975). There was also a tile-built flue extending eastwards from the chamber. Within the chamber were a series of transverse sleeper walls upon which, presumably, the kiln floor was supported. It seems feasible that a twin chamber may lie to the north of this one, using the same flue, with possibly more chambers in the western quadrants.

Magnetic dating by English Heritage dated the kiln to 1380-1400AD, which is later than Mill Green ware (c.1270-1350AD). It may be that this is therefore a tile kiln, following a progression from pottery to tile manufacture. A further 4,000 Mill Green pottery sherds were recovered during the excavation, emphasising that a pottery kiln is located in the vicinity, and indicating the importance of the Noak Hill site.

Previous summaries: Bennett (ed.) 1997, 212 Archive: R.H.F.A.G.

56. Stanway, Gosbecks Archaeological Park (TL 9680 2250)

P. Crummy, C.A.T.

The excavation was completed of the section (started the previous year) through the large enclosure ditch forming the precinct of the Romano-Celtic temple. The ditch proved to be V-shaped, and it was 3.8 metres deep and originally about 7.0m wide. The uppermost part of the fill contained debris from the Romano-Celtic temple. Lower down, the fill contained fragments of roof tile from the portico to the south, indicating that the portico may have been derelict some considerable time before the temple itself became ruinous. Organic material in the portico debris included charred woodland litter, suggesting that the area had become overgrown by the time the roof of the portico was collapsing. The base of the ditch contained fragments of broken-up mid 1st-century pottery vessels and much animal bone, especially parts of pig heads. Other finds from the backfill of the ditch included four coins of Cunobelin and one of Tasciovanus.

Small trenches were laid out at the western corners of the three foundations forming the double colonnade of the portico. This followed the trenches dug in 1996 on the opposite side of the portico. The aim was to make a plan of the building, but by disturbing the ground as little as possible. Externally the portico proved to be about 98 metres square. More excavation would be needed to produce a highly accurate plan because the widths of the portico foundations varied considerably from trench to trench, and the building turned out to be slightly out of square. (See below No. 102 for geophysical survey)

Previous Summaries: Bennett (ed.) 1997, 220-1 Archive: C.A.T., to go to C.M.

57. Stanway, Stanway Hall Farm (TL 9560 2250)

P. Crummy, C.A.T.

The final season's excavations were concerned with finishing off work started the previous year in Enclosure 5 and the excavation of most of Enclosure 2 (the rest having been largely excavated already). Only one more grave was found in Enclosure 5, and this was comparatively small with only two pottery vessels and cremated bone. The ritual shaft in the south-west corner of the enclosure turned out to be only 3.5m deep, with few surviving deposits of much significance. Pollen analysis showed that the backfill of the chamber was composed mainly of turf. It appears that the turves had been mounded over the chamber, and collapsed into it when the upper part of the chamber rotted. The western half of Enclosure 2 contained three large pits which may have been for storage, and a small pit containing many fragments of burnt loomweights and daub. The absence of man-made features in the eastern side of the interior of this enclosure may indicate the site of one or more round houses. The only features which may have been structural were six post holes grouped near the centre of the enclosure. (See below No. 103 for geophysical survey).

Previous Summaries: Priddy (ed.) 1988, 270; Gilman (ed.) 1989, 168; 1990, 135; 1991, 159; 1992, 108; 1993, 205-207; Crummy 1992, 1-5; Bennett (ed.) 1997, 221 Archive: C.A.T., to go to C.M.

58. Thaxted, land to the rear of 34 Town Street (TL 6123 3103)

M. Germany, E.C.C. (F.A.G.) See shorter note in this volume, p. 286-293.

59. Upminster, Hunts Hill Farm (TQ 566 831)

P. Greenwood, N.M.S.

Rescue excavation in 1996-7, following an evaluation in 1996 of the area to the west of the area excavated in 1995, produced evidence of two phases of late Bronze Age settlement including a sub-rectangular enclosure, fence-lines, possible post-ring round-houses and structured deposits/ritual activity, traces of early and late Iron Age activity, and extensive late Roman evidence pits and ditches with quantities of pottery and building material (Fig. 2). A post-fast structure was built over one of these ditches. Of particular note are a 'stray' early Bronze Age barbed and tanged arrowhead placed in a later post-hole, a small pit with a large quantity of late Bronze Age plain wares, an unusual cobalt blue glass bead (possibly late Iron Age), unusual late East Gaulish samian, and three complete tegulae arranged at the bottom of a Roman well. A few early Saxon sherds were found in the subsoil and on the 'surfaces' of earlier features. Medieval and later evidence was sparse, apart from a post-medieval ditch and traces of activity of the last century or so. This final set of evidence complements and enhances that from previous years, particularly the earlier Late Bronze Age phase, the extension of the Roman field system and the first good evidence for the Roman occupation lasting beyond the 3rd century.

This opportunity is taken to thank our funders and helpers in kind, Redland Aggregates Ltd., English Heritage, Essex County Council, the London Borough of Havering, and especially, the numerous volunteers who contributed well in excess of 3000 working days to the project during the last seven years, both on site and indoors.

Previous Summaries: Gilman (ed.) 1991, 159; 1992, 108; 1993, 207; 1994, 252; Gilman & Bennett (eds) 1995, 251-2; Bennett and Gilman (eds) 1996, 269-270; Bennett (ed.) 1997, 221; Greenwood 1986; 1992. Archive: contact G.L.S.M.R. for location Final report: N.M.S. monograph.

60. Waltham Abbey, Longpool (TL 380 008)

P. Huggins, W.A.H.S.

Longpool, in the late 16th century, was part of a navigable route connected to the Cornmill Stream with a pond lock. The earliest activity was the construction of a massive timber-planked structure with a secondary stone wall on one side. The side ground beams were 30cm square. In 1997 the full width was established at 8.3m. There was evidence of secondary bank revetting after timber fences had rotted. All timber was elm.

In the first phase, the evidence suggests a timber wharf for unloading stone for the Augustinian building of 1177 to 1242. The second phase relates to the 16thcentury navigational use. The last phase is of recutting for water cress beds in the 18th century. Finds included high quality pottery and fashionable shoe, probably from the household of the lord of the manor, Edward Denny, of the late 16th and early 17th century.

Archive: W.A.H.S., to go to Lee Valley Regional Park

Watching briefs

61. Canvey Island, The Retail Park, Northwick Road (TQ 760 835 and TQ 7700 8325) T. Pollard, A.S.E.

T. Pollard, A.S.E.

A watching brief undertaken during the construction of the first phase of the retail park and during demolition of the adjoining oil refinery revealed no archaeological features. The standing remains of the unfinished Occidental Oil Refinery were briefly surveyed prior to and during demolition. Original plans of the refinery were recovered from the old site office and a photographic record made. The remains consisted of a large concrete jetty, numerous storage tanks, a processing area with chimney, and ancillary and temporary buildings.

Archive: A.S.E., to go to S.M.

62. Colchester, Beverley Road (TL 9862 2479) S. Benfield, C.A.T.

Observation of a replacement gas main along the west and part of the east sides of the road (between Queen's Road and Lexden Road) revealed scatters of Roman material in four places. Of principal interest was the discovery of a cremation burial at the above grid



Fig. 2 Hunts Farm, Upminster: site plan

reference. This consisted of a group of cremated bone next to (but outside) a ring-necked flagon of late 1st/ early 2nd-century date.

Archive: C.A.T., to go to C.M.

63. Colchester, 67 Castle Road (TM 0005 2539) H. Brooks, C.A.T.

Inspection of footings trenches for an extension revealed a 1.4 to 2.25 metre thick deposit of late medieval or early post-medieval dumped soils containing six fragments (1200g) of a Cunningham (1985) fabric 21 or 21a (Colchester Ware type) dripping dish, conventionally dated to the 15-16th century. The vessel has a green-speckled orange-glaze over a painted slip pattern (a fish?) is very large and flat with steep sides, and has at least one handle. There is sooting on the underside. Cunningham (1985) describes these as dripping dishes. There was also a hefty jug rim with slip painting on the flat-topped rim (235g), and a single sherd (30g), both of fabric 21/21a.

In this position, this material (presumably domestic debris) has to be associated with Greyfriars monastery, which lies only 55 metres SSE. Quite how it links in with any specific building at Grey Friars is not known, but it must (in theory) predate 1538, when the estate was surrendered to the crown agent at the Dissolution (VCH 1994, 306).

Archive: C.A.T., to go to C.M.

64. Colchester, 155 Magdalen Street (TM 0031 2478)

H. Brooks, C.A.T.

Observation of ground reduction and footings trenches for a housing development revealed an E-W postmedieval ditch on approximately the line of the rear of the properties on the north side of Magdalen Street.

The discovery of fragments of two medieval floor tiles on the same site was kindly reported by Mr James Hamilton-Smith and Mr Norman Bone. Mortar adhering to one piece suggests they are not their primary context. The fragments are some 25mm thick, and of a pale brown fabric. Surface decoration is executed in pale brown and gingery brown slip covered in a pale ginger glaze. The pattern, where recognisable, is of a circular vine or tendril, set within a pale brown border.

Archive: C.A.T., to go to C.M.

65. Colchester, rear of 97 Northgate Street (TL 9972 2551)

C. Crossan/S. Benfield. C.A.T.

This site lies in *insula* 5, on the northern edge of the Roman town. Following an inconclusive evaluation in 1993, a watching brief was maintained on footings trenches for new development on the former

Sergeant's Engineering Works site. Considerable traces of Roman town houses were revealed, in the shape of robbed wall lines, tessellated pavements, and a possible hypocausted room.

Archive: C.A.T.

66. Colchester, 67-70 North Hill (TL 9938 2520) S. Benfield, C.A.T.

Two stanchion holes for the construction of Colchester's new Post Office (formerly Belfast Linens) revealed a considerable depth of archaeological deposits. In one hole, a deposit of burnt Boudiccan debris was observed at 1.85 metres below modern ground level. Conditions were slightly better in the second hole, where a "Tudor" brick wall was plotted at 0.7m, a daub block wall at 1.3m, a Boudiccan deposit at 1.6m, and pre-Boudiccan deposits down to 2.5 metres below modern slab. A cut for a new cellar revealed a post-medieval tile-lined pit.

Archive: C.A.T.

67. Colchester, Sixth Form College, North Hill (TL 993 253)

D. Shimmin, C.A.T.

Groundworks for an eastern extension of the main block of the college (formerly the Gilberd School) revealed an early Roman military plinth 1.5m below ground level. It was made of the usual pebbles in mortar, 0.8m wide, and aligned N-S. This plinth was 52m north of the Roman military barrack block excavated on this site in 1984-85 (Shimmin 1992). It probably formed the east end of another, E-W barrack block in the cohortal group further to the north. A later E-W foundation of later Roman date was also seen. This was probably part of the house recorded under the main block by Hull (1958, 93-7). A patch of Roman street metalling was also observed. In this position, it is probably part of the N-S street separating *insulae* 9a and 9b of the Roman town.

Archive: C.A.T., to go to C.M.

68. Colchester, 48 St Botolph Street (TL 9990 2502)

D. Shimmin, C.A.T.

Removal of a short length of modern brickwork from the south wall allowed detailed recording of an earlier wall on the line of the inner face of the Roman town wall. This wall consisted mainly of reused Roman materials, and probably originated in the interior of a building of medieval or later date.

Archive: C.A.T.

69. Colchester, Church of Latter-Day Saints, Straight Road (TL 9674 2360)

S. Benfield, C.A.T.

Observation of footings trenches and test pits in an area which should have been crossed by a continuation of the Shrub End Dyke and a presumed Roman cropmark feature labelled "approximate position of camp" (Hawkes & Crummy (1995) fig. 6.1) failed to reveal any trace of the dyke, despite the fact that it had been sectioned in 1963 only a few metres to the north (*ibid.* no. 35). However, a large ditch 2.3 metres deep was observed in test pits on an a NNW-SSE alignment appropriate for the "camp".

Archive: C.A.T.

70. Colchester, Turner Rise (Asda Store) (TL 995 226)

D. Shimmin, C.A.T.

An extensive Roman cremation cemetery was brought to light by the construction of the Asda superstore on the Turner Rise development site east of Colchester North Station. There are previous records of burials from the vicinity, but only one was recovered by a watching brief early in 1996. However, during the period November 1996 to March 1997, 60 cremation burials were revealed. These lay to the west of a previously unknown Roman road. A little under half were simply cremated bone in a pottery vessel, but there was a surprising variety of other cremation types. Some were in unfurnished pits, others in wooden caskets with iron fittings, and others with as many as five accompanying vessels.

There were also several post-medieval ditches which may be associated with Colonel Fothergall's fort built during the siege of Colchester in 1648.

Archive: C.A.T., to go to C.M.

71. Epping Green to Enfield Gas Pipeline (TL 4345 0620 to TQ 3685 9790)

E. Heppell, E.C.C. (F.A.G.)

A watching brief was maintained on behalf of Penspen Ltd along the route of a gas pipeline. This pipeline was 13km long, running from Epping Green, down past Waltham Abbey to Enfield.

Isolated spot finds were collected along the route, including some Mill Green ware, however these finds did not appear to be associated with identifiable archaeological features. The remnants of ridge and furrow, possibly of post-medieval date, were visible in the pipe trench to the west of Avey Lane, Waltham Abbey. A spread of brick and tile was also located to the west of Stewardstone Road. No other features of archaeological interest were located.

Archive: E.C.C.

72. Hempstead Supply Main

(TL 5547 3412 to TL 5507 3500)

B. Chilcott, R.P.S. Clouston An archaeological observation of both the easement and pipe trench did not reveal any significant archaeological features along the route, but a low level of artefact material was recovered, consisting of 20 pieces of prehistoric worked flint from six positions.

Archive: R.P.S. Clouston

73. North Ockendon, Hall Farm, Church Lane (TQ 588 848)

D. Kenyon, A.O.C.

A possible alignment of timbers was recorded, thought to be associated with the moated manor house known to be in the area (GLSMR No. 211323). These timbers were within a layer of black clay and have been interpreted as possibly foundations for some sort of structure, or as timber packing laid to provide a yard surface.

Archive: contact G.L.S.M.R. for location

74. Rochford to Southend Pipeline (TQ 881 875)

C.J. Tripp, E.C.C. (F.A.G.)

An archaeological watching brief identified the presence of some medieval activity in the area between Smither's Farm and Fossett's Camp (TQ 890 882). Two features were recorded and 12th- to 14th-century pottery and quantities of oyster shell were found. Taking into account the small area excavated at this point little can be suggested as to the shape and function of the features other than that they may have been rubbish pits.

Archive: S.M.

75. Wickham Bishops, Sparkey Cottage, Mope Lane (TL 8331 1231)

E. Heppell, E.C.C. (F.A.G.)

A watching brief of topsoil stripping and levelling on the site of a new house identified three archaeological features. An irregular oval feature contained triangular loomweights dating to the Iron Age, and some Late Iron Age pottery sherds. Also dating from the Late Iron Age was a linear gully, located in the south-eastern corner of the site. This feature was truncated by a rectangular feature, containing early Roman pottery, which was only partially revealed. It is likely that these features may be associated with an Iron Age settlement (PRN 8221), excavated to the north of this site in the 1920's and 1930's.

Archive: C.M.

76. Wickford, Harrows Pumping Station to Wickford Sewage Works (TQ 767 938 to TQ 767 927) M. Germany, E.C.C. (F.A.G.)

A watching brief on a replacement pipeline revealed a small, unurned cremation of indeterminate date, just to the south of Wickford Sewage Works. It was c.0.45m long, 0.38m wide and 0.1m deep, and contained a single deposit of dark yellowish brown, almost black, silt clay,
and occasional flecks of cremated bone. There were also frequent small pieces of charcoal and a few pieces of burnt flint. No other archaeological finds were discovered.

Archive: T.M.

Building Survey

77. Abbess Roding, Longbarns (TL 5790 1090)

H. Cooper-Reade, E.C.C. (F.A.G.)

Recording of a group of farm buildings was carried out prior to their conversion into dwellings. The farm buildings comprised three barns and associated cattle yards, stables and estate offices. They represent an unusually complete model farming complex of the early 19th century, but incorporating a 17th-century timberframed barn within the complex.

Archive: F.A.G.

78. Clacton, Cann Hall, Constable Avenue (TM 166 167)

A. Menuge, R.C.H.M.E.

Cann Hall is a timber-framed house dating from the early 16th century. It consists of a hall range with inline services, and an upper-end cross-wing, disguised on the front by a continuous jetty. The hall range provides fully storied accommodation served by a stair turret in the angle of hall and wing. The hipped roof has plain crown-post trusses throughout. To the rear of the wing are the remains of what appears to have been a detached kitchen.

The site was associated with St Osyth's Priory from the early 12th century. At the site is an *ex situ* scalloped capital of the mid 12th century.

Archive: R.C.H.M.E.

79. Coggeshall, Isinglass Factory, West Street (TL 8420 2245)

A. Upson, A.O.C.

Documentary research and on-site investigation was carried out into the historical and technological development of both the tanning industry and the gelatine/isinglass industries in relation to this site. The research identified a number of narrow rectangular buildings of the original late 18th-century tannery, with its central tanyard.

The original purpose-built factory for the production of gelatine and isinglass, dating to 1874-8, was also identified. This was a relatively small rectangular building, set apart from the tannery buildings. The gelatine works quickly expanded, with a whole complex of new buildings having been constructed by 1875, completely enveloping the original factory building, while retaining some of the tannery buildings.

The production of gelatine and isinglass was

essentially labour-intensive, and there is therefore little evidence of large specialised machinery surviving. It is considered likely that the manufacture of both products has altered little over time, and that the processes that were, until recently, carried out in specific buildings within the industrial complex probably represent a continuation of earlier processes, requiring only limited alterations to many of the buildings.

This site is a rare survivor of the gelatine/isinglass industry of the late 19th century. The buildings have generally survived well.

Archive: E.R.O.

80. Colchester, Rose and Crown Hotel, East Street (TM 008 253)

A. Menuge, R.C.H.M.E.

This building was originally a timber-framed aisled hall, dating from c.1400, in an extramural, suburban location. Substantial elements of the nave survive, together with fragments of the roof and one aisle. The west end, probably representing the upper end, was storied.

15th-century alterations transformed the building by placing jettied cross-wings over either end of the aisled structure. 16th-century additions included a large stack at the upper end of the hall and a range with a crownpost roof. The building underwent an antiquarian restoration in the 1930s.

Archive: R.C.H.M.E.

81. Debden (TQ 43 96 & TQ 44 96)

K. Morrison, R.C.H.M.E.

A rapid survey of the post Second World War development of Debden was recorded as part of a series of rapid surveys of suburban areas, undertaken for methodological reasons. Different "types" of housing were identified and a brief photographic and written record was made of typical or well-preserved examples. One-off buildings forming part of the same development - churches, schools, shopping parades and public houses - were also recorded. The results will eventually be made available in the National Monuments Record Centre in Swindon.

Archive: R.C.H.M.E.

82. Harwich, Beacon Hill Fort (TM 262 317)

M. Brown & P. Pattison, R.C.H.M.E.

Survey was undertaken on behalf of Essex County Council and Tendring District Council of this impressive and complex remains of a large coastal artillery battery, which formerly protected the Stour/Orwell estuary and the route into the harbour. The present remains date largely from the 1880s and after, but there were fortifications here much earlier. Beacon Hill, situated between the ancient port of Harwich and the Victorian Spa resort of Dovercourt, was the site of a Henrician blockhouse and then a Napoleonic battery, both of which were lost to quarrying and coastal erosion. Subsequently, around 1870, a practice battery of six guns was constructed for the Royal Garrison Artillery volunteers.

Construction began on the present installation in 1889, effectively a self-contained fort of a new lowprofile design, which was built to blend with the natural topography when viewed from the sea. It contained six guns in concrete emplacements with a range of support buildings; magazines, stores, shelters, etc. Beacon Hill Fort was one of the earliest military sites to utilise the Twydall Profile, on its landward side, an innovative arrangement of earthworks and unclimbable fencing which was designed for infantry to repel ground assault.

The fort was enlarged at the turn of the century and further developments occurred during the First and Second World Wars, with changes in armament and ancillary structures. It continued in use until MOD decommissioning in 1956, although a token military presence of a single soldier one day a year was maintained until the early 1970s. Today, Beacon Hill Fort contains an impressive range of structures which effectively illustrate much of the development of coastal artillery in the late 19th and 20th centuries.

Archive: R.C.H.M.E.

83. Kelvedon Hatch, Regional Government Headquarters (TQ 563 995)

W. Cocroft, R.C.H.M.E.

As part of the on-going national RCHME project to record the 'Monuments of the ColdWar' a photographic survey was undertaken of the former Regional Government Headquarters at Kelvedon Hatch.

The three level, underground R4 type bunker was originally constructed in the early 1950s as a Sector Operations Centre for the RAF. This role was relatively short-lived, as the advent of faster jets and intercontinental ballistic missiles rendered the early 1950s early warning system obsolete.

By the early 1960s the Home Office had assumed control of the bunker and converted it into a Regional Seat of Government, subsequently known as a Sub-Regional Control, and latterly as a Regional Government Headquarters. The role of the bunker, in the event of nuclear war, was to provide a protected environment for officials from central and local government, in order to conduct the administration of the region.

Fortunately the bunker was never used for its intended function and with the end of the Cold War it was sold to a local farmer. He has since re-equipped it with displays of Cold War artefacts, and it is open to the public as a tourist attraction.

Archive: R.C.H.M.E.

84. Industrial Archaeology Survey

S. Gould, E.C.C. (A.A.G.) See this volume, pp. 189-191.

85. Mistley, No. 1 Maltings, Mistley Quay (TM 118 318)

A. Menuge, R.C.H.M.E.

This is a large waterfront four-malting complex, built c.1896 by Free, Rodwell & Co., but incorporating three earlier 19th-century buildings which may have been connected with an earlier maltings on the site.

The buildings have been little altered since malting ceased in the 1970s, and retain good evidence for a number of powered systems relating to the malting process and the handling of grain.

Archive: R.C.H.M.E.

86. Stisted, Stisted Reservoir (TL 7982 2519)

D.A.G. Gadd, E.C.C. (F.A.G.)

This early example of a rural water supply was erected between 1894 and 1904 by Joseph Paxton, the then owner of Stisted Hall, to serve a 'model' village and a reservoir within the hall estate. Survey prior to its destruction in advance of residential development revealed it was built of brick with four columns supporting a concrete barrel vaulted ceiling. It holds 30,000 gallons and was originally fed by a wind driven pump from a bore hole 340ft deep. This pump was supplemented by a petrol motor. The hall reservoir was then fed by hydraulic ram. Two phases of use were revealed.

Archive: E.C.C.

Field Survey

87. Aerial Survey

D. Strachan E.C.C. (A.A.G.) See this volume, pp. 185-188.

88. Canvey Island Landscape Survey

R. Mackley, R.H.F.A.G.

This project is seeking to identify the location of the numerous farmsteads which once were scattered over the island and which have now mostly disappeared. Despite the scarcity of documentary evidence, and the fact that many of the farms were known by more than one name, 35 farms have now been positively identified.

Archive: R.H.F.A.G.

89. Cropmark Enclosures Project

N. Brown/M. Germany, E.C.C. See this volume, p. 188.

90. Essex Place Names Project

J. Kemble, E.S.A.H. See this volume, p. 297.

91. Great Wakering, Oxenham Farm (TQ 960 880) B. Crump, F.C.A.S.

Over the past two years ploughing after harvest has revealed a significant area of 'red earth'. This covers an area 87.7m by 114.2m. During the autumn the society walked the area and recovered briquetage fragments weighing in total 8.75kg. The briquetage appears to represent parts of the vessels used in the salt production process. One large fragment appears to be part of a fire bar. The small amount of Roman pottery recovered suggests a mid to late 1st-century date for the site.

Archive: F.C.A.S.

92. Historic Towns Survey

M. Medlycott, E.C.C. (A.A.G.) See this volume, p. 188.

93. Hockley, Plumberow Mount (TQ 8398 9383)

E. Heppell, E.C.C. (F.A.G.) See shorter note, p. 269.

94. Stow Maries Airfield, Flambirds Farm (TL 819 001)

A. Menuge, R.C.H.M.E.

Stow Maries Airfield was established as a Royal Flying Corps (later RAF) home defence station during the First World War. Though operational from 1916, building work was still in progress when the war ended, and the airfield was not used after 1919. Subsequently many of the buildings were crudely adapted for agricultural use. More than twenty structures or groups of structures remain, including the Reception Station, Generator House, Officers' Mess, Regimental Institute, workshops, offices, and accommodation blocks, including parts of an unfinished women's hostel.

The site is of particular importance as it escaped the wholesale redevelopment which affected operational RAF airfields during the Expansion period, the Second World War and the Cold War.

Archive: R.C.H.M.E.

Geophysical Survey

95. Brentwood, Thorndon Park (TQ 620 900C) R. Wardill, E.C.C. (F.A.G.)

Magnetometer survey successfully located the brickbuilt gatehouse, perimeter wall and other features associated with the enclosed gardens. The gatehouse appears to consist of three roughly circular structures, possibly octagonal in plan. The perimeter wall is also probably of brick construction. Further linear features between the gatehouse and the Pigeon Mount probably represent less substantial brick walls, possibly damaged by ploughing. Previous summaries: Gilman (ed.) 1993, 203-4. Archive: E.C.C.

96. Colchester, Northern Approaches Road (TL 995 267 - TL 990 285)

P.J. Cott, C.G.S.

Geophysical survey showed many small features, with much ferrous iron rubbish in the topsoil. The survey confirmed that the small Roman ditch found in Trench 15 continues to the east and west of the known position. (See above No. 18 for evaluation).

Archive: to go to C.M.

97. Colchester, St Mary's Hospital (TL 991 253) P.J. Cott, C.G.S.

Magnetometry and resistivity surveys on an open space on the north side of the hospital buildings revealed a main anomaly of a ring feature 10m in diameter. The magnetic survey was disturbed by more ferrous iron rubbish in the topsoil. Subsequent resistivity survey confirmed the presence of masonry feature at an extreme depth, which had been found by excavation. (See above No. 13 for evaluation).

Archive: to go to C.M.

98. Great Chesterford, new Village Hall site (TL 5050 4334)

R. Wardill, E.C.C. (F.A.G.)

Geophysical investigation on the site of the annexe of the Roman fort at Great Chesterford has clearly identified its perimeter defences. There are indications that the annexe formed an integral part of a larger fort rather than an extension of the main body. No structures were identified within the annexe, however a circular anomaly was located outside which may indicate the presence of a ring ditch.

Archive: E.C.C.

99. Great Tey, Warren's Farm (TL 8895 2537) A.J. Fawn, C.A.G.

Following Scheduled Monument Consent, gradiometer survey indicated a buried ditch system, which may in part be associated with the Roman villa here. The villa area itself gave somewhat confused signals, probably because it has undergone at least three excavations in the past. Work continues to determine whether evidence of out-buildings and trackways exist.

Archive: C.A.G.

100. Newport, Grammar School (TL 521 344)

P.J. Cott, C.G.S.

A resistivity survey was carried out to try and find the 'Stone House' which once existed in Newport. Much of the school ground is bordering a stream, and did not seem to be a suitable site for a survey. A survey was therefore carried out on the higher ground around the music block. An area of high resistance was detected close to the school path and the main road, which is probably due to the presence of masonry on site.

Archive: C.G.S.

101. Saffron Walden, Castle (TL 5386 3868)

L. Harvey, G.S.B.

Geophysical survey was carried out in advance of hedge planting, to try and identify any features associated with the castle and its ancillary structures, so that they could be avoided by the hedge planting. The survey identified a number of broad responses that could be archaeologically significant. The results show the possible existence of a building to the west of the castle, and has identified a number of possible wall-like features. Due to the poorly defined nature of the anomalies it has not been possible to give a precise delineation of features, although areas of potential interest have been identified.

Archive: G.S.B.

102. Stanway, Gosbecks Archaeological Park (TL 968 228)

P.J. Cott, C.C.G., for C.A.T.

A magnetometer survey was carried out to locate as precisely as possible the twelve corners of the portico, in order that the precise length of the sides of the portico could be measured and the number of pillars used could be established. The twelve corners were located as accurately as possible. Subsequent excavation of 2m by 1m holes confirmed the presence of the portico corners in all cases. (See above, No. 56 for excavation and previous summaries).

Archive: C.A.T., to go to C.M.

103. Stanway, Stanway Hall Farm (TL 9560 2250)

P.J. Cott, C.C.G., for C.A.T.

A magnetometer survey was carried out over the site of enclosure 2 and the surrounding area. The ditch of the enclosure was detected, and many isolated magnetic anomalies were apparent. As these might have been due to cremations or small burial sites, the largest anomalies were marked on site. The gravel subsoil, with topsoil removed, proved to produce very faint magnetic anomalies, but those that were found were thought to be significant. (See above No. 57 for excavation and previous summaries).

Archive: C.A.T., to go to C.M.

104. Waltham Abbey, Veresmead (TL 3818 0087) P.J. Cott, C.G.S.

A resistivity survey was carried out on the public open space known as Veresmead. This revealed the plan of a two-aisled building with dimensions 28 by 8m. Other buildings were detected to the west and north of this building. The causeway leading to the ancient bridge over the stream, "Harold's Bridge", was easily detected.

Archive: C.G.S.

Abbreviations

A.O.C.	AOC (Archaeology) Ltd
A.S.E.	Archaeology South-East
Bt.M.	Braintree Museum
C.A.G.	Colchester Archaeological Group
C.A.T.	Colchester Archaeological Trust
C.A.U.	Cambridge Archaeology Unit, University of
	Cambridge
Ch.E.M.	Chelmsford and Essex Museum
C.G.S.	Cottconsult Geophysical Surveys
C.M.	Colchester Museum (formerly Colchester and Essex
	Museum)
Cw.A.T.	Cotswold Archaeological Trust
E.C.C.	Essex County Council
E.C.C. (F.A.G.)	Essex County Council (Field Archaeology Group)
E.F.D.M.	Epping Forest District Museum
E.R.O.	Essex Record Office
E.S.A.H.	Essex Society for Archaeology and History
F.C.A.S.	Foulness Conservation and Archaeological Society
G.L.S.M.R.	Greater London Sites and Monuments Record
G.& P.L.	Gifford and Partners Ltd
G.S.B.	Geophysical Surveys of Bradford Prospection
H.A.T.	Hertfordshire Archaeological Trust
H.M.	Harlow Museum
M.O.L.A.S.	Museum of London Archaeology Service
N.H.M.	Natural History Museum
N.M.S.	Newham Museum Service (formerly Passmore
	Edwards Museum)
P.C.A.	Pre-Construct Archaeology
R.C.H.M.E.	Royal Commission on the Historical Monuments of
	England
R.H.F.A.G.	Rochford Hundred Field Archaeology Group
S.M.	Southend Museum
S.W.M.	Saffron Walden Museum
Т.М.	Thurrock Museum
W.A.	Wessex Archaeology
W.A.H.S.	Waltham Abbey Historical Society

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Historic buildings, notes and surveys 1997

ed. D.D. Andrews

Although timber-framed buildings are one of the most characteristic features of the Essex landscape and its historic towns and villages, there are very few that can be visited. One exception is Southchurch Hall, restored and administered by Southend-on-Sea Borough Council. Another is Mashams in High Laver, a hall house with an in-line high end and a cross-wing at the low end, and incidentally a most perfect example of the picturesque thatched cottage. Its owner Derek Shuttleworth had spent a lifetime working with young people, and with a rare vision of its potential as an educational resource, vested his home in a trust. A party from the Society much appreciated a visit to the house in 1992 when they were shown round by Derek Shuttleworth and John Walker. Sadly, Derek died at the end of 1997. Dendrochronological analysis has now been completed by Ian Tyers of Sheffield University, and has given a felling date of 1446 for the joists of the cross-wing. Mashams is illustrated by John Walker in a valuable survey of Essex timber-framed buildings contained in a new book, Regional variation in timberframed building in England and Wales down to 1550, published by Essex County Council.

The articles and reports presented here derived from observations made either as a preliminary to, or during, actual or proposed building works. We should like to thank the householders, property owners and contractors whose co-operation has been essential to the success of the recording.

Bicknacre Priory. Observations on the occasion of the 1997 restoration

D.D. Andrews and B.J. Crouch

Historical background

This priory of Augustinian canons was founded *c*.1175 by Maurice Fitz Geoffrey, apparently at or near the site of a pre-existing hermitage. Already in decline in the 15th century, the house was dissolved when the last prior died in 1507, there being no surviving canons in residence at that time. It was granted by the king to the hospital of St. Mary without Bishopsgate in London (VCH 1907, 144-46). At the Dissolution, it passed first to Henry Polstead, and then in 1548 to the Mildmay family who sold it to the Barrington family in *c*.1654 who held it until 1778 (Morant 1768, II, 33).

Today all that remains of the priory is a single crossing arch of the church. Antiquarian prints (ERO Mint Binder) show, however, that the priory underwent the usual experience of being converted to a dwelling at the Dissolution. The earliest, an undated and rather poorly drawn 18th-century view (Fig. 1), shows the crossing with two ranges adjoining it, the longer one which had been provided with a chimneystack being the former nave, and the shorter the north transept. In other words, it seems to have been adapted as a somewhat unconventional hall and cross-wing house (assuming the nave to have been a hall). This print seems to predate a sketch made by the Revd. John Pridden in 1786 when the house was said to be dilapidated and requiring 'a very compleat repair if not an entire reerection' (ERO D/DU23/139/1). The accompanying description and plan (Fig. 2) reveals that the nave was a kitchen and wash house, the latter preserving a gallery against the west wall; the crossing was a square room with a chamber over and pigeon loft in the attic; and the transept was a parlour with a chamber above.

A print dated 1815 shows the building in much the same state, with the addition of a chimney against the east side of the crossing. However, the building had already been reduced to a ruin by this time, as is shown by an engraving of 1808 which shows the crossing arches exposed and freed of the post-medieval fabric, but largely intact and adjoined by the nave and transept walls. This conclusion is indirectly confirmed by an auction catalogue of 1821 which refers to the existing nearby farmhouse as 'new built', suggesting that it had been erected to replace the house made from the priory ruins.

Another engraving indicates that by 1832 all but the surviving arch had been dismantled, it is said for road building. This view is important, since it reveals that the consolidation of the arch had been carried out by that date, presumably to preserve it as a picturesque landscape feature. The tile coping to the wall tops, the iron tie-rods at the springing of the arch, and the use of semi-circular stones from the responds to buttress and weather the north stub wall, were all in position. The ruin seems to have changed very little in the last 180 years (Turner 1997). Funding provided largely by English Heritage, with assistance from Essex County Council and Bicknacre Parish Council, made it possible for the ruin to be consolidated in 1997, work that was preceded by a detailed assessment of its fabric.



Fig. 1 18th-century print of Bicknacre Priory (courtesy of Essex Record Office)

The landscape setting of the arch is notable. The field contains ridge and furrow on a module about 7m wide running north to south. The present pastoral farming regime has preserved a pattern of small fields



Fig. 2 Plan of Bicknacre Priory made by the Revd. John Pridden in 1786 (courtesy of Essex Record Office)



Fig. 3 Bicknacre Priory: plan of the ruin with a reconstruction of its location within the prior complex

now unusual in Essex. These features are all presumably post-dissolution, but none the less interesting for that.

Description of the medieval remains (Fig. 3)

The ruin comprises the west arch of the crossing of the church, with adjoining stubs of masonry on the west and north sides, representing fragments of the nave and north transept (Fig. 3). The walls are built mainly of flint, ironstone or indurated conglomerate, septaria, tufa, and brick and tile. This patchwork of different materials, the use of similar mortars (with one or two exceptions) over long periods of time, and the very weathered state of the masonry, makes interpretation difficult, and the account of the ruin given here should not be regarded as entirely authoritative (Fig. 4; Plate 1).

What might at first be thought to be Roman brick and tile is in fact Coggeshall-type brick and early pegtile, recognizable mainly by their sandy fabric. Indeed, there seems to be no reused Roman material in the ruin. The bricks are 30-40mm thick. Intact examples used to cap putlog holes measure 330 x 195 x 30mm and 310 x 180 x 42mm. The pegtiles are about 22mm thick and at least 280mm long. They are true pegtiles (as opposed to nib tiles), with large peg holes 20mm in diameter. The ashlar of the arch consists of Reigate stone and a cream-coloured limestone, most of which is probably Caen stone but which also includes some pieces of oolite. The arch mouldings are Early English in style and were dated c.1250 by the RCHM. They are perhaps most striking for their extreme simplicity. Of interest, however, are the conical-shaped bases or broaches at the bottom of the arches.

The earliest parts of the fabric are the stubs of the north wall of the nave and the west wall of the north transept. These are recognizable by the use of a distinctive shelly mortar and a higher than average ironstone content to the masonry, as well as the use of tufa and early peg tile and Coggeshall-type brick. The ashlar masonry of the arch makes a very clear straight joint against this masonry on the east side of the transept wall, at one point trapping some coarse shelly wall plaster covering the earlier build. A straight joint can also be discerned on the west side. It is also significant that the mortar used to bond the rubble masonry core of the ashlar facing lacks any shell. Within the north transept wall an arch can be detected by the presence of a straight joint on both sides which continues upwards as a curve, three voussoirs (two in Reigate and a third in a coarse grey sandstone) being preserved.

A little above the level of the arch springing on the south side of the arch, there is a corbel in a fine-textured grey stone bedded on Coggeshall-type bricks and thin pegtiles. The latter suggest the corbel is 14th to 15th-century in date. About 1.14m above the corbel is a length of lead flashing bedded on pegtile and brick indicative of a roof line. The bricks measure 225 x 40-45mm and date probably from the 15th century.

This analysis suggests that the handsome crossing



Plate 1. The surviving arch of Bicknacre Priory photographed before the 1997 restoration (English Heritage)

arches with their semi-circular responds and moulded capitals were inserted into the late 12th-century priory church, no doubt contemporary with a remodelling of the east end. It suggests that the nave may have been widened, the 12th-century north wall being retained, perhaps because it flanked the cloister as the RCHM proposed, and a new south side to the nave being constructed, perhaps with an arcade. The corbel on the south side of the arch was interpreted by the RCHM as indicating that there was a south aisle or chapel which led into a south transept without an arch. However, Pridden's drawing shows a gothic window in the side of the kitchen and he believed that the kitchen doorway was original, in which case there was never a south aisle. The blocked arch detected in the north transept wall may have been a door between cloister and transept. (It is also possible that the transept was formed within one end of the range of cloister buildings).

The post-medieval fabric

Later building phases which have been identified are all associated with the conversion of the priory remains to residential use, or else the consolidation of the remains when they were re-exposed after the demolition of the house. There are numerous patches and repairs in various types of Tudor brick, most of which appear to date from about the time of the residential conversion. A patch on the southern respond on the east side of the arch is bonded with daub and has traces of a fine white render. Mostly, however, the brickwork is bonded with a sandy mortar which is all but indistinguishable from that of the medieval and 19th-century work. The only exception is a finer textured mortar which seems associated with the 16th-century repairs.

The outer orders of the surviving arch, and the arch on the south side of the crossing, were extensively rebuilt in brickwork, implying that the arches were in an unstable condition. The blocking of the arch in the north transept wall incorporates Tudor brick and was probably carrried out at this time. Subsequent to the blocking, a hole was formed in Tudor brick for a narrow section joist for an inserted first floor. At the south-east corner of the crossing, an east-west joist was inserted for



Fig. 4 Bicknacre Priory: elevation of the east side of the arch of with the main building phases indicated

the floor of an attic within the roof. It has mortices for narrow section joists with double soffit tenons. Hewett (1980, 282) says the first known use of such joists is Queen Elizabeth's Hunting Lodge in Chingford, built in fact for Henry VIII. Strangely there is no corresponding joist on the other side of the arch.

The consolidation of the ruin, which occurred some time between 1808 and 1832, involved rebuilding the top of the wall over the arch in 19th-century bricks (225 x 110 x 65mm), protecting it with a pegtile coping, binding the arch together with iron tie-rods with threaded ends secured with square nuts, and weathering the end of the north wall with semi-circular stones from a dismantled respond. At the top of the wall, there are several courses of Tudor and 18th to 19th-century bricks which step inwards and look as if they may belong to an earlier phase of consolidation in this area. This work includes some yellow slipped floor tiles, 40mm thick and with a side length measuring 138mm. These are probably 16th century in date.

On the west side of the arch, some of the stonework looks smoke-blackened as if there had been a fire. This may explain why the house in the church ruins was abandoned and superseded by the existing farmhouse to the south.

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Bocking, Church Lane, Hill Malting

D.D. Andrews

History

This building stands at right angles to Church Lane, which runs northwards from Bradford Street to St. Mary's church. It might justifiably be known as Elliot Malting, or Boosey Malting, but Hill Malting is what it is labelled on the 1st edition OS map of 1875, and is the name given it in the list description. Whether this name derives from an owner, or from Polly's Hill, on which it stands, is uncertain. A better name would be Resting Seat House Malting, as it belonged to that property until about 1959 when the Elliots built Malt House and detached the malting from Resting Seat House, which was extended to the north and became a residential home (Fig.5).

The age and history of Resting Seat House are uncertain. The facade gives the impression of having been remodelled early in the 20th century. The rectangular plan-form suggests it may have originally been a 17th or 18th-century lobby-entry house, as does the central front door with a back door opposite it. Little of the timber frame can be seen. The ground-floor front rooms have cased-in bridging joists. Some of the very few older timbers visible in the upper part of the house look like elm and appear 17th to 18th century in date. The roof structure has been renewed. Both the house and the malting are marked on the earliest map of Bocking which was surveyed in 1803 (ERO D/DO P2). At that time they belonged to William Boosey, who is identified elsewhere as a maltster (ERO D/P 268/18/1). This was Boosey's only recorded property in Bocking. Part of the land with the house was a hop ground. He also rented an adjacent field which was a larger hop ground. Boosey's hop grounds were amongst the most extensive shown on the 1803 map. A pencilled note on the map indicates that the property subsequently passed to [?] Polly, Widow Joyce, and Peter Taylor. A Nathaniel Boosey, presumably William's father and also a maltster, is recorded in rate assessments as resident in Church lane from 1765 (ERO D/P 268/11/3).



Fig. 5. Sketch plan to show the location of Hill Malting and Resting Seat House, Bocking

Description

The malting comprises a main range of seven bays about 24m long and 5.75m wide, aligned east-west and set at right-angles to the road, just at the top of Polly's Hill. Projecting from its eastern end is a three-bay unit 6.67m long and of similar width. It is timber-framed over a brick ground floor, and has a gambrel roof (Figs 6 and 7). It has been well maintained: the brickwork has been much repaired and renewed, the weatherboarding





covering the frame is modern and recently tarred, the frame has been reinforced and had defective timbers replaced, and the roof must have been relaid with new battens in the last 20 years. The small windows were provided with PVCu frames in the late 1980s, needless to say without consent.

The original bricks are well made with diagonal pressure marks, and look 18th-century in date. The diagnostic carpentry features, notably the primary bracing of the walls, the hanging knees, the presence of reused timber and elm as well as oak, the face-halved and bladed scarf joints, and the scantling of the timbers, confirm this date.

The original fabric is best preserved in the north wall. Here the brick wall is 1.61m high and the timberframed part of the wall above it stands 1.8m to the top plate. The down bracing in the side of the wall is not systematic and sometimes absent. The same is true of the wind bracing in the roof. The storey posts are all reused timbers, mostly floor joists. So are some of the studs, which are mortised into the sole and top plates. These mortices are not pegged, with the exception of those studs flanking the windows which occur in each bay below the sole plate in the brickwork, and in the





timber-framed walls below the top plate. That these studs are pegged demonstrate that the windows are original, as does a careful examination of the brickwork. One window at the east end of the building preserves a plastered jamb.

The south wall is much less straightforward than the north one. The brickwork that forms the lower 1.58m of it is possibly as recent as the 1970s. In the upper half of the wall, the storey posts have arched braces to the top plate, each secured with two pegs. There is no evidence that originally there was ever any studwork or infill in this wall: the existing studwork is modern, probably the same age as the brickwork below it.

The storey posts all rest on square blocks of stone set in the brickwork. Obscuring the inside faces of these posts are wooden plates which have been bolted on to give extra support to the tie-beams. Examination of the bases of the posts shows that there are pegs in their sides, indicating the existence of mortices on their inside faces. To judge from the position of the pegs, these mortices are incomplete, indicating that the posts have been cut through. Adjacent to the pegs are a series of chiselled carpenters' marks. Almost 1 foot up from their bases, the posts are all waisted, tending to be round in section rather than square. This seems not to be their original shape but rather the result of wear.

The tie-beams are probably made of elm. They have a pair of mortices in each side for joists with soffit tenons with diminished haunches, evidence of a floor at this level which is, of course, why the building has a gambrel roof. This roof is strongly made, the ties at the change in pitch being braced by hanging knees which clasp purlins. The hanging knees are all fixed with square-headed bolts. In the upper part of the roof, there is a further set of purlins clasped by collars, whilst at the apex there is another collar just below the ridge piece.

Although it looks built on to the main building, the three-bay east range was an integral part of it. Much of its brick walls have been rebuilt, but where original the brickwork is 18th century and in the east wall continuous with that of the main building. This unit has a first floor and a conventional pitched roof. The carpentry is similar to the main building. The three binding joists of the floor construction are massive, 320-360mm wide. The most northerly of these joists lies 3 feet to the south of the main building, yet supports the timbers that form the side of the easternmost two bays of that building. These studs are in consequence inclined, and they and the the lower part of the roof were boarded over to keep the two areas separate. The same floor joist has a series of empty mortices in the side facing the main building, evidence for the existence of a first floor as will be seen.

Interpretation and reconstruction

From the observations made on the south wall, it follows that the brick base of it represents an underbuilding of the wall posts which have been shortened in height; that these posts have mortices in their sides for joists spanning the width of the building; and that the wall, consisting as it did of posts and arched bracing, was apparently open-sided.

Evidence for the former existence of joists can also be found in the north as well as the south wall. All the storey posts in the north wall stand on newly built bases of fletton bricks which rise above the 18th-century brickwork. This underbuilding has not been caused by rot, as the sole plate is generally in good condition. The height of the brickwork is the same on the north and south sides of the building. It looks very much as if the brick piers mark the position of joists which have been cut off and then removed. Furthermore, incontrovertible evidence of joists at first-floor level can be found in the northernmost of the beams spanning the east range which has a row of empty mortices in it. It seems then that the building had two upper floors. Headroom at the ground floor would have been little more than 5 feet, and at the first floor only about 6 feet.

In having two upper floors with a gambrel roof, the building resembles the maltings which was the former Peatlings wine merchant's in Bradford Street. Here the amputated ends of the joists of the now removed first floor can be seen trapped in the side walls. What is unusual about the Church Lane building, and difficult to interpret, is the south wall. Inasmuch as the storey posts apparently continued to ground level, it is probable that no part of this wall was built of brick. The questions are whether the ground floor here was opensided, as the first floor seems to have been, and whether this impression is deceptive and there was an outshot or aisle. Evidence for an aisle tie-beam would have been removed when the bases of the posts were cut off.

However, between these posts and the weatherboarding it is possible to detect notches, or shallow mortices, on their outer faces which must have served for the attachment of tie-beams. The line of an outer aisle is almost certainly preserved in the northern binding joist of the eastern range which anomalously is set 3 feet to the south of the existing side of the main building. This arrangement would however make sense if the joist were in line with the edge of a former aisle. An unexplained feature doubtless related to the construction of this side is the wear on the posts, which could conceivably have been caused by some system of closing the spaces between the posts.

The function of the building

The process of malting involves steeping barley in a cistern; spreading it on a floor to germinate; and then drying it in a kiln. Cistern and kiln are missing in this building. The cistern may well lie below the modern concrete floor. The kiln, invariably at this date a brick structure, must have been dismantled. It should be at one end of the building, in this case probably the west end where the existing wall is entirely modern suggesting the building may have extended further, and where the 1803 map shows a projecting unit. The door at the east end of the north side probably marks the position of a wider one, to judge from the extent of the patched brickwork.

The ground and first floors were the malting floors; the attic no doubt served for storage. The function of the aisle, and of the east range, are unclear. This malting is not unique in having an aisle (or aisles) but the way they were used seems not to be known. The heavily built floor of the east range suggests it was used for storage.

William Boosey grew a substantial quantity of hops, a very profitable crop. No oast houses have yet been identified in Essex. The capacity to process hops must have existed, and it is almost certain that maltings were used for this purpose (though some authorities recommended against this). The 1803 map marks a building to the west of this one which could have been a small oast. The ample storage capacity of the building may well have been used in part for hops.

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ERO

Essex Record Office

Earls Colne, Sonningwells

Brenda Watkin

Description

Sonningwells in Earls Colne High Street had its timber frame uncovered earlier this century, revealing it to be long-wall jettied house with decorative external braces of slightly serpentine profile (Fig. 8).

Documentary evidence for the owners and the status of the house is given in the book Wherein I dwell produced by the Earls Colne Workers Education Association (WEA 1983, 56). In the manor court entries it is called Sonningwells after the 15th-century owners who were bakers and brewers. In 1526 the premises were acquired by John Pennock who had family connections with the weaving trade in Coggeshall. The assumption is that John Pennock constructed a superior residence on the site of the medieval brewery. However, the wide date range of the features means it could well have been built by a later owner. Questions have also been asked about the motifs used at the ends and centre of the running foliate design of the bressumer. These are five-pointed stars which have been identified as the de Vere mullets. However, this only applies to the central motif as the end ones are variants.

The house is built to the medieval plan form with a cross-entry rather than the later lobby/ baffle-entry plan (Fig. 8). As a long-wall jettied house, it was always of two storeys and consisted of four bays, the two bays forming the hall and cross-entry being wider than the two low-end bays. These two end bays appear to have functioned as a parlour and service room, the division being achieved by the use of a partition, most probably of boards, sprung in along the soffit of the axial bridging joist. Joists to the front of the axial bridging joist are decorated with a double ogee moulding with a bar and run-out stop, whilst the joists to the rear are also of flat section, but unmoulded. Joists are housed into the bridging joist with soffit tenons with diminished

haunches, and by central tenons into the rear stair trap.

The cross-entry abuts the two low-end bays and evidence for the position of three doors survives in the studded partition between them. This would allow for a door into the parlour and the service room and one direct to the stairs. A spere screen positioned to the hall side of the cross-entry gave some privacy and protection but this only extended from the front door to the central bridging joist where its position is acknowledged by an unmoulded section of the axial joist. As there are no evident mortices for studs it is again assumed that the partition was simply sprung into position under a common joist. There is no break in the moulding to the rear of the bridging joist suggesting that the screen was not continued beyond the bridging joist. Due to the insertion of a later staircase it is not now possible to confirm that there was a door to the rear; perhaps a fullwidth screen was not needed if no rear door existed. All the visible common joists to the hall and also the axial bridging joist were moulded with double ogee and bar run-out stops.

No evidence was found that could conclusively prove the position of the stack but it is probable that it was located on the rear wall at a point where there is now a later extension. A later stack has now been inserted into the middle of the two bays forming the parlour/service room end.

Two chambers, each of two bays with central open braces to the cambered tie-beams, are contained at first floor with an interconnecting door in the separating studded partition. The door head has a depressed four centred arch. The stairs would have risen into the chamber above the parlour/service room allowing more privacy for the occupants of the main hall chamber. These rooms would have been lit by oriel windows to the front, as evidenced by mortices in the studs to each side of the windows. Windows are also framed into the rear wall but their design is uncertain. They could have been of simple diamond-mullion design like that of the side window to the rear service room.

The roof is of crown-post construction with thin arched braces. Carpenters' marks on the crown posts and braces are not sequential but this may be due to the use of reused timbers. The attic floor is inserted.

The problem of the external render

Recently, whilst revisiting this house, it was noted that the face of each brace where the ends are mortised into the studs is inset from the studs and not flush as is usual. This meant that the intermediate studs crossed by the braces were also inset up to the opposing end of the brace. This, when plastered, would create an interesting pattern of partly exposed framing contrasting with the panels of render. In timber framing, the patterns formed by external braces were part of the regional dialect. Is this dialect repeated at a later date in the patterns produced by plastering over areas of framing? However, if this was the case, why were external braces used and, moreover, braces with a decorative profile, as it would



Fig. 8. Sonningwells, Earls Colne: isometric drawing of the timber frame, with a ground plan and a reconstruction of how it may have appeared immediately after construction, with plaster panels alternating with areas of close studding.

have been very simple to stiffen the frame, if needed, by the use of internal braces?

It has long been accepted that the covering of the exposed timber frame of a building went with the desire for more comfort once a brick stack and glazed windows became the norm. With this development the requirement for external display braces declined and instead braces were shown to the inside. However, the various ways of infilling or rendering a frame with daub or plaster has been relatively little researched.

At the spring conference of the Vernacular Architecture Group in Norfolk, 16th-century buildings were seen in Norwich that had the frame completely covered with plaster and farm buildings with an external cover of daub. A similar example was noted in the brewhouse outbuilding at Woodhouse Farm, Rivenhall, where vertical staves for the daub were tied to the external horizontal laths for the lime render. This was a relatively late example, datable to the 18th century, but on the western margin of the county evidence has been found for the frame to be covered between the main posts with the common studs set back to compensate for the thickness of the plaster coats (e.g. Hill House, Manuden).

It is not even certain if the plaster was applied to laths, as in the later examples, or directly across the studs and daub, although due to the differential movement of the materials cracking would soon occur. Although modern practitioners do not recommend the coating of earth daub with lime plaster, there are recorded examples of its use to cover the daub panels between the studs. At Maldon Road, Great Baddow a 15th-century long-wall jettied building has recently been repaired exposing close studding with daub between the studs which still retains large areas of the finishing lime plaster coat.

Discussion

Whilst the house displays some wealth in the use of moulded joists, these are not of the quality of others to be found elsewhere in Earls Colne. It is quite usual in urban situations to adapt house plans to suit the restrictions of the site, especially the width, but why was the parlour restricted to only the front half of plan width when it could have been accommodated in a rear wing? This would have then created more space for the traditional service rooms unless the front half was a shop with a parlour, now lost to the rear of the hall. The house is also unusual in the way the braces are recessed from the adjoining studs and the pattern of plaster panels which, if correctly interpreted, has no known parallels (Fig. 8). Was this a conscious effort to cover the frame whilst creating a contrast between the close studding and the plaster panels, or did the owner hang on to the old type of construction thinking that the fully plastered facades were too stark as a final finish? A similar debate took place with the arrival of the ordered Georgian architecture which some contemporaries described as bland and boring.

The dating features have a long time span, and the

ability to date the house firmly would answer some of the questions in regard to who commissioned it and possibly further the research on the plaster panels. Another house in Earls Colne, Combe Hay, has close studding to the front elevation and primary braced construction to the side and rear walls. This house has been dated on documentary evidence to two years either side of 1600 and it is assumed that the close studding was exposed to the front with the primary framing to the sides and rear plastered over. Did this house also have plaster panels to the front contrasting with some panels of exposed framing? As it is now rendered over we will only be able to take the research further when it is re-rendered.

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D.D. Andrews

In 1996-97, the buildings of the old farmyard, including a late 16th-century outbuilding (cf. Andrews 1993), to the north of the 18th-century mansion were converted to residential development.

The remains of the late Tudor wall demarcating the east side of the Tudor garden was pulled down and rebuilt. In digging the foundations for it, a ditch-like feature about 6m wide and apparently aligned east west was discovered. Its position coincided with a kink in the boundary wall and an east-west path through the 18th and 19th-century garden. This path lies just to the south of the foundations of the facade of the late 16th-century mansion. These coincidences raise the possibility that the ditch marks the line of the moat which once existed at Copped Hall (cf. Andrews 1986, 100).

On the south side of the farmyard there is a large relatively modern cartlodge. Because to the south it was partly built into and revetted a slope, a deep trench was dug on this side. It cut through a subterranean domed structure made of white brick, probably an ice house associated with the 18th-century house (Fig. 9).

A number of pieces of moulded stone were uncovered in the ground-works, of which five were recorded (Fig. 10). They comprised two ovolo mullions, the end of a similar transom with a chamfered upper surface, a fragment of window lintel, and a window hood-mould. None were intact, being about 400mm long and rather battered. They were made of Reigate stone, as were the lumps of stone found in the 1984 excavations (Andrews 1986). The transom had two lozenge-shaped holes at 6-inch intervals for the ferramenta to which the leaded lights would have been attached. Each rectangular light was therefore divided into at least three by the ferramenta. Four-light mullion and transomed windows are



Fig. 9. Plan of Copped Hall, Epping, showing the possible ditch and ice house (© Crown copyright 87584M)

represented in drawings made of the mansion before it was demolished in the 18th-century (ERO D/DW E 26-27), occurring in the original construction by Sir Thomas Heneage from 1564 rather than the improvements made by Lionel Cranfield, earl of Middlesex, in the 1620s and 1630s.

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Fig. 10. Copped Hall, Epping: reconstruction of a portion of a window of the Tudor mansion based on the stones found in the building works

Good Easter, Faulkner's Hall. Repairs 1997 D.D. Andrews and D.F. Stenning

Since Cecil Hewett (1980, 43-45) first drew attention to this 'barn' with its posts with romanesque style capitals, it has attracted considerable interest. It is a complex Lshaped building made up largely of reused pieces of timber. The five posts with the capitals are in the north-south wing that flanks the road and are considered to be *in situ*, forming two bays of an open hall, though there is no evident smoke-blackening (Fig. 11). Of similar antiquity to the posts with the capitals are a reused timber, perhaps an aisle tie, now reused as a post (no. 4 on Fig. 11), and some of the studs in the east (roadside) wall.

As part of a repair programme in 1997, the posts in this wing were underpinned. The technique specified by the Morton Partnership was intended to preserve as much of the original fabric as possible, and was inspired by the existing earth-fast wooden plates which have been bolted to the bases of the posts. Similar plates are to be used to support transoms inserted in the empty mortices in the posts.

The holes dug for the underpinning were inspected for any evidence relating to the original construction of the building. (The posts, and the holes dug beneath them, are numbered 1-5 on the accompanying sketch plan). The existing barn floor is made of concrete 100mm thick over hardcore which was laid not long after the Second World War. About 330-400mm below this is a layer of chalky boulder clay. Initially it was assumed that this was a levelling layer or a clay floor put down at some time in the life of the barn. However, no layering was evident in this clay and it proved to be at least 600mm thick, indicating that it is in fact the natural subsoil which the barn was built directly onto after the removal of the topsoil. In holes 3 and 4, there was a chalk floor which had been laid on top of the clay.

corresponded The bottom of the posts approximately with the level of the top of the clay. On the east side of the building, posts 2 and 3 had brickwork beneath them. The bricks were 55-60mm thick, and looked 17th to early 18th century in date. Only one course of brickwork was observed; it is probable that another course and a timber plate had been removed in the building work. There was no evidence that the brickwork had run out to the perimeter wall of the barn, but the area at the edge of the barn was very disturbed, the concrete resting on a mass of relatively modern looking brickwork. In the hole beneath post 4, nothing was found to indicate how the post was supported.

On the west side of the barn, posts 1 and 5 stood on a sole plate about 150mm square which rested on a brick plinth four courses high. This plinth included white bricks and can be dated to the 19th century, probably the early part of the century. The sole plate and plinth were evidently part of an underpinning operation, not simply because of their late date but also because both posts overlapped the sole plates, being wider than them and 'clasping' them.

Thus the structural history of the barn, as evidenced by observation of its foundations in circumstances not entirely favourable inasmuch as the work had commenced before it was inspected, indicates a phase of construction or rebuilding in the 17th century, and an underpinning of, say, 1800. The 'short sill pads' mentioned by Hewett were not seen, though posts 2 and 3 may have rested on something of this sort since the sole plates were not seen to run up to the side wall of the barn. However, the age of the brickwork, which could not be earlier than c.1600, shows that this arrangement was not of any great age. The holes which had been excavated were carefully checked for any trace of postholes, slots, and timber or stone pads, but none was found.



Fig. 11. Sketch plan of the north end of Faulkner's Hall, and drawings of the sections in the holes dug for underpinning post 1 and 3

On balance, this evidence suggests that the building represented by the posts with the capitals did not stand on this site, and that therefore the posts were brought from elsewhere. This conclusion is reinforced by other considerations:

- 1. The height of the posts from their bases to the bottom of the capitals varied from about 1.9-2.0m. At just over 6 feet, this is far too low for a high status building, and implies that the posts have been considerably shortened in length.
- 2. These barns (or buildings in the same position) are represented on a map made by Samuel Walker in 1623 (Edwards and Newton 1984, plate XXXI). They are ranged round an outer courtyard to a moated house located to the west, in the same position as the existing Victorian farmhouse. Medieval high status buildings are rarely located on a roadside like this barn. Instead they are usually set back, like the present farmhouse is. It is probable therefore that the building to which the posts belonged stood near the farmhouse, and that the posts were reused when the barns were built round the outer courtyard, perhaps at the beginning of the 17th century.

To argue that the posts are not *in situ* is not to deny their great age or importance. It does imply, however, that they have to be considered in a context other than that in which we see them today.

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Great Maplestead, Hosdens Brenda Watkin

'Hosedenes' is recorded by Morant (1768, II, 277) as one of the four manors of Great Maplestead. It is situated in that part of the parish that borders on Castle Hedingham (TL 797 344). Morant states that 'The house is but mean, and removed from the place where the former stood, which is known only by the the calling of the court there.'

Recently the external render was stripped and this gave the opportunity to record much of the timber frame of the building (Fig. 12). Not all the building was recorded, but enough was exposed to show a building of unusual construction and layout. Mean it may have seemed to Morant, but in the development of timberframed construction and plan form it is a gem.

From the outside the house appears to take the form of a typical late medieval house with a parlour crosswing, storeyed hall range and in-line service end. However, closer examination reveals that the house was never built as a full two-storey dwelling but only had a first floor equating to three-quarters of its normal height. The typical construction of tie-beam and crownpost roof would have led to serious head-height problems for access between the bays at first-floor level. This problem has been solved by the omission of the tiebeam, except for the closed truss between the end service chamber and the hall chamber, and the introduction of two high collars creating an A-frame truss (Fig. 13). However in the cross-wing a crown post is still used but sits between the two collars. There is no evidence that this also applied to the hall range. To get additional light into the first-floor chamber of the crosswing, the tie-beam is interrupted and mortised into



Fig. 12. Conjectural reconstruction of the timber frame of Hosdens as it was first built

substantial posts framing the central window openings. This method of construction is commonly used for the numerous one-and-a-half storied in-line hall houses in the county.

It is built of well converted oak. The frame is of close-studded construction with braces trenched externally over the studs. The braces are slightly curved and of Suffolk style whereby they fall from storey post to stud, i.e., from vertical to vertical and not from vertical to horizontal in the normal fashion. The joists are of flat section and unmoulded except for the main bridging joists which are chamfered and in the parlour and service end have stepped run-out stops. The main joists within the hall range are also chamfered but with the later lamb's tongue stops (McCann 1985) and it is suggested that this is evidence for a later reflooring.

Where an open truss has principal rafters in A-frame form, then the storey posts do not have jowls. However jowls are used to the storey posts of the closed internal truss, the end frames and also to give additional support to the transverse bridging joists. There is evidence for diamond mullions to a window in the rear elevation but due to subsequent alterations and the deterioration of the front cross-wing mid-rail, it was not possible to determine if the windows to the front elevation of the cross-wing were of a more decorative form. The wall plates are joined with a simple straight bridling joint of three-quarter depth with two face pegs. This is more commonly found as a means of joining sole plates and would appear to be of uncertain date (Hewett 1980, 269-70).

The plan certainly does not conform to the standard in that there is no identifiable cross-entry at the service end of the house. Instead, at the furthest end from the cross-wing, there is a two-bay room at ground floor with a single-bay chamber at the end at first-floor level (Fig. 14). Two narrow bays between this and the cross-wing now accommodate the stack, but again the details of the stack accord more happily with a late 16th-century date and are comparable with the date of the changes to the floor. There is a gap in the studding of the narrow bay adjacent to the stack bay that could have been for a cross-entry and also given access to a separate external kitchen. Due to the later changes to the floor, as evidenced by the empty mortices for the main bridging joist and the braces of the opposing storey posts that formerly marked the end of the two-bay ground-floor room, it is now impossible to be certain if the room was fully divided from the narrow bay or simply had side screens. However this division was made, the provision



Fig. 13. Hosdens, Great Maplestead; detail of A-frame construction to the double-collared roof

for fenestration was limited to one narrow window to the front and rear of the room, with that to the rear having diamond mullions. When the changes were made the single-bay chamber at the end retained the windows whilst the now heated room would have had no original windows. If any were inserted evidence has been lost during the later fenestration changes.

The cross-wing is of two open bays to both the ground and first floor and always appears to have been heated. There is a gap in the studding to what is now the north external wall, but was this the entrance from an earlier building as there appears to be virtually no access between the cross-wing and the in-line range of the building? At first-floor level in the in-line range is an unheated chamber furthest away from the cross-wing with another chamber of two bays. This also appears to have been unheated until the insertion or modification of the brick stack.

Whilst it has been easy to describe the construction of the house the plan form and the development are still unresolved. Was the cross-wing a new heated parlour addition to an earlier building accessed by the opening in the north wall? Did the lack of apparent communication between the two ranges mean that the











Fig. 14. Hosdens, Great Maplestead; ground and first-floor plans as it was probably first built (top) and subsequently modified (bottom)

in-line range performed a completely separate function? But what was that function, given the fact that the fenestration was so limited and most of the rooms appeared to be unheated? During the early 16th century, the manors of Hosdens, Dynes and Caxtons were in the ownership of the de Vere family, but in 1564 they were sold to Edmund Felton of Pentlow Hall who held it for only a year. John Olmstead sold the manor of Dynes to William Deane in 1583 and the manors of Hosdens and Caxtons to William Alliston and Peter Palmer. William Alliston had aready settled in Hopwells in Great Maplestead in 1574/5 (ERO D/DSx 189) after purchasing it from John Olmstead. At the time of his death in 1585 all the three manors were in the possession of William Deane of Dynes. Was it the de Veres who built the cross-wing and in-line range perhaps to an earlier building and then John Olmstead who modified it before selling it? One factor of which we can be certain, however, is that when the brick stack was inserted or modified, and the changes made to the partitions, the plan form conformed to that of the typical lobby-entry house.

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Historical background

In May 1997, an arsonist finally destroyed Heybridge Hall, a manor house which had lain derelict for over ten years despite repeated local authority initiatives to get it restored and re-occupied. As a preliminary to defining future policy for the site, detailed recording was carried out of the remains of the building and an assessment made of its importance.

Heybridge is one of five Essex manors given by King Athelstan in the 10th century to the chapter of St. Paul's cathedral. It remained continuously in the possession of St. Paul's until 1859.¹ The unusually full documentation that exists for the St. Paul's estates, notably the so-called 'Domesday of St. Paul's' drawn up in 1222 and other 13th-century records, makes it possible to re-create in detail the structure and economy of the medieval manor.² The estate was a substantial one. Its importance and prosperity must have been enhanced by its position close to the confluence of the Chelmer and Blackwater, to creeks that were doubtless navigable, and to the bridgehead known as the 'high bridge' from which Heybridge (which in medieval times was known as *Tidwolditon*) takes its name. Untypically for Essex, the Hall and the parish church are not situated together, but stand about half a mile apart. They are linked by Hall Road, a straight road which it is possible to imagine was a strand fronting on to the Blackwater and occupied on its north side by the houses of the little medieval port which is known to have been much shrunken and depleted by Early Modern times.³ Church and Hall stand to the east of the known Roman town. However, an Iron Age cremation cemetery, as well as cropmarks, have been found to the north of the Hall, whilst excavations just to the north-west in 1997 found remains relating to Iron Age agricultural activity.

The curtilage of the Hall enclosed an area of about 2 acres. No ancient topographical features had survived, which is unsurprising in this flat landscape. It is, however, predictable that there would have been a large manorial enclosure surrounded by substantial ditches, and perhaps subdivided or adjoined by lesser enclosures. The medieval manor would have had a predictable suite of buildings: hall, chamber(s), kitchen, dairy, brewhouse, gatehouse, and possibly a chapel. The farmyard and its buildings, of which there must have been successive phases possibly on different locations, has now vanished but Ordnance Survey maps show it to have been situated to the north of the Hall.

Description

Aligned approximately north-south, the Hall had the appearance of a traditional Essex farmhouse, being flatfronted, of three bays with a porch just off centre, and cement-rendered with sash windows and a peg tile roof. The render and the heavy timber porch probably dated from a restoration late in the 19th century or early in the 20th. Since that time the house had been little altered or modernised.

The survey by the Royal Commission on Historical Monuments made after the Great War was able only to identify a 15th-century internal door and to comment on the quality of the staircase and some other features. In about 1979, a more detailed inspection led to the recognition of the existence of a 13th-century hall, a 15th-century cross-wing and later significant work of the 16th and 17th centuries.⁴ It was asserted that the early work may have been associated with rebuilding known to have been carried out by Hugh de Boreham who died c.1265. A lease of 1301 refers to the existence of a camera nova et magna, solarium cum capella de constructione domini Hervey de Boreham, cum duabus caminis de plastro parisiensi, as well as mentioning a domus ad caseum faciendum de bidentibus.5 As the house became more dilapidated, so it became possible to get a better understanding of its fabric and it was upgraded to II* in 1993.

The single roof that covered the front of the building represented a remodelling of earlier roofs and disguised the existence of a series of builds, from the early hall at the south end to the 15th-century cross-wing in the middle to a more modern build at the northern end. To the rear were several relatively modern additions under separate roofs.

In 1993, cores for tree-ring dating were taken from a tie-beam of the early hall and a tie-beam in the crosswing. Like all tree-ring samples so far taken in Maldon, they could not be dated.

Building analysis.⁶ The 14th-century hall

The southern end of the Hall incorporates the remains of two bays of an open hall with a crown-post roof, the crown posts being octagonal with capitals. The most southerly truss, which is now incorporated in a brick wall, had cusped arch braces to the tie-beam. A mortice in one of the storey posts shows that there was another bay of the hall to the south. The northern bay was slightly longer than the southern. To the north, the end of the hall must have terminated in much the same position as the side of the 15th-century cross-wing. The front door and entrance passageway may have corresponded with the cross-passage which was partitioned off either by screens or a spere truss, all trace of which had disappeared. Alternatively, the crosspassage was at the other end of the building and was later moved to this position. The presence of two collars in the northernmost truss of the hall indicates that there was a gablet and probably therefore an in-line end with a hipped roof.

The hall was 7.1m (23 feet) wide, and stood about 3.2m high to the top plate. The storey posts did not have jowls. In the east side were preserved remnants of the framing. The studs were 160mm wide and set at 660-700mm centres (i.e. it was relatively wide studding at intervals of about 2 feet). On the south side of the storey post, shallow slightly curving braces rose from the base plate to the girt, and from the girt to the top plate. The infill panels were made with proportionately few rods to the volume of daub, and the latter was tempered with abundant wheat straw. The daub had not been keyed for a second coat of lime plaster skim, and it may be that its smoothed-off surface formed the wall finish, though doubtless it would have been painted with limewash or ochre. Adjacent to the south-east storey post was a three-light two-mullion window present above and below the girt. It is predictable that the storey post would have formed the central mullion of this window. This could not be confirmed since the southernmost surviving truss was encased in the brick wall which formed the south side of the Hall. A rebate was present in the area of the window in the soffit of the girt.

The exceptional quality of the hall is evident from its great width, the fact that it was probably three rather than the customary two bays, and the cusped braces. The latter are a feature only known elsewhere in Essex at Tiptofts, Wimbish, and Southchurch Hall, Southendon-Sea. The frame was made from timbers that had been grown to match exactly the required scantling, a sign that it came from carefully managed woodland. Too little of the structure was preserved to hazard precise estimates of its date beyond saying it was 'Decorated' in character. The 13th-century date previously advanced is probably too early, especially as tree-ring dating has consistently indicated that many early buildings, including Southchurch Hall, now put to 1321-63, are slightly later than had been thought. It would be reasonable to assign the Hall to the first half of the 14th century (Figs 15 and 16).

The cross-wing To the north of the hall was built a threebay cross-wing jettied to the front, with a crown-post roof. Both floors were divided into two by a partition wall, the larger two-bay room being at the front. At the ground floor, the rooms were separately accessed by doors in the wall dividing the cross-wing from the hall. Trimmed openings in the floor joists in both the front and back rooms were for stairs, there being no direct communication between these rooms at either level.

The front ground-floor room was lit by a wide diamond mullion window consisting of two sets of five lights separated by the central stud in the wall (the only stud to carry a bracket to the jetty). At the first floor there was probably an oriel window about 6 feet wide, only slightly less wide than the window below. In the back wall at both storeys there were five-light windows set off-centre because of the staircase. The back rooms had three-light windows in their north walls there may have been equivalent windows in the front rooms which were lost when the brick chimney stack was inserted. The windows had shutter grooves. A small first-floor doorway at the corner of the north wall of the back room was probably for a garderobe.

The studs were 150-170mm wide at centres of 360-400mm. External tension or down bracing occurred generally at the corners and either side of the storey posts; it is of the sort, sometimes known as 'Colchester bracing', which is located in the sides of the studs. The braces were juxtaposed in such a way as to produce lively and interesting patterns in the studwork. In the wall above the jetty, the braces run in the opposite direction to those over the ground floor, creating a sort of lozenge pattern. The posts do not have jowls, merely slight swellings to accommodate the three-way joint with the other timbers. The floor joists had centre tenons. An edge-halved scarf joint was present in the southern top plate.

The cross-wing was a well built unpretentious structure with few precisely datable features. The centre tenons of the floor joists, and the board-like braces of the crown posts, suggest it may have been built in the second half of the 15th century.

The stair tower This was a small box about 2.5m square built on to the end of the cross-passage and overlapping the corner of the cross-wing by about 1.4m. It was of the same height as the cross-wing and similar in construction. The roof ridge ran east-west and it was hipped at the eastern end. The studs measured 100-140mm, with a tendency to be rather slender, and were



Fig. 15. Heybridge Hall: interpretative ground plan (B. J. Crouch)



Fig. 16. Heybridge Hall: isometric drawing of the 14th to 17th-century parts of the timber frame (B. J. Crouch)

set at centres of 360-440mm. The corner posts had jowls with a distinctively rounded profile. In the north and south sides there were three-light windows with ovolo mullions. Observation by D.F. Stenning indicated

that the studs had been somewhat re-arranged leading to the conclusion that the tower had been moved from elsewhere and re-erected in this position. The staircase structure itself, with its turned balusters, square newels and heavy section handrail, was one of the outstanding features of Heybridge Hall, and indicated a date in the first half of the 17th century for the stair tower.

The chimney stack added to the cross-wing A brick chimney was built against the north side of the cross-wing providing hearths for the front rooms at both storeys. The bricks measured $225 \times 105-110 \times 55$ mm, and were fairly precisely made with somewhat creased surfaces. Where the chimney breast tapered up to the two diamond-shaped stacks, there was a crow-stepped gable. These features suggest a date *c*.1600.

The insertion of the first floor into the medieval hall An upper storey was created within the medieval hall through the construction of a floor with narrow section joists. A window which had been inserted at the south end of the east side at first floor level may have been contemporary. Here the wattle and daub infill had been renewed: on the east side it had been painted in imitation of studwork and it is probable that this was a contemporary (or earlier) external finish. The partition wall that divided the ground floor of the former hall from the newly created entrance hall was built with primary bracing. At the east end of it the entrance into the newly formed ground-floor was through a door with a bolection-moulded hood. This work may be assigned to the later 17th century.

The room at the north-east corner The fire revealed for the first time that this room had an excellent timber frame and was jettied on the north side. Contemporary with it was an addition built on to the chimney stack providing diagonally set hearths at ground and first floor. This new unit measured occupied about half the length of the flank of the earlier cross-wing. On the east side, a small stair tower with an octagonal newel and an ovolo-moulded window gave access to the first floor and probably also the attic. Access arrangements from the cross-wing are uncertain; presumably there was a door from the back room at the ground floor, whilst communication at the first floor was provided by the former garderobe door.

The studs measured 130-140mm wide by 80-90mm deep, and were set at 420-500mm centres, making intervals of 270-360mm. There was no wattling groove in the soffit of the girt or top plate. The infill panels were made with wide closely set laths. The posts did not have jowls. External tension braces occurred at the corners, terminating at the sole plate or girt rather than the studs. The floor joists were narrow section (150 x 90mm) with soffit tenons. Mortices and gaps in the frame indicate two very wide oriel windows on the west or front of the building, and smaller ones in the north and east walls at the first and ground floors respectively. A gap in the frame next to the first-floor door may mark the position of the original door, the surviving doorway with a dropped lintel in fact having been for a garderobe in much the same position as that attached to the cross-wing.

The chimney was made of bricks very similar to those of the earlier stack but rather thinner (225-230 x 110-115 x 45-50mm). They had somewhat pockmarked bases, with squarish arrises but often having a slight camber. Again the two stacks were set diamondwise. One of the flues was cut into the side of the earlier stack, the crow-stepped gable of which was now half obscured.

Although set back from the front of the Hall, this unit was an impressive structure with its jetty and large oriel windows. It provided two large well lit rooms measuring about $5.0 \ge 4.1$ m internally. All the features of the carpentry and brickwork point to a 17th-century date, probably to the second quarter of that century. There can be no doubt that this rapid series of improvements carried out at this time was due to the long tenure of the lease by the Freshwater family.⁷

18th and 19th-century alterations The later phases of construction had not been examined in detail before the fire, and the sequence in which they occurred is not quite as well understood as the earlier ones. Probably the first of the later alterations was the building of a large farmhouse kitchen on the east side of the 14th-century hall. It had a rather low ceiling with a heavy exposed binding joist. Its timber-framed walls were well made. Its studs were 70-80mm wide but nevertheless pegged, and set at centres of 500mm. The character of this work suggests an 18th century date. After the fire the brick fireplace was revealed to have at least one heated recess with a slate shelf and several small subterranean chambers, some of them presumably ashpits.

The entrance passage, and the passage leading northwards off it through the 15th-century cross-wing, had a white marble tiled floor with a black border. The doors off the entrance passage into the area of the crosswing and into the stair tower had fluted pilasters and semi-elliptical heads with keystones. These improvements must have been carried out between the mid 18th century and the early 19th century.

The room at the north-west corner of the building, added to the side of the 17th-century extension, was panelled. This must have been the panelled dining room referred to by a sale catalogue of 1912⁸, despite its distance from the kitchen. A further two flues were added to the Tudor chimneystack, again being set diagonally at the corner of the room. The walls of this room were of interest inasmuch as after the fire it was found that the brickwork of the rather thick groundfloor walls consisted mainly of reused Tudor bricks of varying types. Horizontal lacing timbers were built into the brickwork at vertical intervals of about 770mm. The walls, however, were plastered, three-coat work with a rather gritty scratch coat and a thin lime-rich skim as the top coat. The panelling had been later nailed to the walls through the plaster. At the first floor the walls were made of rather poor studwork with primary bracing. A date in the first half of the 19th century could be

suggested for the addition of this part of the building. It was presumably at this time that the roof of the building was remodelled so that to the front it had a single northsouth axis and the Hall acquired its flat-fronted rendered facade.

On the east side, at the rear of the Hall, further rooms were constructed under two pitched roofs set at right angles to the main axis of the building. They were timber-framed and the north wall incorporated a chimney stack. Since they had stone flagged floors, they were utilitarian in function and should therefore be numbered amongst the wash house, scullery, dairy, pantry, store room, and coalhouse listed in the 1912 sale catalogue. A small brick annex protruded from the south side of the Hall adjoining the kitchen. Its size and the fact that it was brick built suggest it may have been the wash house. The fletton brickwork looked datable to the beginning of the 19th century.

An assessment of the building

Heybridge Hall was unquestionably worthy of its II* listing. Its fabric incorporated well preserved text-book examples of different architectural styles of the last 600 years. The 14th-century hall was unusually grand, and the 15th and 17th-century elements were exceptionally well preserved, presenting an excellent opportunity for the analysis of the social use of the internal spaces though this would need to be combined with further documentary research. The house had developed in this way because it had been able to expand without ever being drastically remodelled as would have been the case in a confined urban situation. Of course, it had also contracted: in particular, one end of the medieval hall was missing. This may well have been a cross-wing. It is possible to surmise that it was pulled down when the panelled room was added, its chimneystack providing the reused Tudor bricks that were to be found in the walls of that room. Also missing were the outbuildings that would have accompanied a medieval and early modern manor, though by the 19th century their functions were clearly accommodated in the rooms which had been built on to the back of the house.

- Information from catalogue for the sale of the estate in ten lots by Sir John Milbanke V.C. in 1911 (Essex Record Office B3157).
- 2 W. Hale ed., *The Domesday of St. Paul's of the year MCCXXII*, 1857, London: Camden Society
- 3 See P. Morant, *The history and antiquities of Essex*, London, 1768, vol. I, 379-80, who says 'There were formerly many houses in this parish, now down...'.
- 4 D.J.E.L. Carrick, P.M. Richards and M.C. Wadhams, Historic buildings surveys, *Essex Archaeology and History* 12, 1980, 86-93.
- 5 W. Sparrow Simpson ed., *Visitations of churches belonging to St. Paul's Cathedral in 1297 and 1458, 1895*, London: Camden Society n.s. 55. See also ERO TA/9.
- 6 This analysis is based on recording carried out by D.F. Stenning before the fire, and on a detailed survey by Thomas Bates and Son Ltd. Inevitably there are some points of uncertainty which can no longer be resolved now that the building has been destroyed.
- 7 P. Morant, The history and antiquities of Essex, 1768, vol. I, 379-80.
- 8 Essex Record Office B3157

Horndon-on-the-Hill, Oxley House Brenda Watkin

Horndon-on-the-Hill was once one of the ten richest medieval towns of the Barstable Hundred in south Essex but is now relegated to a quiet backwater with the construction of the by-pass. Pevsner describes it as 'a nice village with several good houses, e.g. the High House, dated 1728, the Bell Inn and the Old Market Hall.' The Old Market Hall, now with its frame uncovered, renovated and restored from its interim use as a cottage, represents the typical market hall with open sided ground floor to protect the goods on sale and an undivided room to the first floor. It is strategically placed fronting on to the High Road and bounding the passageway to the church. On the north side of the passage way is a yellow stock brick building, with Victorian features, which was formerly the Co-operative shop and now called Oxley House.

In 1989, the building was recorded whilst it was being renovated. The earliest part of the complex is a three-bay timber framed range of c.1400 which faced onto the passage to the church and had jetties on the two most important facades, i.e., to the High Road and the route to the church (Fig. 17). Unfortunately, as so often happens, very little of the original fabric remains at ground-floor level but enough evidence survived in the form of empty mortices to the underside of the transverse bridging joists and the mid-rails to allow for reconstruction. The ground floor was divided into three bays with fully framed partitions on the bay divisions. No gaps were found between the studding that would have given access either into the ground floor from the north or west or between each of the bays. It has therefore to be assumed that each bay was a separate unit with access from the front where the underbuilding of the jetty has now destroyed all of the evidence. The floor joists were all of heavy horizontal section and jointed into the main transverse bridging joists, midrails, bressumer and dragon beam with central tenons.

At first-floor level the volume is divided by a central open truss which has resulted in the two storey posts, used to demarcate the three ground-floor units, becoming superfluous and the introduction of a substantial stud at the mid-point in the rear wall to support the tie-beam. All of the main posts lack jowls, a feature which is common around the coastal margin of Essex, i.e., south Essex and the Colchester and Maldon areas. The elevation to the church passage contained two windows placed centrally in the bays with up-bracing, typical of south-east Essex, from the corner posts to the window stud (cf. Stenning 1997). A gap in the studding of the western wall pointed to this being the access for the first floor. The wall plates also appeared to extend further in this direction and it is possible that an enclosed stair tower, such as that attached to the Moot Hall at Steeple Bumpstead, formed the original or later entrance.

The roof is constructed of paired rafters with a central cross-quadrate crown post with four way bracing on the central cambered tie-beam. It is gabled to the



Fig. 17. Oxley House, Horndon-on-the-Hill: frame drawing with a sketch plan to show its location in relation to the church, the Old Market Hall, and the infilled market-place

High Road, with a hip and gablet to the church. Chamfers occur on all of the main timbers with simple stepped run-out stops apart from the cambered tiebeam which has broach stops to match those at the base of the crown post.

As with all Essex buildings, although the construction and conversion of the timber point to a quality building, the use of decoration is limited and it is only the jetty bressumer that is moulded. The profile is made up of a bowtell at the top followed by an ogee, quadrant, step and hollow with a hollow chamfer to the inner face. An unusual feature is the use of an upper jetty plate which is tenoned into the main posts. A variant on this is cited by Harris (1990), but here the top jetty plate is housed underneath the main posts rather than being tenoned into their sides. Until 1997 Oxley House was the only recorded instance of this type of jetty detail in Essex. This year repair work was undertaken to Olspar, Maldon Road, Great Baddow, the front of which was stripped of its later render. This exposed an upper jetty plate which had also been used in this instance. Dave Stenning, who was able to examine the building, assigns it to the late 15th century and believes it had a public use.

The original use of Oxley House has still to be confirmed by further reseach, but it can be compared to similar buildings such as the long-wall jettied building flanking the entrance to the churchyard at Felsted, which had shops at the ground floor and some form of public use at the first floor.

The addition of a top jetty plate is an unusual feature in Essex, and it is interesting that the only other instance where this technique has been identified is also in what was probably a public building. Was it that this was a detail used on quality buildings, much as the use of soulaces in the roof structure of prestigious buildings, or is it simply the carpenter making sure that the moulded bressumer is not further weakened by the number of mortices required for the closely spaced studding? The method of construction whereby the common floor joists are jointed into the jetty bressumer and the mid rail, instead of being simply lodged onto it, and the very close spacing of the studs, virtually the same gap as the width of the stud, points to an expensive building for a prime site. Unfortunately, at present, it is not known if this was a building that represented an investment by the church or an individual. However its location was certainly well placed to attract good rents as well as customers to the shops and also for it to act as a central venue for public functions.

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Steeple Bumpstead, Little Waltons Farmhouse

Brenda Watkin

Little Waltons Farmhouse (TL 695 426) lies to the

north of Great Waltons, now called Upper House, one of the manors of Steeple Bumpstead. In 1637 the manor estate was dismembered and divided into three, i.e., Great Waltons, Middle Waltons and Little Waltons, with the later coming into the ownership of Mr. Barrons (Morant 1768, II, 349). The structure and development of the house has been observed during recent renovation work.

The house is of three main builds, a frontage range facing south, an extension to the north-east forming an L-shaped plan, and the final extension to the north-west creating a double-pile rear range and a square plan form. The first phase dates from the first half of the 17th century and could have been newly built by Mr. Barrons. The second phase has few dating features but the chamfer stop to the mantle beam of the cooking hearth is typical of the late 17th century. The final phase appears to date to the late 18th or early 19th century.

The first phase represents the typical lobby entry house, built around a central stack, with hall and cooking stack to one half and the parlour and parlour stack to the other. The house was of two storeys with attic rooms for storage or servants' use. The frame was of well converted oak and constructed with primary bracing. The primary braces are of heavy section and slightly curved. This is typical of early primary-braced construction whereas the later development is towards straight braces which become of slighter section through the ensuing centuries. A notable feature of the house is the housing of the attic floor which is not on the usual line of the wall plate and tie-beams but lodged on clamps pegged to the studs and tenoned into the storey posts below the wall plate. This provides a more useful, higher, attic area and is a common detail in urban areas, · but usually incorporates additional structural members such as bent principal rafters or struts (Hewett 1980, 231-3). Here the internal bay divisions, at first-floor level, have an A-frame truss which means that the building only had cross-ties to the wall plate at the two gable ends. Given the amount of outward distortion of the wall plates, this was a design solution that was less than satisfactory.

Most of the original features such as fenestration and door positions have now been lost in the ensuing remodelling. However one feature that gives some idea of the internal decoration of the house is the remnants of painting found to a first-floor fireplace and stack. As often in Essex, the lack of stone results in its replication by paint and so the brick jambs to the hearth are coloured ivory and lined out as ashlar stone work. Above the hearth is a geometric band painted in three colours: charcoal grey, red ochre and ivory (Fig. 18). A similar design, and using the same colours, has recently been found in 'Sigors', formerly the Old Rectory, Clare.

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Fig. 18. Painted decoration on fireplace in first-floor rear chamber at Little Waltons Farmhouse, Steeple Bumpstead

Terling, Cartlodge at Terling Hall Farm Elphin Watkin

The recording of this building was made a condition of listed building consent to demolish it. It is situated just within the parish boundary of Terling which runs along the road to the south. Its original position within the farmyard is now obscured by later cattle sheds. On an old edition of the 1" O.S. map the tracks shown are to the side or rear of the cartlodge. On the 1897 edition of the 25" O.S. map no tracks are shown relating to this building. This does not agree with 18th-century theories that the best position for such a building was on the main access to the farm. Considering other lanes to the south of the road it could be suggested that the entrance could once have run across the front of the building to the farmhouse at the east but this seems unlikely.

Very little has been written about cartlodges with first floor granaries; whilst most books stress their importance, little detailed information is available. The need for large granaries before the 16th century was minimal except maybe on monastic farms. In theory the normal orientation should be with the openings to the north; it may be that the south aspect at Terling relates to a planned dual use. The north orientation is to protect the wagons. The south aspect could mean that it was designed as a shelter shed. This would help explain the silled bays and the rear aisle. Downs Farm, Barrett Ringstead in Norfolk, has a long 18th-century cartlodge/granary with a narrow centre bay containing a stair but it also has another stair at one end. No trace is visible at Terling for an end stairs. The 1897 O.S. map does show a projection of about four feet on the west end but the framing shows no break at first floor level, though above the tie-beam there are signs of a filled opening which is too high for an access.

The older cladding at Terling appears to be nailed flat boarding and the use of flat boards as outside cladding has been noted on another farm sketch as late as 1846. Very few cartlodges are known before the 17th century and most are 18th-century or later. This is consistent with the fact that few large, and therefore expensive, wagons were in farm use before this time, and also the fact that by the middle of the 18th century arable farming had recovered and the effects of the depression later in the century were then not foreseen. Some of this increase was due to the start of the industrial revolution as people were now living in larger conurbations with no areas to grow their own food, which, coupled with the growing size of the farm unit and increasing crop yields was producing the need for more secure storage.

The building is extremely large and rare for its type, comprising seven bays with a floored storey above (Figs 19 and 20). Although it is built almost entirely from reused oak timber, the main construction suggests an 18th-century build. It has an extension of a further two bays to the east, built again from reused timber, but of a slightly smaller cross-section. This unit is open to full height with an end door. What its original use was is hard to determine as no clues exist, but it could have functioned as a workshop or storeroom. Some of the original elm cladding of the cartlodge is trapped by the addition of this extension and one board has the initials 'IB' and the date '1749' inscribed on it. This could well be the date of build for the main range. The limited weathering to the boards suggests the extension was most likely built within fifty years.

The building is 19.96m long (65' 6"), built with a rear aisle making it 7.47m deep (24' 6"). The main body of the building, with the granary above, is 5.61m (18' 5") wide. The bay openings average 2.52m wide (8' 3"), with the centre opening larger at 2.92m (9' 7"). The entrance heights are 1.98m (6' 6") from the base of the sill with about 0.23m (9") extra for the sill base wall built in brick. The height from sill base to the top plate is 4.06m (13' 4"), making it a large and imposing building. The later extension increases the overall length to 25.55m (83' 10"). The 1897 map shows that the division in the



Fig. 19. Terling Hall cartlodge: ground plan



Fig. 20. Terling Hall cartlodge: isometric projection

building at the east end caused by building on the extension was also a field boundary which may suggest a completely unrelated use for the extension.

All the main storey posts are substantial reused posts from an earlier building. It is possible that the storey heights reflect the previous use of these posts but the evidence is not visible. Intermediate posts are fitted in the centre of each bay truss to the girding beams, the two end posts to full two storey height. The axial and girding beams are also from the same building with the width appearing to be original and the bay lengths along the building adjusted to suit a cart opening. This is confirmed by studying the present jointing into the axial beams where recutting is noticeable and the straight chamfers with step stops are complete front to rear but foreshortened along the length of the building. It can be noted that the opening widths for the carts are almost the same as the cartlodge at Cressing Temple Farm which was built about 1780-1800. As most eastern region wagons have a width of about six feet it could be that openings were relatively standardised. Set within the centre of each opening in the joists above are pairs of holes to take a staple and hook thought to be for the suspension of the shafts of a wagon.

In bay one (at the west end of the building), the floor joists are reused floor joists from a jettied building. This is evident because the chamfers stop some distance from one end and the start of a radius at that end where new tenons have been cut. They now run at 90% to their original axis and are joined to the girding beams with soffit tenons with diminished haunches. Many of the rear line of floor joists, which have the same joints and are still in their original orientation, can be seen to have the same timber characteristics as the ex-jetty joists but do not have any chamfers. This direction change is consistent throughout the six floored bays with a noticeable change in the quality of the timber used in bays 5, 6, and 7 indicating that the building was laid out from the western side. This was further confirmed by the runs of carpenters' assembly marks contemporary with the construction of the cartlodge. More new timber was used towards the eastern end of the building and the girding beam to the east of bay 4 (the open bay) is a new beam in elm. Some of the floor joists have been sawn from very poor quality new oak with much bark remaining.

The construction of the outer walls, and the two trusses either side of the central open bay, is primarybraced. The wall infill studding consists mainly of reused timbers from various parts of a previous building, the few new timbers, which include the primary braces, being sawn to relatively small crosssections. The wall plates are jointed with face-halved and bladed scarfs, while the sills have a simple bridled scarf with a housed spur top ledge. This is minimal in most cases, but on one extends to the length of the bridle.

The cartlodge was built with a framed wooden sill segregating each bay and effectively dividing off the rear aisle for each of the three bays each side of the central opening. The omission of the sill plate to the central bay would leave flat access to the rear aisle. These sills have subsequently been removed except for the stubs left under the posts. This is not now clear in the eastern three bays due to much replacement of the main posts. The bases of the remaining posts are encased in concrete.

Each of the posts to the openings have side mortises contemporaneous to the cartlodge build. They are deeper to one side of an opening than the other suggesting that bars could be fitted across the fronts of the openings. Bays 1, 2 & 3 have three mortises each which, coupled with the sign of nailing to the rear of the main trusses and along the western side of the centre bay, suggest that at some time in its history these bays have been shut off. The bays to the east of the central opening do not have full sets of mortises but all have at least one pair. One post has an added timber to produce room for a mortise. With the rebuilding behind, there is not positive evidence that these bays were capable of being shut off. Nails do exist to the eastern side of the timbers on the east central truss.

The centre bay, now open to wall plate level, appears to have been the main access area to the upper storey. The carpenters' assembly marks on the frame above the girding beam show that it was part of the main cartlodge, and indicate that the upper storey has always been in the form of two separate rooms of three bays each. The one to the west is the best preserved. It is entered by a good 18th-century three-foot wide ventilated entrance door, and the room has a boarded lining to 1.04m (3' 5") above floorboard level. This was plastered back to the outer wall cladding above this level. The boarding for this internal cladding is of various ages but the original appears to be rebate jointed with later replacements butt jointed. No positive evidence exists for original windows at this level although many have been cut in at various times and later blocked up. The room to the east has been reclad inside at a later date; the boarding is all 20th-century with a machined tongue and groove and a roll moulding. The door opening has been modified and the door replaced.

The central area now has a six foot wide gallery of 20th-century construction spanning the area between the two doors. It has a central trapdoor to enable sacks to be hauled up via a hoist suspended from some inserted girders. The ladder now positioned to this gallery is of earlier construction and could relate to the previous layout in the centre bay of which no evidence remains. The spacing of the vertical wall studs to the sides would allow for floor beams to be lodged across the opening to complete a floor in this bay and the mortises exist in the posts for a front bressummer rail.

Each of the enclosed bays had knee braces to the tops of the openings and to the rear arcade posts of the cart bays but no evidence exists for knee braces in the central bay. The mortises existing in the underside of the wall plate appear to be from its earlier use although they could still have been reused to fill in the front of the central bay. If this was done the ladder would have to be set within the opening, as now, but maybe rising from the rear to only a partially floored area. The present double doors at the rear of the central bay are secondary to this build.

The roof is of side-purlin construction mainly manufactured from reused rafters coming from an earlier crown-post roof. It was clad with plain clay tiles. The original outer cladding of the cartlodge, of which little remains, did not appear to be rebated but was relatively wide, short lengths of hand sawn elm boarding. The present cladding is machined softwood feather-edged weather-boarding.

The two-bay extension is built against the cladding of the east wall, set within the depth of the main building but again built with a rear aisle, this time divided off during construction to form a small separate room. This division wall has good elm featheredged weather-board cladding. It has one entrance door 1.17metres wide (3' 10") in the east end, no windows and all the framing is reused from a building of older date than that which provided the timber in the main body of the cartlodge. The frame has doublebranched knees of smaller section to the end truss which are different from those of the main building. With minimal primary wall bracing it suggests a date soon after 1800.

How many buildings provided the timbers used to build this cartlodge? The scope of the the survey did not allow for archaeological inspection of each reused timber. Of the timbers examined in the main build it has been assumed that the main posts and beams to the first floor construction come from one building which must have been of considerable size. Some of the posts have been reduced in section, and, due to the state of the structure the upper levels could not be adequately examined to determine whether they are to original height. The floor joists suggest maybe a cross-wing to a large building or, if of mid-16th-century date, a longwall jetty building. All the windows appear to be unglazed with shutters. A number of the timbers imply room divisions with doorways. None of the timbers now show any sign of smoke blackening, further confirming a two-storey or unheated building. The rafters and various top plates imply at least two buildings due to the variation in the detail of cutting the joints and collar positions on rafters.

The timbers of the eastern extension appear to come from another building of earlier date. The frame height suggests an open hall with no mid rail. From this it can be assumed that a minimum of three buildings or sections of buildings were used for the main construction of the cartlodge and its extension. The highly moulded timbers, now used as braces and studs, could be from yet another building or from a fancy bay window incorporated in or added to one of the other buildings. The mouldings and stops of these timbers suggest an early to mid 17th-century date. Its redundancy in the 18th century would be consistent with the 'Georgian' style of architecture in vogue at the time.

The cartlodge is important as it is large for its type and was built at approximately the same time as Terling Place. Its size can no doubt be partly explained by its location on the 'home' farm. Ideally the estate records should be trawled for any information that might relate to when it was built and the subsequent changes to it. Since both the reused timbers and the new wood is likely to have come from the estate, such an exercise may well prove fruitful.

Acknowledgements

Thanks must be extended to Lord Rayleigh's Farms Incorporated, especially to Adrian Tritton, to the farm staff and animals for putting up with the intrusion; and to John Goundry who carried out the initial work on the survey. An archive for the building is held by Lord Rayleigh's Farms Inc., the Essex Record Office, the National Monuments Record, Braintree District Council, and by Essex County Council Historic Buildings and Design Section.

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Church miscellany 1997

(ed). D.D. Andrews

A desk-top assessment of Lost, ruined and redundant churches in Essex recently compiled by the Essex County Council Planning Department has identified 101 churches and 45 chapels. The maintenance, care and preservation of ruined and redundant churches is often a long-term process which consumes a great deal of time, effort and financial resources, with no guarantee of a successful outcome. Alresford, St. Peter, which is described below, is a rare instance of a ruined church in local government guardianship. Most of the others are deteriorating in condition, with no detailed record made of their fabric or immediate prospect of repair and consolidation. Redundant churches too run the risk of being reduced to a ruin, as has happened to Pitsea, St. Michael, though less often do they end with being demolished, as sadly happened in the case of St. Erkenwald, Southend-on-Sea, designed by Walter Tapper and built in 1910.

Once again, it is necessary to thank all those incumbents, churchwardens, PCC members, architects and contractors whose co-operation and assistance has made it possible for recording to be carried out during works at the churches discussed below.

Alresford, St Peter. A survey of the surviving remains A. Garwood

The partial destruction of St. Peter's church by fire in 1971 led to the church being declared redundant, and being taken into guardianship by Essex County Council. Since the fire, which resulted in the loss of the church roof, further deterioration of the building, from vandalism and natural agencies, prompted the detailed recording of the surviving fabric by the County Council's Field Archaeology Group in 1997. A programme of repair and consolidation was also undertaken.

The parish of Alresford covers an area of light fertile soils about five miles south-east of Colchester. St. Peter's church is situated to the south of the present village (TM 6064 2206), and lies in relative isolation, overlooking Alresford creek, on the eastern bank of the Colne estuary. To the south-west of the church and approximately 130m south-east of Alresford Lodge, a Roman corridor building with a detached bathhouse, tessellated floor surfaces and the remains of hypocausts, mosaics and painted wall plaster has been excavated. The building was extensively plundered in antiquity, its walls robbed to their foundations (Hull 1963, 37). This building must have been the source of the Roman brick extensively used in St. Peter's church.

The deterioration of the building has exposed important architectural detail and structural phases that until the fire were not apparent to the naked eye. Externally the building is still extensively rendered, but the internal plaster has been completely removed. The vestry has been demolished and much of the internal tile flooring has been either disturbed or removed. Most of the inside of the church, except for the sanctuary, is now laid to grass.

Today the church comprises a nave, chancel and south aisle, and is built predominantly of ragstone and flint, with Reigate and limestone detail. When the Royal Commission on Historical Monuments recorded the church, they concluded that most of the structure was 14th century, though Roman brick quoins at the northwest and south-west angles of the nave suggest a 12thcentury date. As well as the evidence of the windows, a 14th-century reconstruction was indicated by an inscription on the grave stone of Anfrid de Staunton who held the manor from 1312-1337 (ERO T/P 195/8; Morant 1768, I, 452). This inscription has since been lost.

The church was restored in the 19th century when the chancel appears to have been partly rebuilt, the vestry, south aisle and north porch added, and the belfry rebuilt (RCHM Essex 1922, 5).

The survey drawings were based on rectified photographs combined with measured scale drawings, onto which the main architectural features were located.

Analysis of the fabric (Figs 1-3)

Period 1. The 12th century The original church was a simple two-celled building comprising a nave and a chancel or apse. Substantial remains of this phase can be observed in the west and north walls of the nave. It was predominantly built of coursed Kentish ragstone and flint rubble, but also included reused Roman brick and tile and occasional pieces of septaria, bonded with a distinctive pale yellow sandy mortar tempered with shell.

Roman brick quoins can be seen on the north-west corner of the nave and on the exterior of the west wall. The south-western quoins remained *in situ* when the
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Fig. 1 Alresford, St Peter. The evolution of the church

church was widened (period 3) and are directly in line with a straight joint, between the period 1 and 3 builds. Examination of this joint, revealed that render bonded to the external face of the period 1 fabric, was present. A wall scar representing the line and thickness of the original (period 1) south nave wall is clearly evident immediately north of this junction.

In the west wall, a now blocked small circular window, partly turned in Roman brick, lay at the centre of the original 12th-century building, although its position in the present west end is off-centre due to the period 3 enlargement of the nave. In the northern wall, the western jamb of the north door was dressed in Roman brick, and is all that survives of the original doorway, although above the modern lintel the blocked round-headed arch of this original door is visible.

The 12th-century fabric of the north wall of the nave survives to a height a little above the modern lintel over the northern nave door. A vertical straight joint between the period 1 and period 2 fabrics is visible in the north wall extending from the foot of the wall up to the base of the eastern nave window. Examination of this joint, revealed render on the original exterior face of the 12thcentury wall, to which the period 2 wall abutted. A wall scar immediately to the west of the straight joint, and the presence of Roman brick within the period 1 fabric, respecting the line of the joint, represent a vestige of the demolished east wall of the nave, where it turned southward at the junction with the chancel.

From this evidence the external dimensions of the original 12th-century nave can be accurately deduced. It measured 6.6m by 10.6m in length, with walls 0.84m thick, and was 5.1m high to the eaves and 8.8m to the apex of the west gable end. The exterior walls were rendered and Roman brick quoins were present on each corner of the nave. Unfortunately there is nothing to indicate whether this building had an apse or a rectangular chancel.

Period 2. The 13th century Evidence of the 13th-century build survives only in the top half and east end of the north wall of the nave, and the western half of the north chancel wall. Here the fabric is characterised by its less regular coursing and a change in the mortar which is darker and more sandy without shell temper. However, the 13th-century fabric did comprise much the same components as the period 1 walls. Joints could be detected in the masonry between the upper and lower halves of the nave wall, the upper half also making a straight joint against the 12th-century (period 1) masonry of the west wall. A vertical straight joint between the east end of the 12th-century nave wall and the 13th-century fabric demonstrates the elongation of the nave to the east, increasing the length of the nave to 13.8m. To accommodate this enlargement the original east end was demolished and a new chancel, measuring an estimated 4.7m by at least 4.8m was constructed.

Period 2 is well defined stratigraphically, but lacks diagnostic dating features. The insertion of 14th-

century windows into the period 2 fabric of the north nave wall allows it to be assigned broadly to the 13th century. No sign of widening or heightening of the building was evident in the west wall, implying that the structural activity focused mainly on the eastward extension of the nave and the construction of a new chancel consequent upon that.

Period 3. The 14th century The structural evidence of the 14th-century church survives mainly in the north, east and south walls of the chancel and in the west wall of the nave. The period 3 fabric comprised the same elements as before, but saw the introduction of Reigate stone for dressings. The present windows are stylistically 14th century, although no original masonry survives, other than a few blocks of Reigate stone in the rear arches of the south chancel and east end windows. Reigate stone is also present in the south chancel and north nave doors.

In the 14th century, the period 1 south nave wall was demolished to accommodate the widening of the nave by 1.7m to 8.3m. This extension was evident from a straight joint in the west wall between the period 1 and 3 fabrics. The west end also demonstrates the elevation of the roof line, with period 3 fabric built only onto the southern face of the west end gable. Only a small length of the period 3 south nave wall survives as most of the wall was demolished for the insertion of the south arcade in period 4. It is assumed that a window was inserted into the west wall, though the existing remains of this window are 19th century.

The chancel was extended 2.8m in length to the east and 1.9m in width to the south. A stylistic change in the existing chancel north wall, in coursing and composition of mortar, delineated the change between the eastern end of the 13th-century (period 2) chancel and the 14th-century (period 3) build. This extension kept the chancel in proportion to the widening of the nave.

Both the nave and the chancel were refenestrated during period 3. The windows of the north and south walls of the nave (the latter moved to the south aisle in period 4) are two-centred with 'Y' tracery. The original period 3 rear arch, which extensively uses Roman tile in its construction, survives in the eastern window of the north nave wall.

The original masonry in the two windows of the north chancel wall was renewed in limestone in period 4. The western window, which was inserted into the 13th-century fabric, is a two-centred single-light window with a trefoil light. The eastern window was contemporary with the period 3 chancel extension and is two-light with a trefoil light. The eastern window of the south chancel wall is similar and still retains some of the original 14th-century Reigate stone in its rear arch. It has a low internal cill that served as a seat. To the east of this window is a piscina with a two-centred head. The window in the east end has geometric tracery comprising three quatrefoils above three two-centred lights. Although it is all modern, some Reigate stone in



Fig. 2 Alresford, St Peter. Elevation and interpretative diagram of the interior face of the north wall



Roman Brick and Peg-tile

Fig. 3 Alresford, St Peter. Elevation and interpretative diagram of the interior face of the west wall

the rear arch implies that it is an accurate reconstruction of the original.

Further work during this period included the refurbishment of the original 12th-century north nave door, demonstrated by a few original Reigate stone blocks in the eastern jamb, and the insertion of doorways into the north and south walls of the chancel. A blocked segmental-headed arch is visible above the 19th-century lintel in the north chancel wall. Roman brick abuts both the eastern and western jambs of this door, suggesting that the door is an original feature. Three pieces of Reigate stone representing the eastern jamb are all that survive of the original 14th-century south chancel door. Photographic records show that it had a segmental-headed arch.

Buttressing on the north-east angle of the nave and the south-east angles of the chancel may be attributed to this period, although render on exterior walls of the north nave wall and chancel masked any evidence of a structural relationship.

The 14th century saw the further expansion of the church, with the enlargement of the nave in height and width. It is probable that most of the 13th-century chancel was demolished, leaving only part of its north wall intact, and a new larger chancel, extending the church to its present length, was built. This period also saw the refenestration of both the nave and chancel and the refurbishment, using Reigate stone, of the north and south nave doors. Doorways were built into north and south walls of the chancel and buttressing was added to the north-east and south-east angles of both the chancel and nave.

Period 4. The 19th century The main development in this period was the construction of the south aisle. The period 4 walls comprise irregularly coursed ragstone and flint rubble and some Roman brick in a firm greyish mortar. Coursed peg tile was incorporated into the fabric of the west end of the south aisle and along the top of the south aisle wall at its western end.

The west window of the south aisle is a large single trefoil light. The windows of the south wall are both twocentred with 'Y' tracery and were probably reused from the period 3 south nave wall. The 14th-century windows would have originally been made of Reigate stone, in contrast with the harder pinkish limestone used extensively in the 19th century replacement of the masonry in the church windows. Brickwork repairs to the rear arches and/or splays are also evident in all the windows, except for the east window of the nave.

The two-centred arches of both the north nave and south aisle doors are 19th-century replicas of the original period 3 doors. The north and south chancel doors are both 19th-century features inserted into the period 3 doorways. The masonry of the piscina was replaced as part of this refurbishment, and the altar and surviving internal tile flooring are also contemporary.

A chancel arch faced in ashlar, possibly replacing an earlier arch, was inserted during this period, but since

the fire only the piers remain. A vestry (now demolished) with a doorway leading to the new stone pulpit situated at the junction of the south aisle and chancel, was constructed against the south chancel wall. A north porch was added.

The Victorian period saw the final enlargement of the church with the addition of the south aisle, as well as extensive and doubtless much needed restoration of the fabric. There is no evidence of any significant building activity having occurred after the Victorian period.

Acknowledgements

This survey was carried out by P. Clarke and A. Garwood, with photography by N. McBeth, and assistance with the analysis of the fabric by D.D. Andrews. The illustrations were prepared by the author.

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Boreham, St Andrew. The west wall

D.D. Andrews

St. Andrew's is a complex building with a 12th-century central tower, a 14th-century chancel, and an early 13thcentury nave with aisles which were rebuilt in the 14th and 15th centuries (RCHM Essex 1921, 22). The removal of render in 1997 revealed the west wall and its buttresses to be a remarkably intact 13th-century construction, to which the enlarged 15th-century north aisle was then added (Fig. 4). The 13th-century work is built of a mixture of flint, ironstone or indurated conglomerate, and Roman brick and tile with occasional pieces of septaria and tufa. The mortar was brown and of good quality, retaining its cohesion. Lifts were evident in the stonework at intervals of about 170-400mm. Vertical scaffold intervals, evidenced by putlog holes capped by oak boards, some of which were possibly shingles, were at a height of about 1.7m, except for the highest one discernible, which was at an interval of c. 0.9m.

In the lift at the base of the wall, the mortar was darker, slightly orangey brown. This was particularly pronounced just to the left of the northernmost buttress, and in that part of the buttress adjoining the wall, where there was a concentration of ironstone.

It may be that this darker mortar is all that remains of an earlier phase of the church. If so, it is of importance as it shows the 12th-century building was coterminous in this direction with the 13th-century one, and that it had buttresses, though probably not of the same projection as the existing ones.

The buttresses are dressed with reused Roman materials and are clearly contemporary with the wall,

ESSEX ARCHAEOLOGY AND HISTORY



BROWNER MORTAR

Fig. 4 Boreham St Andrew. Sketch to illustrate structural features revealed after removal of render from the west wall

not modern as the Royal Commission on Historical Monuments indicated (which implies that the wall - or buttresses - was rendered by 1921). The buttresses are well preserved early examples, typical in being of considerable projection (4 feet 6 inches, 1.37m). They rise vertically to a height of about 1.7m, and then obliquely for a further 2.8m before dying into the church wall. The problem of weathering them was addressed by having Roman bricks stepped down in courses along their top surface. The Roman bricks are generally 11/4-11/2 inches high, and some may have been about 260mm square. Some were thicker (40-45mm) and may be *pilae* from a hypocaust. Their fabric also included some pieces of pegtile of above average thickness (22mm) in a sandy fabric which may be 13thcentury in date. The buttresses played a role in the scaffolding system, as putlog holes occurred in the sides of them at a level immediately above those in the wall.

At the west end of the south aisle there is an original lancet window formed in Reigate stone. The quoins at the corner of this aisle (which is now adjoined by a modern vestry) are also in Reigate stone. This aisle is narrow and covered by a continuation of the pitch of the nave roof (i.e. a catslide).

Just to the north of the nave, a clear vertical break in the masonry marks the addition of the 15th-century aisle. The RCHM thought the join between and aisle and nave to be marked by the beginning of the plinth at the north end of the west wall, and it is curious that this join and the plinth do not correspond. However, no other evidence of building phases could be traced in this part of the fabric, with the possible exception of shallow lifts at the base of the aisle wall, raising the possibility that this represented the remains of a rebuild of the 13th-century aisle which was in turn enlarged in the 15th century. The 15th-century work is predominantly of flints of fairly uniform and relatively small size, with little ironstone or Roman brick. It is bonded with rather paler mortar which still comes almost flush with the face of the stones and indicates that the wall must have been made with shuttering and had a rendered finish. Lifts were recognisable in it at intervals of 200-380mm, and the scaffold intervals were at about the same level as those in the 13th-century work implying that the latter had remained unfilled. The putlog holes were either formed in the stonework or covered with oak boards or peg tiles. With the possible exception of the bottom row, the holes had been filled once the scaffold was struck. A row of ironstone blocks coincides with a lift and possibly marks a seasonal break in the construction programme rather than a scaffolding interval, as putlog holes were not detected.

The large Perpendicular west window has been totally renewed since the RCHM survey. The original masonry of the outer arch round the ashlar voussoirs survived. It consisted in part of small squared limestone blocks, as well as fragments of some of the original clunch voussoirs that formed the moulded surround to the window. When this window was inserted, the top of the west wall was totally rebuilt in rather crude rubble masonry consisting of relatively large pieces of stone. Above this window the decayed remains of a collar beam was found in the masonry. This was part of the end truss of the nave roof which was clearly expressed and visible in the exterior of the west wall. Whether the entire nave roof was renewed at this time is uncertain. Other elements of the roof which were evidenced by alterations in the character of the masonry were the sole plates and ashlar pieces at the top of the nave walls and the south aisle wall. A little daub was found at the top of the north nave wall where the facing was no longer intact: daub was commonly used as infill at the eaves of medieval church roofs.

In recent times, the roof has been overhauled and, in this wall at least, the rafters raised 100mm above their previous position, as is shown in a uniform line in the masonry 100mm below the existing verge. The trefoilheaded window at the top of the west wall was entirely modern and was surrounded by a facing of fletton brickwork (removed and replaced with flintwork as part of the repointing works). Whether this window was a substitute for a medieval one is uncertain.

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Dagenham, St Peter and St Paul. The Pilon vault

D.D. Andrews

Maintenance work on the churchyard path by the local authority led to the collapse of the vaulted roof over the stairwell leading down to a vault. Above the vault is a table tomb. The stones sides of this have been removed and the top slab laid flat on the base. The inscription on the slab is no longer legible. The vault must have been entered on several previous occasions. There is a pile of tree roots inside it, no doubt related to an old hole at the south-east corner of the vault which was probably caused by a former tree, and also some charnel (including some skulls) which seems unrelated to the coffins. Of these, there are three, two one on top of the other on the right hand side, and another to the left. The lower of the two coffins is in fact a stone sarcophagus comprising a base and a lid, with pronounced vertical tooling. Two lead depositum plates were found on the uppermost coffin. One read: 'Mr. Nicholas Peter Pilon. Died 5 Oct. 1786. Aged 48 years.' The other was lozenge-shaped and commemorated 'Mrs June Pil[on]. Died [] 178[7].'The plate from the coffin on the other side of the vault recorded 'John Guillemard Esq. FRS. Died 22 Nov. Aged 80 years.' Associated with this coffin were cherub grip plates and a fixture or motif with a sunburst enclosing a cherub.

John Guillemard is commemorated by a mural tablet in the church which records that he was 'late of Gower Street, London, Fellow of the Royal and of several other Scientific Societies' and that 'his remains are laid with those of his maternal grandfather and grandmother Mr. and Mrs. Pilon in the adjoining cemetery.' Daniel Pilon, a Spitalfields weaver, lived at Whalebone House from 1744, being succeeded there by his son Nicholas Peter in 1783 (Shawcross 1904, 114, 271). The Guillemards were probably also originally Spitalfields weavers, and both families were no doubt of Huguenot extraction.

The stone coffin is unusual. Julian Litten notes that there are two similar coffins in the c.1736 Peck vault at Christchurch, Spitalfields. The Pecks were also a Huguenot family.

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Felsted, Holy Cross. Reconstruction of the west wall of the north aisle D.D. Andrews

Felsted church is best known for its 12th-century tower, a notable landmark. There was a nave of similar date, and *c*.1200 the south arcade was built and the south aisle added. The north aisle and arcade date from the 14th century (RCHM Essex 1921, 73). In 1996, the west wall of the north aisle cracked and an ominous bulge appeared. Explanations for this movement differed: initially the nearby trees were blamed, but the subterranean boiler house in the angle between the aisle and the tower, for which the west wall had been underbuilt in brick, seemed a more likely culprit. Eventually a large portion of the facing fell away, and the wall was taken down and rebuilt by Bakers of Danbury to the line of the internal plaster which was skilfully preserved.

The north aisle is dated by the RCHM to *c*.1330. It is constructed of a typical mixture of flint, field stones and other material available to the builders. The wall is only 2 feet thick, this relative thinness no doubt contributing to its instability. It was bonded with a yellow to orangey brown silty mortar, now rather weak and powdery. The stonework of the single-light window with a two-centred arch in this wall had been renewed and reset in a cementitious mortar, but it was observed that the splayed embrasure was original to the wall construction. Items of interest found within the masonry were a Roman brick and tegula; two ashlars in clunch and the base of a small engaged shaft, also in clunch (Fig. 5). The latter was unweathered, and might have come from the surround of a late Norman or



Fig. 5 Felsted Holy Cross. Base of an engaged shaft in clunch found in the core of the west wall of the north aisle (1:2). An incised semi-circular line on its upper surface marks the position of the half column it supported

Transitional window. If so, it is valuable evidence for the former appearance of the church.

A small test hole was excavated at the corner of the aisle, which was shown to have foundations 450mm deep. At a depth of about 300mm, there was a sandy layer with building debris. Below this, there was a compact deposit of stones and pebbles in a dark brown loamy matrix which may represent a former surface and which was seen to run under the aisle wall. There was no trace of the natural subsoil, which in the churchyard is a mottled yellow clay.

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Fordham, All Saints

D.D. Andrews

In 1997 a gas main trench was excavated from the churchyard gate along the south side of the church and round to its east wall. The remains of the old boilerhouse and coalhole were exposed against the east chancel wall. This was photographed, left intact and infilled.

The following floor tiles were recovered from the gas pipe trench:

1. Two broken tiles, 113 x 20mm, with two-colour fleur de lys decoration (Fig. 6). They were in a red brown fabric, reduced in section, which lacks conspicuous

inclusions apart from sparse sub-angular flint and quartz grains (1-3mm) and rare clay lumps. The sides are undercut, and the bases are undulating and somewhat sandy. Traces of slip on the surface of the tile, and absence of brushmarks, indicates that the technique is stamp on slip. The standard of manufacture is somewhat crude, and the pattern is deeply impressed. Although a popular motif, this example may be compared to a Hertfordshire tile published by Eames (1980, II, design no. 2125).



Fig. 6 Fordham All Saints. Two-colour floor tile

- 2. A fragmentary brown-glazed tile, 145 x 18mm. The fabric, which is reduced in section, resembles no. 1, though with slightly more visible sand. The sides are not undercut. Striations left by a strike on the base, and the gritty texture of the glazed surface, implies that the base, instead of the top, was glazed in error.
- 3. One intact half pammet probably scored diagonally and then snapped after firing, 190-195 x 40mm. The fabric is medium red, with fine barely visible sand and sparse blackish iron ore inclusions. The sides are undercut. It has the remains of a blackish glaze, either dark green or dark brown. Mortar on the surface as well as the base shows it to have been reused. Several similar fragments were noted in the spoil.

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Introduction

Some church buildings have avoided alteration or enlargement by munificent patrons or wealthy parishioners. Until recently, this was true of Hawkwell church which stands in relative isolation close to Hawkwell Hall on the east side of the settlement, about a mile north-west of Rochford. St. Mary's was a tiny two-cell building comprising chancel and nave with an overall length of just less than 50 feet. At the west end of the latter is a timber belfry, and to north and south of it are a vestry and porch. Despite its small size, the church is not of great antiquity. The RCHM (Essex 1923, 66) assigned it to the 14th century, with alterations of the 15th century. A restoration in 1875 by William White included the addition of a north vestry.

A generous bequest has enabled the parish to enlarge the church by building on a north aisle and vestry in 1995, an arcade being inserted in the north nave wall, a rare event in the late 20th century (Fig. 7). The demolition of the north wall, and the accompanying overhaul of the belfry and the roofs, occasioned the recording of these parts of the church and a reexamination of its structural history. A watching brief was maintained as the work proceeded, and trenches were excavated to determine the relationship of the buttresses to the north wall and to test for the existence of earlier foundations. In the light of these observations, a structural sequence for the church is outlined below.

Evidence from grave-digging indicates that the church is built on a subsoil of reddish brown silty sand and gravel. The subsoil was not however observed in the works around the church.

Phase 1. ?Norman

In trench B (Fig. 7), four courses of Ragstone walling bonded in a cream to white mortar were found exposed at the base of the north nave wall, offset to that wall and on a slightly different alignment. The character of the masonry differed to that of the later wall in that it was more regular. It was concluded that this was the remnant of an earlier church pre-dating the main 14thcentury build and presumably Norman in date, though it has to be admitted that very little of this structure was seen and it could have been a misaligned portion of foundation. In the south chancel wall, raking out revealed in one or two places a brown earthy mortar distinct from that present in the rest of the walls and also possibly evidence of an earlier phase of construction.

Phase 2. 14th century/ early 15th century

The church was completely repointed as part of the building programme. Not all the masonry was assessed before repointing was carried out. However, in general the church is built of rather small blocks (150-200 x 80-120mm) of Kentish Rag, with rare flints and pieces of

chalk, laid to courses. The mortar is light brown or beige, fairly hard, with quite a lot of aggregate, and relatively few lumps of unslaked lime. The same masonry and mortar occurred on the inside of the north wall of the nave where the plaster had been removed.

In trench B, the north nave wall (Fig. 8) was built directly on top of the phase 1 masonry. Elsewhere, however, foundations were specifically constructed for the phase 2 wall. Their upper portions were approximately 0.9m wide and 0.45m deep, and consisted of limestone and Ragstone boulders. Below this level there was a compact deposit of stones in loamy brickearth 0.75-1.0m deep. The north wall stood 3.5m high and was 0.65m wide (Fig. 8). Eight lifts were distinguishable in the north wall, about 400-500mm high. Putlog holes occurred at intervals of about 4 feet (1.2m). The top of the wall was thought to have been rebuilt, but on closer examination this did not seem to be the case, though slightly smaller stones, including quite a lot of chalk, were used to construct it. If the wall top had not been rebuilt, then the crown-post roof of the nave is probably original. The crown posts have thick braces which would be consistent with this dating. The patchy pebbly external render, seen in section when the wall was demolished, did not look like a repointing but instead like the original wall finish.

The chancel was similarly built to the nave and contemporary with it (with the possible exception of the earlier looking mortar in the south wall). Lifts were evident on a level with those in the nave. In trench A, the chancel foundations were found to be at least 600mm deep and to consist of layers of gravel and loam. The roof is ceiled, but when the re-tiling was carried out, it was found to be built with plain seven-cant rafter trusses. The eaves detail is interesting inasmuch as the sole pieces were tenoned into both the inner wall plate and the ashlar pieces (Fig. 9). The ashlar pieces had nicks in their sides for daub infill to ceil in the triangular space at the eaves above the wall tops.

The buttress at the junction of the nave and chancel was revealed in trench B to be original to the nave wall. The other buttresses also seemed to be original features. Evidence for the diagonal buttress at the north-east corner of the chancel was obscured in trench A by modern underpinning. The north nave door with its simply moulded jambs was also original to this phase. Inside the church, the north wall was butted by a layer of mid brown loam; there were no obvious traces of medieval floor levels. Externally, the construction of the 19th-century vestry had caused considerable disturbance to the archaeological deposits.

In the north and south sides of the nave, there are identical windows framed by the buttresses. They are of two lights each with a cinquefoiled ogee arch flanked by a pair of quatrefoils under a square head. These were renewed in 1875, but as shall be seen they were faithful copies of the originals and their rear arches seem original to the wall. The trefoil-headed low-side window, and the square-headed window with two trefoiled lights



Fig. 7 Hawkwell St Mary. Plans before and after the addition of the north aisle in 1995

in the south wall of the chancel, may also be of this phase, though the RCHM regarded the latter as 15th-century.

Phase 3. 15th-century

A straight joint indicated that the chancel arch, which springs from semi-octagonal shafts with moulded capitals, had been built up against the north wall and is thus a later insertion datable to the 15th century. Work in the chancel also included the Perpendicular east window, and perhaps the two-light trefoil arched window with a square head in the south wall. Flint patches round the top of the east window reveal it to be an insertion. The timber belfry at the west end of the church seems to have been inserted into the roof and is probably also of this period, as is the west window which resembles the east window in the chancel.

Phase 4. 16th to 18th centuries

Typically there is little evidence of building work at the



Fig. 8 Hawkwell St Mary. North elevation



Fig. 9 Hawkwell St Mary. Eaves detail of the chancel roof

church in this period. Repairs were made in Tudor brick to the buttresses at the junction of nave and chancel, and also to the inside face of the north nave wall just to the east of the window. The demolition of the vestry revealed an area of masonry made of small very neatly coursed flints at the top of the wall. These were bedded in a fairly hard white mortar which did not look medieval. This probably represented a rebuild of the top of the wall, and corresponded with a repair to the roof where this abuts the belfry.

Phase 5. 19th century

St. Mary's church was visited by H.W. King in 1848 and 1871, when he noted that it had undergone some restoration in the intervening years (ERO T/P 196/2). In 1875, the parish petitioned for faculty for a fairly comprehensive restoration of the church (ERO D/CF 14/6). The works involved included the removal of the gallery, staircase and pews, and the reseating of the church; the erection of a north vestry; the restoration of the porch; the raising and re-tiling of the chancel floor; repairing the spire; and the renewal of the windows,

repointing and replastering. Some proposed works, such as building a tower and re-roofing the chancel, were not carried out, no doubt for reasons of economy.

The most substantial alteration to the church was the construction of the vestry, which was later extended northwards to incorporate a boiler house. When the vestry was demolished for the construction of the north aisle, 58 fragments from late medieval stone windows were found reused as hardcore for the floor. The majority of these were from the mullions and quatrefoils of a square-headed window made of Reigate stone identical to those in the north and south walls of the nave. The stonework of these is Victorian, but this discovery reveals that the architect William White faithfully copied the medieval windows. The other fragments were mostly from a larger traceried window, probably the west window as King recorded that the east window (which also goes unmentioned in the 1875 faculty) had been renewed in the period 1848-71. The masonry round the head of this window and filling the top of the west gable looks like a Victorian refacing. The only other evidence for 19th-century work encountered in the archaeological observations was the underpinning of the north-east buttress of the chancel, seen in trench A.

Discussion

This investigation has confirmed the RCHM's view that St. Mary's is a late medieval church. Evidence for an earlier church on the site was minimal, no more than a small area of projecting foundation and some darker coloured mortar in the south chancel wall. However, the very small dimensions of the building also imply that it was rebuilt on the site of an earlier structure. It may be, too, that the foundations made of layers of loam and gravel represent the footprint of the earlier building, for this technique of making foundations is most typical of the 12th and 13th centuries, probably going out of use in the late Middle Ages.

It is possible to attempt a more precise dating of the church building. The two-light windows with quatrefoil tracery under a square head may well be original to the church as rebuilt, and although Victorian in their present form it is now clear that they are accurate copies of the originals. The RCHM considered these windows 15thcentury, and it may be that the fabric of the church should now be assigned to the beginning of that century. Certainly H.W. King thought it to be of that date.

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Moulsham, St John

D.D. Andrews

This is a rather sombre church in white brick in a plain, economical, lancet style built in 1837 to a design by

James William Wild to accommodate the expanding population of Moulsham (Grieve 1994). As the hamlet grew into a suburb of Chelmsford, so the church was enlarged. Initially, the tiny sanctuary was replaced by a rectangular chancel, and at the same time the transepts were probably also added. In 1873, faculty was obtained for a new transept, a south porch, a westward extension of the nave and a west tower, all to the design of Frederic Chancellor (ERO D/CP 12/23). Of this work, only the transept seem to have been built, presumably for financial reasons, as faculty was again obtained in 1882 for the westward extension, tower and porch (ERO D/CF 21/6). The attached plan shows the two transepts on the north side as already existing. This later work is readily recognisable because it is in a brick which is now a uniform dirty grey colour, whereas the brick of the earlier work is lighter and more variable in colour, ranging from off white to pinkish.

In 1997, the west end of the church was re-ordered, being enclosed into a series of spaces by partition walls. The groundworks encountered the foundations of the original west front of the church about 3.5m from the inside face of the existing west wall. These were substantially built in red brick and at least 1m deep. The bricks of the sleeper walls for the extended west end of the building have frogs stamped 'BROWN BRAINTREE', a brickmaker who also had works in Chelmsford at this time. The new foundation trenches cut through a pit from which a group of 2nd-century Roman pottery was recovered.

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West Hanningfield, St Mary & St Edward. Re-flooring the belfry

D.D. Andrews

The earth floor in the timber belfry was paved in 1997. It consisted of clay with stones in it, and included rough wooden boards laid to reinforce it at the positions where the bellringers stand. There was also a stone slab marking the vault of Edward Kemble which was apparently moved to the belfry when the chancel was reordered in the 19th century. This was incorporated in the new floor on the south side of the belfry.

Ground level reduction for the new floor was about 120mm or slightly more. Beneath the compacted clayey surface (25-50mm thick) was a dry brown and rather dusty earthy deposit with numerous flints. At two points corresponding to the east and west sides of the belfry, there was a yellowish sandy layer with abundant flints, some of which, especially on the west side, looked bonded together. These deposits represent the remains of the original flint-built foundations or plinths beneath the belfry sole plates, and they show that on the west and east sides the sole plates have been cut through to facilitate access through the belfry. In the bay on the south side of the belfry, the top of a small area of burning was exposed. It was not investigated as no further excavation was required, but it looked like a small smelting hearth, possibly for lead window cames.

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Shorter Notes

A Lower Palaeolithic Acheulean hand axe from Aveley

Hazel Matingell

This is a well made, pointed and heavy butted hand axe tending to plano-convex in section, except for the tip. The front (illustrated view) has cortex at the butt end; the pointed half has bar-hammer flaking from both edges. The back surface is formed by large flake removals from one edge across to the opposite edge.

The material is grey flint with inclusions and there is slight ochre staining. The artifact may date from 500,000 to 200,000 B.P.

In 1964, Dr A.J.Sutcliffe (Natural History Museum) carried out an excavation at TQ 552 807 (Wymer 1968, 51-2; 1985, 304-5). This revealed an ancient channel surrounded by swamp-like conditions and the remains of two elephants, a straight-tusked elephant and a mammoth, but no man-made artefacts were found. At present, it is not known if the hand axe has any association with this area (Fig. 1 was drawn by Nick Nethercoat).

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A Late Iron Age and Roman occupation site at Kirkee McMunn barracks, Colchester D. Shimmin

Introduction

Following a short evaluation in March 1994, a watching brief was maintained from May to December 1994 in the south-east corner of Kirkee McMunn barracks prior to the construction of a large workshop, together with several ancillary buildings. The site is at *c*.35m OD on a slight south-facing slope. The initial evaluation consisted of three small machine-dug trenches (trenches 1-3; Figs 2 and 3), all of which revealed a layer of topsoil and ploughsoil 0.3 to 0.5m thick, sealing natural sand and gravel with pockets of cover loam. These trial sections, together with an almost total absence of finds, implied



Fig. 1 Acheulean hand axe from Aveley



Fig. 2 Kirkee McMunn barracks. General site location. © Crown copyright 87584M.

that significant archaeological remains were unlikely. However, although previous discoveries from Kirkee McMunn barracks were negligible, an extensive network of cropmarks stretches to the south and east of the site, including probable ditches and trackways (Fig. 2).

The contractors' groundworks involved the stripping of over 2 hectares of topsoil to a depth of 0.3 to 0.4m. Apart from some modern features, this did not usually disturb the archaeological deposits, which were cut into the natural subsoil and were therefore often only detectable from surface scatters of finds. Subsequently, with the contractors' assistance, several areas were machined off to subsoil level in order to define features. Additional observations were also possible in various contractors' test pits and service and foundation trenches. Another site in the south-west corner of the barracks did not reveal significant archaeological remains, and is not considered further here. Colchester Museums hold the finds and archive (CM 29.94).

Prehistoric

Definite evidence for earlier prehistoric activity was slight, but included a small pit (Fig. 3; F47) at the northern end of the site, which contained a small amount of probable Bronze Age pottery. A number of potentially prehistoric features were observed; these included pits F9 and F17 in the central part of the site (Fig. 5) and F44, F46 and F58 (not on plan) further north. These were classified as possibly prehistoric on the grounds of including undiagnostic flint flakes and charcoal flecks. Several pieces of worked flint came from unstratified or residual contexts.

1st-century occupation

Several features in the south-west corner belonged to the 1st century AD, including parts of two shallow ditches (F407 and F409). Both contained Sheepen-type pottery and were probably pre-conquest in date. At the presumed eastern end of F407 a pronounced patch of burning and a thin layer of charcoal may indicate the position of a small hearth or oven. Sherds of a stamped terra rubra vessel and also a quantity of burnt daub, perhaps from an oven, were among finds from F409. Conceivably F407 and F409 were the truncated remains of the same feature, but this seems unlikely. Other probable 1st-century features include pits F400 and F403.

2nd to 3rd-century Roman occupation

The surface collection of a large quantity of Roman finds in the central part of the workshop area prompted more detailed investigation. A slot (Figs 3 and 4), 0.12m deep, was traced for 6m, extending beyond the limits of excavation to the north-east, while to the south-west, it appeared to be cut by gully F6. The latter may represent a continuation of F18, but F18 was regular in shape and seemed likely to have housed the ground plate for a timber-framed structure. Post hole F10, 0.25m deep, was incorporated in F18. By contrast, F6 was irregular and was probably a drainage gully.

A small keyhole oven F8 lay at right angles to F18. The main chamber was cut 0.25m deep into natural sand (Fig. 6) and the stokehole extended to the southeast. The edges had been burnt reddish-brown, and the base of the feature was sealed by a thin layer of charcoal. Some large fragments of Roman tile were recovered from the lower backfill of F8, together with a small quantity of pottery of early 2nd or 3rd-century date. The oven conforms to a type well known in the Roman town (e.g. CAR 3, 54 and 119; CAR 6, 70-1), usually in late 1st to 2nd-century contexts, and was probably used for baking. Although in plan F8 appears to cut the edge of F18, the backfills of the two features were similar and they could have been broadly contemporary, if one accepts the possibility of an oven so close to a timberframed wall.

To the south-east of F18 was an extensive area of gravel, which was traced for at least 5m (Fig. 4), but produced very few finds. There was no indication of a slot forming a return for F18. A more compacted gravel surface L2 was uncovered for up to 2.5m north-west of F18, and continued beyond the limits of excavation. This was sealed by a layer of light brown sandy loam L1, 0.1m thick, with a slight olive tinge, as if weathered in antiquity. A large quantity of abraded finds, including tile, pottery and iron fragments, came from this layer; more were embedded in the surface of L2. The latter, while composed of natural gravel, had probably been deliberately compacted, or compressed through use, and formed a yard surface. Along the western edge of these deposits, a line of small postholes, F28 - F40, cut the gravel. The irregular alignment of the postholes perhaps indicated that they belonged to a fence rather than a building. The pottery from L1 and the surface of L2 confirms occupation in the 2nd and 3rd centuries, and possibly earlier.

Machining in an area of particularly high concentration of Roman finds 30m west of F8 revealed the dark fill of two parallel ditches (Fig. 3; F19 and 20), aligned north-east to south-west. The larger and more westerly ditch, F19, was up to 0.5m deep and U-shaped in profile, while F20 was 0.25m deep with a flatbottomed profile. A small quantity of stratified Roman pottery of 3rd-century or later date was recovered from the fill of the features, together with fragments of tile, iron and slag. The sherds from F20 may have been slightly earlier than those from F19, although whether the features were contemporary or represent successive phases was unclear. The abundant finds, including roof tile, in the area indicate a substantial structure nearby, but the absence of box-flue tiles implies that this material was not derived from the hypocausted building to the south (see below). Subsequently these ditches were traced for c.30m to the south-west, although the associated finds appeared to decrease. The larger ditch (F19) was sectioned close to its western ?limit, where it appeared to shallow off and perhaps terminate at F24/405 (see below). The edges of F20 were defined only on the surface and were not traced beyond



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Fig. 4 Kirkee McMunn barracks. Detailed plan of F6, F8 and F18 with surrounding gravelled surfaces



Fig. 5 Kirkee McMunn barracks. Detailed plan of hypocaust F25

F24/405. There were no definite indications of F19 or F20 to the north-east, either in terms of surface finds or in section in contractors' trenches, and these ditches cannot therefore be assumed to have neatly enclosed the nearby Roman settlement.

A short distance to the south, a further ditch (F24 in Fig. 3) was initially uncovered for just over 8m, perpendicular to F19 and F20. Two smaller ditches appeared to extend into F24 on the north and southwest sides. The fill of F24, 0.75m deep, had a

distinctive pale brown colour, with sparse finds, consisting of only a handful of 2nd-century or later sherds, plus some briquetage. Surprisingly, in view of the proximity of the hypocaust, no tile fragments were recovered, suggesting F24 had been backfilled prior to the demolition of the adjacent building. Although it is tempting to see F24 as contemporary with F19, perhaps even with F20 extending into it on the north side, the difference in fills and finds makes this unlikely.

Subsequently, F24 was traced almost continuously for a further 45m to the north-west (F405), although finds continued to be sparse. Observations of contractors' trenches indicated that the ditch extended for at least 50m to the south-east, and thus formed a significant land division, probably linked to the network of boundaries and droveways known from aerial photographs.

Opportunities for investigation in the western half of the site were limited, as here the topsoil was rapidly stripped and covered over as hardstanding. A large ditch (F406 in Fig. 3), over 1m deep, extended at right angles to F405 and was traced for at least 20m. Finds were again sparse, but may indicate contemporaneity with F405. Immediately south of F405 were a large pit (F404) of 2nd to 3rd-century date, and a small undated pit (F273). A further undated ditch (F275) parallel to and *c*.65m north-west of F406 was observed in contractors' trenches and perhaps belonged to the same system of enclosures.

Elsewhere, abraded Roman sherds were recovered from an east-west ?ditch (F5) north-west of F19, and further east were more surface scatters of Roman finds, including a collection from a large, shallow feature (F4) near the east section. Pits and ditches of possible Roman date were noted in contractors' trenches to the south and west of oven F8. A probable ditch (F282 in Fig. 3) was observed in trenches at the eastern edge of the site, roughly parallel to, but over 60m east of, F19, and perhaps also belonged to a ditch system associated with F24. These fragmentary observations indicate that further buildings and enclosures existed in the eastern part of the site.

A quantity of pottery (105 in Fig. 3), together with much of a glass tettine (Fig. 7) and a small quantity of burnt bone, was recovered from contractors' spoil 31m south of the workshop, close to the foundation trenches for an ancillary structure. Three incomplete pottery vessels were apparently represented, consisting of two probable flagons and a flask, although no rim fragments were found. The glass tettine is similar to a complete example in Colchester Museum, and perhaps dates from the mid 2nd to the mid 3rd centuries. This collection of finds may derive from a cremation burial, and could indicate the position of a cemetery.

Roman hypocaust

In the southern corner of the site, 3.5m from and apparently on a similar alignment to F24, a large, subrectangular feature (F25) was revealed during machine stripping. This was characterised by a dark greyishbrown backfill with a slight reddish hue, caused by large amounts of crushed tile in the fill, and included also many fragments of tile, *opus signinum* and septaria. Excavation was necessarily limited to a small number of narrow trenches at the edges of F25.

The feature was cut c.0.5m into the subsoil, with vertical sides and a horizontal sub-floor (Fig. 6). Upon the latter, a foundation (F48), 0.4m wide and consisting

of unmortared septaria blocks set in sandy clay and orange sand, had been constructed around the edges of F25. This survived in places up to 0.5m high, notably along the northern side, but elsewhere had been largely robbed. There was probably an apse in the long northern side. A length of similar foundation (F49) extended 2.75m to the north-west of F25, and was also built on a sub-floor, presumably from a narrow room adjoining F25, although this area had been much disturbed by a modern feature. To the north-east of the apse, there was a narrow, sunken area, separated from F25 by a strip of intact subsoil, but it was not possible to investigate this further.

The sub-floor of F25 consisted of a thin spread of septaria chips, gravels and small fragments of tile sealing the natural subsoil. The remains of a *pila*, immediately adjacent to the position of the robbed foundation, were revealed in a trench on the eastern side of F25. The *pila* survived 5 courses high (0.2m), and consisted of tiles, broken presumably to half size, with the intact side measuring 275mm. Perhaps the full-sized *pilae* elsewhere had been robbed.

The sub-floor of F25 in the limited area investigated showed no sign of a slope despite the recommendations of Vitruvius (Vitruvius v, 10, 1). It was sealed by a thin layer of charcoal, overlain by the backfill (Fig. 6), which incorporated much demolition debris, including tile fragments, lumps of *opus signinum*, in some cases attached to tile fragments, blocks of septaria and occasionally greensand, as well as charcoal and some burnt daub. Among the tile assemblage were 20 fragments of combed box-flue tiles, comprising types B5, B6, and possibly B3, B7 and B11 (*CAR* 6, 261-72). These suggest a likely installation date for the hypocaust of the 2nd-century, or possibly later. There were, however, no *tesserae* or fragments of wall plaster.

There was no definite evidence for the position of a stoke hole, and no signs were found of intense burning, for example on F49. Further machine stripping in the vicinity of F25 failed to reveal additional structural features, such as robber trenches or surface spreads of Roman building materials. This perhaps indicates that any associated structures were built of timber and other perishable materials, or that the excavated building stood alone, perhaps as a detached bath house.

A small quantity of pottery from the backfill suggested a mid 3rd to 4th-century date for the demolition and robbing of the structure. As elsewhere on the site, organic remains were few due to acidic soil conditions. Only one bone fragment and one oyster shell were recovered. The absence of coins of this date is, however, surprising.

During machining near F25, further features were seen; limited excavation of a rectangular pit (F23 in Fig. 3). 0.3m deep, produced a quantity of 3rd-century pottery.

Post-Roman features

There was little convincing evidence for post-Roman occupation. The area is shown as fields as late as the







Fig. 7 Kirkee McMunn barracks. Glass tettine

1897 OS map. In the north-west corner of the site, a curving ditch (F26 in Fig. 4) yielded peg tile and slate, and was of post-medieval or perhaps earlier date. Other features included a dark scoop, which cut the base of the ploughsoil near the western edge of the site, and may have been associated with an east-west ditch F5. Similarly, a large scoop (F7) by the east section may also represent a post-Roman feature. Numerous modern features were revealed during machining, including a series of trenches at the northern end (not shown on plan, Fig. 3). These were mainly 1.2 - 2.0m wide and 1.0m deep, and had been systematically backfilled, mainly with hoggin. They presumably resulted from Army activity.

Conclusions

The archaeological remains appear to lie relatively undisturbed either below recent development or in the open ground to the east, and thus await the opportunity for more detailed excavation. The significant features excavated in the recent work were carefully backfilled and consolidated.

The 1st-century material from this previously unrecorded site suggests that its origins belong in the pre-conquest period, presumably as a subsidiary to the Gosbecks settlement. The small area examined produced evidence for timber structures, a building with a hypocaust and a series of ditches of 2nd to 3rd-century, or later, date. This implies the development of a substantial group of buildings and enclosures, which should perhaps be termed a villa, although this probably represents a Romanised native site, rather than that of Roman colonists. Whatever its status, it was well placed to exploit the surrounding area, including that covered by the network of cropmarks to the south and east. These cropmarks clearly include elements of a well-organised, albeit undated, landscape, showing similarities in alignments with those in the excavated area.



Fig. 8 Plumberow Mount hachure survey

Acknowledgements

Colchester Garrison permitted access and generously provided financial support, and the main contractors, Norwest Holst, gave much assistance, notably with machining. Thanks are also due to those who helped in the work, especially Philip Crummy, Carl Crossan, Ernest Black, Steven Benfield, Howard Brooks and particularly Pat Adkins.

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Survey of Plumberow Mount, Hockley Ellen Heppell

A detailed survey of Plumberow Mount (ESMR 13580) was carried out by Essex County Council Field Archaeology Group in December 1997, under the direction of the author.

Plumberow Mount is a small mound located on top of a prominent hill north of Hockley, overlooking the valley of the River Crouch. It is a Scheduled Ancient Monument, measuring 25 m in diameter and 4 m in height. It was partly excavated in 1913 by means of three narrow, radial trenches (Francis 1915). The presence of a wooden summerhouse on top of the Mount at that time meant that, at the centre, the trenches had to tunnel beneath to investigate this area. No burials were found, but pottery of both Roman and Saxon date was recovered, and a Roman origin for the earthwork is thought likely.

The Mount has suffered considerable erosion in recent years. A deep rut has been worn down on its western side (Fig. 8), and a number of pathways to the top have been worn down through the grass and as such are beginning to erode. (Note that the backfill of the 1913 excavation seems to be stable, and the rut to the west does not correspond to any of the trenches). Heavy vegetation is present on the north and west sides.

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Early Saxon finds from Chesterford Susan Tyler

Introduction

A group of Early Saxon finds was discovered the Chesterford area. (This group was reported to the Archaeology Section by a local metal detectorist, who has previously reported material to the county council. Where interesting finds are made during metal detecting, the Archaeology Section has a policy of producing specialist reports on the artefacts [subject to the availability of funds]. This policy is intended to help maintain good links with metal detectorists, which will become of increasing importance in view of the new Treasure Act). The nature of the finds, which includes a shield boss; spear; brooches and knives, is typical of Early Saxon grave assemblages. The presence of artefacts typically found in both male and female inhumations shows that we are not dealing here with a single isolated burial but with a cemetery, the extent of which is at present unknown.

Catalogue

(Fig 9) Drawing no. Description

- 1
 Disc brooch. Copper alloy. Pin missing; iron corrosion products around pin hinge and on back of brooch show
- that the pin was of iron. Brooch rather worn; the only decoration that can be discerned is a centrally drilled dot. Diameter: 31mm.
- 2 **?Casket fitting with hook-like terminal.** Copper alloy. Traces of gilding on outer surface. Dome-headed rivet, in position; a second perforation would presumably also held a rivet, now missing. Max. length: 25mm.
- 3 Small-long brooch. Copper alloy. Leeds' cross-potent type Ci. The headplate has a central raised square panel with three rectangular arms; the latter decorated with a series of tiny punched dots along their edges. The bow is short and broad. The footplate has two side-lappets (one damaged) also decorated along their edges with tiny punched dots. Beneath the lappets are a series of incised horizontal lines and ridges; the foot (bottom edge damaged) then terminates in a triangular shape with punched dots along its edge. The brooch is in fairly good condition; the pin hinge and catchplate are partly extant; the iron pin is missing, iron corrosion products are visible on the back, particularly on the bow and around the pin hinge. Length: 69mm (slight damage to footplate); Max. width at head: 37mm.
- 4 **Copper-alloy plate; possibly part of a trefoilheaded small-long brooch.** Roughly oval in shape; incomplete: one broken edge shows that this is a fragment of a much larger object and it could be a projecting plate from a trefoil-headed small-long brooch. Upper surface has five circular depressions, two of which penetrate right through the plate. Max. width: 16mm.
- 5 **Shield boss fragments.** Iron and copper alloy. Five pieces (mostly flange) of a shield boss which do not join. The flange is fairly wide with three flat disc-headed rivets in position, two of iron and one of copper alloy; the latter in good condition. Traces of mineralised wood are visible on the undersurface of the flange. Approx. diam. (fragments do not join): 70mm. Width of flange: 22mm. Diam. of rivets: 21mm; 22mm; 23mm.
- Finger ring. Copper-alloy band. In fair condition. Max. internal diameter: 18mm.
 Small-long brooch. Copper alloy. Leeds' trefoil-headed
 - **Small-long brooch.** Copper alloy. Leeds' trefoil-headed type A. Headplate has square central panel with three semi-circular projecting panels. Each panel has a centrally punched dot. Fairly long bow defined at junctions with head- and foot-plate by facetting. Most of footplate is missing. Pin hinge and catchplate extant on back of brooch; fragment of iron pin visible in pin hinge and some iron corrosion products visible on catchplate. Length (incomplete): 53mm. Max. width of headplate: 31mm.

(Fig. 10)

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- **Spearhead.** Iron. In poor condition, tip of blade missing. Long split socket; D-shaped blade; Swanton's type D1. Length (incomplete): 151mm. Max. width of blade: 21mm.
- 9 Knife. Iron. Back and cutting edge incurve slightly to the point. Tang extant; no organic remains visible. Length: 132mm. Max. width of blade: 22mm.
- 10 Knife. Iron. Back and cutting edge incurve to the point. Tang bent; no organic remains visible. Length: 14mm. Max. width of blade: 17mm.
- 11 Shield boss fragment (flange). Iron. Approx. 25 per cent of diameter extant. One iron flat disc-headed rivet in position. No organics visible. Est. diam 80mm. Max. width of flange: 21mm. Diam. of rivet: 23mm.
- Hinge. Flat iron plate, tapering slightly. Length:38mm. Max. width: 17mm.
- 13 Sword fragment. Iron. Fragment of a sword blade, bent at one end. Max. width of blade: 32mm.
- 14 **Copper-alloy plate (incomplete).** Thin piece of copper alloy with central dome. Three punched holes and possible beginnings of a fourth around edge. Max. length: 22mm.
- 15 Spearhead. Iron. Long split socket. Short solid shank. D-shaped blade; Swanton's Type C1. Length: 138mm. Max. width of blade: 25mm.
- 16 **Polished rock-crystal bead. ?Sword bead.** Perforated. Max. diam.: 21mm.
- 17 **Small-long brooch.** Copper alloy with traces of silvering or tinning on front. Leeds' square-headed panelled type. The headplate has two hooked projections (one broken off). The headplate is decorated with drilled ring-and-dot motifs: one on the surviving projection; four on the central panel and a further three either side of it. The bow is short and broad. The footplate is long and tapering and is decorated with horizontal ridges and ring-and-dot ornament and has two side lappets decorated with ring-and-dot motifs; the terminal is broken off. Pin missing. Slight traces of iron corrosion products around pin hinge. Max. length (incomplete): 57mm. Max. width at headplate (incomplete): 22mm.
- 18 **Footplate of a small-long brooch.** Long tapering footplate. Decorated with a series of eight incised horizontal lines. Catchplate in position, incomplete. Length (incomplete): 21mm. Max. width: 6mm.
- 19 Buckle plate. Copper alloy. The plate comprises: a thin narrow sheet of copper alloy bent back on itself (originally bent over the end of a leather strap) with one rivet in position at one end (this would have secured the strap) and perforated the other (through which the buckle tongue would have projected.). Max. length: 38mm. Length of rivet; 4mm.
- 20 **Copper-alloy fragment.** Ribbed. Length: 22mm. Max. thickness: 5mm.
- 21 **Copper-alloy plate fragment.** Possibly from a brooch. Semicircular; one edge has a rough, broken appearance. Max. length: 18mm.
- 22 **Circular lead plate with central perforation.** Approx. 30 per cent missing. Max. diam. : 31mm.
- (Fig. 11)
- 23 Knife blade. Iron. Both back and cutting edge incurve to the point. Bent, tip and tang missing (the tang described below may be part of this knife, although they do not join). Max. length (incomplete): 109mm. Max width of blade: 25mm.
- 24 **Knife tang and short section of blade.** Iron. This could belong to the blade described above, although they do not join. Length: 58mm. Max. width: 22mm.













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Fig. 10 Saxon finds from the Chesterford area; nos 8-22



Fig. 11 Saxon finds from the Chesterford area; nos 23-26

- 25 Knife blade point. Iron. Back and cutting blade incurve to the tip. This is in better condition than the two knife fragments described above and is therefore unlikely to belong to them. Length: 44mm. Max. width: 15mm.
- 26 **Iron plate fragment, possibly one of the terminals of a shield hand-grip.** Iron. In very poor condition. Roughly circular with a projection which may be the beginnings of the hand-grip. Iron rivet in position which may have been decorative as it is of unusual ovoid shape. Max. length (incomplete): 34mm.

Discussion

Brooches

The brooches comprise: three virtually complete smalllong brooches and fragments of two more (Catalogue nos 3,4,7,17,18) and a single disc brooch (Catalogue no. 1). The small-long brooch forms present: Leeds' cross-potent (no. 3), trefoil-headed (no. 4) and squareheaded panelled types (no. 17; the latter with hooked projections), are all generally datable to the late fifth to early sixth centuries (Leeds 1945). The presence of side lappets, however, on the Chesterford examples indicate an early sixth rather than a fifth-century date.

Small-long brooches are common finds from Early Saxon cemeteries throughout East Anglia. Parallels for all three complete Chesterford small-long brooches can be found very close by in the grave assemblages from the primarily late fifth to mid-sixth-century cemetery at Great Chesterford (Evison 1987, 4-5, plates 11 and 12). No.3, the cross-potent panelled type with tiny punched decoration is similar to one from Great Chesterford grave 40 no.1 (Evison 1987, fig. 29). No.4, the trefoilheaded brooch with ring-and-dot decoration is similar to a pair from Great Chesterford grave 20, nos and 3 (Evison 1987, fig.24); no. 17with a square-panelled head and hooked projections shares characteristics with one from Great Chesterford grave 37 no.3 (Evison 1987, fig.28).

To the south also in Essex, the Anglo-Saxon cemetery at Springfield Lyons produced comparable small-long brooches of trefoil-headed and cross-potent forms (Tyler in prep.), lacking, however the side-lappets characteristic of the development of the brooch form during the course of the sixth century. It is to the north amongst the Cambridgeshire and Suffolk cemetery material that the closest parallels can be found, for example: no.24 is similar to one from Westgarth Gardens, Bury St. Edmunds, Suffolk, grave 48 B (West 1988, fig.73).

The single disc brooch (no.1) is not closely datable; it belongs somewhere within the period AD 450-550.

Weapons

The spearheads (Catalogue nos 8 and15) are both Swanton's series D: leaf-shaped blades (Swanton 1973) and are not closely datable; however, their small size suggests an early to mid-sixth century date.

The postulated dating of the spearheads ties in with that of the shield bosses (Catalogue nos 5,11) which, with their wide flanges and flat disc-headed rivets, belong to the period AD 450-575.

The sword fragment (Catalogue no. 13) is too small to date; but is of importance because it signifies a high status cemetery. The large bead (Catalogue no.16) may be associated with the sword.

Other objects

The knives (Catalogue nos 9, 10 and 23-5) with cutting edges and backs both incurving belong to the period AD 450-650 and given the dating of the brooches and weapons are most probably sixth century in date.

The other miscellaneous objects (Catalogue nos 2,12,14,19-22 and 26), including the plain finger-ring (Catalogue no. 6) are not closely datable, but could all fit well into a sixth-century context.

Conclusions

These finds are undoubtedly grave goods from a sixthcentury inhumation cemetery in the Chesterford area. The finds have much in common with those from the cemetery at nearby Great Chesterford (Evison 1987) and further afield, with the Cambridgeshire and Suffolk cemeteries to the north.

Acknowledgements

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Inter-tidal stationary fishing structures in Essex: some C14 dates D. Strachan

Aerial photography has, over the last few years, discovered and mapped a number of inter-tidal fish-weirs in the county. Seven are now known in the Blackwater estuary and a single example exists, on the border with Suffolk, at Holbrook Bay on the Stour. Three of these sites have recently produced calibrated radiocarbon dates ranging from the mid-seventh to the mid-tenth centuries AD, and it is suggested that they may be connected to early ecclesiastical sites on the coast. Due to their position on the dynamic mudflat environment, however, the sites are vulnerable to erosion and further work is required in order to recover valuable environmental evidence and to record the nature of their construction.

Introduction

This report presents the results of a project aimed at surveying and dating the remains of a number of intertidal, timber-built fish-weirs on the mud-flats of the Blackwater estuary. The estuary is of particular importance to this site-type as almost all the surviving Essex examples occur there.

Coastal fish-weirs comprise artificial walls of stone and/or wood which channel fish, usually during an ebb tide, into a series of nets and/or traps. The simplest and most common form is a simple V-shaped wall with traps set at the angle, or "eye" of the V, which is positioned on the seaward side so as to channel fish into a single collection point during the falling tide. By definition, the sites are positioned in the inter-tidal zone, usually on a gently shelving coastline or in a river estuary, and are exposed for collection at low tide. Weirs can vary considerably in size and date. An important aspect of the site-type is that it is both permanent and stationary, and in that respect differs from other temporary and transient inter-tidal fishing techniques.

Stationary fish-traps have been used since the Mesolithic period (Pederson 1995), yet were in use in the Severn estuary into the early twentieth century (Godbold and Turner 1994). They are known from various countries around the globe, including various parts of the continent, Canada and New Zealand. In the UK, similar sites have been recorded in north Kent (Collard 1902), the Severn Estuary (Godbold and Turner 1994), Northern Ireland (O'Sullivan *et al.* 1997) and the Isle of Wight (D. Tomalin *pers. comm.*).

Preparatory work

In the early 1990s, the Essex Aerial Survey programme, funded by the RCHME, targeted the site-type by flying over the mud-flats during equinoctial low tides. This resulted in the discovery of a number of additional sites, bringing the total within the Blackwater estuary to seven. An example at Holbrook Bay on the Stour (actually in Suffolk), identified by aerial photography in 1995, is considered below as the single exception outside the estuary, but within the immediate region.

In addition, the RCHME-funded National Mapping Programme (Ingle, this volume) completed air photographic mapping of the estuary using all available sources in December 1995 (Strachan and Ingle 1997). The resulting plots, at a scale of 1:10,000, remain the most accurate records of the position, size and shape of all the weirs, apart from Collins Creek, which had been surveyed on the ground a number of years before (Clarke 1993). A combination of low-tide, oblique photography, targeted at recording the sites, and various vertical sources were used for transcription, which included computer rectification when possible. The main problem with air photographic sources is that while small-scale vertical photography can often show the location of sites, with some control (such as seawalls and field boundaries) for mapping, the scale does not allow any degree of detail to be obtained. Conversely, low-level oblique photography may show good detail (such as additional lines of posts or multiple lines), but will usually have no control to allow location. As result, the NMP used a combination of these types of photography to produce plots which are accurate to c.10 metres, which is considered acceptable considering the nature of the environment (Strachan 1995a).

The main problem with investigation of the site type is accessibility, as all the sites are situated around or below Mean Low Water (MLW). They are therefore only exposed at lower than average tides. Poor weather conditions can ruin the possibility of using the few tidal "windows" which will expose these features sufficiently to warrant a visit. Planned trips are often aborted, resulting in only a few opportunities *a year* to study the sites.

In addition, the physical environment in which the sites are situated can be dangerous for inexperienced walkers, especially when weather conditions and visibility are poor.

With the only accurately located site plans being those derived from the aerial photographs, another problem has been the accurate recording of locations of samples taken from the sites. The scale of the aerial plots prohibit any degree of detail in terms of individual timbers or other features, and, in the absence of detailed site plans, timbers which provided samples were marked with plastic tags for later identification. It is hoped that if detailed plans of the sites are made in the future, then these markers will allow the sampled timbers to be included. In addition, the approximate position of samples was also recorded using a hand-held Global Positioning System (GPS), by triangulation from landmarks, and notes regarding the position of the sampled timbers relative to the structure.

C14 dates have been secured from three sites; Sales Point, The Nass, and Collins Creek, where ground survey was initially carried out in 1992.

Site Gazetteer

ESMR refers to the Essex Sites and Monuments primary record number. Radiocarbon Age (C14 date) shown in years BP (Before Present) and calibrated age ranges are shown (sigma 1: 68% probability, sigma 2: 95% probability).

Collins Creek, Tollesbury (ESMR 13815): TL 94 07

The site is by far the largest and most complex example in the county, the entire complex measuring c.2,550metres east-west by c.700 metres north-south. English Heritage (EH) funded a project which aimed to date and record this structure, and, in addition to an interim report (Clarke 1993), an accurate plan of the site exists (Fig. 12). Two permanent control stations, positioned using GPS, were tied into the National Grid, and Cambridge University Committee for Aerial Photography (CUCAP) were commissioned to produce a run of vertical photographs (at a scale of 1:4000) for photogrammetric use. Several additional, temporary control points were positioned for Aero-triangulation purposes. This produced a small-scale map showing the position of timber structures in the estuary.

A complementary stop-and-go GPS ground survey was carried out by the University of East London Land Survey Dept. This produced more detailed information, on 20 metre sample stretches of the post alignments. Auger survey was conducted to assess estuarine stratigraphy, and, although timber samples proved to be too small for dendrochronology, two C14 dates, of the 7th and 10th centuries were obtained. Stretches of wattle panelling were recorded and sampled, as was a sample of basketry, which may have collected fish in the trap area. The Collins Creek structure is the most complex so far known in Essex, and involves several phases of construction. Initial ground survey suggests that further survey and sampling is required to understand the structure fully.

The following dates were secured:



Fig. 12 Plan of Saxon timber alignments at Collins Creek. © Crown copyright 87584M.

sample	years BP	sigma 1	sigma 2
1/2	1364 ± 48 BP	640-675 AD	603-761 AD
2/2	1140 ± 33 BP	882-957 AD	789-980 AD

Table 3: Calibrated radiocarbon dates from Collins Creek, taken during the 1992 survey (Clarke *pers. comm.*)

More recently, samples for dating were taken from locations different from those sampled in 1992. These concentrated on the area at Shram Hill, at the eastern end of the structure, which is very rarely exposed. Sample one came from an upright, while samples two and three came from an *in situ* wattling panel.

Five possible fish weirs exist in the complex, three of which are connected to the main elongated timber structure which runs along the south side of the exposed mud-flat, just above MLW. A more comprehensive description of the site awaits publication of the 1992 survey work.

West Mersea, West Mersea (ESMR 9973): TM 010 119

The site appears to consist of two small weirs, both with trap areas and walls of between c.85 - c.110 metres (Fig. 13.1). The structure has several additional timber alignments running parallel to the main structures which may represent modifications to the design. The site is situated just below MLW.

East Mersea, East Mersea (ESMR 9970): TM 051 121

This large weir, beyond Mersea Flats and completely below MLW, was first recorded in early 1992 (Crump and Wallis 1992, 38) during some of the lowest predicted tides of the century (Wallis *pers comm*). A

Table 2: Calibrated radiocarbon dates from Collins Creek (east end)

number of repeat flights, including some during equinoctial low tides, have been carried out and no part of the structure has become exposed. The weir can therefore effectively be considered sub-tidal as it is unlikely to be exposed by even the lowest of tides for some time.

The walls of the weir measure c.270 - c.290 metres. At the "eye" of the weir there is an elongated trap area and what appears to be at least two additional phases of construction (Fig. 13.2). The site has not, as yet, been visited.

The Nass, Tollesbury (ESMR 9974): TL 999 110

The site is situated on an elongated spit of mud-flats, known as The Nass, to the south-east of Old Hall Marshes, Tollesbury. The weir takes the form of an eccentric V-shape (Fig. 13.3), with walls measuring c.120 metres (north-east to south-west) and c.130 metres (north-south). The latter wall appears to have at least two phases of rebuilding at slightly different angles. An elongated "pound" or trap area is visible at the "eye" of the weir. Areas of hurdling and features such as mortice holes and tenons are visible on some timbers at the site. In addition, the site produced an unidentified oak object consisting of a lozenge shaped piece, 39x12 cm, with a central hole and peg, and another piece, 41x7 cm, also with a central hole cut (Figs 15 and 16). The object was retrieved as it was vulnerable to tidal damage (Hall 1997b). Sample 1 came from an in situ wattling panel, and sample 2 was from an upright timber.

Pewet Island, Bradwell-on-Sea (ESMR 9972): TL 988 082 The site consists of two V-shaped weirs, one constructed inside the other, at an angle to elongated walls running

s	position	C14 date	ref:	sigma 1	sigma 2	species
1	TL 95465 07144	1300 ± 45 BP	UB-4139	664-771 AD	650 - 797 AD	oak (<i>Quercus</i> sp.)
2	TL 95434 07107	1286 ± 45 BP	UB-4140	668-777 AD	654 - 858 AD	hazel (<i>Corylus</i> sp.)
3	TL 95472 07171	1261 ± 45 BP	UB-4141	678-787 AD	662 - 883 AD	oak (<i>Quercus</i> sp.)

Table 3: Calibrated radiocarbon dates from The Nass.

s	position	C14 date	ref:	sigma 1	sigma 2	species
1	TL 99942 11015	1268 ± 39 BP	UB-4177	678-782 AD	664-862 AD	hazel (<i>Corylus</i> sp.)
2	TL 99892 11047	1227 ± 24 BP	UB-4178	771-851 AD	690-882 AD	oak (<i>Quercus</i> sp.)



1 West Mersea



2 East Mersea



3 The Nass

Fig. 13 Comparative plans of timber fish traps



4 Pewet Island



5 Sales Point



6 Holbrook Bay

Fig. 14 Comparative plans of timber fish traps

parallel with the current MLW mark (Fig. 14, 4B). The dimensions of the weir are c.390 - c.190 metres

Pewet Island, Bradwell-on-Sea (ESMR 9971):TL 981 075 A smaller group of parallel rows may form part of the larger site, or a separate smaller site of a similar nature (Fig. 14, 4A).

Sales Point, Bradwell-on-Sea (ESMR 2055): TM 034 093 The site is situated around MLW on the mud-flats at Sales Point, around 1,200 metres north-north-east of the Saxon church of St. Peter-on-the-Wall. The weir is roughly rectangular in shape (Fig. 14, 5), with walls measuring approximately 340 metres (west-northwest); 290 metres (west-north-west); and 180 metres (north-north-east). The eastern wall has at least four phases of rebuilding, all at slightly different angles to the main walls.

The weir is unusual in terms of the Essex examples in that it appears to be constructed to collect fish on both the flow and ebb tides. There are three trap areas, two at the west end of the trap and one (which appears to be the main trap) at the north-east corner. The north-east trap area, or "pound", has an extensive fish bone deposit located just to the south. The fish bone layer, which is around 15 cm deep, consists of approximately 60% fish bone and 40% broken shell. It appears to be a single, compacted deposit around 6 by 4 metres. Most of the fish bone appears to come from large fish; the common species of this size which presently appear in the estuary include cod and bass. The layer may represent a processing site, at which fish were filleted prior to transportation, or may simply have built up once the weir went out of use. Detailed analysis would allow the species present to be studied in proportion, and would explain whether or not the fish had been filleted. Should the fish-



Fig. 15 Timber object removed from The Nass

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Fig. 16 Timber object removed from The Nass

bone deposit be contemporary with the weir, its importance must be viewed in the light of similar *in situ* deposits, given that; "Coastal sites giving large assemblages of fish bone are not common in southern Britain..." (Wilkinson and Murphy 1995, 191).

Another interesting feature of the weir is the survival of large panels of hurdling running parallel to the upright timbers which form the walls of the weir. In some areas these wattle structures appear on both sides of the wall. It is possible that the wattle hurdling formed the "fencing" of the walls which was attached to the upright timbers at the time of use. It is also possible, however, that the panels formed a walkway along the walls allowing access to all the fish trap areas, for repair work, or perhaps from the construction phase of the walls themselves. These are by far the most threatened parts of the sites as they sit on the surface and are not secured vertically into the silts. They are therefore open to exposure by erosion and transportation by tides, and photographic records confirm that areas of wattling have appeared and been lost over the last few decades. Other features include what appears to be a large wattle basket which may have formed one of the original traps. Similar examples are known from the Severn estuary.

The samples taken for dating came from upright posts, two from the north wall, and one each from the east and south wall. While surface preservation of the timbers was often poor, the interiors were remarkably well preserved and in most cases bark survived.

An important fact in the consideration of the dates from the site is the proximity of the Chapel of St. Peter on the Wall, *c*.1,200 metres to the south. Built on the west gate of the Saxon shore fort of Othona, Bede records that St. Cedd established a Christian mission at *Ythancester*, generally accepted as the Bradwell site, in the 650s AD. The scale of the sites, and the considerable manpower required not only for construction but also for upkeep and repairs, would suggest a large, organised, and permanent community. The importance of the fish in the early Christian diet is widely recognised, and given the date of the weir, it must remain a possibility that the site was built by the nearby monastic settlement.

Holbrook Bay, Suffolk (ESMR 16423): TM 171 336

The site, on the Stour, is the only example identified outside the Blackwater area. The site was discovered by aerial photography during equinoctial low tides in March 1995 (Strachan 1996a), following reports by local residents of "old timbers in a V-shape" which were only visible at very low tides. The site appears as a simple V-shape with walls of c.140 - c.180 metres (Fig. 14.6). The weir would appear to be of a single phase of construction although the west to east wall consists of three parallel lines of uprights which may represent rebuilding or alteration.

s	position	C14 date	ref:	sigma 1	sigma 2	species
1	TM 03195 09527	1144 ± 16 BP	UB-4113	855-896 AD	873 - 957 AD	alder (<i>Alnus</i> sp.).
2	TM 03462 09460	1214 ± 16 BP	UB-4114	780-855 AD	772 - 881 AD	alder (<i>Alnus</i> sp.).
3	TM 03536 09458	1251 ± 21 BP	UB-4115	713-782 AD	682 - 800 AD	alder (<i>Alnus</i> sp.).
4	TM 03354 90375	1277 ± 43 BP	UB-4116	672-780 AD	659 - 860 AD	alder (<i>Alnus</i> sp.).

Table 4: Calibrated radiocarbon dates from Sales Point

Discussion

Coastal fish-weirs in the county, therefore, are completely timber-built, with individual timber lines varying in length from c.170 metres (West Mersea) to over 1,660 metres (Collins Creek). The overall shape of the structures is either a simple V-shape, usually positioned on a mud-flat expanse or at the end of a tidal channel, or elongated walls, running parallel to modern MLW, which have shorter walls at angles which make a V-shape. The Sales Point example would appear to be an unusual combination of both designs.

The trap areas, or *pounds*, are positioned in the "eye" of the V-shape in all cases. These trap areas would appear to have functioned in the same manner as the Severn estuary "putts", having a collection point containing a number of conical wattle baskets mounted onto a frame into which the fish were trapped. Originally, the weirs would have been exposed at every low tide in order to allow collection; however sea-level rise has resulted in their position now being around or below MLW.

It is of interest that the upright timbers sampled from Sales Point were of alder, while those from Collins Creek and The Nass proved to be oak, both species being ideal for use in large structures exposed to the sea. While the few identified timbers represent a tiny sample of the thousands used in the construction, the number of species, in proportion, may indicate whether supplies were imported to the site or found locally. Hazel was by far the most common species for wattle panels and the baskets, and it is likely that this was transported some distance to the coast before the structures were made.

The existing distribution possibly results from more intensive low-tide aerial reconnaissance over the Blackwater, although reconnaissance from 1995 to 1997 has continually used available low-tide windows to explore other inter-tidal estuaries and stretches of coast. It is possible, however, that weirs in other areas have been covered and hidden by subsequent land reclamation, or buried by silts and sands in inter-tidal areas where there has been accretion.

There is extensive documentary evidence for medieval fish-weirs and kiddles, a similar stationary fishing structure involving nets, from the Foulness area (Crump and Wallis 1992), although three flights at low tide around that island have produced no physical evidence of that industry. It is also clear that other documented examples have simply been destroyed in subsequent years. Documentary evidence notes that fish weirs, consisting of "wattle fences held in place by oak stakes marked by withies" existed in Harwich harbour and were a "danger to shipping" (Weaver 1975, 7). Indeed, it is recorded that the Andrews family of Harwich held a fishing weir for several generations. This consisted of "zig-zag fences leading to a trap in which the fish were left at low tide. They were strongly constructed, as may be judged from the difficulty which the contractors engaged in dredging the harbour in the 19th century found in removing the oak piles which had

held these fences together" (Hughes 1939, 11-12). It would therefore appear that the Stour estuary also had an extensive fish-weir industry, and as the estuary has been flown at very low tides it would appear that the Holbrook Bay site is the only example that has survived extensive dredging and development in the area.

Domesday records a number of "fisheries" in the Blackwater area, which possibly relate to the stationary fishing structures. These include three at Mersea Island, two at Bradwell, one at Osea Island and one at Tollesbury (Rumble 1983). It is possible that these particular examples refer to the two weirs at Mersea (sites 1 and 2); Sales Point (site 5); Collins Creek and the Nass (site 3) respectively. While this would appear to be a very strong correlation, there were evidently a variety of types of sites which could be recorded as "fisheries", including creek fisheries and kiddles. It has been recorded that "weirs were substantial and permanent structures between high and low water marks, triangular in shape, built of oak posts, six to eight feet high, set several feet apart and thatched with wattling...kiddles worked on the same principle, but were large square or v-shaped netting enclosures" (Smith 1970, 46). It is evident, therefore that all the structures discussed here are weirs, indeed, the term weir is derived from the Anglo-Saxon were, meaning a fixed structure for catching fish. While documentary sources can therefore be potentially misleading, there is evidently scope for further research into this form of evidence. It may prove informative about how long the weirs remained in use, and also about site ownership. For example, the entry for West Mersea reads:

"St. Ouen's held (West) Mersea before 1066 for 20 hides. Then 4 ploughs in lordship, now 6. Always 16 men's ploughs...Woodland, 200 pigs; pasture, 300 sheep; then 1 fishery. Value then £26; now $[\pounds]$ 22." (Rumble 1983, 17, 1).

The Domesday reference for Bradwell Quay, listed for the lands of the Bishop of Bayeux, lists:

"1 man-at-arms of the Bishop's holds Bradwell Quay, which Alfward, a free man, held for 2 hides and 30 acres...Pasture, 260 sheep; 1 fishery. The church holds 40 acres. Value then 60s; now £4 11s." (Rumble 1983, 18, 23).

Should these refer to the Mersea and Bradwell structures, then the ecclesiastical connection might support the possibility of an early monastic origin for the sites. There are a number of similar sites where such a connection has been suggested, including Strangford Lough, County Down (Williams 1996), and the Isle of Wight (D. Tomalin *pers. comm.*) which may indicate that they were constructed and used by early coastal monastic sites. It is possible that these sites represent forerunners of the extensive fish-pond systems often associated with later monastic sites inland. While the Domesday and later evidence for Sales Point has already been briefly discussed, it is likely that additional sources may still await discovery.

As noted earlier, stationary fishing structures are

known not only throughout the UK but across the world. The Essex examples, however, have never been studied in any degree of detail, and their location in the changeable and dynamic inter-tidal environment means that their survival continually threatened. The additional dates secured by this project would suggest that fishweirs are mainly a Saxon phenomenon in the county, and as such of considerable interest.

Conclusions

Regular visits over a number of years to both the Collins Creek and Sales Point sites have indicated severe rates of erosion (Bruce pers. comm.; Hall pers. comm.). The erosion of the inter-tidal mudflats and estuarine silts has two effects upon the weirs. Firstly, upright timbers become more exposed (this acts as a good indicator of the local rate of erosion), and secondly, structures which are not vertically secured to underlying silts become vulnerable to the transportation by tides and currents. This second group of in situ structures includes the wattling panels, baskets, and fish-bone deposits. This process has been indicated by familiar stretches of wattling disappearing over time. These features are particularly important as they offer not only insight into how the sites functioned, but also into a number of other areas, such as basketry in the Saxon period. The destruction of such features, albeit over a long period of time, indicates the necessity for a programme of detailed recording while such remains exist. Fish-weirs are a scarce and finite archaeological resource in the county and as such their destruction should not go unrecorded. Efforts have been made over the last few years to identify new sites and re-record known ones, but little further research has been done into the known sites. Given the known rates of erosion, the handful of surviving sites are extremely vulnerable.

Acknowledgements

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Dr. F.G. McCormac, of Queens University, Belfast, carried out the radiocarbon dating and species identification was carried out by Peter Murphy of the University of East Anglia.

The greatest credit, however, must go to two local archaeologists, Ron Hall and Kevin Bruce, who have regularly visited some of the sites over the last decade, and longer. They have independently recorded the sites photographically, investing considerable time in researching both the significance of the sites, and the practicalities of studying these elusive monuments. Their experience and expertise has been regularly called upon by members of this Section over the years, and both have been involved in the collection of the samples taken for C14 dating.

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Fig. 17 Metal finds from Vange

A group of metal finds from Vange

H.Major

A number of objects from a single field on the edge of Vange marshes were kindly lent by the owner to the Archaeology Section for study. They include several unusual late Saxon objects, including two stirrup mounts, and other items of horse equipment. The finder noted that he has also recovered a penny of Edward the Confessor from the field. The number of late Saxon objects suggests that this may be the site of a late Saxon farmstead. The lack of earlier medieval material may indicate the abandonment of the site until the 14th century, with occupation then continuing into the postmedieval period.

The other material from the site, not catalogued below, includes an equal-armed pendant cross in lead, possibly medieval; four pewter spoon fragments which are likely to be 17th century or earlier; and a rowel spur, probably early post-medieval in date. there were also several fragments from late Victorian lead-alloy toys. All illustrated material is shown in Fig. 17.

Late Saxon copper-alloy objects

- Stirrup mount, clearly of Williams' Group C (Williams 1995), 1. although lacking the side plates of his given examples. In other respects, however, the piece has marked similarities with the illustrated mounts from Norfolk. Group C mounts are rare, and are all from eastern England. The surface is poorly preserved, with little detail of the design surviving.
- 2 Stirrup mount, flange incomplete. The mount is rectangular, with irregular cut-outs, possibly giving the stylised shape of a horse, and notched edges. The surface is in poor condition, and if there was any decoration, it has now gone. The rectangular shape of this piece does not fit into any of Williams' groups.
- 3. Incomplete perforated plate with incised decoration, probably part of a bridle cheek piece of late Saxon date, similar to one illustrated by Cuddeford (1996).
- Strap fitting, surface in poor condition. The object is a bar with 4. transverse moulding, with two rivets and a looped terminal, now broken. L 46mm.
- Strap end, with two iron rivets still in place, serrated edge, and 5. a looped terminal. There is possible mineralised leather on the back. W 30mm, L 27mm. The object is virtually identical to one found at Little Walden (Tyler 1997).
- Harness side link, one loop missing, surface in poor condition. 6. The bar has a central knob with a decorative plate at right angles, probably a rather crudely modelled fleur-de-lis with incised decoration. The loop is very similar to the other harness side link and they are undoubtedly of the same date. Williams (1996, 174, no. 54) illustrates a bridle link fragment with a similar loop, and comments that the type is thought to be of early medieval date. Given the lack of other early medieval material from the field, and the presence of other Saxon horse equipment, it seems reasonable to suggest that this link and the following one are late Saxon.
- Harness side link with flat back and central half moulding. The 7. loops either end are externally lozenge shaped, with knobbed corners. One loop is broken.

Other copper-alloy objects

- Buckle with forked plate spacer and a notch for the point of the 8. pin. The form is mid 14th - early 15th century (Cf. Egan and Pritchard 1991, 78-82).
- Strap end with cast front plate, back plate riveted on. This is 9.

stylistically very similar to the hinged 'strap ends' illustrated by Egan and Pritchard (1991, 154, pl. 101, in particular nos. 722 and 723) dating to the late 14th - early 15th century, a common type. In contrast, two piece strap-ends with cast front plates are rare, only one being illustrated by Egan and Pritchard (ibid. 132, no. 614). The Vange strap end is thus something of a rarity, a hybrid form incorporating the shape of one type and the constructional method of another. More recently, however, the hinged 'strap ends' have been re-identified as book clasps (Williams 1996, 179, no. 77). The hybrid form from Vange would obviously not function in the same way; possibly it was just a strap end produced by a workshop which also made book clasps, although some connection with book fittings cannot be ruled out.

- 10. Chape, back plate missing. This is a common and widespread form of late medieval dagger chape, London type III (Ward Perkins 1940, 285). A similar chape from Sandal Castle came from a context dated 1485-c.1600 (Mayes and Butler 1983, 232, no.74).
- Chape, back plate missing. The shape is unusual in being 11. asymmetrical, although the decorative motifs used are standard. Late medieval.
- 12. Chape, back plate missing; another asymmetric example with cut-out decoration.
- 13. Hooked loop with rose motif. 15th-16th century.
- 14. Casket key, very flat and simply modelled. This would fit into Winchester type 7 (Goodall 1990, 1030), a late Saxon/medieval type, but it is difficult putting a closer date on it.
- 15. Seal matrix. Circular, with hexagonal sectioned handle and broken loop. The central motif is a curled up fox or dog, with an illegible inscription round the edge, and the date is around the 14th century.

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Changing joints in spires

The late Cecil Hewett

Many churches and cathedrals had spires, some with three or more, and they were the tallest buildings possible during medieval times. In a world considered flat, the highest spires were thought of as the nearest approach to God. Lincoln cathedral had three spires, the tallest being 254 feet high. With the tower beneath being 271 feet, the total height was 525 feet. In 1579 the tallest of these spires was blown down in a violent storm. The highest spire now surviving is the one surmounting



Fig. 18 Joint detail in church spires

Salisbury cathedral, clad in stone from the outside, but with timber work inside which acts as a tensioning system. The total height is 404 feet, of which the spire is 180 feet. After the first 20 feet, the walls are only 8 inches thick for the whole height of the spire. It is the only one in England with a spire which can still be 'tightened up.' It's date is not certain, but the cathedral foundation stone was laid on 28 April 1220, and the spire was most likely built between 1280 and 1320.

All spires are carried by their top plates, from where their raking rafters are set; these top plates have squared end-to-end joints, and the joints for the corners were changed between *c*.1200 and *c*.1450. The following five spires, Bradwell-juxta-Coggeshall, Stock, Maldon (All Saints), Horndon-on-the-Hill and Blackmore, show the change in corner joints.

Bradwell, Holy Trinity has Norman walls. Its spire has a box-like turret having central studs with saltire braces, all straight. These braces are secured by 'archaic' open notched lap joints at the top and bottom ends. The four vertical posts have no jowls and the four top plates have quasi-jowled tops with mortice and tenons (Fig. 18A). The belfry of Stock, All Saints has its original south doorway, above which is a group of three wooden lights with geometric tracery, dated to *c*. 250-1300. The belfry and the spire are the same date. The top plates have some original timbers, and the ends are tenoned and mortised in horizontal line (Fig. 18B).

The spire of Horndon, St Peter and St Paul is on four top plates with mitred ends and mortices and tenons on the inside joints (Fig. 18C). These top plates are half-mitred, having mortices and tenons inside, and mitred abutments for the outside corners.

The top plates of Blackmore, St Lawrence are mitred completely (Fig. 18D). These four belfries show the development of square-end joints, between Norman, *c*. 1050-1150, and the Perpendicular, *c*.1350-1450.

One other method of construction was produced in spires, making use of girded purlins, and was the outstanding achievement of the carpenter's design. The earliest example of this design was at Upminster, where the spire has collars with very short purlins (Fig. 19A). Later, the spire at Navestock has crossed purlins; these are not halved, but pegged (Fig. 19B). The complete girded purlins appear in Maldon, All Saints spire (Fig. 19C). Girded purlins carried on, as shown by the later Chipping Ongar spire (Fig. 19D). Between 1485 and 1509, diagonal spires appeared, one being at White Notley church (Fig. 19). The principal rafters have a diagonal plan and two square girded purlins. This was intended to be stronger, but was probably not the case. If the principal rafters were set in a square, the normal way, more rafters would have been secured, twelve instead of eight!

One other design was open square collar beams (Fig. 19F), tenoned into the opposed rafters, but not touching the mast. This appears in Stock church between c.1250 and 1300.

Archaeological evidence for the late medieval cutlery industry: excavation at the rear of 34 Town Street, Thaxted

by Mark Germany and Alec Wade

with contributions by Hilary Major, Patricia M. Ryan, and Helen Walker.

Introduction

In August 1997 a small excavation took place in Thaxted on the site of a proposed house (Fig. 20). The site covered 48m² and is situated on Weaverhead Lane, at the end of a long narrow plot behind 34 Town Street (TL 61230 31035). The excavation was carried out on behalf of Glenport Developments by the Field Archaeology Group of the Essex County Council Planning Department who followed an archaeological brief produced by the County Council's Archaeological Advisory Group. The site records and finds are stored at . Saffron Walden museum under the site code TX7. The archaeology of Thaxted is distinguished by the cutlery industry which played a big part in the development of the town from the 14th century onwards (Eddy and Petchey 1983). Offcuts from the manufacture of bone knife handles are common finds in the area and have been found in previous small excavations at Orchard Close to the north-west (Fig. 19, TX2; Andrews 1989) and 23 Town Street to the south-west (Fig. 20, TX5; Medlycott 1996).

The excavation

The topsoil from the footprint of the proposed house was removed by a mechanical excavator with a broad toothless bucket (Fig. 21). The five archaeological features which cut the underlying subsoil of chalky boulder clay were then cleaned and excavated by hand.

The earliest feature, ditch 5 in the south-east part of the site, ran parallel with Weaverhead Lane, c.7m to the north-east. It was c.0.38m deep and contained three deposits (4, 13, and 18) and a small assemblage of late 13th to 14th-century pottery.

Ditch 5 was cut by cesspit 22, a large subrectangular feature with near-vertical sides. It was not bottomed due to insufficient time but was over 0.8m deep. It was filled by three deposits of soft, dark silt (24, 25 and 27), and a deposit of charcoal (26) which had been tipped in from the south-west side. It contained an assemblage of later 15th/16th-century pottery and was probably plank-lined in its original form.

Ditch 9 on the opposite side of the site ran parallel to Weaverhead Lane to the north-east and ditch 5 c.4m to the south-west. It contained 13th to 16th-century pottery and was apparently in use at the same time as the cesspit, as there were pottery cross-fits between the two features. It was sampled by three segments (6, 14 and 19), with two fills per segment (7 and 8, 15 and 16, and 20 and 21 respectively), and was less than 0.2m deep.

Posthole 12, at the south-east end of ditch 9, contained two fills (10 and 11) and a small amount of late medieval pottery. It was found beneath the primary fill of the ditch and was c.0.35m deep. It either predated the ditch or was dug at the same time, before the primary fill in the ditch had had time to accumulate, possibly for a gate post.

Posthole 3, in the middle of the site, was c.0.15m deep. It had even sides and a concave base and was filled by two fills (2 and 17), the topmost one of which (2) contained a few fragments of shell but no datable finds. It may have defined the north-east end of a fence line in association with posthole 12, but there was no evidence to confirm this.

Waste fragments of worked bone and copper alloy were recovered from almost all of the features, with a large assemblage of worked bone derived from the fills of ditch 9. Notable finds were an iron knife and an iron punch or drill bit from the fills of cesspit 22.











Fig. 19 Frame arrangements in church spires

The finds

Medieval and post-medieval pottery Helen Walker

E

Introduction

A small amount (220 sherds weighing 2.4kg) of mainly late medieval pottery was excavated from four features. The pottery has been recorded using Cunningham's typology (Cunningham 1985a, 1-16) and her fabric numbers and some rim codes are quoted in this report.

The fabrics

The pottery from ditch 5 and cesspit 22Pottery from this sequence first appears in the secondary fill of ditch 5 (context 13), and comprises sherds of medieval coarse ware and sandy orange ware. The only rim present is a sandy orange ware cooking pot rim of Cunningham's rim type H3 datable to the late-13th to 14th centuries (Drury 1993, 81-2). Above this, the top fill of ditch 5 (context 4) produced only sherds of sandy orange ware including the base of the cooking pot found in

ESSEX ARCHAEOLOGY AND HISTORY

Fabric No	Common name	Date	Reference
Fabric 20	medieval coarse ware	12th to 14th C	Drury 1993, 81-6
Fabric 21	sandy orange ware	13th to 16th C	Cunningham 1982, 359 and 1985, 1
Fabric 21C	Cambridgeshire sgraffito ware	14th to 15th C	Bushnell and Hurst 1952, 21-6; Drury 1993, 92
Fabric 23E	Cheam white ware	2nd half of the 14th C to mid 15th C or later	Pearce and Vince 1988
Fabric 34	unclassified buff ware	med or post-med	-
Fabric 40	post-medieval red earthenware	later 15th century onwards	Cunningham 1985a, 1-2
Fabric 45M	modern stoneware	late-17th to 20th C	-

Table 1: Medieval and Post-Medieval Pottery: the fabrics

fill 13. Other featured sherds in this context comprise the neck of a jug with horizontal slip-painting and a sherd with applied vertical strips under a dull green glaze, both may belong to the 13th to 14th centuries. The infilling of ditch 5 is therefore dated by the H3 cooking-pot rim to the late 13th to 14th century.

Cesspit 22 which cut ditch 5 produced rather more pottery. Cross-fits between fills 24 and 25 of the cesspit, and between surface finds over the cesspit, indicate the whole group was deposited at the same time. As with the earlier feature, sandy orange ware is by far the commonest type and many sherds are slip-painted with a partial plain lead glaze or are unglazed, a surface treatment indicating a late medieval date. Most of the sherds appear to be from jugs (Fig.22. ?1 - 2), although several other forms are present comprising a bowl rim, jar or cooking-pot rims and at least one cistern. (Cisterns are large vessels with one or two handles and a bunghole near the bottom, and were used for storing liquids, especially beer.) At Moulsham Street,



Fig. 20 Thaxted, Weaverhead Lane; general site location (TX7). © Crown copyright 87584M.

Chelmsford, cisterns occur mainly in 15th and 16th-century deposits (Cunningham 1985b, 70). Fig. 22.1 is either from a large jug or a cistern. In addition a pipkin handle was found in surface finds context

23. Pipkins are small cooking vessels with a tripod base and a saucepan-like handle.

Also found in cesspit 22 are the remains of two sgraffito ware jugs (Fig.22. 3-4), the designs of which are comparable to those found on Cambridgeshire sgraffito ware as published by Bushnell and Hurst (1952), and there is no reason to believe these are not Cambridgeshire products (although the exact source for this fabric type has yet to be found). Worth noting is the fact that much of the slip-painted sandy orange ware is of the same fabric as the sgraffito ware and has a similar glaze. Both decorative types may therefore share the same source. Similarities in form between sgraffito jugs and slip-painted jugs were also noted by Bushnell and Hurst (1952, 26).

Other wares in cesspit 22 comprise sherds classified as medieval coarse ware but with an unusually fine fabric. There are also sherds of post-medieval red earthenware including a slip-painted jug rim and a thin-walled sherd with an all over glaze that may be from a cup. These latter sherds constitute the latest pottery to be found in the cesspit and are datable to the later-15th/16th century. However, much of the pottery found in this feature, such as the sgraffito ware, could be



Fig. 21 Thaxted, Weaverhead Lane; site plan

Top of sequence

Feature	Fill	Relationship	Fabrics 20	21	21C	40	45 M	Wt (g)
Cesspit 22	23	surface finds	-	10	-	2	1	204
	24	below 23	3	107	5	3	1	1372
	26	below 24	-	1	-	_	-	9
	25	below 26	1	37	-	1	-	316
Ditch 5	4	below pit 22	-	4	-		-	40
	13	below 4	4	3	-	_	—:	104

bottom of sequence

earlier, dating to the 14th to 15th century. Also present are sherds of modern purple stoneware which may be from a Staffordshire butter pot, and must be intrusive. More of this vessel was found unstratified.

(Fig.22)

- 1 Rim of vessel: sandy orange ware; from either a large jug (of Cunningham's type D4) or from a cistern; hard uniform orange fabric similar to that of sgraffito ware; pulled spout; trifoliate slip-painted decoration under a mottled plain lead glaze showing occasional mottles of green. *Fill 24 (cesspit 22)*
- 2 Rim and handle of jug: sandy orange ware; Cunningham's form D5; uniform orange fabric but with darker external surface which has a metallic purplish sheen; occasional splashes of glaze; decorated with incised horizontal lines obscured by handle attachment. *Fill 24 (cesspit 22)*
- 3 Lower part of jug: Cambridgeshire sgraffito ware; uniform orange fabric; cream slip-coating through which decoration has been incised to show colour of pot body beneath; splashes of mottled green glaze; comparable to Bushnell and Hurst 1952 (pl. III). *Fill 24 (cesspit 25)*
- 4 Sherd from body of jug: Cambridgeshire sgraffito ware; slightly harder fabric than No.3 with intermittent grey core; patches of clear glaze with occasional mottles of green. *Fill 24 (cesspit 22)*

Pottery from posthole 12 and ditch 9

Much less pottery was found in these features, although the assemblage is similar to that described above with a preponderance of late medieval sandy orange ware and lesser amounts of medieval coarse ware. Pottery first appears in the upper fill of posthole 12 (context 10), and comprises a late medieval sandy orange ware B2 type rim, perhaps from a jar or cistern. Although its core is orange, the margins are buff

coloured and the surfaces are pale grey. There are also sparse to moderate inclusions of hard iron oxide visible on the surface. Similar inclusions were also present in a jar/cistern found during excavations at the rear of 23 Town Street (Walker 1996, fig. 23.1).

Ditch 9 was either contemporary with or later than post hole 12 and produced pottery from all three of its segments. Looking at the primary fills first, the earliest pottery came from fill 16 which produced part of a medieval coarse-ware cooking pot with an early to mid-13th century type H2 rim (Drury 1993, 81), and a sherd of unfeatured sandy orange ware. However, as this feature cannot be earlier than post-hole 12, this pottery is likely to be residual. In common with other medieval coarse ware from this site, the fabric is unusually fine. Primary fill 21 produced an unglazed unfeatured sherd of post-medieval red earthenware which could even be from a modern flowerpot. (Primary fill 8 did not produce pottery.)

Apart from one tiny body sherd of medieval coarse ware, the top fills of ditch 9 segments 6 and 14 (fills 7 and 15) produced only sandy orange ware. There is a cross-fit between top fill 7 and the top fill of cesspit 22 (fill 24), suggesting both features were back-filled at the same time. Several sandy orange ware sherds are slip-painted and patterns can be in the form of dots, straight lines, or curvilinear lines. Featured sherds comprise a slip-painted rim from a jug or cistern, a fragment from a lid and a couple of body sherds that are slip-coated rather than slip-painted. One sherd has an internal slip-coating under a plain lead glaze and shows hard iron oxide inclusions similar to those from the rim sherd in post hole 12.

The pottery from upper fill 20 is somewhat different, although probably contemporary, comprising a Cheam white-ware jug rim with a hole where the handle attachment has come away, a buff ware rim from a large jug or cistern, and a base sherd of sandy orange ware with an internal plain lead glaze.

Feature	Seg	Relationship	Fabrics					Wt
			20	21	23E	34	40	(g)
Cesspit 9	6	top fill	-	12	-	-	-	145
	14	top fill	1	4	-	-	-	20
	14	bottom fill	14	1	-	-	-	97
	19	top fill	-	1	1	1	-	58
P-H 12	-	earlier or contemporary	-	1	-	-	-	22
		Ditch 9	-	-	-	-	-	-

Table 3: Pottery from post-hole 12 and ditch 9

Top of sequence

bottom of sequence



Fig. 22 Thaxted, Weaverhead Lane; medieval pottery

Discussion

To conclude, ditch 5 is likely to be late-13th to 14th century but the three remaining features are late medieval/early post-medieval. Contemporary cesspit 22 and ditch 9 are dated to the later 15th/16th century by the presence of post-medieval red earthenware, although slightly earlier pottery such as Cambridgeshire sgraffito ware and Cheam white ware is also present.

This assemblage is similar to that from previous excavations in the vicinity, at Weaverhead Lane (Andrews 1989) and at the rear of 23 Town Street (Medlycott 1996), where finds also include sgraffito ware and Cheam white ware. It is worth noting that at Medlycott's excavation, sgraffito ware was again found with 16th-century pottery indicating the possibility that Cambridgeshire sgraffito ware may be later than the date suggested by Bushnell and Hurst. The pottery is also similar to that from Market Row, Saffron Walden, where sherds of the fine version of medieval coarse ware were found (Andrews forthcoming.). There is no evidence from this excavation of pottery with a specialised use that could have been associated with the cutlery industry.

The jetton

P.M.Ryan

A 15th-century French jetton was found, diameter 27 mm.

Obverse: A heater shield of France modern, within a granulated inner circle. Legend in Lombardic lettering MERCI.NEMI.MERCIER. All within a granulated outer circle.

Reverse: A cross of three strands fleurdilisee with a quatrefoil in the centre enclosed by a tressure of four arches with a lys at each angle, [indecipherable] in the spandrels.

Miscellaneous finds

Hilary Major

Copper alloy (Fig. 23)

Apart from the vessel fragment described below, the copper alloy comprised small strips and sheet fragments, which are likely to be scrap from the manufacture of copper-alloy objects. While there are no indications of what these objects are, given the evidence of cutlery manufacture from the site, it is entirely possible that they were fittings for knives. Similar fragments were found in previous excavations (Andrews 1989, 116).

 The edge of a beaten sheet vessel with a rolled rim, probably a plate, broken across a hole. There is an unidentified black deposit on the back. (Context 25, cesspit 22) SF11

Iron (Fig. 23)

The iron recovered was mostly nails, and a few strip fragments, but there are two objects of interest, a punch or drill bit, and a knife. The latter appears very blunt (although this could be the result of the way the blade has corroded), and may have been discarded during the manufacturing process, particularly since there is no trace of the bone handle plates, which would surely have survived if present, although the copper-alloy rivets for fixing the plates are present.

 Punch or drill bit with a square section, possibly becoming circular towards the head. The point is blunt. A similar, though smaller, example came from a 12th-century context in Southampton (Harvey 1975, 277, no. 1974). It is probably either connected with metalworking, or is a carpenter's tool. L 144mm. (Context 7, ditch 9)



Fig. 23 Thaxted, Weaverhead Lane; metal objects

SHORTER NOTES

3. Knife, blade tip and the end of the tang missing. It has copperalloy shoulder plates, and three copper-alloy rivets through the scale tang. The cutting edge appears very blunt. The shape is similar to late 14th-century knives from London (e.g. Cowgill *et al.* 1987, 93, no. 117). Surviving L 150mm. (Context 24, cesspit 22). SF7

Slag

There was a small assemblage of slag, a total of 66 fragments weighing 1714g, from six contexts. The slag was all very similar in aspect, except for a single piece of possible fuel ash and some fused clay, which is probably associated with the slag. The material was not examined by a specialist, as the assemblage was considered too small to be useful, but the writer considers that this is likely to be metallurgical slag, and possibly associated with the cutlery manufacturing aspects of the site.

Stone

There were seven fragments of coal from medieval contexts. There is no evidence known to the writer or her colleagues for the use of coal during the medieval period in Essex, and these very small fragments are almost certainly intrusive. There were also two pieces of stone which may have been utilised as building rubble. Two flint flakes, one very battered, and another piece which was possibly worked, came from context 24.

Tile and Brick

Small fragments of tile and brick came from eleven contexts. Most was roof tile, but there was a single piece of floor tile from context 25, and part of a curved roof tile, possibly a ridge tile, from context 24. None of the pieces was large enough to be particularly informative.

Molluscs

Shell was recovered from thirteen contexts. Most was oyster, but whelk, mussel, cockle and snail were also present, and preservation was good. The largest group came from cesspit 22 (contexts 24 and 25), with 32 complete oyster shells from context 24. The molluscs were not examined by a specialist as the assemblage as a whole was small, but since, in general, well dated contexts containing more than 30 complete shells may be worth further study (K. Reidy, pers. comm.), their presence is noted here.

Faunal remains

by Alec Wade

The assemblage comprised 550 pieces of "unworked" animal bone and 113 pieces of worked material associated with the medieval cutlery industry. The bone was recovered both by hand and by wet sieving from ditches 5 and 9, cess pit 22, and post hole 12.



Fig. 24 Thaxted, Weaverhead Lane; worked bone objects

ESSEX ARCHAEOLOGY AND HISTORY

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Table 4.	Summary	ot	evic	ence	tor	worked	bone	and	manufacturing	processes
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Manufacturing stage	Waste Type	Number of Pieces	(%)
Stage 1 Preparation of metapodial or cannon bone	shaft with joint/epiphyses sawn off	6	5.3%
	Sawn off epiphyses/joint	9	7.9%
	Stage 1 Total	15	13.2%
Stage 2 Removal of plates from shaft	Remains of shaft core	3	2.6%
	Shaft offcut (with metapodial groove)	17	15%
	Shaft offcut	38	33.6%
	Other offcut	6	5.3%
	Plate	2	1.8%
	"Squared off" Plate	17	15%
	Stage 2 Total	83	73.3%
Stage 3 Scale Production	Scale with rivet holes	2	1.8%
	Stage 3 Total	2	1.8%
	Total worked pieces from knife handle production	100	88.3%
Other Worked Material		13	11.7%
	Total Worked Bone	113	100%

The Animal Bone

The bone was in reasonably good condition though only 49 of the 550 pieces of "unworked" animal bone could be positively identified by species (9%).

The vast majority of the material was produced by wet-sieving which although effective in its recovery of very small and fragmentary fish (78 pieces), bird (15), and small mammal bones (3) also yielded several hundred tiny unidentifiable bone fragments.

Most of the bone was deposited in cess pit 22 (407 pieces). The remainder was in ditch 5 (93), ditch 9 (46) and post hole 12 (3). One piece was unstratified. The species identified in the assemblage were *Bos* (15 pieces), *Sus* (11), *Equus* (5), *Gallus* (4), *Ovis aries* (3), *Lepus* (2), *Capra hircus* (1) and *Felis* (1). The seven other remaining identified pieces were attributed to *Ovis aries* or *Capra hircus* with no distinction possible.

Seven pieces of butchered bone were also found. Three pieces were from cess pit 22, two from ditch 5, one from ditch 9 and one was unstratified. Where it was possible to determine these were of cattle and sheep or goat.

Given the small number of identified animal bones no reliable conclusions can be drawn from the assemblage except to note the presence of certain species.

The worked bone

One hundred and thirteen pieces of worked bone were recovered. Most were immediately recognisable as the offcuts and reject pieces generated by the manufacture of bone knife handles for the medieval cutlery industry (a process described by Andrews and Bedwin in Andrews 1989).

Briefly, the three main stages involved in the process and the associated bone waste are described below:

- The proximal and distal joints of a metapodial or cannon bone are sawn off and discarded, leaving a smooth, straight cylinder or shaft of bone several inches long.
- Plates of dense bone are carefully sawn longitudinally from the shaft. Up to four or five plates could be removed from a single shaft. The remains of the now obliquely faceted shaft are

discarded. The plates are ideally long, thin and of regular width and thickness.

3. The plates (or scales) are trimmed and shaped to fit the iron knife handle to which they will be fastened. Rivet holes were drilled through the scale to attach them.

Worked bone pieces representative of each of the above manufacturing stages were recovered by the excavation. Figure 24.1 shows the remains of a metapodial shaft (context 7 in ditch 9) which has had plates removed. Figure 24.2 shows a plate which has been squared off prior to trimming and shaping for a handle (context 15 in ditch 9) and Fig. 24.3 shows a finished scale complete with two rivet holes (also context 15 in ditch 9).

Table 4 above summarises the evidence.

Where it was possible to identify, the worked bone was found to consist of cattle metapodials. Most of it was recovered from ditch 9 (77 pieces). The rest of the material was from cess pit 22 (14 pieces), post hole 12 (6 pieces) and ditch 5 (5 pieces). The other pieces were all unstratified (11 pieces).

The remaining worked bone included several pieces not clearly identifiable with the production of knife handles. These included a complete cross section "ring" from context 20 in ditch 9 (Fig. 24.4), 3.5mm to 6.5mm thick, sawn from the shaft of a large mammal metacarpal. Two of these were also found by the previous excavation at Weaverhead Lane (Andrews 1989). A fragment of a second smaller ring (probably cut from a sheep or goat metapodial) was also found in cess pit 22 (context 22).

A tool, fashioned from the shaft of a deer's metatarsal, was an unstratified find (Fig 24.5). A small sharp point appeared to have been carved from part of the jagged broken shaft at one end. The other end of the shaft had been cut off. The point had eventually broken, though only after extensive use judging from the shaft which was so worn that the hand grip adopted to use the implement was visible as shallow depressions in the object's surface. The firm grip required to use the tool and the absence of percussion marks around the point would indicate that it was used in a slow but deliberate fashion to pierce or score a softer medium, perhaps leather.

A second worked deer metatarsal shaft (from context 4 in ditch 5) with a broken proximal end superficially resembled the tool described above in shape and size but did not display any signs of function or wear.

A small square shaped piece of bone with two parallel bevelled edges (Fig. 24.6) was found in ditch 9 (context 15). One side has been crudely flattened and the other has been incised with irregular diagonal grooves (possibly a pattern or keying?). A second, smaller broken piece of similar description was also found.

Also from ditch 9 (context 7) was a broken piece of unidentified bone which had been roughly carved into a rod measuring 48mm long by approximately 6mm in diameter.

Summary

The animal bone assemblage is very similar in character to that from the earlier Weaverhead Lane excavation (Andrews 1989). All of the species identified previously (Bedwin in Andrews 1989) were present in the current assemblage with the addition of *Gallus, Lepus*, and *Felis*. The enhanced recovery of very small bones due to wet sieving also yielded fish, bird and small mammal bones.

Though of a more modest size (113 pieces to 320), the assemblage of bone-working waste was directly comparable to that found at the Weaverhead Lane site. It included the same types of offcut and reject pieces identified as waste generated by the process of making knife handles for the medieval cutlery industry.

As at Weaverhead Lane there was also the suggestion that activities other than the production of knife handles was taking place. A tool, perhaps a leather working punch was found and a ring of bone cut from the cross section of a large mammal metapodial. Two similar bone rings and an awl were recovered by the earlier excavation.

Conclusion

The pieces of worked bone undoubtedly originate from the late medieval cutlery industry. The source of the worked bone is not known, but it does seem probable that it came from a nearby workshop (or workshops) which made handles for knives. The two bone punches, the scraps of copper alloy, and the pieces of metallurgical slag are possibly derived from the same industry. The bone punches may be derived from the making of leather scabbards and the slag and copper alloy from the production of knife blades and knife fittings. The best example of this is the blade which was possibly thrown away during the manufacturing process.

The evidence from the rear of 34 Town Street is complemented by the evidence from Orchard Close to the north-west (Andrews 1989) (Fig. 21, TX 2). Both sites together suggest that the area along Weaverhead Lane was dominated by the cutlery industry in the late medieval period. The two ditches recorded (5 and 9), in particular, represent property boundaries defining the north-east end of one of the long narrow plots behind Town Street. Likewise, Weaverhead Lane must have been existed at that time as an access road for the workshops and forges which must have present along it.

Acknowledgements

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Medieval occupation at Sturmer: excavations adjacent to the Sturmer barrow 1995

Catherine Abbott

Archaeological evaluation, followed by larger-scale excavation, revealed evidence of medieval activity at Sturmer, outside the village, but adjacent to the Sturmer barrow. The evidence took the form of several phases of ditches, probably representing field boundaries and trackways, plus a number of postholes cut into a colluvial deposit which covered much of the excavated area. The date range of most of these features centred on the 13th century; there was also a modern ditch and one possibly of Iron Age date.



Fig. 25 Excavations at Sturmer 1995. General site location

Introduction

The second phase of the A604 Haverhill bypass, constructed between the A604 at Sturmer (TL 6884 4441) and the first phase of the bypass, directly to the north of Haverhill Hall (TL 6620 4436), passes very close to the Scheduled Ancient Monument of Sturmer Barrow (SAM 20738; Fig.25). The mound is recorded in the Essex Sites and Monuments Record (SMR) as PRN1590, and as being of probable Roman date, although during the Monument Protection Programme, a project funded by English Heritage with the aim of characterising and protecting a representative sample of archaeological sites in England, the site was reassessed and is now interpreted as a Bronze Age bowl barrow.

An archaeological evaluation, in the form of trial trenches, was undertaken by the Suffolk County Council Archaeological Section (SCCAS) Field Projects Team in 1994, in order to investigate the potential for other archaeological remains associated with Sturmer Barrow surviving in the area adjacent to it.

The evaluation found no evidence of further barrows in the area. However, it did identify a series of medieval features, consisting largely of linear ditches and gullies. Two pairs of parallel ditches were interpreted as trackways, while it is probable that the remaining features are defining fields, domestic plots and garden features. The pottery recovered from the site was mainly of 12th and 13th-century date.

Elsewhere in Essex, small farmsteads have been identified from minimal evaluation evidence, sometimes set back from the road frontage (Medlycott 1996). Large-scale investigation of such sites is often the only way to assess their significance and extent, so Essex County Council (ECC) required a detailed archaeological excavation on land to the north of Sturmer Barrow and to the southwest of the A604, for a record of the remains to be drawn up prior to road construction; however, due to the presence of a high pressure main sewer along the southern edge of the A604 the excavation area was c.10m away from the road (Fig.25). The work took place between October and December 1995, under the direction of the author, and was funded by Suffolk Highways Engineering Consultancy on behalf of Suffolk County Council (SCC). The pottery report was by H. Walker (ECC), and the remainder of the finds were identified by S. Anderson, Finds Officer (SCCAS). The site archive and finds have been deposited at Braintree Museum (Accession number 1997.52), and a copy of the archive report has also been deposited with the ECC Sites and Monuments Record.

Fieldwork results and interpretation

Stratigraphically, at least six phases were identified on the site, with phase 0 represented by the natural drift geology of the area, although not all features could be related to this sequence.

Phase I

The earliest phase stratigraphically is represented by ditch 0170 (Fig. 26). Although only one sherd of Iron Age pottery was recovered, this, in conjunction with the fact that it is on a different alignment to the other features, suggests that ditch 0170 may represent part of a regularly laid out pre-medieval field system, other examples of which have been recognised from other areas, e.g. at Yaxley, Suffolk (Williamson 1988). Due to the lack of finds associated with them these field systems can be difficult to date, although they generally appear to be from the Late Iron Age to Romano-British period. Further evidence of Iron Age activity in the area, represented by a Middle Whaddon Chase gold stater dating from c.20BC-A.D.10 (Philip de Jersey, Institute of Archaeology, Oxford pers. comm.), was found by metal detecting c.50m west of the excavated area. However despite a further intensive survey in the vicinity of this findspot, no further artefacts were recovered, and later monitoring during the construction of the road revealed no features which could be associated with it in the vicinity.

Phase II

This phase was represented by ditch 0117 (Fig. 26). This was the only feature below the phase V deposit 0046 which was identified continuing on the north-

western side of the modern boundary ditch 0222, although in a much truncated form. No evidence for it continuing to the south-east of the phase IV ditch 0207 was seen. This could either be because it had been completely eroded prior to the deposition of 0046 (it became narrower and shallower adjacent to 0207 suggesting that it had been partially truncated); or a slight change in its alignment could have resulted in it continuing on the southern side of 0207, but beyond the limits of the excavation.

Ditch 0117 is approximately parallel to the line of the present A604, which is thought to have medieval origins, and could mark the rear boundary of a field or tenement plot. The very shallow nature of this ditch, and the few sherds of early medieval pottery recovered from it, which included shell-tempered ware, suggests that it may represent the initial demarcation or division of the landscape during this period.

Phase III

Ditch 0071 was originally identified during the initial site evaluation, below deposit 0046. The similar profiles of this feature and ditch 0145, and because they are approximately parallel to each other (Fig.26), suggest they are related.

Other parallel ditches which were found during the initial evaluation, and which were a similar distance apart as ditches 0071 and 0145, i.e. *c*.8m, were interpreted as trackways. Ditches 0071 and 0145



Fig. 26 Excavations at Sturmer 1995. Plan of all features. The phase V colluvial deposit seals phases I-IV

possibly denote a track running along the back of burgage plots as originally defined by ditch 0117. There was no indication as to whether or not they continued to the north-west of ditch 0222, or to the south-east of ditch 0207.

Only a small amount of pottery was recovered from 0071, but a larger number of sherds were found in 0145. In addition to shell-tempered ware, these included two medieval coarse ware cooking-pot rims of Cunningham's sub-form H2 type, dateable to the early-mid 13th century.

Phase IV

This phase is represented by ditch 0207 (Fig. 26), which was the largest of the features identified during the excavation, and which also produced the largest group of medieval pottery, totalling nearly 2kg. These included similar pottery types to those found in ditch 0145, but with the addition of St Neots ware, Hedingham coarse ware and Hedingham fine ware. The Hedingham fine ware included an abraded sherd with traces of red slip stripes and a pale green splash glaze, which dates from the late 12th-mid 13th century.

This feature has been interpreted as representing a major boundary during a final phase of land division prior to the deposition of 0046.

Phase V

This phase represents the deposition of 0046, an orange-brown silty-clay containing flecks of chalk and charcoal, which lay above the natural boulder clay and below the modern topsoil in the south-eastern area of the site (Fig. 26). Test-pitting prior to its removal showed that 0046 was contained within a slight hollow in the natural boulder clay, which became thinner towards the north, west and south before petering out, and was thickest at the centre and at the eastern edge of the excavation area.

Due to its nature, and its location at the base of a slope, 0046 has been interpreted as a colluvial deposit. It indicates that there were considerable stresses on the environment in the area, almost certainly caused by activities associated with farming and cultivation, although over what timescale this deposit built up could not be determined. 0046 contained a relatively large number of abraded sherds of pottery and metal objects, although there was no evidence to suggest that the finds were stratified within it. As may have been expected from a deposit which overlay all the medieval ditches, the medieval pottery, with the exception of one medieval sandy orange ware thumbed jug base, could have originated from these ditches, suggesting that they, and thus a proportion of the deposit itself, were originally derived from these features. One sherd of Hedingham fine ware was identified as being from the same vessel as others found in the phase IV ditch 0207. This reinforces the idea that the features beneath 0046 are all relatively shallow, and appear to be truncated to some degree, because of the activities that caused the deposition of 0046.

In addition to the medieval pottery, residual sherds of prehistoric pottery, and two sherds of Roman greyware were also recovered from 0046, along with a number of miscellaneous metal items, including the tip of a Bronze Age sword or dagger, identified by S. Anderson, which appears to have been deliberately broken, and which may have originated from the barrow or an associated feature.

Phase VI

The deposit 0046 was cut by a modern field boundary ditch 0222, and a series of twelve postholes. No stratigraphical relationship could be determined between them, and no datable finds were recovered from the postholes, so for convenience this phase has been divided into two sub-phases.

Phase Via Cut into the surface of 0046 was a series of twelve shallow post-holes or pads (Fig. 26). These features fall into two categories - those with grey chalky fill, and those with a brown clay fill containing a high concentration of charcoal. With the exception of feature 0030, the features with the chalky fills appear to form part of a rectangular structure, although the small and insubstantial nature of most of these features suggest that if they did form some sort of structure, it would not have been intended for long term use, even allowing for some degree of truncation by modern ploughing. It is likely that the structure would have been used for some form of temporary agricultural purpose.

The remaining features 0047, 0056 and 0057 (Fig.26), which contained high concentrations of charcoal, appear to have no other structures or features associated with them, and their purpose remains unknown.

Phase VIb Ditch 0222 was a modern field boundary ditch *c*.4m wide, which ran approximately northeast-southwest across the site (Fig.26). This boundary is shown on the 1841 Tithe Award map for the area, and is still shown on the 1965 O.S. Map, being infilled some time after this date. For this reason no sections were excavated across it. Although this ditch was used as a field boundary into the 1960s, it is approximately parallel to the phase IV medieval ditch 0207, which suggests that it could have its origins in the medieval field system.

Conclusion

Although no evidence of medieval settlement adjacent to the road frontage was identified within the area of the excavations, evidence was revealed for three phases of layout of an early medieval ditch system. These features, representing the majority of those identified during the excavation, survived below the colluvial deposit 0046. Although evidence was recovered which indicated that the formation of 0046 led to the truncation of these pre-existing features, since its formation 0046 has been important in preserving their remains. It is probable that a similar concentration of

small pits, ditches and features once extended across more of the area under investigation, although if there had been a medieval settlement in the immediate vicinity it is likely that the number of associated features would have decreased with the distance away from the settlement. Although no evidence was recovered for any medieval buildings or structures, the amount of pottery recovered from these features suggests that the early medieval settlement was somewhere in the immediate vicinity. However if the settlement was situated on the medieval road frontage, between the north-eastern limits of the excavation area and the present A604, the construction of a high pressure sewer (Fig.25), which prevented excavation in this area, would have resulted in extensive damage to any archaeological features associated with a settlement.

In spite of the stratified sequence of ditches, and other than the possible Iron Age phase I ditch, no markedly different phases of activity can be detected from the finds evidence associated with these features, in particular the pottery, which consistently gives an earlier 13th-century date for the infilling of the features, although some mid to late 12th-century pottery was also recovered.

Overall, the majority of finds from this site were of medieval or post-medieval date, and were either unstratified or from the phase V layer 0046. A few stray finds of Bronze Age, Iron Age and Roman date were also recovered. In general the finds were not of particularly high status and did not indicate long periods of occupation on the site. Although the prehistoric finds could be associated with Sturmer Barrow, the later finds are more reminiscent of stray objects lost during agricultural activity or discarded on an edge-ofsettlement dump. The gold stater would also appear to be a stray find.

Archaeological monitoring of the road during the initial stages of construction was carried out between April and June 1996. This revealed a number of ditches, interpreted as field boundaries and trackways, along the length of the road. In addition to the ditches, colluvial deposits very similar to the phase V deposit 0046 were also seen in all the lower lying areas of the road. However, no artefacts were recovered from any of these contexts.

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The Essex place-names project: second interim James Kemble

Significant progress has been maintained in the project since last year's report (Kemble 1997). At the time of writing, over 140 parishes are being researched for documentary evidence of place and field names, supplemented by survey in the field.

Most recorders are researching Tithe maps and Awards, while some, having completed the Tithe for their parish, have moved on to earlier estate maps and documents. Encouragement is given to recorders to investigate their parishes on the ground for explanation of obscure or interesting names. For example, this might show a small earth mound, a clump of trees or a scatter of brick in a field called Mill Field, but where no structure survives and for which there is no other documentary evidence.

In response to requests, two training half-day sessions have been arranged at the Essex Record Office at which recorders may clarify how to make more complex entries onto the Record Forms, which the Coordinating Committee had not envisaged, and to discuss other questions about the project.

The Tithe Awards are now completed for 18 parishes; these have already or are about to be entered onto the computer database held at County Hall. The Co-ordinating Committee is giving active consideration to the publication of short popular interims, and also to the publication of academic articles in county or national journals. The project is funded by grants from the Essex Society for Archaeology and History, the Essex Heritage Trust and Essex County Council.

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Book Reviews

Archaeology and the Landscape in the Lower Blackwater valley, by S. Wallis and M. Waughman, East Anglian Archaeology 82 (1998), 246 pp, 12 plates, 136 line drawings. £17

This publication presents the results of two major excavations in the Lower Blackwater valley (Slough House Farm and Chigborough Farm), and those of a smaller-scale excavation in the same area (Howells Farm). The excavations were undertaken between 1988 and 1990 in advance of large-scale gravel extraction. The sites had originally been identified from aerial photographs which formed an extensive series of cropmarks extending along the north side of the Blackwater estuary.

The introduction sets the scene, detailing the organisation of the report, the topography of the area, the threat to the sites, and previous archaeological work in the area. Investigations undertaken by the Maldon Archaeological Group are summarised in two appendices.

The next three chapters deal with the excavations, with S. Wallis reporting on Slough House farm and Howells Farm and M. Waughman reporting on Chigborough. Slough House Farm represented a multiperiod site, with the earliest evidence consisting of a Late Neolithic/Early Bronze age rectangular mortuary enclosure. During the Middle Bronze Age, the burial theme continued with two ring ditches, followed by Later Bronze Age settlement. Occupation continued into the Iron Age with a sequence of roundhouses which fell into disuse by the Late Iron Age. Evidence of Roman to the Post-medieval activity consisted largely of agricultural features. The most striking features were two wells of Saxon date, both with timber linings and good environmental preservation.

Chigborough, visible as an extensive area of cropmarks, was found to contain evidence from the Mesolithic through to the post-medieval period. Evidence of Mesolithic through to Early Bronze Age occupation was identified consisting of structures, including two Neolithic structures, along with many pits. The finds assemblage indicates the features represented successive short-lived periods of occupation. During the Later Bronze Age through to the Late Iron Age, there was a shift to a purely agricultural emphasis with a sequence of animal enclosures excavated. During the Roman period, a new field system was established with rectangular fields with several wells within the fields indicating their probable function as livestock enclosures. In the post-Roman period a large boat-shaped building was constructed; this is interpreted as being of Saxon date by virtue of comparisons with other buildings of similar design. One criticism of the Chigborough chapter is the frequent use of the term 'structure' used for buildings, fence lines and possible groups of posts, making it difficult for the reader to identify actual buildings.

Howells Farm produced evidence from the Neolithic and Bronze Age including a single building of Middle Bronze Age date. There was a Middle Iron Age settlement with a roundhouse and possible associated enclosure. Occupation continued into the Late Iron Age with the construction of an L-shaped gully and one possible structure. In the Roman period, several of the earlier field boundaries were backfilled with some rubbish pits being excavated.

One general point about the three excavations was the paucity of artefacts. Many of the features were undated, and much of the phasing has been determined by association with other dated features. The evidence from the plant micro-fossils and macro-fossils from the waterlogged deposits provide impressive results and allow the authors to portray a detailed assessment of the landscape from the Bronze Age through to the early medieval period.

The final chapter looks at the results of the three excavations within their wider landscape setting, bringing together the excavations, the extensive cropmark evidence and the results of earlier fieldwork undertaken in the Lower Blackwater area. The authors have produced a valuable and interesting assessment of the Lower Blackwater and its landscape from the Mesolithic through to the post-medieval period. In particular, the report has demonstrated that the use of crop-mark evidence alone to interpret the landscape is potentially misleading, with the excavations providing a radical reinterpretation of a number of features.

In conclusion the authors should be congratulated on producing a readable and stimulating report. It has shown the importance of using all of the facets of archaeological work, to produce a detailed study of a landscape.

Richard Havis

The cartulary of the Knights of St. John of Jerusalem in England: Secunda Camera, Essex, ed. Michael Gervers (Records of Social and Economic History, New Series vi, 1982, O.U.P. for the British Academy); The Cartulary of the Knights of St. John of Jerusalem in England: Part 2, Prima Camera, Essex, ed. Michael Gervers (Records of Social and Economic History, New Series xxiii, 1996, O.U.P. for the British Academy) £50

The publication of the second of Professor Michael Gervers' volumes provides an opportunity to write a double review, for Professor Gervers has now edited all the Essex entries in the Hospitallers' Cartulary (B.L. MS. Nero A IV), compiled between 1442 and 1447. The first volume, the Secunda Camera, covers the estates, mainly in the northern half of the county, which were administered from the Hospitallers' Essex preceptory, first at Chaureth and later at Little Maplestead; it also includes the estates acquired from the Templars after the dissolution of that order in 1312 which were administered from Cressing. In all there are 961 documents relating to 142 parishes. The second volume, the Prima Camera, covers the estates, mainly in the west and south of the county, which were administered from the Hospitallers' headquarters at Clerkenwell, and contains 230 documents relating to 14 parishes. Most of the charters in both volumes date to the late 12th or the 13th century, and document the building up of the estates of the two military orders.

The charters themselves provide valuable material for historians of the individual parishes covered. They also, as Professor Gervers demonstrates in his Introduction, show how the two orders acquired their land. The Templars, the more popular order in the 12th century, perhaps because of their greater military involvement in the Holy Land, received large grants, starting with that of the estates in Witham and Cressing given by Stephen and his queen Matilda between 1137 and 1154. The Hospitallers, on the other hand, had to build up their estates piecemeal, building on small grants by buying adjoining land, and concentrating on the grant or purchase of rents in parishes away from their main estates. In acquiring and enlarging these estates, the Hospitallers sometimes employed local men as their agents, men like Simon of Odewell who obtained land in 14 parishes in north-central Essex, most, if not all, of which he granted to the Hospitallers in 1242. The fact that the Hospitallers dealt in such small pieces of land, often only 1 - acres, and that they recorded these transactions so meticulously, means that the charters in these volumes provide important evidence for what might be termed the lower end of the late 12th and 13th-century land market.

Other chapters in the Introduction discuss the administration and economy of the Hospitallers' Essex estates. Professor Gervers draws attention to the evidence

in some of the charters for livestock and crops, for labour services, and for woodland. He also discusses the importance to both orders of the network of roads and navigable rivers in early medieval Essex. The Templars were particularly successful in obtaining estates on or near navigable rivers, whereas the Hospitallers were more dependent on roads for transport.

The charters are printed in their original Latin, each prefaced by a brief English summary. The existence of any copies other than that in the Cartulary is recorded, and any difference between those copies and the Cartulary copy is noted. People, including those who occur in witness lists, and places are identified as far as possible. Private charters are not usually dated before the early 14th century, and supplying dates for Cartulary copies, where palaeography is no help, has always raised problems for editors. Professor Gervers has dated the charters in the first volume by conventional methods, usually by identifying the grantor, grantee, or witnesses. For many of the charters in the second volume, however, he has devised a new and potentially extremely valuable method of dating by formulae. A careful study of the wording of dated or datable charters has shown that the standard phrases used in making grants, such as the words of granting themselves or the initial description of the land, changed over the 12th or 13th centuries. Some phrases in the Hospitaller charters were used for a period of as few as 5 or 10 years, although others remained current for 50 years or more. By dating the half dozen or so formulae in each charter, Professor Gervers claims to have been able to date most of the charters in his second volume to within about 5 years of their actual date. Such accuracy makes dating by formulae much more useful than dating by witness lists, particularly as in many cartularies witness lists were often omitted, and it will be extremely interesting to see the method applied to other Essex charters.

Both volumes are comprehensively indexed, by persons, places, and select subjects. They are an invaluable addition to the resources available to historians of medieval Essex, and indeed to those of medieval England.

Janet Cooper

Fields of the First, by Paul A. Doyle (1997) Forward Airfield Research Publishing, 112 pages, 52 plates, 46 figs. £13.50

With the growing public interest in more recent military history, this fascinating book provides the first definitive account of World War I military airfields in Essex; in the past these ephemeral and poorly documented sites have received much less attention than the more substantial World War II aerodromes. Many readers will be astonished to learn there were no less than 31 landing grounds in the traditional county of Essex (parts of which now lie within Greater London) during the period 1914-1918.

The author begins with a brief description of air defence measures in Britain during the First World War. By 1916 two Home Defence Squadrons of the Royal Flying Corps were based in Essex, Nos. 37 and 39. Three fighter stations were attached to each squadron to combat expected incursions from German airships and bombers; No. 37 comprised 'A Flight' at Rochford, 'B' at Stow Maries and 'C' at Goldhanger, whilst No. 39 had 'A Flight' at North Weald Bassett, 'B' at Suttons Farm and 'C' at Hainault Farm. A series of emergency night landing stations were also established along the patrol lines to be used in instances of pilot disorientation, engine failure or lack of fuel. Landing grounds that fall outside the above categories may have served the Royal Naval Air Service, the Naval Flying Corps and Squadrons based outside Essex.

Each of the 31 landing grounds are described in considerable detail; location, date(s) of operation, site layout and subsequent history. The flight squadrons attached to the fields are also named together with notable events including encounters with enemy aircraft and crash landings. Plans are re-produced depicting layout and these are complemented by a recent aerial photograph; the only criticism being the quality of some of the plates.

The majority of the landing grounds were simply a collection of fields whose hedges had been grubbedout. Used for emergency night landing, facilities were minimal and may have included tents for shelter, ground arrows and in rare instances, a wind sleeve. These have mostly reverted back to agricultural use and there is no surface indication of their former wartime function.

Fighter stations were better equipped with aircraft hangers, accommodation buildings, workshops, bomb

stores, kitchens, dining rooms and road-ways. Traditionally these were cleared following the cessation of hostilities and a number were re-used during the Second World War. Structures rarely survive, but isolated examples can be found notably the aeroplane sheds at Hainault Farm and the officer's mess at North Weald Bassett. The fighter station at Stow Maries is of greater significance retaining 24 standing structures on a hitherto undeveloped site. Lying on private farm land the buildings straddle both sides of a track and accommodated an estimated 219 personnel and 16 aircraft. Given its potential national importance a measured and photographic survey has recently been completed by the Royal Commission on the Historical Monuments of England and it is hoped that this information will inform a long term management strategy.

The book concludes with useful chapters on surviving First World War buildings and aviation memorials within the county. Subsequent appendices describe the patrol lines, operational periods for landing grounds, flight station plans, numbers of personnel and equipment.

Fields of the First makes a major contribution to the study of recent military history in Essex complimenting an earlier survey by Simon Thorpe of World War Two airfields undertaken on behalf of Essex County Council. Also of interest is the on-going survey of Second World War Defences by Fred Nash, again funded by the County Council. Public awareness of these monuments has never been greater and Fields of the First will be of value to both the military historian and those with a general interest in the historical diversity of the Essex Landscape. Copies are available from the author at 2 Carmelo Court, Beamish Close, North Weald, Essex CM16 6UA.

Shane Gould

Essex bibliography

Bibliography of journal literature on Essex archaeology and history at March 1998

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Both monograph and periodical literature are included; articles published in journals which are devoted exclusively to Essex (e.g. the Essex Journal) are not included. Items which have been overlooked in earlier bibliographies are added for completeness of coverage. For new books on Essex history see the regular lists published in the Society's Newsletter.

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(Atkinson 1995, fig.5)

(Medlycott et al. 1995)

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(Essex iii, 171)

The expanded bibliography should appear at the end of the text, arranged in alphabetical order:

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Cover illustration: Holy Trinity Church, Bradwell-juxta-Coggeshall, from the south-west. The architectural history of the church is the subject of a major article in this volume (Photo: Warwick Rodwell)