ARCHAEOLOGY IN ESSEX TO AD 1500

Edited by
D G Buckley

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In memory of Ken Newton

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Preface

The papers published in this volume were all read at a weekend conference held at Oulton Hall, Clacton, Essex, from 10 to 12 March 1978. This conference brought together archaeologists and specialists in related disciplines, both amateur and professional, currently working on the archaeology of Essex. Eighteen papers were presented and each contribution is summarized in this volume. Collectively these provide a précis of the archaeology of Essex of value to all those with an interest in the past of the county. It also exists as a permanent reminder of our present state of knowledge and should provide a stepping stone to future archaeological research work.

It was with deep regret that we heard a few days after the conference of the death of Ken Newton. Although his failing health had prevented him from attending the conference personally he had taken the trouble to tape record the paper included here. In recognition of the considerable assistance which he gave to Essex archaeologists during his years as the County Archivist, this volume is dedicated to him.

Notes on Contributors

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P Crummy MA is Director of the Colchester Archaeological Trust. He has been responsible for a number of major excavations in and around Colchester and recently published *Not only a matter of time,* a survey outlining the archaeology of the Colchester district and methods of counteracting the erosion of its archaeological remains.

P J Drury ARICS is Secretary of the Chelmsford Excavation Committee. He has excavated a number of Essex sites in addition to Chelmsford, including the important Iron Age site at Little Waltham, and has recently published a compendium of excavation and research in Braintree in *Essex Archaeology and History.*

C F C Hawkes FBA FSA is Professor Emeritus of Archaeology in the University of Oxford. He has had a close and long-standing connection with Essex archaeology.

J D Hedges BSc is Essex County Council's Archaeological Officer with the County Planning Department. He has a special interest in the British Neolithic period.

C A Hewett is a member of the Conservation and Historic Buildings Section of the Essex County Council Planning Department. He has pioneered the use of carpenters jointing techniques as dating criteria and has written *The development of carpentry, English cathedral carpentry,* and *Church carpentry.*

R M Jacobi MA PhD was until recently a research student at Jesus College, Cambridge, where he re-examined the Mesolithic of Northern Europe.

M U Jones BA FSA directed excavations at the extensive multi-period cropmark site at Mucking on the north Thames gravels from 1965 to 1978 and is now preparing the results for publication.

W T Jones FSA ARPS has been assistant director of the Mucking excavations since 1965. His special interest is burial practice during the early Anglo-Saxon period.

K C Newton MA FRHistS was until his death County Archivist at the Essex Record Office. His publications on the history of Essex include *Thaxted in the fourteenth century* and *The Manor of Writtle.*

M R Petchey MA is now Assistant Senior Archaeologist with Milton Keynes Development Corporation. A student at Oxford and Durham, he has been successively Assistant Curator at Hertford Museum and Urban Archaeologist in the Archaeology Section, Planning Department, Essex County Council, during which latter time the research for his paper was carried out.

O Rackham PhD is a fellow of Corpus Christi College, Cambridge. He recently published *Trees and woodland in the British landscape.*

W J Rodwell BA DPhil (Oxon) DLC FSA has undertaken fieldwork and excavation in Essex for the past fifteen years,

concentrating mainly on the Iron Age and Roman periods and on church archaeology and architecture. His doctoral thesis largely concerned the Iron Age in Essex, and his survey of the archaeology of churches in the Chelmsford Diocese was the first of its kind to be undertaken and published. He now lives in Bristol and is Director of the Committee for Rescue Archaeology in Avon, Gloucestershire and Somerset (CRAAGS).

R G Sturdy, MA DipAgric MSc was trained in agriculture and soil science at the Universities of Cambridge and Aberdeen respectively. He is now on the staff of the Soil Survey of England and Wales, a department of Rothamsted Experimental Station, Harpenden, Hertfordshire, and is currently based at Writtle Agricultural College while making soil maps of selected districts of Essex.

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J J Wymer is a Research Associate of the Department of Anatomy, University of Chicago. He has been based in England since 1969 and is currently engaged in Palaeolithic research in East Anglia. Recent excavations include two seasons at Clacton-on-Sea (1969-1970) and four at Hoxne, Suffolk (1971-1974). He was archaeologist at the Museum and Art Gallery, Reading, Berkshire from 1956-1965, and has conducted work on Early and Middle Stone Age sites in South Africa.

Foreword

In march 1978 I had the great pleasure of welcoming to a conference at Clacton archaeologists not only from Essex but also from our neighbouring counties and national archaeological organizations, to consider together the research problems of Essex archaeology. I now have the privilege of introducing this volume, which makes available the series of papers presented on that occasion for all those with a serious interest in the archaeology and history of our county.

The *Victoria History of the County of Essex,* the publications of the Royal Commission on Historical Monuments, and contributions to *Essex Archaeology and History* (Transactions of the Essex Archaeological Society) and to the Essex Journal (Journal of the Essex Archaeological and Historical Congress) cover many aspects of Essex archaeology and history. However, the conference proceedings will present for the first time a county volume encompassing all archaeological periods. The papers are all by experts in their respective fields, many of whom are nationally and internationally acknowledged.

The work of these individuals testifies to the rich historic environment of Essex. Unhappily, this is a heritage which has been placed under considerable threat in recent years; but Essex has not failed to respond to this situation. The many local societies concerned for the protection and recording of our towns and countryside attest to this, whilst

the County Council takes considerable responsibility for all aspects of conservation. Within the County Planning Department Environmental Services Branch there are Sections responsible for Archaeology, Conservation and Listed Buildings, the Countryside, and Design and Development, all of which provide considerable advice, assistance, and grant aid to many amenity schemes. Five officers from this Department are contributors to the volume. In archaeological matters, the Advisory Committee for Archaeological Excavation in Essex, chaired by myself, provides for contact between the many full- and part-time archaeologists in the county. The Essex Record Office provides a resource to which all the contributors owe a debt of thanks. This recognition brings a note of sadness in reminding us of the untimely death of Mr Ken Newton, the County Archivist. Despite his severe illness at the time of the Conference he still provided his valuable contribution and the dedication to him of this volume is a mark of the esteem in which he was held.

Finally, I thank all those who have contributed to this publication and conclude with the suggestion that similar conferences held at five year intervals would serve to give direction to both existing and new archaeological research projects.

Councillor R B Marriott

Introduction

Essex is situated on one of the major estuarine embayments of southern England, and its deeply indented coastline presents a marked contrast to that of neighbouring Rent and Suffolk.

Inland, there is a general rise towards the north-west from sea level to about 30 m (120 ft) around Chelmsford, interrupted only by a series of hills and ridges of which the highest is Danbury Hill at 116 m (350 ft). Thereafter the land surface rises gently to a little over 130 m (420 ft) west of Saffron Walden, where the subdued north-eastward extension of the chalk escarpment that comprises the Chiltern Hills terminates near the border with Cambridgeshire.

Apart from the coast, the county boundary is formed by rivers, the Stour to the north, the Lea and Stort to the west, and the Thames to the south. Principal rivers within the county are the Colne, Blackwater, Chelmer, Crouch, Mardyke, and Roding. The Colne, Blackwater, Chelmer,

and their tributaries rise in the plateau area to the north of the county underlain by Boulder Clay, and flow south-eastward to extensive estuaries. The Crouch flows due east across undulating lowland to the south of the Boulder Clay plateau, and is joined by the Roach to form an estuary complex with low-lying Wallasea, Potton, and Foulness Islands. The Mardyke and Roding flow south to the Thames.

The coastline has a nearly complete fringe of mar&land, but between the Colne and Stour estuaries, and at Southend, there are short stretches of cliff Shingle spits and shellbanks are a marked feature of certain parts of the coast (Greensmith & Tucker 1969).

The nature of the Essex landscape and the way in which it has developed is better appreciated by understanding the geological history, and especially the ice age history of the county. Accordingly a large part of this paper is devoted to outlining events in the past 13 to 2 million years. This period, known as the Quaternary, although dominated by the Pleistocene Ice Age, was one of oscillating climate with ice advances punctuated by warmer interglacial times.

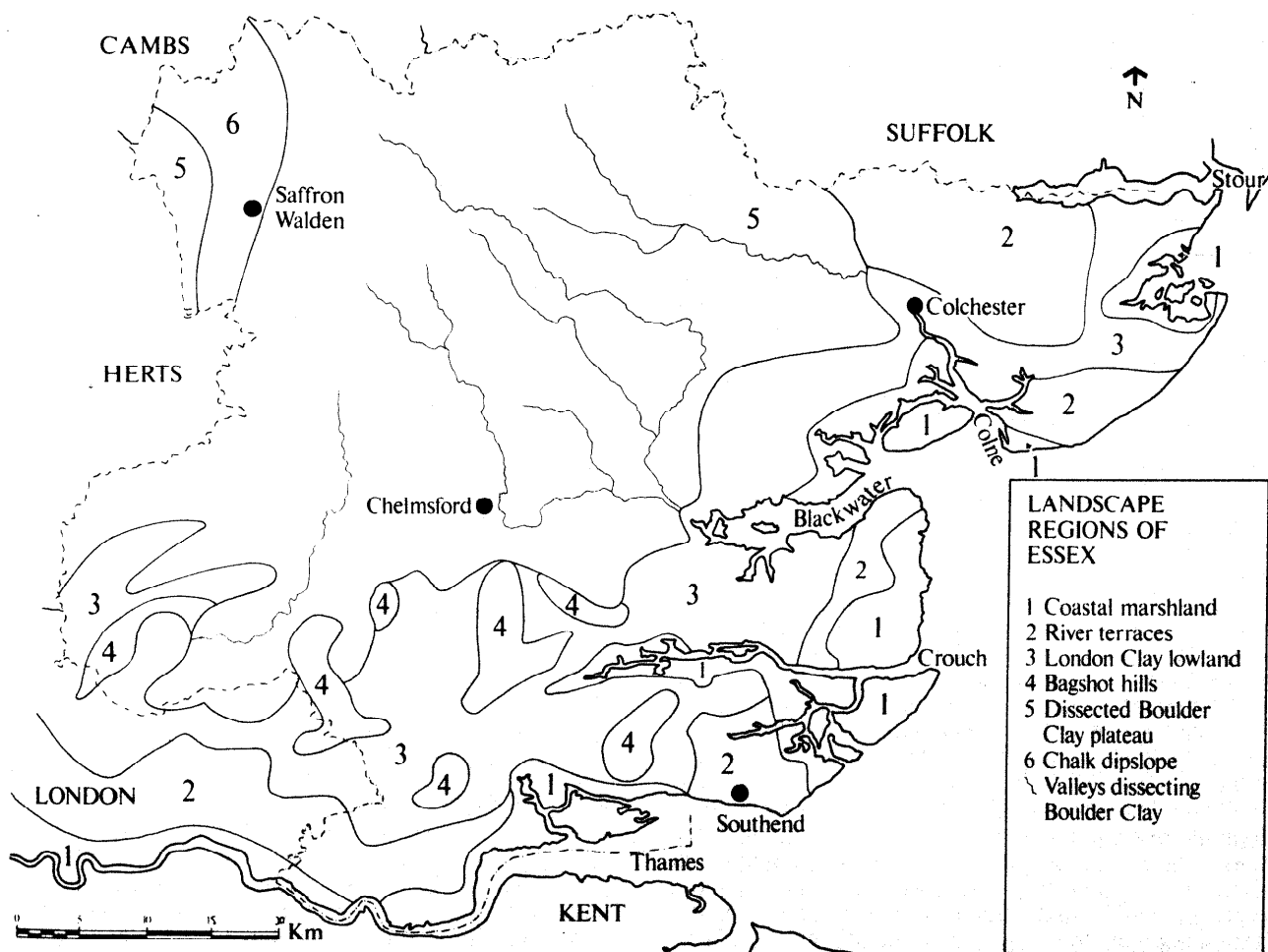*Fig 1   The landscape regions of Essex (Crown copyright reserved)*

LANDSCAPE REGIONS OF ESSEX

1 Coastal marshland
2 River terraces
3 London Clay lowland
4 Bagshot hills
5 Dissected Boulder Clay plateau
6 Chalk dipslope
∖ Valleys dissecting Boulder Clay

These climatic oscillations and the geological deposits and vegetation associated with them are described in sequence, and the early archaeological record and environment of man, so far as they are known, are fitted into this sequence. The soils and land use of the resulting landscape regions are then briefly described and their present agricultural potential considered.

Geology and glacial history

Pre-glacial deposits

Essex forms part of the trough-shaped synclinal structure in the Chalk known as the London Basin. The Tertiary deposits within it and above the Chalk comprise the Thanet Sands, Woolwich and Reading Beds, Blackheath Beds (together described as the Lower London Tertiaries), London Clay, Claygate Beds, and Bagshot Beds (Fig 2). The London Clay is the thickest deposit and its outcrop the most extensive; it is capped locally by loamy Claygate and fine sandy Bagshot Beds. The Lower London Tertiaries have a limited outcrop in the Grays/Orsett area and south of Saffron Walden.

Glacial deposits

Some knowledge of the relationships between different Pleistocene deposits is an essential basis for understanding the landscape of today and the environment of early man.

It is generally assumed that six principal cold periods (glacials) during which ice advanced over Britain were interspersed with five warmer periods (interglacials) when the ice sheets retreated; the present post-glacial period may also be an interglacial.

The dating of these periods and correlation with human cultures is difficult but the first cold period marking the first major extension of Arctic ice is thought to have started 1½ to 2 million years ago (Sparks & West 1972). The most recent cold period (Devensian) is conventionally regarded as ending about 10,000 years BP. Quaternary stage names used in this account follow Mitchell et al (1973; Table I).

During the first cold period (Waltonian) sea levels were lowered and a marine inlet existed in the region of the Stour valley. This is evident from the Waltonian Red Crag deposits in the cliffs at Walton-on-the-Naze comprising shelly sands laid down as offshore shell banks.

There is little evidence about climate and sea levels during the succeeding two glacial periods but it is likely that the climate never became cold enough for ice to develop as far south as Essex.

Extensive sands and gravels (Essex White Ballast) were deposited in the course of the Beestonian glacial period, found now underlying succeeding glacial deposits but exposed on valley sides and on the Tendring Plateau, They were probably laid down as bars and dunes of a braided river with a north-eastward direction of flow (Rose *et al* 1976). The upper part of these sands and gravels is reddened and clay enriched, the result of soil forming processes during the succeeding (Cromerian) interglacial. This old soil (paleosol) occurs at ground level on the Tendring Plateau but is deeply buried beneath later glacial deposits further south. It is being recognized as a stratigraphic marker in southern East Anglia (Rose *et al* 1976).

There is abundant evidence of the Anglian cold period in Essex. The Cromerian paleosol horizon is commonly disturbed by periglacial structures including involutions, frost cracks, and ice wedge casts, features associated with permafrost conditions. In places a thin windblown cover containing wind polished stones is incorporated. The paleosol is overlain by further sands and gravels interpreted as pro-

glacial deposits forming outwash of the Anglian Ice Sheet (Rose *et al* 1976) that was encroaching on Essex from the north. The climate appears to have deteriorated rapidly and sea levels fell sufficiently for Britain to be connected to continental Europe. Ice eventually covered Essex north of a line from Brentwood through Billericay to a point a little west of Colchester. When the climate subsequently ameliorated and the ice melted the vast sheet of glacial till (Chalky Boulder Clay) consisting principally of clay, flints, and chalk was laid down over central and northern Essex.

The commencement of the succeeding Hoxnian interglacial has recently been dated to 250,000 years BP (Szabo & Collins 1975) and probably lasted between 30,000 and 50,000 years (Turner 1970). This stage is of particular importance as the first at which evidence of human culture (Clactonian) is recorded. At Clacton, primitive flint flakes have been found in a freshwater deposit associated with deciduous forest pollen presumed to represent the climatic optimum of the Hoxnian interglacial. At other sites, notably at Hoxne in Suffolk, deciduous woodland pollen is associated with pollen from herbaceous vegetation, suggesting woodland clearance by man.

The vegetation succession has also been established at Marks Tey in central Essex by Turner (1970). Here a deep narrow trough cut into the subglacial surface during the Anglian was slowly infilled with freshwater deposits. The pollen sequence has yielded a complete vegetational record of the Hoxnian interglacial from open grassland with birch at the close of the Anglian, through the early development of boreal birch and pine forest, followed by temperate oak forest and a return to pine and birch, and finally heath vegetation as the Wolstonian glacial period approached.

During the severe climatic conditions of the Wolstonian glacial period the ground was much disturbed by solifluction and cryoturbation. Lavelloisian flakes are found in deposits of this glacial period and the succeeding Ipswichian interglacial, which is correlated with the Lower Palaeolithic culture. Abundant Lower Palaeolithic artefacts have been found associated with terrace deposits of Ipswichian age at Aveley and Ilford. Vegetational and climatic changes in the Ipswichian were broadly similar to those in the Hoxnian. In the following Devensian glacial period which is equated with the Upper Palaeolithic culture frozen ground conditions prevailed, vegetation was sparse, and disturbance by cryoturbation is evident from patterned ground. Sea levels were lowered sufficiently for most of the southern North Sea to be dry. Windblown silts (loess or brickearth) accumulated widely and are preserved today particularly in gravel areas.

Post-glacial history

The Post-glacial (Flandrian) period commenced with a marked improvement of climate, the spread of a forested environment, and a general rise in sea levels.

Sea level changes

The position of the Essex coastline has changed extensively during Post-glacial time. In general, sea levels have risen as the Arctic ice has melted and in response to the isostatic sinking of southern England and localized depression of the southern North Sea floor between Essex and Europe.

Both geological and archaeological evidence has been presented for rises in sea level (Table I). In the Netherlands Pons *et al* (1963) have described a sequence of rising sea levels broadly applicable to the Essex coast. They conclude that about 5250 bc (7200 bp) there was a rapid rise of sea level to 12 m below present level. By 4050 bc (5000 bp)

Table I   The environment of man in Essex[1]

Years BP[2]	AD BC	Stage	Period	Vegetation	Sea level (m)	Climate	Culture
	1950					cooling	
	1900					warming	
	1800					'Little Ice Age'	
	1600						
	1400			Alder-oak-birch-hornbeam		deterioration	
						lesser	Medieval
	1200					climatic optimum	
	1000						
1000	800	Recent	Sub-Atlantic		Steady rise to present levels		Anglo-Saxon
	600						
	400					slight	Roman
	200					Improvement	
	0				-2		Iron Age
2000							
	1000			Alder-oak-lime	-3	deterioration	
3000							
	2000	Flandrian	Sub-Boreal		-3.5		Bronze Age Neolithic
4000							
	3000			Elm decline	-5.5		
5000						climate optimum	
	4000		Atlantic	Alder-oak-elm-limc			
6000					rapid rise to -12		Mesolithic
	5000						
7000							
	6000		Boreal	Pine-hazel	-20		
8000							
	7000			Hazel-birch-pine			
9000							
	8000		Pre-Boreal	Birch pine			
10,000		Devensian		Bare ground and heath	-45	cold periglacial	Upper Paleolithic Lower Paleolithic *Levalloisian*
		Ipswichian		Mixed oak	+7.5	temperate	
		Wolstonian		Bare ground and heath	low	cold periglacial	*Levalloisian Acheulian Clactonian*
250,000?		Hoxnian		Mixed oak	+23	temperate	Not known in Essex
		Anglian		Ice cover in north and central Essex	very low	cold glacial	
		Cromcrian		Mixed oak	+3.5	temperate	
		Beestonian	Pleistocene Ice Age	Heath or bare ground		cold	
		Pastonian		Mixed oak?	+8	temperate	
		Baventian				cold	
		Antian				temperate	
		Thurnian		?	?	cold	
		Ludhamian				temperate	
1½-2my		Waltonian				cool?	

[1] Data about vegetation and climate have been derived mainly from West (1968) and Sparks and West (1972) , about sea levels from Akeroyd (1972) , Pons *et al* (1963), and West (1972), and about culture from West (1968), Sparks and West (1972), and Grimes (1976).
[2] BP = before present. The present is conventionally taken as AD 1950.

there had been a further rise to 5.5 m below, and by 2550 bc (4500 bp) the sea level had reached 3.5 m below present level. Peat development on the Dutch marshes suggests a stabilizing or perhaps a slight lowering of sea levels at this time. Pons *et al* (1963) suggest that the entire area of Britain west of a line from Aldeburgh (Suffolk) to Thanet (Kent) was unaffected by the changes in sea level but D'Ollier (1972) claims that rising post-glacial seas penetrated into the major estuaries along now buried channels, particularly that of the Thames.

These rises in sea level broadly accord with levels deduced by Akeroyd (1972) from archaeological evidence. In more recent times Akeroyd suggests that by about 1000 BC sea level had risen to 3 m below present and between 500 BC and 450 AD sea level did not exceed 1-6 m below present.

After this period there was a gradual transgression with modern levels being reached comparatively recently.

In terms of the archaeological record a rapid rise of sea level during the Early and Middle Mesolithic periods was followed by slower rate of rise during the Neolithic with a standstill during the Late Neolithic and Early Bronze Age. There was a further rise during the Late Bronze Age and Iron Age but levels during Roman times were still 1.6 to 2.6 m below present level. Modern sea levels were attained in the medieval period.

Greensmith and Tucker (1969) have found evidence for a complex series of shoreline advances and retreats around Foulness with offshore areas remaining dry until well into Mesolithic times and during a period of lowered sea level in the early Neolithic.

Vegetation and climate

While sea levels rose during the Post-glacial (Flandrian) period, climatic and vegetation changes were occurring on land (Table I).

During the Pre-Boreal (Early Mesolithic), closed birch forest developed on earlier heaths. In Boreal times (Middle Mesolithic), hazel and pine became important, gradually developing into mixed oak forest of the Atlantic period (Late Mesolithic), the warmest climate of the Post-glacial (Flandrian climatic optimum), when summer temperatures could have been 2-3°C above current averages (Lamb 1965). Conditions were also wetter and more oceanic. Girling and Greig (1977) suggest that lime could have dominated the mixed deciduous forests of the time.

At the beginning of the Sub-Boreal (Neolithic) there is a sharp decline of elm in the pollen record, and a corresponding increase in herbs suggests some deforestation possibly as the result of Neolithic man's activities. From this time onwards there is evidence of intermittent forest clearance and subsequent heath formation. Seed and beetle remains from Neolithic deposits at Hampstead, North London, confirm the overall pattern of change from natural forest to cleared areas for cultivation and grazing (Girling & Greig 1977). The appearance of dung beetles in the Hampstead Heath deposits suggests grazing by herbivorous animals. During the Sub-Atlantic (from the Iron Age onwards) there is a sharp decline in tree pollen and a corresponding increase in herbs and evidence of cereal cultivation Rye and oats are known to have been important in Roman times.

The Late Bronze Age and Early Iron Age coincided with deterioration to a wetter climate. Although there is pollen evidence for an increase in alder, changes in vegetation are complicated by the effects of man. Through Roman times there was improvement to a warmer and drier climate particularly between 1000 and 1350 AD (the Lesser climatic optimum). Thence until 1550 the climate was cooler, this trend intensifying between 1550 and 1850 into the period known as the 'Little Ice Age'. Subsequently until about 1940 average temperatures increased but in recent decades have fallen slightly again.

Soils and their agricultural potential

Intrinsic properties of the soil itself determine how interactions with climate and relief influence land use. In this section the aim is to identify the physical factors which influence current land use given the present climate and modern technology. The importance of the same factors for more primitive agriculture is also briefly considered.

Present climate

The following summary is taken from Smith, LP (1976); average annual rainfall amounts to about 575 mm (23 in) spread evenly through the year. For the summer months between April and September potential transpiration exceeds rainfall by about 175 mm (7 in) so that the average potential soil moisture deficit is large giving rise to periods of draughtiness. If average maximum potential soil moisture deficit is used to assess dryness (Hall *et al* 1977) Essex is one of the driest parts of the country with dryness increasing towards the coast- Higher western parts of the county with greater summer rainfall are less droughty.

January is the coldest and July the warmest month with average monthly mean air temperatures of 3·4°C and 16·9°C respectively. The average growing season, the period when mean soil temperature at 300 mm depth is above 6°C, is 266 days.

Excess winter rainfall, ie the amount of rain the soil cannot absorb, is approximately 125 mm (5 in) and spread over a period of about 3½ months from mid-December to the end of March.

Factors affecting agricultural development

The main physical factors affecting land use for agriculture and the manner of their expression are listed in Table II. Climate is not limiting since most enterprises are possible, although local *variations* in rainfall, exposure, and incidence of frost modify the pattern of use in detail.

Winter wetness caused by waterlogging of slowly permeable clayey soils is a major limitation to intensive land use now and must have been more so in the past, so that much clayey land was retained in woodland or rough grazing. By contrast, light gravelly land soon dries out in summer and crops are commonly affected by drought so, although easily cultivated, yields are reduced or occasionally crops totally fail.

Many Essex soils are naturally acid and deficient in lime. Heavy liming has always been necessary to improve fertility. Slope is rarely limiting but, on valley sides cut in sands and gravels, erosion can be serious and large hedge banks composed of hill-wash (colluvium) have developed as the result of erosion upslope. The appropriate factors are considered in the brief account of soils of the landscape regions which follows.

Table II Physical factors affecting agricultural development in Essex

Factor	*Expression*
Climate	Favourable for arable farming and livestock production.
Wetness	Slowly permeable soils or high ground-water table; flushing by springs (localized); flooding (streams and rivers).
Soil limitations	Shallowness and stoniness, reducing total available water, restricting rooting and adversely influencing cultivation. Soil texture; cultivation problems with clays, droughtiness with sands. Soil fertility; acidity requiring liming; mineral and nutrient deficiences.
Gradient and soil pattern	Short steep slopes are uncultivable or easily eroded; some landslipping on London Clay slopes.

Soils of the landscape regions

The county can be conveniently divided into the following six landscape regions related to geology and soils (Fig 1):

1. Coastal marshland
2. River terraces
3. London Clay lowland
4. Bagshot hills
5. Dissected Boulder Clay plateau
6. Chalk dipslope

Detailed acounts of the soils and land use can be found in Sturdy (1971,1976), Allen and Sturdy (in preparation), and Sturdy and Allen (in preparation). North-west Essex soils are described by Thomasson (1969). These publications are accompanied by soil maps.
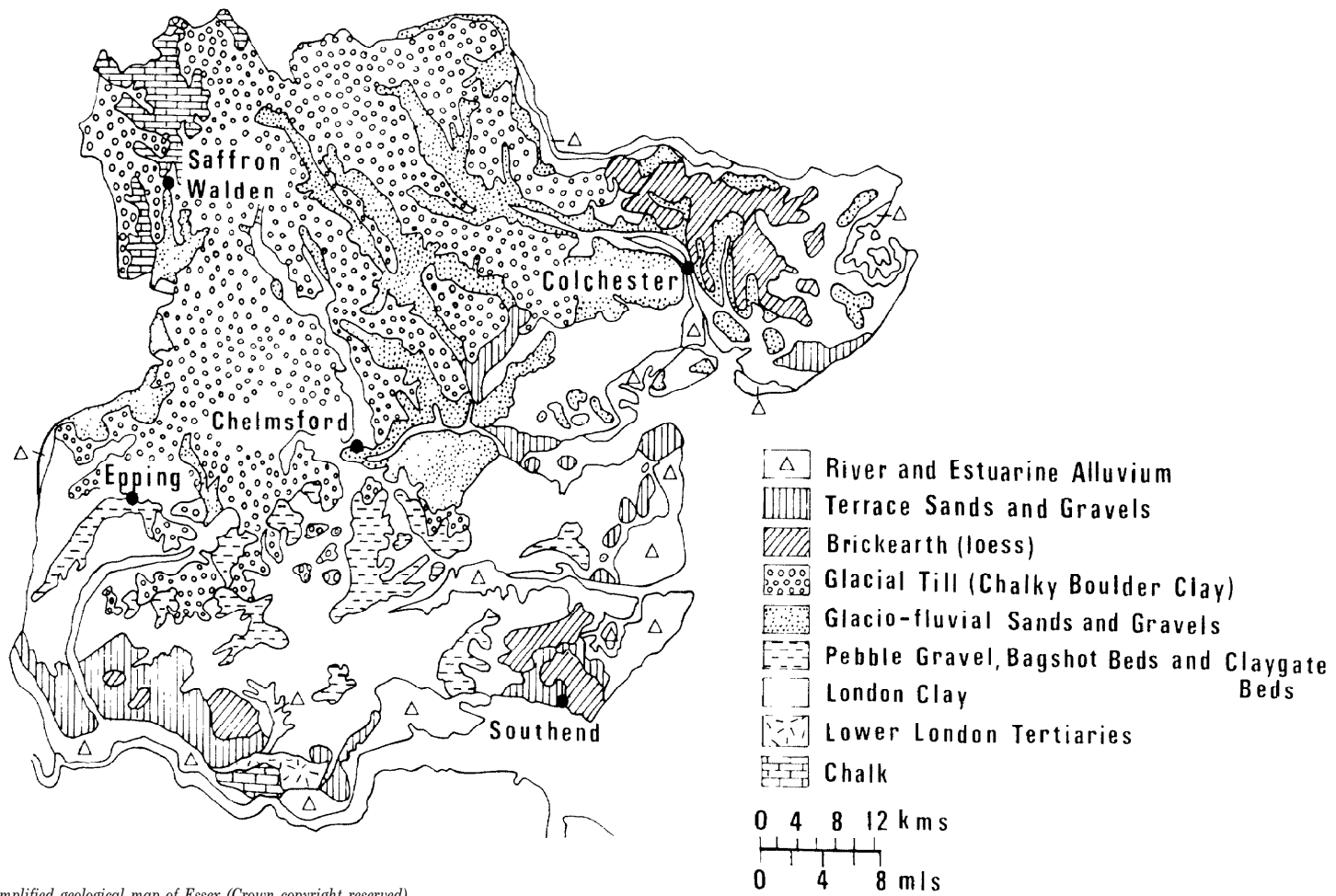
Fig 2 *Simplified geological map of Essex (Crown copyright reserved)*

Legend:

- △ River and Estuarine Alluvium
- Terrace Sands and Gravels
- Brickearth (loess)
- Glacial Till (Chalky Boulder Clay)
- Glacio-fluvial Sands and Gravels
- Pebble Gravel, Bagshot Beds and Claygate Beds
- London Clay
- Lower London Tertiaries
- Chalk

0 4 8 12 kms

0 4 8 mls

1   Coastal marshland

The areas of reclaimed coastal marsh are characterized by heavy soils in clayey marine alluvium. When underdrained, levelled, and limed to improve soil structure, good yields of wheat and barley can be obtained from this land. Productive grassland farming is difficult, however, since opportunities for grazing are restricted by the risk of poaching when the soils are wet, especially in winter. The land is quite unsuitable for root crops.

This potential is being realized increasingly, but the area is still at risk from sea flooding and was much more so in the past (Grieve 1959); there are now some 300 miles of sea wall requiring constant maintenance. The land was reclaimed progressively by the process of inning and accounts are given in Gramolt (1961) and Smith, JR (1970) for Foulness Island. The marshes played an important part in the rural economy until the end of the 17th century, through their pasturage of sheep and cattle.

2   *River terraces*

Some of the best agricultural land in Essex occurs in this region. All the soils are easily worked loams, silts, or sands, for the most part naturally free draining, and the region includes many prime sites used for early occupation and farming. The deep soils in brickearth around Southend are very fertile and, although acid under natural conditions, are not droughty. Thinner silty loams over gravel on the Tendring Plateau have a periodically high water table and require drainage; they are slightly more droughty, and also very acid under woodland. Droughty gravelly soils often incorporating large blocks of iron-manganese cemented gravels (ragstone), indicative of fluctuating groundwater conditions, occur on terraces where brickearth is absent and give poor yields of most crops.

In this region, crop marks reflecting patterned ground with differences in soil depth and available water are apparent in most summers. The commonest pattern type, the fossil ice-wedge polygon (Evans 1972), has been identified around Orsett, Paglesham, and extensively on glacial sands in the Alresford-Tendring district. Jones and Evans (1975) discuss the range of factors which can contribute to the development of crop marks.

3   *London Clay lowland*

Most soils are heavy clays, although lighter soils occur in some footslope positions. On level sites winter waterlogging over impermeable subsoils is severe and drainage is needed to grow arable crops. Traditionally the land was ploughed on the 'stetch', a form of ridge and furrow promoting limited surface run-off. Most of the stetches have been ploughed out now and underdrainage systems using clay pipes installed. Waterlogging is less severe on sloping land because of greater natural run-off. Some slopes of more than 8° are potentially unstable, and landslipping has occurred in the past. Hutchinson (1968) suggests that much of it was associated with either the climatic deterioration between 1550-1850 (the 'Little Ice Age') or medieval deforestation.

London Clay soils shrink and crack on drying, and swell on rewetting, and when wet are very sticky and plastic. These properties make the soils difficult to cultivate and the period over which they are sufficiently friable for cultivation is very limited.

4   *Bagshot hills*

Rising above the general level of the London Clay lowlands are a number of low hills at about 100 m (330 ft) capped, in most instances, by Pebbly Clay Drift over fine sands of the Bagshot Beds. The soils are easily cultivated but inherently very acid and of low natural fertility. Springs, with associated wet soils, are common at the base of the Bagshot Beds and contribute to a complex pattern of soils in much dissected terrain of limited potential. Paleosols occur in the Pebbly Clay Drift and are preserved undisturbed in woodland at Epping Forest, Warley (south of Brentwood), and High Wood.

5   *Dissected Boulder Clay plateau*

This region is probably the most distinctive landscape of the county, and forms part of a very widespread feature developed over boulder clay extending northwards into Suffolk and westwards into Hertfordshire. Soils developed in the boulder clay can be divided into wet clayey soils from which chalk has been partially leached, so that they are acid under natural conditions, and drier clayey soils, chalky to the surface, which are always neutral or alkaline. Both kinds of soil require underdrainage for modem arable farming, but when drained make valuable corn land. It was formerly common to use ridge and furrow as an aid to drainage. Parts of the plateau have stony loamy soils in drift incorporating a good deal of loessic (silty) material in the upper 600 mm (24 in) or so over leached chalky boulder clay.

Many of the common lands that remain today are associated with the wetter level sites, eg Navestock Common and Crabbs Green at Stocking Pelham, suggesting that cultivation of the wet sticky boulder clay soils has always been difficult. The drier calcareous soils tend to occur on slopes at plateau edges and thus have a greater degree of natural run-off.

The valleys of the Stort, Chelmer, Ter, Brain, Blackwater, Colne, and Stour dissect the Boulder Clay plateau and a variety of deposits of glacial origin are represented within them. Most are glacial sands and gravels, brickearth (loess), head (solifluction deposit), and alluvium with, locally, some calcareous tufa and peat. The gravels are associated with terraces in the lower reaches of the Chelmer, Blackwater, and Stour.

Valley soil patterns are variable and often intricate especially where springs occur limiting the intensive use of land. Nevertheless, springs are an important source of water, and well drained valley sites above the level of the floodplains were favoured by early settlers. Erosion of sandy soils and soil creep on steeper valley sides is a further problem of current farming, though these processes could have been more severe in the past when rainfall was heavier. Hedgebanks with accumulations of soil upslope, and sunken lanes are characteristic features.

6   *Chalk dipslope*

Chalk crops out in the Cam and Stort valley in north-west Essex and locally on high ground where not covered by Boulder Clay. A further outcrop is associated with the Purfleet anticline at Grays, but here it is mainly covered by river terrace gravels, and characteristic soils are of limited extent. Chalk soils are alkaline and free draining although often shallow. Apart from low potassium status, the soils are quite fertile and barley grows well. Because cereal farming is wholly mechanized fields are large and hedgerows few. This is historically the only part of Essex where a 'mature' open-field system, resembling that of the Midlands, developed.

Conclusions

The landscape history of Essex outlined in the first part of this paper demonstrates the wealth of literature on the subject, and alludes to several sites of great importance in

establishing the sequence of events during the Quaternary in East Anglia.

The soils are briefly described by landscape regions in terms of present agricultural potential. In doing this we are aware of omitting much that could be said about soil classification, processes of soil formation, and about soil evolution; these complex subjects are covered in several recent texts (eg Curtis *et al* 1976; Limbrey 1975), and in publications of the Soil Survey. However, in many situations, objective descriptions of soils and soil materials in the field by the archaeologist are as valuable as interpretations of soil development, and the Soil Survey Field Handbook (Hodgson 1974) provides details of a widely applied system of soil description.

References

Akeroyd, A V, 1972   Archaeological and historical evidence for subsidence in southern Britain, *Phil Trans Roy Soc London* A272, 151–69

Allen, R H, & Sturdy, R G, in preparation   *Soils in Essex III. Sheet TL71 (Little Waltham)*, Soil Survey Rec

Curtis, L F, Courtney, F M, & Trudgill, S, 1976   *Soils in the British Isles*

D'Olier, B, 1972   Subsidence and sea-level rise in the Thames Estuary, *Phil Trans Roy Soc London*, A272, 121–30

Evans, R, 1972   Air photographs for soil survey in lowland England: soil patterns, *Photogrammetric Record*, 7, 302–22

Girling, M, & Grieg, J, 1977   Paleoecological investigation of a site at Hampstead Heath, London, *Nature*, 268, 45–7

Gramolt, D W, 1961   *Coastal marshlands of east Essex between the seventeenth and mid-nineteenth centuries*, MA thesis, Univ London

Greensmith, J T, & Tucker, E V, 1969   The origin of Holocene shell deposits in the Chenier Plain facies of Essex (Great Britain), *Marine Geol*, 7, 403–25

Grieve, H, 1959   *The great tide*

Grimes, W F, Chairman, 1976   *Time on our side: a survey of archaeological needs in Greater London*, Report of a joint working party of the Department of the Environment, the Greater London Council, and the Museum of London

Hall, D G M, Reeve, M J, Thomasson, A J, & Wright, V F, 1977   *Water retention, porosity and density of field soils*, Soil Survey Tech Monogr No 9

Hodgson, J M (ed), 1974   *Soil survey field handbook*, Soil survey Tech Monogr No 5

Hutchinson, J N, 1968   The free degradation of London Clay cliffs, *Building Research Station, Current Paper*, 54/68

Jones, R J A, & Evans, R, 1975   Soil and crop marks in the recognition of archaeological sites by air photography, in *Aerial reconnaissance for archaeology* (ed D R Wilson), CBA Res Rep 12, 1–11

Lamb, H H, 1965   Britain's changing climate, in *The biological significance of climatic changes in Britain* (eds C G Johnson & L P Smith), Symposia of the Inst Biol No 14

Limbrey, S, 1975   *Soil science and archaeology*

Mitchell, G F, Penny, L F, Shotton, F W, & West, R G, 1973   A correlation of Quaternary deposits in the British Isles, *Geol Soc London, Special Report No 4*

Pons, L J, Jelgersma, S, Wiggers, A J, & DeJong, J D, 1963   Evolution of the Netherlands coastal area during the Holocene, *Verhaudelingen Koninklijk Nederlands Geologisch Mijnbouwkundig Genootschap Geologishe, Serie 21*, 197–220

Rose, J, Allen, P, & Hey, R W, 1976   Middle Pleistocene stratigraphy in southern East Anglia, *Nature*, 263, 492–44

Smith, J R, 1970   *Foulness—a history of an Essex island parish*, Essex Record Office Publications No 55

Smith, L P, 1976   *The agricultural climate of England and Wales*, Tech Bull Min Agr Fish Food No 35

Sparks, B W, & West, R G, 1972   *The Ice Age in Britain*

Sturdy, R G, 1971   *Soils in Essex I: Sheet TQ 59 (Harold Hill)*, Soil Survey Rec No 7

———, 1976   *Soils in Essex II: Sheet TQ 99 (Burnham-on-Crouch)*, Soil Survey Rec No 40

———, & Allen, R H, in preparation   *Soils in Essex IV: Sheet TM 12 (Weeley)*, Soil Survey Rec

Szabo, B J, & Collins, D, 1975   Ages of fossil bones from British Interglacial sites, *Nature*, 254, 680–2

Thomasson, A J, 1969   *Soils of the Saffron Walden district*, Soil Survey Spec Survey No 2

Turner, C, 1970   The Middle Pleistocene deposits of Marks Tey, Essex, *Phil Trans Roy Soc London*, B257, 373–437

West, R G, 1968   *Pleistocene geology and biology*

———, 1972   Relative land–sea-level changes in south eastern England during the Pleistocene, *Phil Trans Roy Soc London*, A272, 87–98

Palacolithic sites are fairly numerous in Essex, although fewer than in the neighbouring counties of Kent and Suffolk. Of 156 find spots of Palaeolithic artefacts recorded from the county in the CBA *Gazetteer of British Lower and Afiddle Palaeolithic sites,* 48 now come within Greater London, so the number is reduced to little more than 100 (Roe 1968). The majority are find spots of Palaeolithic artefacts which have been washed into river deposits at various times in the Middle and Late Pleistocene period and their archaeological value is minimal. However, the site at Clacton-on-Sea is of great importance, those in the Grays/Purfleet area add significantly to the Thames Valley sequence, Acheulian material is known from primary contexts just beyond the western border of the county, and several other sites yield information that is relevant to some understanding of episodes within the long period of time involved, perhaps some 350,000 years or more. As elsewhere, the majority of known sites have been found by chance, usually as a result of commercial mineral extraction. It is certain that many more remain to be discovered, and the geographical position of Essex makes it likely that some of these could be key sites. This is because Essex, like Suffolk, was on the fringe of the limits of the great Anglian ice sheet, yet beyond the limits of the later Wolstonian and Devensian ones. Proglacial lakes of the Hoxnian interglacial period are known to exist, giving optimum conditions for the preservation of living sites, The evidence from Hoxne, in Suffolk, is sufficient to show that Palaeolithic hunting groups exploited such a terrain and it would be surprising if they did not do so in what is now Essex.

There are two major problems with Palaeolithic archaeology, separate and yet related. Suitable sites can give information, when investigated in a controlled manner, that allows some reconstruction of the environment and the mode of life of particular hunting groups, and one of the problems is to locate such sites and excavate them. However, the information acquired is of little consequence unless it can be put into some time scale. That is the second problem. The only reliable framework is that produced by geological stratification. The record is very far from complete but, for the present, it is best to use the sequence of stages proposed by the Geological Society of London for the Quaternary (Mitchell *et al* 1973). Only the later part of the sequence is relevant to the Palaeolithic of Essex, as there is nothing known that can be dated to a time prior to the ice sheet of the Anglian stage. The terminology is given below, with comments on the climate and some dates based on estimated correlations with marine deposits examined in deep sea cores and dated by sedimentation rates, various radioactive methods, and palaeomagnetism:

Stage		
Flandrian	Temperate	From 10,000 bp to present
Devensian	Mainly cold	back to *c* 75,000 years
Ipswichian	Temperate	- *c* 128,000 -
Wolstonian	Mainly cold	- *c* 297,000 -
Hoxnian	Temperate	- *c* 400,000 -
Anglian	Mainly cold	- *c* 472,000 -

It must be emphasized that the estimated correlations with the marine stages are tentative, and that each geological stage may cover a complex series of fluctuations in climate, ie the Ipswichian may be two or three interglacial periods with intervening cold but not necessarily glacial stages. The Wolstonian may have included a full interglacial equivalent to the Dömnitz of the Continent. This is not the place to consider the many possible interpretations and correlations of the time scale in calendar years but the table gives some idea of the order of time involved. At present, the best method is to place where possible the Palaeolithic sites into the framework of geological stages, however broad they may be in terms of climate and date, by means of geological stratigraphy and, to a lesser extent, by comparison of pollen profiles. Two things are certain and particularly relevant to Essex. One is that the mass of boulder clay (till) that covers most of the north-western part of the county and extends as far south as Hornchurch and Upminster is the result of the presence of glacial ice during the Anglian stage, and that ice never covered the county again. The other certainty is that the Hoxnian interglacial (as defined at Hoxne) was the interglacial which followed the retreat of the final Anglian ice sheet.

It is self-evident that the pre-Anglian drainage system was totally destroyed by the Anglian ice sheet and that fluviatile deposits beneath till in Essex represent rivers which were diverted, if they are not glacial outwash. The so-called 'white ballast' of Essex, now referred to as the 'Kesgrave Sands and Gravels' (Rose & Allen 1977, is interpreted as a former course of the Thames. Not a single flint flake or implement has ever been recorded from these gravels, and the inference is that there was no human occupation during this pre-Anglian stage. This is surprising, as there is now positive evidence for Cromerian occupation at Westbury-sub-Mendip, Somerset (Bishop 1975).

The earliest and most important site in the county is Clacton-on-Sea. It has a history of‘ numerous investigations and excavations, and these are summarized in the most recent report of work conducted in 1969-70 by the University of Chicago together with full bibliographic references (Singer *et al* 1973). A pollen profile taken from a borehole made in 1950) Pike & Godwin 1953 places the freshwater deposits near the base of the sequence at Clacton itself in Zone II Early-temperate of the Hoxnian, but evidence from the recent excavations nearer Jaywick Sands, on the Golf Course, favours a Late Anglian date. It also confirms at least three phases of Palaeolithic occupation. The first is represented by abraded artefacts in the gravel of a small river channel. The presence in the gravel of Lower Greensand chert and a distinctive bi-zoned flint found in North Kent suggests a Thames/Medway derivation, prior to the diversion of the Thames by Anglian ice, therefore implying an intra-Anglian date. This is supported by cold-climate features associated with the deposition of the gravel. Occupation on the surface of this gravel is in primary context, for the flint artefacts are in mint condition and can, in a few instances, be conjoined. The presence of hunters, with the butchered remains of‘ a fauna including elephant, deer, and Bos/bison indicates a milder phase, followed by another cold phase after the deposition of an overlying marl, producing cryoturbation of the gravel and marl and an ice wedge cast in the gravel. Pollen from the marl has been interpreted as Pre-temperate Zone I with a pine-birch forested landscape. In the opinion of the writer, this is just as likely to be a Late Anglian interstadial period as early Hoxnian. If so, it would appear that hunters reoccupied the

area in Zone II of the Hoxnian, from the evidence of the 1950 borehole. Some of these problems could probably be resolved by an excavation of the full sequence of deposits in the cliff at Clacton. An open area exists where part of the Palace Hotel has been demolished and it is hoped that an opportunity will be forthcoming to do this before any development takes place there.[1] It was also very close to the Palace Hotel site that Hazzledine Warren found a wooden spear within an organic bed of the Lower Freshwater Beds. A recent paper has confirmed the artificial nature of this weapon (Oakley *et al* 1977), which is unique in Britain and the earliest Palaeolithic wooden implement in Europe if not the world.

The pristine condition of many of the simple flakes and cores found in the 1969-70 excavations has allowed micro-wear traces to be identified by Dr Keeley, suggesting their use for working wood, hide scraping and cutting, and meat butchery.

The Clacton deposits are only a little above sea level, and descend about 4-5 m below it. There are good reasons for equating the Lower Gravel at Swanscombe with the Clacton Channels. They are 70 km distant and at about 22 m OD. Whether the fall in height represents the original longitudinal profile of the river or there has been a general subsidence in the Clacton area is unproven, although the latter seems more likely. Such subsidence may account for the unusual occurrence of Acheulian material with faunal remains at Barling Magna at about sea level (Gruhn *et al* 1974). Finds of this nature are so frequently made in gravels at about 22-30 m OD that their anomalous position at Barling Magna is easier to interpret if subsidence is invoked. However, in this respect, it is interesting to record Clactonian artefacts, although admittedly derived, in gravels at Thorpe-le-Soken (Weeley, in earlier reports) less than 10 km from Clacton, at 20 m OD. This emphasizes the unreliability of using altitude or archaeological typology as a means of correlating Pleistocene deposits.

Acheulian hand-axes have been found in many parts of the county 'map, Fig 3), but only at Gant's Pit, Dovercourt now filled in) have they been found in any numbers. The CBA *Gazetteer* lists 208 hand-axes and also a Levallois core and two Levallois flakes. The gravel in which they were found, at about 20 m OD, probably relates to the Stour and is presumably Wolstonian. A small hand-axe from Witham Wymer 1976) may possibly relate to a proglacial lake known to have existed between Witham, Rivenhall, and Kelvedon (Haggard 1972). Two other hand-axes have been found at Kelvedon and Tiptree on the fringes of this lake but it is impossible to know whether there is any real connection. Similar lakes existed at Marks Tey and Copford Turner 1970) during the Hoxnian interglacial. Records of fauna1 remains from both places, and a few hand-axes, suggest that important sites may one day be revealed around the lakesides, comparable to the famous Hoxne site.

A significant recent Palaeolithic discovery was made by the M11 Archaeological Committee at South Woodford, now in Greater London. There were a few hand-axes and flakes, with a smear of bone, found beneath 'brickearth' on a surface of gravel above the River Roding. The artefacts were in mint condition and in primary context and, for the first time, confirm the observations of Worthington Smith, who described the 'Palaeolithic Floors' of North East London and Essex (Smith 1894). There is no dating evidence but, broadly, a Wolstonian date is likely. Similar sites arc likely in the district and, if one becomes available, it might repay excavation on a large scale.

The deposits and terraces of the Lower Thames are finely represented in the Urban District of 'Thurrock or, more

correctly, *were* represented, for the quantity of land that has been quarried away in this area to satisfy the cement industry is enormous. From Ockendon to Stanford le Hope, gravels of the so-called '100 ft terrace' have yielded derived Palaeolithic hand-axes. Sandy Lane, Orsett, and Chadwell St Mary appear to have been the richest sites. The Mucking crop-mark site lies on the east end of this spread of ancient Thames gravels. At a lower altitude, closer to the present river, remain fragments of a complex series of Middle and Late Pleistocene sediments. It is to be regretted that they were not recorded in detail when the majority were dug away in the 19th and early 20th century. All three major divisions of' Palaeolithic industries to be found in Britain are represented: Clactonian, Acheulian, Levalloisian. It is difficult to see how the rich Clactonian industry from gravel at the Globe Pit, Little Thurrock, relates to the Lower Gravel at Swanscombe on the other side of the river, for it rests on a bench level 7 m lower. It is, however, earlier than the famous Grays brickearths which abut against it. Palmer (1975) has found derived Palaeolithic material in the Greenlands and Bluelands Pits at Purfleet, at about 6 m OD. Levalloisian artefacts are known from West Thurrock, and Carreck (1976) has assessed the deposits there as Ipswichian on the basis of its contained fauna. Perhaps the most interesting site area was the gravel on the north side of the chalk outlier at the Botany Pit, Purfleet. A few hand-axes were found on the surface of the underlying chalk which were probably in a primary context, but the gravel itself contained great numbers of flakes and cores. Most of these, crudely struck with stone hammers, are identical with Clactonian products, but a fair number 'of both the cores and flakes showed 'distinct preparation prior to striking. The industry has none of the sophistication of the Levallois industries known from the Kent side of the river at Northfleet and Crayford, so it is tentatively referred to as a Proto-Levalloisian industry. This gravel at Purfleet was more associated with the Mar Dyke than the Thames and, on the flimsy evidence of its altitude, is probably of Wolstoman date. This industry was extensively excavated and collected by A J Snelling and is preserved at the British Museum, awaiting a detailed description.

Extensive spreads of fluviatile clays and silts ('brickearths') exist from Aveley to Grays. They are generally regarded as Ipswichian. but it is most unlikely that they are all of the same age. The possibility that what is termed-the Ipswichian Interglacial is really two or even three separate events has recently been expressed by Sutcliffe and Kowalski (1976) There is certainly a strong chance that the Grays brick-earths, on the basis of their contained mammalian fauna, are earlier than those at Aveley, which yielded the near-complete skeletons of both a mammoth and straight-tusked elephant, now displayed in the British Museum Natural History). It is hoped that roadworks connected with the M25 and A13 may, in the future, expose sections that could resolve this problem.

The archaeology of the Ipswichian stage in Britain is very poorly understood and that of the Early Devensian even more so. Levalloisian technique seems to have dominated to the almost total exclusion of hand-axes, as at Crayford in Kent, but this site could belong to one of the possible early Ipswichian interglacials, or even Wolstonian. A distinctive British type of Mousterian or Acheulian Tradition industry appears to have lasted into the Devensian, with flat-butted cordate (bout coupé) hand-axes. Such are occasionally dredged out of the River Thames, presumably from gravels filling the present channels. One such hand-axe comes from the Thames at Tilbury. The apparent difference between the British and continental, particularly the French,
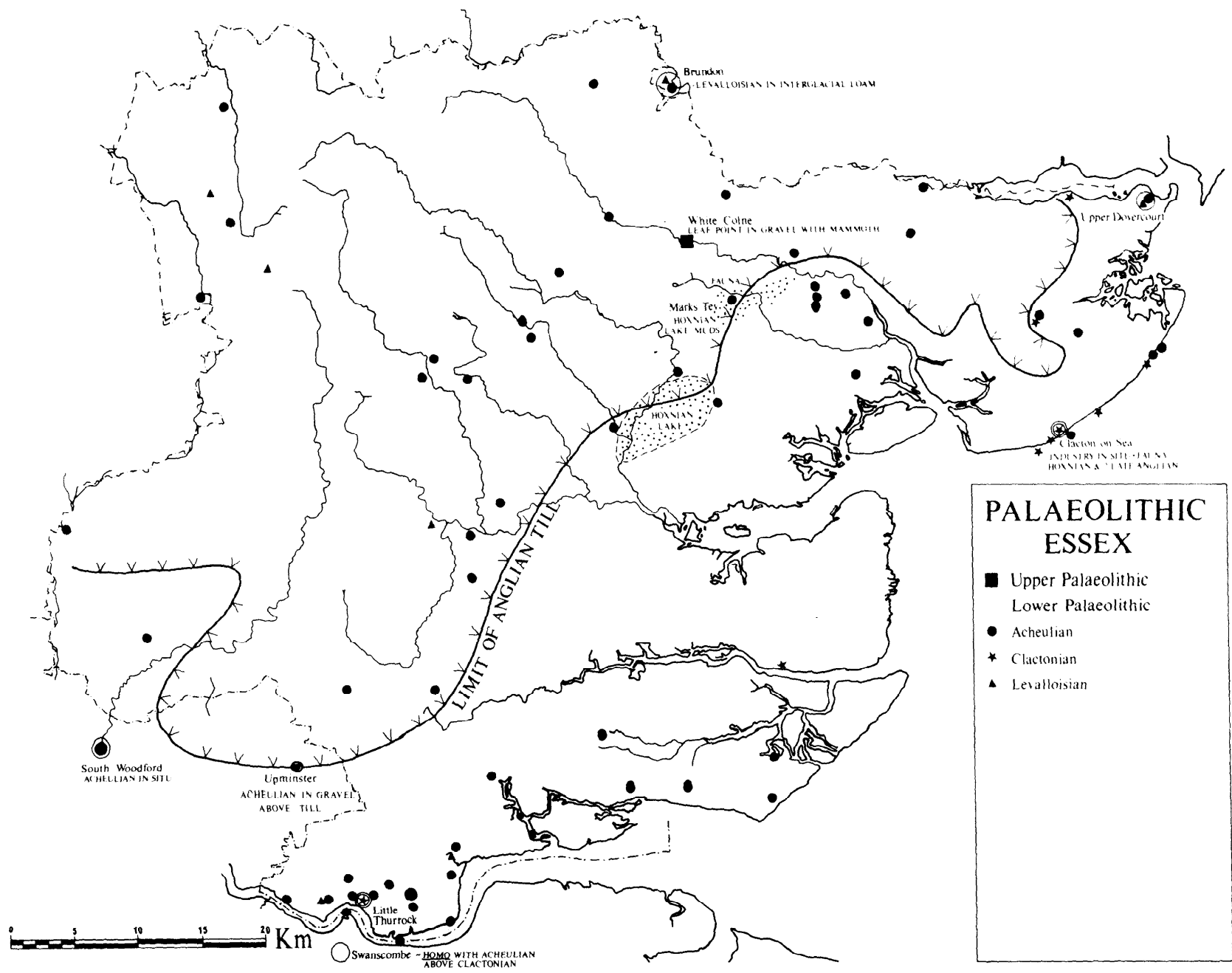
PALAEOLITHIC ESSEX

■ Upper Palaeolithic

Lower Palaeolithic

● Acheulian

✶ Clactonian

▲ Levalloisian

Fig 3   Distribution map of Palaeolithic sites in Essex (Crown copyright reserved)

archaeological sequences at this time warrants an explanation. One would be that Britain was already insular, and was to remain so until the low sea level of the latter part of the Devensian, *c* 30,000-15,000 BC, created a land bridge. However, this coincided with the maximum extent of the Devensian ice sheet. It did not extend further south or nearer to Essex than the very north of Norfolk, but periglacial conditions would not have been conducive to any human occupation other than occasional hunting forays in the late summers. Campbell (1977) has divided the British Upper Palaeolithic into Earlier and Later periods, the former occurring prior to the maximum extent of the Devensian ice, and the Later from about 13,000 BC after its retreat. Neither of these periods is well represented in Essex, although the one find of a bifacial leaf point of Earlier British Upper Palaeolithic date is one of the best stratified, securely dated examples in Britain. It was found by Nina Layard (1927) within gravel underlying a Mesolithic site at White Colne. It was at a depth of '8 ft, in white sand overlying the blue loam which is below water level'. The same gravel yielded a complete mammoth tusk, two teeth fragments, and molars of horse, Bos, and ibex.

The Later British Upper Palaeolithic is virtually unrepresented, although Dr Jacobi has drawn attention to a tanged point from Shoeburyness that could well be of this period. The lack of evidence need not imply lack of occupation, for it is almost certain that movement from the continent would have been up the major river valleys, especially the Thames. The sea level would have been 30 m or more below the present and it can be assumed that camping sites from the end of the Devensian stage and through Zones I-III of the Flandrian are now buried beneath that thickness of sediment. Zone III, the Younger Dryas, appears to have been much colder and more catastrophic than generally supposed. Periglacial or near-periglacial conditions must have bared the landscape and brought vast quantities of rock waste into the river valleys. This was the time when coarse deposits infilled most of the buried channels. Sea level was rising and, by Zone IV times, *c* 8500 BC, Essex, although still connected to the continent, had assumed much of its present topography. Tundra and steppe was giving way to pine and birch forest and Mesolithic hunting communities were exploiting the herds of game that migrated seasonally into the country.

Note

[1] Boreholes made on this site in January 1979 demonstrated the presence of *c* 2 m of potentially rich archaeological levels of organic muds (= Freshwater Beds), but at depths of *c* 15 m. Reluctantly, it had to be concluded that the archaeological investigation of these deposits at such a great depth would be too difficult and costly to justify.

References

Bishop, M J, 1975   Earliest record of man's presence in Britain, *Nature*, **253**, (5487) 95–7

Campbell, J B, 1977   *The Upper Palaeolithic of Britain*, 2 vols

Carreck, J N, 1976   Pleistocene mammalia and molluscan remains from "Taplow" Terrace deposits at West Thurrock, near Grays, Essex, *Proc Geol Ass*, **87** (1), 83–91

Gruhn, R, Bryan, A L, & Moss, A J, 1974   A contribution to Pleistocene chronology in southeast Essex, England, *Quaternary Research*, **4**, 53–71

Haggard, H J E, 1972   The sand and gravel resources of the country around Witham, *Inst Geol Sciences Report*, **72/6**, 1–90

Layard, N F, 1927   A late Palaeolithic settlement in the Colne Valley, Essex, *Antiq J*, **7**, 500–14

Mitchell, G F, Penny, L F, Shotton, F W, & West, R G, 1973   A correlation of Quaternary deposits in the British Isles, *Geol Soc London, Special Report No* **4**, 99

Oakley, K P, Andrews, P, Keeley, L H, & Clark, J D, 1977   A reappraisal of the Clacton spearpoint, *Proc Prehist Soc*, **43**, 13–30

Palmer, S, 1975   A Palaeolithic site at North Road, Purfleet, Essex, *Essex Archaeol Hist*, **7**, 1–13

Pike, K, & Godwin, H, 1953   The Interglacial at Clacton-on-Sea, Essex, *Quart J Geol Soc*, **108**, 261–72

Roe, D A, 1968   *A gazetteer of British Lower and Middle Palaeolithic sites*, CBA Res Rep **8**

Rose, J, & Allen, P, 1977   Middle Pleistocene stratigraphy in south-east Suffolk, *J Geol Soc London*, **133** (1), 83–102

Singer, R, Wymer, J J, Gladfelter, B G, & Wolfe, R, 1973   Excavation of the Clactonian Industry at the Golf Course, Clacton-on-Sea, Essex, *Proc Prehist Soc*, **39**, 6–74

Smith, W G, 1894   *Man the primeval savage*

Sutcliffe, A J, & Kowalski, K, 1976   Pleistocene rodents of the British Isles, *Bull Brit Mus (Natur Hist) Geology*, **27** (2), 1–147

Turner, C, 1970   The Middle Pleistocene deposits at Marks Tey, Essex, *Phil Trans Roy Soc London*, **B257**, 373–440

Wymer, J J, 1970   A hand axe from Witham, Essex, in Excavations at Witham Lodge, Essex, 1972, (R T Brooks & A H Stokes), *Essex J*, **10** (4), 123–8

Considerable problems surround the interpretation of radiocarbon dates for the British Upper Palaeolithic, problems triggered most often by very real doubts as to the genuineness of associations between the samples dated (usually bone) and finds of archaeological material. In other cases, most notably that of the 'Red Lady of Paviland', the very small size of the actual sample used for dating raises doubts as to the reliability of the age obtained. Bearing these problems very much in mind, and depending upon one's preconceptions of human tolerance of a severe climatic regime, it would be possible to argue that a human population was absent from Britain during the period of maximum ice advance of the last glacial, recolonization perhaps only taking place as late as the 13th or more probably the 12th or 11th millennia bc. Evidence for this resettlement derives mainly from rock shelter and cave sites in western and northern England and even a detailed search of museum collections has revealed little complementary evidence from eastern England attributable to this Late-glacial period. Such evidence as there is takes the form only of isolated artefacts whose real age is suspected on purely typological grounds.

'Late-glacial' artefacts fall into three distinct groupings: (1) shouldered points, trapeziform (Cheddar) and angle-backed (Creswell) points; (2) convex backed 'Penknife-points' which become extremely numerous within Northern European flint assemblages dated close to 9400 bc; and (3) tanged points whose appearance, often replacing Penknife points, dates to the last centuries of the 10th millennium bc.
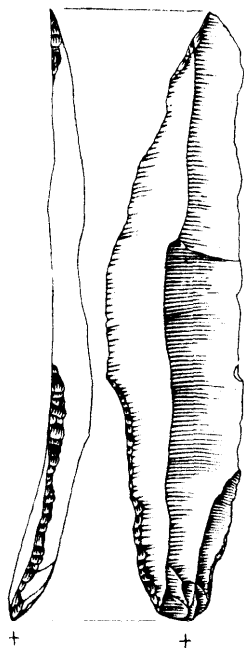

Fig 4   Shouldered point from Shoeburyness (Scale 1:1)

A single shouldered blade (Fig 4) collected by Laver from the foreshore at Shoeburyness (Site XII: Colchester Museum) falls clearly into the first of these groupings. Unrolled and with a length of 82 mm and a width of 18 mm it resembles closely points from Oare in N Kent (Clark 1938), New Faygate in Sussex, and Mildenhall Fen, Suffolk (Garrod 1926, 169, fig 42). If one is correct in assuming that such forms derive from the shouldered points of the Hamburgian whose nearest occupation sites, however, lie over 300 km to the east in Utrecht and Gelderland (Tromnau 1975, Abb 30) the Shoeburyness artefact could be as early as the last centuries of the 12th millennium bc (Menke 1968, 81-2) and thus represent the earliest exploitation of part of Essex after the maximum of the last glaciation.

While no 'Penknife points' could be recognized from the county, what appear to be tanged points came from three sites. From Prior's Brickyard at Widford near Chelmsford a near complete (Fig 5, 1) and a broken tanged point (Colchester Museum Acc No 286.57) were recovered from a depth of 2 ft 6 in 'under rainwash on top of Brick earth' by F N Haward and given by him to Mothersole (Haward ms, British Museum; the damage to the left hand side of Fig 5, 1 is recent). In the Hassall collection from Stone Point (Walton-on-the-Naze, Fig 5, 3) is another tanged point apparently associated with a group of stone struck flakes and blades, the whole group patinated a deep cream (for comments on this patinated assemblage and its stratigraphy see Warren *et al* 1936, 204; footnote, Warren 1940, 3; and Zeuner 1958; 98). In Colchester Museum is a fourth tanged piece (Fig 5, 2) which can only now be provenanced to North Essex, perhaps to the area around Manningtree.

That the tanged points from Widford and Walton were (apparently) associated with waste material and that a pair of points was found at Widford argues strongly that these artefacts may derive from living sites rather than representing just hunting losses. If so, the potential exists for carrying settlement archaeology in Essex back into the Late-glacial, precisely as was achieved in Denmark in the 1940s when similar scattered finds of tanged points were fully investigated. The Essex finds help make up a thin scatter of such points ('Steilspitzen') spread around the south-east of England from Cranwich in Norfolk (Wymer 1971, fig 1, 5) and Ipswich (Bolton and Laughlin's Pit: Moir 1932, 259-61) in the north round into Sussex (Newhouse Farm, Buxted) and western Hampshire (Mace 1959). Made on parallel sided blades requiring retouch to bring them to a point rather than on pre-formed flakes or blades, these tanged pieces resemble most closely the tanged points of the Northern European Bromme-Lyngby group whose innovation lies at some point within conventional pollen zone II (Iversen 1946)—if the isolated radiocarbon dates are any guide, close to 9200 bc (Kozlowski 1975). It must remain speculative whether in Britain their use extends, as appears to be the case in Jutland at least (Iversen 1942), into the final cold phase of the Late-glacial–Youngest Dryas zone III (8800-8300 bc).

So far from Essex we have no sites attributable to the 'long blade' industry recognized from Suffolk (Wymer 1976; Moir 1914), Kent (Burchell 1938), and the Upper Thames
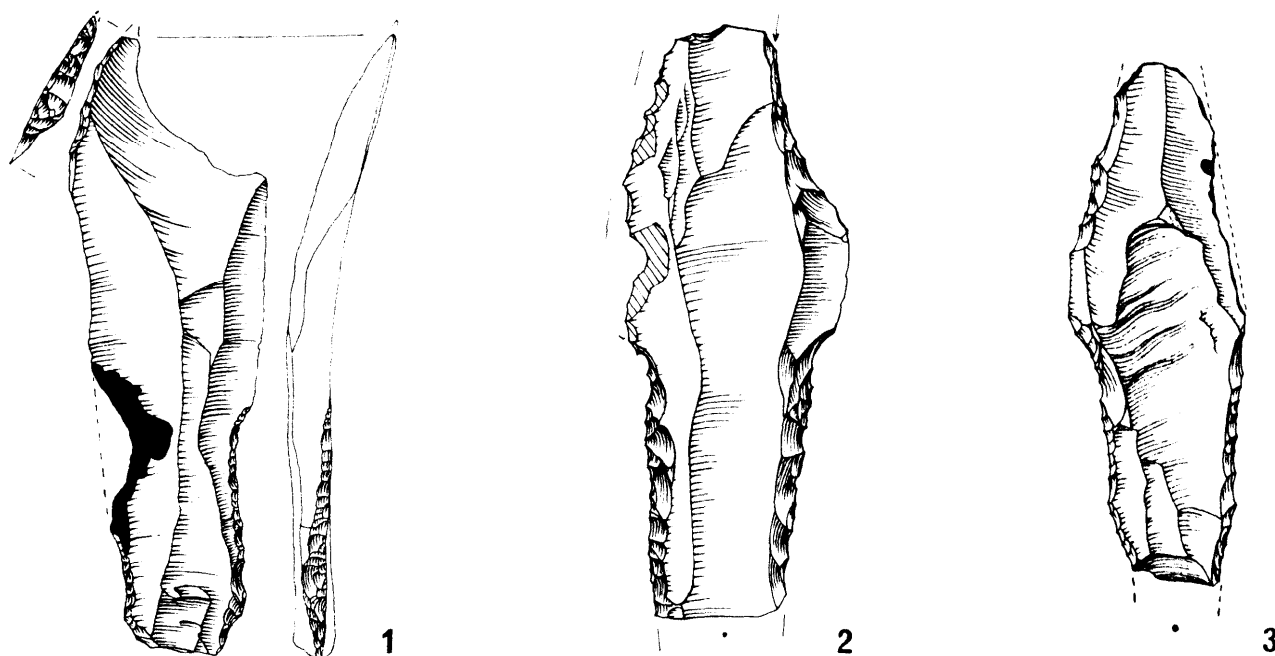
Fig 5　'Tanged points' (for provenances see text) (Scale 1:1)

and Kennet Valleys. Evidence for dating these occurrences is peculiarly slight and it is likely that more than a single industry is being lumped under this rather loose covering term by virtue of having produced many long blades, burins on long blades, and end scrapers. However the material from Springhead at least is dated by its associated land mollusca to earliest Zone IV, suggesting that other occurrences of this technology may also be found to be of Earliest Post-glacial age. A single microlith (a rhombic point) was found at Springhead and isolated simple microlith shapes are recorded from other sites. If these 'long blade' sites could be shown to form a close typological group and if their dating as Earliest Post-glacial could be confirmed elsewhere it would seem possible that we have here some of the earliest manifestations of a microlithic technology in Britain—a technology probably deriving from the rather earlier microlithic material found in the continental Ahrensburgian. These 'long blade' occurrences would thus be broadly contemporary with such more standard Earliest Mesolithic sites as Thatcham IIIA. Such a suggestion might go far in supplementing the pattern formed by carbon dates for the earliest Post-glacial microlithic industries from Britain with the oldest determinations at or a little before 8000 bc coming from the Kennet Valley, within the area of these 'long-blade' sites, and rather younger ages as one passes west and north, the youngest dates for Post-glacial settlement deriving from Scotland, N Wales, and Ireland. Essex lies at the centre of these developments and it may be suspected that it is only a matter of time before it too will have evidence to contribute in the form of 'long-blade' sites.

References

Burchell, J P T, 1938　　Two Mesolithic 'floors' in the Ebbsfleet Valley of the Lower Thames, *Antiq J*, **28**, 397–401

Clark, J G D, 1938　　Reindeer hunters' summer camps in Britain? *Proc Prehist Soc*, **4**, 229

Garrod, D A E, 1926　　*The Upper Palaeolithic Age in Britain*

Iversen, J, 1942　　En Pollen analytisk Tidfaestelse af Ferskrand-slagene ved Nørre Lyngby, *Meddelelser Fra Dansk Geologisk Forening* Band **10**, Heft 2, Copenhagen

———, 1946　　Geologisk Datering af en Senglacial Boplads ved Bromme, *Aarbøger*, 198–231

Kozlowski, S K, 1975　　Quelques remarques sur le Brommien, *Acta Archaeologia*, **46**, 134–42

Mace, A, 1959　　The excavation of a Late Upper Palaeolithic open-site on Hengistbury Head, Christchurch, Hants, *Proc Prehist Soc*, **25**, 233–59

Menke, B, 1968　　Das Spätglazial von Glüsing, *Eiszeitalter und Gegenwart*, Band **19**, 73–84

Moir, J Reid, 1914　　The discovery of a flint 'workshop-floor' in Ivry Street, Ipswich, *Proc Prehist Soc E Anglia*, **1**, 475–9

———, 1932　　Further Solutré implements from Suffolk, *Antiq J*, **12**, 257–61

Tromnau, G, 1975　　Die Fundplatze der Hamburger Kultur von Heber und Deimern, Kreis Soltau, *Materialhefte zur Ur und Frühgeschichte Niedersachsens* Hefte **9**, I–VII and 46, Hildesheim

Warren, S H, 1940　　Geological and prehistoric traps: presidential address, *Essex Natur*, **27**, 2–19

———, Piggott, S, Clark, J G D, Burkitt, M C, & Godwin, H & M E, 1936　　Archaeology of the submerged land surface of the Essex coast, *Proc Prehist Soc*, **2**, 178–210

Wymer, J J, 1971　　A possible Later Upper Palaeolithic site at Cranwich, Norfolk, *Norfolk Archaeol*, **35**, 259–63

———, 1976　　A long blade industry from Sproughton, *E Anglian Archaeol*, **3**, 1–10

Zeuner, F, 1958　　*Dating the past*, 4 edn

While for evidence of the Late-glacial exploitation of Essex we are dependent upon the recognition and interpretation of isolated, but seemingly diagnostic artefacts, we are in the Post-glacial able for the first time to deal with assemblages of flint tools or rather, as will become apparent, collections made from what were originally assemblages. However, a glance at Fig 6 reveals that the bulk of the evidence for mesolithic activity within the county is instead still based upon isolated finds of transversely sharpened core-adzes ('Tranchet' adzes) or small groups of parallel sided blades and blade cores (optimistically regarded as Mesolithic) with only comparatively rarely any accompanying microlithic equipment. A broken barbed point of antler from Fisher's Green (Waltham Holy Cross), the outline of whose notched edge is closely similar to that of the well known Wandsworth point (Clark 1932, fig 2, 7), is the only representative of the bone and antler equipment used by at least the earliest Mesolithic groups.

No Essex find spot is dated either by pollen or radiocarbon and fitting what artefact material we do have into any chronological framework involves typological comparisons with dated assemblages outside the county. However, only 100 metres over the county boundary into Hertfordshire we have the complex of sites at Broxbourne where some six artefact concentrations, of both the Early and Later Mesolithic, have been investigated along the course of the Old Nazeing Channel (Warren *et al* 1934, for early finds) either sealed below or stratified into peat deposits formed within the flood-plain of the Lea, and dated either by radiocarbon or pollen analysis or a combination of both.

Similarly too—as for the rest of East Anglia—there are no faunal samples relating to the period and it must remain a speculation that the principal game animals were Red deer and Pig (Jarman 1972), a proposition supported by identifications of the isolated bones from Broxbourne (sites 104 and 106A). Roe deer and Aurochs will also have been exploited together with, during the Pre-Boreal and earliest Boreal zone V, Elk. Again there is no evidence for plant foods, the only potential record from East Anglia being several carbonized hazel nutshells from Kelling recovered from an apparently Mesolithic context.

Recent work suggests at the crudest the division of the Mesolithic into an Early and a later stage (Jacobi 1973; Mellars 1974, 1976), the Early Mesolithic, covering the 8th millennium bc and the first two centuries of the 7th, resembling closely the North European early Maglemosian (Jacobi 1976). Two Essex sites–Hillwood, High Beech (Epping) and White Colne–appear certainly to belong to this early stage when, with sea level between 50 and 35 metres below present, and marine penetration of the present Thames estuary, an event only occurring towards 7000 bc (D'Ollier 1972, fig 5), Essex would have been encased within a larger land mass, which extended at the beginning of the period unbroken to Scandinavia. Two further small groups of material from Dawes Heath (Thundersley and Pledgdon may also be best interpreted as Early Mesolithic.

Records of Warren's work on the edge of a clay pit cut into the Claygate Beds at High Beech in Epping Forest are minimal. Discovered at some date prior

to 1913 (Warren 1913; Warren, *Neolithic implements and antiquities* (catalogue) vol 3, 147, Brit mus), the earliest finds comprised 'Cores, hammer-stones, fabricators . . . and one or two small fragments of prehistoric pottery . . .' associated with 'pygmy' implements. No additional information is given in this preliminary account published in 1913 nor in a subsequent note (Warren 1918, 20). However in 1919 as if in further amplification the site is described as '. . . another pit dwelling site . . .' and a sherd of pottery specified as Beaker is noted as having been recovered from a depth of 2 ft. This was regarded as 'probably. . . contemporary' with the other finds but we are not told whether this sherd–now lost–was from within or outside the pit feature (Warren 1919, 103). Clark noted that the flints were found '. . . tightly concentrated in and immediately around a small depression . . .' which'. . . might well represent the remains of a pit dwelling. . .' (Clark 1932, 62-3; see also Clark & Rankine 1939, 104, footnote). Finally a note boxed with the finds states of the 'pit dwelling' that '. . . only a small part (had) been dug (by) 1940 . . . .' Further excavation was undertaken by Warren in 1954 but no account survives of his activities at this date. At no point is the pit feature itself described in any further detail and nowhere are any dimensions recorded.

Considerable difficulties attach to the material now preserved in the British Museum as from High Beech. Warren in his *Emergency notebook,* after explaining the code for the very small group of artefacts specifically marked as coming from the 'microlitic pit dwelling', goes on to remark that '. . . at the time of writing the marking of this group (had) not yet been done. . . .' The great bulk of the material is in fact still unmarked and it is difficult to place much reliance on subsequent divisions of the assemblage into what are believed to represent portions from the 1954 or previous excavations, or items from within the 'pit dwelling'. For the purposes of discussion, therefore, the material is divided into two parts: those artefacts *marked* as coming from the pit, some of the larger pieces among which bear a further symbol indicating that they are from the base or middle of the pit; and the residue upon which no further sorting appears desirable.

The marked material from the pit (to be published elsewhere) comprises, in addition to some 1578 pieces of waste, half a dozen cores, and a broken quartzite hammerstone, some sixteen microliths with eight microburins, six convex scrapers, a 'pseudo-burin', a mèche de foret (cf. Clark 1975, 108, fig 11), a pair of nosed awls, and three punches (cf Rankine 1952, 33). Of the microliths, perhaps the only 'closed' group from Essex, four are unclassified fragments, eight are simple obliquely blunted points (classes 1A and 1B: Fig 7), two are elongated trapezoids (class 2B), one a rhomboid (class 3A), and the last a lanceolate point (class 3D). (Two of the microliths and the mèche de foret are illustrated in Kozlowski 1975, 191, fig 13, Nos 16, 21, and 7 respectively, and wrongly attributed to Broxbourne site 102.)

If we take the whole assemblage as preserved in the British Museum, it contains 102 microliths. Significantly none of these, either those sufficiently complete (68) to be characterized by shape (Fig 7) or those too fragmentary (34), need be a late shape of microlith. If we go on to compare the classifiable shapes with the very substantial assemblage
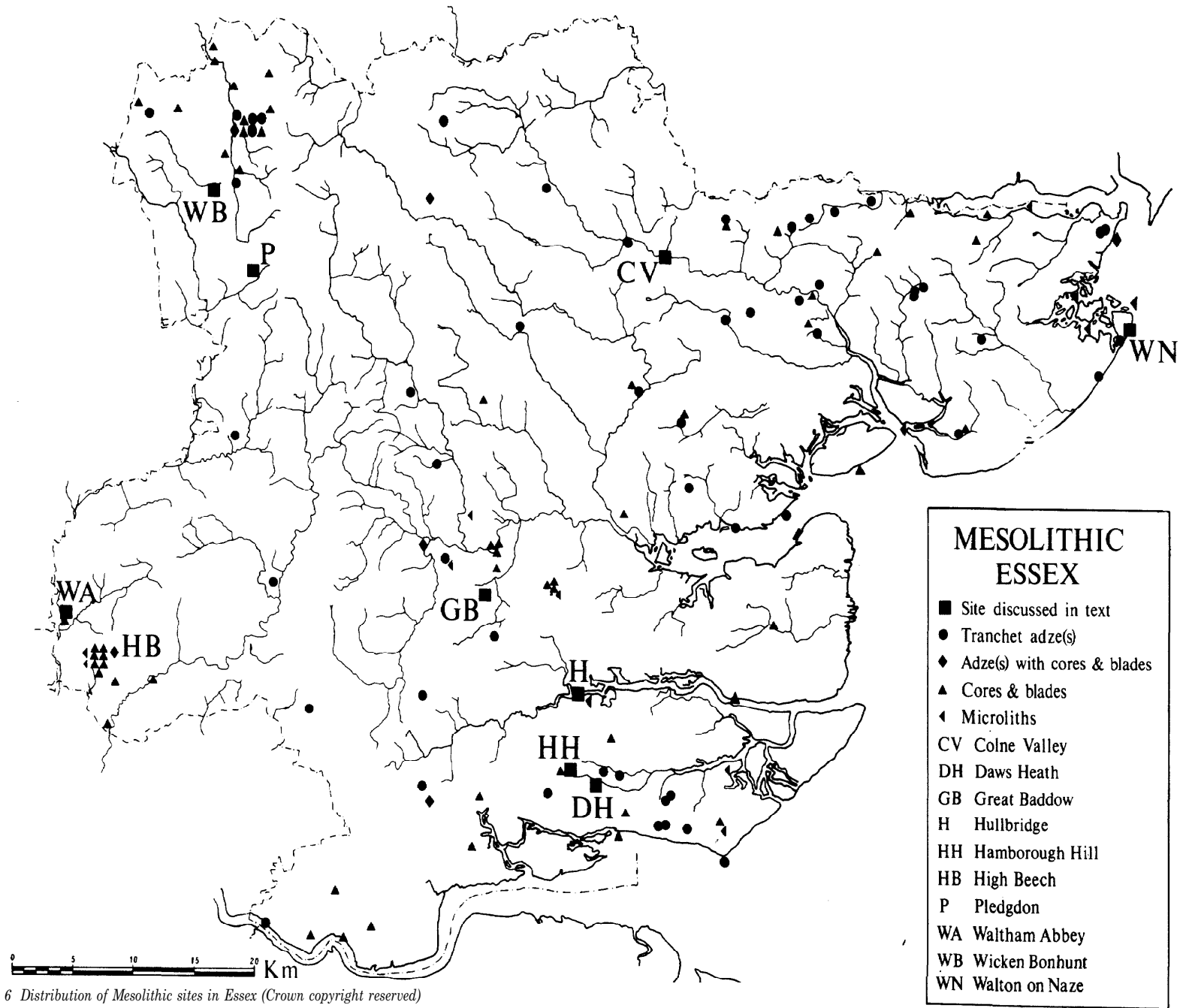
Fig 6 Distribution of Mesolithic sites in Essex (Crown copyright reserved)

MESOLITHIC ESSEX

■ Site discussed in text
● Tranchet adze(s)
♦ Adze(s) with cores & blades
▲ Cores & blades
◀ Microliths
CV Colne Valley
DH Daws Heath
GB Great Baddow
H Hullbridge
HH Hamborough Hill
HB High Beech
P Pledgdon
WA Waltham Abbey
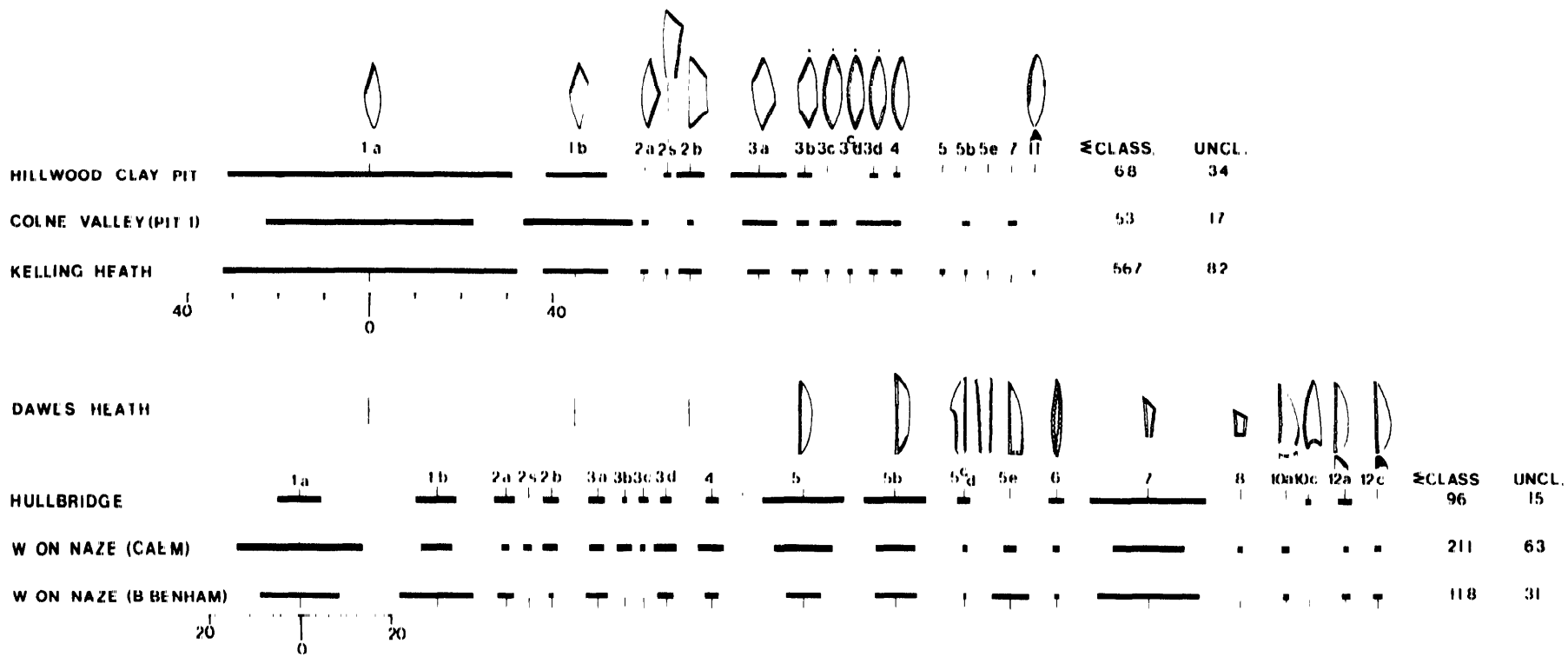WB Wicken Bonhunt
WN Walton on Naze

Fig 7 Composition of principal microlithic assemblages

(567) from Kelling Heath in North Norfolk (Clark 1932, 54-7 and refs therein), there are quite striking similarities both in the ratio of obliquely blunted points to more 'elaborate' forms (classes 2A-4) and in the patterns of representation within this latter group. Thus the more 'elaborate' shapes present in the much smaller Hillwood assemblage are precisely those which are most common at Kelling—ie those shapes most likely to be represented in a smaller sample of a similar assemblage.

Functionally, however, the Hillwood assemblage differs from Kelling in the far heavier representation of microburins—71:102 compared with 28:649 at Kelling, indicative of an apparently greater preparation of hunting equipment at Hillwood The ratio of scrapers to microliths (1:3.4) is conversely much lower than at Kelling (1:1.8) and there is a similarly reduced ratio of burins. Compared to some 37 core adzes at Kelling, there is only a single adze from Hillwood, and statistics showing a similar trend could be presented for the other non-microlithic tool categories. These differences, the higher representation of microburins and the lower representation of processing equipment at Hillwood compared to Kelling resemble—albeit in a lesser degree—the pattern observed between upland Maglemosian sites in Yorkshire, interpreted as summer hunting and extractive camps, and sites on low ground in the same area, which appear, at least in part, to have been winter settlements (Jacobi 1978a).

The finds at White Colne were made in terrestrial deposits ('Loam') exposed in a pair of gravel pits (Pits I and II) dug an unknown distance apart into the Colne flood plain (Layard 1927; Clark 1932, 59-62 and 173; Rankine 1956, 21; also Clark & Rankine 1939, 97 and 104). While it appears that most finds were made in Pit I and that some at least were associated with ? artificial depressions (see below) the great bulk of the artefacts are unmarked, and it is possible only to refer to this pit pieces which carry relevant pencil jottings and that material illustrated in the *Antiquaries Journal* for 1927 when only nine unretouched pieces had been recovered from Pit II (Layard 1927, 508; much material was recovered from this pit subsequent to the publication of this report). Even for the finds from Pit I, however, we are ignorant of from how great an original area they derived and whether more than a single artefact scatter was being investigated, perhaps in different faces of the pit.

While in addition to the microlithic equipment the finds from Pit I include a dozen core adzes (*ibid,* 511, fig 7), a sharpening flake, and retouched and truncated blades, there is an absence, as Clark originally noted (1932, 60) of scrapers, usually the most common non-microlithic tool in any early assemblage, and certainly none is illustrated by Layard. This and other features of the assemblage suggest selective collection or retention, a factor which renders the collection unsuitable for statistical treatment.

All except two of the microliths (class 5B: Layard 1927, fig 2, 56; class 7: *ibid,* fig 1, 16) are early shapes, the assemblage standing apart from both Hillwood and Kelling (Fig 7) in the high proportion of obliquely blunted points with retouch on the leading edge, and the much larger number of lanceolate points (Classes 3C and 3D). If these differences are not both simply products of the selectivity we have already suspected it could be that the greater proportion of lanceolate points indicates a rather later date within the local Maglemosian, a proposition already advanced as one explanation of a similar variability observed between Early Mesolithic assemblages within the Weald (Jacobi 1978b).

From a second pair of Essex sites comes material which it seems reasonable to regard as Early Mesolithic From among a much larger collection of flint work, much of it

Neolithic, retrieved from a sand pit at Pledgdon half a mile NE of Elsenham Cross, it is possible to sort out a group of twelve microliths, all simple forms (classes lA, 1B, 2A, and 2B), a pair of tranchet adzes, four resharpening flakes, burins, and truncated blades. Of this material the microliths, a serrated blade, and a small quantity of waste are specified as deriving from one or another of '. . , two pit dwellings . . .' (Warren 1945, 275).

Of the flints collected during the late 1920s from a sand pit on the Wyburn Heights Estate (Dawes Heath, Thundersley) all, with the exception of two flakes from polished axes, a discoidal and a piano-convex knife, could be Mesolithic. The striking feature of this collection is the number of core-adzes recovered—28 transversely sharpened (Fig 8b, 1) and five non-tranchet forms (Fig 8b, 2) together with fragments and resharpening flakes. The ten microliths (Fig 8a, 1-10) are all potentially early shapes with individual lengths only to be expected within an early context (Pitts & Jacobi, in preparation). Complementing this flint equipment is a pebble of pinkish quartzitic sandstone with the beginnings of a perforation on its upper face. Nearly identical in both size and outline (Fig 8a, 11) to a partly drilled pebble from Lower Halstow, Kent (Burchell 1927, pl III, 10), the Dawes Heath example is similar to the bulk of certainly or potentially Mesolithic drilled and partly drilled pebbles in its near circular outline and the heavy pecking applied to its perimeter in order to achieve this. The purpose of these drilled pebbles which seem to appear in the later 8th millennium bc has been much discussed (Rankine 1953, 186; Roe 1968, 1%) and whatever the function of later more elaborate perforated artefacts, it seems not improbable that these carefully rounded 'discs' served as the weights for bow and pump drills, the use of which was suspected at Star Carr for perforating the beads in a shale necklace.

Of the four assemblages defined above as early, that from Hillwood, despite the difficulties surrounding the collection, is the most useful, By contrast the other three collections represent fragments of assemblages in each case variously biased in their collection. All four assemblages, it is suggested, should fit within the 8th millennium bc, a proposition supported by a single radiocarbon date for a group of early microliths at Broxbourne site 106A (Q1146 = 7408 bc ± 50). It is possible that the assemblage from White Colne with its higher proportion of convex backed microliths is more recent than that from Hillwood. It is within this millennium that the barbed point from Fisher's Green would fit more easily.

It is not impossible too that with larger samples of microliths the groups of artefacts recovered from the Cloister site at Waltham Abbey (Huggins 1970, 223-8) and from the surface at Carter's Camp Field at Great Baddow (Colchester museum) might also prove to be early Mesolithic.

In three cases-Hillwood, Pledgdon, and White Colne-it has been suggested that the artefact material discussed derived from 'pit dwellings' and, while in no case has the evidence been presented for considering whatever features were encountered as artificial, the depressions at White Colne have been interpreted as the earth houses of a winter settlement (Clark & Rankine 1939, 104) perhaps comparable to those investigated at Farnham. Here it seems that at least three depressions were observed in the surface of the flood plain gravels, about one of which we are told that it was 8 ft across by 4 ft deep (Layard 1927, 498)-depth presumably being measured as below the present surface. (For estimate of vertical scale see size of a spades in *ibid,* pl LX.) In the absence of any plan, however, it is impossible to know whether the single horixontal measurement—8 ft—
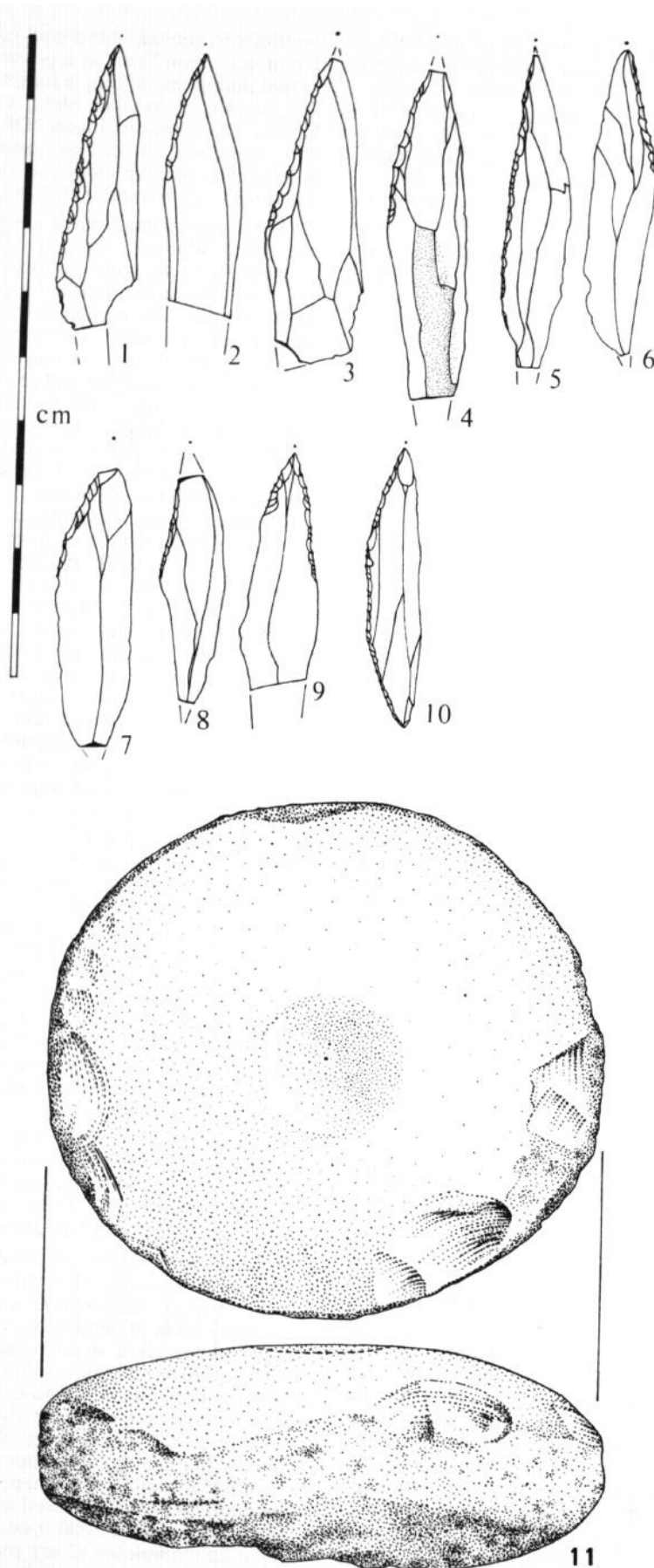
Fig 8a Artefacts from Dawes Heath, Thundersley. 1-10 microliths and 11 'mace head' (Scale 1:1)
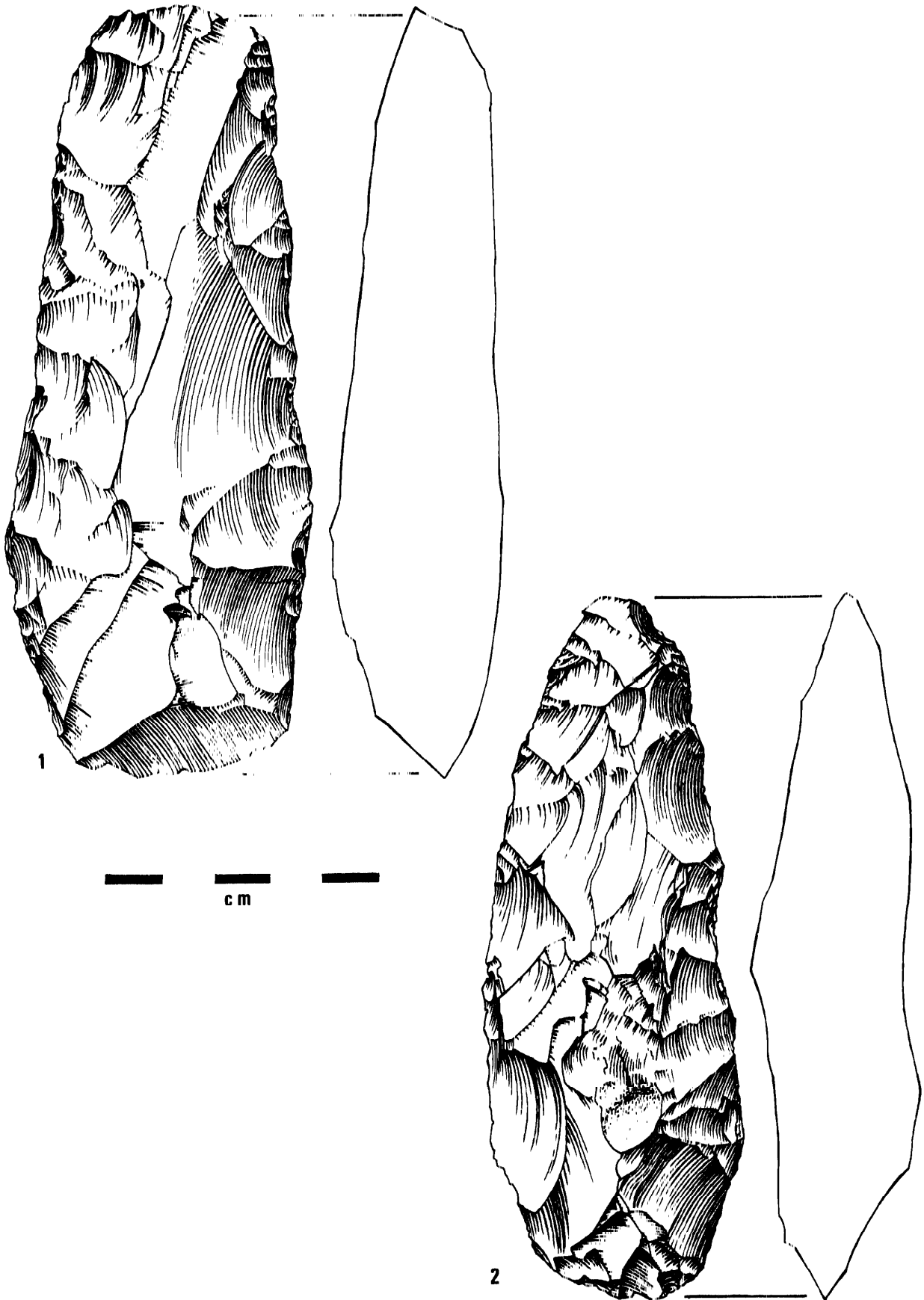
Fig 8b   Artefacts from Dawes Heath, Thundersley. 1 and 2 axes

represents a maximum dimension or simply a measurement taken across the remnant of a more substantial feature when exposed by gravel digging. Notes jotted on a small number of the flints refer to a '4ft pit' (? the same feature) while others are marked as coming from a 'depression 2 ft by 4 ft'. A core and a small group of waste derived from a 'pit dwelling' with no dimensions specified. All these artefacts like those marked as found in (or with) a pair of 'hearths' in the same gravel pit appear to be Mesolithic ,see also Layard 1927, fig 3, 1-13 and there is no reason to associate any of the Neolithic material recovered *(ibid,* fig 4, 4 and 6) with these features.

It was Warren 1940, 4 who pointed out that a falling tree would '. . . tear up a hole in the ground . . .' the roots '. . . often forming a sheltering wall standing on one side of the hollow . . .' while a recent paper (Kooi 1974) has demonstrated that whole clusters of pit-like features up to four metres across and originally interpreted as groupings of artificial storage pits or hut-hollows were instead the now infilled depressions left by fallen trees- hollows which, while entirely natural, could (ibid, 64, fig 7A,) still have served as points of shelter for prehistoric man and accumulated occupation debris in their bases. As with other earlier records of apparently Mesolithic hollows in Britain ef Toms 1907, the quality of the evidence for these Essex occurrences is insufficient to allow us in any way to choose between an entirely natural origin, such as that described by Kool, or an artificial one. Certainly in no case is the evidence of a calibre which would any feature of group of features to be taken as evidence of winter pit houses.

Microlithic industries attributed to what is now termed the 'Later Mesolithlc' are characterized by the appearance of narrow scalene triangles (Fig 7, class 7) and straight backed microblades (class 5). While such assemblages appear in Northern England in the first half of the 7th millennium be when Britain was still joined by a narrowing land bridge to mainland Europe, and in southern England in the second half of the same millennium (Jacobi 1976, 74, fig 7), the only dated assemblages from East Anglia proper appear to be late in the overall sequence. Thus a group of micro-triangles from Broxbourne (site 105) is dated to close to the Boreal/Atlantic transition and occurs in peat above a radiocarbon date of Birm 342 = 5880 bc ± 520, while at Shippea Hill later Mesolithic artefacts were entering accumulating peat between a pair of determinations of Q587 = 5660 bc - 150 and Q586 = 4744 bc ± 150. By this time Britain, an island for almost a millennium, was approaching its present geography.

Apart from isolated later microliths from Epping Forest 'Pillow Mounds; illustrated in Kozlowski 1976, fig 1, 17 and wrongly attributed to Hillwood), Colne Valley (Pit I (see above, and Pit II: a scalene micro-triangle), and a small unpublished group from Wicken Bonhunt, there are two major collections of' microliths from the county which contam a high proportion of later shapes-from Walton and Hullbridge. Neither could be described as an assemblage. The finds from Walton are divided between two collections: the Hassall collection at Cambridge (Clark 1932, 62; Warren *et al* 1936; Rankne 1956, 21) and the collection of Mr Brian Benham. The microliths were picked up with a greater bulk of later prehistoric flintwork-including over 1000 pressure-flaked arrowheads—over a two mile length of coast south of Stone Point, and must represent the flotsam from an unknown original number of occupation sites presumably originally stratified within the terrestrial deposits of the 'Old Land Surface' now being broken up at mid-tide level by the action of the waves.

The Mesolithic material has, of course, been washed up together with the contents of later prehistoric flint assemblages from which it cannot in any way be distinguished in terms of physical condition. Thus, while it is possible to isolate among the various collections a dozen core adzes of tranchet type, adze sharpening flakes, punches, a small number of burins, and at least one 'drilled pebble' as certainly or potentially Mesolithic, it is not now realistic to attempt to isolate any real assemblage (or assemblages) from this site. Thus only the microlithic portion of the collection is relevant to the discussion.

Some 55% of the microliths in the Hassall collection and 48% in the Benham collection whir-h are apparently early shapes (classes 1-4) could have been lost at any point within the Mesolithic, and may suggest that sites belonging to early as well as late stages of the period arc being destroyed and their contents mixed. The rare 'Horsham points' class 10 may represent specimens originally associated with later microlith shapes, as documented from a number of assemblages in south-eastern England, or might derive from rather earlier assemblages possibly of the 7th millennium be Jacobi 1978b where their associations would be with a comparatively restricted range of effectively early mcrolith shapes. In Essex such a grouping may have existed at Hamborough Hill (Reader 1911, 251-4).

Of the remaining microlith shapes 14% Hassall and 22% Benham are scalene micro-triangles and 20% and 16% straight microlithic 'rods', forms which they appear in south-eastern England in the 7th millennium be remained in use up to the end of the period. The single micro-rhomboid class 8 in the Hassall collection and a group of 14 'right-angle' microliths class 5E, Warren *et al* 1936, fig 11, 10 are of more significance to us since, in Britain at least, both shapes are absent from any assemblage earlier than a little after 5000 and there is no suggestion of either form being derived from the continent at a moment when a dry land connection existed 'pace Kozlowski 1976, maps 1 and 2. At the complex site of Broomhill (Hants) such micro-rhomboids only appear above a radiocarbon determination of Q1191=5270 bc ± 120 while at the Hermitage Rock Shelter East Sussex micro-rhomboids and a single 'right-angle microlith' are associated with a date of Q1312=4850 be. 110. It could perhaps further be argued that the 'micro-tranchet' forms recovered at Walton (classes 5C and 5D. Warren *et al* 1936, fig 11, 13) again only appear close to 5000 bc.

It thus appears possible to demonstrate that some at least of the Mesolithic activity at Walton took place at a time when the main part of the post-glacial rise of sea level had been achieved and when, with the exception of localized horizontal erosion (D'Ollier 1972. 128-9). the Essex coast had reached its present outline. While fronted by a gradually disappearing spine of London Clay The Wallet-Shipwash Spineland', the 'home range' of the Walton site will, at 5000 be, taken in the extensive combined saltwater estuary of the Orwell and Stour and a coastal zone including a considerable expanse of tidal flat. Walton is only one of some fifty occurrences of Mesolithic artefacts around south-east England carried below present tide level by combined rise of sea level and crustal down-warping (Churchill 1965). With the exception of the 'drilled pebble' from Southampton (Rankine 1949) none of these finds is in any way independently dated, and (pace Palmer 1977, 111) of these only the collection from Walton contains sufficient typological elements to allow a part at least of the activity on the site to be related to contemporary sea-level and coastal geography.
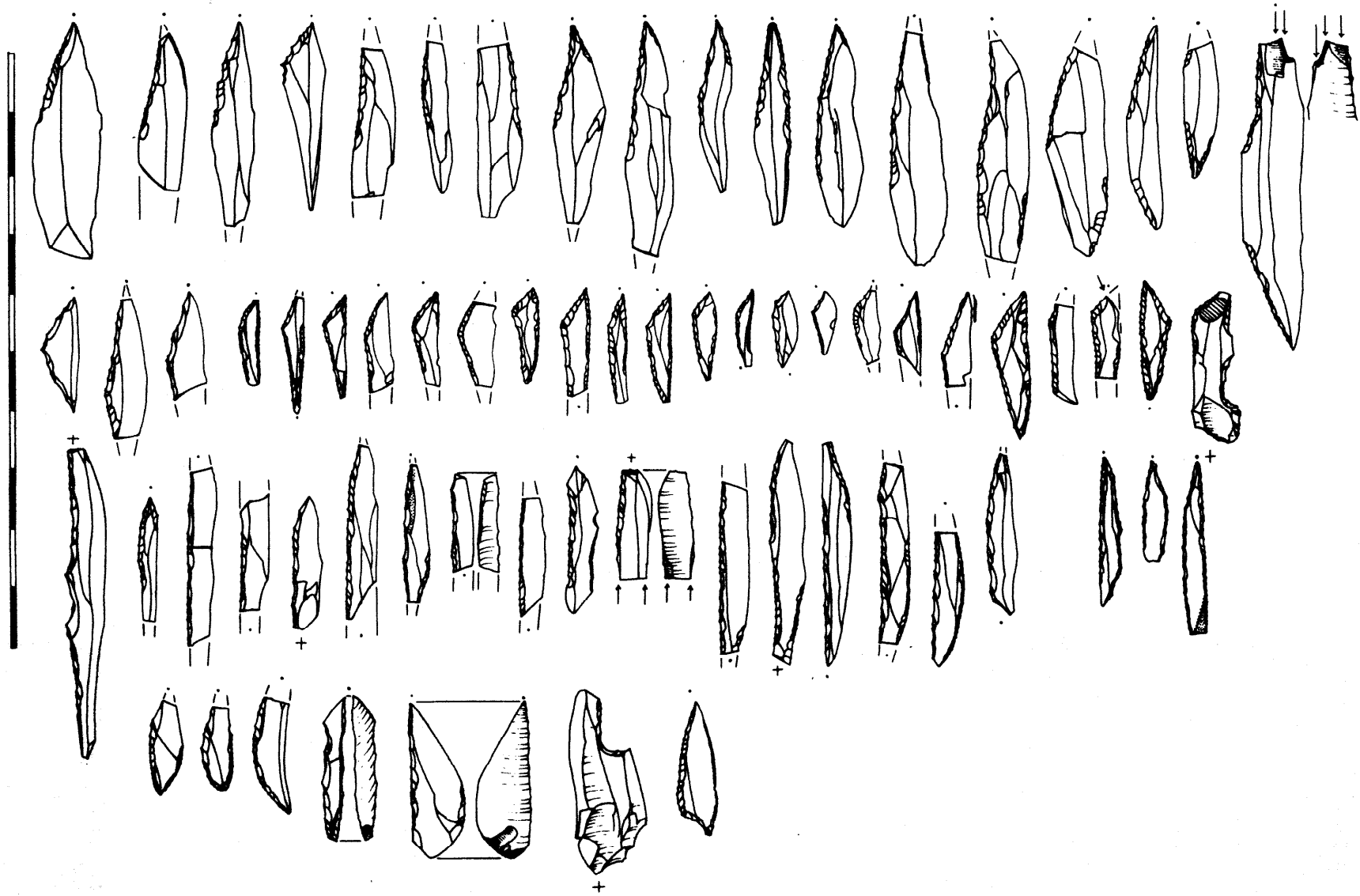
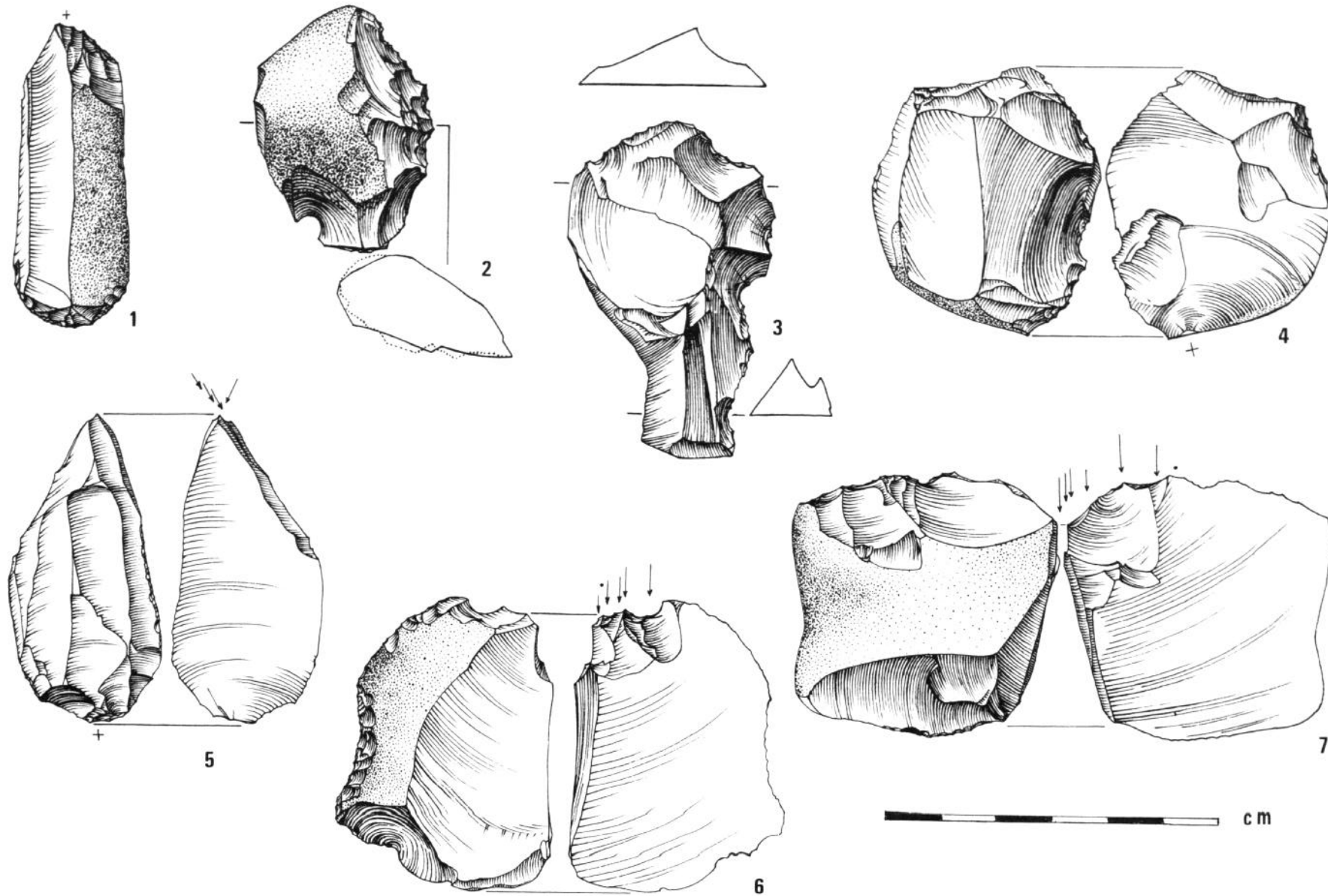Fig 9   Microliths from Hullbridge (scale in cm)

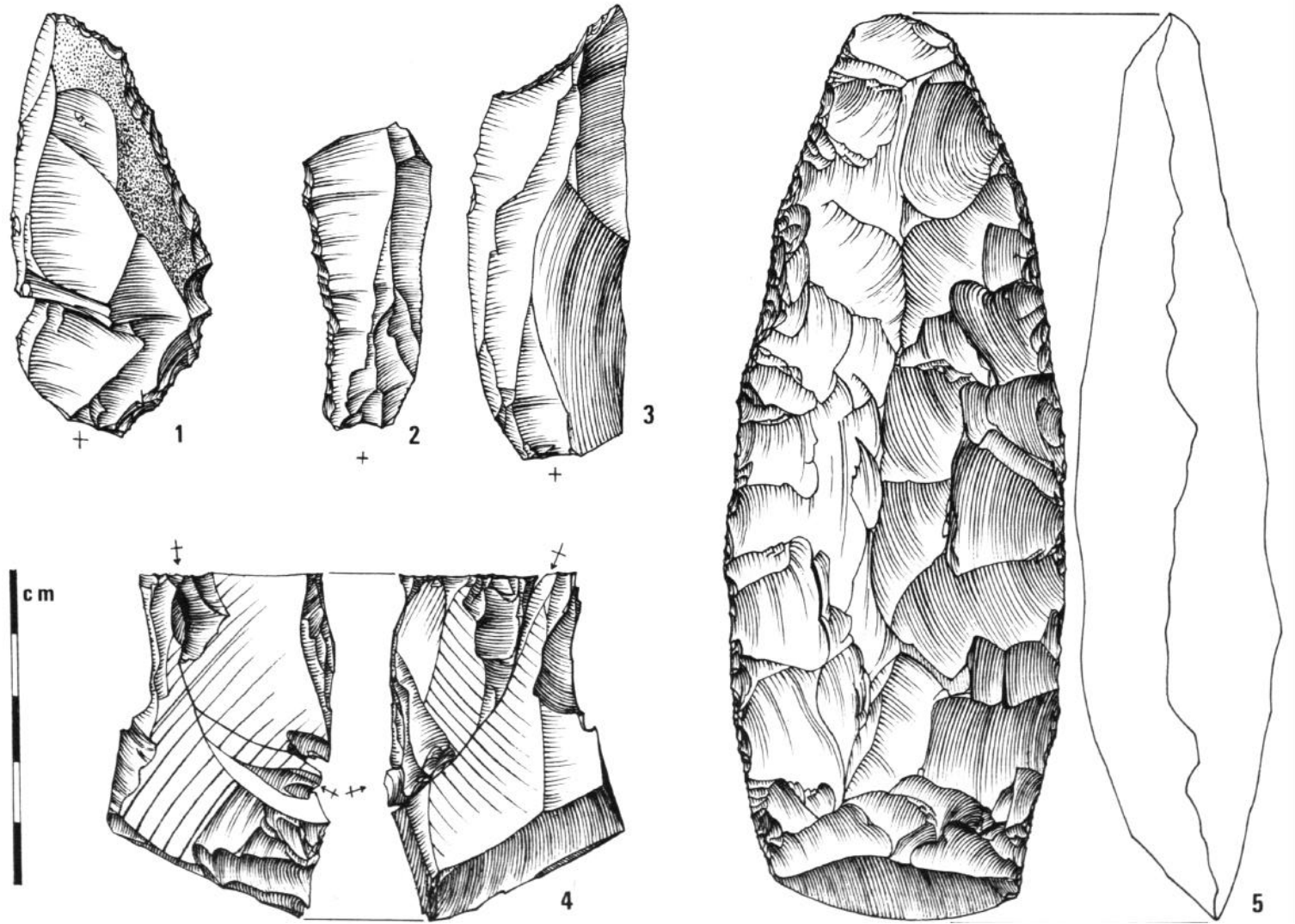Fig 10a   Hullbridge, non-microlithic equipment. 1-7 scrapes and burins

Fig 10b   Hullbridge, non-microlithic equipment. 1-3 backed and truncated pieces, 4 core and 5 axe

At Hullbridge (Haward 1914, 465; clark 1932; 62; Warren et al 1934, fig 10; Rankine 1956, 21; Jacobi 1973, 263) the artefact material recovered at low tide from the north bank of the crouch derives from a terrestrial deposit scaled directly by a wood peat, the latter overlaid first by an 'estuarine clay' and then by a second thin band of peat (see Reader 1911, figs 6 and 7 for profiles). From the junction of the 'estuarine clay' and the lower peat comes a group of Late Bronze Age potery (ibid, pl XIX and text p 263. For stratigraphy see also Warren 1911, 275), while features in the pollen counts for the lower wood peat, immediately above the artefacts artefacts–notably high values for Tilia and the representation of *Fagus* and *Carpinus* (Godwin 1943, 242–4)–suggest that this accumulated with the Bronze Age. confirmation of such a late dating appears to be given by the recovery of sherds below the peat and presumably at the same stratigraphic horizon as the microlithic equipment (Warren 1911, 276). The stratigraphy at Hullbridge thus has no bearing upon the date of the Mesolithic occupation beyond allowing the simple observation that there is no reason why material attributable to any point within the period, even the latest phases, could not be present.

The finds, made along the stretch of bank between Hullbridge Ferry and Fen Creek, were either picked up loose on the mud surface or recovered in place by probing into the deposits with '. . . a long sharp nail fixed in the end of a stick . . .' (Haward to Warren, 13. II. 1928: letter preserved in the Brit Mus). That some at least of the artefacts derived from undisturbed occupation sites is strongly suggested by the refitting onto a conical micro-core of a plunging flake and an intervening bladelet (Fig 10b, 4).

There is, however, no evidence that the microlithic material was recovered from a single site and, as at Walton, the high proportion of early shapes (some 34%: see Fig 7 and Fig 9, 1-21) might be taken to suggest that Early as well as Later Mesolithic material is represented. Compared to Walton there is a greater relative proportion of scalene micro-triangles (Fig 9, 22–43) and 'rod-like' microliths (Fig 9, 44–60), while both micro-rhomboids and right-angled microliths are absent. A single micro-tranchet (Fig 9, 67) is again suggestive of activity on the site close to, or rather after, 5000 bc. It is, however, impossible to suggest whether these relatively minor variations are of chronological or functional significance and it must be stressed again that neither the collection from Hullbridge nor that from Walton can be regarded as an 'assemblage' in the strict sense of that term.

With the exception of a fragment of reflaked polished axe (Prittlewell Priory Museum: Acc No 303/4) the residue of the material collected at Hullbridge is all potentially Mesolithic, with some ten convex edged scrapers (Fig 10a, 1) and six denticulated scrapers (Fig 10a, 2–4). There are four burins (one dihedral (Fig 10a, 5) two angle (Fig 10a, 6 and 7), and one on natural truncation,, a 'backed-knife' (Fig 10b, 1), retouched blades (Fig lob, 2), a 'ground-edged piece' (cf Wymer 1962, 348 and 350), some fourteen truncated pieces (Fig 10b, 3), and six awls.

The apparent association of this equipment—every major tool category recognized for the Later Mesolithic—with two whole and a fragmentary core–adze (Fig 10b, 5) supplements the evidence of the relatively poorly recovered and now much dispersed assemblage from Lower Halstow on the Kent side of the Thames estuary (Clark 1932, 63–5 and refs therein) in confirming that adzes ('Thames picks') dredged from the lower reaches of the Thames–Grays, Thurrock, and Tilbury on the Essex side-are likely to be the sole survivors of more substantial tool kits, the whole discarded on former river-side 'base-camps' equivalent to

those which survive in the Kennet Valley. Confirmation of this propositions derives from the observation at Broadness that Tranchet adzes recovered at the same time as the better known bronze hoard were dredged up with '. . . flints which numbered several hundreds and comprised flakes as well as finished implements . . . (the) presence of a large numer of small implements and flakes indicating) that there was a factory or store of flint tools on this spot . . .' (Smith 1910, 161-2).

The estuaries of these rivers, of which of course the Thames is the most major, form the most marked geographical feature of the county, and it is from *below* their recent alluvial infill that Mesolithic finds ultimately derive. Of these finds and of the material recovered loose on Essex beaches nothing, except for isolated artefacts from Walton (see above), can be related to past stages of estuary and coastline development. It remains, therefore, speculative that exploitation of land resources, to which it could be argued that all the artefact material discussed within this chapter relates, would be complemented by coastal exploitation with an original presence around the Essex coast of 'midden' accumulations now submerged or destroyed by erosion.

This coastal belt takes in areas of successful commercial oyster cultivation, while not only are total yields of cockles from the area north of the Thames Estuary–mainly from the Maplin and Southend Flats–the second highest around the British coast (after the Wash: Franklin 1972) but also the most consistent. consistent. That is, the total yields show minimum variation year to year as compared with the other major beds. That these cockle beds were exploited at least during the later prehistoric period and that midden accumulations may once have existed is suggested by the observation at Walton in 1937 of a timber structure, ground around which was '. . . strewn with potboilers, round flint pebbles and cockle shell . . .' (Zeuner 1958, 97). Boats are necessary to travel out to the richest cockle beds currently worked and in this context it is worth remembering the pair of paddles from Lion Point Warren et al 1936, 184, one of which was found in the thin band of peat below the *Scrobicularia* clay and thus must be of the 2nd millennium be Warren M S, British Museum: for the sate of this peat band see Vaughan 1958, 74–6. A 'dug-out' from Walton is also taken as prehistoric.

Common seals, animals with the meat weight of a pig or roe deer, breed around the estuary of the Blackwater (Hewer 1974, fig 41), while the whole Essex coast lies within the winter distribution of cod, a fish heavily exploited by Danish latest Mesolithic groups. Indeed the Domesday record for Essex stands apart from that for other counties in the emphasis placed upon coastal fishery (Darby 1952, 245 and 246). There appears no reason why, complementary to the inland sites which we have been able to document, coastal sites should not also have existed combining a range of land and marine resources equivalent to those available along the Danish coast, whose exploitation is there rendered conspicuous by the settlement and midden sites preserved on upwarped shorelines. The quantity of Neolithic equipment, the bulk of it arrowheads and scrapers, from these foreshore sites, suggests that, whatever changes may have taken place in settlement location in inland situations from areas of optimum hunting to zones of high arable potential, exploitation of coastal and estuarine environments may have been common to both economic strategies. It could be speculated that it might be on the coastal sites of just such an area as Essex, could such be located, that the innovation of a Neolithic technology and the chronology of' such an innovation could most sensitively be measured.

Acknowledgements

Notes on the origins of the statistics presented

(a) High Beach, Hillwood: The S Hazzledine Warren collection in the British Museum. I have not used the samples of material collected more recently by J Gordon and Frank Clark.

(b) Kelling Heath: All surviving collections.

(c) White Colne: Only material known to have been collected by Nina F Layard, and now divided between Ipswich Museum, the Colchester and Essex Museum, and the Institute of Archaeology, London.

(d) Pledgdon: The S Hazzledine Warren collection in the British Museum.

(e) Dawes Heath: Only material in the Prittlewell Priory Museum, Southend; donated by Mr T J Mays and Alderman Sir F Senier.

(f) Walton-on-the-Naze: The John Hassall collection in the Museum of Archaeology and Ethnology, Cambridge, and the private collection of Mr Brian Benham. Statistics for these are presented individually. I have not made use of smaller collections in the British Museum (ex F N Haward), the Colchester and Essex Museum (ex H Mothersole and H E and P G Laver), the City of Liverpool Museum, and Bolton Museum (ex W Thornley), which simply appear to be very much smaller samples from the same populations as represented in the Hassall and Benham collections.

(g) Hullbridge: I have only used the microliths in the F N Haward, Harry Rand, and A Wright collections, all in Prittlewell Priory Museum. For the non-microlithic material, I have not made use of the collection formed by A Wright in the same museum, since this, as now preserved, appears to contain artefacts which from their physical condition seem to have been collected elsewhere.

(h) Hamborough Hill: The A Wright and T J Mays collections in the Prittlewell Priory Museum.

References

Burchell, J P T, 1927 Further report on the Epi-Palaeolithic factory site at Lower Halstow, Kent, *Proc Prehist Soc East Anglia*, 5, 2, 217–23

Churchill, D M, 1965 The displacement of deposits formed at sea-level, 6500 years ago in southern Britain, *Quaternaria*, 7, 239–50

Clark, J G D, 1932 *The Mesolithic Age in Britain*

———, 1975 *The Earlier Stone Age settlement of Scandinavia*

———, & Rankine, W F, 1939 Excavations at Farnham, Surrey 1937–38: the Horsham Culture and the question of Mesolithic dwellings, *Proc Prehist Soc*, 5, 61–118

Darby, H C, 1952 *The Domesday geography of eastern England*

D'Ollier, B, 1972 Subsidence and sea-level rise in the Thames Estuary, *Phil Trans Roy Soc London*, **A272**, 121–30

Franklin, A, 1972 *The cockle and its fisheries*, Min Agr Fish Food Lab Leaflet No **26**

Godwin, H, 1943 Coastal peat beds of the British Isles and North Sea, *J Ecol*, **31**, 199–247

Haward, F N, 1914 A workshop site of primitive culture at Two-Mile-Bottom, Thetford, *Proc Prehist Soc East Anglia*, 1, 461–7

Hewer, H R, 1974 *British seals*

Huggins, P J, 1970 Waltham Abbey monastic site and prehistoric evidence 1953–1967, *Trans Essex Archaeol Soc*, 3 ser, 2, 216–66

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

———, 1976 Britain inside and outside Mesolithic Europe, *Proc Prehist Soc*, **42**, 67–84

———, 1978a Northern England in the eighth millennium bc: an essay, in *The early Post-glacial settlement of Northern Europe* (ed P A Mellars)

———, 1978b The Mesolithic of Sussex, in *Archaeology in Sussex to AD 1500* (ed P L Drewett), CBA Res Rep **29**

Jarman, M R, 1972 European deer economies and the advent of the Neolithic, in *Papers in economic prehistory* (ed E S Higgs)

Kooi, P B, 1974 De orkaan van 13 November 1972 en het onstaan van 'hoefijzervormige' grondsporen, *Helinium*, **14**, 57–65

Kozlowski, S K, 1975 *Cultural differentiation of Europe from 10th to 5th millennium bc*, Warsaw University Press

———, 1976 Studies on the European Mesolithic II—rectangles, rhomboids and trapezoids in north-western Europe, *Helinium*, **16**, 43–54

Layard, N F, 1927 A late Palaeolithic settlement in the Colne Valley, Essex, *Antiq J*, 7, 500–14

Mellars, P A, 1974 The Palaeolithic and Mesolithic, in *British prehistory: a new outline* ed C Renfrew

———, 1976 The appearance of 'narrow blade' microlithic industries in Britain: the radiocarbon evidence, *UISPP IX Congrès Nice, Colloque* **XIX**, 166–74

Palmer, S, 1977 *The Mesolithic cultures of Britain*

Rankine, W F, 1949 Stone 'maceheads' with Mesolithic associations from south-eastern England, *Proc Prehist Soc*, **15**, 70–6

———, 1952 A Mesolithic chipping floor at the Warren Oakhanger, Selborne, Hants, *ibid*, **18**, 21–35

———, 1953 A study of quartzite maceheads: functional interpretation and perforation technique, *Archaeol Newslet*, 4, 12, 186–8

———, 1956 *The Mesolithic of southern England*, Res Vol Surrey Archaeol Soc, 4

Reader, F W, 1911 A Neolithic floor in the bed of the Crouch River, and other discoveries near Rayleigh, Essex, *Essex Natur*, **16**, 249–64

Roe, F, 1968 Stone mace-heads and the latest Neolithic cultures of the British Isles, in *Studies in ancient Europe* (eds J M Coles & D D A Simpson)

Smith, R A, 1910 Bronze Age hoard dredged from the Thames at Broadness, *Proc Soc Antiq London*, 2 ser, **23**, 160–71

Toms, H S, 1907 Pigmy flint implements found near Brighton, *Brighton Hove Natur Hist Phil Soc*, 1–10

Vaughan, D E , 1958 *The influence of geological history and sample preparation on radiocarbon dating, with comments on the method itself,* unpublished PhD Thesis, Univ London

Warren, S H, 1911 On the correlation of the prehistoric 'floor' at Hullbridge with similar beds elsewhere, *Essex Natur*, **16**, 265–82

———, 1913 'Pigmy flints' in Epping Forest, *ibid*, **17**, 292

———, 1918 Prehistory in Essex as recorded in the Journal of the Essex Field Club, *Essex Fld Club Special Memoirs*, 5, 44

———, 1919 The dating of surface flint implements and the evidences of the submerged peat surface, *Proc Prehist Soc East Anglia*, 3, 1, 94–104

———, 1940 Geological and prehistoric traps: presidential address, *Essex Natur*, **27**, 2–19

———, 1945 Some geological and prehistoric records on the north-west border of Essex, *ibid*, **27**, 11, 273–80

———, Clark, J G D, Godwin, H, & M E, & Macfadyen, W A, 1934 An early Mesolithic site at Broxbourne sealed under Boreal peat, *J Roy Anthropol Inst*, **64**, 101–28

———, Piggott, S, Clark J G D, Burkitt, M C, & Godwin, H, & M E, 1936 Archaeology of the submerged land-surface of the Essex coast, *Proc Prehist Soc*, 2, 2, 178–210

Wymer, J J, 1962 Excavations at the Maglemosian sites at Thatcham, Berkshire, England, *ibid*, **28**, 329–54

Zeuner, F E, 1958 *Dating the past*

Introduction

This paper attempts to collate for the first time a wide variety of information on the activities of Neolithic man in Essex from *c* 4000 BC to the emergence of the Beaker people around 2000 BC.

Countless problems have been encountered in preparing this statement, the main obstacle being the fundamental lack of survey, excavation, and published information relating to the Neolithic period. It is acknowledged that this account provides little more than an interim statement but it is hoped that it will direct the researcher to those aspects which particularly warrant attention.

Certain researches do stand out as milestones in the Neolithic study of Essex. Firstly, there was the work of Hazzledine Warren in recognizing sites on the submerged Neolithic land surfaces of coastal Essex; secondly, there are the more recent results of field and air survey in north-east Essex and Suffolk and the identification and publication of potential Neolithic sites by Ida McMasters, Felix Erith, and Dick Farrands of the Colchester Archaeological Group. Their dedicated work over many years has supplemented the national air surveys undertaken by the Cambridge University Committee for Air Photography and the National Monuments Record Air Photographic Unit.

Environmental background

Climatically the Neolithic and Bronze Age periods fall within the later period of the Climatic Optimum, and although there is no good evidence to indicate exactly when this came to an end it seems likely that by the end of the second millennium bc temperatures had assumed their present day range (Evans 1976, 142).

Allen & Sturdy in their paper in this volume have discussed the geologically recent subsidence of the coast of south-eastern England. It is worth re-emphasizing these events owing to their relevance to present coastal Neolithic sites which were originally sited considerable distances inland. Other sites have undoubtedly been lost below low tide level. Churchill (1965) noted that a peat bed formed above sea level at Tilbury in 4840 bc was now 27 ft* below ordnance datum. The sea level in the Thames estuary during middle to late Neolithic *(c* 2500 BC) seems not to have exceeded minus 14 ft (4 m) ordnance datum (Akeroyd 1972, 159), whilst subsidence in the order of 10ft has occurred since late Neolithic times at Hullbridge.

The archaeological evidence

Settlements

The existence of permanent or semi-permanent settlement in southern England is attested by the widespread forest clearance (Evans 1976), evidence of stock rearing, cereal cultivation, and the construction of major field monuments. The present knowledge of Neolithic economy, settlement, and intercommunal relationships here in Essex is, however,

minimal. Only one later Neolithic site interpreted as an enclosed settlement area has been excavated (Tye Field, Lawford). Surviving earthwork enclosures or posthole house structures are unknown. However, there are certain classes of cropmark enclosure in the county which do not readily conform to the more usual types of later prehistoric enclosures at present known. Some of these irregular or ovoid ditched enclosures, usually with a single entrance, deserve further attention. Examples at Lawford or the double enclosure at Lamarsh are typical and could well be Neolithic or possibly Bronze Age in date.

The enclosure at Tye Field, Lawford

Although constantly referred to as a 'henge', the site is interpreted by the excavators as an enclosure of a 'domestic character'. The lack of published information and the site's excavation history make discussion difficult but certain evidence should nevertheless be considered. When Bryan Blake excavated in 1962/63 the site still survived as a low mound. It was interpreted as an irregular segmented ditched enclosure with opposed entrances sited off-centre. The outer face of the internal bank was retained by a post and wattle fence. The area enclosed by the bank was roughly 40 ft x 36 ft. Placed centrally within the enclosure was a small dwelling. Blake reported that no trace of the hut postholes survived but a thick layer of black ash had been trampled hard into a floor and upon this surface occurred most of the finds. These consisted of Grooved Ware pottery, flints, bone pins, bones of pig and cattle, and four petit tranchet arrowheads. Pre-enclosure early Neolithic pottery was also found in residual contexts. Blake excavated most of the central area and half the circuit of ditch, including both entrances.

F Peterson, on behalf of the DoE, returned to the site in 1971 and found that plough erosion had almost completely flattened the earthwork. Peterson excavated the remaining internal quadrant but only found a thin flint scatter on the surface and a shallow feature which contamed Grooved Ware sherds. A small quantity of similar pottery was recovered from the remaining ditch. He was unable to confirm the existence of Blake's bank revetment postholes on the inner edge of the ditch and nothing remained of the rich area of black ash deposits (Shennan 1978, pers comm[1]).

Open settlements

The term open settlement is usually applied to sites where no building or enclosure structures are determinable. Evidence in the form of storage and rubbish pits, posthole scatters, and occasional shallow depressions containing occupation debris is generally all that is found.

No systematic survey or excavation work has been undertaken on these open settlement sites and they have usually been discovered accidentally either in the course of the excavation of later sites, or by coastal erosion, mineral extraction, and other subsoil disturbances. Nothing on the scale of Hurst Fen, Suffolk (Clark *et al* 1960) or the pre-enclosure phase at Broome Heath, Norfolk (Wainwright 1972) has been found in Essex. The excavated multi-period sites which have produced Neolithic evidence arc at Mucking, Little Waltham, Pledgdon, Wicken Bonhunt, Saffron Walden, and Waltham Abbey.

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*quoted. * Imperial measurements used in this Paper 'follow the authors in reference quoted.*

The Neolithic features at Mucking have so far only produced a small number of finds. Early Neolithic pottery and flints have been found in pit and posthole bases and also in periglacial hollows. No recognizable structures have been found. Residual material found in later contexts includes very many flint gritted sherds, flint knives, leaf-shaped arrow-heads, hammerstones, two saddle querns, and rubbers, all of which may be Neolithic in date. Late Neolithic Grooved Ware was also found in half a dozen shallow pits (M U Jones 1978, pers comm).

There is little to be gained from discussing each site in detail as similar features to those at Mucking are all that have been found in most instances. Other excavations and salvage recording have produced evidence of isolated pits and postholes containing potsherds and flints, etc, at Sandon, West Thurrock, Danbury, Newport, Woodham Walter, Lawford, and Rivenhall. Many other sites have contributed the occasional pit or hollow with small flint assemblages.

Perhaps the most intriguing sites of all are those along the coast between the rivers Stour and Blackwater, and in partitular the sites at Clacton, Dovercourt, Walton-on-the-Naze, and to a lesser degree Hullbridge on the River Crouch. All have produced quantities of Neolithic pottery and flintwork of the highest quality. Although in the past extensive collections of finds were made, little in the way of site recording of structures was carried out.

It is clear that these low lying settlements were rapidly inundated by the sea and the occupation debris sealed by brackish peats before site erosion or weathering of the artefacts could take place. Warren identified four main classes of site on this old land surface at Clacton:

1   'Surface occupation or camp sites.' These consist of 'concentrated accumulations of flint-work, sherds, pot-boilers, charcoal etc commonly about 30 ft in diameter' (Warren *et al* 1936, 179).
2   'Pit dwellings. Where the level of occupation surface is not too low upon the foreshore, the lower part of the infilling of pit dwellings is sometimes revealed above low water. These pits are round or oval measuring 10 to 20 ft across, with a flat floor on which is the debris from a wood structure, as well as sherds, pot-boilers, and bones buried in black earth' (Warren & Smith 1953).
3   'Cooking-holes or earth ovens are holes averaging 3 ft in diameter and 18 inches deep below the occupation surface. They were filled with black earth containing charcoal and pot-boilers and not infrequently also yielded worked flint, bones, and sherds'.
4   'Hearth sites-small patches of charcoal and pot-boilers, often with lumps of burnt earth, that appeared to represent casual camp fires, they yielded little useful evidence' (Longworth *et al* 1971).

Windmill Hill wares, Peterborough, and Beaker wares were recorded. At low tide at Walton-on-the-Naze two examples of what might have been hut structures were exposed on the old land surface. They were formed by interlaced small branches and may either have been wind breaks that had fallen flat or else floors placed on the clay. Rectangular ditched enclosures some 100 yards in width were also recognized on the lower foreshore by Warren.

Unfortunately, it would seem that the opportunity to make fuller records has now been lost due to further sea erosion and many years of flint collecting. The true nature or potential of these sites will probably never now be known but they must surely represent some of the elusive settlement sites, albeit of perhaps a rather specialized coastal nature.

Funerary and mortuary monuments

The Neolithic period is noted for the number of different types of site that produce human skeletal material. These skeletons are commonly found to be incomplete, probably as a result of initial exposure burial practices. Settlements, cursus monuments, henges and stone circles, causewayed enclosures, cave sites, barrows, and chambered tombs may all lay claim to being- sites for-the temporary reception or disposal of the dead. However, in most instances the primary function of the site is clearly not a funerary one-that is, a place of final burial. It is true that some long barrows and chambered tombs were apparently con-strutted for burial purposes but more often than not the structure merely represents a late phase in the use of a site which has undergone a long and complex mortuary history. Many can now be seen to have contained no burials at all. Neolithic man appears to have had a marked disregard for depositing complete bodies in places of final burial, preference being given to the varied mortuary rites and eventual disposal of the remains of the dead. The long barrows seem to represent identity foci for a community in the same way as causewayed enclosures and henge monuments. There was certainly a prolonged interest in the barrows long after their construction date. Many barrows can be shown to have been visited by peoples over several hundred years and frequently occupation debris was carefully placed in the ditches and then covered, so preserving the artefacts in a fresh condition. The excavation evidence shows that individual site histories are rarely the same and the understanding of cenotaph and mortuary structures is still in its infancy.

In Essex, the traditional earthen long barrow is apparently absent apart from one possible example at Grange Farm, Lawford, which survived to a height of approximately 1.0 m in 1970 and is some 50 m in length (Erith 1971, 38). The cropmark evidence for ploughed out long barrows and mortuary enclosures must therefore be examined.

There are a small number of rectangular and oval enclosures some 75 to 100 m in length which could well represent long barrows of the Skendleby, Lincolnshire type, or Neolithic mortuary enclosures of the Charlecote, Warwickshire form. The ditch in these examples is normally continuous on all sides with entrances being a rarity, a notable exception being at Grange Farm, Lawford. Such enclosures are also known at Rivenhall End, Lawford (three), St Osyth, Alresford Creek, and possibly Mistley; and at Stoke-by-Nayland, Bures St Mary, and Stratford St Mary just over the county boundary in Suffolk.

They have also been recognized elsewhere in East Anglia and examples may be quoted from Norfolk at Marlingford, Langley, and Kettlestone. The latter appears to have two opposed entrances (Edwards 1978, pers comm). One partitularly interesting example at Roughton, Norfolk occurs adjacent to a small causewayed enclosure. Probable associations of mortuary enclosures, cursus monuments, and also ring ditches occur in Suffolk at Bures St Mary, and in Essex at Lawford, (McMaster 1971, 8; Erith 1971, 38) and are common elsewhere in England.

One further aspect which should be considered is the possibility that some forms of the many diverse types of ring ditch known in Essex may be attributable to the late Neolithic period. They are certainly to be found in association with cursus type monuments at Lawford and Wormingford in Essex, and in Suffolk at Bures St Mary and Higham. They also occur in association with mortuary

Plate 1   Cursus near Chelmsford   Photo: Cambridge University Collection (copyright reserved)

enclosures at Lawford, Essex, and Stratford St Mary, Stoke-by-Nayland, and Bures St Mary in Suffolk. Else: where in England it is increasingly being demonstrated that round barrows are a normal element in Neolithic burial practice. A ring ditch site at Rainham, Greater London, excavated by Dr Isobel Smith may perhaps be considered under this class of monument. Here 'a central sub-rectangular pit feature containing a dark soil was of such a size that it could have accommodated a small contracted burial' (Smith 1978, pers comm). The pit also produced middle Neolithic pottery of the Mildenhall style. The ring ditch had been deliberately backfilled with material from the inner bank and contained many large sherds of Mildenhall ware with incised linear decoration.

Cursus monuments

In discussion of the mortuary enclosures reference has been made to that rather enigmatic class of site known as cursus monuments. They are perhaps the least understood of all prehistoric earthworks and are thought to be unique to Britain. Along with causewayed enclosures and henges they provide insights into social organization and motivation not witnessed prior to the Neolithic age. Unlike the irregular causewayed enclosures, they illustrate considerable plan-ning, surveying, and constructional skills with their widely spaced parallel ditches running in straight lines for distances of up to several kilometres.

Study of air photographs suggests that a few examples may

be found in Essex, although none has yet been tested by excavation and the characteristic closed terminals are rarely identifiable.

Probable examples exist at Lawford, Great Holland, Wormingford, Little Horkesley, and Dedham, and at Bures St Mary and Stoke-by-Nayland in Suffolk. An isolated example at Chelmsford (Pl 1) points to the need for further survey in that area.

Henge monuments

Late Neolithic henge monuments consist primarily of a circular embankment surrounding a ditch. Professor Piggott originally classified them according to their plan form and entrances (Wainwright 1969, 113). The classification has never been a happy one as it clearly embraces sites of many types which often contain internal structures serving various functions. The relatively small cropmark sites in Essex cannot really be considered alongside the massive henges at Mount Pleasant, Dorset, and Durrington Walls, Marden, and Avebury in Wiltshire.

Henges are currently regarded as representing meeting places or ceremonial enclosures although it is possible that some sites served a dual function with domestic occupation also in evidence. Whatever their purpose they clearly served as a focal point for an organized regional community.

The henge monuments in Essex remain unexcavated and their study is fraught with difficulties following the conclusions drawn by Blake and Peterson at the Lawford 'henge' (p 26). Nevertheless, attention can be drawn to a number of circular enclosures with one or more entrances which may prove to be henges of the smaller type. They are frequently found in association with other cropmarks of probable Neolithic date. At Little Bromley (P1 2) there is a circular enclosure with opposed entrances some 75 ft in diameter whose containing ditch is 12 ft wide (Erith 1968, 24). An associated rectangular enclosure some 90 ft across, which may or may not be contemporary with the henge, could be critical to the interpretation of the site.

Similar hengiform enclosures with a double entrance exist at Tendring, Great Wigborough (150 ft diameter), Boxted,

Plate 2 Henge monument, Little Bromley Photo: R H Farrands
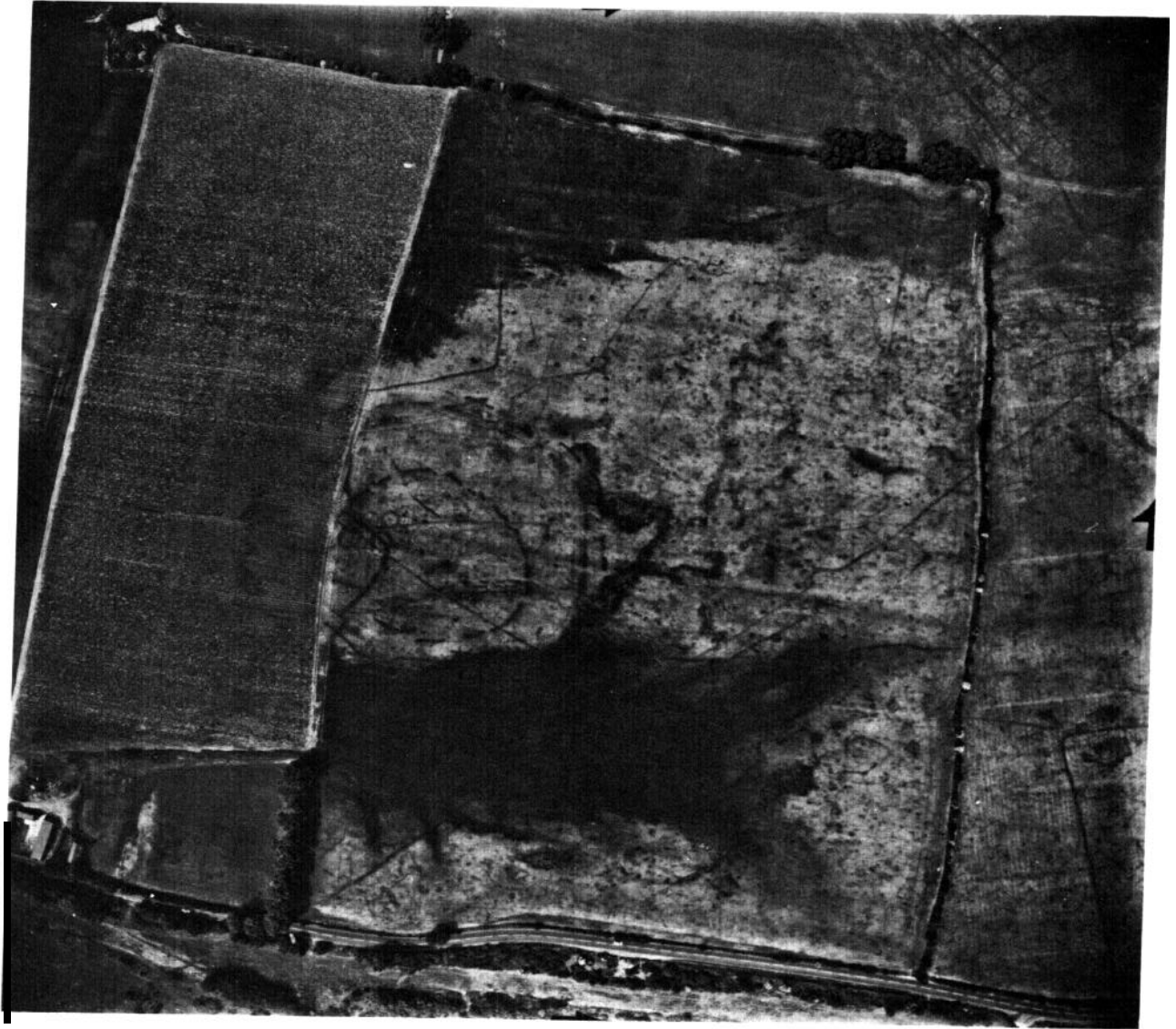
Plate 3   Orsett causewayed enclosure Photo: Cambridge University Collection (copyright reserved)

and Lawford. Close to Ferriers Pit at Bures Hamlet lies a single entrance enclosure some 85 ft in diameter with a ditch of 10 ft and a 15 ft wide south-east entrance (McMaster 1971). An almost identical site at Stratford St Mary in Suffolk measures some 89 ft externally with a 12 ft wide ditch interrupted by a 9 ft wide entrance to the south-east. There have been reports of a central cruciform crop-mark and the possibility that it is a windmill site cannot be overlooked (McMaster 1971, 16). A similar site has been recorded by Farrands at Elmstead and a further example is known at Sturmer.

A hopeful indication that Neolithic settlement is awaiting discovery in West Essex is the presence of a possible henge and associated enclosure at Romford which is remarkably similar to the Little Bromley site.

Standing stones
Essex, being a county with no outcropping building stone,

is naturally devoid of any notable stone monuments. However, the occasional standing stone such as the 'Leper Stone' at Newport and numerous smaller examples do survive but their date remains in question. Place and field name evidence at Alphamstone and Ingatestone and the presence of large blocks of sandstone in and around the churchyards has led to the suggestion that former pagan stone monuments may have existed on these sites. It is certainly noteworthy that the stones were not utilized in the church construction or repair.

Causewayed enclosures
During the last five years causewayed enclosures have received the close attention of several prehistorians, and excavations at six of these early and middle Neolithic sites have brought new theories as to their purpose. Further-more, as a result of aerial reconnaissance (Wilson 1975), the known sites, which were previously exclusive to the

Wessex area, have almost doubled in number and their distribution widened into the Midlands and East Anglia (Palmer 1976). There are now some 33 known enclosures with a further twelve sites being possible candidates. Most of the newly discovered ones lie on the river gravels.

One causewayed enclosure is known from Essex. The site at Orsett (P1 3) was discovered by air survey in 1973 and occupies a prominent position on sloping ground at the southern edge of a remnant of the 30 m (100 ft) Thames Terrace (the Boyne Hill Terrace) overlooking the lower Thames valley.

The monument has three concentric circuits of interrupted ditch. The inner circuit measures between 80 and 95 metres across, there is an interval of 30 to 40 metres between the inner circuit and the next, and the third circuit lies some 10 metres beyond it. Parallel to the middle ditch and three metres within it is a palisade trench.

A trial excavation by the Archaeology Section of the Essex County Council in 1975 (Hedges & Buckley 1978) examined a complex entrance to the enclosure through the outer ditches and palisade, and a small area of the interior together with a short length of the inner causewayed ditch.

The evidence from the outer ditch sections suggested that the berm between the two ditches had supported a turf rcvetted bank. The ditches themselves were now (ie the eroded profiles approximately 4.0 m wide and 1.5 m deep with steep sides and flat bottoms. A radiocarbon date of 2583 ± 112 bc (BM 1214) was obtained from the primary silts of the middle ditch. The timber palisade trench produced a radiocarbon date of 2776 ± 74 bc (BM 1378).

Two short lengths of the inner causewayed ditch were excavated. The ditch was again about 4·0 m wide but slightly deeper (2.0 m) than the outer ditches. A radio-carbon date 2635 ± 82 bc (BM 1215) was obtained from the floor of the Inner ditch which also produced the majority of the finds. Some hundred or so postholes and pits were excavated within the interior but the only discernible struc-ture of Neolithlc date was an oval posthole setting 11 m x 8 m) with a central pit.

In the past causewaycd enclosures have been interpreted as bettlements, defensive sites (Curwen 1930), cattle pounds (Piggott 1954, 29), and more recently as trading and communal meeting places (Smith 1965, 17-21). Many of these suggestions have now been discounted (Drewett 1977) but the evidence from recent excavations will not allow a universal function to be attributed to them. The Interpretation of the enclosures as cult/ritual centres and burial sites has recently gained much support from some archaeologists. Evidence from Hambledon Hill (Mercer 1977) and to a lesser degree Offam (Drewett 1977) suggests that mortuary practices were closely associated with the monuments.

A second causewayed enclosure lies on the Hertfordshire/Essex border near Sawbridgeworth (Wilson 1975, 183). The incompletely known plan consists of an arc of triple discontinuous ditches and lies on river gravels at 35 m OD. The site remains unexcavated.

Material culture

Pottery

The total amount of Neolithic pottery recovered from sites In Essex is relatively small and until recently no type series existed for the early/middle Neolithic. The later Neolithic is better represented in terms of volume but unfortunately little has been recovered from secure, well stratified, and recorded contexts (Fig 11).

The sites and circumstances of discovery are summarized above (p 26-7) and in Table III.

The Neolithic pottery fabrics so far recorded in Essex in-clude shell-gritted, vegetable-tempered, and flint-gritted wares, the latter being the most common. Grog-tempered wares appear in the Grooved Ware of the Late Neolithic period.

The type site for the middle Neolithic in Essex is the Orsett causewayed enclosure. The pottery series was recovered from the well stratified deposits of the causewayed ditches, pits, and postholes. The pottery falls within the eastern England Mildenhall regional style developed in the middle Neolithic and may be compared with pottery from Hurst Fen (Clark *et al* 1960, 202) and Swales Tumulus (Briscoe 1957, 101). The Orsett assemblage is to date the most southerly representative of the Mildenhall style (Kinnes 1978). The predominant form is the open deep sided bowl (Fig 12,1) with closed and carinated forms being rare. Slightly necked or everted pots are the general tendency. Lugs are totally absent and the few shoulders are of slack profile. Rolled rims account for 50% of the total, followed by simple and expanded rim forms (19% and 15% respec-tively); externally thickened and T-rims amount to 7.5% each with inturned rims being absent.

The fabric is thought to represent locally available materials-clay and burnt or crushed flint gritting and variable sand admixture. Surfaces where preserved are commonly smoothed and retain a mechanical slip. Decora-tion where preserved (c 12% of total) consists essentially of vertical or diagonal linear incision on rims or necks and fingertip fluting of the rim. Two body sherds contain impressed hollow (? bird bone) decoration.

Late Neolithic pottery in many styles has been found on sites in the county but rarely are more than a few vessels or even a few sherds present (see Table III). Pottery in the tradition now known as Grooved Ware is the best repre-sented both in terms of the number of sites where it occurs and the quantity of vessels. Indeed, one of the Grooved Ware sub-styles is named after the type-site at Clacton in the locality of Lion Point. Here, Hazzledine Warren (1936) recovered the pottery from some 21 'cooking holes' along 150 yards of foreshore. Only one other 'cooking pit' outside this area produced similar sherds (Warren & Smith 1953). The pottery is well fired and sparse grog tempering is com-mon. Some show the loss of a more soluble tempering, perhaps crushed shell. The majority of vessels appear to be more or less straight-sided vertical or trunco-conic forms (Fig 12,6). A few simple-rimmed open bowls with curving convex sides are also present. Bases are universally flat and occasionally display a slightly protruding foot. Rims are mainly of the simple rounded, flattened, or pointed forms. Internal bevelling and internal plastic decoration are also found.

Decorative techniques used on the pots include incision, grooves, impressions, strokes, rustication (five varieties), and plastic in the form of pellets and straight, wavy, and chain cordons, Decoration occurs internally on the rims and externally, often forming concentric lozenges and triangular shapes or multiple chevrons in zones (Longworth *et al* 1971).

Comb and corded techniques are totally absent as are curvilinear motifs (excepting plastic and finger-tip wavy cordons) and lugs. Vertical panelling (one vessel), rim top decoration, and plastic external decoration are rare.

In contrast to Clacton the other important Grooved Ware site at Tye Field, Lawford (p 26) produced a fine collection of vessels in the Durrington Walls tradition (Longworth
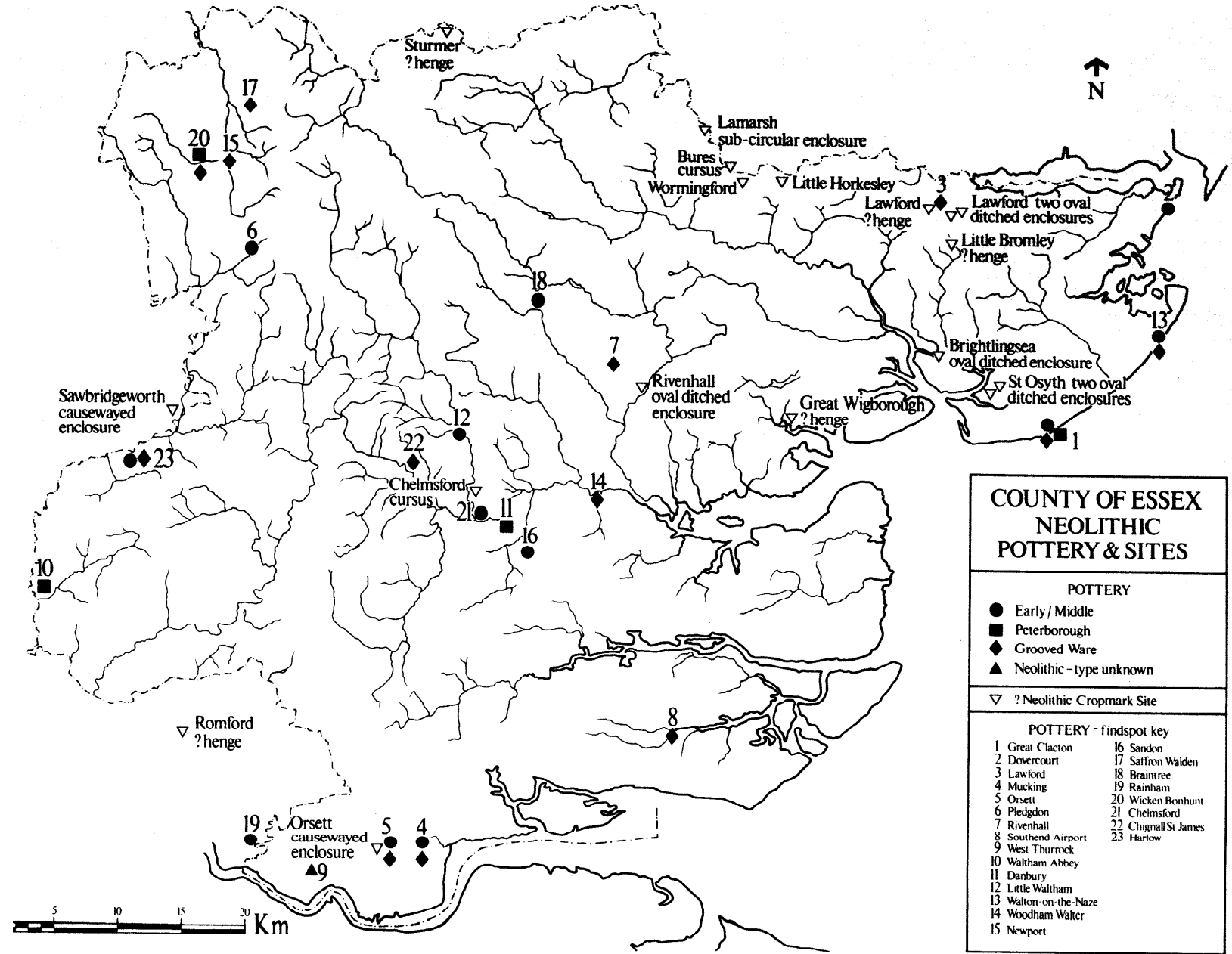
Sturmer
?henge

17

20 15

Lamarsh
sub-circular enclosure

Bures
cursus
Wormingford

Little Horkesley

3

Lawford
?henge

Lawford two oval
ditched enclosures

Little Bromley
?henge

2

6

18

13

7

Brightlingsea
oval ditched enclosure

Rivenhall
oval ditched
enclosure

St Osyth two oval
ditched enclosures

Sawbridgeworth
causewayed
enclosure

Great Wigborough
?henge

1

22

23

12

Chelmsford
cursus

21 11

14

10

16

COUNTY OF ESSEX
NEOLITHIC
POTTERY & SITES

POTTERY

● Early / Middle
■ Peterborough
◆ Grooved Ware
▲ Neolithic – type unknown

▽ ? Neolithic Cropmark Site

POTTERY – findspot key

1 Great Clacton	16 Sandon
2 Dovercourt	17 Saffron Walden
3 Lawford	18 Braintree
4 Mucking	19 Rainham
5 Orsett	20 Wicken Bonhunt
6 Pledgdon	21 Chelmsford
7 Rivenhall	22 Chignall St James
8 Southend Airport	23 Harlow
9 West Thurrock	
10 Waltham Abbey	
11 Danbury	
12 Little Waltham	
13 Walton-on-the-Naze	
14 Woodham Walter	
15 Newport	

Romford
?henge

8

19

Orsett
causewayed
enclosure

5

4

▲9

5 10 15 20 Km

Fig 11 Distribution map of Neolithic pottery and sites Essex (Crown copyright reserved)

Table III Essex sites producing Neolithic pottery: a gazetter

Site	NGR & Essex site record No	Map No	Pottery	Context	Other finds Location of finds	References
LION POINT (Jaywick Sands) Clacton	TM 166 135 TM 11,21/15	1	1) Windmill Hill ware 2) Peterborough ware 3) Mildenhall ware 4) Grooved ware (one site) 5) Beaker 6) A large number of flat-bottomed ware	Occupation sites on the submerged fore-shore with pit dwellings, cooking holes or earth ovens, and hearth sites.	Flint assemblage Hazzledine Warren Collection, British Museum	Warren *et al* 1936 Warren & Smith 1953 Longworth *et al* 1971
MILL BAY, DOVERCOURT	TM 255 313 TM 23/15	2	1) Windmill Hill ware 2) Beaker	Occupation sites on the submerged foreshore with 'camps and cooking holes'	Flint assemblage, Hazzledine Warren Collection, British Museum	Warren *et al* 1936
LAWFORD	TM 088 308 TM 03/20	3	1) Early Neolithic 2) Grooved ware	Excavation of a 'henge' cropmark site by 1) B Blake, 1963 2) F Peterson, 1971	Flint assemblage, bone Colchester Museum (B Blake's finds only)	Colchester and Essex Museum Collections
MUCKING	TQ 676 806 TQ 68/15	4	1) Early Neolithic 2) Mildenhall ware 3) Grooved ware 4) Beaker	Pits found during excavation of multi-period cropmarks.	Flint Thurrock Museum	M U Jones 1978, pers comm
ORSETT	TQ 653 806 TQ 68/36	5	1) Mildenhall ware 2) Grooved ware 3) Beaker Radio carbon dates for (1) 2583 ± 112 bc (Feature 2 causewayed enclosure ditch) 2635 ± 82 bc (Feature 4 causewayed enclosure ditch)	Excavations at a causewayed enclosure cropmark site	Flint assemblage Thurrock Museum Acc No 1731	Hedges & Buckley 1978
PLEDGDON, ELSENHAM CROSS	TL 542 267 TL 52/35	6	1) Windmill Hill ware 2) Beaker	'Pit dwelling' and pits located in gravel workings	Flints Hazzledine Warren Collection, British Museum ?	Warren 1945
RIVENHALL	TL 82 18 TL 81/60	7	1) Grooved ware rim sherd 2) Rusticated beaker (2 sherds)	Found during excavation of Rivenhall Roman villa	Flints	W J Rodwell 1978, pers comm
SOUTHEND (airport)	TQ 873 895 TQ 88/31	8	Grooved ware sherd	Pit with crouched inhumation burial	— Southend Museum	Southend Museum Publication No 15, 1971
WEST THURROCK	TQ 591 789 TQ 57/16	9	?Early Neolithic (*c*30 sherds)	Group of pits found during salvage excavations in a gravel quarry	Flint assemblage Thurrock Museum	M U Jones 1978, pers comm
WALTHAM ABBEY	TL 381 009 TL 30/2	10	Ebbsfleet style ware (*c*30 sherds from two vessels)	A shallow pit found during excavations of Waltham Abbey Cloister site	Flints Waltham Abbey Museum	Huggins 1970
TWITTY FEE, DANBURY	TL 742 058 TL 70/39	11	Sherd from a Peterborough ware pot	Found on the floor of a gravel pit	— Bull Collection Colchester Museum?	Dunning 1933 Bull 1935–37
LITTLE WALTHAM	TM 255 313 TM 71/81	12	Early Neolithic Radiocarbon date 3170 ± 130 bc	Pits found during excavation of an Iron Age settlement	Flints Chelmsford Museum	P J Drury 1978, pers comm
WALTON-ON-NAZE	TM 2521 TM 22/l	13	1) Windmill Hill ware 2) Grooved ware 3) Beaker	Finds from the foreshore including 'cooking holes and a camp site'	Flints Hazzledine Warren Collection, British Museum, Colchester Museum	Warren *et al* 1936
WOODHAM WALTER	TL 812 080 TL 80/43	14	1) Plain ware (5 sherds) 2) Grooved ware (1 sherd)	Pit found during excavation of a Late Iron Age/Romano-British settlement	Flints Chelmsford Museum Acc No 76/201	Buckley & Hedges (forthcoming)

Table III

Site	NGR 43 Essex site record No	Map No	Pottery	Context	Other finds Location of finds	References
NEWPORT	TL 52 33 TL 53/77	15	Grooved ware	Occupation pit	Flints Hazzledine Warren Collection, British Museum	Warren *et al* 1936
SANDON	TL 751 043 TL 70/53	16	Windmill Hill ware (30 small sherds)	Shallow pit located in gravel workings	Flints Possesion of Mr R B Sachs and one sherd Chelmsford Museum	Ordnance Survey 1959 TL 70 S.E.I R B Sachs 1977, pers comm
SAFFRON WALDEN	TL 530 385 TL 53/10	17	1) Plain ware (7 sherds) 2) Grooved ware (1 sherd)	Pit found during excavation at Elm Grove, Saffron Walden	Flints Saffron Walden Museum	S Bassett 1978, pers comm
BRAINTREE	TL 769 238 TL 72/75	18	?Middle Neolithic, plain wares	Pit	— Braintree Museum	T Turner 1978, pcrs comm
RAINHAM	TQ 542 818 (Greater London)	19	Plain and decorated Neolithic wares of Mildenhall type. 3 Fengate sherds? Beaker (at least 4 vessels)	Ring ditch (*c*450 Neolithic sherds and central pit, 6 plain Neolithic sherds and 8 Beaker sherds	Flintwork Passmore Edwards Museum, Newham	I F Smith 1978, pers comm
WICKEN BONHUNT	TL 511 335 TL 53/35	20	1) Mortlake ware 2) Fengate ware 3) Peterborough ware 4) Grooved ware 5) Beaker	Hearths and a few pits	Flints with excavator	Wade (this volume)
CHELMSFORD, ORCHARD STREET	TL 708 063 TL 70/1	21	Early Neolithic	Buried soil	Flints Chelmsford Museum	P J Drury 1978, pers comm
CHIGNAL ST JAMES	TL 662 108 TL 61/97	22	?Grooved ware sherd	Residual infill of a Roman ditch	Flints Chelmsford Museum	Couchman & Eddy 1977
NORTHBROOKS, HARLOW	TL 439094 TL 40/93	23	Middle Neolithic Grooved Ware	?Occupation area with pits, salvage excavation in gravel working	Flints Fired clay Harlow Museum	John (Chapman 1978, pers comm

1971, 240) which had corded decorations and the occasional lug, including one with a triple perforation. The decorative techniques included combed patterns, rusticated cordons, impressed hollows, hatched lozenges, incised chevrons, and vertical and horizontal rusticated zones. Some flat bottomed, thick sectioned coarse wares were plain apart from vertical cordons.

Flint industry

The Neolithic flint industry in Essex has been largely neglected, apart from work carried out early this century. The material in most museums consists largely of collected finds of an unstratified and unsorted nature.

Earlier Neolithic industries appear to be virtually absent. Sites producing early and middle Neolithic pottery are few and the flint associated with these is either poor, as at Orsett (Bonsall 1978), or insufficiently diagnostic to be distinguished from the other material, as at Little Waltham (Healey 1978).

The majority of flint axes and leaf-shaped arrowheads are chance finds but they do indicate the level and area of activity in Neolithic times. The present distribution maps of flint and stone implements (Figs 13 and 14) most probably reflect the activities of museums and local archaeologists, but nevertheless a coastal and riverine distribution of finds can be detected.

The later Neolithic period is somewhat better represented, notably by Lion Point, Clacton (Wainwright 1971). Recent excavations producing flintwork of a similar date include Saffron Walden, Heybridge, and Little Waltham. A study of the important flint assemblage from Lawford, found in association with Grooved Ware, would add an important site to the list. Work by Elizabeth Healey is now in progress on the flint assemblages from a number of sites along the Chelmer Valley and also Mucking. Once these reports become available it should be possible to produce a more comprehensive pattern of settlement than is currently determinable. An assemblage from the earlier Neolithic site at Orsett and a second from the late Neolithic site at Lion Point are worthy of a brief mention.

Orsett

The total number of artefacts recovered during the excavation was 1493 of which 2.75% were regular tools. It is likely that several different periods are represented but none appears to be earlier than Neolithic (Bonsall 1978).

The middle Neolithic assemblage of 316 flints consists mainly of blades, flakes, and waste (276 of total). Cores were the second highest category, numbering some 24. Notched flakes, scrapers, serrated flakes, roughouts for bifacial tools, and core rejuvenation flakes were also represented.
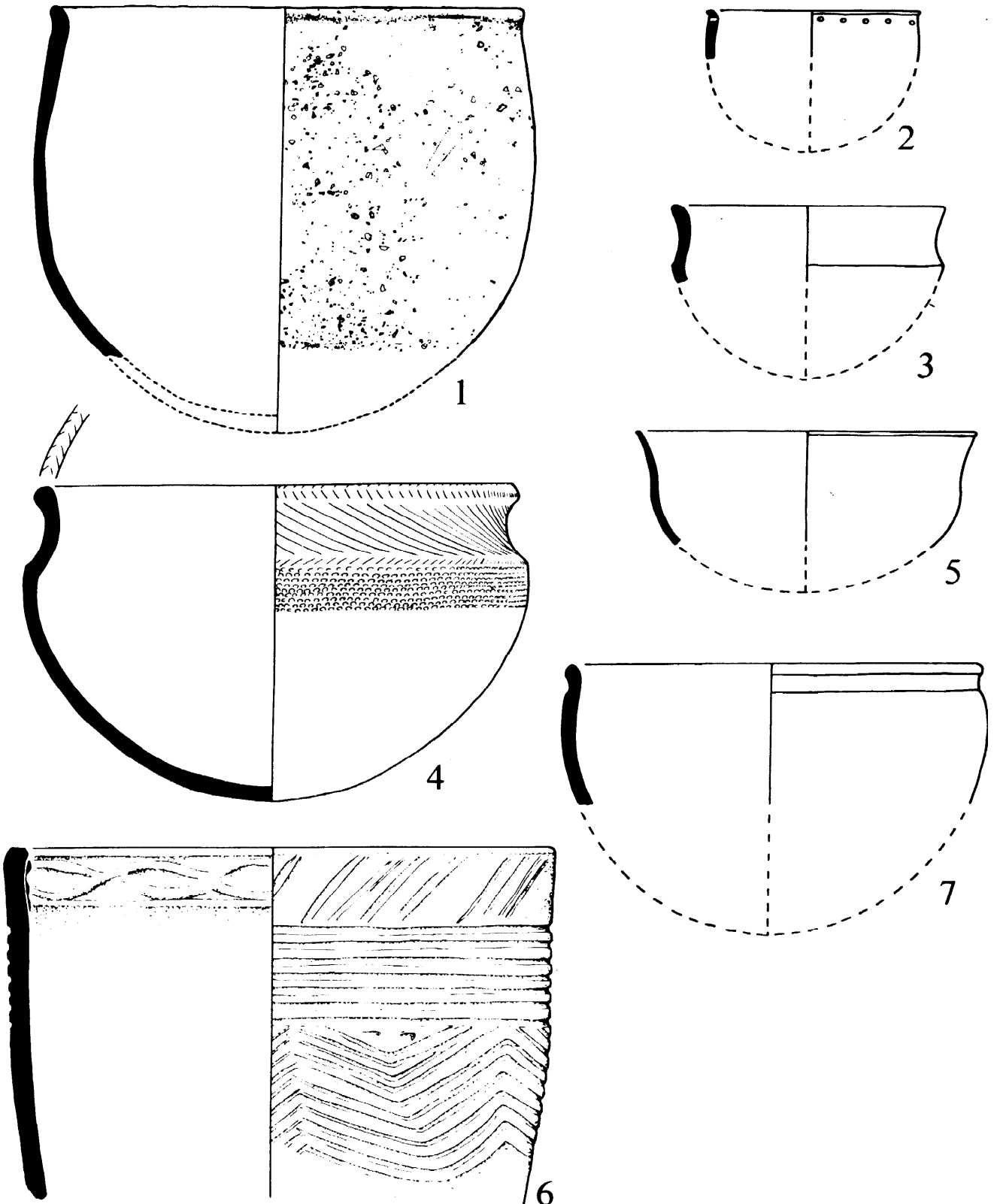
Fig 12   Essex Neolithic pottery: Early/Middle Neolithic 1-5 and 7; 1, Orsett, 2-5, Lion Point, Clacton, 7, Dovercourt. Grooved Ware; 6, Lion Point, Clacton (scale 1-3, 5, 7 = ¼; 4 and 6 = $^1/_3$)
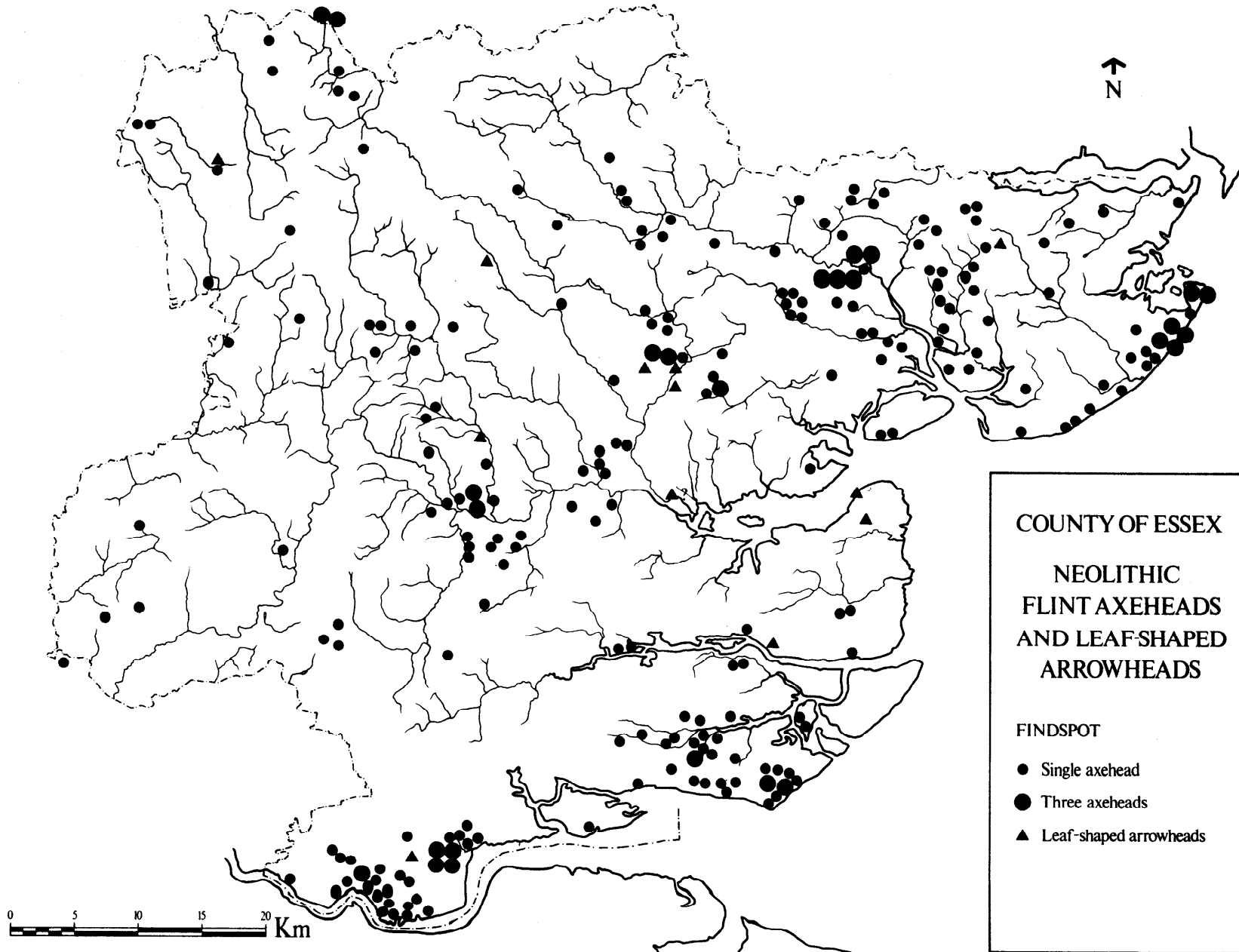
COUNTY OF ESSEX

NEOLITHIC
FLINT AXEHEADS
AND LEAF-SHAPED
ARROWHEADS

FINDSPOT

● Single axehead

● Three axeheads

▲ Leaf-shaped arrowheads

Fig 13   Distribution map of Neolithic axeheads and leaf shaped arrowheads in Essex (Crown copyright reserved)
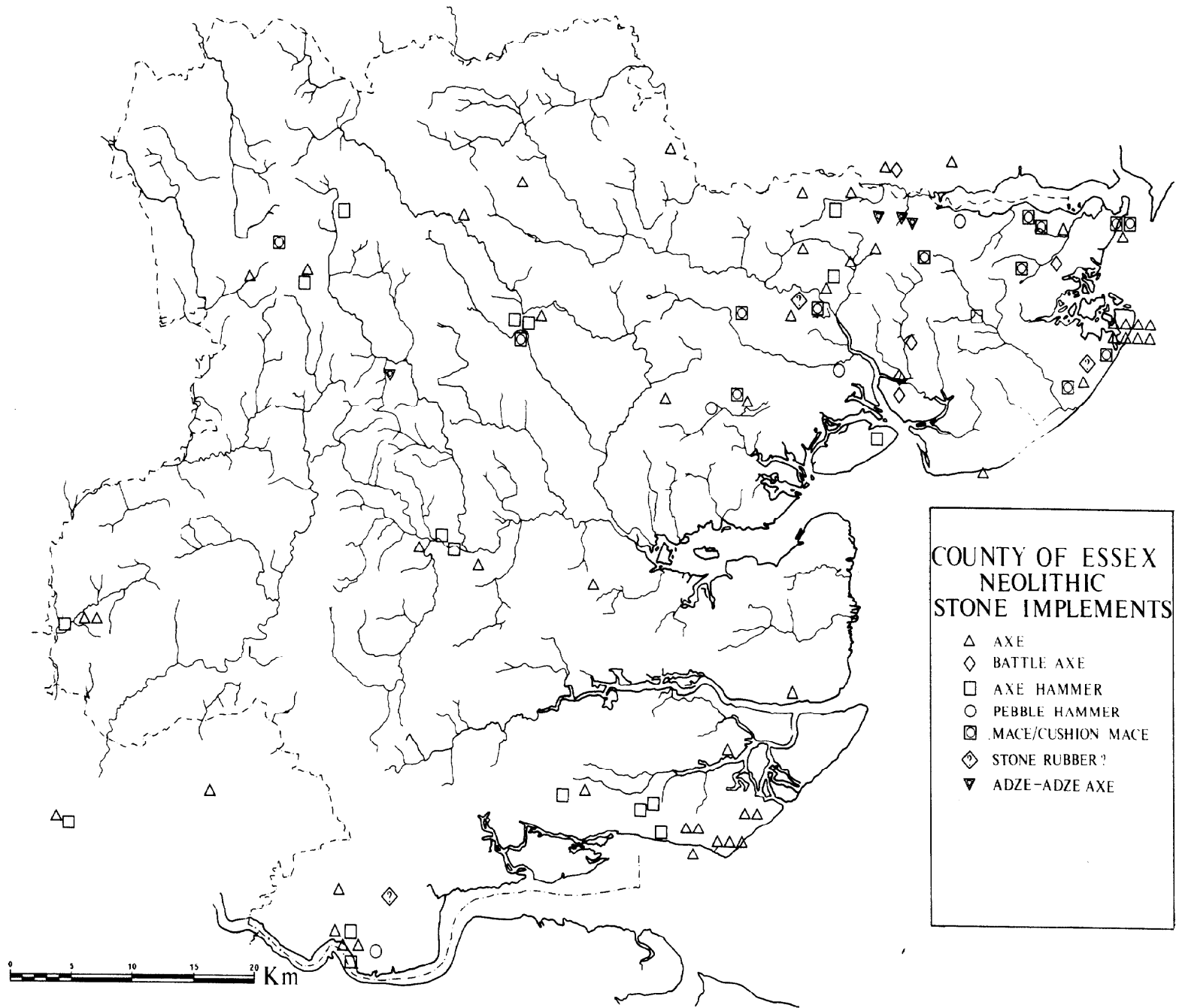
Fig 14 Distribution map of Neolithic stone implements in Essex (Crown copyright reserved)

Blades were a minor but significant component of the Orsett industry. The roughouts for bifacial tools, presumably of 'laurel leaf' form, also occur at Hurst Fen (Clark et al 1960).

Grooved Ware site, Lion Point, Clacton

S Hazzledine Warren recovered a total of 522 flints from pits/cooking holes on the foreshore. They have been recorded in detail by Wainwright (1971) and only a brief mention of the assemblage will be made here. The local raw material which was utilized was of a good quality and the flints were in a fresh condition. Of the total number of artefacts 365 are waste flakes (70%), 69 are cores (13%), and implements numbered 88 (17%). The proportion of implements and cores to waste flakes is notably high. The implements consisted of scrapers, retouched flakes, polished axe fragments, transverse arrowheads, knives, serrated flakes, borers, and one flaked axe; scrapers represented over 60% of the total. Amongst other implements the three transverse arrowheads are perhaps the most diagnostic type of the late Neolithic.

The collection is important awing to its undoubted close association with the Grooved Ware pottery, which is a rare occurrence.

Priorities for research in Neolithic Essex

The long term aim should be to establish models for Neolithic settlement in eastern England and to relate these models to patterns of change in the Bronze Age. Attempting to define land usage patterns or territorial organization at the present time would be premature. A number of research aims may be identified:

Survey—general

Further survey in the form of aerial reconnaissance and fieldwork must remain the top priority. Until the primary locational data on the sites have been collected and identified little progress can be made. Throughout the discussion in this paper it is apparent that the Stour Valley region of Essex and Suffolk was particularly important during the Neolithic but, perhaps surprisingly, no interrupted ditch enclosure is know-q in that region. In contrast, the Thames terrace which is rich in cropmarks of all periods is notably devoid of Neolithic mortuary enclosures and cursus and henge monuments and yet possesses the only Essex causewayed enclosure at Orsett. Special attention should therefore be given to survey in southern and central Essex.

It is also necessary to take stock of existing sites which may be of Neolithic date. Accurate plans and contour surveys of extant remains should be completed. The condition of the monument and the likelihood of future threats needs to be considered.

Intensive field walking and surface collection of artefacts on a carefully controlled grid basis should be undertaken on ploughed sites. This method is especially relevant to the understanding of open settlements (Drewett 1977, 9). Basic sorting and study of the mixed Upper Palaeolithic-Bronze Age flint and stone collections in Essex museums is required.

Sampling and trial excavation

Progress on the classification of field monuments is at present delayed owing to lack of dating and information from scientifically excavated sites. It has therefore become necessary to commence a planned programme of site sampling and trial excavation which will, whenever practicable, relate to rescue needs, but will nevertheless be controlled by predefined research priorities. It is considered that purely rescue based excavation is neither academically desirable nor financially justifiable. The programme commenced with trial work at the Orsett causewayed enclosure and will continue with the examination of possible Neolithic sites of all types. This stage of the programme awaits the results of field survey and site evaluation exercises related to the national priorities defined by the Prehistoric Society in their recent paper (Kinnes et al 1977).

Conservation of monuments

When survey has added new information to the existing corpus of monuments, thought should be directed to preserving selected sites of outstanding importance. Guardianship under the provisions of the Ancient Monuments Acts has proved to be the only viable means of providing this level of protection. Neolithic earthworks, should any survive, would naturally be worthy of such attention. However, most sites have already been ploughed flat and will only be identifiable as cropmarks. It is therefore necessary to ensure that a programme of selective conservation is implemented to secure the more important cropmark sites for future investigation,

Note

[1] S Shennan (Southampton University) was Assistant Director to F Peterson in 1971.

References

Akeroyd, A V, 1972   Archaeological and historical evidence for subsidence in southern Britain, *Phil Trans Roy Soc Lond*, **A272**, 151–69

Bonsall, C, 1978   The flint, in Hedges & Buckley 1978, 255–9

Briscoe, G, 1957   Swales tumulus. a combined Neolithic and Bronze Age barrow at Worlington, Suffolk, *Proc Cambridge Antiq Soc*, **50**, 101–12

Buckley, D G, & Hedges, J D, forthcoming   Excavations at Woodham Walter, *East Anglian Archaeol*

Bull, J M, 1935–37   A prehistoric site at Twitty Fee, Danbury, *Essex Natur*, **25**, 87–93

Churchill, D M, 1965   The displacement of deposits formed at sea-level, 6500 years ago in southern Britain, *Quaternaria*, **7**, 239–47

Clark, J G D, Higgs, E S, & Longworth, I H, 1960   Excavations at the Neolithic site at Hurst Fen, Mildenhall, Suffolk, *Proc Prehist Soc*, **26**, 202–45

Couchman, C R, 1977   Marlborough Road, Braintree, in Work of Essex County Council Archaeology Section, 1977 (ed C R Couchman), *Essex Archaeol Hist*, **9**, 71–4

——, & Eddy, M, 1977   Chignal St James, in *ibid*, 77–84

Curwen, E C, 1930   Neolithic camps, *Antiquity*, **4**, 13, 22–54

Drewett, P L, 1977   Preliminary excavation of a Neolithic open settlement on Bullock Down, Beachy Head, East Sussex, in Rescue Archaeology in Sussex, 1976, *Bull Inst Archaeol*, **14**, 1–61

Dunning, G C, 1933   Neolithic and Iron Age pottery from Danbury, Essex, *Antiq J*, **13**, 59

Erith, F H, 1968   The henge monument at Little Bromley, *Colchester Archaeol Group Annu Bull*, **11**, 3

——, 1971   The Lawford Neolithic complex, *ibid*, **14**, 38–40

Evans, J G, 1976 *The environment of early man in the British Isles*

Healey, E, 1978 The flints, in *Chelmsford Excavation Committee Report 1: Excavations at Little Waltham 1970–71* (P J Drury), CBA Res Rep **26**

Hedges, J D, 1978 Archives of air photographs—the collections of Essex County Council, Planning Department, *Aerial Archaeol*, **1**, 37–8

————, & Buckley, D G, 1978 Excavations at a Neolithic causewayed enclosure, Orsett, Essex, 1975, *Proc Prehist Soc*, **44**, 219–308

Huggins, P J, 1970 Waltham Abbey monastic site and prehistoric evidence, 1953–67, *Trans Essex Archaeol Soc*, 3 ser, **2**, 216–66

Jones, M U, & Catton, J, 1971 Cropmarks recorded in 1970, *Panorama* (Journal of the Thurrock Local History Society), **14**, 38–42

Kinnes, I, 1978 The Neolithic pottery, in Hedges & Buckley 1978, 259–67

————, Mercer, R, & Smith, I F, 1977 *Research priorities in the British Neolithic*, Prehist Soc advisory paper

Longworth, I H, 1971 in *Durrington Walls: excavations 1966–1968* (G J Wainwright), Soc Antiq London, **29**

————, Wainwright, G J, & Wilson, K E, 1971 The Grooved Ware site at Lion Point, Clacton, *Brit Mus Quart*, **35**, 93–124

McMaster, I, 1971 Cropmarks; an appeal for conservation and observation, *Colchester Archaeol Group Annu Bull*, **14**, 5–20

Mercer, R, 1977 quoted in Causewayed camps (A Selkirk), *Curr Archaeol*, **58**, 335–40

Palmer, R, 1976 Interrupted ditch enclosures in Britain: the use of air photography for comparative studies, *Proc Prehist Soc*, **42**, 161–86

Piggott, S, 1954 *The Neolithic cultures of the British Isles*

Smith, I F, 1965 *Windmill Hill and Avebury, excavations by Alexander Keiller, 1925–1939*

Wainwright, G J, 1969 A review of henge monuments in the light of recent research, *Proc Prehist Soc*, **35**, 112–33

————, 1971 in Longworth *et al* 1971

————, 1972 The excavation of a Neolithic settlement on Broome Heath, Ditchingham, Norfolk, England, *Proc Prehist Soc*, **38**, 1–97

Warren, S H, 1945 Some geological and prehistoric records on the north-west border of Essex, *Essex Natur*, **32**, 273–80

————, Piggot, H S, Clark, J G D, Burkitt, M C, & Godwin, H & M E, 1936 Archaeology of the submerged land-surface of the Essex coast, *Proc Prehist Soc*, **2**, 178–210

————, & Smith, I F, 1953 Neolithic pottery from the submerged land-surface of the Essex coast, *Inst Arch Annu Rep*, **26**

Wilson, D R, 1975 Causewayed camps and interrupted ditch systems, *Antiquity*, **49**, 178–86

No overall survey of the evidence for Bronze Age settlement in Essex has been attempted before. This paper is a preliminary study, based on a series of distribution maps assembled to see if any settlement patterns emerge.

There are two possible sources of inaccuracy. The first is that the information has been assembled from records, and the writer has not examined most of the actual material. The second, if real, is more serious because harder to correct This concerns the conditions governing discoveries; and failure to take it into account could result in wrong conclusions about early settlement patterns. Since this study is based on the distribution of finds s, it is essential to be clear about possible modern sources of bias. It is frequently assumed that prehistoric settlement was confined to the lighter soils; and that in Essex the clay lands, particularly the London Clay, prevented settlement and inhibited movement westwards. Cropmark evidence is no help: it is easily forgotten that only on gravels and chalk are conditions ideal for cropmark formation. Furthermore, it is in gravel and brickearth extraction (and during urban development) that casual finds can be expected However, many artefacts were found in the course of the principal industry of Essex: agriculture. Axes and urnfields are as likely to be recognized if turned up during field-draining or ploughing on clay as they are if discovered in gravel-working. Moreover, there are areas which fulfil conditions for ready discovery where early funds have not been made. Finally, recent excavations on later sites are resulting in the discovery of Bronze Age finds of precisely the sort not recognized as casual finds; generally these reinforce the existing picture.

This survey is divided into early, middle, and late Bronze Age. This has the disadvantage that some of the items plotted on one map could be up to 700 years apart, though most fall between the extremes. We must also guard against the subconscious attitude this approach may induce, that the divisions reflect a break in continuity. They do not.

Discussion of each phase begins with a survey of the evidence, followed by conclusions which may be drawn about settlement patterns.

Early Bronze Age (Fig 15)

Evidence

Beginning with the late Neolithic Beaker invasions, there are only two dubious Beaker domestic structures in Essex: a rectangular building at Dunmow (Drury, pers comm) and an oval structure at Orsett (Hedges & Buckley 1978). There are pita at places as far apart as Lion Point, Clacton (radiocarbon date 1800 bc ± 150, BM 172), Elsenham, and Mucking. Beaker burials are equally widely-spaced; so are single finds of complete beakers, which may or may not represent burials.

The numerous isolated flint barbed-and-tanged arrowheads were presumably lost in hunting; but flint daggers may represent settlement since they would not be so easily lost Their distribution partly parallels, partly exceeds, that of the pottery. Only one wrist-guard is known, from Danbury, Mace-heads, battle-axes, and flint assemblages are excluded from this study; only examination of the objects themselves could confirm the frequently untrustworthy identifications in the records.

The idigenous population has left far fewer traces than the Beaker people, and in a more restricted distribution.

Generally the two do not mix. Beaker and Grooved Ware sherds were found together only at Orsett causewayed camp. At places where both Beaker and collared urn finds occur—Alphamstone, Mistley, Shoebury, and again at Orsett—there is no evidence of direct contact The difference may be temporal rather than cultural

Collared urn finds all fall east of a line from Alphamstone to Orsett; by contrast, all the food vessels come from the west of the county. However, only three food vessels are represented, and further finds would be needed to show whether the division was recognizable in the early Bronze Age.

Some Wessex connections are demonstrable, most notably the Rochford cremation burial, where an inverted collared urn contained gold, amber, and shale beads. Another, conical, amber bead at Milton Hall Brickfield was residual, as were Beaker and collared urn sherds. An oblate amber bead was found in Colchester with a Group I palstave, dated to the early to middle Bronze Age transition (Davies 1968, 1-5). Also possibly transitional is the East Tilbury burial: an urn containing a double cremation and a segmented faience bead, inverted over a saddle quern, was buried in a cylindrical flint 'cist' within a double ring ditch (Bannister 1961, 19-27). The urn was not preserved, but from the description it may have been a bucket urn. Three small open cups, two from Shoebury and one from Stansted Mountfitchet, are possibly paralleled by the Wessex straight-sided pygmy cups (cf Ashbee 1960, 128, fig 46.11).

Indisputable early Bronze Age metalwork is very rare. Only one item, now lost, has a recorded context: a plain, flat-section bronze or copper bracelet with a Beaker crouched inhumation at Berden (Clarke 1970, 445, 546, fig 894). There are triangular bronze knife-daggers from Braintree and Thurrock, and a tanged bronze spearhead from Saffron Walden. No certain flat axes are known; though Evans (1881, 43) supposed that five axes from Great Baddow were flat; so possibly was an axe from Shoebury, also lost.

Conclusions

The majority of early Bronze Age sites have a riverine or coastal distribution. They cluster in the Stour valley, near the streams draining into the Colne, Chelmer, and Blackwater, along the coast between Harwich and Clacton, and above the Thames, ie, where rivers have cut through London or Chalky Boulder Clay to expose glacial sands and gravels and deposit alluvium, or on brickearth or river gravels. Presumably both soil type and the proximity of water influenced choices of site.

The gaps are equally interesting: London Clay and Chalky Boulder Clay except where cut by river valleys. The preference for lighter soils can be demonstrated in two quite small areas. In Tendring Hundred cropmark survey has shown dense prehistoric settlement, and local interest in archaeology is strong. Yet there is a Neolithic and Bronze Age lacuna on the London Clay, encircled by a fringe of finds. In the Dengie peninsula there is London Clay west of a north-south line running through Southminster; east are alluvial deposits which were mostly once salt-marsh Along the junction sands and gravels outcrop, and it is there that most of the Bronze Age finds in the Dengie have been discovered

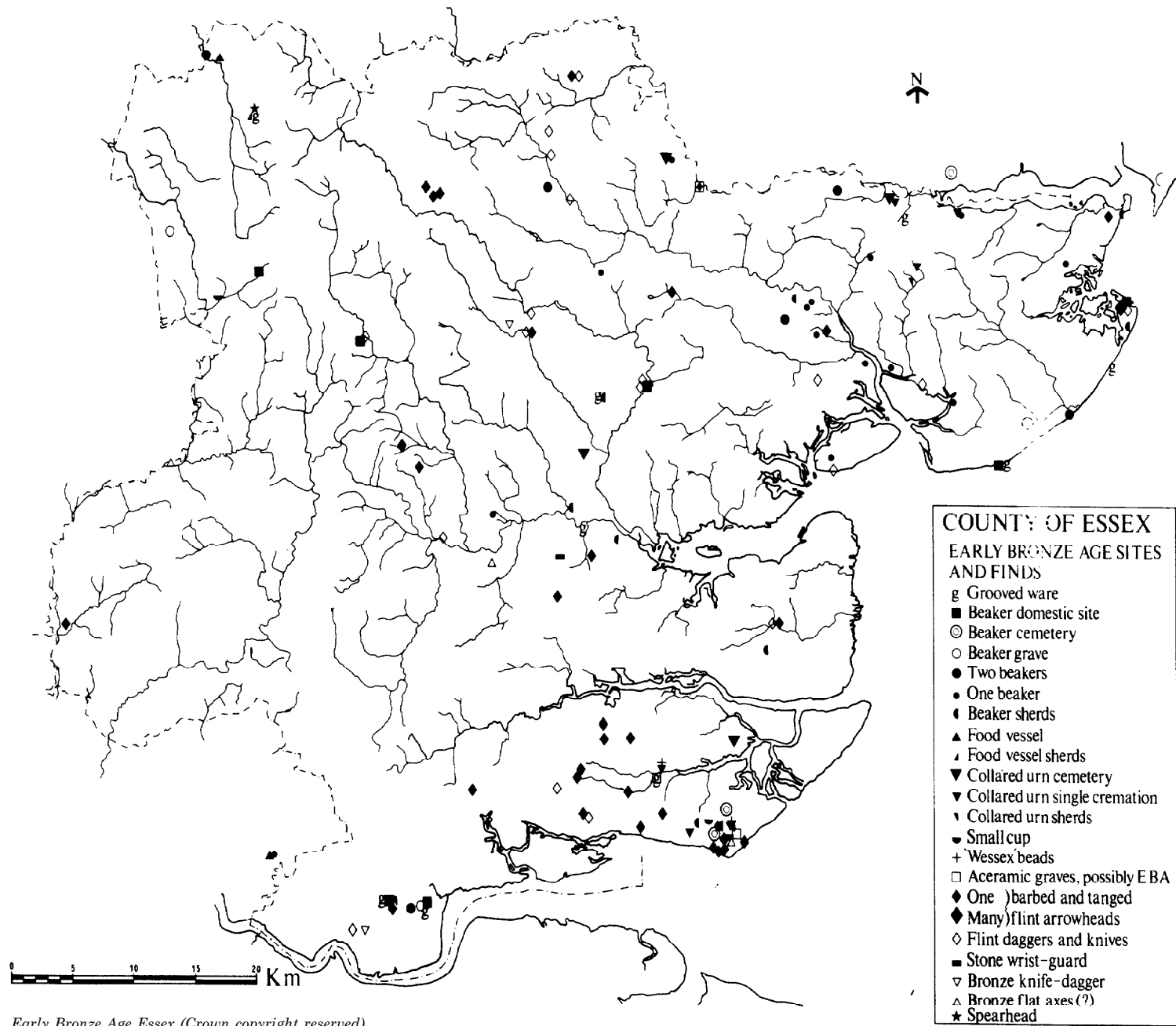Certain foci of settlement emerge within the general pattern. The Shoebury area stands out, in terms both of

Fig 15 *Early Bronze Age Essex (Crown copyright reserved)*

COUNTY OF ESSEX

EARLY BRONZE AGE SITES
AND FINDS
g Grooved ware
■ Beaker domestic site
◎ Beaker cemetery
○ Beaker grave
● Two beakers
• One beaker
◖ Beaker sherds
▲ Food vessel
◢ Food vessel sherds
▼ Collared urn cemetery
▾ Collared urn single cremation
◥ Collared urn sherds
◕ Small cup
+ Wessex beads
□ Aceramic graves, possibly EBA
◆ One)barbed and tanged
◆ Many)flint arrowheads
◇ Flint daggers and knives
◖ Stone wrist-guard
▽ Bronze knife-dagger
△ Bronze flat axes (?)
★ Spearhead

density and variety of finds. There is evidence for both Beaker and indigenous settlement; and insofar as there is a concentration of Wessex finds, it is in this area. Further west on the Thames terrace is Mucking, already a focus of settlement which was to continue through to the Saxon period. Here there are Beaker pits and inhumations, including one with an all-over-combed beaker and one in a plank coffin (radiocarbon date 1630 ± 90 bc, Har 450). The AOC beaker sherds from Orsett are early (Kinnes 1978, 266); obviously the Thames estuary would be a convenient landfall for incoming Beaker people.

The Clacton–Harwich coastline so prominent in the Neolithic was still important in the early Bronze Age, but thereafter it ceased to attract settlement. Is this related to coastline changes, or the beginning of climatic deterioration postulated by Burgess (1974, 195-6)?

Middle Bronze Age (Fig 16)

Evidence

The middle Bronze Age is represented by numerous cremation cemeteries and casual finds of bronze axes, but settlement evidence is still quite elusive. There are many ring ditch cropmarks and several standing barrows; the few that have been excavated were either early or middle Bronze Age.

In ceramic terms the middle Bronze Age means the Ardleigh Group of the Deverel–Rimbury 'culture' (Erith & Longworth 1960, 178-92). In contrast to the early Bronze Age the pottery is remarkably uniform. The Ardleigh Group is clearly defined within the Deverel-Rimbury 'culture', with its distinctive bucket urn features of all-over finger-tip rustication, horseshoe 'handles', and lines of holes beneath the rim (Couchman 1975, 14-32). Globular urns are rare except at Ardleigh itself.

There are no known house sites. Recognizable domestic features are confined to pits containing pottery and (frequently) cylindrical clay loomweights. Pits with pottery and loomweights are recorded from Barling, Mucking, Braintree, and Wivenhoe; and both were residual at Milton Hall, Shoebury. It seems clear that middle Bronze Age economy in Essex was partly based on sheep-farming. Agricultural activities are attested by the one, or possibly two, examples of 'Celtic' fields recognized in Essex. It is impossible to say how widespread these were, but one may postulate that their rarity is due to loss through later agriculture rather than a reflection of the true state of affairs. At Mucking field boundaries respected Barrow 3 with a radiocarbon date of 1150 ± 100 bc (Har 2339); while at Gun Hill, Tilbury a field boundary was dated, though not closely, within the latter part of the Bronze Age (Drury & Rodwell 1973, 51). Evidence for cereal cultivation comes from the pit at Braintree (above), where bucket urn fragments contained food residue which proved to be starch (couchman 1977, 70-4).

The burial rite was invariably cremation, as single or multiple barrow and ring ditch burials (ploughed-out barrows or ditched enclosures?), and urnfields. No chronological differences can be detected between ring ditch and urnfield pottery; though at Chins Hill, Colchester, unenclosed cremations seemed to respect the ring ditches (Crummy 1977, 14-15). Mucking Barrow 5 had radiocarbon dates of 1260 ± 100 bc and 1340 ± 80 bc (Har 2340 and 2342) but no pottery. Funerary pottery is not distinguished in form or decoration from domestic pottery.

The only association of pottery and metalwork is an undiagnostic fragment of bronze bracelet from one of the Ardleigh cemetery urns (Hawkes 1965, 50-1). The Ornament Horizon of southern England and Norfolk so far seems to have missed Essex.

Palstaves are widely distributed. Several apparently come from the same mould: the early Potton Island palstave is thought to be identical to those in the Burnham-on-Crouch hoard, and one from Shoebury may be also. Spearheads are fewer but still widely distributed. However, rapiers seem largely related to the Thames and its tributaries in the south-west of the county.

Conclusions

Middle Bronze Age sites and finds have a comparable distribution to those of the early Bronze Age. The Stour, Colne, and Blackwater–Chelmer basins continued to be attractive. Again there are gaps corresponding to the clays. The lack of finds on marine alluvial deposits suggests that these were marsh in the Bronze Age: on the Thames shore the concentrations at Mucking and Thurrock on gravel and chalk, and on gravels and brickearth around Shoebury, are separated by the barren Canvey Island marshland. In the Dengie the few finds are still on the gravels between clay and marsh. There is clearly continuity at Mucking, where domestic pits are adjacent to middle Bronze Age ring ditches.

The grouping of finds on the west side of Colchester seems to indicate a growing population here. The finds around Braintree and Chelmsford could represent single groups practising transhumance. The cemetery at Ardleigh brings this area into prominence for the first time. Continuity cannot yet be demonstrated between the meagre early Bronze Age occupation and the important middle Bronze Age site; nor through the late Bronze Age into the dense settlement of the later Iron Age and Roman period. There could be a cycle here, related to intensive land-use resulting in temporary exhaustion of the soil.

The concentration of metalwork around the Thames, so noticeable in the late Bronze Age, perhaps sees its beginnings in the middle Bronze Age. Finds are not from the Thames itself, however, but from above it. This applies to hoards (up to *c* five kilometres from its banks), and single finds including five of the six rapiers known from the county. The provenances of most of these finds are the valleys of rivers draining into the Thames.

Late Bronze Age (Fig 17)

Evidence

In common with the rest of Britain, late Bronze Age Essex is top-heavy with metalwork. The idea of recognizable pottery of this phase, and therefore of settlements, is so recent that re-examination of much material is necessssary before many actual sites can be recognized.

A few sites are known to have late Bronze Age origins. The only well-defined ones are at Mucking: a circular defensive double-ditched enclosure and a similar single-ditched enclosure. Both produced high-shouldered cordoned jars with finger-tip decoration, and smaller burnished comb-decorated pots. The double-ditched enclosure contained a round house. Radiocarbon dates for this enclosure are in the range 860-820 bc (Har 1634, 1630, 1708).

The jars from Mucking are paralleled by surface finds from Langdon Hills. This is very interesting, since the site is probably a hillfort. Unfortunately the original context of the pottery is unknown, whether an early phase of the defences or pre-hillfort occupation. Possibly related pottery comes from the 'camp' at Twitty Fee, Danbury.
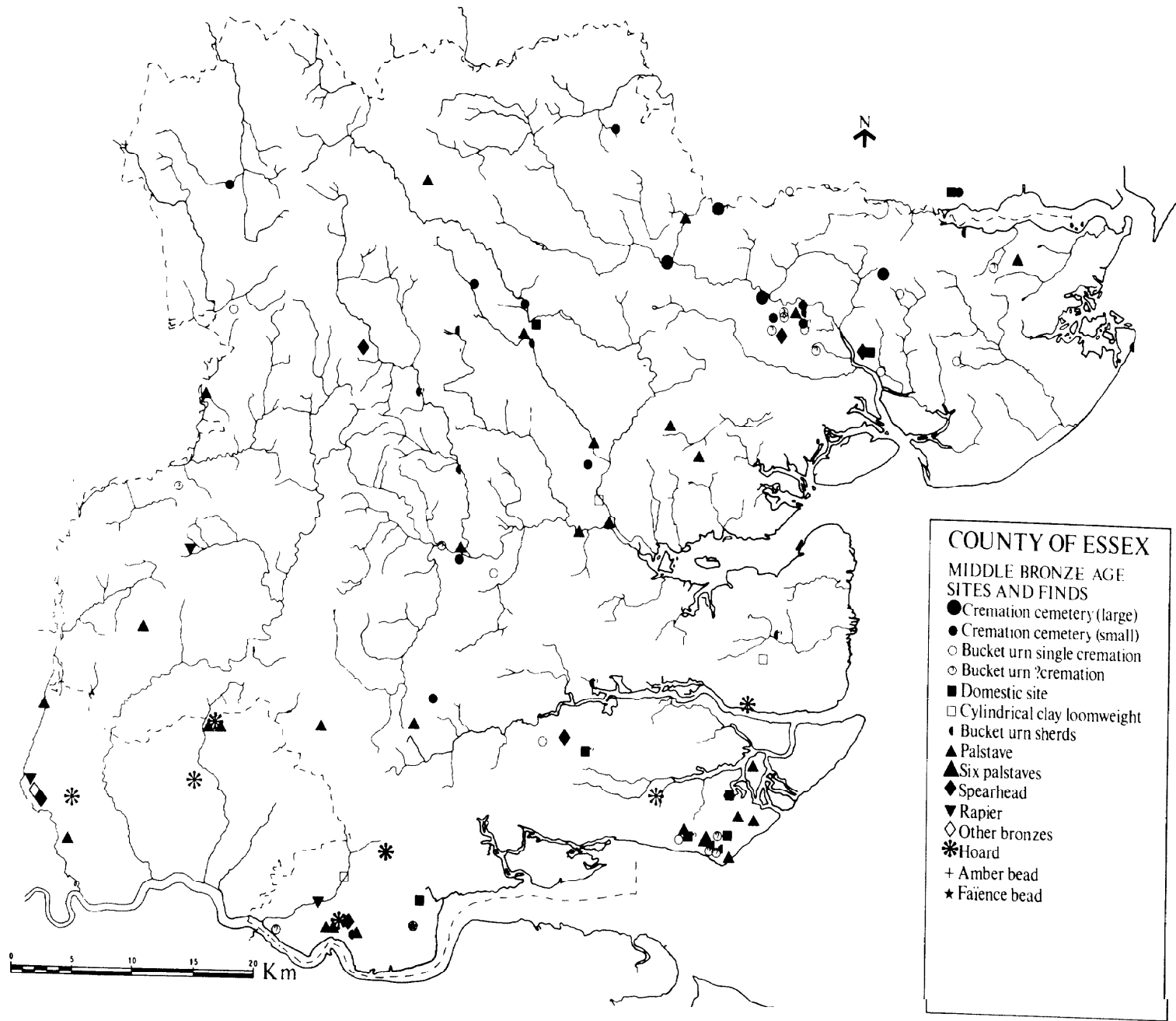
COUNTY OF ESSEX

MIDDLE BRONZE AGE SITES AND FINDS

- ● Cremation cemetery (large)
- ● Cremation cemetery (small)
- ○ Bucket urn single cremation
- ☉ Bucket urn ?cremation
- ■ Domestic site
- □ Cylindrical clay loomweight
- ◀ Bucket urn sherds
- ▲ Palstave
- ▲ Six palstaves
- ◆ Spearhead
- ▼ Rapier
- ◇ Other bronzes
- ✳ Hoard
- + Amber bead
- ★ Faïence bead

Fig 16 Middle Bronze Age Essex (Crown copyright reserved)

COUNTY OF ESSEX
LATE BRONZE AGE

* ✱ Bronze founder's hoard
* ▲ Bronze socketed axe
* ◉ Small axe hoard/association
* ◓ Large axe hoard
* △ Iron socketed axe
* ◢ Part of axe
* ▼ Bronze sword
* ◥ Part of sword
* ◆ Spearhead
* • Bronze lump
* ◉ Hoard of bronze lumps
* b Bronze bracelets
* c Bronze cauldron
* s Circular shield
* ★ Gold artefact
* ■ Double-ditched enclosure
* ■ Occupation
* □ Pottery
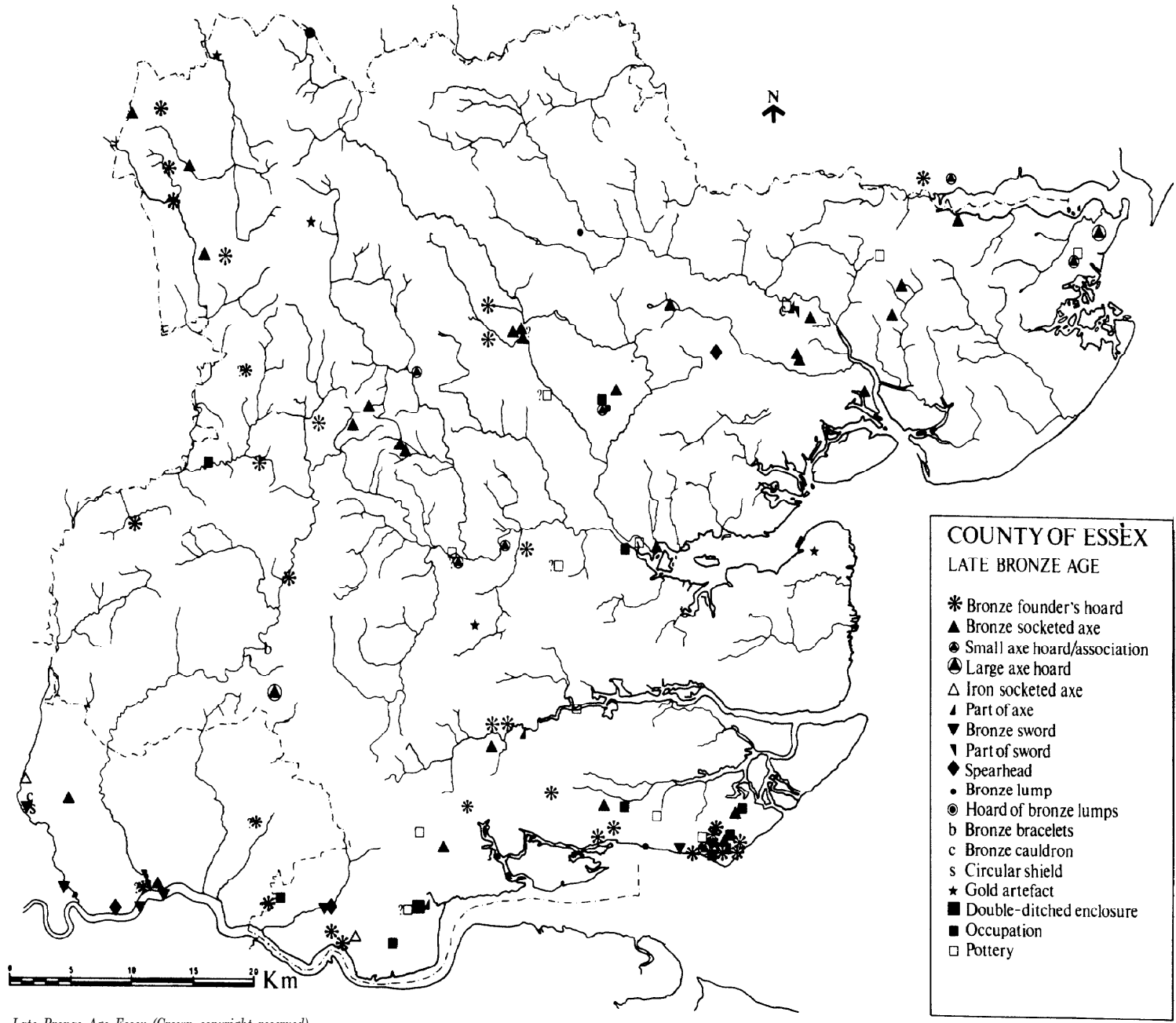
Fig 17   Late Bronze Age Essex (Crown copyright reserved)

At Eastwood near Southend a rectangular ditched enclosure contained evidence of late Bronze Age occupation. Excavation at Sheering revealed ditches and a 'working hollow' of this date; and at Milton Hall there was a late Bronze Age pit.

Different late Bronze Age pottery was found in peat deposits at Hullbridge (Reader 1911, 263—described as Neolithic, pl XIX; see also p 27 above): hard greyish 'situlate' jars with cabling on top of the rim. Cabling may be part of the late Bronze Age decorative repertoire in Essex (Couchman 1975, 24, 27). Another ceramic form is represented by a somewhat butt-shaped, hard dark pinky-grey jar, found at Shoebury with six lumps of bronze round the shoulder.

Turning to the metalwork, attention immediately focuses on the founders' hoards. For sheer concentration of hoards the Leigh–Shoebury–Southchurch area is unique in Essex. The Grays Thurrock hoard, of over 200 pieces, is outstanding; others like the Leigh I hoard contain only five or six items. Some of. the larger hoards comprise a wide range of pieces both in type and date; by contrast the Ashdon hoard consisted entirely of rough bronze lumps. Several hoards were found in pots, but these rarely survive. Full publication of the Essex hoards to accord them their proper place in the British late Bronze Age is long overdue; and D G Davies's intended publication of the Hatfield Broad Oak, Southchurch, Rayne, and Leigh I hoards will be a major contribution.

There is a wide scatter of casual finds of socketed axes. Many are of local 'south-eastern' type, but there are exotic pieces like the Nordic axe from Braintree (O'Connor 1976). Noteworthy are two iron socketed axes, from Walthamstow and Grays Thurrock *(VCH Essex* 1, 1903, 268 and fig 34).

Apart from hoards, swords and sword fragments are almost entirely confined to the Thames and its tributaries, both from the water and the marshes. The only example of a circular bronze shield comes from Walthamstow. Buckets and cauldrons are represented by a cauldron fragment also from Walthamstow, pieces of bucket in the Hatfield Broad Oak hoard, and a complete cauldron carefully buried in a pit at Sheepen (Hawkes & Smith 1957, 1665).

There are a few items of personal adornment widely-spaced across the county, including two penannular gold bracelets from West Hanningfield, 'Irish gold ring-money' from Bradwell-on-Sea and Thaxted, and a bronze bracelet with filled chevron decoration and flattened oval terminals from Shoebury *(VCH Essex* 1, 1903, 266 fig 18).

Conclusions

It is not valid at this stage of knowledge to discuss the distribution of late Bronze Age occupation sites; at present it shows no significant variation from the rest of the Bronze Age.

The Shoebury area is so important throughout the Bronze Age that one wonders how it fits into the political situation of later Iron Age Essex. At Colchester the Sheepen excavations produced residual late Bronze Age material including evidence of metalworking; and in view of the social implications of cauldrons we may suggest that the careful burial of one on Sheepen as early as the end of the Bronze Age is significant in the light of the later importance of. the site.

From Braintree in the late Bronze Age there are only casual finds of axes, with the Rayne and Panfield hoards to the west. However, two of these axes are imported; and one

wonders what there was at Braintree to so attract outside influences. The concentrations of metalwork at Grays and Wickford surely mean that traces of late Bronze Age settlement should also be sought there.

Much has been said about the remarkable concentration of bronzes, particularly weaponry, in the Thames around London. The idea of the Thames as a 'holy river' is not universally accepted, though that there was a water cult in the late Bronze and Iron Ages is generally recognized. Certainly most of the late Bronze Age weaponry in Essex outside hoards is from the Thames and its tributaries, both from the water itself and from the marshes. If Burgess (1974, 210-11) is right, it was the sacredness of the Thames which attracted the deposition at Plaistow of the only Broadward spear from the county (Burgess *et al* 1972, 244, 277 fig 31.23). However, not all the finds need be votive. Some could have been eroded out of riverside settlements. Alternatively, they may have been washed out from hoards; some of the swords are fragmentary, and Hatfield Broad Oak is a reminder that hoards were deposited in river banks.

Perhaps the most remarkable result of plotting the distribution of late Bronze Age finds is the emergence of a line of hoards, mostly founders' hoards, on the west side of the county from the Thames to the Cambridgeshire border. Hoards are recorded from Grays Thurrock, Aveley, Hornchurch (?), Navestock, Fyfield, Hatfield Broad Oak (the big hoard and a small one), Ugley, Clavering, Arkesdcn, and Elmdon. It is suggested that this represents a routeway, not observed in earlier distributions, frequented by bronzesmiths who perhaps had dumps of scrap bronze at specified places. At one end is the Thames, itself a routeway, and the north end of the line projected into Cambridgeshire would join the Ickneild Way. One may speculate that deposition and recovery of material along such a routeway might have been routine until an event or series of events prevented recovery (cf Burgess 1974, 209).

Priorities for future work

Since this paper is a preliminary survey, clearly the Essex Bronze Age material should be examined in more detail. Only for the Beaker material and the Ardleigh Group have corpuses been compiled (Clarke 1970; Erith & Longworth 1960, 188 fig 8, 192), and recent discoveries have already made both out of date. Davies's forthcoming publication of four late Bronze Age hoards will be a valuable start on that material. A high priority, therefore, is the excavation of museum stores and publication of the material. Re-examination of assemblages from early Iron Age sites for evidence of Bronze Age beginnings would rank high.

Conventional excavation should concentrate on areas where settlement is suspected. Excavation of sites with Bronze Age beginnings can be frustrating; later occupation has often destroyed all but a few traces. However, Alphamstone, Ardleigh, and White Colne with their big cremation cemeteries and little modern development could prove rewarding. The Shoebury brickfields and Thames terrace cropmark sites should also produce more detailed evidence of Bronze Age occupation under modern excavation methods.

Finally, it is essential to obtain as many radiocarbon dates as possible from both cemetery and settlement sites.

References

Ashbee, P, 1960   *The Bronze Age round barrow in Britain*
Bannister, K, 1961   Barrow at East Tilbury, Essex, *Thurrock Historical Society Journal*, **6**, 19–27

Burgess, C, 1974   The Bronze Age, in *British prehistory* (ed C
    Renfrew)
————, Coombs, D, & Davies, D G, 1972   The Broadward
    Complex and barbed spearheads, in *Prehistoric man in Wales and the
    West* (eds F Lynch & C Burgess)
Clarke, D L, 1970   *Beaker pottery of Great Britain and Ireland*
Couchman, C R, 1975   The Bronze Age cemetery at Ardleigh,
    Essex: a further consideration, *Essex Archaeol Hist*, 7, 14–32
————, 1977   Marlborough Road, Braintree, in Work of Essex
    County Council Archaeology Section, 1977 (ed C R Couchman), *Essex
    Archaeol Hist*, 9, 71–4
Crummy, P, 1977   A Bronze Age cemetery at Chitts Hill,
    Colchester, Essex, *ibid*, 1–16
Davies, D G, 1968   A palstave and amber bead from Colchester,
    Essex, *Antiq J*, 48, 1–5
Drury, P J, & Rodwell, W J, 1973   Excavations at Gun Hill, West
    Tilbury, *Essex Archaeol Hist*, 5, 48–112
Erith, F, & Longworth, I H, 1960   Bronze Age urnfield on Vince's
    Farm, Ardleigh, Essex, *Proc Prehist Soc*, 26, 178–92
Evans, J, 1881   *The ancient bronze implements of Great Britain*
Hawkes, C F C, 1965   The bronze fragment from Ardleigh Ring II,
    Colchester Archaeol Group Annu Bull, 8. 4, 50–1
————, & Smith, M U, 1957   On some buckets and cauldrons of
    the Bronze and early Iron Ages, *Antiq J*, 37, 131–98
Hedges, J D, & Buckley, D G, 1978   Excavations at a Neolithic
    causewayed enclosure, Orsett, Essex, 1975, *Proc Prehist Soc*, 44,
    219–308
Kinnes, I, 1978   The Neolithic pottery, in Hedges & Buckley 1978,
    259–67
O'Connor, M, 1976   A Nordic socketed axe from near Braintree,
    Essex Archaeol Hist, 8, 279–81
Reader, F W, 1911   A Neolithic floor in the bed of the Crouch
    River, and other discoveries near Rayleigh, Essex, *Essex Natur*, 16,
    249–64
VCH   *The Victoria History of the County of Essex*, 1, 1903

Dr Rodwell has recently argued (1976a, 3) that the area bounded by the North Sea, the river Lea and its tributaries, and, to the north-west and north, the watershed of the boulder clay ridge, constitutes a naturally defined region within which Iron Age settlement can usefully be studied In a recent paper (Drury 1978a), the writer has attempted a preliminary review of early and middle Iron Age settlements in that area, of which the administrative County of Essex is but an arbitrary part.

Some 125 early and middle Iron Age sites are known in the county, mostly casual finds of pottery in gravel and brick-earth pits. But recent work has demonstrated that Iron Age and earlier settlement exists in the heavier clay areas, although mineral extraction and the intensification of aerial survey (eg Jones, G D B, 1977) continue to reinforce the bias in the data. Yet whatever their primary aim, most recent major excavations have produced, if not Iron Age settlement evidence, then the scraps of pottery in early ploughsoils indicative of ancient cultivation (eg Braintree; Drury *et al* 1976, 4,63,82). The increasing discovery of surviving elements of field systems of pre-Roman origin (pp 59-64, this volume) further promotes the concept of an intensively managed landscape prevailing over much of the area by the time of the Roman conquest.

It should not be forgotten that even in the Roman period some, at least, of the gravel terraces from which our settlement evidence is strongest were probably regarded as marginal land (eg Mucking: Jones, M U, 1974, 190; and especially 1978, 50). Given the ability to cultivate them, the arable potential of the heavy soils, even the London and boulder clays, can be greater than that of the gravels. The increasing evidence of settlement on these soils from the Neolithic period onwards (eg pp 26-39 above) makes it clear that early agricultural communities had the ability to cultivate them. Further, we should not forget that *early* Iron Age settlements are virtually invisible from the air; the easily detectable enclosed sites seem to originate late in the middle Iron Age. Against such a background, the distribution of casual finds or discoveries through aerial reconnaissance is archaeologically meaningless; what emerges is a map demonstrating the relative intensity of archaeological fieldwork and the distribution of gravel pits. Figure 18 therefore serves only as a location map for sites mentioned in the text.

The Iron Age in Essex can be divided into three phases: early, middle, and late. Each phase seems to be characterized by distinct settlement forms, house types, and ceramics. The early phase is seen as spanning the 6th to 4th centuries BC, (preceded by a LBA/EIA transition, spanning the 8th to 7th centuries) and the middle phase is seen as covering the period from the early 3rd century until the introduction of wheel-thrown pottery of late Iron Age type, and conceivably new house-types (Rodwell, below, p 70) by the middle of the 1st century BC, or possibly earlier in some areas.

Hillforts

The small group of hill forts in the region has been considered in two recent studies: Rodwell 1976a (19-30, 180-92), and Morris & Buckley 1978, the latter including a summary of published references; previous general surveys are Cotton 1961 and Gould 1903. The salient fact to emerge

is our ignorance of these sites; there has been little excavation, all of it small-scale and mostly unpublished. Yet it is clear from their distribution, numbers, and in some cases (eg Pitchbury, Ambresbury) strong evidence of the lack of permanent occupation, that early and middle Iron Age hillforts in this region fulfilled a purely defensive function unrelated to the hierarchy of settlements.

As Rodwell (1976a, 25-6) has observed, most are sited on promontories rather than hilltops, with a commanding view down a river valley or towards the Thames estuary or the coast (see Fig 18); he sees them, surely correctly, as a reaction to a threat of seaborne (and riverborne) invasion or raiding. This group seems to comprise Loughton, Ambresbury, Wallbury, Ring Hill, Weald Park, Langdon Hills, Downham Grange (not in Morris & Buckley; see Rodwell 1976a, 180-81; Drury 1977, 43), Danbury, Asheldham, and Pitchbury; Loughton and Ambresbury are so close together as to suggest that one replaced the other. Rayleigh (Rodwell 1976a, 184) and Vange Hill (Drury 1970) are other possible locations on the north bank of the Thames, and fieldwork may bring more to light. These sites vary considerably in size, shape, and defensive form, including both univallate and bivallate examples; some, for example Langdon Hills and Asheldham, have yielded appreciable amounts of pottery probably of 6th century BC date, whilst excavations in others have yielded but a few sherds of pottery spanning most of the Iron Age. This diversity points towards the individuality of origin and maintainance of each site, and the probable lack, except perhaps for short periods, of any overall control. Nonetheless, it seems probable that the basic pattern was built up during the early Iron Age; future work should enable us to discern its detailed development.

In contrast to sites so far described, the fort at Witham occupies a low-lying position by the river Blackwater and, although close dating is not possible, despite several excavations, the emphasis of the finds is certainly on the middle Iron Age (Davison *et al* forthcoming), including three inhumations accompanied by La Tine II-III pokers (Rodwell 1976c). Uphall Camp occupies a similar site and may be of the same period, although Rodwell (1976a, 27) postulates a post-Roman date.

The fate of the hillforts in the late Iron Age is uncertain. Witham was reconstructed with Fécamp-type defences, linear earthworks being added at a distance, the whole probably forming a minor *oppidum* (Davison *et al* forthcoming; Rodwell 1976a, 185-6, 197; 1976b, 331), and the defences of Pitchbury were similarly reconstructed, the site clearly relating to the *oppidum* of *Camulodunum* (Rodwell 1976b, 330, 339-59). Probable *de novo* minor *oppida* are known at Braintree (Drury *et al* 1976, 104-8, 123) and suspected at Grimsditch Wood, Little Walden (Rodwell 1976a, 197; 1976b, 331). Some other forts may have remained in commission in this period, eg Wallbury (Rodwell 1976a, 197; 1976b, 330) but some clearly did not: Asheldham, for instance, was partly used as a cremation cemetery (Colchester Mus, unpub). The mere presence of later Iron Age pottery within the defences is no guide to continued military use, for Romano-British pottery occurs with equal frequency, and it is likely that non-military settlements developed within the redundant earthworks at several sites. Downham Grange has produced material

ESSEX

**Early–Middle Iron Age
Settlements & Hillforts**

Hillforts
■ Certain   □ Probable

Later Oppida
■ Certain   □ Probable

● Other sites mentioned in the text
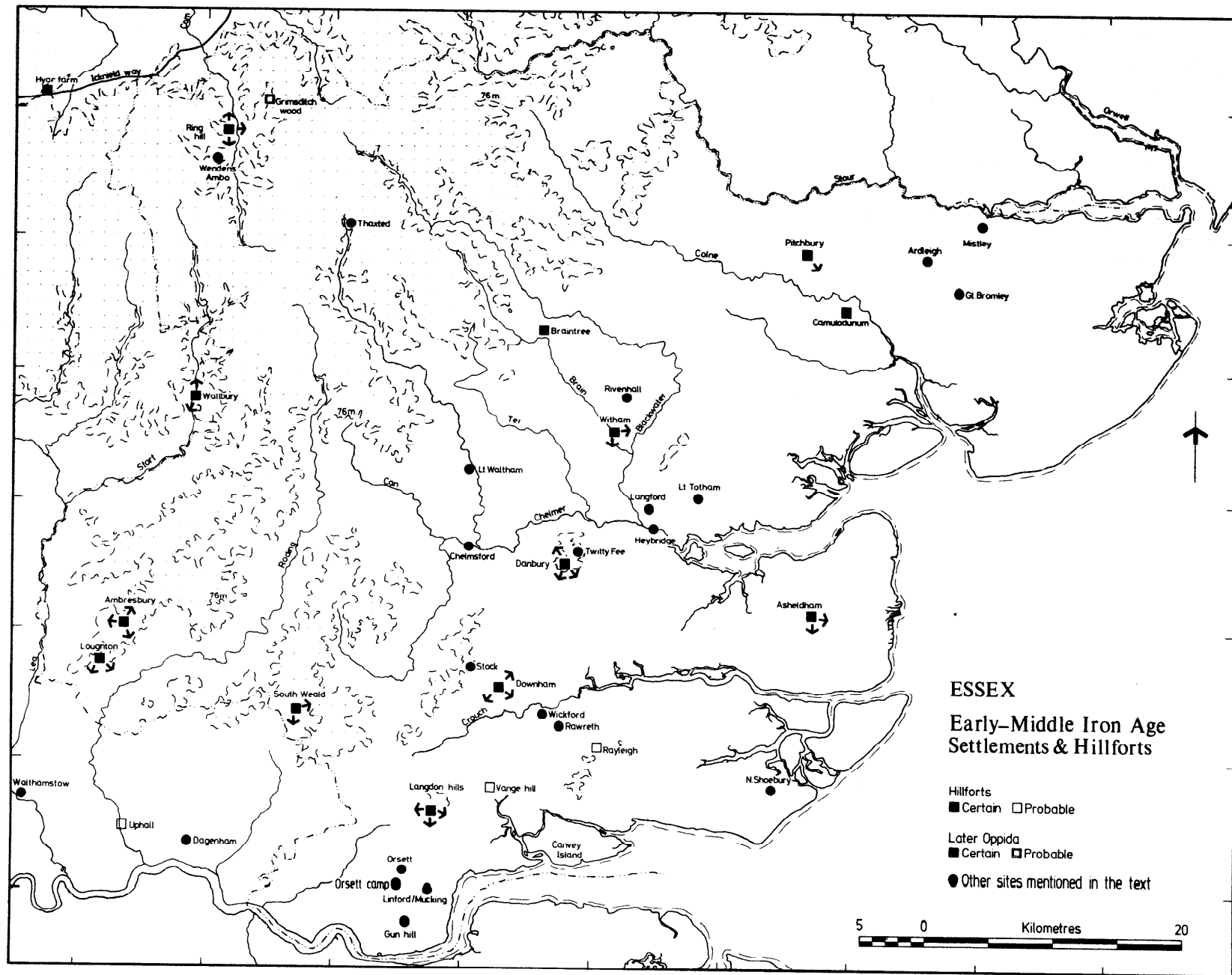
Fig 18   Essex showing Iron Age sites mentioned in the text. The defensive aspects of hillforts are indicated by arrows, following Rodwell 1976a (Crown copyright reserved)
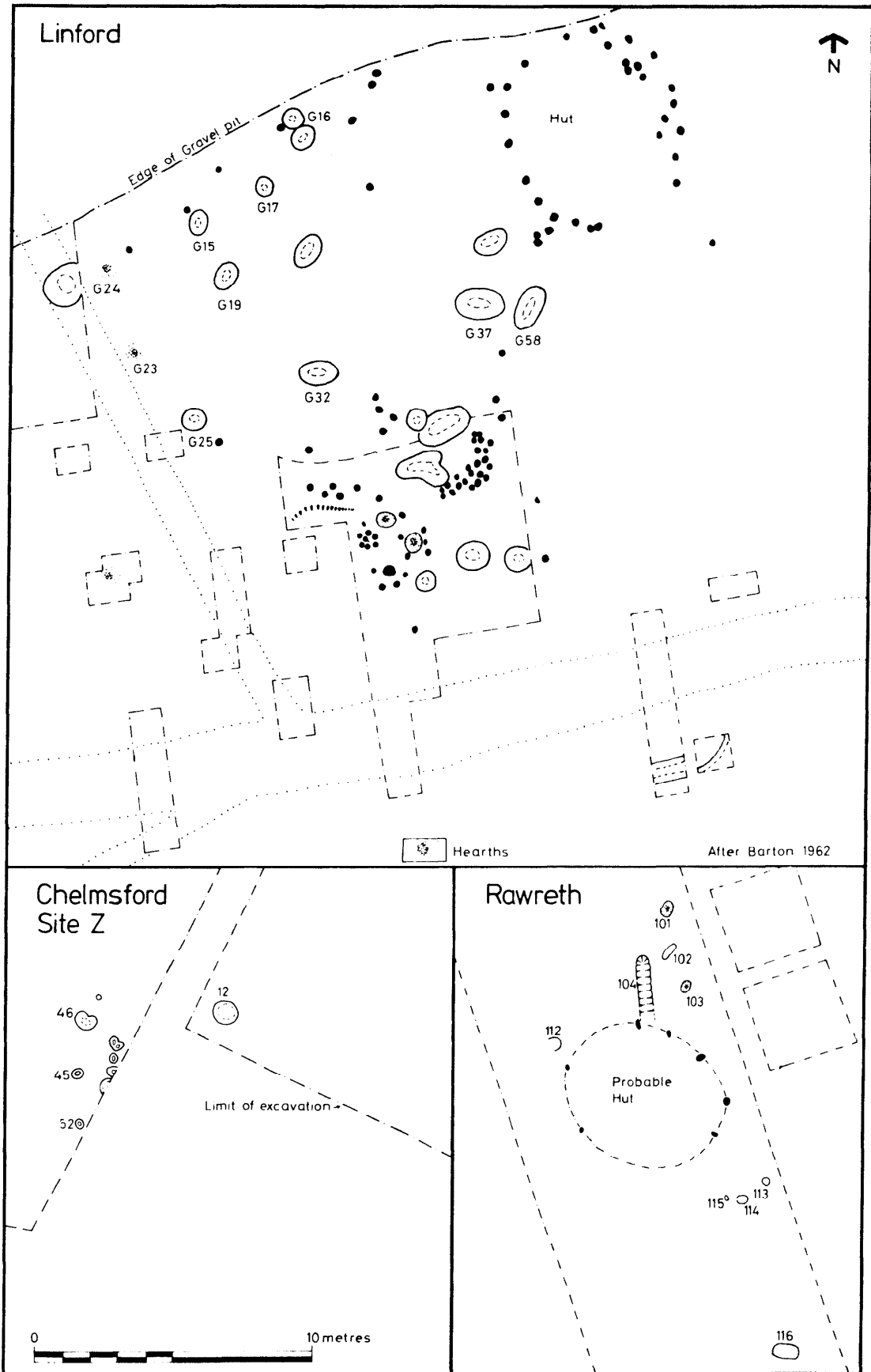
Fig 19   Early Iron Age settlements and structures at Linford, Rawreth. and Chelmsford

covering the entire Romano-British period, and also pagan Saxon grass-tempered ware.

Indeed, one wonders whether some hillforts reassumed a defensive role in the post-Roman period, particularly in view of the evidence from Danbury. Here the defences seem to have been reconstructed, since the tail of the rampart sealed an abraded sherd of Roman pottery (Morris & Buckley 1978). A small amount of plain grass-tempered pottery seems to suggest a 7th century origin for the Saxon reoccupation, whilst features producing bones and loom weights but no contemporary pottery suggest its continuation into the essentially aceramic period which probably lasted until the mid 10th century (for which see Drury & Rodwell 1978, 146-7). The name 'Danbury' means 'the stronghold of the Daen(n)ingas' (Reaney 1935, 248); to the south-east lay the forest of *Danegrise (ibid,* 249) and beyond, the Dengie hundred and peninsula (see Fig 22), described in the early 8th century as a *regio* called *Deningei* (Hart 1957, 12), and notable for the survival of a Roman pattern of land division (p 64 below). Within the Dengie peninsula lies the plateau fort of Asheldham, the ditch of which has yielded Saxon pottery and weapons apparently of Viking type (Laver 1930, 183-5), suggesting perhaps that it was still defensible during the Scandinavian raids in the 9th century. On a larger scale, the reuse of the fort at Witham as a *burh* by Edward the Elder is well known (Davison *et al* forthcoming).

Settlements and houses

Substantial excavations of settlements have been undertaken at few sites and only one-Little Waltham–is yet published in detail (Drury 1978b). But largely through the work of Margaret Jones at Mucking, a pattern seems to be emerging, although it will clearly require amendment as new information becomes available.

Whilst at Mucking part of a Bronze Age rectilinear field system has been excavated, predating the major bivallate middle-late Bronze Age earthwork (Jones et al 1968, 212; Jones & Jones 1975, 141). Thereafter agricultural and domestic enclosures detectable in excavation seem to disappear from the archaeological record until the later part of the middle Iron Age, and field ditches do not seem to become common until the late Iron Age or the early Roman period (below, p 62). Since agricultural practicality demands the separation of herbivores from crops, fields in the intervening period must have been defined by hedges, or by banks topped by hedges or fences. The problems of identifying the former presence of hedges have recently been discussed by Robinson (1978); so far little progress has been made.

Details of early Iron Age settlements (Fig 19) in Essex are so far available from Linford (Barton 1962), Mucking (Jones *et al* 1968; Jones, M U, 1974, 1975; Potter 1974), Orsett (Hedges & Buckley 1978), Heybridge (Drury 1978a, 46-8), Rawreth (Drury 1977, 22-3, 44) and Chelmsford (Drury forthcoming); with the exception of Orsett, these are summarized and discussed in Drury 1978a. The principal buildings are oval houses defined by rings of postholes ranging in diameter from *c* 4.75 x 5.8 m (Rawreth) to *c* 10 x 11 m (Heybridge), which mostly seem to demarcate the line of the outer wall. Occasionally the line of intermediate roof supports may be indicated; as in the middle Iron Age, structures seem to be anchored by either the outer wall or the intermediate roof supports being deeply set, but not both. Semicircular buildings of similar construction occur at Heybridge and Mucking, as do two- and four-post structures, the latter conventionally granaries (eg

Potter 1974, fig 1; Drury 1978a, fig 3), but one perhaps supported a roof over a hearth (at Linford; Barton 1962, 65 and fig 4, no 7). A more elaborate rectangular building has been noted at Chelmsford (Drury 1978a, 46-7, and forthcoming). Pits are common on gravel sites (eg Orsett, Linford), and hearth pits occur on both gravel and clay (eg Linford and Rawreth respectively) outside the houses. Concentrations of as yet uninterpretable postholes are prominent at Linford and Orsett. There is a hint that the larger and more substantial buildings, eg at Heybridge, belong late in this phase; but the similarity between some sites described, particularly Linford, and sites of the late Bronze Age in the south-east (eg Egham: O'Connell & Needham 1977) is probably not coincidental.

Houses of the middle Iron Age (Fig 20) are typically defined by enclosing features-wall trenches, drainage gullies, or both. The structural interpretation of the eighteen round houses excavated at Little Waltham has been discussed in detail elsewhere (Drury 1978a, 51-7; 1978b, 118-24). Briefly, those of Period II *(c* 250-100 BC) were defined by wall trenches *c* 10-14 m in diameter; progress from deep to shallow and finally to polygonal trenches has been suggested, and interpreted as implying increasing confidence in, and ability to work within, the structural form. The polygonal wall trenches may imply the use of wall plates. Houses defined by shallow wall trenches also occur at Mucking (eg Jones, M U, 1974, fig 5B).

In Period III *(c* 100-50 BC), the houses, *c* 12-14 m in diameter, were surrounded by a drainage gulley. There was no structural evidence for the outer wall, which probably consisted of a clay and turf bank over which the thatch was extended to the lip of the gulley; internally the wall would probably have been retained by a stake and wattle structure. Stakeholes survive in the appropriate position in houses at Mucking (Jones, M U, 1974, fig 5E, F and p 194; fig 4, southernmost house) and at Orsett (H Toller, pers comm). The intermediate roof supports were deeply set into the ground; house C2 at Waltham had a porch, as did some of this form at Mucking (eg Jones, M U, 1974, 196).

In Period IV *(c* 50-25 BC) there was a return to the shallow wall-trench technique of later Period II houses, although the building (C5) tended towards a rectangular shape, suggesting influence from a new building style (Rodwell 1978; and p 70 below). Whether the development of round houses at Little Waltham is typical of Essex generally it is not yet possible to say; but already local variations of detail are becoming evident. This is best observed at Mucking, where massive doorposts are a common feature, in contrast to the slight extra emphasis on these features at Little Waltham. At Muckling too, a third basic form of round house seems to be present, with a wall trench closely surrounded by a concentric gulley (eg Jones, M U, 1974, fig 5B). Other round houses of middle Iron Age date, as yet unpublished in detail, are known from Ardleigh (Erith & Holbert 1970), North Shoebury (Dunnett 1975, 110), Witham (Rodwell 1976a, 40-1), and Wendens Ambo *(Britannia 6* (1975), 265).

Semicircular buildings, arguably workshops, also occur, generally defined by wall trenches; at Gun Hill (Drury & Rodwell 1973, area A, fig 6, 53-4, 60) two such structures, probably associated with iron working, arc described, and Rodwell (1976a, 44) discusses their incidence outside Essex, Four-post 'granaries' continue to be a feature of settlements, whilst at Mucking six- and nine-post examples are known (Jones, M U, 1974, 190-1). Other rectangular subsidiary structures occur (eg R8 at Little Waltham, Drury 1978b, 24-6), and two-post structures remain common, as do pits on gravel sites.

LITTLE WALTHAM Iron Age settlements
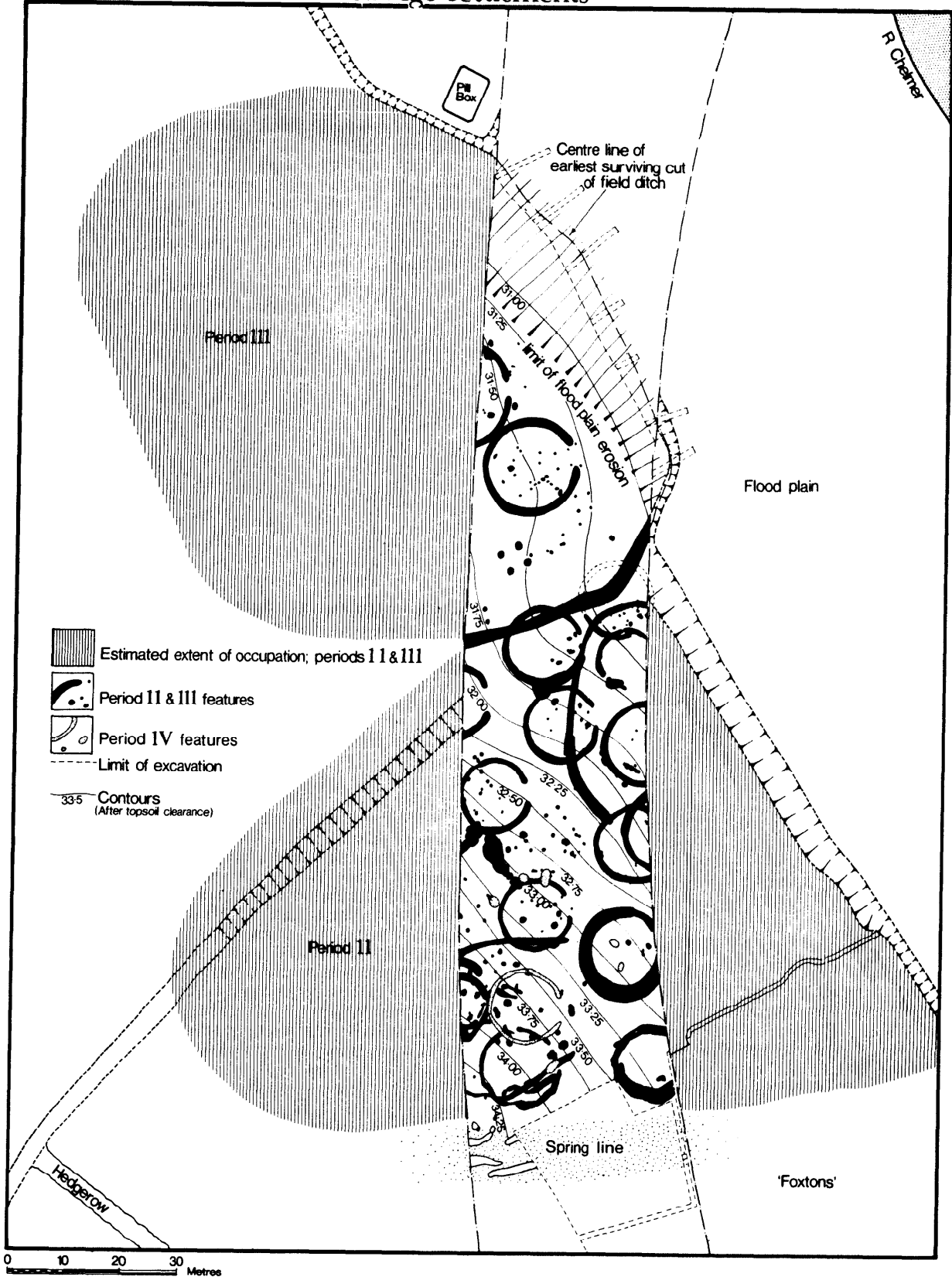
Fig 20　Middle Iron Age settlements at Little Waltham, Essex

The division of the middle phase of the Iron Age in Essex into two sub-phases rests on the appearance of settlement enclosures; Little Waltham, where the Period III enclosed settlement originated *c* 100 BC, provides the only example from a well studied site sequence, but at Mucking and Ardleigh (Erith & Holbert 1970, discussed in Rodwell 1976a, 33-4 and Drury 1978a, 65; fig 16) the trend from 'open' to enclosed settlement is clear. Oval settlement enclosures may on average be earlier than rectangular and rectilinear examples, which seem to be more typical of the late Iron Age (eg the Orsett 'Cock' site; H Toller, pers comm). Not all enclosures of this period were domestic; some seem to have been purely stock enclosures, linked to a system of droveways (eg Gun Hill; Drury & Rodwell 1973). If these are primarily features of the gravel terraces, some degree of agricultural specialism may be indicated. Un-enclosed settlements probably range from 'villages' like Little Waltham in Period II to single houses, like the first phase of Ardleigh; but enclosed settlements seem generally to include only one or two houses. Good examples comparable with Little Waltham Period III are known from aerial photography at Langford, Little Totham, and Mistley (Drury 1978a, fig 16).

The importance of salt production on the Essex coast in the later Iron Age is well known, and a considerable body of literature exists on its most obvious physical manifestation, the 'Red Hills' *(VCH* 1963, 32-4 with refs; Rodwell 1976b, 298-301). However, finds of briquetage salt containers of middle Iron Age date at Gun Hill (Drury & Rodwell 1973, 73, 92) and salt 'furniture' at Mucking dated by thermo-remanent testing to *c* 600 BC (Jones, M U, 1978, 48 and pers comm, indicates that the industry was established much earlier.

Pottery

There is no strong tradition of publication and classification of early and middle Iron Age pottery from Essex, although a start was made on the former by Dunning (1933, 1934) and on the latter by Welsford and Rudsdale *(c* 1935) and Kenyon (1952;. Save for the site at Linford (Barton 1962), only since 1965 has excavation, and latterly publication, of relevant material been undertaken on a significant scale. Only now, with the publication of the material from Orsett Camp (Barrett 1978), and the middle Iron Age material from Little Waltham (Drury 1978b, can we suggest a tentative framework for the development of Iron Age ceramics in the area,

I   The Late Bronze Age/Early Iron Age transition: 8th-7th centuries BC

As Barrett has pointed out (1978, with refs), the origins of 'Early Iron Age' ceramic styles must now be taken back into the 8th-7th centuries BC and beyond. 'Post Deverel-Rimbury' pottery, of *c* 11th to 9th century date, consists mostly of thin-walled plain jars and bowls. The use of finger-tip impressions on coarse wares and more elaborate, often incised, motifs on the finer jars, while present in the 9th century, occurs much more extensively from the 8th century onwards, and new vessel forms, for example the bi-partite bowl, *seem* to have developed from post Deverel-Rimbury types.

II   Early Iron Age: 6th-4th centuries BC

In an earlier paper, I have suggested that the pottery of this period might be subdivided into three phases, centred on the 6th, 5th, and 4th centuries respectively (Drury 1978a, 73-4), although it should be emphasized that the majority of

material from early Iron Age sites is coarse ware derived from forms established in the preceding period.

A   Groups characterized by the presence of fine wares of Cunliffe's West Harling/Staple Howe group (Cunliffe 1974, 34-5, 319), and elements of his Ivinghoe/Sandy group *(ibid,* 35, 320), particularly the restrained use of finger-tip decoration on the carinations of jars. Haematite-coated wares, noted at Linford (Barton 1962, 77; see also Potter 1974, 5), Langdon Hills, Mucking, and possibly Canvey Island (W J Rodwell, pers comm), should also belong in this phase, and may indeed have been introduced earlier; they seem to represent an extension of the Thames-borne distribution of this essentially Wessex type, already known to extend into Berkshire and Surrey (Burchell & Frere 1947, 45-6, fig 20).

B   Groups characterized by well made angular bowls and jars, some with pedestal or footring bases, the bowls often being decorated with horizontal lines above the carination: ie Cunliffe's Darmsden-Linton group (Cunliffe 1974, 39, 326) of which certain features, particularly the pedestal base, seem to be the result of copying contemporary La Tène I forms. Barrett (1978), in relation to the 6th-5th century Orsett Camp material, avoids Cunliffe's use of style zones and prefers tentatively to identify a horizon of La Tene influence, on the evidence of the appearance of pedestal bases. His discussion of the continental evidence implies, probably correctly, that this influence is likely to have arrived early rather than late in the 5th century, as Cunliffe suggested (1974, 36). 'Darmsden-Linton' style pottery has been published from Linford (Barton 1962) along with much that is earlier and some which is probably of 4th century date.

C   Groups characterized by a lack of fine ware or decoration on the coarse ware, save for finger-tipping on the rim only. The shapes are devolved rather than angular, but all the pottery continues to be flint-tempered. Examples include waster material from Rivenhall (Rodwell & Rodwell forthcoming) and an apparently votive deposit at Stock (Hedges 1977).

III   The Middle Iron Age

By the time of the inception of the Period II settlement at Little Waltham, around the middle of the 3rd century BC, the ceramic style characteristic of the middle phase of the Iron Age was 'mature' in the sense that it was no longer evolving at a discernible rate; thus it seems reasonable to assume its development earlier in the 3rd century, or slightly before. In contrast to earlier styles, in which flint tempering was used almost exclusively, *c* 80% of middle Iron Age vessels at Little Waltham were sand-tempered and *c* 12% vegetable tempered; flint tempering was now reserved for large coarse pots (c 7% of the total). Decoration was limited to vertical scoring or emphasis on the body and rare finger-impressions on the rim (but never on the body). Some 17 forms, none angular, were isolated at Little Waltham; although most occur in all three periods, down to c 50-25 BC, the proportions in which they occur relative to one another change perceptibly from period to period, as does the incidence of fine wares probably not of local origin.

The pottery is discussed in detail in Drury 1978b (51-85; 127-33), and summarized in Drury 1978a (59-63); detailed description is not warranted here. Only two further points need be made: firstly, the possibility of influence from the *Ruinen-Wommels III* style which flourished in the north of Holland and along its western coast during the 4th and 3rd centuries BC; and secondly the existence, by the 3rd

century BC, of a centre on the north bank of the Thames producing everted-rim footring bowls in a distinctive fine fabric, which have been found over a wide area, including Little Waltham (Drury 1978b, fig 71).

At Waltham, 'Belgic' wares first seem to appear *c* 50-25 BC, together with stabbed vessels which can be paralleled in the middle Rhineland (Drury 1978b, 131-3). However, the site lies outside Rodwell's proposed primary Belgic settlement areas (1976b, esp fig 5, and pp 90-4, 220-37); within them, and particularly around Colchester, it is possible that such wares were introduced as early as the late 2nd century. In the area as a whole, essentially middle Iron Age pottery was probably not totally superseded by late Iron Age ('Belgic') wares before the end of the 1st century BC.

Artefacts other than pottery

Even extensively excavated sites like Little Waltham have produced no bronze and little iron, and none of it is closely datable (Saunders 1978). This scarcity of metalwork should probably not be taken as evidence of the poverty of the area, nor of the scarcity of metal in use in the Iron Age, but of the high value of scrap in an area distant from contemporary sources. Iron probably reached the area in the form of lightly smithed blooms, fragments of which were found at Little Waltham (Tylecote 1978), and there is evidence of ironworking at Gun Hill (Drury & Rodwell 1973, 53-4 96-7), but until more settlements have been excavated the organization of metalworking within the community will not be clear.

Bone generally does not survive, nor have waterlogged deposits which could yield evidence of wood and leatherworking been located. At Little Waltham, the saddle quern, generally if not wholly made from local glacial erratic boulders, was in exclusive use until the middle of the 1st century BC (Drury 1978b, 110-12).

Votive deposits and related finds

For religious activity and belief we have little evidence; yet mention must be made of marsh and spring deposits which have occasionally been found. The most striking of these is the 'Dagenham Idol' (Wright 1923), a wooden figurine with a socket for a representation of an erect phallus, found near a deer skeleton (a sacrifice?) in a marsh deposit on the north bank of the Thames at Dagenham (Pl 4). At a spring to the south of Broom Wood, Stock, four pottery vessels, probably of 4th century date, were found covered by silt; all were complete when deposited and contained food remains (Hedges 1977). At Walthamstow, eight early Iron Age vessels were found in 1869 associated with a 'crannog' site, and others were found in the Lea marshes by S H Warren. These too are likely to be votive offerings in natural rather than man-made deposits (for a discussion of a similar site—the 'fascine dwellings' at Braintree—see Drury *et al* 1976, 111).

These finds are strikingly similar to those from Denmark and Schleswig-Holstein and, to a lesser extent, elsewhere in Germania (Todd 1974, ch 6). The Dagenham figure resembles one found in Broddenbjerg Fen, Jutland, in 1880, set on a heap of stones and surrounded by pottery vessels containing food offerings (Todd 1974, 196; illustrated in Glob 1971). The ithyphallic nature of the Dagenham figure and the probable associated sacrifice suggest a fertility cult. There seems to be a distinct difference between these Essex finds and a few others from the west and north of Britain (Ross 1967, 35, figs 4,6) and in Ireland (especially the figure from Ralaghan (Megaw 1970, 164) which closely
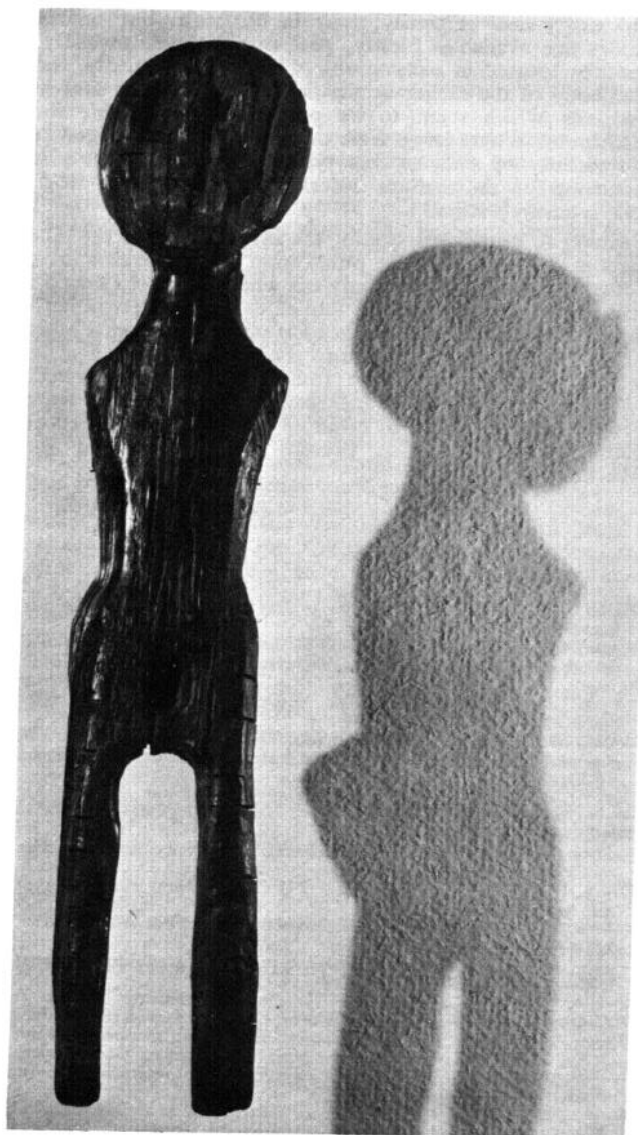
Plate 4 Wooden figure found at Dagenham in 1922 (height 490 mm) Photo: Colchester and Essex Museum. Accession number 4351.1922

resembles the Dagenham example), and the fine metalwork found sporadically over most of Britain in bogs and rivers particularly the Thames (summarized in Cunliffe 1974, 297). The 5th century BC flagon from the river Crouch (Harbison & Laing 1974, 8-10) seems to belong in this latter category. Finally, mention should be made of the stone head from Thaxted thought by Ross to be pre-Roman (Ross 1967, 72, pl 16d).

Archaeological priorities

A framework is beginning to emerge for the early and middle Iron Age in Essex, but there is no part of the field in which our knowledge is adequate; further excavation of settlements, especially early ones, is vital. The bias towards later middle and late Iron Age settlements on gravel was mentioned in the introduction; the location of sites on clay,

and early sites generally, may be difficult, but certain guides are available. Firstly, past casual finds; secondly, features located in excavations of later sites; thirdly, the likelihood of the earlier occupation of known later sites in positions which seem to be particularly favourable for settlement. Where large-scale development is envisaged in the vicinity of sites of this type, rapid mechanical trial trenching (in the manner described in Drury *et al* 1976, 137) is surely justified.

Turning to specific problems, the investigation of the hill-forts in the area, and the publication of past excavations, deserves attention, as does any site which offers the hope of reasonable preservation of faunal or environmental evidence. Reappraisal and publication of the substantial body of Iron Age pottery in museums is needed, but may best be tackled when the sequence from Mucking is published. Most important is the scientific examination of pottery from a wide range of sites, to build on the basis established at Little Waltham and at present being developed for Mucking.

References

Barrett, J C, 1978   The later prehistoric pottery, in Hedges & Buckley 1978, 268–88
Barton, K J, 1962   Settlements of the Iron Age and pagan Saxon periods at Linford, Essex, *Trans Essex Archaeol Soc*, 3 ser, **1**, 57–104
Burchell, J P T, & Frere, S S, 1947   The occupation of Sandown Park, Esher, during the Stone Age, the Early Iron Age, and the Anglo-Saxon period, *Antiq J*, **27**, 24–46
Cotton, M A, 1961   Observations on the classification of hillforts in southern England, in *Problems of the Iron Age in southern Britain* (ed S S Frere), 61–8
Cunliffe, B W, 1974   *Iron Age communities in Britain*
———, & Rowley, R T (eds), 1978   *Lowland Iron Age communities in Europe*, BAR **S48**
Davison, B K, Petchey, M R, & Rodwell, W J, forthcoming   *The earthworks at Witham, Essex*
Drury, P J, 1970   Vange Hill—TQ 724876, *Trans Essex Archaeol Soc*, 3 ser, **2**.3, 34
———, 1977   Excavations at Rawreth, 1968, *Essex Archaeol Hist*, **9**, 20–47
———, 1978a   Little Waltham and pre-Belgic Iron Age settlement in Essex, in Cunliffe & Rowley (eds) 1978, 43–76
———, 1978b   *Chelmsford Excavation Committee Report 1: Excavations at Little Waltham 1970–71*, CBA Res Rep **26**
———, forthcoming   *Chelmsford Excavation Committee Report 3: The Mansio and other sites in the south-eastern sector of Caesaromagus*
———, *et al*, 1976   Braintree: excavations and research, 1971–76, *Essex Archaeol Hist*, **8**, 1–143
———, & Rodwell, W J, 1973   Excavations at Gun Hill, West Tilbury, *ibid*, **5**, 48–112
———, 1978 Investigations at Asheldham, Essex: an interim report on the church and the historic landscape, *Antiq J*, **58**, 133–51
Dunnett, B R K, 1975   *The Trinovantes*
Dunning, G C, 1933   Neolithic and Iron Age pottery from Danbury, Essex, *Antiq J*, **13**, 59–62
———, 1934   Iron Age pottery from Danbury, Essex, *ibid*, **14**, 186–90
Erith, F H, & Holbert, P R, 1970   The Iron Age farmstead at Vince's Farm, Ardleigh, *Colchester Archaeol Group Annu Bull*, **13**, 1–24
Glob, P V, 1971   *The bog people*
Gould, I C, 1903   Ancient earthworks, in *VCH Essex*, **1**, 275–314
Harbison, P, & Laing, L R, 1974   *Some Iron Age Mediterranean imports in England*, BAR **5**
Hart, C, 1957   *The early Charters of Essex: the Saxon period*
Hedges, J D, 1977   Broom Wood, Stock, in Work of Essex County Council Archaeology Section, 1977 (ed C R Couchman), *Essex Archaeol Hist*, **9**, 75–7
———, & Buckley, D G, 1978   Excavations at a Neolithic cause-wayed enclosure, Orsett, Essex, 1975, *Proc Prehist Soc*, **44**, 219–308
Jones, G D B, 1977   The Colchester and Ipswich aerial survey, *Aerial Archaeol*, **1**, 23–5
Jones, M U, 1974   Excavations at Mucking, Essex: a second interim report, *Antiq J*, **54**, 183–99
———, 1975   The Mucking excavations, 1974, *Panorama*, **18**, 32–41

———, 1978   The Mucking excavations, 1977, *ibid*, **21**, 48–58
———, Evison, V I, & Myres, J N I., 1968   Crop-mark sites at Mucking, Essex, *Antiq J*, **48**, 210–30
———, & Jones, W T, 1975   The cropmark sites at Mucking, Essex, England, in *Recent archaeological excavations in Europe* (ed R Bruce-Mitford)
Kenyon, K M, 1952   A survey of the evidence concerning the chronology and origins of Iron Age 'A' in southern and midland Britain, *Annu Rep Inst Archaeol Univ London*, **8**, 29–78
Laver, P G, 1930   *Sunecastre*, or the Camp at Asheldham, *Trans Essex Archaeol Soc*, n ser, **19**, 180–5
Megaw, J V S, 1970   *Art of the European Iron Age*
Morris, S, & Buckley, D G, 1978   Excavations at Danbury Camp, 1974 and 1977, *Essex Archaeol Hist*, **10**, 1–28
O'Connell, M, & Needham, S, 1977   A late Bronze Age hoard from a settlement at Petters Sport Field, Egham, Surrey, *London Archaeol*, **3**, 123–30
Potter, T W, 1974   An Iron Age site at Rainbow Wood, Thurrock, Essex, *Essex Archaeol Hist*, **6**, 1–12
Reaney, P H, 1935   *The place-names of Essex*
Robinson, M, 1978   The problems of hedges enclosing Roman and earlier fields, in *Early land allotment in the British Isles* (eds H C Bowen & P J Fowler), BAR **48**, 155–8
Rodwell, W J, 1976a   *Settlement and economy in the territory of the Trinovantes, circa 50 BC to AD 50*, unpublished D Phil thesis, Univ Oxford
———, 1976b   Coinage, oppida and the rise of Belgic power in south-east Britain, in *Oppida, the beginnings of urbanisation in barbarian Europe* (eds B W Cunliffe & R T Rowley), BAR, **S11**, 181–367
———, 1976c   Iron pokers of La Tène II–III, *Archaeol J*, **133**, 43–9
———, 1978   Buildings and settlements in south-east Britain in the late Iron Age, in Cunliffe & Rowley 1978, 25–41
Rodwell, K A, & Rodwell, W J, forthcoming   *Rivenhall: investigations on the Roman villa, church and village, 1950–77*
Ross, A, 1967   *Pagan Celtic Britain*
Saunders, C, 1978   Objects of iron: periods II–IV, in Drury 1978b, 95–8
Todd, M, 1974   *The northern barbarians, 100 BC–AD 300*
Tylecote, R F, 1978   The metalworking residues: bloomery iron, in Drury 1978b, 115
VCH, 1963   Roman Essex, *The Victoria History of the County of Essex*, **3**
Welsford, A E, & Rudsdale, E J, nd   *The Iron Age in Essex* (MS article, *c* 1935, now in Colchester and Essex Museum)
Wright, A G, 1923   The Dagenham Idol, *Trans Essex Archaeol Soc*, n ser, **16**, 288–93

In Roman geography and history from the conquest on-wards (AD 43). Essex formed most of the country of the Trinovantes (Dunnett 1975). Of Caesar's dealings with Britain, a century before, which I reviewed in 1975 in the Mortimer Wheeler Lecture, updated now as Hawkes 1978 (paged 125 ff), I will start by discussing (from its 142-75) those bearing on Essex, and thence will approach the Trinovantes in archaeology.

Caesar and the Trinovantes

Caesar, here in 54 BC with his army, and already concerned with these people, is the first to name them. He knows that in the years directly before, they had been fought by Cassivellaunus. This king had dominions that extended to the Thames in a stretch with a single ford, some 80 Roman miles from the sea where Caesar had landed on the east Kent coast (Caesar v.18, 1 with 11, 8-9). The distance is 118 kilometres, 73 English miles. From his landing place, just south of Sandwich, to the likeliest location for the ford, at Wandsworth, the crow-flight English mileage is 70. The ford was of the river, not the estuary. And the king was not a maritime ruler; the river divides him from 'maritime states'. So his frontier on the Thames was upstream from the estuary. Caesar's men breached it by crossing at the ford. He says nothing of the river's being tidal. which to-day, as far up as Twickenham, it is. This difficult and sole British ford will have either been for passing at low water only, or else (and I think more probably) above high-water mark. But in any case Caesar's words must make it upstream from the confluence of the Lea. And the Lea is the natural western boundary of Essex.

The Lea has natural marshes, north along it anyhow as far up as Broxbourne. Though Claudius, later, might pass them close to the confluence (aided by bridging?), they were kept by Caesar-after fording the Thames-on his right. For the march was through Cassivellaunus's lands. where his chariots punished the soldiers cutting his corn: the scene suits Hertfordshire country. Only after that do we hear of Trinovantes: Caesar v.20; the march, 19. Their envoys come and offer submission, with corn and with hostages—on terms that at last make Caesar's march understandable. Only now does he reveal that in the previous wars which Cassivellaunus had fought, he had beaten the Trinovantes and killed their king, whose son had sought Caesar's pro-tection in Gaul, and had now been brought with him to Britain. By the terms, Caesar would restore this prince, Mandubracius, as king and as friend. Defending him from Cassivellaunus would accord with the decree of the Roman Senate (Caesar i.39, 4) allowing profitable wars in defence of Rome's friends. But this must of course have been pro-jected already in Gaul, when the prince had arrived there. Why is it concealed till now? And why this marching through enemy country, to a tribe that was east of the Lea and had a south-east coastline, just across the estuary's mouth from the east Kent coast where Caesar had his ships?

There, once ashore, he had left his fleet at anchor and had dashed through the night, to snatch the Bigberry hillfort, over the Stour on the ridge above Canterbury. Four-fifths of his army were in motion; with the fleet he had left ten cohorts only. So the dash was to secure all north-east Kent-and the channel that parted it from Thanet: the Wantsum, which then and long after kept Thanet an island, and itself a safe sea-way. Opposite its southerly mouth was

his anchorage; the northerly looked towards Essex. All this Caesar will have known from enquiries and a scouting-cruise previously made for him, and latterly from Mandubracius. Yet he never tells a word of it. Why? Because the fleet, in his absence at Bigberry, was hit by an overnight gale. It damaged nearly all the ships and drove them ashore. Dragged into a camp, with forty lost, they could hardly be repaired before the end of the season. Nobody explains why Caesar had left them at anchor. The reason is surely the same as for his hiding the geography, concealing Mandubracius till the last, and then, when he brings the Trinovantes in, keeping their actual whereabouts entirely in the dark. He had anchored near the Wantsum for a quick sail over to Essex, with the prince to 'defend' by attack upon Cassivellaunus, inland, from the east. The gale had ruined all. Only silence could save his face.

Essex's entry into history is thus more dramatic than it usually has seemed. But Caesar has also implications for Essex archaeology. We have noticed that Cassivellaunus was divided by the Thames from 'maritime states'. These have been generally supposed all south of the river. Yet north of its estuary and stretching on away, the Trinovantes had a coast of their own. If Caesar had allowed himself to tell us their location, would he not have called it 'maritime' too? The point bears closely on the problem, in the British south-east, of archaeology's 'Belgae'. Into the narrative dealing with his fights in East Kent, we find that Caesar has intruded a 'British Excursus': three chapters of notes on Britain regarded as a whole. It is evidently drawn from his reports and personal files, but includes material from one or more earlier writers. In Britain's 'interior part' it has pastoral folk who claimed to be indigenous; to the 'maritime part' there had crossed invaders 'out of *Belgium*'. This is Belgic Gaul's west part, extending to the Channel (Hawkes 1968, 6-10 with maps figs 1 and 2a). Keeping mostly their old tribal names, it says, they had settled into agricultural life (Caesar v.12, 1-2, with 14, 2 on the 'interior' as pastoral). The Excursus's chapters are 12, 13, and 14; on its text, see Hawkes 1978, 165-8. Its length for Britain's side facing Gaul, '500 miles' so of course too long, seems guessed from the much-indented length of Gaul's side facing Britain. For the west, like Strabo's *Geography* soon after, it mentions informants, who had ventured quite far. None of this ethno-geography is Caesar's own; he has obviously borrowed it.

Ethnographers before him were Greek, and the chief one for all these parts was Posidonius, whose own books are lost but who was used by the extant Strabo, Diodorus, and successors. He was in Gaul, collecting data, in the 90s BC. So our invasion 'out of *Belgium*' may well have been taken from him. Caesar fits it in with observations of his own about Kent's population and resemblances to Gaul. Kent, 'all maritime', is plainly in the 'maritime part'. Yet nothing has confined the invasion to Kent, nor anywhere given it a date. Thus far the Excursus. Caesar's own narrative, in stating that the Thames bounds 'maritime states', is consis-tent with it, but not consistent exhaustively; away from the Thames, unlocated, could be other such states. The Trinovantes, left unlocated in the narrative for reasons we can now understand, will be anyhow within the Excursus's 'maritime part'. Its 'interior' folk, clad in skins and with next to no agriculture, have to be remote. All parts between-and we have textiles and tillage attested there—it simply

omits. Its 'interior', so different, never could include the kingdom of Cassivellaunus (as Avery in *Hillforts,* ed Harding, 142; and Harding 1974, 223–6), although this is not in the narrative a 'maritime state'. The Excursus's contrast, only of distant 'interior' and 'maritime part', must be drawn from informants on the Continent, prior to Caesar. Not his narrative, but only the Excursus, has our Belgic invasion. No wonder he is silent on its date, and on what were those tribe-names. That it was made, introduced them, and affected a 'maritime part' not otherwise defined, he has put in the Excursus from a source, most likely Posidonius, that was prior to himself.

It is the only such movement vouched for by classical evidence. This is clear about the portion of Gaul that the invaders came from, clear about their coming in arms and growing peaceful afterwards, but vague about the 'maritime part' where they settled—as Caesar will shrewdly have perceived. Combining his narrative and this, one sees that he juggled with what 'maritime could mean. The Trinovantes were this in his Excursus's sense. His narrative is veiling their location; so its south-of-Thames 'maritime states' may appear to be the only ones, and this has all too frequently been taken on trust. If any north-of-Thames country had a share of the invasion 'out of *Belgium',* the Trinovantian country has at least the best claim, as the nearest that really is maritime. Caesar, critically read, has nothing against this. So how may it stand in terms of our Essex archaeology?

Weapons and the early coins

Our sites, from within the Late Bronze Age on, have been almost all habitation sites. Their poterry shows us an Early tradition, till around the middle 3rd century; then a change to the Middle Iron Age sort, Mr Drury's at Little Waltham: and finally the advent of Late, seeming not before the 1st century, and advancing to the fine or coarser wheel-made ware, like Gaul's, known commonly as 'Belgic'. The Early and Middle traditions were each conservative: industries of peace. But the Excursus's invaders came in arms, for plunder and for war–thought their ensuing agricultural peace a means of course accommodation with existing inhabitants. So archaelogy's primary sign of their invading should be weapons. The ascendancy won by superior arms would be social. Gaul, we know from Caesar and (through Greek excerptors) again Posidonius, had a class society; graves reflect it, the higher-class males having weapons. None such are known at this time in our quarter of Britain, which was keeping to the older rite: weapons were ritually drowned, most often in a river. So though they may (more often parts of them) occur in habitation sites, it is weapons retrieved from water that will tell us the most.

The best-dated, primarily within the 2nd century, are La Tène II swords and scabbards. They and their variants are Piggott's (1950) Group II; he listed twelve from the Thames, and one from the Lea marshes at a Walthamstow reservoir. Iron scabbards, as there, with five from the Thames, are well known to be standard in Gaul: Déchelettc 1914 and reprint, 1112–13 (= 1927, 618-29). And while Piggott stressed rather the bronze ones, British (with further developments ensuing), the Gaulish sort in iron should be primary. For in Britain, combat with the sword was a drastic innovation. Within the passage to La Tène II from I we have indeed (in the late 3rd century) our first long shield, novel and foreign-inspired, from the Lincolnshire Witham: Jope 1976, 168, 177 against his 1971, 64 and Fox 1958, 29; and from the upper Thames the Standlake sword and bronze scabbard, of about 200 BC

(characters of La Tène I with an element of II: Jopc 1971, 69 n42, against his 1961, 315 fig 6; Harding 1972, 103-4; 1974, 181-2). But our traditional Iron Age combat was with daggers: Jope 1961, whence Hawkes 1976, 4–9. Daggers lasted till the coming of La Tène II swords, little sooner than about 150, spreading widely only afterwards. And 150 now is settled for the starting of our first gold coins–early Gallo-Belgic A.

These are in east and north-west Kent and (from Maldon northward) in Essex; the later are distributed over southern Essex too, west Kent and Surrey and round the Chilterns (Rodwell 1976, 183-7, maps figs l-2; basic lists, Allen 1961, 148-62, 169). They came from the Ambiani (region of Amiens), inside *Belgium* (Scheers 1968, 1969; against Allen 1961, 99-102, and bringing his start for A (with XA; to *c* 150; later A issues follow them thence in instalments). Gallo-Belgic B (up-river from London and in parts of Surrey; otherwise sparse, as coming in Essex) were at home elsewhere in coastal *Belgium,* coming first nearer to 100, and shorter-lived (Scheers 1970, differing less from Allen 1961; his list there, 154-5, whence Rodwell 1976, 186–8, map fig 3). A, however, was a long time current: even longer than believed by Allen, the founder of our system of Gallo-Belgic A to F (1961, whence Hawkes 1968, 11-13; Rodwell 1976, 183 ff). For Simonc Scheers's work on them all in then Gallo-Belgic homelands, not only on A as Ambianic, and on B, but also on C and the remainder, has shown that C, once again Ambianic, was later than 70 (Scheers 1969), and that F (like D) came to Britain in the 60s too. So the *British* -struck series of gold, Allen's *British* A onwards, will have started some 30 years later than he guessed–though still out of Gallo-Belgic C. Later, thus, than the king Diviciacus, who had sway on both sides of the Channel; he issued no coins. C was the Ambianic sequel here to A; Ambianic, then, was its inspiration of the British. Scheers's principal papers are listed in the references p 58; John Kent (British Museum), in the fresh reappraisal that he promises, will be taking us further through the use he makes of them and others. I have provisionally used them myself (Hawkes 1978, 142-4, 164-5, 177, 184, recanting my 1968, 11–13, wherever thus required. Allen 1961 is basic for its system and lists; its conclusions (they were essentially from the 1950s) have become, nowadays, another matter.

A further Important coinage is Gallo-Belgic E. It does not mean surges of invaders round 60 BC, inland from north Essex, from Kent up the Thames, and elsewhere. This gold is from the Ambianic portion of a big set of strikings in Belgic Gaul, undertaken in the winter 58–7 when its tribes were first threatened by Caesar (Scheers 1972). From Britain, their resistance next year had some aid, and defeated or unreconciled chieftains could flee here: Caesar ii. 14, 2; Ambiani surrender, 15, 2; previous aid, iv.20, 1 where the words must cover that year. Thus aid-seeking missions will have brought the coins first, and the rest have been coming in soon with refugees: Hawkes 1978, 142-3, from Scheers— her word is *émigrations*. They had little numismatic effect here (Allen 1961, 114), for despite their numbers, they were foreign and were never struck again. That disposes of 'invasions in the years just prior to Caesar'. So it simplifies our problem of 'the Belgae'-though it strengthens the accepted belief in refugees. This will help us on cremations-and our pottery's transition to La Tène III from II, that is, to 'Belgic' from 'Middle Iron Age'.

Pottery, cremations, and kingdoms

Looking back through the hundred years to the mid 2nd century, one is first of all impressed by the coin-imposing

role that was performed by the Ambiani, from the Somme. It was they who struck our Gallo-Belgic E. Twenty years earlier they sent us our C, which from north-west Kent gave the start of nearly all the uninscribed gold British-struck coinages. And, about 150, they started our first-ever using of coins, by introducing to us Gallo-Belgic A. More important in Essex than C or the short-lived E, and of long duration, it stands for a steadiness, social and economic, that should also be demographic and political. And in Caesar's British Excursus, our sole written source for any invasion, prior to his own, that invasion has crossed 'out of *Belgium'*– which includes the Ambiani. It is brought to a 'maritime part' from which Caesar's narrative, since he hides where they were, cannot set aside the people in Essex (and south-east Suffolk): Trinovantes. The invaders' taking up farming life was the sequel, says the Excursus, to their coming for plunder and in arms; this is fully explicit. The text in Caesar is his v.12, 1–2. Second century Belgae would fight with La Tène II swords. Introduced here within that century, instead of old daggers, these came to be widespread. Their prevalent scabbard on the Continent was iron, and finds from our rivers represent it. British versions are manifest as soon as they have scabbards of bronze: it is the well-known spectacle of British adaptation of a novel type primarily foreign. If the first of the swordsmen were the arrivals 'out of *Belgium'* whom the Excursus guarantees-though not with date-and if the sequel was the state of things implied by the A coins, primarily also novel and from *Belgium,* but with date, what would that be adding up to, towards that date of 150? An invasion, historically known, confirmed by weapon-archaeology and coins?

Impossible, most will object, without new pottery. This is absent even from the graves with inhumations, of this time or later, scattered elsewhere in Britain, mostly stretched and most (in foreign tradition) with swords (Whimster 1977, 322-3). (Add Deal (east Kent) with 'spoons', Hawkes 1968, 14; Shouldham (Norfolk) is earlier, *Proc Prehist Soc,* **21** (1955), 198-200 Clarke, 206, 226, Hawkes.) With La Tène III cremations, we meet it: Whimster 1977, 323–5 with map of them. But Stead (1976) (though mistaken on 'spoons' and on A coins, 411, 412) has made such cremations in Britain start little if' at all before Caesar's campaigns here. He divides them all between a 'Welwyn' phase, from 50s to the late 1st century BC, and a 'Lexden', onward thence to the Claudian conquest. Supported by his studies of brooches and Peacock's of amphoras, his system is fully consistent with all the imports. He can date by it all the pottery occurring with cremations. He makes no exception for the pot-forms guessed by Ann Birchall as 'earliest' and 'early'; real early ones will only be early in the Welwyn phase.

That, of course, is tying the forms to the beginning of cremation. The tic is the notion of a 'culture', named from the cremations at Aylesford in Kent. Birchall added Swarling (cast Kent) to its title in her study of it (1965); Stead, like Hodson (1964, 101–2), prefers 'Aylesford'. It packages together the cremations, the metal, and the pot-forms; users of such pottery must (if qualified socially) be given a cremation. And as cremation and the prototypes for pots and much metalwork arc foreign, with priority (even if a slight one) in Belgic Gaul, the package should be brought across the Channel all as one, in (presumably) the 50s BC. This, although the date was '75' (Hawkes & Dunning 1930), was the notion that prevailed already some fifty years ago. The culture, ascribed to the invaders in Caesar's Excursus, was thus called Belgic–a name which 'should be banned from archaeological literature', says Stead, and I

agree. But still more inapplicable here, I would add, is the 'package' conception of a culture. These pot-forms are not to be confined to the cremators who employed them when cremation came in-provided they be present, in contexts apart from it, on sites of domestic habitation.

A culture may be treated as a once-for-all package when the dating of its period has to be loose. When this grows proto-historic, less and ever less need that be done. Coins and historical data can tighten the dates, and show that its eventual components can start up singly. So I suggest more attention to the sites of habitation, in Kent and in Essex and some nearby counties, from which Rodwell, apart from any 'Aylesford' graves, offers 'earliest/early' coarse-ware: his 1976, 215-37, with map and three pages of drawings. His two cremation-cemetery sites with it in Gaul are both in *Belgium,* and one is of the Ambiani: Port-le-Grand (Somme). Mme Leman-Delerive's new full publication (1976) shows them cremating already with pots of La Tène II forms. Work around the Somme and lower Seine will be telling us more as it proceeds.

Thus in south-east Britain, with Essex, there could seem to be an ongoing sequence, as follows. The Excursus's invaders, with La Tène II iron-scabbard swords, could have mounted an ascendancy, expressed from *c* 150 in the Ambianic currency, the A coins. Gradually, next, would come adoption of some *Belgium* pot-forms; settlers, with the Gaulish potter's wheel, would start passing it to natives. Native Little Waltham, in its final phase, already has a few of them. To their west Kent areas, after 70, came the C coins: Ambianic too, and starting Britain on its own derivatives. Lastly, winter 58–7 and from 57 on, came political missions and numerous ensuing refugees, with E coins, again Ambianic, first meant for the resistance to Caesar which he crushed. And these refugees, by their numbers and example, will have furthered the adopting of cremation till it came to prevail among all whom it socially befitted. So what the Welwyn phase does show us then, and at last, as a British La Tène III 'package', which the Lexden phase maintained till the Claudian conquest, can have had behind it a hundred years of 'Belgicization' of the natives, who throughout would be the basic stock of our region's Trinovantes.

I must pass by the later coinages, uninscribed and inscribed (Rodwell 1976, 243-85; Allen 1975 on king Cunobelin's). Webster 1978 has come too late for bringing in. The lecture's last portion, as I gave it at Clacton, was on Colchester, and the Dykes which in *Camulodunum* (Hawkes & Hull 1947) I provisionally mapped-redrawn by Collis (1975, 221-2) and Rodwell in a gallant but again provisional essay (1976, 339-59). These, with the added early Roman works and roads, Mr Crummy and 1 are now working to publish more fully. It would all be too much for me to summarize here in writing. But it leads, from earlier beginnings, past Cunobelin, the Dykes' chief author, to *Camulodunum* in the Essex that Claudius conquered.

References

Allen, D F, 1961   The origins of coinage in Britain: a reappraisal, in *Problems of the Iron Age in southern Britain* ed S S Frere , Institute Archaeol Occasional Papers 2
——, 1975   Cunobelin's gold, *Britannia*, **6**, 1–19
Birchall, A, 1965   The Aylesford–Swarling culture: the problem of the Belgae reconsidered, *Proc Prehist Soc*, **31**, 241–367
Caesar   *De Bello Gallico*, books i, ii, iv, and v
Collis, J R C, 1975   Defended sites of the Late La Tène, in *Oppida: the beginnings of urbanisation in barbarian Europe* (eds B W Cunliffe & R T Rowley), **BAR S11**, 3–23
Déchelette, J, 1914   *Manuel d'archéologie 2,* iii, *Époque de la Tène,* and modern reprintt
——, 1927   Same in new edn, renumbered **4**

Dunnett, R D, 1975   *The Trinovantes*
Fox, C, 1958   *Pattern and purpose: early Celtic art in Britain*
Harding, D W, 1972   *The Iron Age of the Upper Thames Basin*
——, 1974   *The Iron Age in Lowland Britain*
Hawkes, C F C, 1968   New thoughts on the Belgae, *Antiquity*, **42**, 6–16
——, 1976   Celts and cultures: wealth, power, art, in *Celtic art in ancient Europe* (eds P M Duval & C F C Hawkes), 1–25
——, 1978   Britain and Julius Caesar, *Proc Brit Acad*, **63**, 125–92
——, & Dunning, G C, 1930   The Belgae of Gaul and Britain, *Archaeol J*, **87**, 150–335
——, & Hull, M R, 1947   *Camulodunum*, Soc Antiquaries Res Rep **14**
Hodson, F R, 1964   Cultural grouping within the British pre-Roman Iron Age, *Proc Prehist Soc*, **30**, 99–110, esp 101–2
Jope, E M, 1961   Daggers of the early Iron Age in Britain, *ibid*, **27**, 307–43
——, 1971   The Witham shield, in Prehistoric and Roman studies (ed G de G Sieveking), *Brit Mus Quart*, **35**, 61–9
——, 1976   The Wandsworth Mask shield, in *Celtic art in ancient Europe* (eds P M Duval & C F C Hawkes), 167–84
Leman–Delerive, G, 1976   Le Cimetière gaulois de Port-le-Grand (Somme) . . ., *Cahiers archéologique de Picardie*, 3, 97–115
Piggott, S, 1950   Swords and scabbards of the British early Iron Age, *Proc Prehist Soc*, **16**, 1–28
Rodwell, W J, 1976   Coinage, Oppida, and the rise of Belgic power in south-eastern Britain, in *Oppida: the beginnings of urbanisation in barbarian Europe* (eds B W Cunliffe & R T Rowley), BAR **S11**, 181–366
Scheers, S, 1968   Le premier monnayage des Ambiani, *Revue belge de numismatique*, **114**, 45–73
——, 1969   Un monnayage ambien . . ., *ibid*, **115**, 1–55
——, 1970   Un monnayage gaulois . . ., *ibid*, **116**, 65–89
——, 1972   Coinage and currency of the Belgic tribes during the Gallic War, *Brit Numis J*, **41**, 1–6
Stead, I M, 1976   The earliest burials of the Aylesford culture, in *Problems in economic and social archaeology*, (eds G de G Sieveking & K E Wilson)
Webster, G, 1978   *Boudica*
Whimster, R, 1977   Iron Age burials in southern Britain, *Proc Prehist Soc*, **43**, 317–27

The archaeology of Essex in the later Iron Age (Fig 21) and Roman periods is a subject of great breadth to which many contributions have been made, particularly in the last fifteen years. It is impossible to synthesize here either the entire literature on the subject, or even the full range of relevant material. Instead, five aspects of the history and topography of Iron Age and Roman settlement have been chosen, partly because they are subjects of topical interest in British archaeology and partly because there have been significant recent advances in their study. Colchester is not included here, since it is discussed elsewhere in this volume.

The main body of secondary source material for Roman Essex is contained in the third volume of the Victoria History of the *County of Essex (VCH) 1963*. This comprises a near-comprehensive gazetteer of material recorded up to *c* 1956, with a few references to later dicoveries. The gazetteer was compiled by the late M R Hull and the late J G S Brinson, with an introduction and synthesis by the late Sir Ian Richmond. Although many new details can be added, and some of the conclusions modified, much o what Richmond wrote, nearly two decades ago, remains sound. the rate of discovery has been such that even more recent accounts of Roman Essex (Rodwell 1972/5; Dunnett 1975) have rapidly become outdated. No general account of the Iron Age in Essex has been published, although one was prepared in the 1930s (Welsford & Rusdale, nd) and an inventory of all prehistoric sites and finds was prepared by M r Hull for its inclusion in *VCH 1963*.

The later Iron Age and Roman landscapes (PJD)

Whilst the survival of Roman roads and linear earthworks, either in their original form or as land divisions, has been accepted from the earliest days of field archaeology, only recently has it become apparent that the basic form of many areas of what Rackham (1976, 17) terms 'ancient country-side' was established in the later Iron Age and Roman periods, and has survived because of subsequent continuous agricultural usage of the areas concerned (Fig 22). Yet one hundred years ago, Flinders Petrie pointed out that by the study of maps it is possible to tell whether field systems are earlier than the roads they abut, or contemporary or later ('unconformable or conformable juxtapositions'), with the implication that it is the development of boundaries in the landscape as a whole which should be studied; the paper is illustrated largely from Kentish examples (Petrie 1878).

Essex is well provided with maps; the Tithe Apportionment maps, *c* 1840, together form the first large-scale survey of the area, whilst there are an exceptional number of sur-viving estate maps, which enable the development of the landscape of some parishes to be traced back in detail to the late 16th century. These maps, the evidence from excavation, and the results for selected parishes (Rivenhall/Kelvedon by WJR; Chelmsford and Asheldham by PJD) of documentary research, field survey, and hedgerow survey, are providing the raw material for landscape studies which are pointing to the extent of surviving Roman and pre-Roman elements in the Essex countryside. Progress has recently been summarized by Rodwell (1978a), whilst the results of work at Braintree (Drury *et al* 1976, 121-3) and Little Waltham (Drury 1978, fig 74 and pp 134-5) have been published in detail; that at Rivenhall will appear imminently (Rodwell & Rodwell forthcoming), whilst an

interim report on Asheldham and the Dengie peninsula has recently appeared (Drury & Rodwell 1978).

The relationship of field systems, roads, and boundaries to principal Roman roads provides the most useful evidence of their date. Rodwell (1678a. fig 11.8) has demonstrated the existence of long sinuous boundaries, which on the grounds of horizontal stratigraphy should clearly predate main Roman roads in the Roding Valley; the principal line, now demarcated by parish boundaries, follows the eastern watershed of the Roding for some 25 miles (40 km). Other sections of parish boundaries seem to delineate roughly rectangular land blocks between the main boundary and the river. A more striking example of such land division occurs between the Colne and Stour Valleys, north-west of Colchester, although here the dating evidence provided by Roman roads is missing (Rodwell 1978a, fig 11.9). None-theless, the probability exists that estates with an average area of some five square miles, established in the pre-Roman period, essentially retained their integrity through the Roman period and later (see further below, p 71).

The survival of a cohesive rectilinear field system of pre-Roman date as the basis of the modern landscape seems best demonstrated in the Chelmer Valley at Little Waltham (Drury 1978, fig 74; Rodwell 1978a, fig 11.6) where the Roman road to Braintree cuts dianonally across the pattern. bisecting some fields whose boudaries are still extant: The basis of the system is the road leading northwards up the west side of the Chelmer Valley; like the boundaries referred to above, its course is rather sinuous. Elements of a similar system survive around Braintree (Drury *et al 1976,* fig 49; Rodwell 1978a, fig 11.7, somewhat extended). Rodwell (1978a, fig 11.5) has mapped the framework of sinuous roads and tracks centred on Kelvedon, manv of which are self-evidently ore-Roman: more detailed work on fragments of surviving field systems in this area is in hand.

It is thus clear that both in framework and in detail much survives from the pre-Roman period. But when in the pre-Roman period? On the evidence from Little Waltham, the writer suggested a date probably within the 1st century AD, on the grounds that elements of the systems overlay the site of the Period IV settlement (p 50 above), datable to the 3rd quarter of the 1st century BC, but this could merely represent the extension of a pre-existing sytem over a site reverting to agriculture; a clue to the period when such sytems originated has been provided by the extensive excavations undertaken by the writer in Chelmsford (Drury forthcoming).

It has long been clear that the plots and buildings on the frontage of the London-Colchester road within the 'small town' of *Caesaromagus* are aligned not on that road, but on the side road leading eastwards out of the town (Drury 1975, 163-5; Fig 23 here). The line of the side roads is still preserved in property boundaries, and the estate map of the manor of Moulsham, 1591 (ERO D/DM P2) shows its then more extensive survival (A-B on Fig 23). The same map indicates that field boundaries and sections of roads on the same alignment as the side road occur over an extensive area of the valley slope, and would probably have survived more intensively at the heart of the manor of Moulsham were it not for the creation of Moulsham Park, extant in the 16th century. Later (tithe) maps enable the pattern to be extended to the east and west. The relationship of the enclosure at C, and indeed the sytem as a whole, to the

ESSEX

Late Iron Age
Sites and Finds

▣ Oppidum

■ Religious site

◆ Rich burial: certain

◇ Rich burial: probable

• Inurned cremation burial

∴ Inurned cremation cemetery

● Settlement site mentioned in the text
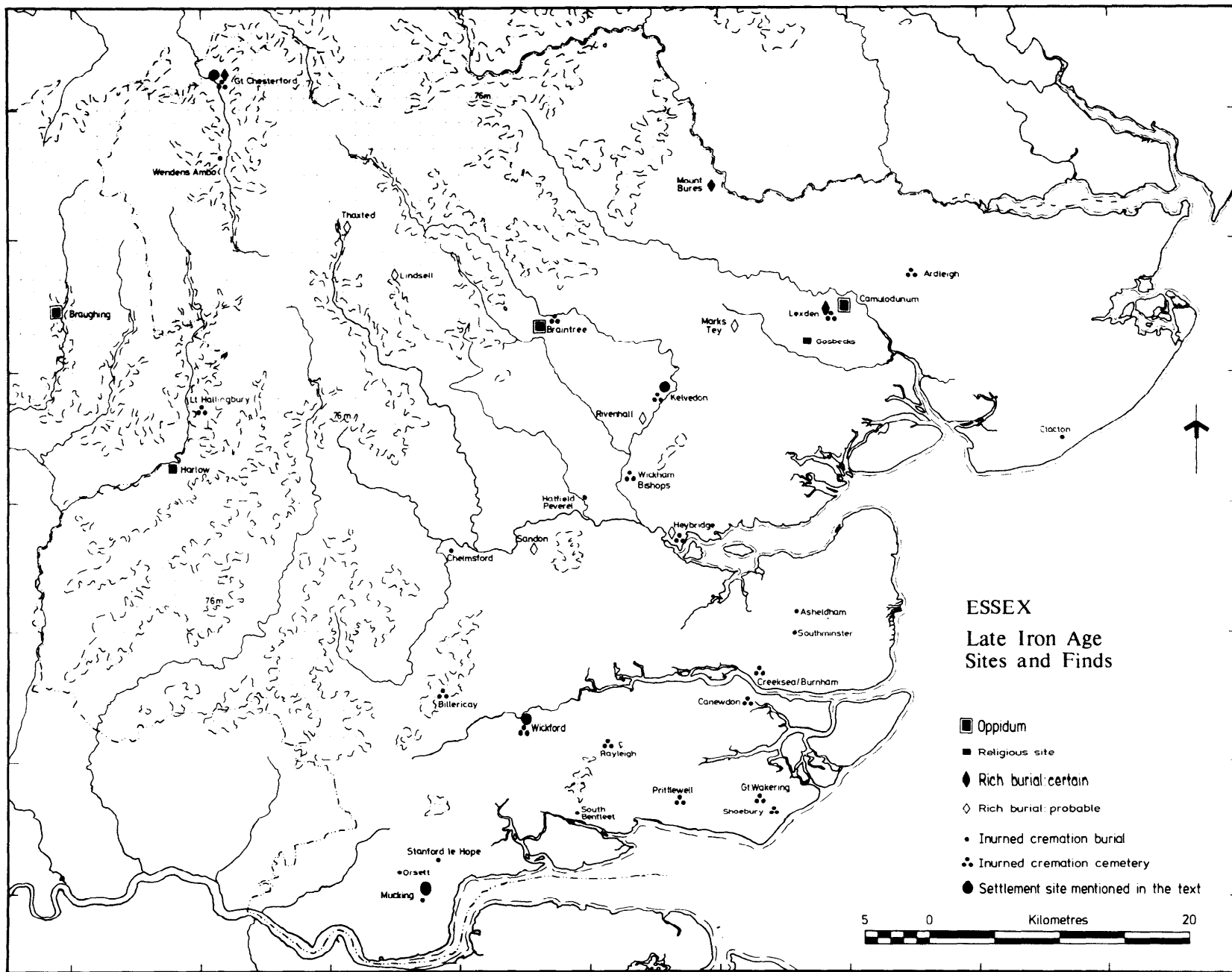
Fig 21   Essex late Iron Age sites and finds (Crown copyright reserved)
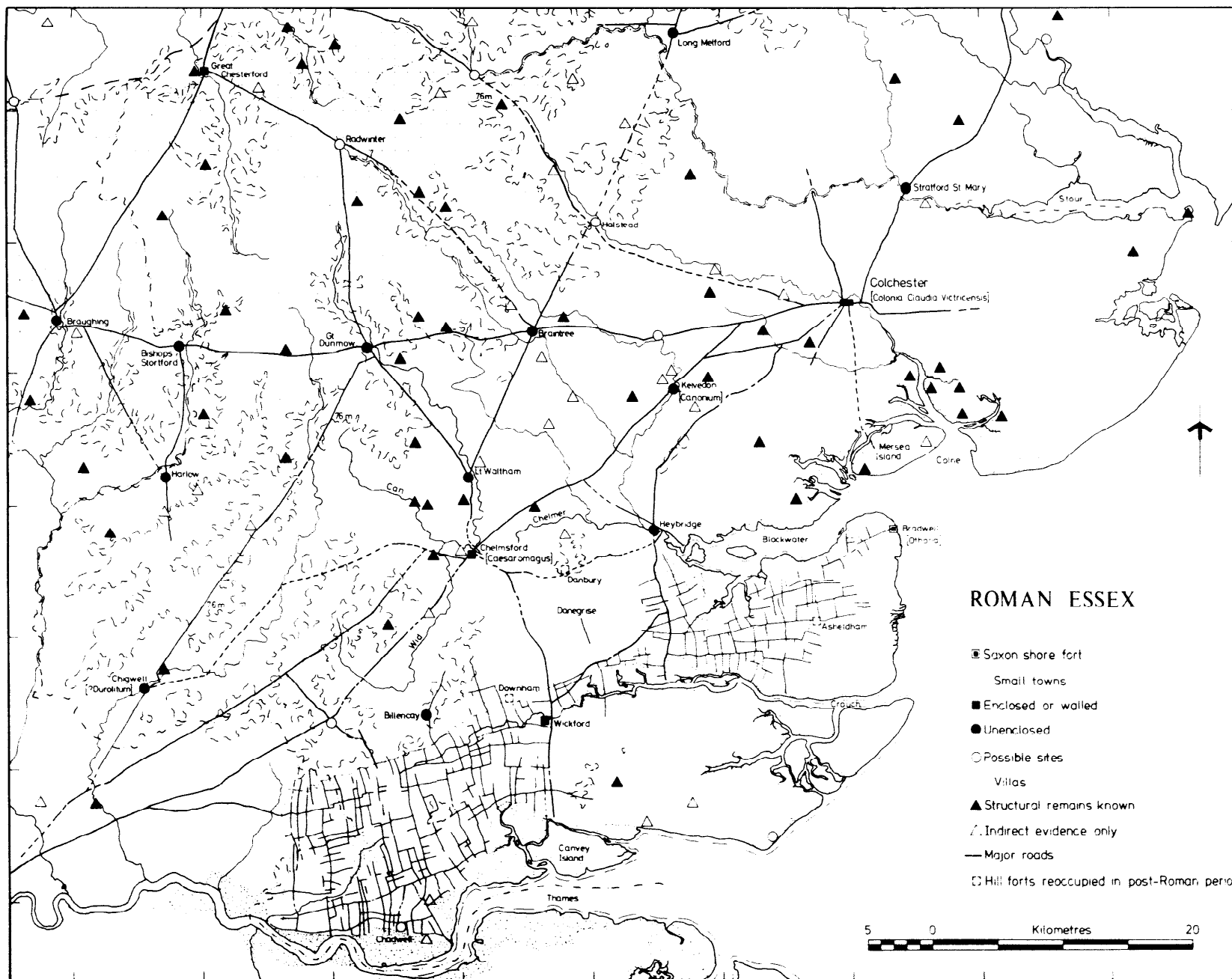
ROMAN ESSEX

Saxon shore fort

Small towns

Enclosed or walled

Unenclosed

Possible sites

Villas

Structural remains known

Indirect evidence only

Major roads

Hill forts reoccupied in post-Roman period
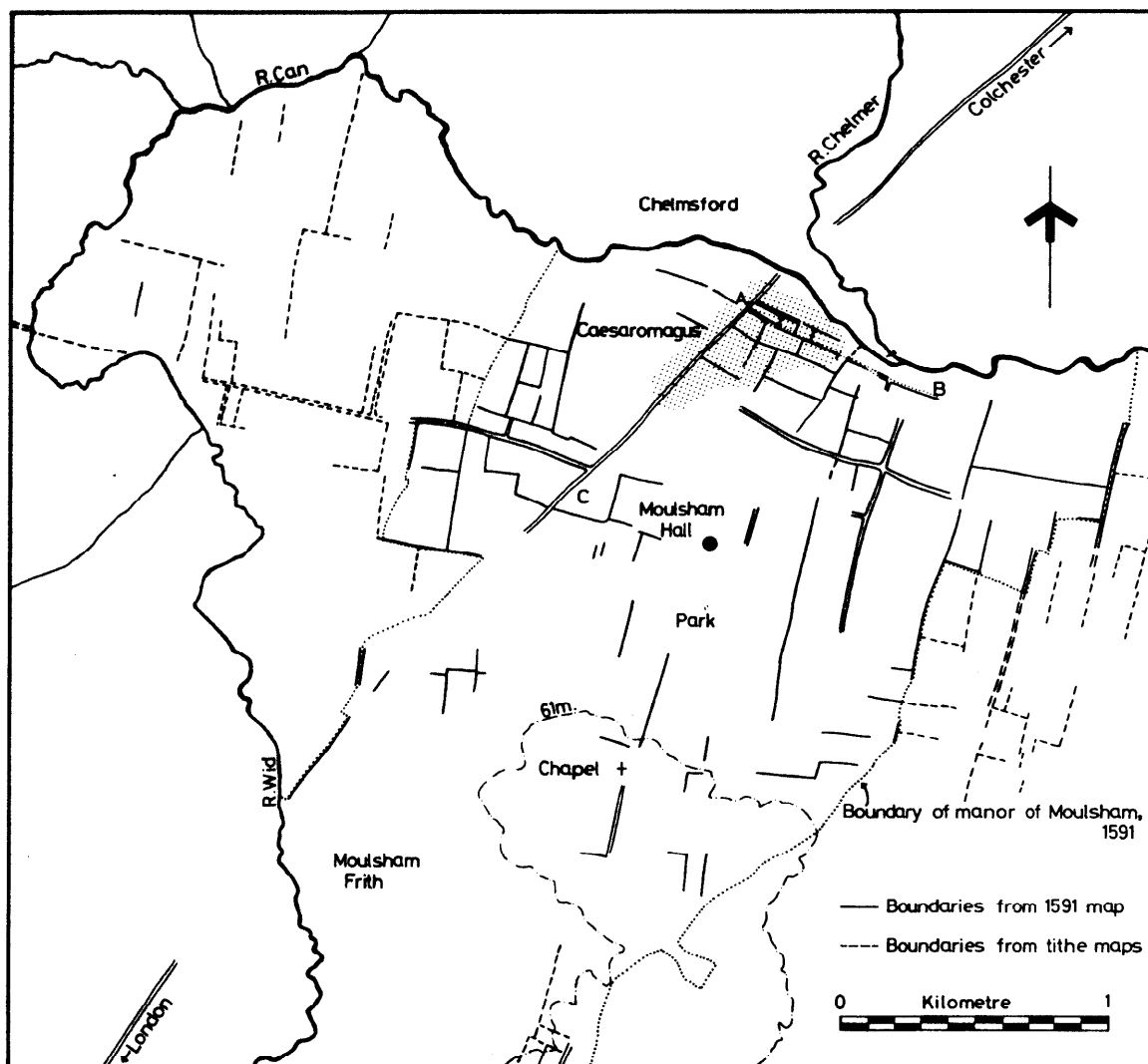
Fig 23   Relict features in the landscape south of Chelmsford prior to modern development (Crown copyright reserved)

London-Colchester road suggests a pre-Roman origin for this pattern of land-division, which in form closely resembles those discerned at Little Waltham and Braintree. The dichotomy of property alignments adjacent to the London-Colchester road in the Roman period is thus explicable in terms of development taking place within the constraints of a pre-existing pattern of land division crossed by a later road

Underlying the Roman levels in the town is a buried soil containing numerous small abraded sherds, of Neolithic to Iron Age date, and seemingly indicative of cultivation, but no field ditches have so far been discovered However, underlying the road leading south-eastwards out of the town, excavation has revealed a lynchet, adjacent to a track. On top of the lynchet was a large posthole, the filling of which contained only middle and early Iron Age pottery. One substantial element of the Chelmsford field system, therefore, originated in or by the middle Iron Age.

In Summary, it is now becoming clear that over extensive areas of central and northern Essex a system of land division originating in or by the late Iron Age continues to form the basis of the present landscape. Over this early pattern a network of strategic roads was superimposed in the Roman period (Fig 24), and within it some areas were subsequently

replanned, or newly brought under cultivation. Examples occur east of Braintree, between the Braintree–Colchester road and the river Blackwater, where at least two distinct holdings with boundaries aligned on the Roman road seem to be apparent, both centred on Roman sites (Drury *et al* 1976, 122–3); but we could equally he dealing with the reorganization of existing holdings, since at least one of these sites (38) has produced pre-Roman material. What survives to us (or survived into the 19th century) of Roman and pre-Roman layouts represents the land which has remained in continuous agricultural usage since the end of the Roman period; those areas which reverted to woodland, or which were never cultivated or enclosed, have been infilled, usually in distinct blocks, at various periods from Saxon times onwards, producing the complex pattern of ancient countryside which is so characteristic of maps of the area.

However, over two large areas in the southern part of the county, a quite different pattern of rectilinear landscape division exists, based on axes which run straight for considerable distances, regardless of the local gram of the landscape (Fig 22). The form is exemplified by the pattern of roads and field boundaries which survives over virtually the whole of the non-mar&land area of the Dengie

ESSEX
First-Century
Military Sites

■ Legionary fortress
▣ 35 acre fortress
■ Fort certain or probable
□ Fort possible site
● Defended site ? military
○ Other sites mentioned in the text
◆ Findspots of military equipment

5   0   Kilometres   20
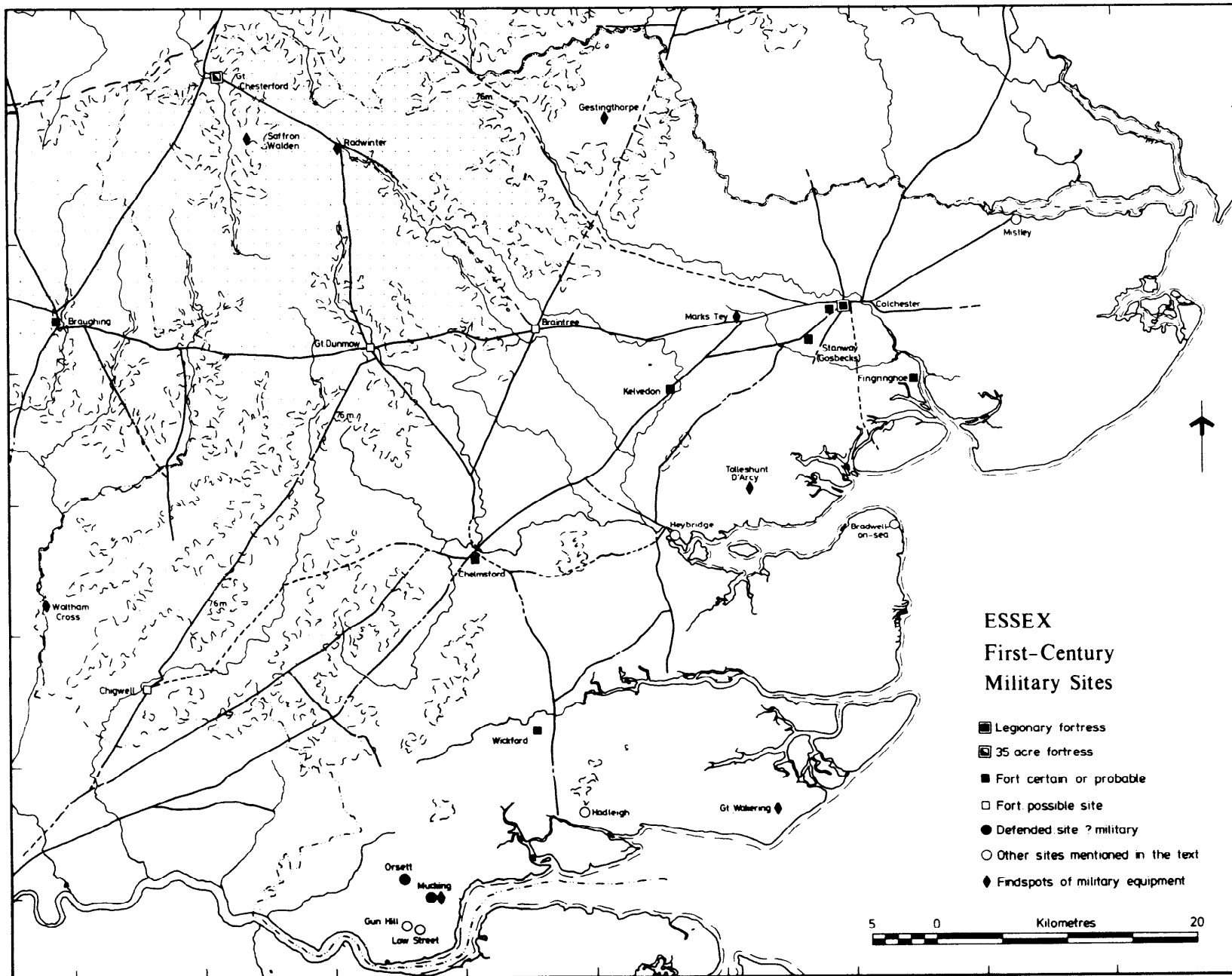
Fig 24   Essex: 1st century military sites (Crown copyright reserved)

peninsula, and recent excavations at Asheldham (Drury & Rodwell 1978; Rodwell 1978a, fig 11.2) make a Roman date for its inception virtually inescapable. The remarkable survival of the pattern in the Dengie peninsula is probably due in part at least to the post-Roman integrity of the area, but survival is almost equally good in the vicinity of Thurrock, where some major features from the pre-Roman landscape are incorporated into the layout (Rodwell 1978a, figs 11.3, 11.4; Drury & Rodwell 1973; Rodwell 1975b).

We thus have evidence for the creation of planned landscapes (but *not* centuriation) on a very large scale during the Roman period, which has prompted Rodwell (1978a, 93) to suggest that the areas concerned may have been imperial estates, The virtual absence of villas (Fig 22 and Rodwell 1975b, fig 6) supports such a suggestion, as does the fact that Roman (rather than late Iron Age) salt-working appears to have been concentrated along the coasts of the ares concerned. But in the late Iron Age these areas were far from deserted; indeed both in Thurrock and in the Dengie peninsula evidence of earlier agricultural landscapes us being recovered by excavation and aerial reconnaissance, although in general these pre-Roman landscapes do not compare with the field systems detected in central Essex The reason for the difference probably lies in the subsoils in that the area of Roman planned landscape includes much of the London clay and gravel terrace areas of Essex, whilst the advanced late Iron Age landscapes developed largely on the boulder clay, glacial tills, and alluvium of central Essex. The mere institution of an Imperial estate would be unlikely in itself to provide sufficient incentive for such large-scale physical changes, unless there was some gain to be achieved in doing so; presumably it was felt that the productive capacity of London clay and gravel lands could be improved substantially by the application of new methods and working arrangements

In this paper, it has been possible to consider only the principal patterns emerging from current studies, and areas of considerable special interest, particularly those around Colchester and Great Chesterford, must necessarily be omitted. Work by M Corbishley and P Crummy on the former, and Warwick Rodwell on the latter, should advance our knowledge considerably in due course. Further, it must be stressed that what has been considered in this paper are merely the surviving elements of early field systems. Where no obvious traces of early systems of land allotment survive, it may mean that the area never formed part of a pattern of the type described; or that the pattern has been wholly obliterated; or that we have failed to recognize features for what they are, There is at present no 'negative evidence' in this field-we cannot say of certain areas that they were not intensively cultivated in the Iron Age or Roman periods because the traces do not survive.

First century military occupation (WJR)

Essex played a crucial role in the Roman conquest of Britam and its immediate aftermath. It has long been assumed that Claudius's army left little trace of its activities in Essex, owing to the supposedly brief duration of the military occupation. This is an over-simplification of the situation, deriving largely from a paucity of contemporary documentation and surviving field monuments; however, recent excavations and an appraisal of the tangible evidence suggest a complex military history. Most of the military bases so far recorded are related to the towns, both large and small, and are thus entangled with the multi-period occupations of such sites (Fig 24).

It is still not known where Aulus Plautius effected the

crossing of the Thames, whether at London or possibly further downstream; at any rate, the potential exists for locating his riverside base camps in Essex. More certainly, marching camps of legionary or double legionary size must await recognition in Essex; these are to be expected both near Colchester and at one or two other localities on the route from the Thames crossing. The processes involved in the conquest of AD43, the redeployment of forces in 43/44, the reconnoitring and policing of the Trinovantian territory, the setting up of civil government, and the suppression of the Boudican revolt and its aftermath must have called for an immense amount of activity by the Roman army. The complexity of military structures in London and Colchester has only become apparent in recent years. At Colchester the sequence involved the construction of a fortress, a fort, the 'triple dyke', and sundry other works of military character (see paper by Philip Crummy in this volume). To the south-west of Colchester a fort has recently been identified at Gosbecks, Stanway (Wilson 1977).

No less complex is likely to be the sequence at Chelmsford, where Drury has found items of military equipment, ditches of military character, and pro-Flavian sigillata under several areas of the later town (Drury 1975). This occasions no surprise, since Chelmsford lies near the mid-point between London and Colchester, and its very name *(Caesaromagus)* implies an official foundation. There was probably a military presence in Chelmsford until at least *c* AD 80 (below, p 67:.

Although there are reasons for suspecting that the Trinovantes were mitially allies of Rome (Rodwell 1976, this cannot be taken to imply that small vexillation forts were not likely to be established at strategic points in the area. On the contrary, the unquestionable need for the army to establish and maintain supply bases and communication routes must all have led to the construction of forts and posting stations. It is thus reasonable to espect to find primary bases along the roads linking Colchester with London and *Verulamium*. The presence of a fort at Kelvedon (Rodwell & Rodwell 1975) has been established, and another seems certain at Braughing, Herts. On topographical grounds forts might be anticipated at Great Dunmow and Braintree, where both the 'small towns' had early origins, but have not so far yielded military remains (on Braintree see Drury *et al* 1976, 126-7).

Only one coastal supply base is known with certainty, at Fingringhoe Wick, on the Colne. This would have served Colchester, as could a base on the Stour at Mistley (Farrands 1975). Supplies to Chelmsford and central Essex might have arrived via the pre-Roman and Roman port at Heybridge, although no military depot can be postulated there on present evidence. While there is no reason to suppose that Bradwell-on-Sea was a supply base, owing to its remote location, the possibility that the Saxon shore fort was preceded by an early Roman naval base should be borne in mind. The finds from the fort area begin in the 1st century, with a pre-Flavian brooch of Hod Hill type *(CMR* 1948, 20-3), and recent work on other shore forts has indicated that some, at least, originated as bases of the *Classis Britannica* in the 1st and 2nd centuries (Cunliffe 1968, 255-60; Cleere 1977).

Supply bases may well have existed on the north bank of the Thames, and the probability of a significant river crossing at East Tilbury has been noted (Rodwell 1972/5, 6). Strategically placed on the hill top overlooking this crossing, and commanding an unrivalled view down the Thames, is Mucking. Here a 1st century rectangular enclosure has been excavated and its military connection, initially

disputed, now seems reasonably established (Jones *et al* 1968, 215; Jones & Jones 1974, 31). Several items of military metalwork have been found on this site, and amongst the buildings so far identified is a specifically military type of granary (Jones & Jones 1974, 35; 1975, 33).

Some two kilometres north-west of Mucking lies the triple-ditched, rhomboidal enclosure at Orsett (Rodwell 1975c). Recent excavations have confirmed the mid 1st century AD date and regularity of plan, as well as demonstrating the existence of a northern annex (H Toller, pers comm). Despite the lack of military equipment from this site,, it is difficult to envisage its construction without military inspiration. One is reminded of the recently discovered fort at Coddenham, Suffolk (Farrands 1978).

Further inland, at the tidal limit of the Crouch, is Wickford, where a length of military ditch and associated finds attest the presence of a pre-Flavian fort. At several locations in southern Essex aerial photography has revealed small rectangular enclosures, usually strategically placed. They may be single or double-ditched, are rather irregular in form, and lack evidence for internal structures; eg Hadleigh (Rodwell 1971, 3), Low Street, and Gun Hill, West Tilbury (Drury & Rodwell 1973). They cannot be called 'forts' but their defensive nature is not in doubt. The excavation of Gun Hill showed that the enclosure was built in the mid 1st century AD and comprised a V-shaped ditch with an internal turf-revetted rampart. There was a single entrance and timber gateway, but no sign of buildings or contemporary domestic occupation inside. Futhermore, the defences had been slighted before the end of the 1st century.

It is difficult to put forward a convincing explanation for the 'military' and other defended enclosures of southern Essex in the context either of invasion or of garrisoning. They do not plausibly fit into known military or civilian contexts. In view of the evidence for the wholesale planning of the landscape of this area (see p 64) is it not possible that these are works compounds, administrative bases, or collection centres on an imperial estate?

In west Essex very little evidence has so far been recovered of military activity; when the site of *Durolitum* is finally established, it will presumably be found to include an early fort as evidenced by the placename (Frere 1971). *Durolitum* was probably at or near Chigwell (Rodwell 1975a, 93).

Finally, in northern Essex one major military site is known, at Great Chesterford (*VCH* 1963; Rodwell 1972). Here, a 30 acre fortress of half-legionary size lies partly beneath the Roman 'small town', and was possibly connected with events following the Boudican rebellion. Military activity can also be deduced from several finds from Saffron Walden, which include a catapult bolt, strap end, and Claudian brooch of Hod Hill type (Ecroyd-Smith 1884, pls 10.6, 8.5, and 8.6 respectively); and an important but unpublished find from Radwinter is a fragment of legionary armour *(lorica segmentata)*. Some of the small objects of bronze from Gestingthorpe may also be of military derivation.

From the remainder of Essex come various finds which hint at other sites with a military presence at some time in the 1st century. For example there are heads of *pila* from Tolleshunt D'Arcy and Great Wakering, and two military pendants and several early brooches arc believed to have been found at Marks Tey (Clarke 1874; *VCH* 1963, 187). A legionary dagger was recently recovered from gravel workings on the banks of the Lea, near Waltham Cross. Less certainly of military association are finds such as the button-and-loop fastener from Orsett, the Claudian coins

and sigillata, and brooches of Hod Hill type, from various sites. The brooches and coins, and particularly the imitation *asses* of Claudius, are most commonly found on military sites of the pre-Flavian period.

The 'small towns' (PJD)

During the past decade the 'small towns' of Roman Essex (Fig 22), particularly Chelmsford and Kelvedon, have been subjected to excavation on a substantial scale. Using the evidence of past finds, and the interim results of new excavations, Warwick Rodwell produced a preliminary study of Trinovantian small towns (Rodwell 1975b) which is likely to remain generally valid until the major recent excavations and the past finds from each site have been fully published. To date this has been done only for Braintree (Drury *et al* 1976): comparison of the newly-published plans of the settlement *(ibid,* figs 2, 3) with that published by Rodwell (1975b, fig 2) indicates how much the picture can change, in that instance more from a detailed study of past discoveries (no less than 53 sites in and around the settlement) than from the relatively small-scale recent excavations. Further work has also changed the picture at Chelmsford *(Caesaromagus),* although not to the same extent, since the publication of the 1975 interim report (Drury 1975) (Fig 25).

The 'small towns' are nucleated settlements covering *c* 8-20 ha, which are generally assumed to have acted as market centres for the surrounding countryside and in which dwelt artisans practising a wide variety of crafts (few of which leave archaeological traces under normal conditions). Most known sites lie at a nodal point on the main road system, and close to a river; Heybridge was certainly a significant port. Many seem to have originated in the pre-Roman period, and most have yielded suggestions of early Roman military activity (above, p 64). There is little evidence of formal planning, the buildings generally being ranged along one or more main road frontages, or along a back road (eg Kelvedon).

Domestic and commercial buildings are almost invariably timber-framed, generally with earth, gravel, or timber floors and thatched roofs; in the centre of Chelmsford, strip-houses are the norm, but less cramped building styles seem to have prevailed at Braintree (Drury *et al* 1976, 124) and doubtless on the fringes of most of these settlements. Only in the 1st century are the structural timbers normally set into, rather than on, the ground, the latter technique making plans difficult to recover in excavation. Chelmsford and Wickford are known to have had earthen defences; in both cases these were short-lived and belong to the late 2nd century. Great Chesterford was walled in the 4th century.

Major buildings in the small towns are best known from Chelmsford, where an octagonal temple (Drury 1972) and an extensive *mansio* are known. More extensive excavation of the *mansio,* coupled with the study of past finds, has produced a more accurate picture of its origins and development than was possible in 1975 (Drury 1975, 170-1). Post-conquest activity on the site can now be summarized as follows (Fig 26):

Phase II

Timber-framed buildings were erected on a site to the west of the later stone *mansio* (see below). This phase began *c* AD 60-5, and is probably associated with the post-Boudican fort which lies to the south. The baths, including the circular *laconicurn* located by Chancellor in 1849 and re-excavated in 1975, originated either in this phase or the next; if in this phase they were probably intended primarily to serve the fort.

river can

temple

enclosure

mansio

CAESAROMAGUS
from the late first century onwards

Roads ▰▰▰ known ▨▨▨ conjectured

Town defences 〰〰〰 known

〰〰〰 conjectured

▨▨▨ known buildings

◆ •• burials ═══ ditches

Density of occupation indicated by
bold stipple

0   metres   200

b
u
r
i
a
l
s

b
u
r
i
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l
s

principal cemeteries
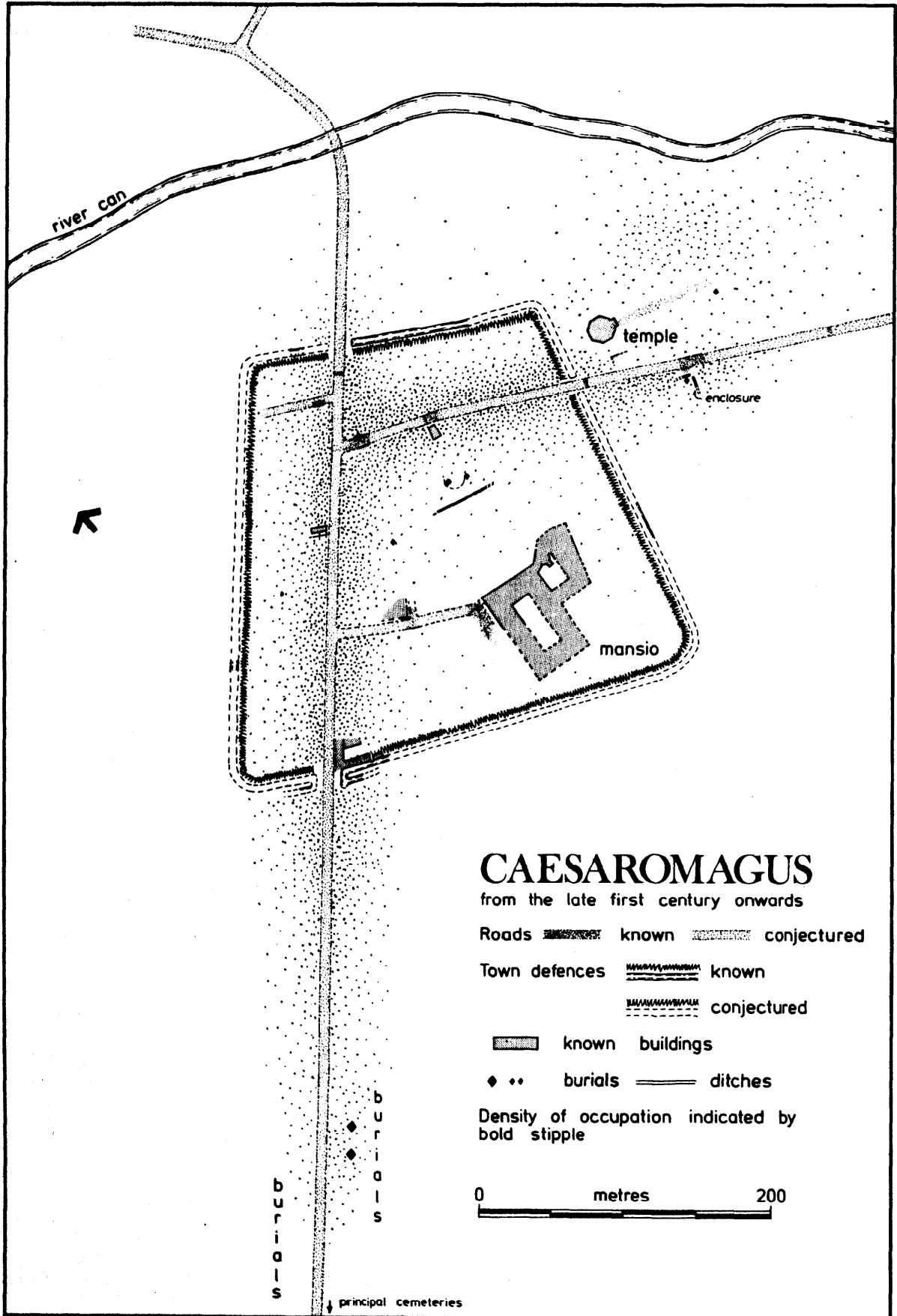
Fig 25   Chelmsford: plan of the 'small town' of Caesaromagus

CHELMSFORD
The Mansio
Phases IVa

Phase IVb

Phase V

Phases VI,VII
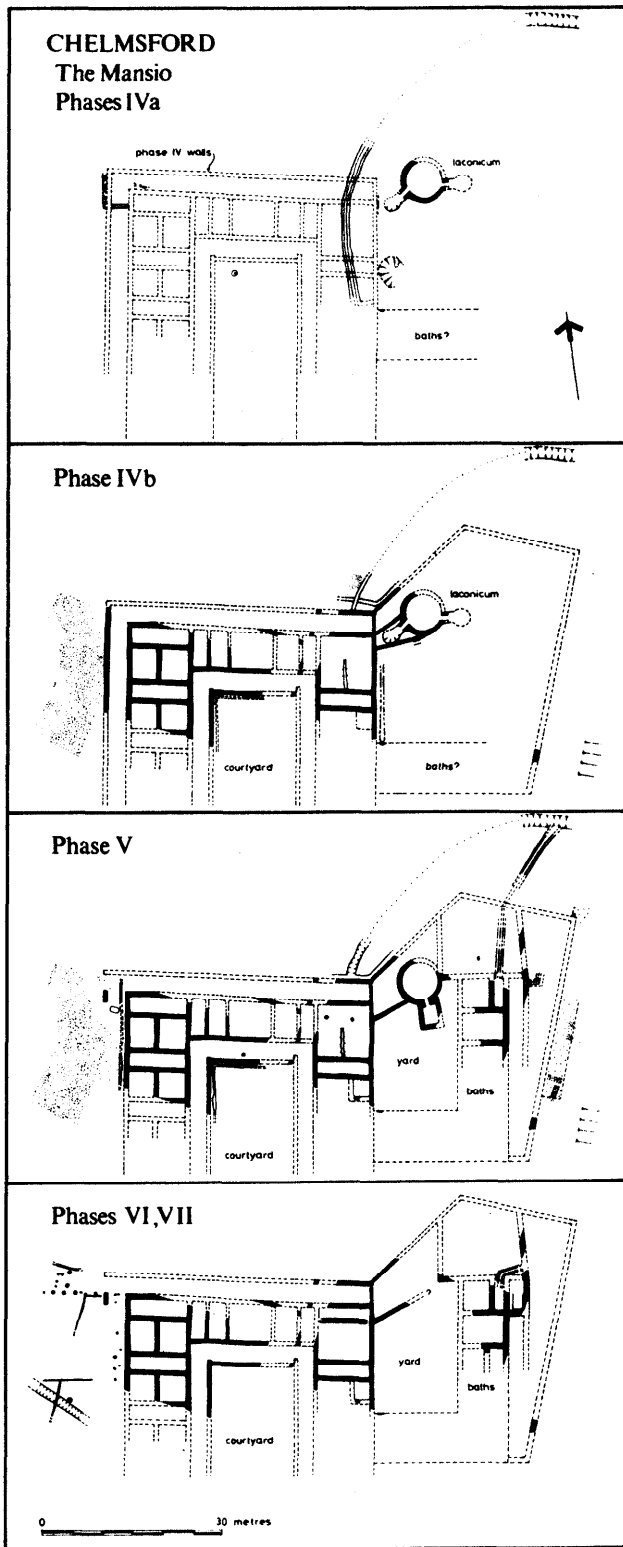
Fig 26   Chelmsford: the development of the mansio

Phase III

A second phase of activity is evidenced largely on the site to the west of the *mansio;* it began *c* AD 80, in other words when the fort to the south seems finally to have been given up (Drury 1975, 162). It probably involved some replacement of earth-fat buildings with framed structurea.

Phase IV

In Phase IVA, *c* AD 120–5, the *mansio* and an associated building to the west were constructed in timber; from *c* 125 onwards it was reconstructed in stone, but perhaps only to first floor height (Phase IVB). The stone building may largely follow the plan of its timber predecessor, save that the position of a path or road shows that the earlier building had neither north wing nor verandas.

Phase V

A further phase of reconstruction, involving little alteration to the plan and possibly representing the addition of a masonry upper storey, took place probably around the middle of the 2nd century.

Phase VI

The building, in common with much of the town, and indeed other sites in Essex (Rodwell 1975b, 93), seems to have suffered from fire damage at the end of the 2nd century, necessitating reconstruction which again involved little alteration to the plan of the main building.

Phase VII

Alterations, particularly to the baths, began in the 3rd century and continued into the late 4th century, and probably beyond.

The comer of another masonry building, whose structural form and development exactly parallels that of the *mansio* itself, was located in 1977, flanking the street connecting the *mansio* to the London–Colchester road, which originated in Phase IV. It may have been a Romano-Celtic temple of the normal square type. On the opposite side of the street, part of a piped water distribution system was also located in 1977. The extent of the *mansio* precinct is only now becoming clear, as in addition to these main structures, ancillary timber buildings are being located both in excavation and by a reconsideration of past finds (summarized in *VCH* 1963, 67–71). Publication of the *mansio* and adjacent sites in the south-east corner of the town is in hand (Drury forthcoming).

Away from the *mansio* and the temple, the consistency of building standards and plans in Chelmsford is remarkable––only one non-public building has yet been found to have even a mortar floor—and provides a distinct contrast to Colchester where rapid if erratic progress was made towards the use of masonry in domestic and commercial structures. A similar consistency is emerging in the standard of pottery, glass, and other material, some element of contrast being provided by the finds from the *mansio.*

Slag derived from iron-smithing is almost ubiquitous in the small towns, but at Braintree, G D Pratt has excavated a 4th century smithy (Drury *et al* 1976, 3–65), a long narrow building with one open side, over which the roof was carried on posts. The structure finds parallels as far away as the *vicus* at Manchester (Jones, G D B, 1974, ch iv), and is clearly a specialized building type with a widespread distribution in the province. Other specialized buildings, perhaps less clearly attributable to a specific function but almost certainly as difficult to detect and interpret in excavation, should be recognized in the future. The material evidence for the other trades which we assume to have been the basis of the economy of the 'small towns' is also beginning to emerge. Bone and horn working is indicated at Chelmsford, and bone and antler working at Braintree (Drury *et al* 1976, 21–2); and in 1975–6 the site of a tanning and probably cloth-dying establishment was excavated in Cables Yard, Chelmsford.

Pottery was also manufactured; 1st century wasters and 4th century kilns have been found in Chelmsford (Drury 1975, 170), and kilns are also known at Kelvedon (Rodwell & Rodwell 1975). But their siting in the small towns seems to be incidental, since the 4th century Chelmsford kilns were producing Rettendon ware, now realized to be a central Essex regional type produced in at least four centres (Rettendon, Sandon, Inworth, and Chelmsford), three of which are rural (Drury 1976, 257–8).

Rural settlements, buildings, and villas (WJR)

Finds of pottery and, to a lesser extent, coins and other artefacts of the later Iron Age are well distributed throughout the county, indicating an extensively occupied landscape before the Roman conquest. Furthermore, excavation and fieldwork in recent years have shown that the majority of Roman rural settlements had Iron Age predecessors, either on the same site or immediately adjacent. Cropmark evidence, particularly on the lighter soils of the Thames terraces, leaves no room for doubt that systems of roads, fields, and associated settlements of Iron Age and Roman date cover hundreds of square kilometres of landscape (Rodwell 1978a). Likewise evidence is forthcoming that tracts of the Colne, Blackwater, and Stour valleys were no less densely occupied and farmed.

The evidence from the claylands is less overt, but is not lacking: the prehistoric and Roman village at Wickford was firmly founded on the London clay, and so were several smaller settlements close by (Fig 27). In the area around Witham, Braintree, and Kelvedon, where a moderate amount of fieldwork and study has been undertaken, it is clear that settlement on the boulder clay was widespread

It is evident that most of the known villages or small towns (eg Chelmsford, Kelvedon, and Great Chesterford) lay on the lighter soils close to river crossings: they did not exist as small units in isolation, as cropmark evidence on the adjoining terraces shows. Sometimes 'ribbon development' trailing off into the hinterland can also be detected. Such is the case alongside the London-Colchester road (here probably of pre-Roman origin) south-west of Kelvedon, where aerial photography has revealed what would appear to be a chain of small holdings nearly as far as Rivenhall End Thereafter the cropmarks die out but archaeological finds indicate a continuation of this pattern at least to a point south-west of Witham, an overall distance of 9 km (Fig 28).

Away from the villages, communication routes, and river valleys, there does not appear to have been a similar pattern of intense, all-over settlement. Instead, separately identifiable farmsteads and villas are to be found, each probably set amongst many hectares of farmland, pasture, and woodland. It is not possible either to estimate the average density of these hinterland settlements or to suggest the extents of their estates. Intensive field by field studies of sample areas are required before these problems can be approached satisfactorily. Even without systematic field searching it is obvious that the density of late Iron Age and Roman sites on
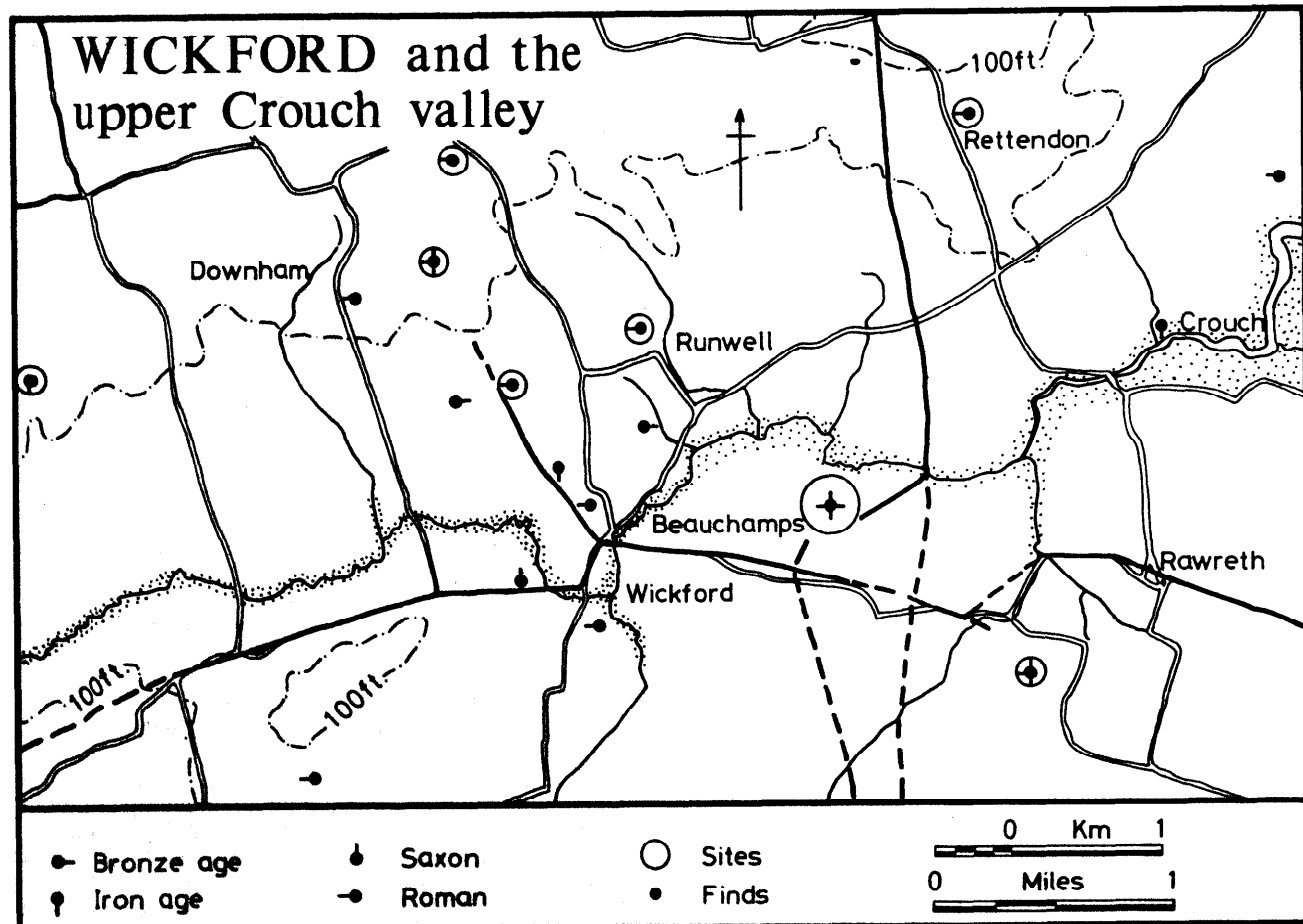
Fig 27   *Settlements in the Wickford area (Crown copyright reserved)*
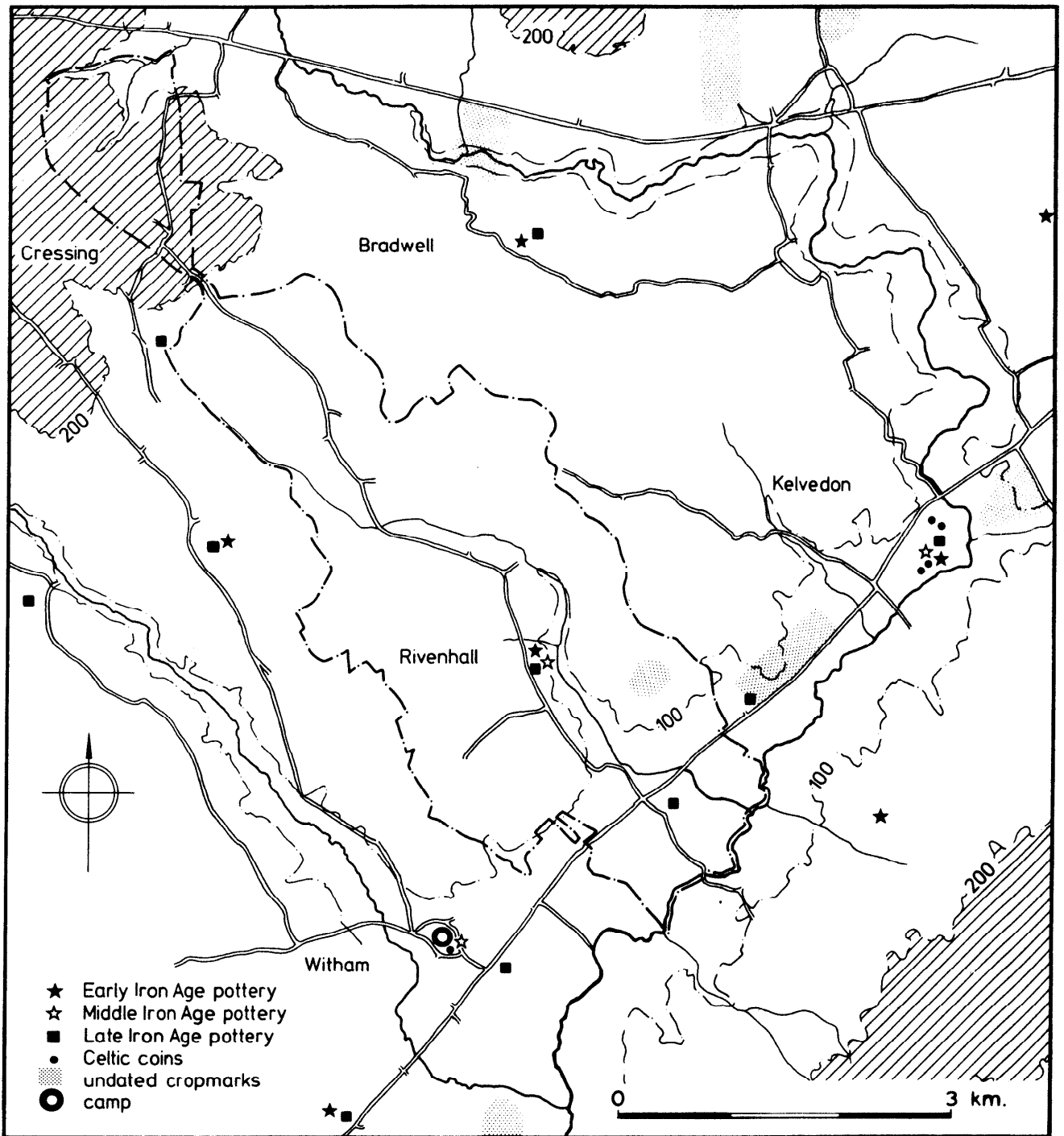
Fig 28   Iron Age settlements in the Rivenhall area (Crown copyright reserved)

the heavy subsoils amounts to several per parish. Thus on the London clay around Wickford the average distance between any adjacent pair of eight recorded Roman period sites is 1.5 km. One of the sites, at Rawreth (Drury 1977), was first occupied in the middle Bronze Age, while Beauchamps, Wickford, has yielded evidence for settlement from the late Bronze Age onwards (Rodwell 1970b). Similarly on the boulder clay of the Rivenhall area the average distance between Roman settlements is 2 km (Fig

29). If in these areas it is assumed that the recorded number of settlements represents half the actual total (and that is optimistic; it may only be a quarter or less), then it is legitimate to conclude that the average distance from one farm or hamlet to the next must have been 1 km or less. This is not to deny that there may have been areas of land, each of several square kilometres, where no settlements existed in the Iron Age or Roman periods. There must have been tracts of woodland, and in this connection attention might

be drawn to areas of higher, more exposed ground, for example south-east of Braintree, above the 200ft contour (Fig 29).

Distributions of sites and finds make one point clear: by the early Roman period there cannot have been large tracts of uninterrupted forest surviving in Essex. As a crude generalization it may be said that the distribution of settlements in the Roman period (and perhaps the later Iron Age) was no more sparse than it was at the time of the Domesday survey.

Details of the layout of individual settlements of the late Iron Age are poorly known, but four types of site can be differentiated (Rodwell 1976): first, the urban or proto-urban complex at Colchester; secondly, the much smaller *oppidum* at Braintree (Drury *et al* 1976); thirdly, the villages, which usually became 'small towns' or posting stations in the Roman period, such as Great Chesterford *(VCH* 1963) or Kelvedon (Rodwell & Rodwell 1975); and fourthly, the individual farmsteads. These appear to have comprised groups of sub-rectilinear farmyard enclosures

with paddocks, sheep folds, and animal pens attached The biggest single difficulty to date in understanding late Iron Age settlements, from *Camulodunum* downwards, has been the scarcity of intelligible evidence relating to buildings. Circular houses, so well attested in earlier periods, had largely disappeared in Essex by the turn of the 1st century AD: they were apparently superseded by rectilinear buildings of framed construction which left comparatively slight traces in the ground (Rodwell 1978b). Outside Colchester, timber-framed buildings which rested directly on the ground surface remained the most common form of construction throughout the Roman period.

Very few structures in the small towns and in the country-side of Roman Essex were provided with walls and foundations of mortared masonry. This type of construction was essentially limited to religious and administrative buildings (such as temples and *mansiones;* pp 65–71 above) and to the principal residences on the larger agricultural estates (ie the 'villas'). The predominance of timber architecture is not an indicator of cultural backwardness, but simply a regional building style. When covered with
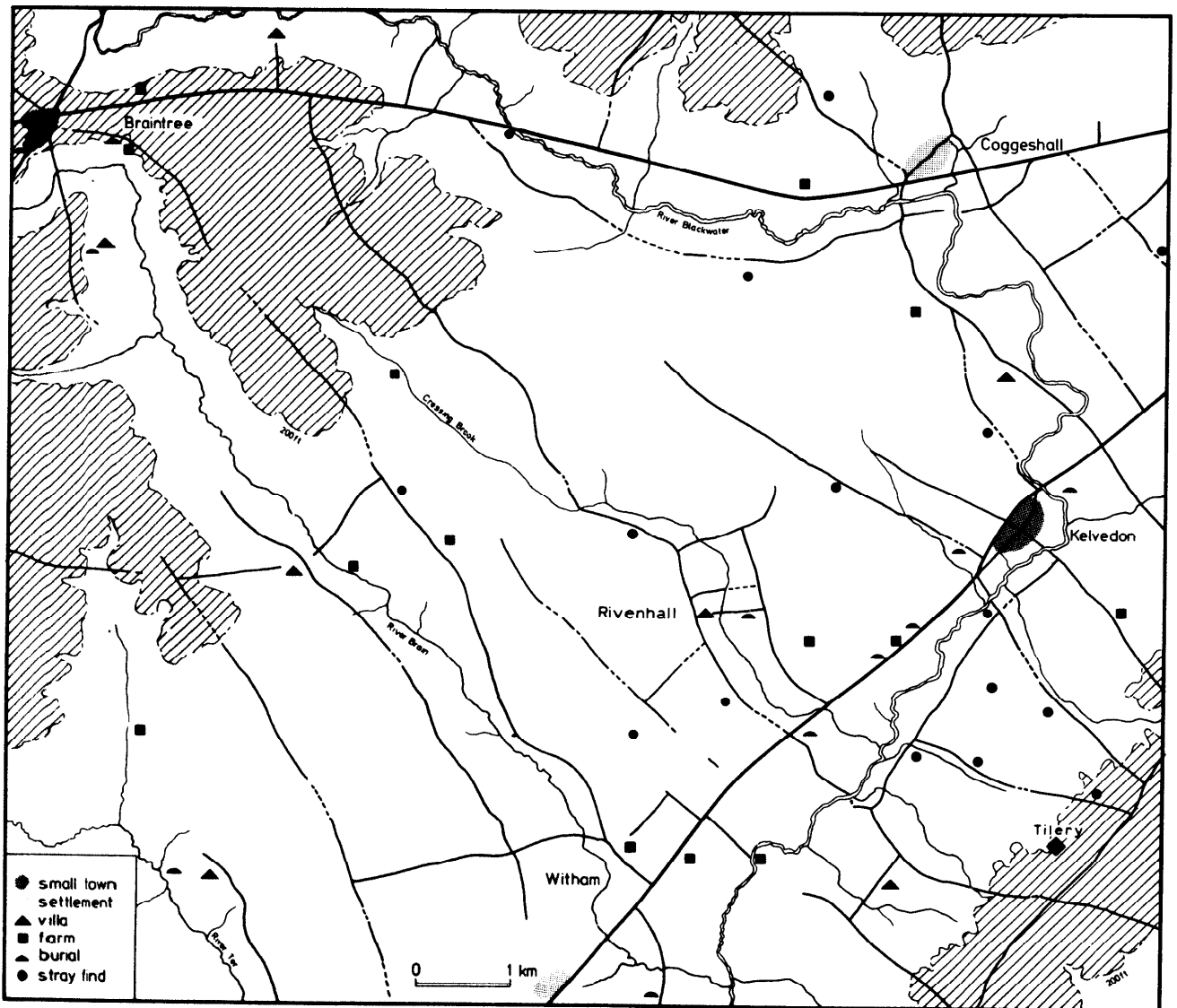
Fig 29 Romano-British settlements in the Rivenhall area (Crown copyright reserved)

stucco, lime-washed, and painted, it would have been difficult to ascertain from a superficial inspection whether a house was built of stone or timber, or a mixture of both.

The use of rubble masonry in Essex villas was amongst the earliest in Britain and seems to have been associated initially with prestigious dwellings of the later 1st century (Rodwell 1978c). The use of stone not only facilitated the construction of hypocausts and baths but was also essential to the erection of highly sophisticated buildings such as the podium-villa at Rivenhall (Rodwell & Rodwell 1973 and forthcoming).

The picture which emerges of the transition from late Iron Age to Roman Essex is not one of great physical change. The former Trinovantian capital *oppidum* became a Roman *colonia* and chief administration centre for the *civitas* (although Chelmsford may originally have been intended to fulfil the latter function: Wacher 1975); the lesser Iron Age settlements became villages or small towns in the Roman period, being usually situated at river crossings or nodal points in the road system (Rodwell 1975a); farmsteads continued in occupation; field systems remained undisturbed, but were extended; and rectangular houses and farm buildings saw no drastic modifications, until prestigious villa-houses of stone emerged in the richer areas, particularly in central and northern Essex (Fig 22). Some of the more magnificent houses in the Colchester area (eg Alresford and perhaps West Mersea) were possibly the residences of immigrant officials or business entrepreneurs, while others (eg Pleshey and Rivenhall) are more reasonably seen as the homes of the native farming aristocracy (Rodwell 1978c).

The 'end' of Roman Essex (WJR)

The transition from Roman Britain to Saxon England has traditionally been seen as one of the more vivid episodes in history; and Essex lies prominently in the middle of the south-eastern zone of primary settlement. There is however no historical evidence which has any direct bearing on the Roman to Saxon overlap in Essex and, until the discovery of the settlements and cemeteries at Mucking, there was also very little pertinent archaeological evidence from the county. Recent excavations have revealed few new Saxon settlements, but have greatly increased our understanding of the latest phases of activity in settlements of the Roman period, and yielded evidence for their survival well into the 5th century, which might not have been deemed credible a decade ago.

Excavations in the small towns have consistently yielded coins of Honorius and Arcadius (the latest imperial issues to reach Britain), taking occupation into the early 5th century at least in Chelmsford, Great Dunmow, Braintree, Great Chesterford, Heybridge, and Wickford. Other finds from late 4th and 5th century levels are equally significant: shell-tempered pottery (which first appears in Chelmsford *c* AD 370); Oxfordshire colour-coated pottery of types manufactured into the early 5th century; and hybrid pottery types known as Romano-Saxon. This pottery had its heyday in the second half of the 4th century and its distribution is weighted towards the east coast of England; more has been found in Essex than in any other county (Fig 30). Although the historical significance of Romano-Saxon pottery is still heavily disputed, its semi-Germanic decoration and distribution remain evocative (Myres 1956; Rodwell 1970a; Hurst 1976; Johnson & Rodwell forthcoming).

The general picture which emerges in late Roman Essex is one of continuing prosperity, with no solid evidence for destruction or decay around the turn of the 5th century. Indeed, on some sites where stratified deposits of this period have survived and been excavated, good evidence for building activity in the 5th century has been recovered. Thus at Chelmsford, there were two or three phases of occupation on the site of the late Roman temple after the building itself had been removed (Drury 1972). The fact that the temple was demolished and even its foundations robbed of their stone in the 5th century is of the greatest interest, since it implies fresh building elsewhere.

In a rural situation an example of the continued occupation of a villa after the historical end of Roman Britain is provided by Rivenhall (Fig 31). There it can be seen how two large domestic buildings (B1 and B2, originally constructed as luxurious dwellings) and an aisled barn (B4) were modified during the 4th, 5th, and 6th centuries to suit the needs of the agriculturally-based estate (Rodwell & Rodwell 1973 and forthcoming). As stone buildings passed economic repair they were replaced by timber buildings; although the luxuries enjoyed during the heyday of villa life had waned, there is no reason to assert that the villa as a basic farming unit suddenly disappeared. On the contrary, there is good reason at least to ask whether Roman estates did not gradually transmute into Domesday vills.

The poor survival of later Roman and early post-Roman levels in Essex, coupled with a paucity of large scale excavation on suitable sites, has resulted in the low rate of recovery of structural sequences which are vital to an understanding of the period. Thus at Wickford a rare survival was glimpsed underneath a medieval headland bank, where a succession of levels from late Iron Age to sub-Roman was recovered. A small sub-Roman building was recorded, the lower parts of whose walls were apparently constructed of turf and rubble.

The evidence obtained from cemeteries associated with Roman settlements is no less interesting, and several sites have yielded late Roman and early Anglo-Saxon burials in intimate association. Nineteenth century records suggest that this was the case with the western cemetery outside the town of Great Chesterford. The same is certainly true of the eastern cemetery at Kelvedon (which is actually in Feering parish), where rich Roman burials, in stone and lead coffins, lay alongside 5th century Anglo-Saxon graves. A cemetery at Prittlewell, possibly associated with a villa, has yielded several Roman burials and graves containing objects of the 6th and 7th centuries (Pollitt 1923). The southern cemetery at Kelvedon contained graves from the 1st century onwards. The most elaborate of the late Roman burials was in a chamber grave inside a timber mausoleum (Rodwell & Rodwell 1975), and it may be compared to an Anglo-Saxon chamber grave from Spong Hill, Norfolk (Hills 1977). A large inhumation cemetery at Saffron Walden could have been in use from the 3rd to 12th centuries (Ecroyd-Smith 1884).

With the exception of a small number of early Saxon settlements founded in the coastal areas of Essex, of which Mucking is the best known, it has become clear that there cannot have been any great influxes of Germanic immigrants in the 5th and 6th centuries, comparable to those of East Anglia or east Kent. This is not to say that folk of Germanic origin were not present in the hinterland of Essex: artefact finds suggest that they were, but in limited numbers, living in controlled circumstances on 'Roman' settlements. How such controlled settlement was instituted and maintained is perhaps beyond the reach of archaeology, but the clues to its initial phases should doubtless be sought in the Saxon shore fort at Bradwell-on-Sea (Johnson 1976) and the walled towns of Colchester and Great Chesterford. Although of disputed significance, the distinctive belt fittings and crossbow brooches (Fig 30) which were worn

ESSEX
Late Roman Finds

■ Walled town or fort

● Romano-Saxon pottery

◉ Romano-Saxon pottery kiln site

✝ Crossbow brooch(es)

◆ Military metalwork

△ Anglo-Saxon sites – 5ᵗʰ century
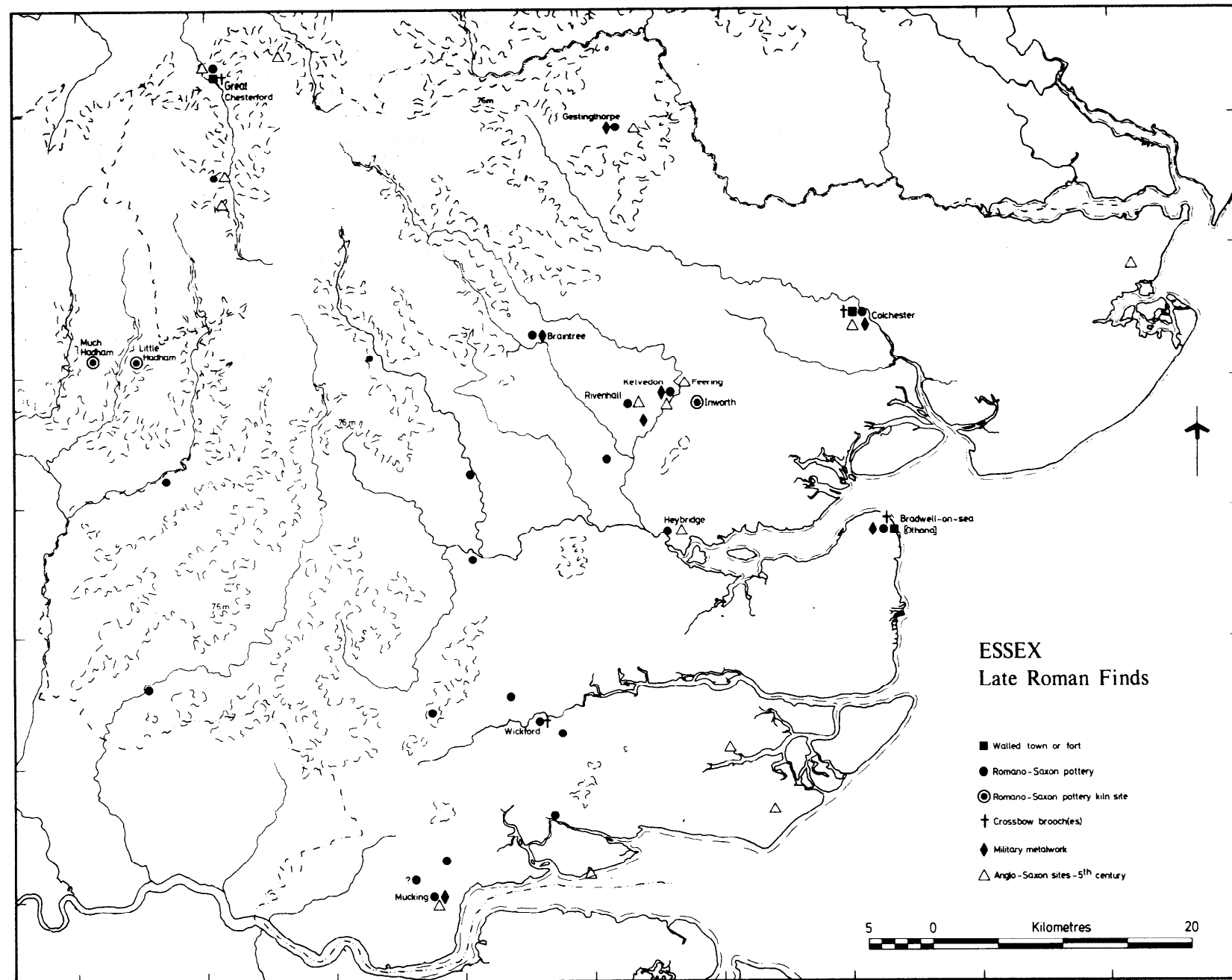
Fig 30   Essex: late Roman finds and early Saxon settlements (Crown copyright reserved)
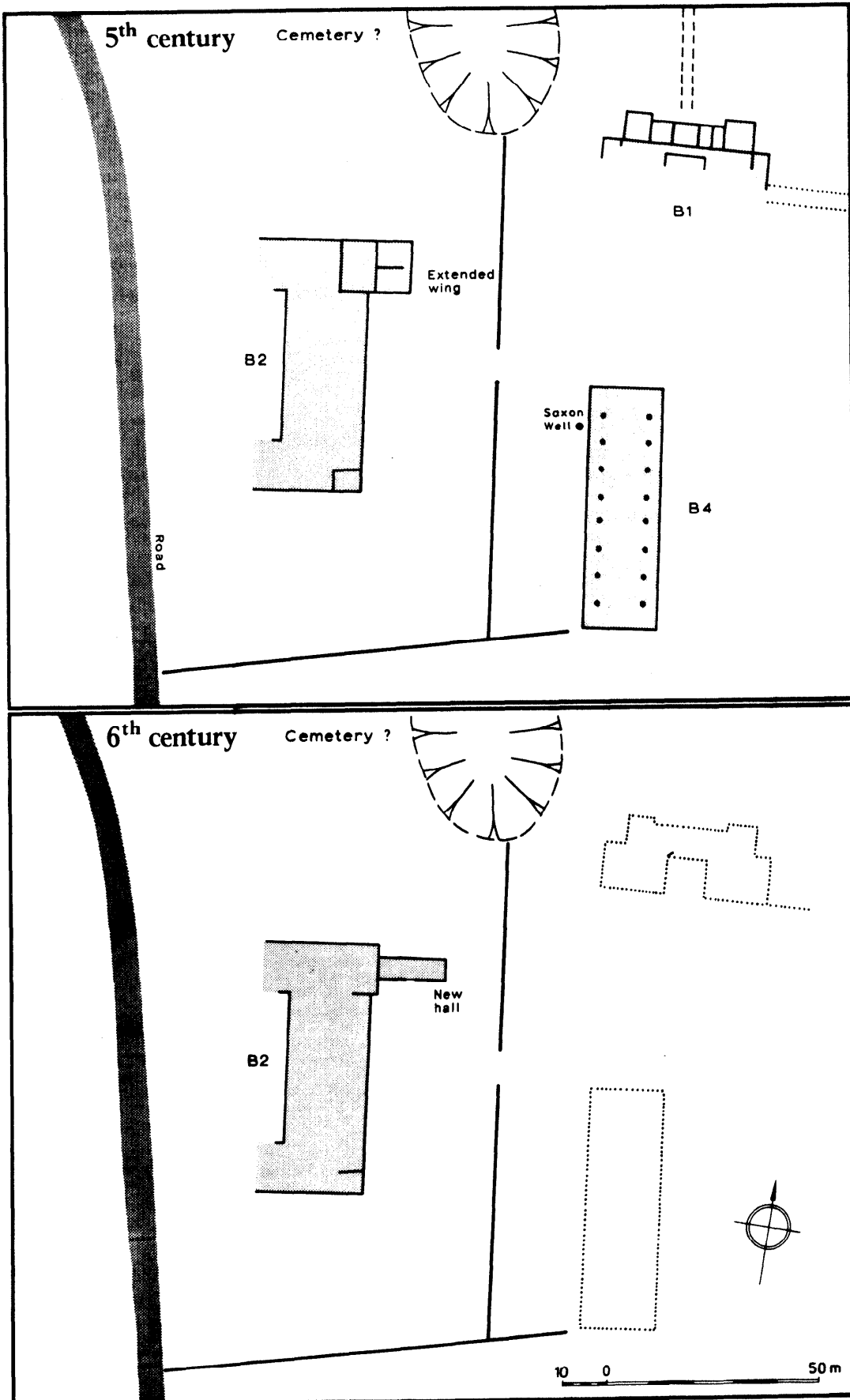
Fig 31   Rivenhall: the villa buildings in the 5th and 6th centuries

by soldiers and perhaps civilian officials in the late Roman period (Hawkes & Dunning 1961; Hawkes 1974), may be the only personal links with those who provided the military or semi-military control which was undoubtedly necessary in the formative decades of the early post-Roman era in Essex. It can hardly be mere coincidence that every 5th century Anglo-Saxon site—settlement or cemetery—is directly associated with one of late Roman date (although not all have yielded objects of the particular groups shown on Fig 30).

Excavation priorities (PJD)

Essex has been intensively cultivated for so long that most sites not underlying later settlements have been denuded of all stratified levels. The nature of timber buildings typical of both the late Iron Age and Roman periods is such that only rarely did their structural members penetrate the ground to any significant extent. Hence, if the stratification has been destroyed, so, generally, has all trace of the buildings themselves. Even in the case of villas, most floor levels and remains of ancillary timber buildings will generally have been destroyed (eg Rivenhall, the aisled barn: Rodwell & Rodwell 1973, 123). In the selection of sites for excavation, therefore, one of the major considerations must be the likely degree of presentation.

So far as the late Iron Age is concerned, *Camulodunum* seems to offer the best hope of stratified levels, and the excavation or preservation of the Gosbecks and Sheepen areas should be the first priority. Despite the damage to Great Chesterford in recent years, evident by the appearance of ring ditches as cropmarks within the Roman town area, some stratified late Iron Age levels may still survive, but urgent action is required if these are not to be destroyed without record. Redevelopment in Braintree may also make available areas of pre-Roman settlement relatively little disturbed by later activity.

The policy for the Roman small towns must be one of concentration on sites with good surviving stratification over areas large enough to yield comprehensible results on excavation. We have reached the point were the limited results which can be obtained from sites where all stratification has been ploughed away, except under the headlands of medieval and later fields (eg Wickford), are merely duplicating existing information, and such sites should not be dug unless there are specific questions which can be answered from the surviving remains. Examples include the elucidation of military earthworks, town defences, or the excavation of peripheral Saxon settlements in which the *Grubenhäuser,* at least, will be relatively intact. In the case of towns sealed beneath later settlements, the scale of development has been such as to destroy or seal so much of the evidence that, unless a start was made by *c* 1970, it is unlikely that a comprehensive picture of the settlements will ever emerge. Excavation shod therefore be concentrated in those areas where stratification survives and work has already been undertaken on a considerable scale, eg Chelmsford; although even there the survival of late Roman levels is relatively rare.

So far as Romano-British rural sites-villas and farms—and their late Iron Age predecessors are concerned, the best hope of reasonable preservation seems to lie in those sites which have continued in occupation until recent times. It is probable that many moated sites and other medieval earthworks (eg Pleshey Castle) cover and preserve Roman and earlier settlements, and attention has been drawn to the number of churches which overlie villas (Rodwell & Rodwell 1977, 90, fig 30). Although seriously damaged by graves, the stratification of such sites is likely to survive at least in part.

Finally, excavation must be on a scale commensurate with that of the site under examination. Small-scale excavations of large sites, particularly villas and small towns, are at best poor value for money and at worst misleading. Work in the future must concentrate on a small number of large sites, chosen on the criteria of their state of preservation, availability (in most cases over a number of years), and the likely value of the results, as well as the threat of destruction by dramatic, or more likely insidious, action.

References

CMR, 1948   *Report of the Colchester and Essex Museum, 1947–48*
Clarke, J, 1874   *Notes on objects in the Mayer Collection relating to Essex*
Cleere, H, 1977   The *Classis Britannica* in *The Saxon shore* (ed D E Johnston), CBA Res Rep 18, 16–19
Cunliffe, B W (ed), 1968   *Fifth report on the excavations at the Roman fort at Richborough, Kent*
Drury, P J, 1972   Preliminary report: the Romano-British settlement at Chelmsford, Essex, *Essex Archaeol Hist*, 4, 3–29
——, 1975   Roman Chelmsford—*Caesaromagus*, in Rodwell & Rowley 1975, 159–73
——, 1976   'Rettendon' ware kiln debris and other material from Sandon, *Essex Archaeol Hist*, 8, 253–8
——, 1977   Excavations at Rawreth, 1968, *ibid*, 9, 20–47
——, 1978   *Chelmsford Excavation Committee Report 1: Excavations at Little Waltham 1970–71*, CBA Res Rep 26
——, forthcoming   *Chelmsford Excavation Committee Report 3: The mansio and other sites in the south-eastern sector of Caesaromagus*
——, et al, 1976   Braintree: excavations and research 1971–76, *Essex Archaeol Hist*, 8, 1–143
——, & Rodwell, W J, 1973   Excavations at Gun Hill, West Tilbury, *ibid*, 5, 48–112
——, & ——, 1978   Investigations at Asheldham, Essex: an interim report on the church and the historic landscape, *Antiq J*, 58, 133–51
Dunnett, B R K, 1975   *The Trinovantes*
Ecroyd-Smith, H, 1884   An ancient cemetery at Saffron Walden, *Trans Essex Archaeol Soc*, n ser, 2, 311–34
ERO   Essex Record Office catalogue numbers
Farrands, R H, 1975   Evidence for a Roman road linking Mistley with Colchester, *Colchester Archaeol Group Annu Bull*, 18, 5–7
——, 1978   Combretovium, *ibid*, 21, 2–3
Frere, S S, 1971   Editorial, *Britannia*, 2, xv–xvii
Hawkes, S C, 1974   Some recent finds of late Roman buckles, *ibid*, 5, 386–93
——, & Dunning, G C, 1961   Soldiers and settlers in Britain, fourth to fifth century, with a catalogue of animal-ornamented buckles and related belt-fittings in Britain, *Medieval Archaeol*, 5, 1–70
Hills, C, 1977   A chamber grave from Spong Hill, North Elmham, Norfolk, *ibid*, 21, 167–76
Hurst, J G, 1976   The pottery, in *The archaeology of Anglo-Saxon England* (ed D M Wilson), 283–348
Johnson, J S, 1976   *The Roman forts of the Saxon shore*
——, & Rodwell, W J, forthcoming   Romano-Saxon pottery: a reconsideration
Jones, G D B, 1974   *Roman Manchester*
Jones, M U, Evison, V I, & Myres, J N L, 1968   Cropmark sites at Mucking, Essex, *Antiq J*, 48, 210–30
——, & Jones, W T, 1974   The Mucking excavations: the interim plan, 1965–73, *Panorama*, 17, 31–9
——, & ——, 1975   The Mucking excavations, 1974, *ibid*, 18, 32–41
Myres, J N L, 1956   Romano-Saxon pottery, in *Dark Age Britain* (ed D B Harden), 16–39
Petrie, W M F, 1878   Notes on ancient roads, *Archaeol J*, 35, 169–75
Pollitt, W, 1923   The Roman and Saxon settlements, Southend-on-Sea, *Trans Southend Antiq Hist Soc*, 1, 92–141
Rackham, O, 1976   *Trees and woodland in the British landscape*
Rodwell, W J, 1970a   Some Romano-Saxon pottery from Essex, *Antiq J*, 50, 262–76
——, 1970b   Wickford: fourth interim report, *Trans Essex Archaeol Soc*, 3 ser, 2, 331–2
——, 1971   *South-east Essex in the Roman period*, Southend Museum Pub No 16
——, 1972   The Roman fort at Great Chesterford, *Britannia*, 3, 290–3
——, 1972/5   *Roman Essex*, 1 edn 1972; 2 edn 1975
——, 1975a   Milestones, civic territories and the Antonine Itinerary, *Britannia*, 6, 76–101
——, 1975b   Trinovantian towns and their setting: a case study, in Rodwell & Rowley 1975, 85–101

————, 1975c   The Orsett 'Cock' cropmark site, *Essex Archaeol Hist*, **6**, 13–39

————, 1976   Coinage, oppida, and the rise of Belgic power in south-east Britain, in *The beginnings of urbanisation in barbarian Europe* (eds B W Cunliffe & R T Rowley), BAR, **S11**, 181–367

————, 1978a   Relict landscapes in Essex, in *Early land allotment in the British Isles* (eds H C Bowen & P J Fowler), BAR, **48**, 89–98

————, 1978b   Buildings and settlements in south-east Britain in the late Iron Age, in *Lowland Iron Age communities in Europe* (eds B W Cunliffe & R T Rowley), BAR, **S48**, 25–41

————, 1978c   Rivenhall and the emergence of first-century villas in northern Essex, in *Studies in the Romano-British villa* (ed M Todd), 11–32

————, & Rodwell, K A, 1973   The Roman villa at Rivenhall, Essex: an interim report, *Britannia*, **4**, 115–27

————, & ————, 1977   *Historic churches—a wasting asset*, CBA Res Rep **19**

————, & Rowley, R T (eds), 1975   *The small towns of Roman Britain*, BAR, **15**

Rodwell, K A, & Rodwell, W J, 1975   Kelvedon, *Curr Archaeol*, **5**, 25–30

————, & ————, forthcoming   *Rivenhall: investigations on the Roman villa, church and village, 1950–77*

VCH, 1963   Roman Essex, *The Victoria History of the County of Essex*, **3**

Wacher, J S, 1975   *The towns of Roman Britain*

Welsford, A E, & Rudsdale, E J, nd   *The Iron Age in Essex* (MS article, *c* 1935, now in Colchester and Essex Museum)

Wilson, D R, 1977   A first-century fort near Gosbecks, Essex, *Britannia*, **8**, 185–7

The following account of Colchester in the Roman and Anglo-Saxon periods is in many ways superficial. However, a full discussion of the fortress at Colchester and the development of the colony has recently been published (Crummy 1978) and a detailed account of the finds from the Anglo-Saxon town and its development has been prepared for publication (Crummy forthcoming a). The study below concentrates on the *colonia,* discussion of the native *oppidum* during the period in question being omitted.

The probable position of the legionary fortress at Colchester is now established (Fig 32). The principal evidence for this comes from Lion Walk where, during the excavations of 1971-5, the remains of seven early buildings were found, six of which were laid out in a characteristically military fashion within an early road and defensive bank and ditch. The six buildings are recognizable as a group of barrack blocks, each with detached centurion's quarters. The latter, having walls of sandy clay built on dwarf mortar-and-stone walls, were more substantial than the parts for *contubernia.* The *intervallum* road and the fortress defences were traced for over 50 m, mainly during the contractor's excavations. The ditch varied in depth between 2.5 and 3 m. The rampart was almost 4 m wide and consisted of a bank of sand revetted by two walls of coursed slabs of sandy clay overlying a timber corduroy.

At Balkerne Lane the ditch and *intervallum* road of the fortress were located. The earliest occupation here took the form of light wattle-and-daub buildings lining the main road into the fortress. These are interpreted as *canabae.* Thus the excavations at Lion Walk and Balkerne Lane defined the eastern and western limits of the fortress. The southern limit, indicated by the southern barrack block at Lion Walk, was in the same position as the later town wall. The northern extent of the fortress was demarcated by the east-west ditch or ditches sectioned by Miss B R K Dunnett in two places at North Hill (Dunnett 1971, 43-4). The area enclosed by the ramparts is 49 acres.

Evidence for an annex added to the eastern side of the fortress comes from Lion Walk. Here were found an east–west ditch and a rampart, both of similar proportions to those of the fortress. The ditch stopped short of the legionary defences and thus indicated that the annex was a later addition to the fortress. The size of the annex is unknown and no contemporary buildings have yet been found inside it.

Other early buildings with the same distinctive dwarf walls as those at Lion Walk have been found at North Hill in 1965, St Mary's Rectory in 1967, and at the Gilberd School in 1973-4.
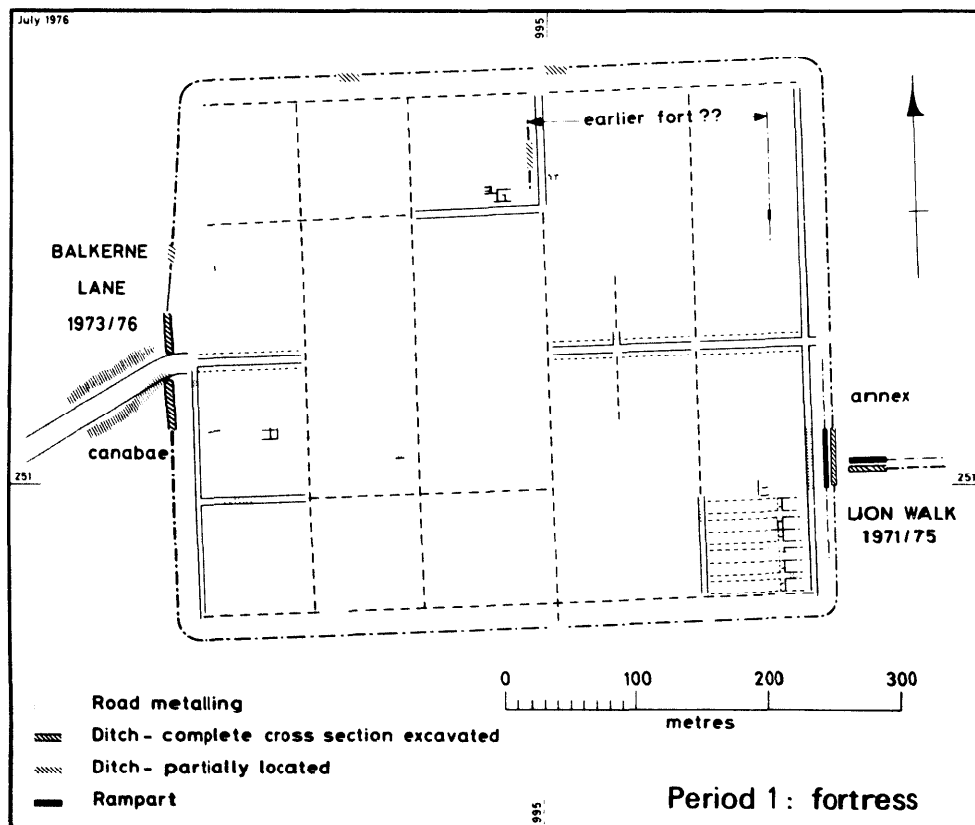
Fig 32   Conjectural layout of the fortress at Colchester

In AD 48-9 when *Legio XX Valeria* was withdrawn and the colony founded, the fortress was not dismantled but adapted as the basis of the new colony. That the military defences were demolished was made clear at Lion Walk where, sealing the levelled legionary bank and ditch, was a north-south street fronting which were buildings destroyed during the fire AD 60/61. At Balkerne Lane, a similar sequence of burnt buildings sealing the levelled legionary defences was discovered.

At Lion Walk, several parts of the legionary buildings were found to have been destroyed in AD 60/61 thus providing the inescapable conclusion that they survived the change-over from fortress to colony.

The street plan of the Roman city was on two alignments; that on the west side was the same as the military buildings and defences at Lion Walk whereas that on the east side was the same as the later streets and buildings at Lion Walk dating to *c* AD 49-AD 60/61. Hence the western part of the fortress was retained for use in the new colony, although no doubt in a much modified form, whereas, apart from a few buildings at Lion Walk and presumably elsewhere, the eastern side of the fortress was demolished and replaced with a new street grid and new buildings, all on a slightly different alignment. The fortress and annex had been orientated with great accuracy, being aligned to within half a degree of true north, whereas the new eastern grid of the colony was laid out approximately three and a half degrees west of true north (Fig 33).

Reuse of the streets of the fortress results in the partial preservation of its western layout in the plan of the colony and enables reconstruction of the plan of the fortress. The principal throughfares to survive were the fortress's four western north-south roads.

There are a few problems and anomalies relating to the evidence in favour of the fortress, although none needs be regarded as serious. Firstly there IS the existence of an early deep north-south ditch found on the site of the Telephone Exchange and a 'turf' rampart in William's Walk. These do not fit easily into the plan of the fortress or the subsequent sequence of development of the town as understood at present. These are therefore provisionally regarded as associated and part of a pre-fortress fort, the dimensions of which would be similar to, for example, contemporary Hod Hill, in Dorset (Richmond 1968).

Secondly, the position of the *via principalis* would seem from the plan of the fortress to have been to the east of the presumed site of the *principia*. If this is correct, then most likely in AD 49 or shortly afterwards this street was not retained as the cardo maximus of the colony but was replaced by the north-south street bounding the western side of the site of the *principia*. Such a change would seem unnecessarily radical particularly because of the likely resultant need to make a new crossing over the river Colne further upstream at the present site of North Bridge.

Thirdly, the distance across the six barrack blocks at Lion Walk is only 72m. This is much shorter than corresponding
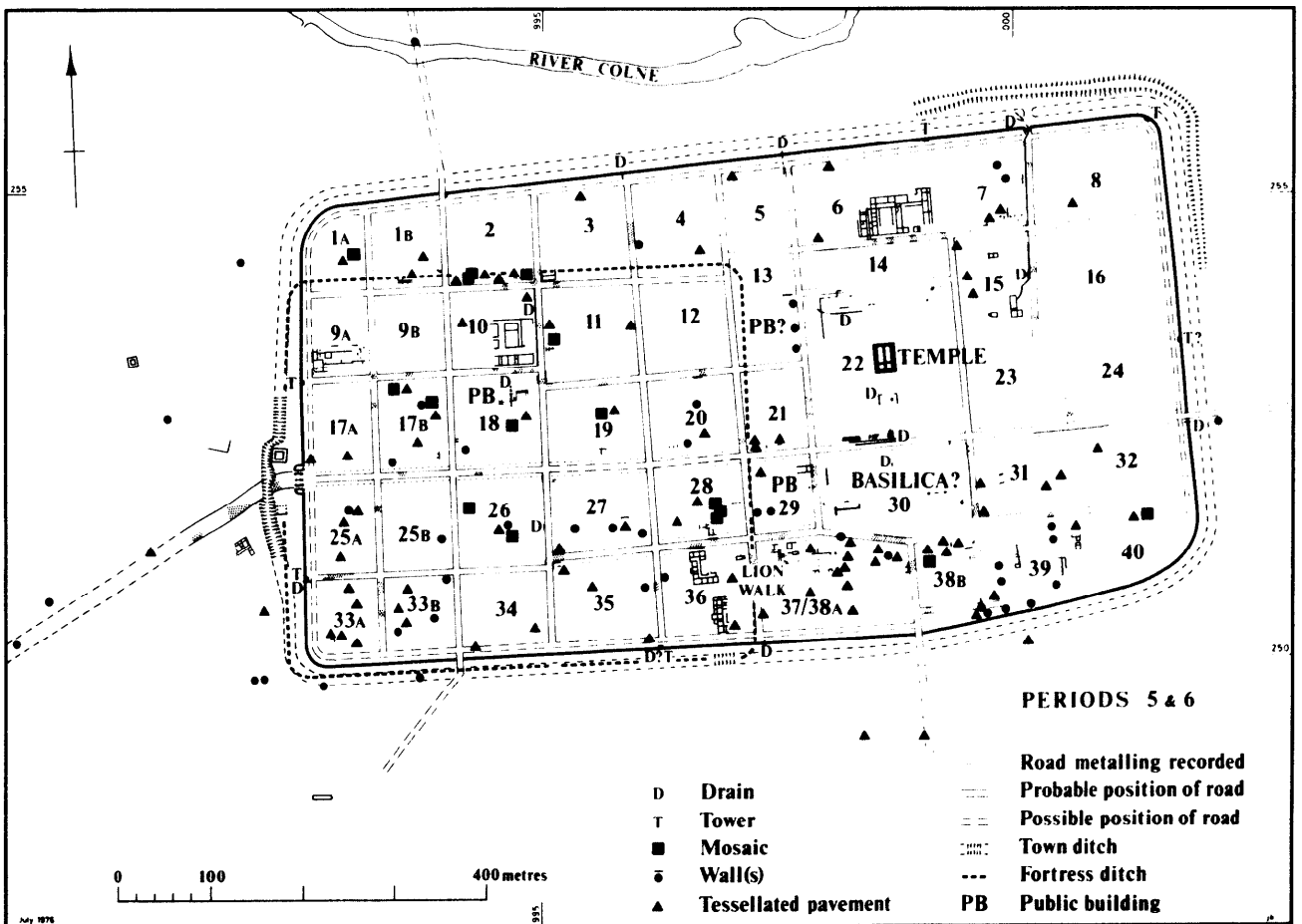
Fig 33 Roman Colchester

dimensions at Gloucester and Caerleon, for example, where these are 84 m and 85-92 m respectively.

Fourthly, dwarf walls are not the kind of structure normally associated with military sites of this date and these prompt the question whether these could have been parts of civilian rather than military buildings. They are, however, also unusual in civilian contexts at such an early period so that as an apparent anomaly they have to be accepted. It now seems as if similar walls1 have been found at the fortress at Gloucester although this is not certain (Hurst 1974).

Finally, as a cautionary note, particularly until men's quarters of barrack blocks are uncovered, the possibility that the fortress was not a military base but was the early *colonia* cannot be entirely discounted. In essence, the evidence in favour of the fortress is the existence of defences levelled before AD 60, the grouping of the buildings at Lion Walk, the presence of an annex, the size of the early enclosure (being close to that of fortresses elsewhere), and the evidence of continuity between fortress and *colonia* at Gloucester (Hurst 1972, 40; 1974, 17). The alternative hypothesis is that the early town was equipped with defences but when it expanded before AD 60 these were dismantled and not replaced; the similarity to military planning reflects the work of military surveyors and the occupation of the *colonia* by veteran soldiers.

Those better quality houses of the colony not adapted from military buildings were timber-framed. A substantial part of such a wall was found at Lion Walk. It consisted of upright studs set at 550 mm intervals along a ground-plate, the gaps in between being filled with wattles. At Balkerne Lane, walls were found of a simple wattle construction. These incorporated stakes driven into the ground at 300 to 400 mm intervals. The difference between the two methods of construction almost certainly reflects the different type of roof each was intended to support. Framed walls were presumably designed to carry the great weights of tiled roofs whereas wattle walls were for use with thatch.

The period from AD 49 to 60/61 was the only time when the Roman city had no defences. This is consistent with Tacitus who, implying that the town was undefended, wrote that during the Boudican uprising it was easy to destroy the town for it had no walls *(Annals* XIV, 32). However, from the Balkerne Lane excavations, it is clear that defences consisting of a bank and ditch were erected a short time after the attack. These followed the line of the legionary defences on the western, southern, and northern sides of the colony, except that in the last case they were probably on the same alignment as the eastern part of the city's street grid,

About AD 80, the defences at Balkerne Lane were filled in and the defended area of the city expanded westwards. This expansion may have been accompanied by an enlargement of the town northwards by the equivalent of one row of *insulae,* up to the position of the later town wall.

The size of the new western extension to the defended area of the city has not been positively established. Only the southern boundary has been located and is represented by an east-west ditch discovered in Crouch Street in 1973. However, the distribution of walls and burials in the area suggests an extension of about 35 acres on the assumption that the known Roman burials are indicative of land outside the new defences.

To this period belong the three public buildings found at Balkerne Lane: a Romano-Celtic temple, a monumental arch, and a possible shrine or temple. The arch stood on the site of the western gate of the town, and the Romano-Celtic temple and shrine sealed the levelled post-Boudican defences.

The town wall did not enclose the new western extension to the colony but at Balkerne Lane followed the line of the legionary defences and the ditch dating from AD 60/61 to 75/80. To preserve the monumental arch, it was incorporated in the new Balkerne Gate and, to preserve the temple and shrine, the new ditch was diverted around their western sides. It has been suggested that the town wall did not include the whole of the enlarged area simply for reasons of cost (Crummy 1978, 98). However, another factor may have been jurisdictional, namely to demarcate, as perhaps the arch did before, the area of the colony proper from that occupied predominantly by those who were not Roman citizens.

The town defences were sectioned at Lion Walk in 1972. This corroborated the sequence put forward by Miss B R K Dunnett as a result of her section at St Mary's Rectory, where in 1970 she found that the town wall had been built as a free-standing structure, the rampart having been added later (Dunnett 1971, 68-9). The Lion Walk section has resulted in slightly earlier dates being postulated for the wall and the rampart which are early 2nd century and mid 2nd century respectively.

Although the resourceful compromise with the town wall and monumental building at Balkerne Lane doubtless overcame problems of preservation and economy, it could hardly have been regarded as militarily effective. The new arrangement's defensive shortcoming probably led to the radical step of widening the ditch and digging it all the way across the carriageways, an event which is likely to have taken place in the 3rd century. Until recently, remains of a rampart lay across the road leading northwards out from the north-east postern. This may have been part of the same scheme to improve the defensive capabilities of the colony as the ditch-digging at Balkerne Lane.

A field of research where much needs to be done is the Roman cemeteries of Colchester. Hull catalogued over 600 burials from the town and, although his list appears to be almost comprehensive, much work is needed to complete the task and to prepare the results for publication. In *Roman Colchester,* Hull ascribed the burials to cemeteries defined simply in terms of their regional distribution. Thus he wrote of the Lexden cemetery, the Abbey Field cemetery, the Union Cemetery, and so on. However, recent work at Butt Road has demonstrated that, predictably, the archaeology of the cemeteries is much more complex than this. To date, 450 burials have been excavated here, most of which belong to a 4th century cemetery. However, beneath this, but with different boundaries, is a 2nd to 3rd century cemetery to which nearly all other burials belong. Thus, rather than the cemeteries being large, amorphous areas outside the town walls used as burial grounds over long periods of time, they were in the main probably well organized, compact, and of restricted date-range. Hull's nomenclature could be adapted by substituting 'cemetery area' for 'cemetery' although the resultant division is still archaeologically invalid.

Although 40 kilns or so have been recorded from the town, our knowledge of the local pottery industry is still in its infancy. Its success throughout the Roman period not only locally but also in penetrating and competing in other markets is still to be assessed.

Another important gap in our understanding of the Roman city is our slight knowledge of the colony's major public buildings, apart from its temples and the monumental arch at Balkerne Lane. Although large foundations are known in four *insulae* (10, 22, 29, and 30), the buildings to which these belong have not been identified. An obvious deficiency here is public baths.

We shall now turn our attention to the post-Roman town and the problems related to the end of the Roman city.

At Lion Walk, two Saxon huts were found. The earlier of these was associated with pottery datable to the first half of the 5th century. Of significance are pieces of two pots with facetted carinations found near the hut. The other building is of 6th or 7th century date. It was built up against the outside wall of a ruined Roman house, and, to judge by the stakeholes in its floor and the associated spindle-whorl and fragment of loom-weight, was probably a weaving shed. The slots in the floor suggest use of vertical looms about 1.0 m long.

Apart from the huts, evidence in the form of finds from various sites in the town indicates Anglo-Saxon occupation from the 5th until at least the early 8th century. These consist of up to 200 sherds of pottery and over 60 other objects, mainly from Anglo Saxon cemeteries. The finds include 21 iron spearheads and bosses dating from the 5th to the early 8th century three cremation pots of 6th/7th century date, a late 7th century 'thrymsa' and early 8th century 'sceatta' two seaxes belong to first half of the 8th century, and a two-edged sword of 8th century of later date. Six Saxon brooches or brooch fragments have been found in the town. These include a mid 6th century cruciform brooch, a late 6th or early 7th century florid cruciform brooch, a 6th century saucer brooch, and a 6th century radiate brooch. Of greatest significance are two early cruciform brooches found deposited as grave goods with some other personal ornaments just outside the north-east corner of the walled town. These have been dated by Mrs Sonia Hawkes to *c* 420 and are imports, probably from Schleswing-Holstein.

The nature and date of the *Adventus Saxonum in Britanniam* are of course not fully understood, but from the written evidence it is thought that the main migrations which marked the start of the domination of much of Britain by the Saxons began *c* 450 (Jones 1964, 190-1; Alcock 1973, 100-9) Since the early Germanic pottery from Colchester can be dated to as late as 450, there seems to be no compelling case for associating these pieces with Saxon mercenaries within a Romano-British context.

Whist the typology of late Roman pottery from Colchester is yet to be established, the impression so far is that the Roman pottery found with the Saxon material in the early hut at Lion Walk is all residual and that the strucure represents a dislocation in ceramics and house-types which indicates a cultural change. consequently, rather than being associated with late Roman Germanic soldiery, the hut is perhaps best seen as postdating the collapse of Roman Colchester. The pottery from the but and the surrounding area indicates, therefore, that by the mid 5th century the Roman town no longer existed as such and, in conjunction with the written evidence relating to *Adventus,* suggests that the town must have succumbed to Saxon pressure in approximately AD 440-50.

Eleven pieces of late Roman military equipment are known from Colchester so far but since nome of these were recorded being found with burials interred with weapons, as for example at Winchester (Clarke 1970), no evidence of Germanic mercenaries can be claimed on the basis of these finds, even if this kind of evidence were indicative of such.

Of course the brooches, from outside the north-east corner of the Roman town, could be taken to imply Saxon settlement at Colchester by *c* AD 420, but how much can be made of pre-AD 440 objects when the time span involved is only two decades or so and the dating necessarily approximate?

Apart from the two-edged sword of 8th century date or later and a 9th or 10th century strap end, there is little from the town which can be ascribed to the period 750-900. There are a few grass-tempered sherds which may be this late but certainly the evidence for occupation in this period is scanty and suggests that the town had then either a relatively small population or, less likely, was deserted.

Of course the dearth of material datable to this time must in part—but not entirely—be a result of such factors as the change in burial practice where grave goods were not deposited with the dead, the absence in Essex of a dynamic pottery industry such as that producing Ipswich-type ware, and perhaps the lack of a pit digging tradition.

The relationship between the Danes and the town *c* 917 when, according to the *Anglo-Saxon Chronicle,* Colchester was captured by the English is not clear. Rather than Colchester simply having been used as a convenient defendable strong-point by the Danish army, the most likely situation is that a Danish settlement had been established in the town sometime after the 'Treaty of Alfred and Guthrum' in 879. Whether or not Colchester was deserted during the years leading up to the Danish settlement is not known but the town was certainly repopulated by Edward in the early 10th century.

Four periods are detectable in the plan of modern Colchester. The earliest of these can be traced in areas where modern property boundaries share the same alignment as the buildings of the underlying Roman town. This suggests the survival above ground of Roman remains as Anglo-Saxon or later buildings as for example with the 6th or 7th century hut and the Roman house at Lion Walk, or the reused Roman walls of St Helen's Chapel, St Nicholas' Church, and the Temple of Claudius (Crummy 1974, 27-8).

The second period involved the replanning of most of the area within the town wall on a systematic basis. The third period is marked by the laying out of a series of properties which fronted on to the High Street and extended southwards to a new back lane, Culver Street. In this area most of the second period planning was lost. In the fourth period beginning *c* 1076, the building of the castle commenced and the High Street was diverted around the defences of the new bailey.

An examination of various dimensions of the period 3 town plan (Fig 34) reveals a consistent pattern which suggests that within the walled area of the town there was systematic division of land based on a module of four poles. Details of this work are set out in a preliminary study which seeks to determine if such modules can be detected in a selection of late Saxon and early medieval street systems (Crummy forthcoming b).

At Colchester, the laying out of the plots along the High Street's southern frontage and the division of the land within the walls were schemes so radical that they were presumably imposed on the town by royal authority as indeed the replanning of period 4 patently was. The period 2 or the period 3 operations could have been carried out by Edward the Elder during his campaign against the Danes; certainly dates for these within the 9th and 10th centuries seem highly likely.

A mint does not seem to have been established in Colchester until the reign of Aethelred II, probably in the 990s. Colchester's exclusion from the group of 30 to 40 places known to have possessed a mint before Edgar's reform of the coinage in 973 is instructive as it implies how the 10th century town probably rated in comparison with contemporary communities.

Fig 34 Evidence of planning at Colchester

Although the distribution of Thetford-type ware is widespread in the town, the total number of sherds found so far is only about 200 which is a small number compared with the sherds of early medieval sandy ware. Thus, in accordance with the numismatic evidence, it can be concluded that the town's population probably did not expand markedly until the end of the 10th century.

A simple chronology for late Saxon and Norman pottery from Colchester has now been established and it seems that Thetford-type ware was ousted entirely from the local markets by early medieval sandy ware during the first half of the 11th century. The evidence for this comes principally from the large group of pottery in the 11th century town ditch found at the foot of the Roman wall in Vineyard Street during the Lion Walk excavations. The ditch had not been dug all the way round the town walls but only where, because of decay, the Roman structure was weakest. The ditch was probably a response either to a Viking attack on the town in 1069, when several towns on the east coast were raided, or more likely to the Viking campaigns which occurred throughout the reigns of Aethelred II and his son Edmund Ironside.

In conclusion there is certainly evidence of occupation in Colchester throughout most, if not all, of the Anglo-Saxon period. The numbers of finds cannot be used as a convenient yardstick to judge without qualification the relative intensity of the occupation throughout this time but, as we would expect, it is unlikely that the town will ever produce finds approaching the scale of important late Anglo-Saxon centres such as Norwich, Lincoln, or Winchester.

Note

[1] These are bonded with clay, not mortar.

References

Alcock, L, 1973   *Arthur's Britain*
Biddle, M, 1970   Excavations at Winchester 1969, eighth interim report, *Antiq J*, **50**, 227–326
Clarke, G, 1970   Lankhills School, in Biddle 1970, 292–8
Crummy, P, 1974   *Colchester: recent excavations and research*, Colchester Excavation Committee
———, 1978   Colchester: the Roman fortress and the development of the *colonia*, *Britannia*, **8**, 65–105
———, forthcoming a   *Aspects of Anglo-Saxon and Norman Colchester*, CBA Colchester Archaeology Reports, **1**
———, forthcoming b   The system of measurement used in town planning from the ninth to the thirteenth centuries, *Anglo-Saxon Studies*, **1**
Dunnett, B R K, 1971   Excavations in Colchester 1964–68, *Trans Essex Archaeol Soc*, 3 ser, **3.1**, 1–130
Hurst, H, 1972   Excavations at Gloucester 1968–71: first interim report, *Antiq J*, **52**, 24–69
———, 1974   Excavations at Gloucester 1971–73: second interim report, *ibid*, **54**, 8–52
Jones, A H M, 1964   *The later Roman Empire 284–602; a social, economic and administrative survey*
Richmond, I A, 1968   *Hod Hill*, **2**

The Ordnance Survey Map of Britain in the Dark Ages (Ordnance Survey 1966) and other gazetteers (Addyman 1972; Hurst 1972; Rahtz 1976) reflect an increase in the knowledge of early Saxon settlement which is both recent and rapid. In Essex it may be regarded as spectacular, since excavations in Mucking parish (Barton 1962; Jones & Jones 1968-77; see p 86) have established a European type site where, for the first time in Britain, settlement(s) and cemeteries of the migration period have been found together.

This new Essex evidence comes from at least nine sites (Fig 35, Table IV), a total which could probably be increased by a fresh study of old finds. The circumstances of discovery of these sites should be noted, since none has come to light by intent. The 1965-77 Mucking excavations were indeed initiated to rescue a henge-like cropmark (St Joseph 1964) which turned out to be a Late Bronze Age hillfort, within a multi-period landscape palimpsest of settlements and cemeteries ranging from Neolithic to early Saxon, with a few medieval or later elements (Fig 36). Even less con-

sequential was Hazzledine Warren's inspection of a sewer pipeline in 1939 for a Cromerian channel, which led to the recognition of a Roman site of which the continued investigation produced Saxon evidence (Farrands 1958; 1976).

Previously, Saxon settlement in Essex, as elsewhere, could only be studied indirectly. Above all, it was implied by the distribution of cemeteries, a point well illustrated in Myres's classic *Anglo-Saxon pottery and the settlement of England* in which almost every pot is from a burial (Myres 1969, 11). Place-names provided other clues. Notable are Dodgson's maps of Essex. However, the shortcomings of place-name evidence are inherent in his thesis (Dodgson 1966) reversing 'earlier' into 'later' names. Other devices to help fill the Dark Age hiatus were studies of specific arte-facts as settlement indicators, especially brooches (Leeds 1970), and there are the rather overworked phrases of early chroniclers (Bede 731). So although 5th century AD sites were mapped by Dunnett to conclude her account of Roman Essex (Dunnett 1975, fig 44), Fig 35 is the first
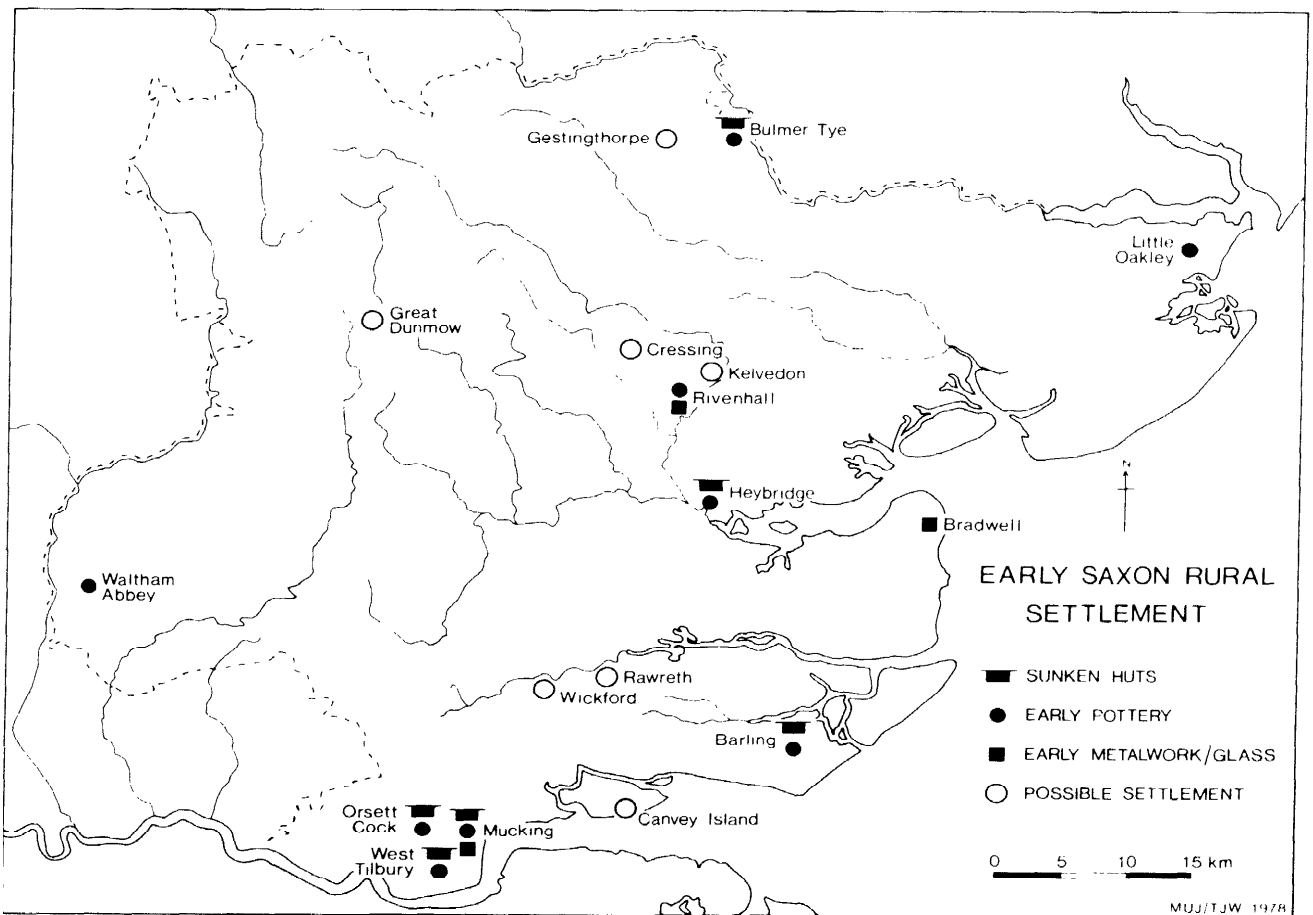
Fig 35   Distribution map of early Saxon rural settlement in Essex (Crown copyright reserved)

Table IV   Early Saxon settlement sites in Essex

Site	Means of discovery	Excavating agency	Settlement evidence			Early pottery carinated carinated/ faceted schlickung rusticated	Other pottery 'grass'-tempered stamped lugs bosses	Metalwork	Other diagnostic finds	References
			Sunken floored	Ground level	Fits					
Barling	gravel pit inspection	ECC	?1	–	–	?c sc	–	–	–	EAH, **9,** 1977, 60-9
Bulmer Tye	deep ploughing	CM	?1	–	–	c	gt, st, l	–	–	MA, **3,** 1959, 282
Heybridge	housing	DOE	5	?1	–	c f	gt, st, l	–	–	MA, **17,** 1973, 140
Little Oakley	sewer pipeline	amateur			yes	c f	st	brooch	–	CAGB, 1958, CAGB, 1976
Mucking (Linford quarry)	quarrying	DoE	5	1	yes	cf, sc, r	st, b	–	lead & clay loom weights	EAH, 3 ser, **1**.2, 1962, 57-104
Mucking (Orsett quarry)	cropmarks quarrying	DoE	200+	50+	yes	cf, s, r	gt, st, l, b	belt fittings	lead & clay loom weights etc	see bibliography of Mucking p86
Orsett Cock	gas pipeline roadworks	TM, DoE, ECC	4	–	yes	–	gt, st,	–	clay loom weights	ECC forthcoming EAH, 7, 1974, 36
Rivenhall	sewer pipeline		–	?1	yes	c	l	–	glass	Brit, **4,** 1973, 123-7
West Tilbury	cropmark quarrying	DoE	1	–	–		gt, l	–	clay loom weights	TLHSJ, **16,** 1972, 39-52 EAH, **5,** 1973, 66
Waltham Abbey	development	amateur	–	–	yes	r	gt	–	–	MA, **20,** 1976, 90

The following findspots are also mapped Evidence for their being early settlements (as against occupation sites) when there are no archaeological features in the ground is less certain. When complete objects such as the Paglesham brooch have been found, these are considered more likely to have come from burials. 'Grass'-tempered pottery need not imply an early date.

Site	Means of discovery	Agent of discovery	'grass'-tempered pottery	Other finds	References
Bradwell	?	?	yes	buckle	Hawkes & Dunning 1961, 59; EAH, **8,** 1976, 236
Canvey Island	coastal erosion	amateur	yes	–	EAH, **8,** 1976, 265-7 MA, **16,** 1972, 152, 265-7
Cressing	research	educational	yes	–	Essex J, **11,** 1976, 51-60, & verbal
Gestingthorpe	ploughing	amateur	–	buckle	Hawkes & Dunning 1961, 47; VCH 3, 133
Great Dunmow	housing	DoE	yes	–	MA, **16,** 1972, 152; **17,** 1973, 140
Kelvedon	housing	DoE	'early A/S pottery'	buckle	CA, **48,** 1975, 29
Rawreth	roadworks	amateur DoE	yes	–	MA, **13,** 1969, 232; EAH, **9,** 1977, 42
Wickford	housing	DoE	yes	–	MA, **16,** 1972, 154

Abbreviations

CM	Colchester Museum
TM	Thurrock Museum
MA	Medieval Archaeology
EAH	Essex Archaeology and History
Brit	Britannia
CA	Current Archaeology
CAGB	Colchester Archaeological Group Annual Bulletin
TLHSJ	Thurrock Local History Society Journal
ECC	Essex County Council
DoE	Department of the Environment

Note: Evidence from Colchester and Chelmsford has not been included, as not relevant to the theme of this chapter.
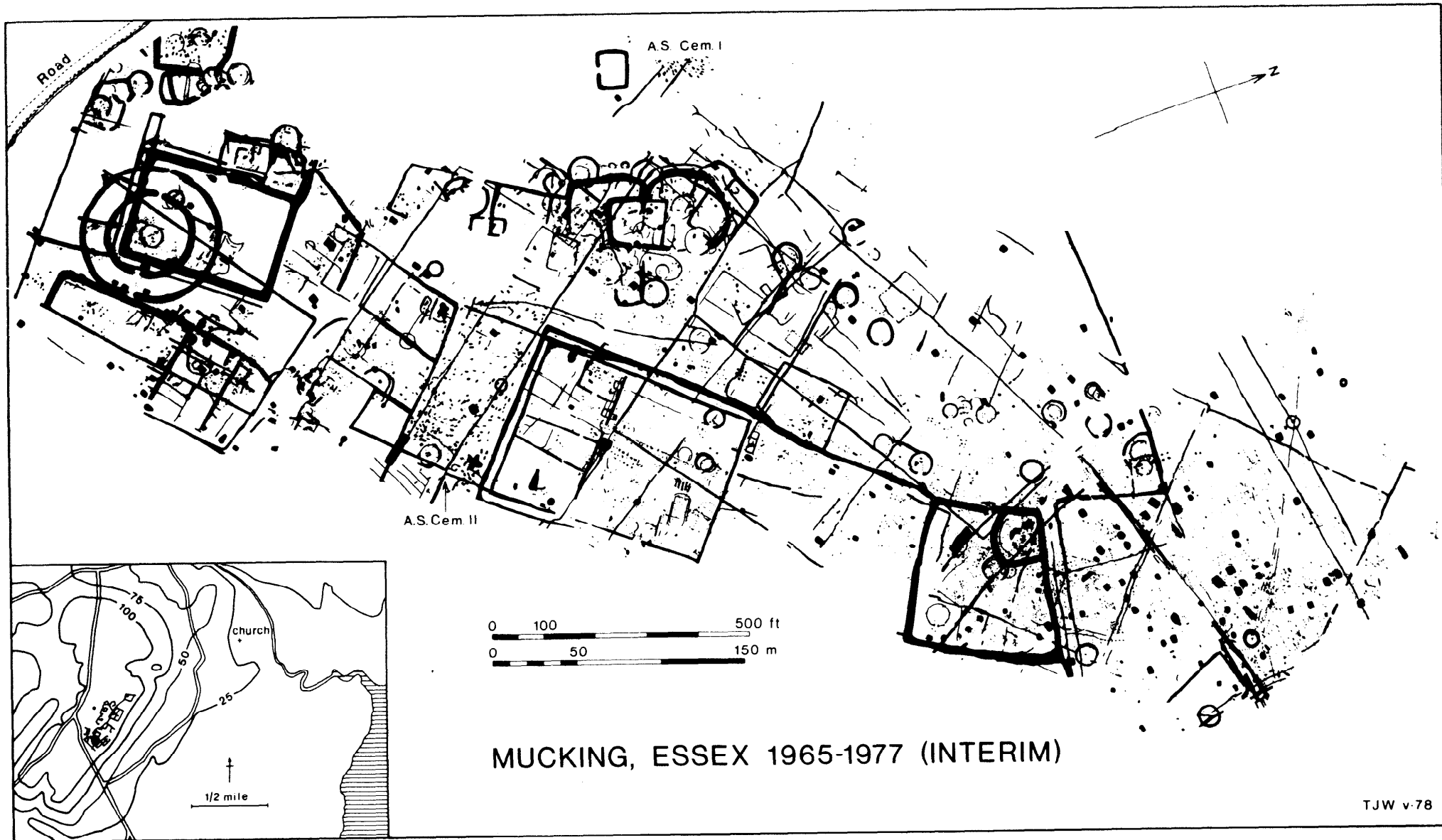
Fig 36   Plan of soil marks of all periods and location of the Mucking cropmark sites. The solid black rectangular marks are of Saxon sunken huts; posthole plans of ground level buildings show most clearly in the north area. The Saxon cemeteries 1 and 2 are indicated

effective map of early Saxon settlement in rural Essex, since the Ordnance Survey map itself contains but one site, Mucking, Linford quarry, and the *Victoria County History* map of 'Anglo-Saxon remains' includes only ten miscellaneous finds (Smith 1903, 315).

reasons for such a tardy recognition are discussed in the text of the OS map. First is the problem of pottery recognition. Out of context, early Saxon sherds of black smoothed ware are not always easily distinguishable from late Iron Age pottery (Farrands 1976, 7). Such a problem hardly arises with the cemeteries, where pots are usually whole, frequently decorated, and often accompanied by distinctive metalwork. second is the use of timber for building. Without area soul excavation, watch is now commonplace (ironically due to the use of earthmoving machines which destroy so many sites), sites), such traces as posthole plans and beamslots area not always easy to recognize, let alone date. White increasing study of cropmarks the tentative interpretation of Saxon settlements is likely to increase following Mucking's pioneer role the first British site where cropmarks of sunken huts were confirmed by excavation. Though indeed this has led to possibly over-hasty interpretation (Benson & Miles 1974, 102).

Because of their relative lack of vertical stratification, rural sites are usually difficult to date with any precision. Scientific dating for so recent a period as the 5th to 8th centuries AD is of limited help (uncorrected radiocarbon dates of ad 470 and 550 have been obtained for features within the Mucking settlement). To date *early* Saxon settlement it is more satisfactory to seek traits which can be closely matched on dated continental sites, since we are dealing with a period when invasion need not be doubted. It then follows that the development of differing, insular, traits must imply the end of contact with the homeland.

Here the large body of evidence recovered at Mucking can, when processed and studied, serve as a yardstick for discoveries on a lesser scale elsewhere. In its turn, the Mucking evidence depends for interpretation and dating on continental material. Particularly useful sites for comparison are Feddersen Wierde Schmid 1969) and Flögeln (Schmid & Zimmermann 1976; Zimmermann 1974) in Germany, and Wijster (van Es 1967 in Holland. All are thought to have been abandoned in the 5th century AD. It is not indeed impossible that some Essex immigrants had their origins there.

This early, alien, evidence may be considered in three aspects:

Pottery

A definition of early Saxon pottery based on the Mucking material has been published (M U Jones in *Berichten ROB* 1969, 147-9). Its occasional confusion with British Iron Age pottery is readily appreciated when it is realized that the origin of Saxon pottery lies in a Europe which escaped romanization; it is in effect still prehistoric. Although its study will always be dominated by funerary pots, where whole forms and complete decorative schemes can more profitably be considered, and there are more and more reliable metal and glass associations, settlement pottery is now receiving more attention (Myres 1977, Little Oakley, Mucking, Rivenhall; Hurst 1976, fig 7.3, Mucking). West Stow, Suffolk (West 1969, fig 9) is of special relevance to Essex.

Close dating by fabric is never likely to be exact, unless a pot could be proved by clay analysis to have been imported. However, so-called 'grass'-tempered handmade Saxon pottery is one of the easiest fabrics to identify, although its

date range is still uncertain (Cunliffe 1970, 72-3; Brown 1976). At Mucking it accompanies sandy fabrics. When more is known of the first post-Roman wheel-thrown wares these will be useful; but so far no Ipswich ware has been recognized at Mucking, while Frankish pottery found there (distinguished by its stamped decoration) is rare (Evison 1979, fig 19a-i).

Form and surface treatments fortunately both include traits which are unequivocal even in small sherds. The early dating of biconical pots, with or without pedestal bases, has been fully discussed by Myres (1968, 224; 1969, 25, 77; 1977, 2). The sharp carination of these pots, whether or not faceted, makes them readily recognizable. Surface treatment includes two characteristics which indicate the first Saxon wares found in England. One is the deliberate roughening of the outer surface by an all over application of slip containing coarse grits (so-called *schlickung* (van Es 1967, 273)). It was this indeed which helped to confirm the new site at Barling (Buckley 1977). The other treatment, shared by British earlier prehistoric pottery, is all over finger impressed or pinched rustication (Myres 1977, 20). There are other distinctive traits in the Mucking assemblage, though whether they are specifically early is another matter. They include apparent copying of Roman forms such as footrings; close all over perforations of 'woolcomb warmers' (M U Jones in *Antiq J,* 1975, 411, pl LXXXVIIb); combing; grooving; stamps; bosses; lugs. Doughnut-shaped loomweights of clay, frequently unfired, might be included here.

(Since their connection with Saxon immigration has yet to be demonstrated pottery types known as sub-Roman and Romano-Saxon are not taken into account. Here note a recent unfounded statement that the latter was 'certainly' made at Mucking (Johnson 1977, 65), while a reference to 'grass'-tempered pottery at Mucking should also be discounted (Brown 1976, 192).)

Metalwork

Significant pieces are the military bronzes, belt-fittings, inferring settlement by Germanic mercenaries, discussed and illustrated by Hawkes and Dunning (1961). These have come from both settlement and cemeteries at Mucking (Evison 1968; 1969). Elsewhere in Essex pieces are known from Bradwell (Hawkes & Dunning 1961, 59), Colchester *(ibid,* 51), Gestingthorpe *(ibid,* 47), and perhaps Braintree (Drury 1976, 19, fig 12.18).

Buildings

Since loose finds need imply no more than occupation as against settlement, could be heirlooms or transported or traded, or might even be from cemeteries, the most reliable evidence for the first Saxon settlers must lie in their new, alien, building fashions. These show a complete disregard for the durable materials so characteristic of Romano-British settlement, with its concrete, plaster, and pre-fabricated tiles. (Stone is rare in any period in Essex.) These new building fashions are: (i) sunken floored; (ii) ground level. They both used timber and presumably such other organic materials as turf and thatch, with a consequent loss of architectural detail. Trier (1969, Tafel 1) has mapped the east European distribution of these building types. Hurst (1972) gives 22 sunken hut and 6 ground level building sites for the pagan Saxon period in England.

The size range of the sunken floored huts or houses at Mucking is *c* 3–6 m wide by *c* 3–8 m long. In crop or soilmark they show as rounded oblongs, sunk between 0.10-1 m into the gravel. Structural evidence is slight, usually the two gable posts of Ahrens's classification

(Ahrens 1966). Huts excavated at the two other main Essex sites, Heybridge and Orsett Cock, are similar.

Convincing plans of ground level buildings have been recovered only at Mucking where, among fifty probable buildings, only four are reasonably complete. Their essentials are a double 6 m square outlined in postholes, with gaps indicating entrances at the centres of the long sides and an internal partition at the east end. Such a plan can be matched quite well at Wijster and Flögeln. An almost universal east-west building line on both British and continental rural sites, for both sunken and ground level buildings, may be noted.

To close this brief review of the present state of knowledge of early Saxon rural Essex, the character of the Mucking settlement will be considered. The provisional site plan (Fig 36) shows all archaeological traces. Phased plans and suggested layouts must await the processing of finds and records which began in Thurrock Museum in October 1977. As in the prehistoric periods Saxon settlement extends over the entire area, some 200 m wide and 1 km long, if one includes the Linford quarry area to the south and the North Ring area to the north.

The main evidence comprises:
    sunken huts or houses 200+
    ground level buildings 50
    pits
    occupation layers preserved in the final fills of deeper prehistoric and Romano-British features such as ditches or wells
    the two cemeteries

Although two concentrations of sunken huts can be discerned, there is no apparently planned pattern of settlement and no visible boundary. Because excavation was dictated by rescue, it was confined to the Boyn Hill terrace gravel-poor, marginal land. The site plan is thus incomplete and biased. A purely agricultural settlement of the size implied by so many buildings would have needed the greater productivity of the lower slopes and the marsh. However, a ready explanation of the terrace siting is seen in its strategic value, overlooking to the south the natural crossing of the head of the Thames estuary, and to the east Mucking creek and the widening river. These factors apply also in the siting of the prehistoric and Romano-British earthworks.

Military bronzes and very early pottery support the picture of a military station (Evison 1968, 241; Myres 1968, 226) at the outset, at any rate, of the three centuries of Saxon settlement. Its final date is suggested by a mini-hoard of three late 7th century AD silver *sceattas* from the floor of one hut.

Without any compelling evidence for rich agriculture or trading post activities, a third and indeed probable factor in the persistence of such dense settlement is that Mucking is one of the 'natural points of entry . . . centres to which immigrants poured and from which further intensive settlement progressed' (Loyn 1962, 30).

Through its geographical position Essex is thus in the forefront of European migration studies. It follows that this research advantage should be consolidated in future rescue policy by a particularly close scrutiny of the county's coastal gravels.

Bibliography of Mucking 1967-79

Jones, M U, & Jones, W T, 1967–79

Antiq J, Cropmark sites at Mucking, Essex, **48**, 1968, 210–30; A second interim report, **54**, 1974, 183–99; Notes, **52**, 1972, 335–8; **53**, 1973, 269–70, 271–2; **55**, 1975, 407–8, 408–9, 411–13; **57**, 1977, 317–19, 321–2

Journal of the Thurrock Local History Society (Panorama), **11, 13, 14, 15, 17, 18, 19, 20, 21, 22,** 1967–79

Essex Archaeol Hist, An ancient landscape palimpsest at Mucking, **5**, 1973, 6–12

Essex J, The Mucking, Essex, cropmark sites, **7**, 3, 1972, 65–76

Berichten ROB, Saxon pottery from a hut at Mucking, Essex, 1969, 145–56

The cropmark sites at Mucking, Essex, England, in *Recent archaeological excavations in Europe* (ed R Bruce-Mitford), 1975, 133–87

References

Addyman, P V, 1972   The Anglo-Saxon house: a new review, in *Anglo-Saxon England*, **1** (ed P Clemoes), 273–307

Ahrens, C, 1966   Vorgeschichte des Kreises Pinneberg und der Insel Helgoland, *Vor- und Frühgeschichtliche Denkmäler und Funde in Schleswig-Holstein*, **7**, 205–34

Barton, K J, 1962   Settlements of the Iron Age and pagan Saxon periods at Linford, Essex, *Trans Essex Archaeol Soc*, 3 ser, **1**.2, 57–104

Bede, 731   *Ecclesiastical history of the English nation*

Benson, D, & Miles, D, 1974   *The Upper Thames Valley: an archaeological survey of the river gravels*

Brown, P D C, 1976   Some notes on grass-tempered pottery, in *Saxon and medieval Walton* (M Farley), *Rec Buckinghamshire*, **20**, 191–3

Buckley, D G, 1977   Barling Hall, Barling Magna, in Work of Essex County Council Archaeology Section, 1977 (ed C Couchman), *Essex Archaeol Hist*, **9**, 60–9

Cunliffe, B W, 1970   The Saxon culture sequence at Portchester Castle, *Antiq J*, **50**, 67–85

Dodgson, J M, 1966   The significance of the distribution of the English place-name in -ingas, -inga- in south-east England, *Medieval Archaeol*, **10**, 1–29

Dunnett, R, 1975   *The Trinovantes*

Drury, P J, 1976   Braintree: excavations and research 1971–76, *Essex Archaeol Hist*, **8**, 1–143

Evison, V I, 1968   Quoit brooch style buckles, *Antiq J*, **48**, 231–49

———, 1969   Metal objects, in Saxon pottery from a hut at Mucking, Essex (M U Jones), *Berichten ROB*, 157–73

———, 1979   *A corpus of wheel-thrown pottery in Anglo-Saxon graves*

Farrands, R H, 1958   Romano-British villa at Little Oakley, *Colchester Archaeol Group Annu Bull*, **1**.4, 43–5

———, 1976   Fifth century Anglo-Saxon pottery from Little Oakley, *ibid*, **19**, 7–10

Hawkes, S C, & Dunning, G C, 1961   Soldiers and settlers in Britain, 4th–5th century: and catalogue of animal-ornamented buckles and related belt-fittings, *Medieval Archaeol*, **5**, 1–70

Hurst, J G, 1972   Gazetteer of excavations at medieval house and village sites, in *Deserted medieval villages* (M Beresford & J G Hurst), 145–68

———, 1976   The pottery, in *The archaeology of Anglo-Saxon England* (ed D M Wilson), 283–348

Johnson, S, 1977   Late Roman defences and the *Limes*, in *The Saxon shore* (ed D E Johnston), CBA Res Rep, **18**, 63–9

Jones, M U, & Jones, W T, 1967–79   See separate bibliography, above

Leeds, E T, 1970   *The archaeology of the Anglo-Saxon settlements*

Loyn, H R, 1962   *Anglo-Saxon England and the Norman Conquest*

Myres, J N L, 1968   The Anglo-Saxon pottery from Mucking, in Cropmark sites at Mucking, Essex, *Antiq J*, **48**, 222–8

———, 1969   *Anglo-Saxon pottery and the settlement of England*

———, 1977   *A corpus of Anglo-Saxon pottery of the pagan period*

Ordnance Survey, 1966   *Map of Britain in the Dark Ages*

Rahtz, P, 1976   Gazetteer of Anglo-Saxon settlement sites, in *The archaeology of Anglo-Saxon England* (ed D M Wilson), 405–52

St Joseph, J K, 1964   Air reconnaissance: recent results 1, *Antiquity*, **38**, 217–18

Schmid, P, 1969   Die Siedlungskeramik von Mucking (Essex) und Feddersen Wierde (Kr Wesermunde)—ein Formenvergleich, *Berichten ROB*, **19**, 135–44

———, & Zimmermann, W H, 1976   Flögeln—zur Struktur einer Siedlung des 1 bis 5 Jhs n Chr im Küstengebiet der südlichen Nordsee, *Probleme der Küstenforschung im südlichen Nordseegebiet*, Band 2, 1–77

Smith, R A, 1903   Anglo-Saxon remains, in *The Victoria History of the County of Essex*, **1**, 315–31

Trier, B, 1969   Das Haus im nordwesten der Germania Libera, *Veröffentlichungen der AltertumsKommission . . . für Westfälische Landes- und Volkskunde*, Band 4, 7–188

van Es, W A, 1967   *Wijster, a native village beyond the Imperial Frontier*

West, S E, 1969   The Anglo-Saxon village of West Stow, *Medieval Archaeol*, **13**, 1–20

Zimmermann, W H, 1974   A Roman Iron Age and early migration settlement at Flögeln, Kr Wesermünde, Lower Saxony, in *Anglo-Saxon settlement and landscape* (ed R T Rowley), BAR **6**, 56–73

Introduction

This provisional gazetteer of (mostly early) Saxon burials has been assembled from a preliminary study of the more obvious sources. It seems clear that there is still much research to be carried out among old records and in musuem collections. Any additions or amendments will be welcome. Even so, it may be remarked at the outset that for a county which is named after the Saxons, archaeology makes a poor showing in this respect, as Myres's map (Myres 1969, map 2), very largely based on cemetery evidence, suggests. His total has of course since been increased by the Mucking material.

Saxon burials have been known in Essex since the early 19th century. They are recorded in _VCH_ 1, 1903, in the _Ordnance Survey Map of Britain in the Dark Ages_ (2nd edn, 1966), and in _Gazetteer of early Anglo-Saxon burial sites_ (Meaney 1964). New discoveries have been reported in _Medieval Archaeology_ since 1956.

When Smith wrote his 'Anglo-Saxon remains' in _VCH_ 1, 1903, he remarked that 'cemeteries of the Anglo-Saxon period are rare in Essex and what there are have not been thoroughly explored'—nor, he might have added, published. For almost 30 years after he published these words, no discoveries at all were made, and his statement essentially still stands now, after nearly 80 years.

The map (Fig 37) is thus a provisional picture of mostly accidental discoveries. Only at Great Chesterford, Nazeing, Mucking, Orsett, Shoebury, and Wicken Bonhunt have burials been discovered as a result of archaeological excavations. Finds have otherwise come to light mostly from gravel digging, while objects such as the Dovercourt and Paglesham brooches have been appreciated for their out-standing intrinsic interest. At the same time, Essex is still the only county where accompanying settlement(s) and cemeteries have been excavated together (at Mucking and at Wicken Bonhunt); while Mucking Saxon Cemetery 2 is the only sizeable pagan Saxon cemetery in England known to have been excavated in its entirety.
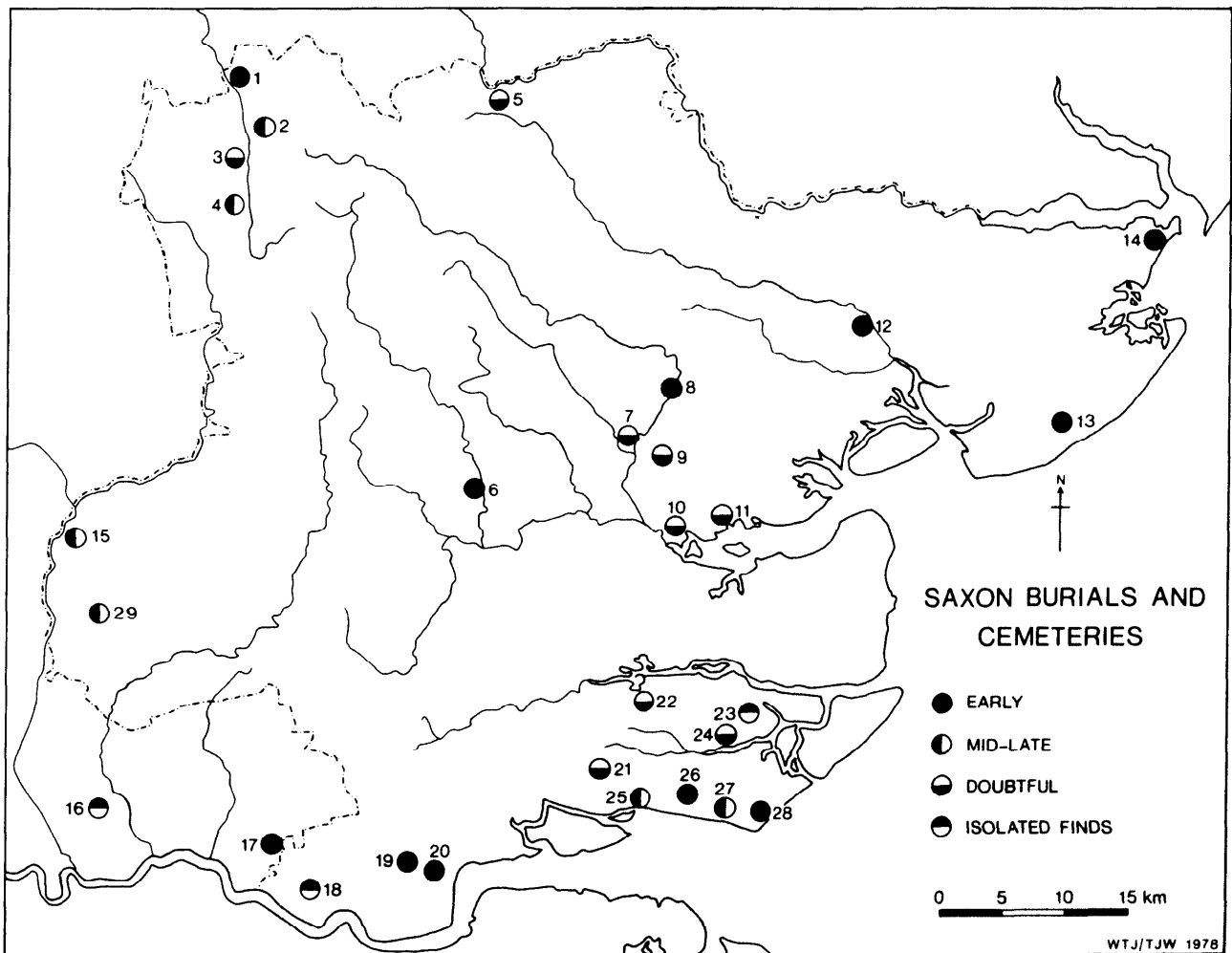
Fig 37 _Distribution map of early Saxon cemeteries in Essex. See p 88 for explanation of the symbols. The numbers correspond with the entries in the gazetteer (pp 89-94) (Crown copyright reserved)_

An attempt has been made in Fig 37 to distinguish four kinds of evidence:

> *Solid dots:* cemeteries or burials which contain presumed pagan, late 4th-7th century AD, finds
> *Left shaded dots:* burials or cemeteries which have virtually no finds and are presumably Christian
> *Bottom shaded dots:* finds certainly, or claimed to be, Saxon, with varying evidence for burial
> *Top shaded dots:* isolated Saxon finds which might have come from burials

No distinction is made on the map between inhumation and cremation. Indeed, only at Colchester, Great Chesterford, Mucking, and Shoebury (Milton Hall brickfield) have cremations been recorded.

The distribution shows a north west cluster which may be regarded as an outlier of the Cambridgeshire cemeteries (Fox 1923, map H) and a broadly coastal grouping, with a concentration in the hinterland of Southend Museum. The date range within the county extends from the late 4th-5th century AD Roman military belt fittings (as from Mucking) to the presumably Christian Middle Saxon period for which an 8th-9th century AD date seems likely.

Some of the Saxon burial finds from Essex are of exceptional significance, such as the gold, garnet, and glass objects from Broomfield; the glass drinking 'horns' from Rainham; and three of the five glass vessels and the five piece bronze and silver belt set from Mucking (Pl 5).

The possibility of Saxon burials being discovered in the future through a deliberate research policy seems slight. Machines quarrying gravel and brickearth produce fewer accidental discoveries than the shovels of yesterday's labourers. Graves rarely produce recognizable cropmarks. Every opportunity should, therefore, be taken to follow up isolated graves as at Shoebury, or finds likely to have come from burials, such as the Paglesham brooch (Pl 6), in the hope of discovering, and it is to be hoped, completely excavating, new cemeteries. Where sites offer the chance of related cemetery and settlement, as perhaps at Heybridge and at Kelvedon/Feering, these deserve special attention.
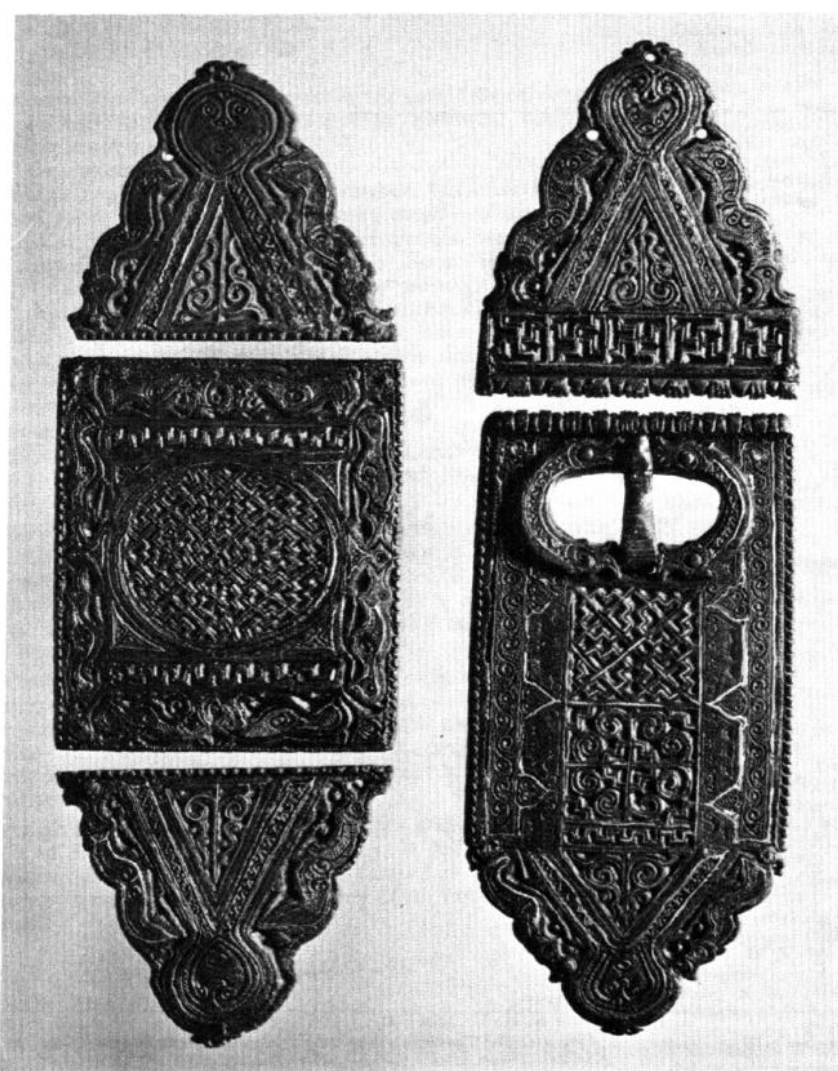
Plate 5   Complete five piece belt set of bronze inlaid with silver from a Saxon grave at Mucking, Essex. The orginal is in the British Museum, and facsimiles in Thurrock Museum and the Museum of London Photo: W T Jones (Scale just under 1:1)

Brown 1915, **3,** 270
Evison 1969, 157-73
Fox 1923, 265
Meaney 1964, 85
Myres 1977, corpus nos 3683-7

2   Saffron Walden

Saxon cemetery known from discoveries in 1830 and 1876-7. About 200 inhumations contained very few finds, and most of these came from one woman's grave. Finds from this rich grave included three bronze pendants and beads including rock crystal, comelian, and two of silver of which one was inset with pearls. This grave is placed towards the end of the cemetery, dated to 7th to 11th century AD.

Finds: AM; SWM

Brown 1915, **4,** 600-1
Evison 1957, 220-2
Fox 1923, 265-6
Meaney 1964, 88
Neville 1836, 148
Smith, C R, 1880, 7, 109
Smith, H E, 1884, 284-7, 311-33
VCH 1903, **1,** 329-31, pl facing 322, 4-10
Wilson 1956, 70-1

3   Wendons Ambo

Three/four spearheads, two fragmented pots, a shield boss, and other iron objects found in 1848 by workmen digging into the north side of Mutlow Hill. The only contemporary account is by Neville, who stated there was no trace of bone, cremated or otherwise.

Finds: CUM (Braybrooke Coll)

Fox 1923, 265
Meaney 1964, 89
Neville 1848, 9-11, 49-50

4   Wicken Bonhunt

Two hundred middle Saxon graves besides St Helen's chapel were excavated in 1974. See pp 96-102 in this volume.

Finds: Under study

DoE *Archaeol Excav* 1975,91
Medieval Archaeol, **18,** 1974, 175-6

5   Birdbrook

In the late 18th century fourteen inhumations with heads to NW were excavated by the side of the Roman road. Since only bones and no objects were found, the cemetery may have been late Saxon.

Meaney 1964, 85
Walford 1803, 68-9

6   Broomfield

A single grave was discovered by workmen digging gravel in a pit behind Clobbs Row in 1888. This is still one of the

Plate 6   Great square-headed Saxon gilt bronze brooch, found in a quarry at Paglesham near Southend in 1974 and now in Southend Museum Photo: W T Jones with permission of Southend Museum (Scale just under 1:1)

Gazetteer

Key to museums referred to in the text:

    AM Ashmolean Museum, Oxford
    BM British Museum
    CHM Chelmsford Museum
    CM Colchester Museum
    CUM Cambridge University Museum
    DM Dagenham Museum
    SM Southend Museum
    SWM Saffron Walden Museum
    TM Thurrock Museum

1   Great Chesterford

Saxon cemetery known from discoveries between 1819 and 1955. In 1819, 1923, and 1952 finds only are recorded. In 1953-5 DoE rescue excavations produced 160 inhumations and 33 cremations. Only the west and south limits of the cemetery were found. Five grave groups, including two glass vessels, have been published. The earliest finds are 5th century AD.

Finds: CUM; BM

most important graves in Essex. Only part of the grave was then excavated, and a sword, spear, gold pyramid, and gold buckle plate with garnets were found. These were shown to the Society of Antiquaries in 1894, by C H Read, who then made plans to dig the rest of the grave. He established that the main part of the grave was 6-7 feet below the surface, and made further finds: two wooden buckets with iron mounts, two wooden cups, two glass bowls, two iron vessels, an iron ? cup, shield boss, and roller stamped wheelthrown pot. The objects were presented to the British Museum by David Christy, where some are now on display.

The Broomfield burial has many points in common with Sutton Hoo and Taplow, Bucks. Its gold ornaments with garnet inlay may have come from the same workshop as those from Forest Gate and Sutton Hoo. The pattern welded swords from Broomfield and Sutton Hoo both have narrow linen tapes bound round the top 3-4 inches of the scabbard. The two glass bowls (Harden class VIII) are among only twelve found in the country; fragments of two others were found in mound 2 at Sutton Hoo, and in the Snape boat burial. The textiles found by Read have been studied by Elisabeth Crowfoot (Sutton Hoo, **3,** forthcoming).

Finds: BM

Brown 1915, **4,** 601-3
Bruce-Mitford 1974, 4, 50, 53, 117, 129, 285, 347
Bruce-Mitford 1975, 132, 134, 356, 458, 465, 480, 483, 491, 685
Evison 1979, 81, fig 16g
Harden 1956, 164
Meaney 1964, 85
Read 1894, 250-5
VCH 1903, **1,** 320-6, pl facing 322, 13, 19

7   Witham

In the early 1840s, three skeletons and supposed weapons of iron were found on the site of an ancient camp called Temple Field when the railway was being built. Repton's brief note contains no proof that they were Saxon, and the iron is now considered prehistoric.

Finds: CHM

Brown 1915, **4,** 603
Meaney 1964, 89
Repton 1844, 393
Rodwell 1976, 43-9
VCH 1903, **1,** 320

8   Kelvedon/Feering

Before the 1880s, finds had been made in a gravel pit in Inworth parish. In 1899, in a field called Barrow field, inhumation burials were found near the river bridge at Kelvedon (in Feering Parish) not far from the station. Finds from these burials include a sword, spear, brooches, buckles (one with garnet inlay) and seem to be 6th to early 7th century AD.

Finds: CM

Beaumont 1888, 124-5
Brown 1915, **4,** 599-600
VCH 1903, **1,** 319, 326-7, pl facing 322, 12, 18
VCH 1963, 3, 149-50

9   Little Braxted

A Saxon sword, shield boss, and spears found 1974 during mechanical excavation.

Finds: Under study

Eddy 1977, 84

10   Heybridge

There is no record whether or not a complete Saxon pot, found before 1903, was from a burial. For Saxon settlement at Heybridge see page 71 in this volume.

Finds: CM

Meaney 1964, 87
Myres 1977, corpus no 411
VCH 1903, **1,** 319-20

11   Goldhanger

VCH **1,** 1903 records Saxon or Danish 'relics' found when 'several small grave mounds were opened on the marshes'.

Finds: Lost

Meaney 1964, 87
VCH 1903, **1,** 319--20

12   Colchester

The south side of Roman Colchester, outside St Botolph's Gate and in the Mersea Road district, seems to have been the main area of Saxon finds. Two sunken huts have been excavated at Lion Walk. In the 19th century shield bosses and bronzes, evidently from graves, were found, though no graves were identified. In 1938, a pot containing cremated bones was found in Meanee Barracks, Mersea Road.

P J Crummy (forthcoming) has brought together specialist reports on the more important Saxon finds made in Colchester—spears, bronzes, beads, comb, pottery—but the provenance of many of them is doubtful. Some finds are datable to the early 5th century AD but most seem to be 6th-7th century.

(A glass vessel illustrated in *VCH* **1,** 1903 and now in the BM seems Roman, not Saxon.)

Finds: CM (Joslin and other coll); BM

Brown 1915, **4,** 599
Crummy forthcoming, chapter 1
Meaney 1964, 86
Smith, C R, 1852, **2,** 224; 1854, **3,** 22-3
VCH 1903, **1,** 327, pl facing 322, 3, 16

13   Great Clacton

In 1847, a glass cup, broken tiles, and charred wood were found on a farm near the coast when a barrow was being levelled. The cup (Harden type X) was exhibited at a meeting of the British Archaeological Association.

Finds: Lost

Harden 1956, 165
Smith 1847, 54, 99
VCH 1903, **1,** 329

14   Dovercourt

VCH **1,** 1903 illustrates a 6th century AD radiate bronze brooch. ECC records an Anglo-Saxon spearhead from Upper Dovercourt village. A small, plain pot is illustrated in Myres's Corpus.

Finds: CM (pot and spearheads); AM (brooch)

ECC record
Meaney 1964, 86
Myres 1977, corpus no 3766
VCH 1903, **1,** 329, pl facing 322, 1

15   Nazeing (Nazeingbury)

During 1934 and 1948, many skeletons were dug up in what was then Lapwoods Nursery. Excavations by Waltham Abbey Historical Society in 1975-6 produced 180 inhumations oriented E-W. There were no Saxon grave goods, though middle Saxon sherds were found in the grave fills. Uncorrected radiocarbon dates of the late 7th century and the late 9th century were obtained from bone.

Finds: Under study

Huggins 1978, 47-64
Meaney 1964, 87 (Nazeing)
VCH 1963, **3,** 162

16   Forest Gate

A late 6th century to early 7th century AD truncated gold cone, made in two parts joined by cabled gold wire, with garnet and lapis lazuli inlay, is recorded.

Finds: AM (Evans coll 1908)

Brown 1915, **4,** 538, 603, pl CXLVII, 5
Bruce-Mitford 1974, 262, pl 85 c,d
Jessup 1950, 126, pl XXX11
VCH 1903, **1,** 329, pl facing 322, 2

17   Rainham

Prehistoric, Romano-British, and Saxon finds were made in 1937 during gravel digging at Gerpins Farm between Rainham and Upminster. They were sold by the gravel diggers to a local man, who presented them to the Dagenham Local History Museum, then being formed. The Saxon finds include two glass drinking horns (Harden type IV) which are still unique in this country. Shield bosses, spearheads, girdlehanger, brooches, glass spindlewhorls, bronze bound buckets, handmade pottery, and a wheel-thrown roller stamped pot were also found. Dr Evison has published a full account of the Saxon finds.

Also notable is a gold coin pendant of Mauritius Tiberius, now missing, minted at Marseilles 582-602 (Rigold group B) which is contemporary with those from Sutton Hoo, while the workmanship of the pendant suggests an origin in the same workshop as metalwork from the Sutton Hoo, Forest Gate, and Broomfield burials. Pottery includes a complete handmade vessel with comb point decoration similar to one from Stanford-le-Hope (corpus no 3760) and to sherds in the Mucking settlement (*Medieval Archaeol,* **16,** 1972, 153).

Finds: BM and DM

Evison 1955, 159-95, pls LIX-LXIX
Evison 1979, 77, figs 14e, 24f
Harden 1956, 161, fig 31, pl XVIe
Meaney 1964, 88
Myres 1977, corpus nos 419, 3760
O'Leary 1955, 62-7
Rigold 1955, 162-4
VCH 1963, **3,** 167

18   Aveley (Moor Hall)

A Saxon shield boss and buckle were found.

Finds: Location unknown

VCH TS, 242 h

19   Orsett

The cropmark photograph of the Orsett Neolithic earth-work published by St Joseph shows four or five ring ditches which he remarked seemed too small for barrow ditches, while in the centre of at least two of them were possible pits. During the 1975 excavations, two of these ring ditches and pits were established as Saxon burials.

Finds: Under study

DoE *Archaeol Excav,* 1975, 90
Hedges & Buckley 1978, 255
Hogarth 1973, 113
St Joseph 1973, 236-8 pl XXXI

20   Mucking

Two early cemeteries, about 400 m apart, lie midway in an elongated Saxon settlement area about 1 km long by 200 m wide (see 82-6 in this volume and Fig 36). They were excavated from 1967 onwards during quarrying for gravel of a cropmark landscape. The graves could not have been identified from cropmarks, and their discovery is a classic instance of archaeological opportunism. Only 60 graves in inhumation Cemetery 1 could be rescued, but mixed Cemetery 2 (336 inhumations and 468 cremations) is known to have been entirely excavated-the first time this has occurred with a sizeable pagan Saxon cemetery in England. The inhumations are of special interest for their 'silhouettes' (Barker *et al* 1975; Biek 1969) although the loss of skeletal information is to be regretted (Pl 7).

Cemetery 1 inhumations had a consistent W/E orientation with very few exceptions. Cemetery 2 inhumations followed no apparent order—graves disturbed cremations and vice versa. The first burials of Cemetery 2 were in the south-east corner, in an area later damaged by the cross trenches of a medieval windmill. Their finds included late Roman military belt fittings, a faceted carinated pot, and a fragment of a silver equal-armed brooch (presumably from a grave destroyed by the windmill), which all suggest an early to mid 5th century AD origin for the cemetery, and burial seems to have continued to the mid to late 7th century AD. Conservation and processing of the finds is not yet complete, but brief interim accounts have been published by M U & W T Jones (see below).

Individual finds have been discussed by Evison and Myres (see below) and 42 pots have been illustrated in Myres's corpus.

Mucking offers the first real opportunity in British archaeology for comparison between finds from an early

Saxon settlement and its cemeteries. It can be seen for example that many domestic-looking pots-plain, crudely made vessels-were used as cremation urns; while conversely sherds of decorated pots, including the ornate *buckelurnen* usually associated with burials, have been found in sunken huts. Metalwork, such as iron knives, pins, shears, and strike-a-lights, as well as brooches (Pl 8), are common to huts and graves, as are beads and fragments of glass vessels. Finds from both contexts, considered together, bridge the gap between the first Saxons-whether soldiers or settlers—and the first post-Roman coinage. Because of the higher proportion of metalwork in graves, cemeteries allow more comparisons with continental material such as Frankish brooches and weapons, and brooch types from Denmark, north Germany, and France.

Finds: BM; TM; and under study

Barker *et al* 1975, 564-72
Biek 1969, 118-23
Bruce-Mitford 1975, Appendix C, 564-72
Current Archaeol, 1975, **50,** 73-80
DoE *Archaeol Excav,* 1969, 28; 1970, 27; 1971, 28; 1972, 82; 1973, 75
Evison 1968, 231
Evison 1973, 269-70, pl LI a,b
Evison 1977, 128, 132, 134, 135, 137-9, 140
Evison 1979, fig 18e
Jessup 1974, 15, 16, 86-7
Jones 1968, 210-30
Jones 1972, 65-76
Jones 1973, 6-12
Jones & Jones 1974, 20-35
Jones & Jones 1975, 133-87
Medieval Archaeol, 1968, **12,** 157; 1970, **14,** 155; 1971, **15,** 124-5; 1972, **16,** 153; 1973, **17,** 142
Myres 1969, 78, 88, 104, 119
Myres 1973, 271-2, fig 2
Myres 1977, 32, 34-5, 36, 51, 55, 56, 57
    Corpus numbers of pots—3351, 3406, 3409, 3410, 3412-16, 3693, 3754-59, 3801-3808, 3811-3820, 3835-3837, 3929-3938, 4067-68, 4122, 4130
Ypey 1969, 123, Abb 20

21   Thundersley (Dawes Heath)

An iron spearhead and knife were found at Dawes Heath in 1931. The spear has a split socket, the knife lacks point and tang.

Finds: SM

Pollitt 1953, 76

22   Hockley (Plumberow Mount)

In 1913 a Romano-British barrow was partly excavated. Romano-British pottery was in the mound and a coin of Domitian on the old ground surface, but no burial of that period was found. In the A barrow fill Saxon sherds, including a globular bowl, were found, but no bones are recorded.

Finds: Lost

Benton 1867, 280
Dunning & Jessup 1936, 52
Francis 19 15, 224-37

Plate 7 Body silhouette in a Saxon grave at Mucking, Essex Photo: W T Jones

Plate 8 Saucer, button, disc, square-headed, and plate brooches are represented in this group of beads and brooches from womens ' graves at Mucking, Essex (approx full size) Photo: W T Jones

Meaney 1964, 87
Myres 1977, corpus no 3069
VCH 1963, **3**, 147-8

23   Paglesham

A great square-headed brooch of Leeds type A2 (Leeds 1949) was found in Stannetts quarry at Raglesham, sold at Christies in 1974, and purchased by Southend Museum (pl 6).

Finds: SM

Clarke 1976, 214-5 and pl I

24   Great Stambridge

In 1924 fragments of three early 5th century AD pots were found during gravel digging in Martins' pit, opposite the Royal Oak. There was no evidence for burials.

Finds: SM

Meaney 1964, 89
Myres 1969, 81, 88, 104
Pollitt 1953, 76

25   Leigh

In 1892 coins of Alfred (871-900) and Plegmund, Archbishop of Canterbury (890-914) were found when several burials came to light when new houses were being built in West Street.

Finds: SM

Draper 1893, 124
Pollitt 1953, 41
VCH 1903, **1**, *328*

26   Prittlewell

A cemetery of 'many' graves was found in 1923, and further graves in 1939-41. Some graves were Romano-British. In some of the Saxon graves were traces of clay, foreign to the site, and large stones were found, on or just over the body. Finds included swords, shield bosses, spears, buckles (one of iron inlaid with silver), brooches, knives, and pottery. A glass jar (Harden type VIII) and a pair of saucer brooches inlaid with garnets are notable. In the same grave were found a gold pendant inlaid with garnet and two wheel-thrown Frankish pots.

Finds: BM; SM

Bruce 1936 contains colour illustration of Saxon jewels from Prittlewell
Evison 1979, 80, 86, figs 16a, 16b, 26a
Helliwell 1971, 15-16
J Brit Archaeol Ass, 1930, 114-l5
Kendrick & Hawkes 1932, 306, 312-13, fig 108
Meaney 1964, 87
Pollitt 1923, 93-141; 1930, 386-8; 1931, 61-2; 1932, 89-102; 1953, 39-41, 74
VCH TS, 188

27   Southchurch

In 1929 an inhumation grave containing at least 8 early 8th century AD *sceattas* (Rigold 1960, Primary Series types A, B, C) was found in Thorpe Hall brickfield.

Finds: SM

Meaney 1964, 89
Pollitt 1953, 41, 76
Rigold 1960, 15 and 48
Sutherland 1942, 52

28   North Shoebury/Great Wakering

Quarrying for brickearth in this area has brought many finds to light since the 19th century. Burials, thought to be Saxon, were then reported, with the feet arranged in a ring towards the centre. Recent work at Milton Hall brickfield (by D G MacLeod of Southend Museum) includes the excavation of both inhumations and cremations. Finds include pottery and metalwork, buckles, shears, and a decorated pin. An early 5th century AD date is possible for some recent finds.

Finds: SM

Brown 1915, **4**, 600
MacLeod, D G (pers comm)
Meaney 1964, 89
VCH 1903, **1**, 327

29   Waltham Abbey

Graves cut by a buttress foundation of Waltham Abbey were excavated in 1977, by Waltham Abbey Historical Society. Their fills contained 'grass'-tempered sherds. They are considered to belong to the cemetery of the mid-late Saxon settlement. An uncorrected radiocarbon date in the 9th century AD was obtained from bone.

Finds: Under study

Medieval Archaeol, 1977, **21**, 207

References

Barker, H, *et al,* 1975   Analysis of soil samples from a grave in the Anglo-Saxon cemetery at Mucking, Essex, in *The Sutton Hoo ship burial* (ed R Bruce-Mitford), **1**, Appendix C, 564–72
Beaumont, G F, 1888   Report of proceedings of an ordinary meeting, *Essex Natur,* **2**, 187
Benton, P, 1867   *History of the Rochford Hundred*
Biek, L, 1969   Soil silhouettes, in *Science and archaeology* (eds D Brothwell & E Higgs), 118–23
Brown, G B, 1915   *The arts in Early England,* **3, 4**
Bruce, M, 1936   *The book of craftsmen*
Bruce-Mitford, R, 1974   *Aspects of Anglo-Saxon archaeology*
———, 1975   *The Sutton Hoo ship burial,* **1**
Clarke, D T-D, 1976   Saved for Britain (the Paglesham brooch), *Curr Archaeol,* **54**, 214–5 and pl I
Crowfoot, E, forthcoming   in *The Sutton Hoo ship burial,* **3**
Crummy, P J, forthcoming   *Aspects of Anglo-Saxon and Norman Colchester*
Current Archaeol, 1975   Mucking: the Saxon cemeteries, **50**, 73–80
Draper, W H, 1893   Saxon remains at Leigh, *Essex Review,* **2**, 124
Dunning, G C, & Jessup, R F, 1936   Roman barrows, *Antiquity,* **10**, 37–53
ECC record—*Essex County Council Archaeological Record*
Eddy, M R, 1977   Little Braxted, in Work of Essex County Council Archaeology Section (ed C R Couchman), *Essex Archaeol Hist,* **9**, 84
Evison, V I, 1955   Anglo-Saxon finds near Rainham, Essex, with a study of glass drinking-horns, *Archaeologia,* **96**, 159–95, pls LIX–LXIX
———, 1957   A group of late Saxon brooches, *Antiq J,* **37**, 220–2
———, 1968   Quoit brooch style buckles, *Antiq J,* **48**, 231–49

————, 1969   Five Anglo-Saxon inhumation graves containing pots at Great Chesterford, Essex, *Berichten van de Rijksdienst voor het Oudheidkundig Bodemonderzoek,* **19,** 157–73

————, 1973   Anglo-Saxon grave-goods from Mucking, Essex, *Antiq J,* **53,** 269–70, pl LI a,b

————, 1977   Supporting-arm brooches and equal-arm brooches in England, *Studien zur Sachsenforschung,* 127–47

————, 1979   *Wheel-thrown pottery in Anglo-Saxon graves*

Fox, C, 1923   *The archaeology of the Cambridge region*

Francis, E B, 1915   The opening of Plumberow Mount in Hockley, *Trans Essex Archaeol Soc,* **13,** 224, 234–7

Harden, D B, 1956   Glass vessels in Britain and Ireland AD 400–1000, in *Dark Age Britain* (ed D B Harden), 132–67

Hedges, J D, & Buckley, D G, 1978   Excavations at a Neolithic causewayed enclosure, Orsett, Essex, 1975, *Proc Prehist Soc,* **44,** 219–308

Helliwell, L, 1971   *South East Essex in the Saxon period*

Hogarth, A C, 1973   Structural features in Anglo-Saxon graves, *Archaeol J,* **130,** 104–19

Huggins, P, & Huggins, R, 1977   Waltham Abbey, *Medieval Archaeol,* **21,** 207

Huggins, P J, 1978   Excavation of Belgic and Romano-British farm with Middle Saxon cemetery and churches at Nazeingbury, Essex 1975–6, *Essex Archaeol Hist,* **10,** 29–117

Jessup, R F, 1950   *Anglo-Saxon jewellery*

————, 1974   *Anglo-Saxon jewellery*

Jones, M U, 1968   Cropmark sites at Mucking, Essex, *Antiq J,* **48,** 210–30

————, 1972   The Mucking, Essex, cropmark sites, *Essex J,* **7,** 3, 65–76

————, 1973   An ancient landscape palimpsest at Mucking, *Essex Archaeol Hist,* **5,** 6–12

————, & Jones, W T, 1974   An early Saxon landscape at Mucking, Essex, in *Anglo-Saxon settlement and landscape* (ed R T Rowley), BAR, **6,** 20–35

————, & ————, 1975   The cropmark sites at Mucking, Essex, England, in *Recent archaeological excavations in Europe* (ed R Bruce-Mitford), 133–87

Kendrick, T D, & Hawkes, C F C, 1932   *Archaeology in England and Wales, 1914–1931*

Leeds, E T, 1949   *Corpus of early Anglo-Saxon brooches*

Meaney, A, 1964   *Gazetteer of early Anglo-Saxon burial sites*

Myres, J N L, 1969   *Anglo-Saxon pottery and the settlement of England*

————, 1973   An Anglo-Saxon *Buckelurne* from Mucking, Essex, cemetery, *Antiq J,* **53,** 271–2, fig 2

————, 1977   *A Corpus of Anglo-Saxon pottery of the pagan period*

Neville, R C, 1836   *History of Audley End*

————, 1848   *Sepulchra Exposita*

O'Leary, J G, 1955   The Saxon burials at Gerpins Farm, Rainham, *Trans Essex Archaeol Soc,* **25,** 62–7

Pollitt, W, 1923   The Roman and Saxon settlement, Southend-on-Sea, *Trans Southend Antiq Hist Soc,* **1,** 2, 93–141

————, 1930   Anglo-Saxon remains in south-east Essex, *Antiq J,* **10,** 386–8

————, 1931   Further Anglo-Saxon remains in Essex, *ibid,* **11,** 61–2

————, 1932   The East Saxons of Prittlewell, *Trans Southend Antiq Hist Soc,* **2,** 89–102

————, 1953   *Southend before the Norman Conquest*

Read, C H, 1894   A Saxon grave at Broomfield, Essex, *Proc Soc Antiq,* **15,** 250–5

Repton, J A, 1844   Note on finds at Witham, *Archaeol J,* **1,** 393

Rigold, S E, 1955   Report on gold coin pendant, Rainham, in Evison 1955, 162–4

————, 1960   The two primary series of *sceattas, Numis Chron,* **30,** 6–53

Rodwell, W J, 1976   Iron pokers of La Tène II–III, *Archaeol J,* **133,** 43–9

Smith, C R, 1852, 1854, 1880   *Collectanea Antiqua,* Vols 2, 3, 7

Smith, H E, 1884   An ancient cemetery at Saffron Walden, *Trans Essex Archaeol Soc,* **2,** 4, n ser, 284–7, 311–33

Smith, R A, 1903   Anglo-Saxon remains, in *VCH,* **1,** 315–31

Smith, 1847   Glass exhibited to the British Archaeological Association, *J Brit Archaeol Soc,* **2,** 54, 99

St Joseph, J K, 1973   Air reconnaissance, 31, *Antiquity,* **187,** 236–8, pl XXXI

Sutherland, C H V, 1942   Anglo-Saxon *sceattas* in England, *Numis Chron,* 6 ser, **2,** 42–70

VCH 1903, 1963   *The Victoria History of the County of Essex,* **1 & 3**

VCH TS, typescript draft of *VCH,* **3,** containing information on Roman and other periods; deposited in Colchester Museum

Walford, T, 1803   An account of a Roman military way in Essex, *Archaeologia,* **14,** 68–9

Wilson, D M, 1956   A bronze mounting from Oxshott Wood, Surrey, *Antiq J,* **36,** 70–1

Ypey, J, 1969   Zur Tragweise frühfränkischer Gürtelgarnituren auf Grund niederländischer Befunde, *Berichten van de Rijksdienst voor het Oudheidkundig Bodemonderzoek,* **19,** 89–127

The parish of Wicken Bonhunt lies about 40 miles NNE of London and 20 miles SSE of Cambridge in the NW corner of Essex. The site lies to the east of the parish surrounding a small standing Norman chapel and redundant farm buildings on the gentle south-facing valley slope of a tributary stream of the river Cam (TL 511335). The subsoil of the valley is gravel and sandy clay but the surrounding hills are chalk capped with boulder clay.

The site was discovered in 1967 by a local archaeologist, Bari Hooper, after the ploughing of a pasture field adjacent to St Helen's Chapel. This produced a considerable quantity of pottery ranging from Roman to 13th century and included Ipswich ware and grass-tempered sherds (Wilson & Hurst 1968, 201). In the following year Mr Hooper excavated some 49 skeletons from around the chapel and further bulldozing nearby revealed more Anglo-Saxon material associated with possible hut sites (Wilson & Hurst 1969, 250). The then Ministry of Public Building and Works decided to conduct a rescue excavation and five seasons took place between the summers of 1971 and 1973 under the direction of the writer and Andrew Rogerson.

The method of excavation was to strip off the topsoil by machine down to the natural subsoil and then to excavate the exposed features by hand. The strategy was to start alongside the barns, which were to be levelled, and move westward in large open areas. It soon became obvious that the filling of features on the site was virtually uniform grey-brown loam and that consequently stratigraphic relationships between features were going to remain undetermined. Consequently, it was decided to aim at as large an area as possible in the hope that crude phasing at least would be possible through the recognition of obvious building alignments, etc. In fact excavation was limited to that area actually threatened with extensive damage by farming operations but orientated throughout towards an understanding of the Middle Saxon settlement.

There was considerable evidence of occupation before the Middle Saxon settlement, of both prehistoric and Romano-British date. Most areas of the site produced evidence of a large Mesolithic flint industry which included microliths, blades, scrapers, burins, tranchet arrowheads, and axes. Such an assemblage is characteristic of the base camp activities of hunting, processing of skins and meat, and bone working. It is also thought probable that the valley floor at this time contained a lake—an additional incentive to occupation (Clydesdale 1975).

For the Neolithic period there is not only a flint industry, but pottery and some enigmatic features. Several different pottery styles are present: Mortlake ware, Fengate ware, Peterborough ware, Grooved ware, and Beaker. The flint industry includes arrowheads, knives, polished axes, and sickles, probably indicating a mixed farming economy of crop production and hunting. Settlement traces were slight and similar to those found at a site in the neighbouring parish of Newport, namely hearths and a few pits, with no evidence of structures, possibly indicating temporary occupation with tents or flimsy shelters.

Two urns belonging to the late Bronze Age or early Iron Age were found at either end of the site, one containing the cremation of an elderly adult. There were also at least three Iron Age pits, containing pottery and two bone objects, indicating casual occupation as in the previous periods.

In the main area of excavation there were also two ditches and one pit belonging to the Roman period, but again, no actual structures were associated. The quantity and nature of finds within them, however, including pottery and preserved grain, indicate occupation nearby, possibly to the west, as a number of Roman features were encountered here in exploratory trenches cut westward across the field. Individual finds included a jet plaque decorated with an incised geometric design.

The earliest Anglo-Saxon occupation on the site, associated with handmade sand-tempered pottery, must be 6th or early 7th century in date. The features containing it, pits and ditches, were few, widely distributed, and included no structures.

Figure 38 shows the distribution of definite Middle Saxon features from which it is clear that more than one phase of occupation is represented. Two ditches, interpreted as settlement boundaries, run from south to north and turn sharply eastward at the north end of the site. At this point the western ditch was found to cut the eastern ditch, the one replacing the other presumably as part of an expansion of occupation westward. This would seem to be confirmed by the large building (V) which lies east-west across the earlier ditch. Both ditches contain Ipswich ware, the earlier one in considerable quantity indicating that at least the later part of occupation in the earlier phase must date after the middle of the 7th century. Thus there are at least two major phases of Middle Saxon activity and the second shows evidence of two sub-phases of building.

Another major feature of Middle Saxon date is a channel running across the bottom of the site into which the boundary ditches drained and which itself drained into the stream. It seems possible that this feature was the leet for a water mill although no trace of any associated structure was found.

Drinking water was drawn from two wells on the site as well as the stream to the south. The first well was wicker lined with four corner posts. Well 2 was more sturdily constructed, in its first phase of large oak planks set behind corner posts, and in its second phase of planks morticed into the corner posts. Timbers from this well have been radio-carbon dated to AD 830 ± 50 years, putting its usage firmly in the latter part of the Middle Saxon period.

Evidence was found of at least 28 structures of Middle Saxon date. They vary in floor space from 36 to 130 square metres and in their technique of construction. Three types are known: individual posthole construction, individual postholes with short lengths of foundation trench, and the continuous foundation trench. The individual posthole construction is known from many sites especially those of the 6th and 7th centuries, such as the halls of West Stow (West 1969, 9-10), Maxey (Addyman 1964, 26-8), Bishopstone (Selkirk & Selkirk 1976, 170), and Chalton (Addyman & Leigh 1973, 8-9, 12-13). Where they occur with other techniques of construction they would appear to be earlier. The use of postholes and short lengths of foundation trench is not widely known but occurs in one building at Maxey (Addyman 1964, 30) and at Catholme (Webster & Cherry 1976, 169-70). The continuous foundation trench technique is paralleled at Chalton and North Elmham (Wade-Martins 1970, 36). In some the side wall trenches were deeper than the end wall trenches,
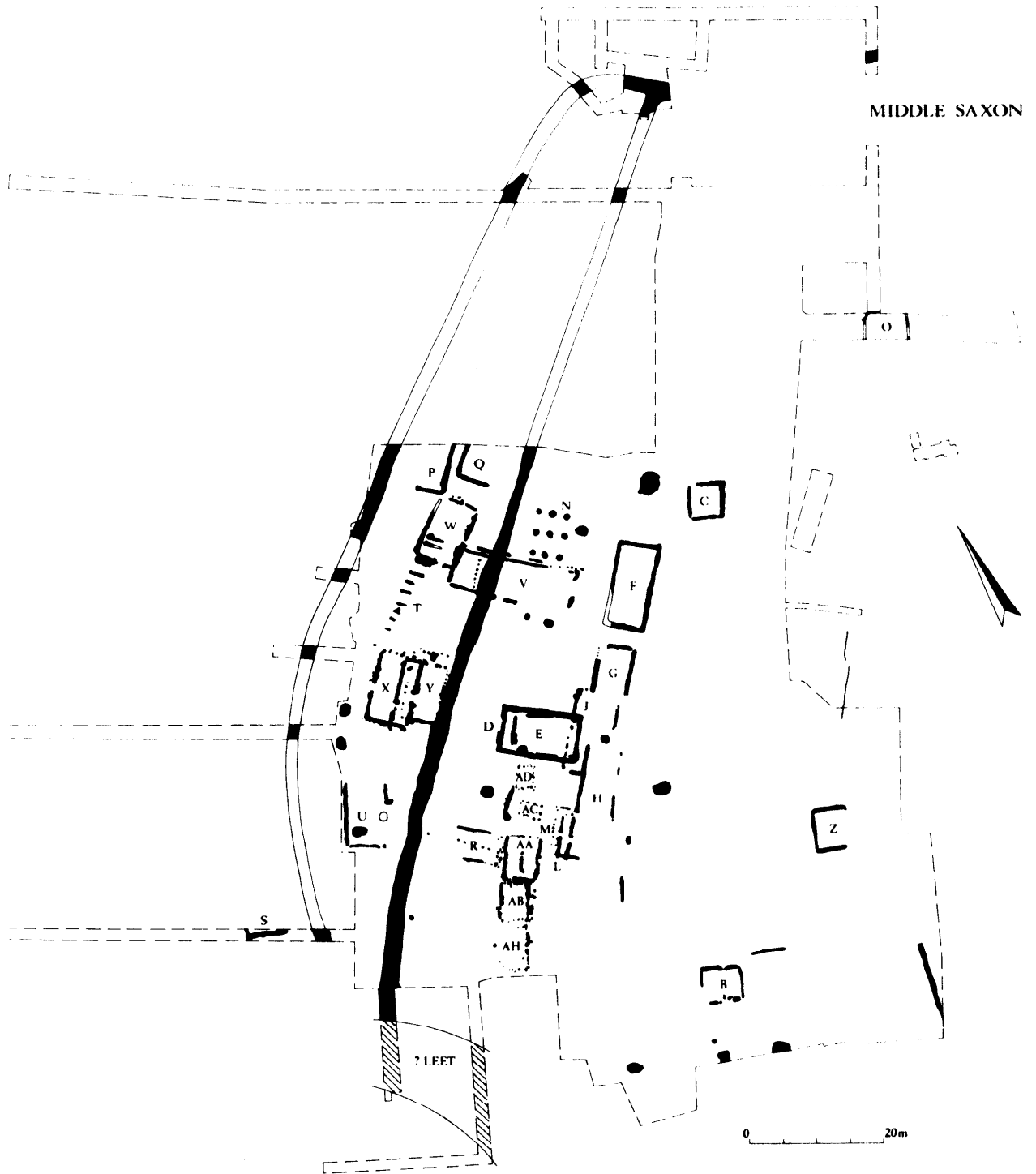
MIDDLE SAXON

Fig 38 Plan of Middle Saxon features

presumably indicating that they took the main weight of the roof. A characteristic of the small square buildings was the use of opposed inset entrances—a feature also noted at Chalton and the other contemporary settlements.

There is no direct evidence for the function of any of the Bonhunt structures. The largest building (V) was the only structure to be partitioned and its easterly room contained the only hearth within a building on the site, indicating domestic usage for at least part of the building. Ploughing had probably removed evidence of hearths from elsewhere as well as any occupation debris which may have remained as evidence of function. Some of the buildings were undoubtedly workshops, barns, and byres, although as Addyman has pointed out the climate of southern England is favourable enough to make the winter quartering of animals unnecessary (Addyman 1972, 279). A single nine-post structure is almost certainly a granary or hayloft.

Before leaving the plan of the Middle Saxon settlement, three observations, in particular, seem important:

1   The structures are grouped fairly closely together along the western margin of the settlement in spite of a relatively open space to the east, implying an important function for the area (possibly a green in the centre of the settlement on which animals could be pastured safely at night).

2   The plan of the settlement boundaries implies that only a half or a third of the settlement has been excavated (the actual proportion depending on the precise angle with which the boundaries returned southward to the stream, east of the site).

3   The obvious building alignments suggest an element of deliberate planning in the layout of buildings; at one phase they are grouped around a courtyard or farmyard. This, together with the reorganization of the settlement boundaries and the construction of a possible mill leet to the south, seems to indicate a high degree of organization and authority.

The artefactual evidence associated with the Middle Saxon occupation is particularly rich. The earliest boundary ditch, in particular, produced especially comprehensive evidence of Middle Saxon rural economy and artefact range.

The most common find, of course, was pottery and there were four basic types in use during the Middle Saxon occupation: grass-tempered ware, proto-St Neot's ware (that is handmade, shell-tempered ware), Ipswich ware, and imported continental wares. There is every reason to expect that the grass-tempered pottery was locally manufactured but the shell-filled wares are characteristic of the Bedford/St Neot's area, some 20 miles to the north-west, from where it was presumably imported. Similarly the Ipswich ware has come the 50 miles from Ipswich to the east. Furthermore, the Ipswich ware is hardly an overlay of fineware as in percentage terms it forms 70% of the assemblage, with handmade wares forming 20%, and the imported continental wares filling the remaining 10%. The quantity of Ipswich ware at this site is all the more surprising in view of the lack of finds of the ware elsewhere in Essex, even in the area close to Ipswich (Dunmore *et al* 1975, 60). The continental imports are also present in surprising quantity, and examination by Richard Hodges suggests that most are French with parallels at Hamwih. This is interesting as, in contrast, the East Anglian kingdom and its port Ipswich appear to have dealt mainly with the Rhineland. We must conclude that, while Ipswich ware was imported to Bonhunt from Ipswich, foreign wine and associated vessels were probably arriving via a different source (? London). The dominant import was Carolingian burnished grey and black ware pitchers but an outstanding find was a Beauvais

ware three-handled, red-painted pitcher. Its discovery, securely sealed with Ipswich ware, makes it one of the earliest pieces of that ware known and one of the earliest pieces of red-painted pottery in NW Europe.

Metal objects included an almost complete iron linen heckle. and keys. pins. and knives of various sizes. There was the usual range of weaving artefacts: bone thread-pickers, spindle whorls of bone, clay, and stone, and loom weights of fired clay.

Large Samples of soil from five contexts were passed through a 'flotation tank by Andrew Jones during the excavations: one from one of the Roman ditches, one from each of the Middle Saxon boundaries, one from Middle Saxon Well 2, and one from an 11th century ditch. The samples from each of the three periods contained a similar cereal composition: mainly bread wheat, with some oats, barley, peas, and beans.

The earliest boundary ditch also contained an enormous group of animal bones. Preliminary analysis by Roger Jones at the Department of the Environment Laboratory suggests a very odd picture: 600 pig, mostly heads, compared to 200 cattle. all bones. and to 100 sheep, all bones. Few of the bones show signs of butchery with only skinning-type marks present. The initial reaction was that the collection represents a meat production site. but the cattle all seemed to be elderly. This has led to a more detailed examination of age determination methods and the results arc still awaited.

The ditch also produced an extremely useful group of bird bones which have been examined by D Bramwell. The majority are domestic birds: 295 fowl, 228 geese, 35 ducks, 10 doves, and 1 peacock. The fowl are mostly adult presumably indicating egg production as their primary function. The wild birds point to nearby marsh, farmland, and a small amount of woodland

In spite of this considerable artefactual and ecofactual evidence for the middle Saxon settlement, interpretation is still difficult, simply because there is no wider context in which it can be viewed. The only other excavated middle Saxon settlement within a 70 miles radius of the site are Maxey, Northants, and North Elmham, Norfolk (Fig 39). North Elmham is claimed as an episcopal settlement at this period and consequently may not be comparable. Maxey is probably the best site for comparison, especially now that the uncertainties of dating have been clarified (two sherds believed to have been contemporary with the building have been dated by thermoluminescence to 780 and 830; Addyman & Whitwell 1970, 100). Addyman here also emphasized the problem of interpretation when the function of the buildings is unknown. He wrote: 'Were the building peasant dwellings in a vill or the specialized structures of something that might more accurately be described as an estate? Unfortunately little can be said about the maxey layout as only an estimated eighth of the settlement was excavated. The chief interest of Maxey lies in the poor quality of material possessions present. All the pottery was crude, handmade ware with no imported Ipswich ware or continental wares. This is especially surprising as a Middle Saxon site at caster, just seven miles away, produced considerable quantities of Ipswich (Hurst 1959, 18). Our interim conclusions must be that comparability of size and construction techniques of building may conceal wide variations in the wealth, status and function of settlements. Luxury goods were far more difficult to obtain than timber, specially in what seems to be a pre-market economy in which social status and the concept of gift exchange was undoubtedly of great importance. Until much more evidence of individual settlements is available we simply cannot interpret Bonhunt with any certainty.

There remains one piece of documentary evidence which is contemporary with the Middle Saxon settlement, the place-name, and this might cast some light on the interpretation of the material evidence. Unfortunately the earliest known form of the name is the *Banhunta* of Domesday Book—a bit later than ideally required. The second element *(hunta)* is of two possible origins:

  (i) from *OE funta* 'a spring', or
  (ii) from OE *hunte* which in a developed sense means 'a hunting district'

The first element *Ban* is also of two possible origins:

  (i) from OE (ge) *bann* a 'summons, proclamation, or command' or
  (ii) from the OE personal name *Bana*

Fig 39   Bonhunt in relation to other Early and Middle Saxon settlements mentioned in the text (Crown copyright reserved)
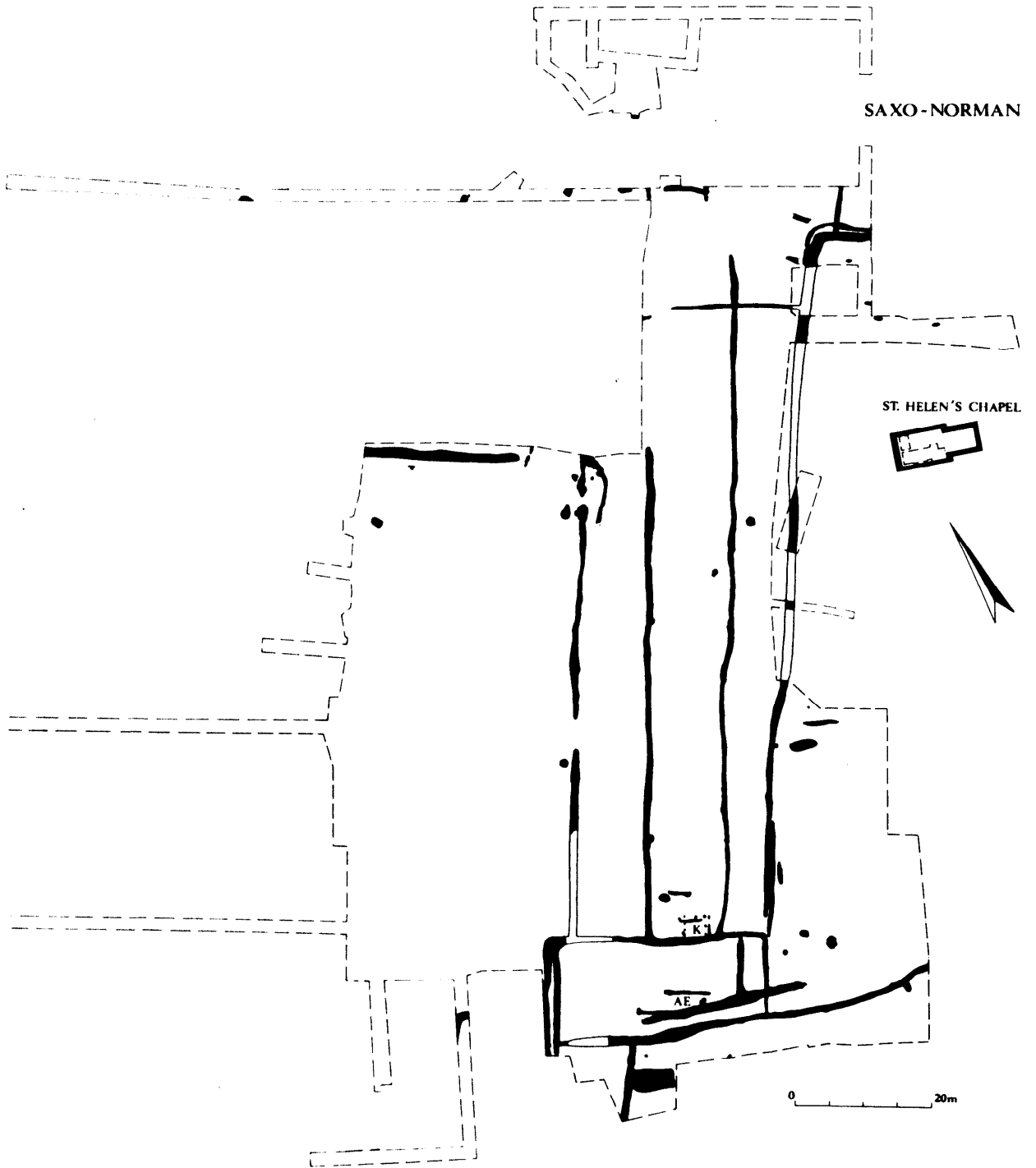
Fig 40 Plan of the 11th century features

12th-13th CENTURY

ST. HELEN'S CHAPEL

AF

AG

0 20 m
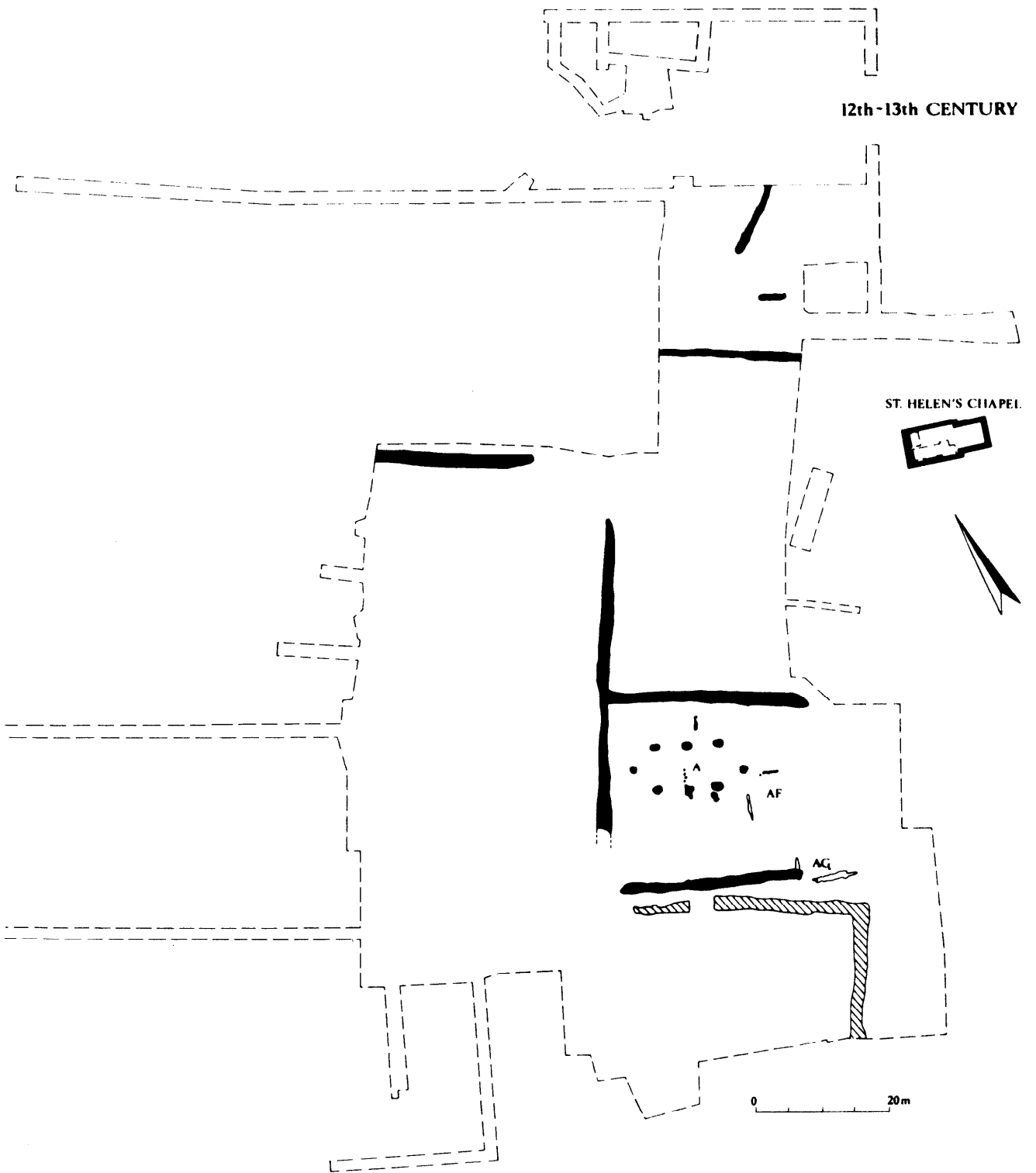
Fig 41 Plan of late 11th to 13th century features

The etymology is equivocal and three meanings are possible:

1) Bana's huntsmen or hunting district;
2) Bana's spring;
3) Huntsmen liable to be summoned

There is certainly a spring on the opposite side of the river to the settlement which makes 2 a distinct possibility. The other two both imply hunting as a specialist occupation of the settlement. Such settlements undoubtedly existed, as evidenced by Whitelock in *The beginnings of English society* (105):

> 'Not all men of the churl class were engaged in tilling the land and minding the flocks. It was men of this class who carried on the necessary crafts, often in the service of a lord. Asser mentions King Alfred's goldsmith and craftsmen of all kinds, his falconers, hawkers, and dog keepers. The king's huntsmen and foresters occur frequently in our records, and are sometimes rewarded for their services with estates of considerable size, as when in 987 Ethelred gave three hides and three perches at Westwood and Farnley to his huntsman Leofwine.'

If we are to entertain such a theory of huntsmen for Bonhunt, then could it also be connected in some way with royal patronage ? Staying with the place-names, is it mere coincidence that one of the neighbouring parishes on the south is Rickling, meaning people or followers of *Ricola,* queen of Essex in the late 6th century? We must push the evidence no further. There remains a possibility that Bonhunt was a specialized settlement providing hunting services, and if so was undoubtedly privileged.

The possibility also exists that the original estate boundaries are still more or less intact. The lands of Bonhunt, which form the east of Wicken Bonhunt parish, and which up until this century coincided with the lands of Bonhunt Farm, cover some 211 acres, including 10 acres of meadow. At Domesday it was entered as 2 hides, that is approximately 240 acres using Darby's estimate that one hide was 120 acres (Darby 1952), and included 10 acres of meadow. The conclusion must be that the 19th century farm could well be the topographical descendant of the Domesday manor and that this was probably the descendant of a two hide Middle Saxon estate, quite possibly, like Whitelock's example, a gift from the Crown for services rendered but in this case in the Essex Forest.

Following the Middle Saxon settlement there appears to be a break in occupation, at least in the area excavated, until the 11th century. There are, however, a few features of late Saxon date including a boundary slot which contained a knife, inlaid with gold, and believed to be 10th century (Musty *et al* 1973, 287).

In the 11th century the site was divided into four long plots with an enclosure to their south (Fig 40). One at least had a building at its extreme south although whether a house or garden shed is uncertain. Domesday records four bordars, probably agricultural labourers, as the total population, suggesting a demesne farm rather than a village, and there were no finds of note associated.

During the late 11th or early 12th century the site was completely reorganized (Fig 41). The new layout consisted of a large aisled hall surrounded by drainage ditches. Its interpretation as the manor house is supported by the finds from one of the surrounding ditches which had been abandoned in the early years of its occupation. They include a mercury-gilded pin (Musty *et al* 1973, 287), a simpler gold-headed bronze pin, and an iron prick spur. At this period also St Helen's Chapel was constructed, undoubtedly in the first place as the manorial chapel, but there

is a sizeable cemetery around it. The ditches around the aisled hall were not filled until the 13th century, giving two centuries of life for the building.

By 1237 Bonhunt had lost its identity and was included for the first time with Wicken for administration purposes, the two being known from then on as Wicken Bonhunt. In fact it would seem that from the 11th to 19th centuries Bonhunt was little more than a demesne farm with no population other than the 'famuli' needed to work it.

The latest episode in its history was the construction of the M11 motorway across its eastern margin in the winter of 1977. During excavation for a slip road skeletons of unknown date were found about 90 metres to the north-west of the chapel, emphasizing the problems of attempting to interpret a settlement with the evidence from only half of it.

Acknowledgements

References

Addyman, P V, 1964   A Dark Age settlement at Maxey, Northants, *Medieval Archaeol*, **8**, 20–73
———, 1972   The Anglo-Saxon house: a new review, in *Anglo-Saxon England* (ed P Clemoes), **1**, 273–307
———, & Leigh D, 1973   The Anglo-Saxon village at Chalton, Hampshire: second interim report, *Medieval Archaeol*, **17**, 1–25
———, & Whitwell, J B, 1970   Some Middle Saxon pottery types in Lincolnshire, *Antiq J*, **50**, 96–102
Clydesdale, A, 1975   *Bonhunt, Essex, the prehistoric occupations,* Undergraduate Dissertation, Univ Reading
Darby, H C, 1952   *The Domesday geography of eastern England*
Dunmore, S, Gray, V, Loader, T, & Wade, K, 1975   The origin and development of Ipswich: an interim report, *E Anglian Archaeol*, **1**, 57–67
Hurst, J G, 1959   Middle Saxon pottery, in Anglo-Saxon pottery: a symposium, *Medieval Archaeol*, **3**, 13–31
Musty, J, Wade, K, & Rogerson, A, 1973   A Viking pin and inlaid knife from Bonhunt Farm, Wicken Bonhunt, Essex, *Antiq J*, **53**, 287
Selkirk, A, & Selkirk, W (eds), 1976   Bishopstone, *Curr Archaeol*, **53**, 166–171
Wade-Martins, P, 1970   Excavations at North Elmham, 1969: an interim report, *Norfolk Archaeol*, **35**, 25–78
Webster, L E, & Cherry, J, 1976   Medieval Britain in 1975, *Medieval Archaeol*, **20**, 158–201
West, S E, 1969   The Anglo-Saxon village of West Stow: an interim report on the excavations 1965–8, *ibid*, **13**, 1–20
Wilson, D M, & Hurst, D G, 1968   Medieval Britain in 1967, *ibid*, **12**, 155–211
———, & ———, 1969   Medieval Britain in 1968, *ibid*, **13**, 230–87

Introduction

Essex is an 'Ancient Countryside' county (Rackham 1976); lacking a strong tradition of open-field agriculture, its landscape has been formed, not by sudden reorganization through Enclosure Acts, but by the gradual simplification of a medieval landscape which has lost some of its hedges, woods, and roads and nearly all its heathland. It is particularly rich in pre-1500 features which are still in use. It has few deserted villages—for villages in general have been few and mostly large—but many deserted farmsteads and moats.

The small towns, hamlets, greens and tyes, and isolated farms, the winding lanes and hollow-ways suddenly narrowing where houses have been built into them, the mixed hedges, and the woods are all abundantly mentioned in medieval court rolls and surveys. A stage in their simplification is recorded by 16th century maps (Emmison 1947) such as that of Earl's Colne in 1598 (ERO D/DSm P1)* which show nearly all the hedges, woods, and lanes now existing, plus many that have disappeared since 1600, plus the remains of some that had already gone before 1600. A later stage is shown in less detail by Chapman and André (1777), a map of the whole county at a time when over half the heathland still survived. Destruction has greatly increased since 1945 and is abundantly recorded in Ordnance maps and aerial photographs.

Trees and woods, and the coastal marshes, are the most stable part of the countryside; through them we come nearest to seeing what the medieval landscape looked like in use. Trees form part of four separate and independent traditions of land-use, the first three of which go back at least to Anglo-Saxon times (Rackham 1976).

1   *Woods:* Woods have been most commonly managed by *coppicing.* The majority of the trees, called the *underwood,* are cut down every few years and grow again from the stumps *or* stools to yield a permanent succession of crops of poles or *wood,* used for fuel and many domestic and agricultural purposes. Scattered among the underwood are *standard* or *timber* trees, left to stand for several rotations and eventually felled to produce *timber* suitable for structural uses. Coppicing uses the property that most native trees have of growing again after felling without artificial replanting. Coppice woods have to be protected from grazing animals which would eat the regrowth.
2   *Wood-pasture:* the art of growing trees in the presence of cattle, sheep, or deer; the traditional land-use of Royal Forests, deer-parks, and many commons.
3   *Non-woodland:* trees in hedges and fields and around farms and settlements. Many of these are *pollards,* trees cut like coppice stools to yield successive crops of wood, but at a height of from 6 to 15 ft above ground so that livestock cannot reach the young shoots.
4   *Plantations:* These differ from woods in that the trees are established by planting, are all of the same age and usually the same species, and are intended to die after felling and to be replaced by a new plantation.

* ERO = Essex Record Office

This paper is based partly on documentation and, because of the scarcity of earlier records, deals chiefly with the period 1220-1500. The last section reviews the evidence on how the landscape of this period came into being.

Farmland, hedges, and non-woodland trees

By 1250 at latest most of Essex was agricultural land. In the north-west there were classic open-field systems (eg at Saffron Walden (Cromarty 1966)), whose eventual enclosure produced the geometrical network of flimsy hawthorn hedges familiar in the enclosure-act country of the Midlands. In the rest of the county medieval records occasionally mention or imply small areas of common arable, but these had faded away almost entirely by 1500.

Hedged fields are often mentioned in surveys, as at Leaden Roding in 1439 (ERO D/DHf M19), where almost the entire parish consisted of fields 'enclosed with hedges and ditches'. Hedges and hedgerow trees appear in 14th and 15th century court rolls in connection with disputes between neighbours, obstruction of the highway, and unauthorized felling by tenants of the landlord's timber: examples include Hatfield Broadoak (ERO D/DK M1), Great Canfield (Eland 1949), the Donylands (ERO D/DHt M145), and Woodford (ERO D/DCy Ml). The hedges were mixed-at Hatfield a hedge containing 'oak, ash, maple, white thorn & black' was cut down in 1443—with numerous pollards and other hedgerow trees.

The many surviving medieval (or earlier) hedges in Essex are usually sinuous rather than straight, forming an irregular pattern not greatly dependent on drainage or other apparent practical considerations. Alongside roads they wander to and fro leaving a verge of varying width. Typically they are composed of a mixture of shrubs. The observation that the number of woody species in a 30 yard length equals the age of the hedge in centuries (Pollard *et al* 1974) has not been widely tested in Essex, but in general seems to be successful in distinguishing medieval from later hedges. Hedgerow counts at Debden (Essex County Council 1976), varying from one to twelve species, agree well with what is known of the agricultural history. Whether the rule can be extended beyond the medieval period is not known. Peculiarities of vegetation ought to be looked for in the regular grids of hedged fields in the Dengie peninsula, the Orsett-Ockendon area, and south of Braintree which are widely supposed to be of Roman origin. A frequent complication is the invasion of hedges by suckering elms, which can displace the other species and can convert a known medieval hedge into a hedge of pure elm (Rackham 1976).

The farmland trees most often documented are oak, elm, poplar, and willow. Sometimes they were not in hedges but in the middle of fields; a very few such, especially ancient oaks, survive. Poplars were the black poplar, *Populus nigra,* a very large and—then as now—always a non-woodland tree (Rackham 1976). It appears in the 14th and 15th centuries at Colchester (Moore 1897), Great Canfield (Eland 1949), Felsted (ERO D/DSp M37), Writtle (ERO D/DP M201), etc. This very distinctive and once familiar poplar is now

perpetuated by only a few individuals chiefly in the Hedingham area.

The elms of Essex are of particular historical interest. This most variable genus of trees reproduces chiefly by suckers; once introduced to a site a particular variety of elm maintains itself indefinitely without further human intervention. Richens (1967) classifies the village elms of Essex into nineteen groups of populations; he interprets their distribution patterns as the result of a series of fashions in elms, for planting round houses, beginning in the Iron Age. It would be rewarding to extend this study to the elms of other kinds of settlements, of deserted settlements, and of hedges of different ages.

Meadows—permanent grassland cut for hay, and sometimes divided into strips like open-field arable—occupied the floors of even the smallest valleys. This aspect of medieval Essex has almost entirely vanished; of recent years meadows have been ploughed, fertilized, neglected, or planted with cricket-bat willows, and their characteristic vegetation has disappeared. Only a handful of sites still have *Orchis morio, Dactylorhiza incarnata,* and other plants of old mown grassland.

Woods

Detailed systematic records of woods go back to the 13th century (eg the Ely Coucher Book of 1251 (Brit Mus Cott Claud C xi; Ely Diocesan Register (in Cambridge Univ Library) G3/2/27) which mentions Hadstock Wood). Woods were private property, with definite names and acreages, and were treated as a permanent resource. Coppicing was taken for granted: it was already a fully-developed art and changed little down the centuries, so that many woods in the early 20th century, and some even today, differ only in detail from what they were in the 13th. In medieval Essex, woods were coppiced, on average, every six to ten years; thereafter the interval between fellings gradually lengthened (Rackharn 1980a). In Essex most large estates had a wood, but there were exceptions, and transport both of timber and underwood-specially to London (Rackham 1978)—was an important part of the economy.

Medieval woods are still fairly numerous; large examples are Quendon Wood, Dunmow High Wood, and Chalkney Wood (Earl Colne). They can be the most persistent of all antiquities: in the 'lunar landscape' of the Grays Thurrock pits there are no less than seventeen groves which are shown on pre-1650 maps and which remain where almost all else has been dug away or built upon (Rackham 1980b).

Medieval woods usually have irregular sinuous or zigzag outlines, often with a change of level where the boundary crosses a slope. They are surrounded by strong rounded banks and ditches, typically 30 ft in total width and often bearing Pollard trees, by means of which alterations to the boundaries can be detected. The timber trees are rarely of great age but the coppice stools are often very large and old, up to 18 ft in diameter, the result of centuries of felling and regrowth of the same individual tree. Certain plants are strongly associated with ancient woodland, for instance oxlip *(Primula elatior),* woodland hawthorn *(Crataegus laevigata),* and wild service *(Sorbus totminalis)* (Rackham 1976; 1980a).

Essex has a great variety of native woodland, the commonest types being the ash-maple-hazel woods of the north-west, the hornbeam woods of the south, and the lime and elm woods of the mid-north. These can be shown to have independent histories going back at least to the Middle Ages. They have changed little in distribution except for a gradual increase of elm and more recently of birch (Rackham 1980a). Sweet-chestnut, common in east Essex, is a 'quasi-native' tree introduced probably by the Romans and persisting in some places into the Middle Ages: early Essex records include one of 1471 at Little Bentley (ERO D/DB M122) and an already ancient tree noted at Frating in 1706 (Evelyn 1706,223).

Oaks have formed the majority of timber trees in all kinds of woodland; genuine oakwoods, in which oak forms the underwood as well as the timber, are very local in Essex.

The most distinctive Essex woods are the lime-woods—of the small-leaved lime or pry tree, *Tilia cordata—which* are relicts from the wildwood of late Mesolithic times when this was probably the commonest tree (Birks *et al* 1975; Rackham 1976; 1980a). Pry is still abundant in the Sudbury-Leaden Roding-Colchester triangle; it is almost confined to ancient woods and does not spread into recent woodland. Place-names (eg *Lindsell,* from Anglo-Saxon *linde)* and documents show that this distribution has altered little in the last thousand years; there are some notable examples of long-term persistence in particular woods (Rackham 1980a).

Post-medieval woods can be of archaeological interest. Groves often cover moated sites, and if the grove is of elm it may be derived by suckering from elms planted by the inhabitants of the moat. An Essex speciality are the *plotland* woods of Laindon, Thundersley, etc, on land where 19th century urbanization has receded, where street after street of bungalows has rotted back into the ground and woods have sprung up on the site. These are an instructive parallel to the fate of deserted settlements in previous historical periods.

Essex possesses what may be, by at least 250 years, the earliest known artificial wood in England: Soane *alias* Bullock Wood near Colchester, which—on the medieval interpretation of its name as *boscus seminatus,* 'sown wood'—could have been deliberately established by the monks of St John's Abbey at some time before 1242 (Fisher 1951; Rackham 1980a). This doubtful exception apart, plantations are a post-1600 development which in Essex had little effect until the 20th century.

Something like half the medieval woods of Essex survived until 1945. In the last thirty years, about 30% by area has been destroyed, mainly by being converted to plantations or to arable land. Around Saffron Walden nearly all the ancient woods have been coniferized; losses have been much less in south Essex.

Wood-pasture

Trees and livestock can be combined in two classes of ways. *Compartmented* wood-pastures were coppiced in the ordinary way, but were subdivided by temporary fences so that the animals should not get at the young regrowth. In *uncompartmented* wood-pastures the animals had access at all times but the wood-producing trees were pollarded, not coppiced; the timber trees, being more difficult to replace, were felled less often than in woods.

Wood-pastures are less distinctive in their flowering plants than ancient woods, but have many trees more than 300 years old and can be a particular habitat of certain lichens and invertebrate animals which specialize in ancient trees.

Forests

Of the six Royal Forests of Essex, Writtle is obliquely mentioned in Domesday Book, while Epping, Hainault, Wintry, Hatfield Broadoak, and Kingswood (Colchester) were probably established in the early 12th century by

introducing fallow deer to what had previously been ordinary wood-pasture commons (Rackham 1978). We are here concerned with the physical Forests as recognizable on the ground; the Forest administration extended over a large and fluctuating part of the county, but left no archaeology and is not relevant to this paper.

A Forest usually provided: grazing for the king's deer; pasture for cattle, sheep, pigs, etc; wood; and timber. The structure, the social organization, and the relative importance of the four products varied widely from Forest to Forest.

Hatfield Forest (Rackham 1976) is the least altered medieval Forest in England. All the elements of its land-use survive, most of them in working order. Contemporary descriptions show rhat it has changed very little for at least 350 years. It is compartmented into coppices (originally seventeen, of which twelve are extant) and *plains* of grassland. The coppices were supposed to be fenced against livestock for the first half of the eighteen-year felling cycle. The plains were accessible to stock at all times and contain pollarded trees—some of great age—and tracts of scrub. Among the many other antiquities are a 17th century lodge and a rabbit-warren adapted from some earlier earthwork. The Forest has suffered many vicissitudes particularly in the last 60 years, but little of its fabric has been destroyed; the grazing is kept up and the coppicing has recently been revived.

In Writtle Forest a compartmentation system like that of Hatfield has been transferred to the very different soils and woodlands of south Essex. Most of this Forest also survives, though is not so well preserved as Hatfield; little remains of the plains. A lonely cottage still occupies the site of a hermitage founded by King Stephen, and is surrounded by the assart given to the hermit for his support.

Epping Forest (Rackham 1978) is possibly still the best-preserved non-compartmented Forest in England. It has changed little in area for several centuries, and the northern half has a characteristic wood-pasture shape-a straggling concave outline funnelling out into roads—almost unaltered for at least 400 years. It was divided into plains and tree-covered areas, but the boundaries of the plains were gradual and undefined. Pollarding was the almost universal tree management. The system was remarkably stable from at least the 12th to the 19th centuries. After the Epping Forest Act of 1878 the wood-cutting was terminated and the grazing has declined; the increasing shade resulting from these changes has proved very harmful to the Forest's vegetation and antiquities. The pollards have decreased in numbers; many plains have become overgrown; heather and small trees such as crabapple, both of them important in the Forest's history, are severely reduced.

Wintry Forest is a small satellite detached from Epping probably in the 13th century and similar in history to the main Forest.

Hainault Forest was largely destroyed under an enclosure act in 1851. It was uncompartmented and the surviving fragments arc better preserved than Epping.

Kingswood Forest was apparently compartmented, producing timber—some of it exported to Dover—and some wood. Some fragments probably survive in the woods north of Colchester.

Wooded commons

This form of wood-pasture was very widespread in medieval Essex. The largest and most highly organized example was the multi-parochial Tiptree Heath, partly compartmented and with elaborate byelaws governing woodcutting (Morant 1768, **2,** 141)—like a Forest without deer. Most wooded commons were uncompartmented, with grassland and Pollard trees.

Like all Essex commons, these were greatly diminished by late enclosure. The best surviving is probably Childerditch Common, preserved by being incorporated in the 18th century into Thorndon Park and latterly into the modern Thorndon Country Park. It has many surviving medieval trees including oaks of awesome size. Other examples are Gernon Bushes by Wintry Forest, quite recently still pollarded; Woodham Walter and Little Baddow Commons in the Danbury area, much overgrown but still recognizable; and Woodside Green by Hatfield Forest.

Parks

A park had much the same land-uses as a Forest but differed in having a perimeter fence to retain the deer and in being private land whose trees and grazing belonged (with rare exceptions) wholly to one owner.

At least 160 parks are recorded in Essex between 1086 and 1530 (this provisional total includes the records which Professor L M Cantor, Mr W H Liddell, Mr J Hatherly, and Mr J Hunter have kindly sent me). Compared with other counties this is a remarkably high density of parks, which is only partly explicable by the greater attention which Essex has received or by the more complete recording of Essex parks in royal archives because of their potential conflict with Forest Law. The heyday of emparking was between 1250 and 1330, at which time—assuming an average 200 acres per park—roughly 3% of the county was parks, a proportion which has never been exceeded since.

Parks usually contained at least some woodland. They could be compartmented, like the parks at Thaxted in 1393 with their named 'hewets' or coppices (Newton 1960), or uncompartmented, like those at Writtle in the 1390s with their Pollard beeches (ERO D/DP M200-1).

Surprisingly little is left of all these parks. Some reverted to being woodland, often named Park Wood. Norsey Wood (Billericay), for instance, is surrounded by an earthwork called the Deerbank which originated as a medieval park bank with its internal ditch designed (in contrast to a wood-bank) to make it more difficult for animals to get out (Rackham 1976, fig 20). Medieval parks sometimes remain as parks or (as at Skreens and Writtle) have only recently been destroyed. They should be looked for m 18th and 19th century landscape parks, although re-emparking was often on a different site.

Until about 1950 there survived considerable remams of what was probably the earliest recognizable park in England, Ongar Great Park; it can be traced back to 1045 (Reaney 1935), a time when only red deer were available. The vast perimeter, about 2 x 1 miles, was a rectangle with rounded corners for economy in fencing; ir interrupted the Roman road from London to Dunmow. It was apparently compartmented and contained several woods.

Heathland

Heathland (Latin *bruerium)* was much more important in medieval Essex than the exiguous surviving remains would suggest. It goes back well into Anglo-Saxon times, as shown by place-names such as *Hat*field (heath-field). Heaths were used as pasture; heather and furze were cut for fuel. Most heaths were common-land.

Many medieval heaths survived to be mapped by Chapman and André (1777)—a source which is more reliable for common-land than for woods. Together with heaths such as

that of Navestock which had already disappeared, they formed a vast network, interspersed with wood-pasture, which ramified almost continuously across Essex from Wanstead Flats in the extreme south-west to Dedham Heath in the extreme north-cast. They formed a considerable part of the Forests; the heaths of Epping Forest, for instance, are documented back to the 17th century (Rackham 1978).

Late enclosure destroyed the Essex heaths with singular thoroughness. Such fragments as were overlooked, eg Shenfield Common, fell into neglect and tumbled down to woodland. Even the heaths of Epping Forest, which are supposed to be protected by law, have largely disappeared. Almost all that remain are a scrap of Tiptree Heath and of Galleywood Common (Great Baddow), bits of the Danbury commons, and partly restored heathland in Hainault Forest.

Coastal marshes

Throughout the Middle Ages the Essex marshes were important as pasture for sheep and later for cattle, and from the 15th century in places as arable (Smith 1970). To protect them from rising sea-level they were gradually surrounded with earthen walls; the origins of this process are unknown, but the state had an increasing hand in it from 1280 onwards. Most of the enwalling, including about four-fifths of Foulness Island, had been completed by 1500; after the Middle Ages there were few large successful schemes other than that for Canvey Island in the 1620s (Cracknell 1959).

Parts of the Essex marshes are still unploughed and preserve a medieval landscape of sea-walls, access roads, ditches, and creeks, complete with the vegetation of old grassland and salt-marsh (Hunter *et al* 1974). Medieval marshland engineering—even immense works like the 'Roman Bank' round the Wash (Taylor & Hall 1977)—has attracted less attention than that of later centuries because of the lack of easily accessible documents. The successive walls that compartment Foulness Island have been mapped by Smith (1970); those elsewhere in Essex might repay study.

The making of the medieval landscape

Recent discoveries go far to discredit the traditional belief that much of Essex was wildwood, little touched by the hand of man, until well into the Middle Ages. Dr Rodwell and Mr Drury demonstrate clearly in this volume the great extent of Romano-British settlement, and presumably agriculture, in Essex, and the new evidence that much of the countryside, including even field boundaries, passed from Roman into Anglo-Saxon administration with little discontinuity.

Domesday Book

Domesday portrays Essex as a county about average for England in density of population and agriculture. In 1066 there were about 4000 ploughs (Darby 1971), which at the rough-and-ready rate of 120 acres to the plough would mean that half of the county was arable. The coastal marshes are referred to as pasture for many thousands of sheep, and there was also considerable inland meadow. Inland pasture is not recorded but may be inferred from the many thousands of livestock enumerated.

Unfortunately the woodland of Essex is recorded mainly in terms of feeding a specified number of swine. Of the recorded settlements, 76% possessed woodland. 635 woods were supposed to fatten a total of 94,000 pigs; only 23 woods were recorded by area. These figures cannot be made to yield a precise acreage, but, making the best of them, I argue (Rackham 1980a) that roughly 20% of Essex was then woodland. (The figure for Domesday England as a whole, based mainly on more explicit evidence, is 15%.) This leaves 30% for the proportion of Essex which was pasture, meadow, heath, gardens, and coastal marshes in 1086.

Anglo-Saxon evidence

The early charters of Essex are numerous but topographically disappointing. Perambulations of East or West Ham, dated 958 (Birch 1893, no 1037), and of Littlebury, dated 1004 (Blake 1962). tell us little about the Essex countryside. although they mention isolated thorn-trees and the Littlebury charter refers to an 'old hedge' *(ealdan gehæge).* The charters date the salt-marsh economy well back into the Anglo-Saxon period (Hart 1957).

The most characteristic element in Essex place-names is *-feld* (eg Bard*feld,* Finching*field);* in early names this appears to mean an open place in sight of woodland with which to contrast it: Names referring to clearings in woodland *(-ley, -hurst, -ridding)* are widely scattered but are few in comparison to Derbyshire or the Weald (Rackham 1980a):They give the impression that the Anglo-Saxon landscape was not. save in small areas round Thundersley and the Bromleys, formed by Saxons *ab initio* by making clearings in the wildwood; the *-leys* were an extension of a *feld* landscape that had already been cleared by someone else.

Conclusions

Documentary and field evidence, working backward from the 13th century, are now beginning to be linked up with excavation evidence working forward from Roman times. The number of known Roman villas and towns and Romano-British settlements, and the probability that many others are undiscovered, suggest—considering that an establishment such as the Rivenhall villa could hardly have been supported by less than 2000 acres of agriculture-that at least half of late Roman Essex was farmland. Settlements are known from nearly all soil types and were not confined to the better soils. Woods were almost certainly already named and managed; indeed the names *Chatham* and *Chatley* near Little Leighs, derived from Celtic *coit* = wood, commemorate actual woods of that period. The *-feld* names were probably given by the Saxons to the larger areas of Roman farmland. Already we can dimly see an arrangement of tracts of farmland separated by irregular ribbons of woodland and wood-pasture, of which traces can still be discerned in Chapman and André and whose last survivor in one piece is Epping Forest.

The Saxons soon overflowed the Roman farmland and, over many centuries, carved out *-ley* settlements in the wooded ribbons. By 1086 much of the Essex landscape as we know it had already taken shape, the chief differences being that there was considerably more wood-pasture than there was in the 13th century, Some of this wood-pasture may have been destroyed by the formation of further *leys,* as in the vicinity of Epping Forest (Rackham 1978). Some of it probably succumbed to excessive grazing, so that the wooded ribbons became the later heathland ribbons; names like Parslow Wood Common and Nazeing Wood Common appear to commemorate such a process.

The remains of the medieval landscape of Essex are the product of a complex evolution starting long before the Middle Ages. Hedges, for instance, include Roman-or even, as Mr Drury proposes in this volume, Iron Age—field boundaries; successive enlargements of Anglo-Saxon

leys or medieval assarts; early enclosures of open-field arable; the perimeters or compartments of former parks; or late enclosures of heathland.

References

Birch, W de G, 1893   *Cartularium Saxonicum*, **3**
Birks, H J B, Deacon, J, & Peglar, S, 1975   Pollen maps for the British Isles 5000 years ago, *Proc Roy Soc London*, **B189**, 87–105
Blake, E O, 1962   *Liber Eliensis*, Roy Hist Soc London
Chapman, J, & André, P, 1777   *A map of the county of Essex . . . taken in 1772, 73 & 1774*, republished by Essex Record Office 1970
Cracknell, B E, 1959   *Canvey: the history of a marshland community*
Cromarty, D, 1966   *The fields of Saffron Walden in 1400*, Essex Record Office
Darby, H C, 1971   *The Domesday geography of Eastern England*, 3 edn
Eland, G, 1949   *At the courts of Great Canfield, Essex*
Emmison, F G, 1947   *Catalogue of maps in the Essex Record Office 1566–1855*, Essex Record Office
Essex County Council, 1976   *Farming, wildlife and landscape: Essex exercise*
Evelyn, J, 1706   *Sylva, or a discourse of forest-trees*, 4 edn
Fisher, J L, 1951   `The Leger Book of St John's Abbey, Colchester, *Trans Essex Archaeol Soc*, n ser, **24**, 77–127
Hart, C R, 1957   *The early charters of Essex: the Norman period*
Hunter, J M, Hedges, J D, Roberts, G C S, & Ranson, C, 1974   *Essex landscape: historic features*, Essex County Council
Moore, S A, 1897   *Cartularium monasterii Sancti Johannis Baptiste de Colecestria*
Morant, P, 1768   *The history and antiquities of the county of Essex*
Newton, K, 1960   *Thaxted in the fourteenth century*, Essex Record Office Publication no **33**
Pollard, E, Hooper, M D, & Moore, N W, 1974   *Hedges*
Rackham, O, 1976   *Trees and woodland in the British landscape*
———, 1978   Archaeology and land-use in history, in *Epping Forest—the natural aspect?* (ed D Corke), Essex Field Club No **2**, forthcoming
———, 1980a   *Ancient woodlands: their history, vegetation and uses*, forthcoming
———, 1980b   Woodlands and their management in South Essex, in *Conservation and land management in South Essex* (ed J Mac-Connell), forthcoming
Reaney, P H, 1935   *Place-names of Essex*
Richens, R H, 1967   Studies on *Ulmus*. VII. Essex elms, *Forestry*, **40**, 184–206
Smith, J R, 1970   *Foulness: a history of an Essex island parish*, Essex Record Office
Taylor, A, & Hall, D, 1977   'Roman Bank': a medieval sea-wall, *Proc Cambridge Antiq Soc*, **67**, 63–8

It will not be possible to confine either the works of carpentry here cited, nor their implications with regard to the historical development of technology, to the county of Essex—as has been specifically requested and the given title implies. The majority of buildings mentioned, however, are within the boundaries of Essex. The principal objective of this paper will be to establish a concept of an 'archaism' that is far removed from the related concept of 'crudity' and an absence of skills that has hitherto played an important part in the hypothetical reconstructions that archaeologists have formulated from the sparse evidence of many Saxon, or earlier, building sites.

In a recent paper (Møller 1963, 17) the author 'raises the question of when it was that craftsmanship was developed to such an extent that the supporting skeleton of the house could be structurally assembled professionally, with mortise and tenon and dovetail joints. On the basis of a couple of finds (nr Fjand) it can be deduced that the possibilities for a really highly developed timber-framed structure were *present at the period when our historical dating begins.'* Soon after this a statement was published (Rahtz & Sheridan 1971, 168) to the effect that: 'All the *elaborate* jointing was done by timber pegs; it is interesting to see this *positive evidence of the Saxon skill in erecting large wooden structures.* . . . There is nothing to give a precise date to the Tamworth mill in the absence of pottery, but four radiocarbon determinations from the mill all lie within the 8th century (755 ± 90, 730 ± 100, 788 ± 100, 710 ± 110 AD: by Professor Shotton at Birmingham).' It is surprising that, despite the abundant evidence for a high level of craftsmanship in the majority of human construction or craft media, including even decorative glassware, archaeological interpretations of the evidence that posthole sites provide appear to persist in crudeness, which is not in itself any form of archaism. This fact probably derives from the anomaly of archaeologists attempting to think what they imagine craftsmen might have thought.

The whole question—of hypothetically determining what the implications of such evidence as a razed building site can afford-is nicely summarized in a recent publication on Saxon literature (Alexander 1975, 91). 'The effect of being asked a riddle by someone who lived eleven hundred years ago is already disconcerting; but not to know the answer is frankly embarrassing . . .'. On page 30 of the same work an actual Saxon riddle is given in modern English:

I am fire-fretted and I flirt with wind
and my limbs are light-freighted and I am lapped in flame
and I am storm-stacked and I strain to fly
and I am a grove leaf-bearing and a glowing ember . . .

The author suggests that the answer to this riddle may be—a beam of wood. The same work elsewhere (p 91) states that: 'People in Anglo-Saxon times, living uncomfortably close to the natural world, were well aware that though creation is inarticulate it is animate, and that every created thing, every *wiht,* had its own personality.' It is here contended that all prerequisites of a highly refined and developed 'sense of material' were obviously present in Anglo-Saxon England and, in view of this, in addition to an abundance of well known artefacts (such as St Radigund's Lectern and King Alfred's Jewel), it is evident that the archaeologist should be seeking an analogous solution, which acknowledges specialized skills in carpentered building, whether 'earthfast' or not. That this has not always been the object of hypothetical reconstructions such as that at West Stow, Suffolk, will be generally admitted, and some alternative approach is suggested as necessary.

The Saxon works of carpentry so far known in Essex are few in number but widely disparate in relation to one another, and in one instance, Greensted-juxta-Ongar Church, to those from different parts of England. With this exceptional building, the log-walled church at Greensted near Ongar, it seems appropriate to begin, and a current reappraisal of the available documentary evidence has in no way clarified the writer's view as to its chronological place among the other Saxon structures examined. The earliest document—a drawing of the building as seen in 1748—and the published descriptions of the restoration of 1848-9 (Ray 1869, 8-13) indicate that this was then a ground-silled building. The possibility of earlier earthfastness, together with the probability of various dates suggested for its original construction, are questions that have not been resolved to the writer's satisfaction. A case can, however, be made for an original state of earthfastness and a rebuilding on ground-sills in ancient times (see addendum), with regard to which the cross-sections drawn as Fig 42A must be assessed as possible above-ground lengths of what were circular posts embedded in the ground. The main support of this suggestion has been published (Hewett 1977, 183) and the evidence survives in Winchester Cathedral and Roydon Church, the latter in Essex. The most primitive feature of Greensted Church, as it had survived until 1748, was the retention of the curvature of the logs on their external surfaces. The logs forming the west wall reach the height of the western gable, and for this reason are 'scarfed' in a manner that cannot be ascertained since only square abutting ends can be seen; and this fact adds to the number of sharp edge tools that must have been available during the (uncertain) period of this construction. It is possible that the ground-silling could have been executed during the rebuilding in the reign of Henry VII (1485–1509) since a refinement of the same type of construction was used at the Trig Lane waterfront in *c* 1375-85 in the capital.

Before the times of Edgar the Peaceable, *c* AD 960, it would appear that such labour-saving devices as the retention of rounded surfaces on timber components had fallen out of use, at least insofar as buildings for religious uses were concerned; cf Sompting, Sussex, and Earls Barton, Northants (Hewett 1979).

The floor joists of the tower of the Holy Trinity Church at Colchester, Essex, were squared *c* 1000 AD and squared to Roman Imperial measurements. They, like the timbers of Sompting's Rhenish Helm, were also numbered in Roman numerals, and the only flaw in the high standard of workmanship lies in what may be interpreted as either a poor provision of raw material (oak timber) or a poor standard of selection from the available resources. It seems probable, in view of the relatively turbulent times, that only 'wild' oaks were available, and these may have been felled within the shortest possible distance from the building sites to minimize timber haulage over what may have been awkward terrain for this process.

The carpentry at St Botolph's, Hadstock in north Essex is again in strong contrast since it shows that wide 'quartered' and seasoned oak planks were available by AD 1015, a probable date for the construction (Hart 1968; Rodwell 1975). Even in this later context some archaisms persist, but these only constitute archaism if considered from contemporary viewpoints; to earlier craftsmen they may well have expressed a sense of material that was sensitive to the respective merits of timber used partly circular, a grown, or cleft of ripped ass flat or squared plank or baulk. As has been emphasized elsewhere (Hewett 1977, 183) the use of three-quarter circular timber for the ledges of the Hadstock door derives from shipwrighting-as does the use of iron roves and clenches for the fastenings, These details are drawn as Fig 42B. The mid-wall window frames at Hadstock are the only examples yet known to survive of elaborate carpentered construction for this purpose, the others being simply a plank pierced for the opening. These are works of a peculiar quality in view of the 8-centered section of the pegs used to transfix the stub-tenons at their tops and bases (Hewett 1979).

The implications of the Anglo-Saxon works examined to date are twofold and far-reaching. It appears to the writer, on the strength of this minimal evidence alone, that during the period *c* 750 until 1066 the Anglo-Saxons were formulating a craft tradition, and that this process was accelerating rapidly towards the close of the period. A reassessment of the overall development of carpentry in England is now required, and this tends to imply that the Norman Conquest was not directly responsible for all aspects of our earliest carpentry techniques and traditions. That the Conquest brought with it the superimposition upon Saxon England of some advances and refinements of craft technique may yet be a fact, but it seems more likely that a more significant aspect was the injection of an ability to design, organize, and fund buildings on a vastly increased scale. Buildings like those which the poet of 'The ruin' (Alexander 1975, 30) described as 'the work of the Giants' were undertaken during the period—or phenomenon-known as the 'Saxon overlap' (Harvey 1971, 21) by Saxon craftsmen working to Norman specifications, and the surviving traces of carpentry attributable to these times
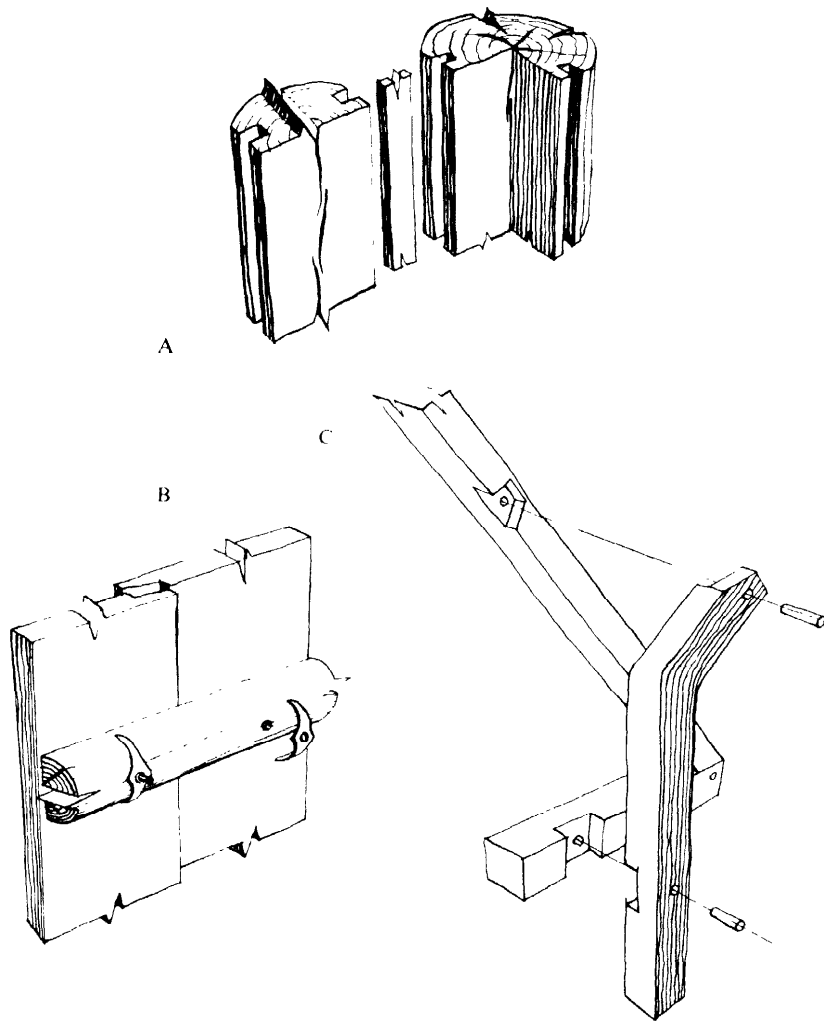
Fig 42 A Cross-section of circular posts, Greensted-juxta-Ongar church; B Detail of the door, Hadstock church; C Squint lap-joints, Sompting church, Sussex

show clearly the subtle distinction between what were by then traditional Saxon techniques and the technological advances introduced from the continent.

The origin of the notched lap-joint was a puzzle until Sompting's spire was properly examined in 1977. This unique survival incorporates over seven examples of squint lap-joints that offer no objection to longitudinal withdrawal; four of these are in their original situations, and one is drawn as Fig 42C. It is apparent that these were used in a *shearing* context and that they have, for this reason, proved adequate. Furthermore, the entire framing at Sompting was designed mainly in terms of resistance to compressions resulting from the dead weights of the structural components. The Normans when implementing their building programme introduced wider spans, which possibly led to the concept of the base-tied roof, this in turn postulated the design of un-withdrawable carpenters' joints. At this point in technology, the Norman appears to have added the notch (derivation old French *oche)* to the Saxon lap-joint, but this is a tentative supposition at present.

One technique that carried over the period of the 'overlap' and persisted for some time afterwards was the use of compressed abutments that were face-pegged and relied solely upon compression, without recourse to any degree of penetration or integration. The prime example of this appears to be the junction of the Sompting spiremast and its four rising-braces (Hewett 1979). The church of St Martin of Tours at Chipping Ongar in Essex is dated to the last quarter of the 11th century (that is within the accepted duration of the Saxon overlap) and among the four different types of roof-frame covering its chancel there are seven rafter couples which are demonstrably the oldest. These, it is proposed, are likely to be original to the first build and date of dedication, *c* AD 1075. The same technique is recorded by Deneux (Hewett 1968/9, 98) and given a date range between *c* 1190- *c* 1250 with regard to the area of France between Dunkirk and the Loire. It has also been recorded by Reuter in West Germany where it is ascribed to the opening of the 13th century.

Any consideration of the implications of these facts must, obviously, reach forward into the centuries during which our earliest timber framed buildings that are datable were built. This process. since in point of fact it has been made possible only by such researches as reached backward in the time scale, helps to bridge the 'gap' (as the writer has envisaged it in the past) between fully-framed timber buildings that are independent of the soil on which they stand and such earth-embedded buildings as the excavating archaeologists have long been studying. An intermediate stage of building technique has now been fully established by partial excavation (undertaken by A V B Gibson in collaboration with the writer) and its probable duration seems to be between *c* AD 1000 and soon after *c* 1190. This process is illustrated by two buildings in Essex: the Granary at Falconer's Hall, Good Easter, and the barn at Paul's Hall, Belchamp St Paul. A full account of these has been prepared for publication (Hewett forthcoming) and the facts above will be stated therein. A cross-section that hypothetically completes the oldest frame of the Belchamp barn is given as Fig 43A, in which all chained lines indicate the only reasonable interpretation of the definite evidence of the carpentry. At this point in time *(c* AD 1000) it is proposed that earthfastness was the principal aid to the rearing process of framed and aisled timber buildings. The raking-shores, it is suggested, were first driven so far into the natural subsoil beneath the levelled site as to be entirely rigid; their upper ends were then cut to form chase-tenons against and onto which the previously carpentered posts

were reared and secured by pegging of great strength and wide diameters. The feet of-these posts-were then earth-packed for a depth of 5 to 6 inches and the top of this second surface was prepared as flooring by some such means as lime-binding, pitch-coating, or ox-blooding. For the last suggestion there is little evidence but. for the present. it remains tenable since the floor of the Grange Barn of *c* 1130-*c* 1144 at Coggeshall, Essex, retains a pitch-coating in parts. The ultimate stability of frames reared in this way was given by the highly elaborate bracing systems used. which included long passing-braces and the use of two, or possibly three, braces in the transverse angles. The foot of the one surviving original post at this barn stands upon a lime-cement pad, set in an indentation of the natural subsoil.

The next step is illustrated by the building at Falconer's Hall, and this one is datable to *c* 1190 by reason of the very finely carved capitals of its six surviving posts, which have the 'cubical capital' (Clapham 1964), which has a cleanly cut carinated fillet above its bell (Hewett forthcoming). In this instance Gibson excavated the substantial remains of a sill-pad of oak that was accurately fitted onto the post's foot by a mortise and tenon joint. This building is given as Fig 43B, in which again the postulates of the evidence are shown in chained line. It is admitted that excavation inside and outside of the intruded brick footings of the later walls of both these buildings did not produce any evidence to support this supposition—but no conclusion can be based on the excavation of a single, altered, post that is merely one of an extensive range. Further detailed work by excavators is necessary here.

Another technological 'overlap' has herein been already passed, because the barn of the Cistercian Coggeshall Abbey had its posts standing on stone stylobates at a date somewhere between *c* 1130 and *c* 1147 when the great church was consecrated. A section of the oldest frame of this barn is given as Fig 43C, and it indicates the earliest framing known to the writer that obviously implies the concept of timber building that is fully independent of its site inasmuch as the bracing evidence is addressed to the fabric itself—no shoring existed and, therefore, no site penetration was ever needed.

In view of the limitations of space, this matter cannot be pursued to its logical conclusion, and it is appropriate to conclude with a list of carpenter's joints now known to have Saxon, or Saxo-Norman, origins.

1   Lap-dovetail (at Sompting)
2   Mortises and tenons. both 'through' and 'stub' but all unrefined (widespread, numerous buildings)
3   Squint lap-joints, withdrawable but inset and flush (Sompting)
4   Bridle-joint   (Sompting)
5   Cogged, clasping, joints (Sompting)
6   Splayed scarfs with under-squint butts (Sompting)
7   Chase-tenons (Sompting)
8   Rebates, both square and splayed (Hadstock)
9   Tongue and groove, or fillet (Greensted-juxta-Ongar)
10   Fox-wedged pegs (Westminster Abbey)
11   Butt-notching (Chipping Ongar, Sompting derivation)
12   In-pitch wall-plating (Sompting, Canterbury, St Martin, and Harlowbury Chapel)
13   Arris trenches (Sompting)
14   Cross-halving (Sompting)
15   Hewn outsets (Sompting)

In addition to this considerable 'vocabulary' of timber-
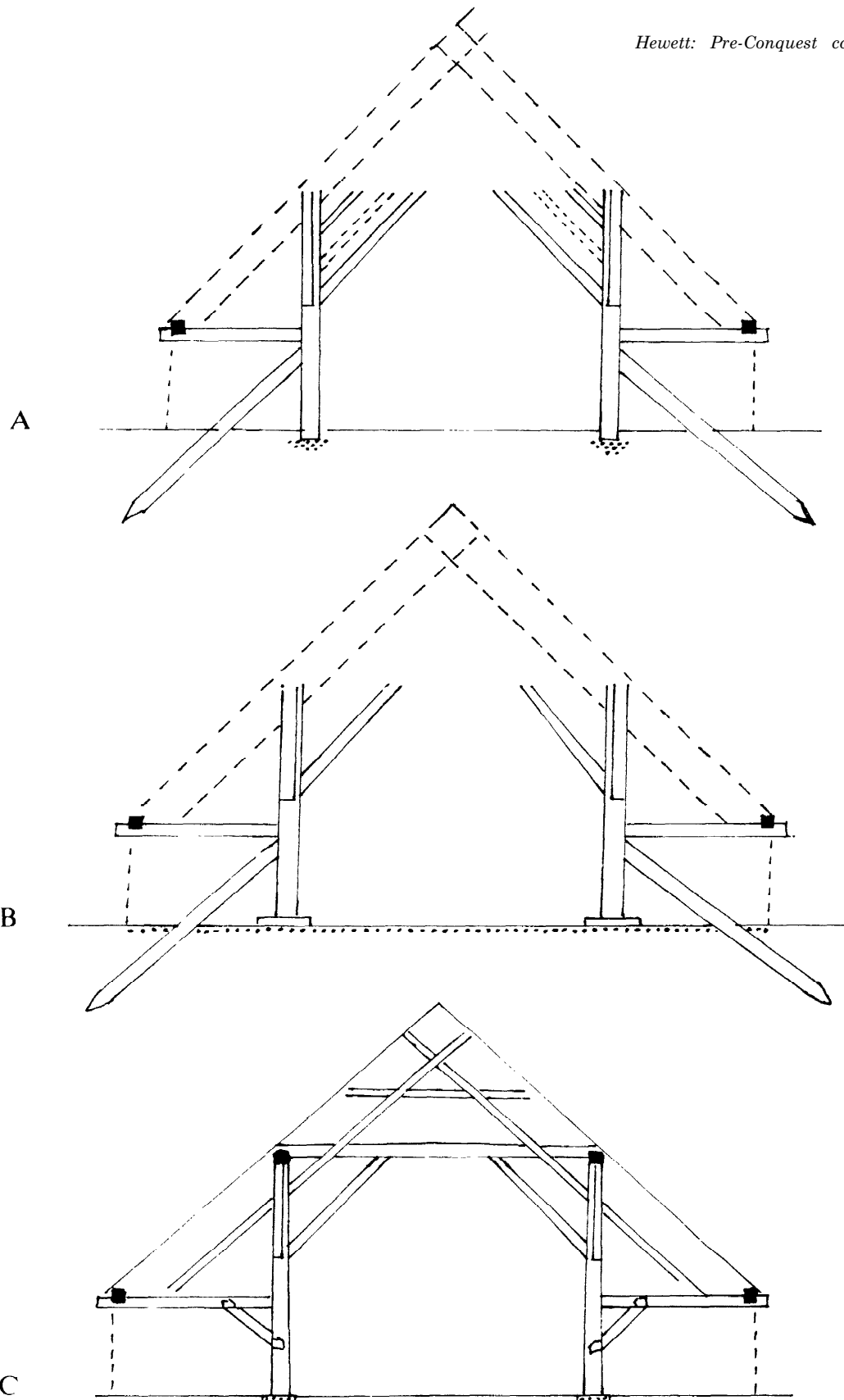
Fig 43   A Hypothetical cross-section of the oldest frame of the Belchamp barn; B Hypothetical cross-section of Falconer's Hall; C Cross-section of the Coggeshall Abbey barn

jointing techniques the following structural concepts may be inferred:

1   The use of 'wild' timber, indicating but little woodland management prior to the reign of King Canute

2   Fine quartered oak plank, cleft and not sawn; from at least *c* AD 1015

3   Steam, or heat bending, Hadstock *c* AD 1015 and earlier

4   The lateral and longitudinal stability of timber frames concentrated at tie-beam level, due to the lack of basal stability or permanence, owing to earthfastness at *outer* walls

5   Wall-plates in pitch of roofs designed to 'clasp' their spans exerting neither inward nor outward thrusts

6   The use of wickerwork for the shuttering of mortar-set rubble

7   The use of cleft and triangular timbers as put-logs (Elmham 'minster')

8   The angling outward of put-logs at returns, thereby avoiding the need for corner-poles in scaffolding (tower of Little Bardfield Church)

9   Bonding-timbers within rubble masonry (Sompting rower)

Addendum

Letter to writer dated April 22, 1978, from Dr Harold Taylor, enclosing 'Appendix I: other pre-Norman timber churches in England' wherein, p 23, with regard to the Hope-Taylor excavation of Greensted-juxta-Ongar's chancel, it is stated that:

'When this early feature in the northern trench had been cleared of its filling its nature became clear: it was the surviving deepest part of a trench that had been cut for a timber wall; there was no trace of mortar, stone, or brick; instead, the former presence in the virgin clay of at least two (or probably three) closely set vertical timbers was testified by the series of shallow depressions left after the removal of the grey-brown sandy soil and humus.'

References

Alexander, M (translator), 1975   *The earliest English poems*
Clapham, A W, 1964   *English Romanesque architecture after the Conquest*
Hart, C, 1968   The Site of Assandun, *Hist Stud*, **1**, 1–12
Harvey, J H, 1971   *The master builders*
Hewett, C A, 1968/9   Aisled timber halls and related buildings, chiefly in Essex, *Trans Ancient Monuments Soc*, n ser, **16**, 45–99
——, 1977   Understanding standing buildings, *World Archaeol*, **9**, 2, 174–84
——, 1979   Anglo-Saxon carpentry, in *Anglo-Saxon England*, **7**, 205–29
——, forthcoming   Evidence for the transition from earthfast posts to the use of sill-mounted posts, *Medieval Archaeol*
Møller, E, 1963   *Traebingskunsten*, København
Rahtz, P, & Sheridan, K, 1971   Tamworth, *Curr Archaeol*, **29**, 164–8
Ray, P W, 1869   *The history of Greensted Church*
Reuter, R, 1968   Das Alter des Mittelschiffdachstuhlis der ehemaligen Benedikiner—Klasterkviche Mittelzell auf der Insel Reichenau/Bodensee, *Derkmalpflege*, M5078 F
Rodwell, W J, 1975   Hadstock, *Curr Archaeol*, **47**, 375–81

The first problem facing any consideration of medieval towns is the problem of terms, of what constitutes a town in that period.[1] This is a problem that cannot be solved by reference to solely archaeological (Alexander 1975) or solely historical criteria (Beresford & Finberg 1971) and there is not room in a short summary paper to set out and justify a complete list of suitable criteria (see Heighway 1972). The essential factors that identify a medieval urban settlement are the possession of a market, and a population that owns little land in relation to its wealth and makes a living from non-agricultural pursuits. On this basis 24 communities in Essex achieved urban status at some time in the Middle Ages. They are shown on Fig 44.

Colchester was, in the medieval period as in the Roman, the most important town in Essex; its pre-eminence is demonstrated by the way in which its nearest adjacent markets were sited at least ten miles away (cf Bury St Edmunds; Carr 1975, 51 and fig 27). The exception around Colchester is Elmstead Market, which does not seem to have been a success. However, to avoid duplication with Philip Crummy's paper, pp 76-81, consideration of its problems is omitted from this discussion.[2]

Essex was as well served by Roman towns as any other part of the south-east of England (Rodwell, W J, 1975) but none of these urban communities survived beyond the 5th century, except Colchester. Indeed, when the medieval revival of trade along the still used Roman roads encouraged the return of settlement at junctions in the network, at such places as Great Dunmow, Kelvedon, and Braintree, the medieval settlement is deliberately placed adjacent to, but not over, the Roman settlement and the roads accordingly diverted. This does not seem to have been because the Roman town was in use as a quarry for building materials; at Great Dunmow, the most striking example of the phenomenon, excavations have not provided any indications of Roman masonry structures. The cause of this constraint must therefore be a matter for speculation.

Urban life returned to Essex in the early 10th century with the campaigns of Edward the Elder against the Danes. In 912 a combined operation by land and sea brought him to Maldon, which formed his army's base while he built a new *burh* at Witham (Fig 45), not far from the main road between London and Colchester (Plummer 1892, *sub anno* 913). The main line of the former Eastern Counties Railway was built in the 19th century through the middle of earthworks that had been described by 18th century antiquaries as those of the *burh* (eg Strutt 1774-5, **1,** 25) but sufficient survived for later commentators to suggest two concentric earthwork defences (eg Spurrell 1887). Excavations in 1933-5 (Cottrill 1934), 1969 (Wilson & Hurst 1970, 156), and 1971 (Webster & Cherry 1972, 154) have shown that the inner circuit is an Iron Age hillfort, whilst the outer are the burghal earthworks of Edward the Elder and are not completely concentric but utilize the hillfort defences on the western side, forming an enclosure of approximately 0·1 square kilometres. The interior does not seem to have been occupied (Davison *et al* forthcoming). The church and a small triangular market place (Chipping Hill, used until its replacement by the new town of *Wulvesford* in the 13th century) are sited immediately to the north of the earthworks.

A similar situation is found at Maldon, established as a *burh* in 919 (Plummer 1892, *sub anno* 920) on the resumption of campaigning in the east. Antiquarian description are again the best source for an earthwork, now almost invisible, that has been assumed to be the *burh* (Strutt 1774-5). Outside the earthwork to the east are a small triangular market place and All Saints' church, whose parish includes just the market place, earthworks, and part of the High Street that runs east from the market place along the ridge down to the harbour. Excavation in the High Street some distance to the east of the market place has shown two phases of pre-Conquest occupation starting in the early 10th century, whilst trial trenches inside the earthwork have not discovered any occupation of that period (Webster & Cherry 1973, 140-1).

The evidence suggests that Witham and Maldon should not be thought of as *burhs* of the Wessex types as described by Radford (1970). They were, however, more than mere forst and it can be suggested that they form a new class, typified by an undefended market place and church lying immediately outside one of the gates of a fort. Though there do not seem to be any exact parallels, the separation but close physical association of the defence and trade functions of an Anglo-Saxon *burh* can be seen in the relationship between Chisbury (the *Cyssanbyrig* of the Burghal Hidage), a reused Iron Age hillfort. and Great Bedwyn, the site of a borough and mint (Brooks 1964).

Two other communities showed aspirations to urban status before the Conquest: Horndon-on-the-Hill and Newport. Horndon's claim rests on the creation there of a mint in the early 11th century. Newport, whose name means 'new market', was so called in Domesday Book. Its market was transferred in 1144 to Saffron Walden. Its small parish appears to be imposed on the normal Cam valley pattern in which each community has its share of valley bottom, valley slope, and boulder clay plateau, for it hardly impinges on the valley slope. Taken together, it would seem that Newport is a new community of the late Saxon period. There are no obvious signs of planning, but both it and Horndon share with Maldon and Witham the small triangular market place immediately adjacent to the church. Only at Witham has this market area escaped infilling.

The growth of towns in post-Conquest England is usually presented as occurring either by 'planted' or organic methods. In this crude from, the distinction is meaningless. In Essex, while some new towns were planted on entirely new sites, others were placed adjacent to existing communites. The Bishop of London founded both Chelmsford, planted *de novo,* and Braintree, planned alongside one of the foci of a multi-focal settlement, in the same year, 1199. The bishop did not consider the two towns in a different light and nor should we: he was in each case, like most large medieval land-holder, using his land to its greatest potential in the way he saw fit. The true organic town, where commercial pressures produced a town with little semblance of planning, is rare in Essex; Great Dunmow and Coggeshall are the principal examples. In both cases, the original village lay away from the Roman Stane Street and migrated towards it to profit from the increase in trade in the early 13th century.

TOWNS AND RURAL MARKETS IN ESSEX

● TOWN
▲ RURAL MARKET

HEIGHTS OF LAND IN FEET

0   100   200   300   400
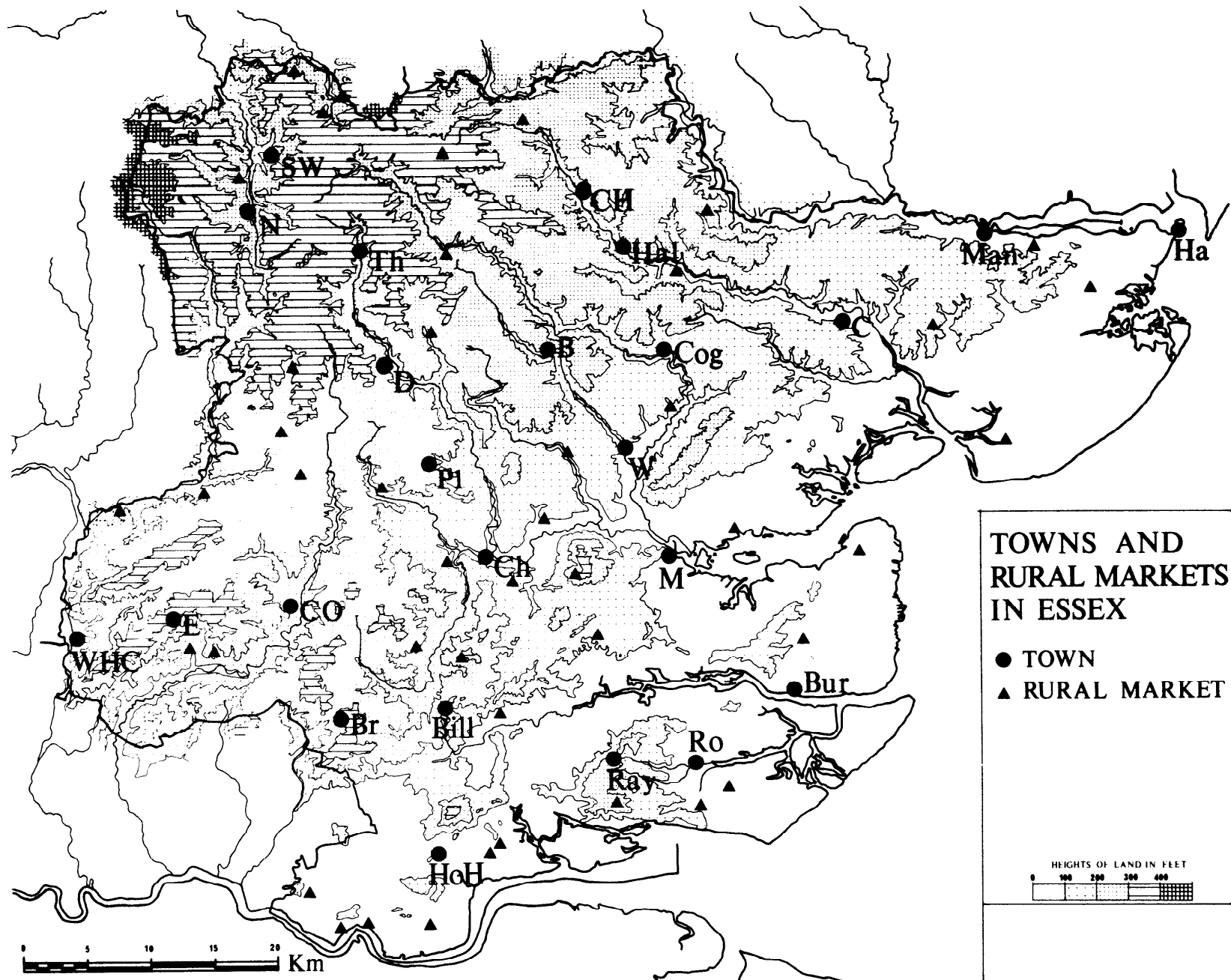
Fig 44   Towns and rural markets in Essex: B: Braintree; Bill: Billericay; BT: Brentwood; Bur: Burnham-on-Crouch; C: Colchester; Ch: Chelmsford; Cog: Coggeshall; CH: Castle Hedingham; CO: Chipping Ongar; D: Great Dunmow; E: Epping; Ha: Harwich; Hal: Halstead; HoH: Horndon-on-the-Hill; M: Maldon; Man: Manningtree; N: Newport; Pl: Pleshey; Ray: Rayleigh; Ro: Rochford; SW: Saffron Walden; Th: Thaxted; W: Witham; WHC: Waltham Holy Cross(Crown copyright resewed)

Epping

Saffron
Walden

TOWN
BAILEY
DEFENCES

ENCLOSURE

THIRTEENTH CENTURY

Witham

BURGHAL DEFENCES

HILL-FORT
DEFENCES

B   U   R   H

Chelmsford

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N

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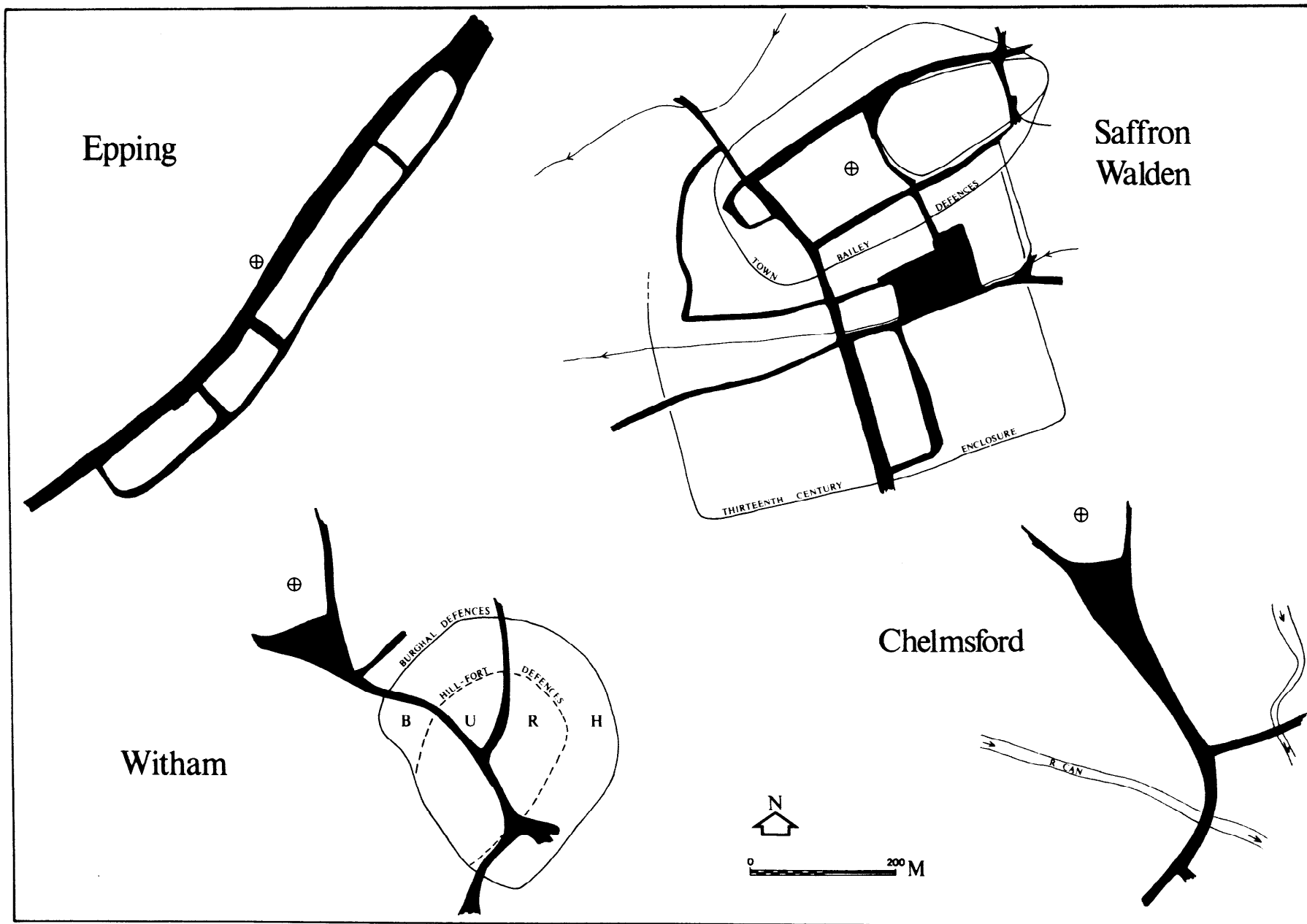
Fig 45   Essex towns: selected plans

The first post-Conquest towns in Essex were those established adjacent to their castles by the leading lay land-holders of the 12th century. The most well known is Pleshey where the bank and ditch enclosing the town bailey survive as an almost complete circuit to the north of the even better preserved castle earthworks. The town and castle are not contemporary, however. The castle's origins must be sought in the middle of the 12th century (Williams 1977); the hypothesis that the semicircular Back Lane marks the line of an earlier northern bailey has been confirmed by recent observations in construction trenches (Couchman 1976). The town probably dates from the reconstruction of the castle in the 1180s by William de Mandeville when the de Mandevilles moved their principal residence from Saffron Walden to Pleshey, a move which explains the creation of a town in such a commercially unpropitious location. At Saffron Walden (Fig 45) the de Mandevilles had, for at least 50 years before Pleshey was built, benefited from the revenues of the flourishing town they had created there. This was originally within a now invisible town bailey to the west of the castle. The shape of this bailey is reflected in the street pattern in the north of the town and the alignment of the parish church. Its existence was confirmed by an excavation in 1975 (Webster & Cherry 1976, 184) which showed its ditch to be 4.5 m below present ground level. The Empress Matilda enabled Geoffrey de Mandeville to bring Newport's market to Saffron Walden in 1144 as part of a deal in which he changed sides in her civil war, a sign of the value he placed on the market. The present market place, which contains fossilized market rows, lies at the probable south gate of the original town and castle and reflects the secondary arrival of the market in the town's topography. A final and unique phase of development at Saffron Walden came in the 13th century with the enclosure of a large area to the south of the original town and castle, including the market place, by an earth bank and ditch (Ravetz & Spencer 1961; Webster & Cherry 1973, 141). This was associated with the laying out of new streets, but as much of the area enclosed reverted to farmland (Ravetz & Spencer 1961, 10), the extension cannot be counted a success.

The de Lucys at Ongar enclosed their town in a similar fashion to the de Mandevilles. There is no exact date for the establishment of either castle or town; the church is however almost entirely of the late 11th century (RCHM 1921, **2,** 51). There is no reason on topographical grounds for supposing it not contemporary with the town, which might then be the precursor of Saffron Walden and Pleshey and a contemporary of such other castle towns as Barnard's Castle (Co Durham) or Ludlow (Salop). Rayleigh is another Essex castle town with no known foundation date. Next to Suen of Essex's extremely early castle, it might be equally early. It is not enclosed and its medieval topography is not entirely clear, but no excavation took place before the almost complete rebuilding of the town's High 'Street during the last decade and the opportunity to answer some of the town's problems is now lost.

The town of Castle Hedingham, founded by the de Veres in the late 12th century, lies adjacent to their castle, and though because of this it falls into the category of castle towns, it has, in its Chelmsford-type market place, more in common with the unenclosed market dominated towns of the second phase of town development in Essex. In the short period between 1180 and 1260 half of Essex's medieval towns were founded; commercial considerations and not seigneurial were the chief factors in location. Chelmsford (Fig 45), as noted above, was founded by the Bishop of London in 1199 and typifies the class of market dominated town distinguished by an elongated triangular market place into which the through roads are diverted. The base of the triangle is usually formed by the church and churchyard. Castle Hedingham is a small but perfect example. At Thaxted and Halstead the type is modified by the constraint of a pre-existing church and settlement; at Braintree these constraints have so modified and truncated the triangle as to produce an irregular polygonal area for a market place.

Witham, or rather the new town of *Wulvesford,* now Newland Street, planted on the Roman road in 1212 a half mile from the Anglo-Saxon *burh,* is a rare Essex example of the more generally common cigar-shaped market place; the Knights Templar were able to look for models outside the immediate region of the town.

A class of town layout in which the settlement is planned on one side only of the road that forms both its *raison d'être* and market place can be distinguished in Essex, though has not apparently been noticed elsewhere. At Brentwood, on the edge of South Weald parish on the London-Colchester road, the monks of St Osyth were given leave to assart in 1184; they built a chapel, still standing as a ruin on the south side of the High Street, in 1221, and obtained a market charter to confirm their new foundation in 1227. In 1234 Thomas de Cemill was given permission to build opposite the monks' buildings on the other side of the King's road (Round 1924). The two sides of Brentwood are still different in their topography. Epping (Fig 45), a town founded in 1253 by the monks of Waltham Abbey and like Brentwood assarted from forest, lay on the east side of the London to Cambridge road, where it crossed the ridge between the Roding and Stort valleys. Only the chapel, subsidiary to the church now known as Epping Upland, lay on its western side. The plots were short, backed by a continuous back lane that also marked the parish boundary. Only in the 19th century was the western side of the road begun to be built up.

Essex's long coastline might be thought to encourage the foundation of new ports in the late Middle Ages. That only three emerged, of which only one was successful, is due to the fact that the two prime sites, at the head of deeply penetrating flooded valleys, were already occupied by the Saxon towns of Colchester and Maldon. They were nearer to the hinterland, which compensated for the more tricky navigation needed to reach them. Harwich, though perfectly placed to exploit the best natural harbour between the Thames and the Humber, struggled to overcome this general problem of a lack of hinterland, coupled with a local one of hostility from Ipswich. Its ultimate prosperity derived from its roles as a shipbuilding centre, as a naval base in the French wars, when fleets were assembled in and victualled from Harwich, and as the packet station nearest to the Flemish possessions of the Duke of Burgundy, England's foremost European ally.

Beresford (1967, 434) has already drawn attention to the striking way in which the 24 medieval towns of Essex developed on the radial roads north and east from London, especially at junction points with the predominantly north-west-south-east river valleys. Another feature of their distribution is the lack of large-scale town development in the poor London Clay country south of the London-Colchester road. It might be considered noteworthy that a high proportion of medieval Essex towns were planned or planted; excluding Colchester and the other Saxon towns, it is fifteen out of twenty and, if towns with planned elements are included, seventeen out of twenty, or 85%. Roughly similar data are available for two counties with a similar number of small medieval towns: Oxfordshire (Rodwell, K, 1975) and Hampshire (Hughes 1976). Thirteen of sixteen

small Oxfordshire towns were planted or planned at least in part, ie 81%, and thirteen out of twenty in Hampshire, ie 65%. The lower Hampshire figure may be due to the inhibiting influence of the large and important towns of Winchester and Southampton and so Essex and Oxfordshire may be seen as more typical.

When one turns from topography and morphology to consider the urban landscape in medieval Essex, there is still not much evidence to be brought into consideration. Most Essex towns were undefended. Aside from the castle towns already discussed, only Harwich built defences in the medieval period; these are now lost, though septaria blocks in some cellars on the west side of King's Quay Street may be their foundations and there is no doubt that this was their line to the east (Taylor & Dale 1732, 27 ff). This lack of visible constraints in most towns does not appear to have encouraged ribbon development. When the friars arrived in Essex, they chose to build their priories at Chelmsford and Maldon behind the main street and to gain a gateway, however small, into the heart of the town, rather than be sited on the urban periphery. At the setting-out stage of town development, however, developers could be generous.

In Chelmsford, excavation has shown that, though the plots were laid out on a two and a half rod frontage, they were immediately amalgamated into a five rod unit in the area examined (Webster & Cherry 1973, 167). Documentary and topographic evidence combine to enable us to reconstruct the average plot size in Witham. A survey of *c* 1255 (PRO DL 43 14/1; dated by Britnell 1968, 17) lists the town's 60 plots by area, mostly half an acre. It can be observed that the depth of the present Newland Street plots is sixteen rods, so the frontage for an half-acre plot is five rods. The total length of medieval frontage implied by this calculation is the same, allowing for larger plots and intervening streets, as the observed length of the topographic indicators of medieval settlement.

the large size of these plots seems to have encouraged the building of houses of Pantin's parallel type in which the axis of the hall is parallel to the street rather than at right angles to it (Pantin 1962-3). The surviving example of medieval Essex town houses are predominantly of this type. Excavation has also produced this house plan in larger quantity than any other.

industry is an essential feature of any town. yet it has not so far entered the archaeological record in Essex. nor has it left much mark on the topography of the medieval towns. To take one example, though the prosperity brought by the curlers to Thaxted, where they formed 50% of Thaxted's tradesmen in the 14th century (Newton 1960), is reflected in the church and in Newbiggin Street, no physical indication remains of their craft. More work needs to be done.

Trade is another difficult subject to consider archaeologically. For medieval towns, however, the data to produce a model are to hand. By the middle of the 13th century the Essex pottery industry was predominantly rural but located near the towns where their wares were marketed. Thus, near Colchester, the Nayland road linked a series of kilns which supplied the town (Drury & Petchey, 1975), and the Ingatestone and Sible Hedingham industries were in similar relationship to Chelmsford and Braintree respectively. With the publication of the last decade's work on both kiln sites and medieval settlement sites, a pattern of the trade in pottery, which can be used as a model for trade in other commodities, should emerge.

Our further understanding of towns, industry, and trade is of vital importance to medieval history, and the archaeologist has an important role to play in advancing that under-

standing. Since the rate of loss of archaeological data in towns was first fully appreciated some years ago, archaeologists in Essex responded as well as anywhere in the country; yet there remains much to be done. It is to be hoped that a similar survey in ten years' time will reflect many new advances in our knowledge.

Notes

[1] This paper derives from a survey of Essex medieval towns carried out by the present author when working for the Archaeology Section, Planning Department, Essex County Council. It is hoped that this survey will be published by the County Council in due course.
[2] Discussion at the conference revealed some differences of emphasis between Crummy and the present author.

References

Alexander, J, 1975   The development of urban communities: the evidence from Cambridge and Great Chesterford, in Rodwell & Rowley 1975, 103–10

Beresford, M, 1967   *New towns of the Middle Ages*

———, & Finberg H P R, 1971   *Medieval English boroughs: a handlist*

Britnell, R H, 1968   The making of Witham, *Hist Stud*, **1**, 13–21

Brooks, N, 1964   The unidentified forts of the Burghal Hidage, *Medieval Archaeol*, **8**, 74–90

Carr, R D, 1975   The archaeological potential of Bury St Edmunds, *East Anglian Archaeol*, **1**, 46–56

Cottrill, F, 1934   A trial excavation at Witham, Essex, *Antiq J*, **14**, 190–1

Couchman, C R (ed), 1976   Work undertaken by Essex County Council, Archaeology Section, 1974–6, *Essex Archaeol Hist*, **8**, 173–6

Davison, B K, Petchey, M R, & Rodwell, W J, forthcoming   The earthworks at Witham, Essex

Drury, P J, & Petchey, M R, 1975   Medieval potteries at Mile End and Great Horkesley, near Colchester, *Essex Archaeol Hist*, **7**, 33–60

Heighway, C, 1972   *The erosion of history*

Hughes, M, 1976   *The small towns of Hampshire*

Newton, K, 1960   *Thaxted in the fourteenth century*, Essex Record Office Publication No **33**

Pantin, W A, 1962–3   Medieval English town-house plans, *Medieval Archaeol*, **6–7**, 202–39

Plummer, C, 1892   *Two of the Saxon Chronicles parallel . . .*

Radford, C A R, 1970   The late pre-Conquest boroughs and their defences, *Medieval Archaeol*, **14**, 83–103

Ravetz, A, & Spencer, G, 1961   Excavation of the Battle Ditches, Saffron Walden, *Trans Essex Archaeol Soc*, 3 ser, **1**, 1–19

Rodwell, K A (ed), 1975   *Historic towns in Oxfordshire*

Rodwell, W J, 1975   Trinovantian towns and their setting, in Rodwell & Rowley 1975, 75–102

———, & Rowley, R T, 1975   *The small towns of Roman Britain*, BAR **15**

Round, J H, 1924   The making of Brentwood, *Trans Essex Archaeol Soc*, n ser, **17**, 69–74

RCHM, 1921   *An inventory of the historical monuments in Essex*, Royal Commission on Historical Monuments (England)

Spurrell, F C J, 1887   Withambury, *Essex Natur*, **1**, 19–22

Strutt, J, 1774–5   *Horda Angel-Cynan or A compleat view of the manners, customs, arms, habits, etc of the inhabitants of England*

Taylor, S, (edited and continued by Dale, S), 1732   *The history and antiquities of Harwich and Dovercourt in the county of Essex*

Webster, L E, & Cherry, J, 1972   Medieval Britain in 1971, *Medieval Archaeol*, **16**, 147–212

———, & ———, 1973   Medieval Britain in 1972, *ibid*, **17**, 138–88

———, & ———, 1976   Medieval Britain in 1975, *ibid*, **20**, 158–201

Williams, F, 1977   *Pleshey Castle (12th–16th centuries): excavations in the bailey, 1959–63*, BAR **42**

Wilson, D M, & Hurst, D G, 1970   Medieval Britain in 1969, *Medieval Archaeol*, **14**, 155–208

Ecclesiastical studies are one of the oldest tranches of archaeology and one of the most wide ranging in the material they encompass. In the Victorian sense, the term basically covered two aspects of investigation: first, the study of architecture, monuments, and furnishings, and secondly, the excavation of monastic sites. In the latter instance the primary, and usually sole, aim was to recover the plans of masonry buildings.

Following half a century of stagnation, the subject has developed in the last decade to comprise the all-embracing study of ecclesiastical precincts, buildings, monuments, furnishings, and fittings. The full potential of the application of stratigraphical investigations, both above and below ground, coupled with detailed topographical and historical studies, is only gradually being appreciated (Addyman & Morris 1976; Rodwell & Rodwell 1977).

Religious houses (Fig 46)

The principal general account of religious houses in Essex was prepared by the *Victoria County History (VCH* 1907); this is an historical study of great value but contains scarcely any information on the physical remains of the establishments. These comprised 27 houses of the regular orders, 5 alien houses, 4 friaries, 2 preceptories, 2 colleges, and an uncertain number of hospitals, upwards of 10.

These buildings and their adjuncts have never been studied as groups, and most lack any form of investigation or archaeological recording. Only Waltham Abbey has been the subject of continuing archaeological investigation in recent years (Huggins 1970a; b; 1972; Huggins & Huggins 1973). The results of this well published series of excavations have been important in two aspects: first, in providing details of the lesser buildings within the monastic precinct, and secondly in shedding light on the early history of the site, prior to the foundation of Harold's abbey.

Substantial parts of several other houses are known, such as St Osyth's Priory (RCHM 1922), Colne Priory (Fairweather 1938), Coggeshall Abbey (Gardner 1955), and Little Leighs Priory (RCHM 1921), but these are nevertheless still inadequately understood, and their plans have been largely derived from unscientific excavations. A considerable amount of excavation has taken place in recent years at Prittlewell Priory although, apart from the church (Helliwell 1958), this is unpublished.

Likewise, excavations which are largely unpublished have been conducted in the last decade at Barking Abbey, Colchester Abbey, and Chelmsford Friary (Drury 1974). In all, excavations on Essex monasteries have been very fragmentary and undertaken either unscientifically or on too small a scale, while detailed architectural analyses have yet to begin.

The upstanding remains of monastic houses in the county are mostly limited to parts of their churches which are now in parochial use (eg Hatfield Broad Oak, Hatfield Peverel, Blackmore, Waltham, and Little Dunmow), while in several instances fragments of the claustral ranges have survived owing to their incorporation in later domestic premises (eg Prittlewell, Beeleigh, Coggeshall, and St Osyth). Even where the initial domestic conversion of the monastic building was followed by a 'total reconstruction', it

is likely that much early work remains built into wall cores and concealed behind later facings. This is even true of Audley End (Drury forthcoming a), where a conversion of 1536-44 was followed by the construction of the Jacobean mansion in 1603-16. The inner court of the latter rises from monastic walls, which in many cases survive to a height of almost a metre above medieval ground level. Not the least interesting aspect of Audley End is the influence which the desire to reuse the Abbey foundations (and walls of the first Audley End) had on the layout of a house 'too large for a king though it might do for a Lord Treasurer'.

Very little remains in Essex in the form of abandoned ruins (eg St Botolph's, Colchester, Bicknacre, Thoby, Tilty, and Maldon hospital). At Tilty and Little Coggeshall the *capellae extra portas* are still in use as parish churches. while the only gatehouses to have survived are at St Osyth, Colchester Abbey, and Barking.

Notwithstanding the paucity of extant buildings and the fact that even these are not on the whole of high architectural merit, some houses of considerable historical importance did exist in Essex. These are worthy of notice, and should facilities for proper investigation arise they should command priority.

Barking Abbey (now Greater London)   Originally a double monastery, founded *c* 666, it is not only the earliest recorded house in Essex but also became the most important nunnery in England. Nothing is known of its early structures.

St Botolph's Priory, Colchester   Although the Augustinian Priory was founded in the 1090s it was on the site of an earlier minster church which was served by a small company of priests. This church lay among the Roman and Saxon cemeteries to the south-east of the town and the site offers great potential for religious and funerary continuity from the Roman period onwards. Apart from the ruins of the nave of the Norman church nothing is known of this house. St Botolph's was the earliest and principal house of Augustinian canons in England.

St John's Abbey, Colchester   Similarly situated to St Botolph's, in the southern cemetery of the Roman town, and with great archaeological potential (Rodwell & Rodwell 1977, 24-41), as recent excavations have shown (Crummy 1974). It would be particularly valuable to investigate the claustral buildings which were erected soon after 1096 and destroyed by fire in 1133; they were rebuilt on the opposite (south) side of the church.

Waltham Abbey   A house of great importance, already mentioned, and the last English abbey to fall at the Dissolution.

West Mersea Priory   A pre-Conquest alien house founded alongside an existing minster church, all on the site of a large Roman villa. Nothing is known of the structure of the priory.

ESSEX
Religious Houses

● Abbey or Priory
○ Friary
† Preceptory
■ Hospital
▲ College

Saffron Walden
Newport
Berden
Tilty
Thremhall Priory
Takeley
Lt Dunmow
Hatfield Broad Oak
Pleshey
Parndon
Latton
Writtle
Chelmsford
Waltham Abbey
Blackmore
Thoby Priory
S Weald
Ilford
Hornchurch
Barking
Stratford Langthorne
East Tilbury
Castle Hedingham
Lt Maplestead
Halstead
Lt Horkesley
Earls Colne
Wix
Panfield
Bocking
Colchester
Braintree
Lt Coggeshall
Cressing
Tiptree
St Osyth
Hatfield Peverel
W Mersea
Beeleigh Abbey
Maldon
Stansgate Abbey
Bicknacre Priory
Prittlewell
Lt Leighs
76m

Fig 46   Religious houses in Essex, excluding hermitages, cells, and possible Anglo-Saxon monastries (Crown copyright reserved)

Cressing Preceptory   This was the principal preceptory of the Knights Templar in England, of which important remains survive, including two barns.

Coggeshall Abbey   The significance of this house is for its 12th and 13th century brickwork, which was produced on the estate. A considerable amount of this brickwork survives *in situ,* both at the abbey and at Bradwell-juxta-Coggeshall church (Gardner 1955).

Parndon   Between about 1172 and 1180 the first house of the Premonstratensian Canons in Essex was at (Great?) Parndon. Neither location nor extent of the buildings is known, but were they to be found their closely dated occupation would be of considerable interest.

Anglo-Saxon minsters and monasteries

Of the 50 or so monastic and related establishments considered above, only three are known to have been founded before the Norman Conquest (Barking, Waltham, and West Mersea), although some may simply have been refoundations of earlier houses: such was the case according to legend at St Osyth *(VCH* 1907). There is, however, no doubt that monasteries and churches served by secular priests existed in Essex before the Conquest and vague references to several are recorded. A few pre-Conquest minsters are known with certainty, such as Southminster and St Botolph's, Colchester, while others are more equivocal (eg Earls Colne).

Indeed it is often unclear, both from the literary and architectural evidence, whether a church was a minster or a monastery: such is the case with the two foundations associated with St Cedd at *Ythancester* (Bradwell-on-Sea) and *Tileburg* (probably East Tilbury); and at White Notley a religious establishment of unspecified nature is referred to in a will of 998 (Taylor & Taylor 1965, 475). It is by no means impossible for a church to have served, at different times, both as a minster and a monastery, which may have been the case at Hadstock (Rodwell 1976).

The lack of formal planning in pre-Conquest, and in particular pre-Danish, monasteries, coupled with the fact that in Essex the conventual buildings would usually have been of timber, makes the elucidation of these early ecclesiastical complexes difficult. It will, however, only be through large scale excavation that Anglo-Saxon minsters and monasteries will be differentiated and understood. In Essex there has been no progress towards this goal. Nor is there any clue at present as to the distribution of the minster churches in the county; a number may be suspected from the evidence of the cruciform plans of some of the larger buildings in rural areas (eg St Osyth, Great Chesterford, Orsett, and Prittlewell).

Whether simple two- and three-cell churches also served as minsters remains to be elucidated (for a preliminary discussion of arrangements in the Dengie peninsula see Rodwell & Rodwell 1977, 55-6; Drury & Rodwell 1978).

Anglo-Saxon churches

Very few wills and charters which mention Essex churches have survived, and the assessors for the Domesday survey took little notice of churches in the county. This contrasts markedly with Suffolk, for example, where they recorded 345 churches in 1086, and even then some were certainly overlooked. In general, it can be asserted with confidence that the majority of the *c* 420 ancient parishes in Essex existed as recognized units, each with a church, by about the middle of the 11th century (Rodwell & Rodwell 1977, 91-2). Furthermore, it is becoming clear that by the Saxo-Norman period stone rubble was the normal medium for church building, and not timber as has often been supposed.

Several distinct methods of church building can be detected in the pre-Conquest period. The most sophisticated is seen in churches of minster or monastery status, such as St Peter's, Bradwell-on-Sea, and Hadstock. Both are likely to be of middle Saxon date and were built in stone *ab initio,* although a case can be argued for Hadstock having had a partly timbered superstructure at first (Rodwell 1976).

The primary walls of these buildings were of carefully selected and coursed flints without, it seems, any use of Roman brick. The formation of quoins, jambs, and splays without the use of brick or dressed stone could not have been easy, but it was clearly deliberate and may imply that the walls were meant to be seen and not plastered externally. Several notable buildings which are usually attributed to the late Saxon period exhibit the same technique (eg Little Bardfield and Chickney).

The use of Roman brick, particularly where it is very fragmentary and used in a haphazard fashion, seems to equate with plastered external surfaces. It is now clear from a recent thorough study of St Peter's, Bradwell-on-Sea (by Miss Jane Wadham) that the Roman brick in this church is a secondary introduction. Equally, it is clear that a considerable number of churches built in the later Saxon or Saxo-Norman period made extensive use of brick in quoins, jambs, and arches. This is exemplified in buildings such as Holy Trinity, Colchester (tower), Great Tey, Great Braxted, White Notley, and Rivenhall (Rodwell & Rodwell 1973; 1977, 90-1). Closer study has shown that many of the simple churches of what may be termed the 'Rivenhall group' show remarkable similarities not only in construction but also in planning and dimensions (Rodwell & Rodwell forthcoming).

A third group comprises those relatively small and simple churches which were constructed entirely in timber. Most notable is that at Greensted-juxta-Ongar (Christie *et al* forthcoming). At Nazeingbury an Anglo-Saxon cemetery and two timber buildings, interpreted as churches, were found and excavated in 1976 (Huggins forthcoming). This important investigation demonstrates the potential for the discovery of early ecclesiastical sites which are entirely unrecorded in history. Less remarkable is the recovery of timber predecessors to stone-built churches, as at Rivenhall (Rodwell & Rodwell 1973) and Asheldham (Drury & Rodwell 1978).

The dating of Anglo-Saxon and Saxo-Norman churches in Essex presents great difficulties on account of the lack of early documentation and distinctive sculpture. Before the beginning of the 12th century the architecture of Essex churches was generally fairly simple in outline and lacked decorative detail of a diagnostic nature. Hadstock is the only church which contains early to mid 11th century sculpture *in situ* (and even that was reset in the medieval period), while only a handful of fragments are known from the remainder of the county (West Mersea, Great Bardfield, Great Canfield, and Barking).

Dating will have to be derived from many series of radiocarbon determinations on separate churches. Meanwhile, typologies of church plans and architectural details are slowly being established and general date brackets assigned. But this work is in its infancy, and Dr H M Taylor's signal contributions in this field provide the impetus for continuing study (Taylor 1972; 1976; 1978).

ASHELDHAM
St Lawrence's Church

Evolution of the plan
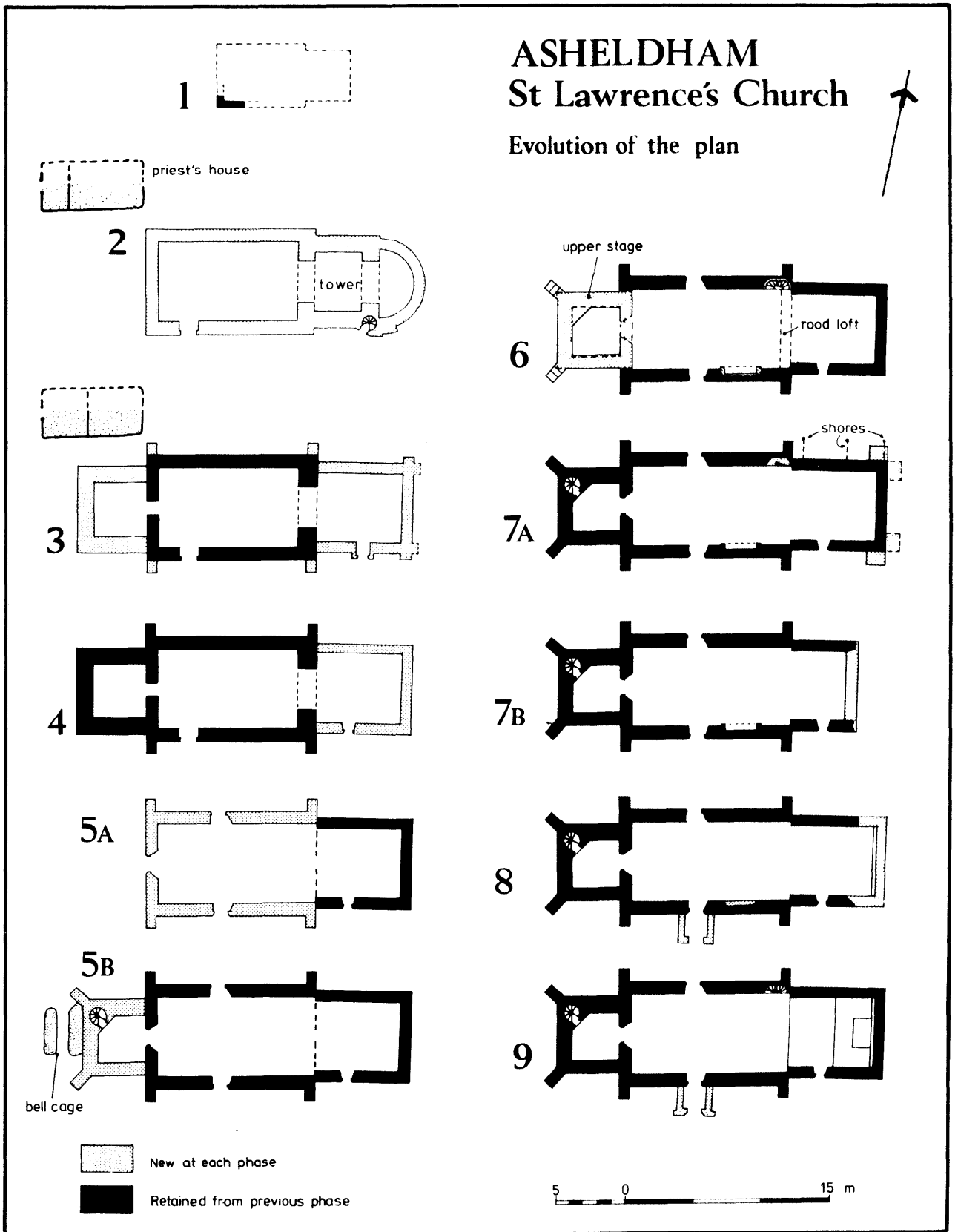
Fig 47   Asheldam: an example of the structural sequence revealed by detailed investigation of an apparently 'simple' church: 1 Anglo-Saxon (timber); 2 Norman; 3 13th century; 4 Early 14th century; 5 Mid 14th century; 6 Late 14th century; 7 15th-16th century; 8 18th century; 9 19th century

Medieval churches and chapels

It is often assumed, albeit incorrectly, that medieval ecclesiastical archaeology is of less interest than Anglo-Saxon. Certainly a great deal more architecture survives, and dating is less haphazard, but modern study of the subject, far from being exhausted, has hardly begun. First, there is the need for accurate surveys of churches, supported whenever possible by large-scale, meticulous excavation and structural dissection (Rodwell & Rodwell 1976; 1977).

It is probably no exaggeration to say that every historic church has a more complicated and subtle structural history than has been indicated by any published account hitherto. Thus, to take just three of the more extensively investigated examples in Essex: Hadstock was thought to be a single-period Saxon church with some later additions (Rodwell 1976); Asheldham (Fig 47) appeared superficially to be an uninteresting little building of the 14th century (Drury & Rodwell 1978); and Rivenhall had been all but dismissed as a Victorian Gothic rebuild (Rodwell & Rodwell 1973).

The studies undertaken by the Royal Commission on Historical Monuments in Essex in the years either side of the First World War were models of their kind but, after 60 or more years, are in need of reconsideration- Explicitly, detailed studies are needed of plan forms, building materials, constructional techniques, decorative treatments, mouldings, and architectural ornament. While the architectural study of cathedrals and great churches has proceeded steadily, the smaller and medium sized churches have been effectively neglected since the 19th century. Pioneer works such as Brandon's *Analysis of Gothick* (1874) and Hadfield's *Architecture of England* (1848, entirely based on Essex examples) remain the standard works for the county.

The only aspect of study in which medieval ecclesiastical architecture in Essex has advanced substantially in recent years has been in the field of carpentry (Hewett 1974). Progress in other directions is, however, being made, for example on medieval floor tiles (Drury forthcoming b) and early medieval brickwork (Rodwell forthcoming). Equally, recent surveys and excavations in and around churches have provided much new archaeological data (for example at Bradwell-on-Sea, West Bergholt, Latchingdon, Little Oakley, and St Giles, Colchester). While investigations such as these need to continue, moves must also be made towards the study of problems which can only be successfully tackled on a large scale, such as the total investigation of cemeteries and monastic complexes, as well as the study of churches in their parochial settings.

References

Addyman, P V, & Morris, R K (eds), 1976   *The archaeological study of churches*, CBA Res Rep **13**
Brandon, R, & Brandon, J A, 1874   *An analysis of Gothick architecture*, 2 edn, vols **1**, **2**
Christie, H, Olsen, O, & Taylor, H M, forthcoming   The wooden church of St Andrew at Greensted, Essex, *Antiq J*
Crummy, P J, 1974   *Colchester: recent excavations and research*
Drury, P J, 1974   Chelmsford Dominican Priory: the excavation of the reredorter, 1973, *Essex Archaeol Hist*, **6**, 40–81
———, forthcoming a   Walden Abbey into Audley End, in *The origins and early development of Saffron Walden* (S R Bassett)
———, forthcoming b   *Census of medieval floor tiles in Essex*
———, & Rodwell, W J, 1978   Investigations at Asheldham, Essex: an interim report on the church and the historic landscape, *Antiq J*, **58**, 133–51
Fairweather, F H, 1938   Colne Priory, Essex and the burials of the Earls of Oxford, *Archaeologia*, **87**, 275–96
Gardner, J S, 1955   Coggeshall Abbey and its early brickwork, *J Brit Archaeol Ass*, 3 ser, **18**, 19–32
Hadfield, J, 1848   *The ecclesiastical, castellated and domestic architecture of England*

Helliwell, L, 1958   Prittlewell Priory and the Church site, *J Brit Archaeol Ass*, **20–21**, 84–94
Hewett, C A, 1974   *Church carpentry*
Huggins, P J, 1970a   Waltham Abbey: monastic site and prehistoric evidence, 1953–67, *Trans Essex Archaeol Soc*, n ser, **2**, 216–66
———, 1970b   Excavation of a medieval bridge at Waltham Abbey, Essex, in 1968, *Medieval Archaeol*, **14**, 126–47
———, 1972   Monastic grange and outer close excavations, Waltham Abbey, 1970–72, *Essex Archaeol Hist*, **4**, 30–127
———, forthcoming   Excavations at Nazeingbury, 1976, *ibid*
———, & Huggins, R M, 1973   Excavation of Monastic forge and Saxo-Norman enclosure, Waltham Abbey, 1972–3, *ibid*, **5**, 127–84
RCHM 1921   *An inventory of the historical monuments in Essex*, Royal Commission on Historical Monuments (England), **2**
RCHM 1922   *An inventory of the historical monuments in Essex*, Royal Commission on Historical Monuments (England), **3**
Rodwell, W J, 1976   The archaeological investigation of Hadstock Church, Essex, an interim report, *Antiq J*, **56**, 55–71
———, forthcoming   Early medieval brickwork in Essex churches
———, & Rodwell, K A, 1973   Excavations at Rivenhall Church, Essex: an interim report, *Antiq J*, **53**, 219–31
———, & ———, 1977   *Historic churches: a wasting asset*, CBA Res Rep **19**
———, & ———, forthcoming   *Rivenhall: investigations on the Roman villa, church and village, 1950–77*
Rodwell, K A, & Rodwell, W J, 1976   The investigation of churches in use: a problem in rescue archaeology, in Addyman & Morris 1976, 45–54
Taylor, H M, 1972   Structural criticism, *Anglo-Saxon England*, **1**, 259–72
———, 1976   The foundations of architectural history, in Addyman & Morris 1976, 3–9
———, 1978   *Anglo Saxon architecture*, **3**
———, & Taylor, J, 1965   *Anglo Saxon architecture*, **1**, **2**
VCH 1907   *The Victoria History of the County of Essex*, **2**

The value of pre 17th century documents and maps to medieval archaeology in Essex

K C Newton

While as an archivist I must, and do, regard the records of any period as having equal potential value for the present and posterity, I must admit that in my research interests those of the medieval period are most dear to my heart and mind, though it has not been unknown for me to stray into the Tudor period on occasion. Over the years, in my professional work and in pursuing my researches, I have become fairly familiar with the wealth of information buried in the local archives of those periods and, equally important, their shortcomings. While my researches have not in themselves been concerned with archaeology, the kind of information that I have gleaned from the records for analysis and synthesis seem to me to have implications and importance for the archaeologist working in those same periods.

For practical purposes the relevant classes of archives may be categorized under the following heads: (i) charters and deeds of property; (ii) manorial records which are to be divided into a number of sub-classes; (iii) inventories; (iv) maps, which may or may not be strictly a sub-class of manorial records. I propose to deal with them in this order.

Charters and deeds of property

Inmost county record offices, as in Essex, these may be expected to date from the 12th century, perhaps from the earliest years of that century, and will relate to property ranging from the grant of a manor or the foundation and endowment of a religious house to a humble cottage or the. odd acre or rood of land. There will not be that many for the 12th century and comparatively few parishes will be represented; but the number and the territorial coverage grows with successive centuries. A slight problem is that many charters before the last years of the 13th century bear no date, but external and internal evidence, including the handwriting, will normally allow the assignment of one within quite close limits. This for example, the finding of a clause excluding the transfer of the property in question to Jews is proof that is was made between the passing of the Statute of Jews in 1275, and the expulsion of members of that race in 1290; and if men of religion are similarly proscribed this narrows the gap slightly to after the passing of the Statute *de religiosis,* better known as the Statute of Mortmain, in 1279.

Some charters, unfortunately, merely convey or grant 'all my lands and tenements in the parish of X' and are clearly in themselves of no great use in identifying a particular site; but many will give not only the name but also the abuttals of a property, and if one or more of the latter is still an easily identifiable place, as 'the churchyard', the north-east side of the marketplace', etc, there is a good chance of identifying. There is, for instance, a charter dated 1384 of a property fronting the marketplace at Hatfield Broad Oak. As there are some 1200 charters of Hatfield Broad Oak covering the 12th to 15th centuries, it should be possible to place this one property even more precisely and even to build up a from plan of that once important community in the medieval period. in such a large collection the trades and occupations of the parties and witnesses will throw significant light on its economic basis.

The individual parcels of land which make up a holding or farm are often distinguished in a charter by acreages and abuttals; the use of the phrase 'enclosed with hedges and ditches' is self-explanatory of an enclosure, but the absence of the phrase in relation to a number of parcels each with a small acreage, or less than an acre, may be the first clue to the presence of a common-field system; what kind of common field system and whether the vestigial remains of one, would have to be determined by further research. If the parcels are each described as *selio terre,* ie strips of land, then the presence of the system in whatever state is certain.

Field-names are usually given in charters and elements in these may suggest the possibility of an earlier field-pattern. The element 'shot' in the names of what are relatively small enclosures may indicate an earlier common field; the element 'ridden' or 'reden' may represent comparatively late assarting on an individual or cooperative basis rather than a communal one. As a concrete example I would offer you Redindike Farm in Ingatestone which is a documented 13th century clearance. In the Petre archives there is an original grant, in about 1225, by Mabel, Abbess of Barking, to her steward, John le Geyton, of all his assart between Writtle Park and his wood of Hanley. This assart which came to be known as Redindike is clearly shown on the fine map of the Manor of Ingatestone made by John Walker the elder and the younger (of whom more later) in 1600.

Unless they represent physical partitions of properties between two or more persons charters are seldom useful for details of the buildings to which they relate. A charter may say 'newly built' or 'newly rebuilt', but how new is new? These phrases may be carried on for decades, simply because the scribe writing out a new charter upon the sale of the property copied the description contained in the previous one. The description of a messuage 'with all the barns, stables, and other buildings' is not necessarily evidence that there was any barn or stable or other outbuilding in the singular, let alone the plural. Such a phrase is an all-embracing legalism which should have been qualified with the words 'if any', but never was.

Far better in this respect often are medieval leases which define the rooms in a dwelling as well as giving details of any land attached, obligatory crop rotation and other husbandry practices, and repairing covenants.

Manorial records

The central sub-class of these are the court rolls of the manor, which enshrine the proceedings of the domestic court of the Lord—the Court Baron—and, on capital or chief manors, the business of the Court Leet with View of Frankpledge where the Lord was acting as the agent of the Crown, either by usurpation, prescription, or grant of the privilege which had originally belonged to the sheriff, to deal with criminal misdemeanours, consumer protection, regulation of trade, and increasingly the enforcement of sundry statutes.

For our purposes here the Court Baron is the most important, for its rolls record any transfers of property from one person to another, whether by purchase, gift, or inheritance, whether of villein (later copyhold) or free tenure. The record of these transfers may contain interesting details about the property concerned. At Ingatestone manor court,

in 1470, the transfer of a cottage in the High Street makes clear that its kitchen was a separate building, a topic which I believe was once, and may still be, a matter of debate in some quarters.

As with a large body of charters relating to one place, analysis of the court rolls will reveal a great deal about the nature of the community and its economic and social bases. Grants of waste by the Lord and licences to build upon them are formally recorded and can be an index of expansion of a community. Tenants are presented and, if guilty, fined for erecting dwellings and other buildings without licence and for allowing the like to fall into disrepair or, worse, pulling them down. Thus, again at Ingatestone, in 1390 John Paty was distrained to answer at the next court for throwing down and carrying away a tenement and for erecting a tenement (the one he had pulled down?) on land elsewhere. I query whether it was the one he had pulled down, for this is not made clear. Certainly, however, a tenant of the Manor of Thaxted, in 1568, was presented for doing just that; his offence was greatly aggravated by the fact that he re-erected the house on land belonging to another manor in the parish. He was ordered to rebuild it on its original site and presumably did so, as the matter was not brought before the court subsequently.

The Court Baron also exercised the jurisdiction of what today we would call a court of civil, not criminal, pleas. Actions of debt, broken agreement, trespass, and the like could be brought by one tenant of the manor against another or by an outsider against a tenant. For most manors the amount of money involved was limited to 40 shillings, but for manors in ancient demesne, ie those that had been part of the *terra regis* before the Conquest, such as Writtle, Havering, and Newport in Essex, the amount was unlimited.

Such pleas may relate to buildings and building work. In 1419, at a court of the Manor of Writtle, a tenant brought a plea of broken agreement against a stonemason, effectively a complaint about the quality of his workmanship in the making of a fireplace with two flues; the mason counter-attacked with a plea of debt against the tenant. The case went on for some time, the tenant finally winning the day with an order that the stonemason must remedy the defects. Also at Writtle, in 1469, another tenant complained that his leasehold tenant of a tenement and ten acres of land, who was apparently only interested in the land, had failed, as promised, to find a man to dwell in the tenement who would make a fire in the principal building called 'hallehous' during the term of the lease. The definition of the building as a 'hallehous' will doubtless be significant to the reader, as will the recognized need in the medieval period and later to keep a fire going in a dwelling in the interest of its fabric. Many other pleas are concerned with the repair, or more likely the non-repair, of buildings, and the materials used or not used are frequently specified.

On some manors it was customary, as a matter of permanent record, to copy on to the court rolls detailed agreements with carpenters, masons, tilers, thatchers, and other crafts-men for building work done at the manor house and its ancillary buildings. These agreements may be supple-mented, or repeated, although usually in briefer form, in the annual accounts of the bailiff. The Writtle court rolls are an excellent example of this and such information was extensively used by Philip Rahtz in his *Excavations at King John's Hunting Lodge, Writtle, Essex, 1955-1957,* published in 1969 by the Society for Medieval Archaeology. My only quarrel with the report is that the great manor house is called a hunting lodge, which it was but only incidentally.

The rolls recording the proceedings of the annual Court Leet can occasionally be useful in the present context. As an example, in 1599 at Ingatestone, Thomas Hyendes was accused of lighting fires in his dwelling in the High Street without having a chimney—an obvious fire hazard to him-self and his neighbours. He was ordered to insert a chimney before the next court or pay a quite heavy fine of ten shillings. Non-compliance with the order would have meant a repeated doubling of the fine at each court until Hyendes had the chimney built. Until his house, among others backing on to Ingatestone churchyard, was pulled down some years ago, it was possible to see the chimney, an obvious later insert even to an untutored eye such as my own.

Having mentioned, albeit briefly, manorial bailiffs' accounts as a source for building, rebuilding, and repairs on a manor, the other principal type of manorial record, ignoring for the moment maps, is the written survey in which the manor house and the demesne and every individual tenant's holding is described in greater or lesser detail.

The earlier surveys, of the 13th and 14th centuries, unfortunately seldom give full abuttals, but names and acreages of holdings and a full description of the labour services due are fully described, notably in the so-called Ingatestonc 'Domesday' of' about 1275, which is apparently part of a great survey, of which only fragments survive, of all the manors and estates of the Abbey of Barking. Such surveys are revealing of the number and size of holdings and the nature of the agriculture and any other industry pursued within that particular manor.

On manors with a marked urban element in the 13th and 14th centuries, even if every abuttal is not given there is at least a tendency to group tenants' dwellings and trade premises under streets. A splendid example of this is the survey of the Manor and Borough of Thaxted, made in 1393, a roll measuring some 28 feet in length, with its remarkable tally of dwellings and cutlers' workshops in the town area. One section deals with the burgesses and records the dwellings etc in Park Street. The survey also records the other strata of manorial tenants and describes the five great common-fields, and the meadows, pastures, and woodland around the town, making clear, however, that by this time common-field husbandry had been totally abandoned and all labour services commuted for an enhanced money-rent.

There is a greater tendency to give full abuttals of every holding on a manor during the course of the 15th century and this becomes quite commonplace in the next century. In the absence of any map of relatively near date it is possible to construct a map from such a survey. A particularly good example is that made of the manor of Writtle in 1594-5. One section deals with 'Writtle Towne', ie the built-up area around the Green. It is perfectly possibie, for I have done so, to use the survey as a walking-order directory and perambulate the houses fronting the green on all sides. The value of the survey is enhanced by later marginal comments updating the original information. Midway down one page a marginal note says, 'the house pulled downe and an orchard planted in place', and below that 'Memorandum that a tenement is lately built upon the said ground' (described in the original entry as 'orchard'). Although, unlike the original text, these marginalia are written in a sweet italic hand, I would judge that they were added well within 20 years after 1594-5.

It is unfortunately very rare that a surveyor goes so far as to give the dimensions of every building on a manor and whether it was thatched or tiled. Indeed, I know of only two for Essex, both by the same unnamed man: the one of the Manor of Crondon in Stock, dated 1556, the other of the

Manor of Ingatestone, undated, but made not earlier than 1555 and not later than 1558. As both manors were part of the possessions of Sir William Petre, it is possible that they are of the same date. In both surveys the length, depth, and height to the eaves of each building is given. The following entry from the Ingatestone survey is typical:

> 'Robart braynwood holdithe j tenement called makrons or mockrons being. 40. fot long 15 wide 9 story (ie 9 feet to the eaves), tiled, j kechin, barn and stable 33. long. 15 wyd. 10 story thetched. the same holdithe A tenement being 24 fot long. 9 wyd. 6 story, thetched with orchard gardin and yeardes containing 3 roodes bounding on Ingatestone stret west, shonkes and balardes north, the dolphin mede est and walkers tenement suthe.'

Thus for Ingatestone one can reconstruct in map form all the buildings with their actual dimensions on the manor, whether the dwellings were single or two storey, and whether they were thatched or tiled. This Ingatestone survey was, of course, a vital piece of evidence to prove the contention of Gus Edwards and myself that the maps of manors and other estates, including the Manor of Ingatestone, drawn by John Walker senior and junior between 1584 and 1616, show all buildings as accurate elevations. Of this more anon.

Inventories

This would appear to me to be the third main class of written record of potential value to the archaeologist, particularly where the listings and valuations of furniture and fittings are done on a room by room basis, which may well allow the reconstruction of the original room plan of an old house either now demolished or much altered over the centuries by partial demolition and a series of internal changes. A case in point is Ingatestone Hall, built in the 1540s. A number of inventories dating from 1600 allowed us to reconstruct with reasonable certainty the original room plan, even in the west wing which was pulled down in the early years of the 19th century.

The problem with all the principal sources discussed so far is that their analysis and the synthesis of their evidence, for whatever purpose, is very time-consuming; and the interpretation of particular pieces of evidence may be difficult because of ambiguities and, it has to be faced on occasion, downright error.

Maps

With the last class of archive that I shall deal with—estate maps—time consumption in research is less of a problem for one has, as it were, a self-contained picture of the area surveyed rather than the numerous pieces of a documentary jigsaw puzzle. The regrettable thing is that for practical purposes estate maps span only the last half century or so of the period under discussion, though they may well be very revealing of an earlier, even much earlier, state of things.

Although some estate maps of the period 1550-1600 are not to scale, and do not pretend to be so, many achieve a high order of accuracy. A map not drawn to scale, however, is not without its evidential value. A map of Stock, undated but about 1575, is a good example for, although not to scale, it is valuable for its evidence of recent partial disparking of Crondon Park by Sir William Petre and illustrates a not uncommon practice by go-ahead landowners in the reign of Elizabeth I. In this case, Sir William appears to be attempting to have the best of both worlds—a smaller park and a profitable arable farm.

In the Essex Record Office there is an interesting map of about 525 acres in the south of Hornchurch, made in 1600. It is a representative example of surveying and mapmaking of good quality, giving the names of owners and occupiers and showing the strips in the named common marshes amongst other topographical detail. The representation of buildings in elevation or perspective view, rather than in plan, is a characteristic of all such maps of this period and, indeed, for a very long time thereafter. With one exception, however, it would be most unwise to assume that such representations are accurate. With this one exception, it has not been possible to prove that the buildings so drawn on the estate maps of any surveyor of the period are accurate.

The exception is the maps of John Walker the elder and John Walker the younger, father and son, to whom I made brief reference earlier. I am now in the gravest danger of launching into a second paper, but will restrain myself by mentioning only a very few examples of their work to prove the point. It is the contention of Gus Edwards and myself that the buildings on their maps are accurate elevations, down to the positioning of doors, windows, and chimneys. In this regard it is perhaps significant that on a number of his maps John Walker the elder describes himself not as surveyor but as *architector*.

The written survey of about 1556 with its dimensions of every building in Ingatestone provided documentary proof that the distinction between single- and two-storey dwellings on the Walkers' map of 1600 was accurate in most cases and, though there was a discrepancy, proof of rebuilding between *c* 1556 and 1600 could be gleaned in a significant number of cases through the court rolls. Their representation of Ingatestone High Street in 1600 has been of special value to my own researches; but if you prefer the evidence of an existing building, there is Hide Cottage, one of a number of Ingatestone houses which have been examined carefully and compared with drawings of buildings on the same sites on Walker's map. Walker shows a house with a single-storeyed hall, two two-storeyed cross-wings, and a main chimney well to the right of the centre of the hall roof. Today, the only external difference is that the position of the door has changed but, as I recall, the frame of the door shown by the Walkers was located during examination of the interior of the house.

If there were space I could multiply the examples to convince the reader further. For instance, I am satisfied that on his magnificent map the elder Walker depicts Chelmsford exactly as it was in 1591. Less well known is his survey of Boxted in 1586. Among the buildings he shows is a rich clothier's courtyard house where now, if it has not been built over, there is nothing but grass. It bears all the marks of authenticity; query, is the site worth a dig?

In conclusion, I would voice my strongly held view that the crying need is for a research team based on the county record office, which would exploit much more fully than is possible in normal cataloguing the great body of source material for the period we have been dealing with, preparing transcripts and translations, or at least detailed calendars, with indexes of (say) whole series of manorial records, for which we do not have the necessary staff resources. Because of the difficulties of palaeography and the use of Latin, such records are denied to many researchers and prime evidence for archaeologists, historical geographers, and others lies untouched and unrequested in our strong-rooms.

Editor's note: The Essex Record Office is rich in medieval records likely to be of use to archaeologists and is widely used. The resources of other repositories should also be consulted, notably the Public Record Office and St Paul's Cathedral Library.

There is a widespread belief that because we are close in time to the medieval period, there is little that we still need to learn. However, despite the vast amounts of information that can be gleaned from contemporary writings and illustrations, our knowledge is still sadly lacking. Items which for one reason or another are never mentioned or depicted are those things which were taken for granted and not felt either worthy of mention or needful of explanation. Often the very items which will advance our knowledge most fall into this category. Regrettably the situation is not improved by the frequent lack of realization that material in medieval and post-medieval archaeological levels is just as important as that below. The study of late buildings in this county is eased by the quantity of buildings remaining, but there is a considerable amount of information that can only be obtained below ground level. Use of individual rooms, specialized uses, previous structure or alterations, and back-up dating evidence are all information which excavation can help to supply. It is vital to view the whole context of a building, and this includes the site it stands upon.

During the last 60 years, much research has been carried out on historic buildings and our knowledge has increased a hundredfold. Essex was fortunate in that it was one of the first areas surveyed by the RCHM, in 1921-23. Nowadays this survey comes in for a great deal of criticism, but it must be considered in the context of the knowledge available at the time it was prepared. If one looks at it in this way, one can appreciate the achievement it represents and moreover the basis it gives for subsequent research. By its very nature it is capable of reinterpretation as knowledge increases.

The work carried out elsewhere in the country by individuals has produced considerable advances, not only in knowledge but in methods of approach. Cecil Hewett's pioneer work on timber frames has its basis in Essex (Hewett 1969), and has shown that the timber frame tradition can supply answers to problems which in a stone building remain obscure. Many fallacies have been exploded. The strangely unrealistic beliefs about the life of oak as a building material being limited to a few hundred years are a case in point. Radiocarbon dating and stylistic approaches have lent their weight to the more commonsense view that the complex development of timber structure as we know it could not feasibly have been compressed into a mere 400 years. At this juncture a note of caution must be sounded. We may now know far more, but it is only a fraction of what is still to be learned.

Essex must rate as of prime importance as a research ground. It has the material in abundance, a fact which has not been fully realized elsewhere. Reasonably high population and modest prosperity have resulted in an emphasis upon alteration rather than rebuilding. Whilst generalizations are always dangerous, it can be said that evidence of complete rebuilding is comparatively rare. It does occur, but it is the exception rather than the rule. Few of our 18th century houses lack their medieval core (Wadhams 1972), and usually it is sufficiently in evidence to be identified with a little persistence. The relative economic merits of new building versus modernization are a source of discussion even today. However, all indications are that careful modification can be less expensive, and therefore more attractive, than demolition and rebuilding, a practical situation which cannot have been so very different in the

past. It would seem that the ideal circumstance for the preservation of historic evidence in buildings is one of reasonable prosperity, but not one of abject poverty or vast riches, both of which can prove disastrous. It is only in the last ten or fifteen years that rural Essex has become a popular place to live for the commuter and the executive. Kent, Sussex, and Surrey were affected much earlier, and so much of their heritage has been lost through unsympathetic owners imposing their requirements on buildings totally unsuited to them. Essex was simply not fashionable, and now perhaps the legislation will help in some way to avoid the worst excesses of what has occurred elsewhere.

The quantity of material means that the load on the shoulders of the professional is that much greater. Foresight and a responsible attitude by the Essex County Council when the 1968 legislation came into force led to the setting up of a section of the County Planning Department to deal with matters relating to historic buildings. People with specialist knowledge were employed on a permanent basis as advisors, and it is the existence of this team that has enabled specialist advice to be available to District Councils since Local Government reorganization in 1974. The reorganization vastly increased the work load, it being obviously more time consuming to advise fourteen District Committees than it was to advise one County Committee. However, it is equally obvious that had each District been required to set up its own team the cost to the rate fund would have been prohibitive. The Essex historic buildings team offers a service to the District in the hope that it will assist the cause of conservation generally in the county, but it is a service that can only be effective if the District can obtain the information required with as little delay as possible and can see the advantages of consulting. There are problems. Too few specialist officers being available can mean a District having to wait for a visit or letter and being therefore more likely to take a decision unadvised; naturally, if they are not in possession of the facts, such a decision may prove to be the wrong one. Further, the advisor must have the information available and therefore it is vital he keeps up to date with current research. When an average of a dozen medieval buildings per person per week is being dealt with, new material is going to build up rapidly. This makes necessary a supporting organization to process the new material. As is the case with most Local Government Authorities at the present time, the curbs on increasing staff have meant that resources are stretched to a maximum. More professionals would mean a better service to the Districts, to conservation generally, and to the field worker. The prime task of the professional officer is to advise on the legislation, but if that advice is to be the best possible it cannot be divorced from research. The findings of this research should also be available generally, which is rarely possible in the present economic situation. Even should the financial constraints be reduced, there is the problem of finding people with the expertise and necessary local knowledge.

Great reliance must be placed on the contribution of the amateur enthusiast, but the capabilities of the people in question must be correctly judged. Some are specialists of a very high calibre, others have extensive local knowledge, yet others exhibit pure enthusiasm, but providing one can evaluate their contribution adequately, their help can prove
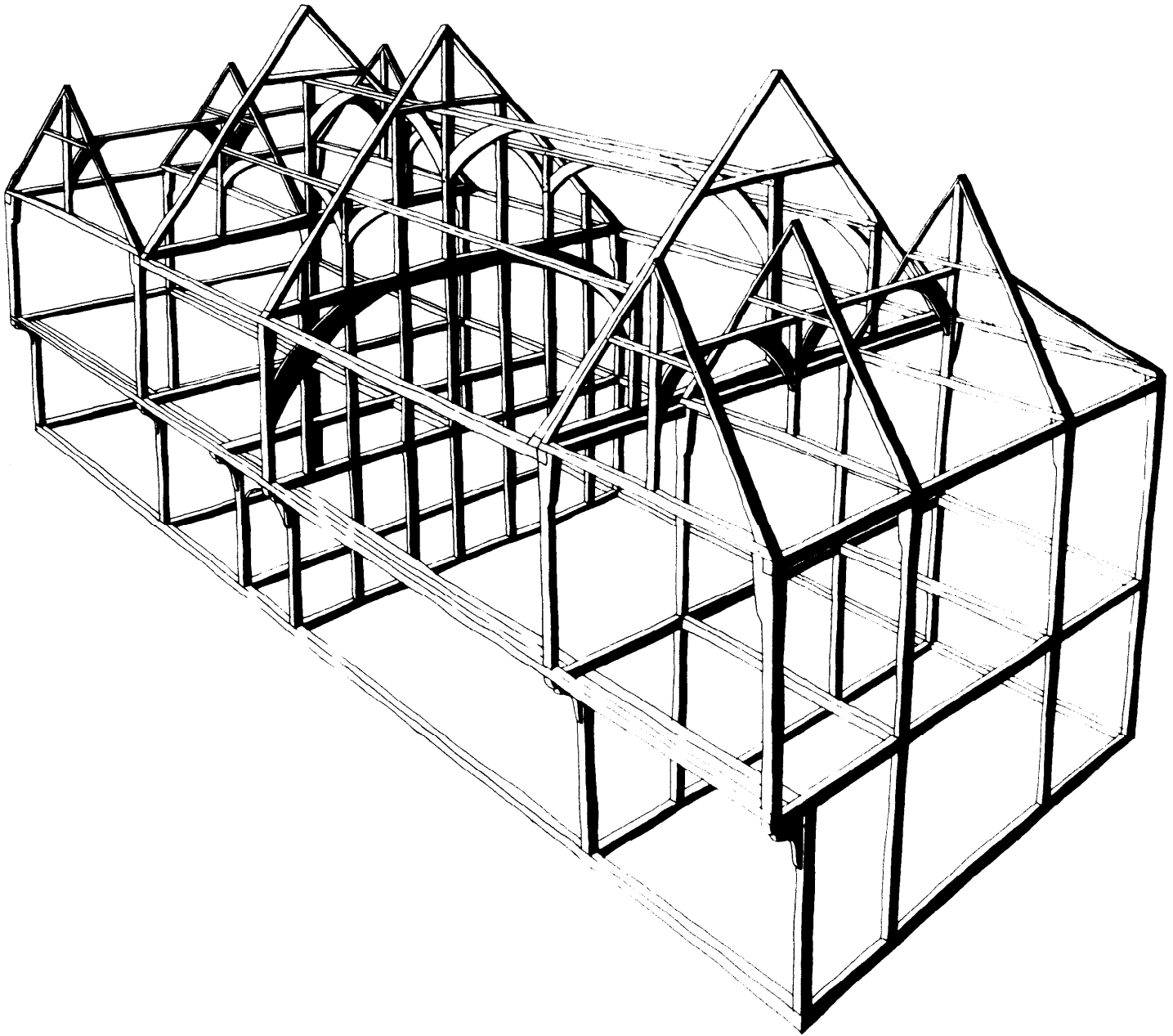
Fig 48   Numbers 19-23 Station Road, Lawford, now demolished. An early 16th century building the specific use of which is unknown. Only part appears to have been intended as a dwelling

invaluable. Good working relationships with architects and builders must be maintained wherever possible. It is unfortunately a fact that the training of both gives scant recognition to the problems of medieval buildings. Owners and occupiers must also be taken into consideration. Without their consent little research is possible, and therefore it is important to respect their wishes and encourage their cooperation. On too many occasions in the past, research has been set back because an owner has become tired of constant demands to allow strangers into his home or place of work.

In spite of it being a cliché in many fields of endeavour, it must be emphasized that the only way the full potential is to be realized is by teamwork, education, and public relations. A high level of teamwork is required between archaeolo-

gists, specialists in fields relating to historic buildings, archivists, historians, architects, builders, owners, local societies, individuals, and the general public. The only way to achieve this is by education and public relations. A more general awareness of the problems facing the building researcher would help greatly to ensure that information was not lost by default.

The primary problem is one of recognition. We do not yet even know the full extent of our architectural heritage in the county. There are approximately 9000 buildings which appear on one form of list or another. Experience has shown that this is far from the full picture. The official lists have yet to be revised for about 50% of the county, and areas resurveyed so far are all showing marked increases in medieval buildings. Informal sources suggest we are dealing

with something in the region of 16,000 buildings still remaining substantially complete from before 1800. Quality and standards of preservation are dominant factors in the criteria for protection, but over and above this must be considered the remnants which are not worth preserving but which are of great value in the archaeological and historical context. A fragment of 15th century framing encapsulated between two later buildings may be the only evidence of earlier development. Needless to say such evidence should be evaluated by a specialist who can obtain the maximum amount of information from the evidence available.

Facades, particularly in urban situations, are often misleading (Fig 48). The desire for a prestigious building with a fashionable appearance is not a new one. A high proportion of apparently 18th century houses and merely facades on older properties. Sometimes this is obvious at glance from the rear elevations of from the details which differ from those which one would expect in a purpose-built structure. An indication of this can be as minor as a window wedged into a space too small for it, or the relationship between a window head and the eaves. Even internally it can be difficult. A recent example had an early 19th century gault brick facade, behind which was a timber frame structure. The only framing showing was some timber beams in one wall and jetty bracket projecting below a ceiling. The beams were medieval timber, but were used totally incorrectly and proved to date from 1938. So the only visual evidence was the partly encased jetty bracket. When plaster was removed a 15th century cross wing came to light (Wadhams 1972). Anyone used to working with timber frames can repeat numerous similar stories. In a building in Kelvedon another 19th century facade hides an extremely high quality early 16th century building, and a small cottage in Great Sampford, apparently 19th century, is in fact a 14th century hall house with two oversailed cross wings. It is only a short time before the observant field worker develops a 'nasty suspicious mind' and ceases to rely upon external evidence.

Further problems are posed by alterations. Raised roofs, reroofing, oversailed roots, walls moved or removed, chimney stacks inserted of built integrally, all contribute to the picture, provided one can recognize them when they occur. The interpretation of a complex can often depend upon realizing that a certain short section of wall has been moved of the aspect changed. It is not only structural alteration that can lead the unwary astray; alterations in use are frequent occurrences. In a range of farm buildings at Navestock Hall, stable is in fact a small 14th century hall house and an apparently 16th century granary, with post and board walls, is a 15th century barn reduced in size. Older houses were often relegated to the status of service wing when new ranges were added.

It will be appreciated from the above that interpretation of standing structure calls for a high degree of specialist knowledge and expertise, and equally an extensive local knowledge of the building techniques used in the past. Complexes that have developed over four or five hundred years can present a puzzle which is extremely difficult to interpret. In many ways the approach to such problems, as with excavations below ground, is one of stratigraphy, mouldings, joints, and structural forms supplying the stylistic dating criteria normally supplied by pottery and other artefacts.

Stylistic dating methods are being refined all the time. Through research, knowledge of the periods of use of particular mouldings has been extended, and the suggested sequence of scarf joints can now be seen so demonstrably to

work that it is generally accepted. Plan forms, structural theory, sizes and types of timber have all come under scrutiny and are already providing improved guidelines for the researcher. The older approach, based purely on architectural style, is still valid, but both documentary and archaeological sources have shown that the dating horizons are open to adjustment; like all dating techniques, this approach should only be used as one amongst a number. The inexperienced often assume that if they learn a few joints and mouldings, they are equipped to interpret any building they encounter. This is obviously absurd, but it is surprising how many people believe it. They fail to realize that research work done on such details is never carried out in a vacuum and is always related to many other factors. The dangers of the superficial approach cannot be overemphasized; all aspects must be taken into account.

In many cases we know roughly for how long a period particular details or techniques were used. By relating these one to the other in any one build, a time span can be arrived at in which it is likely that all details represented in the same structure could occur. An exercise was recently carried out on All Saints Vicarage, Maldon. There is a firm documentary date for this building of 1449, and the survey revealed twelve different details to which approximate time scales could be given. When plotted as a graph they gave a period in common of only ten years. In this instance 1449 was in the middle of that period (Smith & Wadhams 1975). Coincidence can presumably play a large part, but if the exercise could be multiplied it could at least give an indication that we are thinking along the right lines. A further note of caution has to be sounded, however; documentary dates are not in themselves always what they seem to be (Wadhams 1972).

All datings made at a given time can only be relative in their accuracy to the knowledge available at that time. More extensive knowledge in future may require that these datings be adjusted. It is up to us to ensure that, where the evidence fails to survive, the details recorded are such that they are capable of reinterpretation should it be necessary in the future.

Finally, a brief look at subjects of specific research which are gradually proceeding, and to many of which the archaeologist dealing with excavation work can make a positive contribution. We do not yet know enough about early brickwork. The period between Coggeshall Abbey and the mid 16th century is usually written off as having produced very little brickwork, but documentary evidence suggests otherwise. It is highly probable that we are simply unable to recognize what we are looking at and indications of brick from sealed datable archaeological levels could help. Such information would also assist in tracing the origins of the plain tile. At present we can firmly date plain tiles in the 13th century, and we have examples that are probably early 12th century, but we have no proof. Dr Pantin's paper (1962-3) on urban plans is a major work, and now we need to know more about the occurrence of his basic types in Essex. Chimneys, staircase towers, kitchens, dovecotes, and granaries all require more specialized study. Examples of some timber-framed kitchens have now been identified, and there must be more (Hewett 1973b). There is much more to be learned about methods of heating buildings. Too many buildings are turning up in both urban and rural situations with no indications of sooting, timber flues, smoke bays, or chimney stacks. Obviously there is something else we are missing. Not long ago the belief was prevalent that small medieval houses would not have survived, but more and more of these are now being discovered (Fig 49) (Hewett 1973a; 1973c; Gibson 1974).
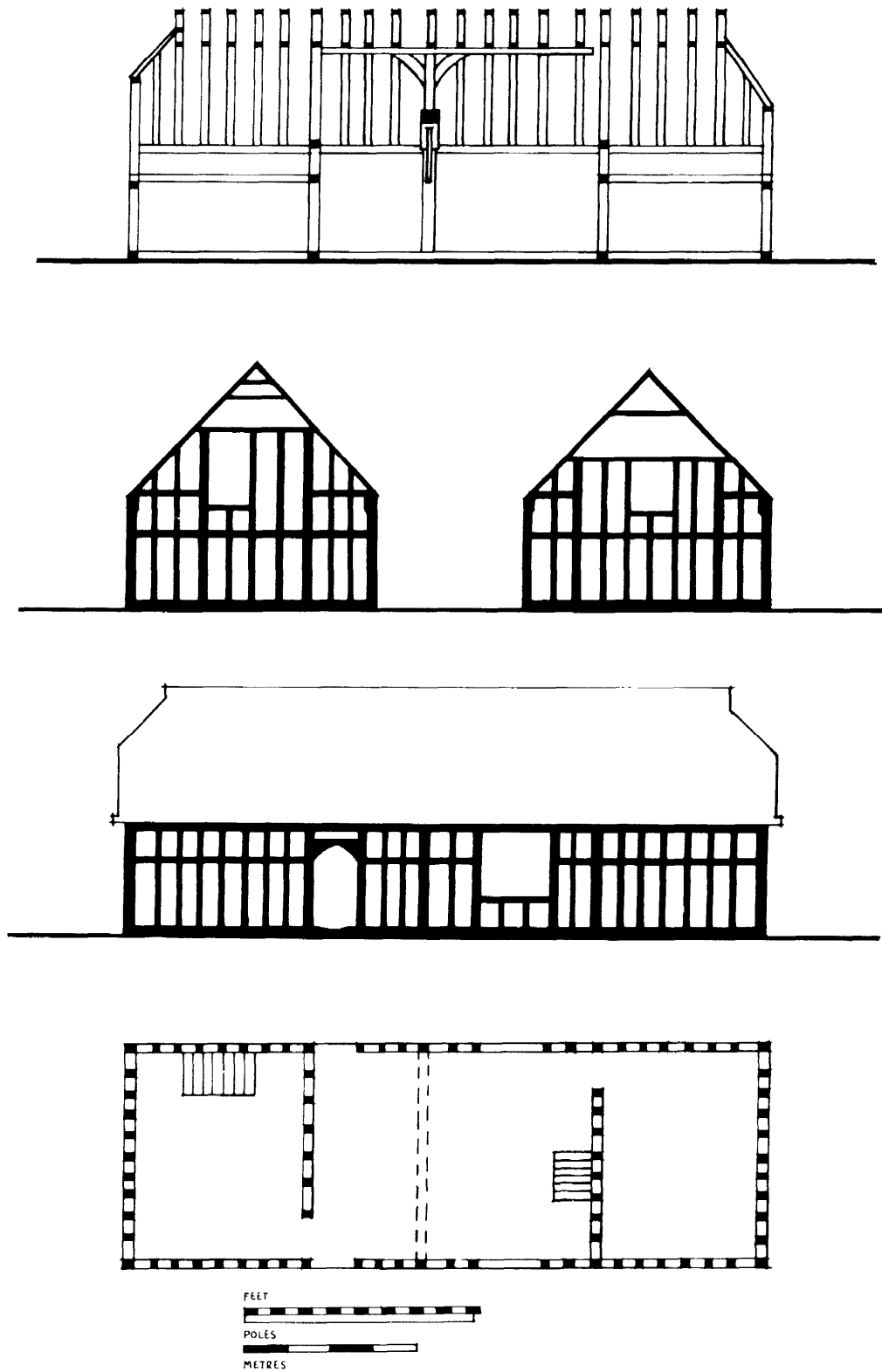
Fig 49   Plan and elevation of small hall house, which from numerous fragmentary remains appears to have been a common type in North Essex in the late 14th to early 16th centuries

Not only are earlier small buildings coming to light, but earlier buildings generally. The apparent trend of ascribing earlier datings has been criticized as unrealistic by those whose knowledge is limited, but it must be pointed out that with standing structures one can only work backwards from what is known, Excavation tells us little except about plan form and from any given plan the permutations of possible superstructure are limitless; therefore, as with any study, one must work from the known towards the unknown. Increased knowledge makes it possible to recognize early structures the significance of which would have been missed in the past. It is also rarely appreciated that some early ascriptions, accepted for many years, are now proving to fit into later contexts. Detailed area surveys are necessary. The results of certain of these that have already been completed have been unexpected. At Witham and Kelvedon, two small towns five miles apart, the smaller produced high quality work of all periods, while the larger, apparently more prosperous, town produced a large quantity of poor work of all periods hidden behind a veneer of quality.

Research and conservation must proceed hand in hand. Reasoned conservation is impossible unless one has sufficient knowledge of what one wishes to conserve. It is therefore in everyone's interest that an efficient level of cooperation is achieved by all concerned. Investigation of an historic building does not presuppose destruction of evidence, as excavation does, but one similar factor applies to both, in that it is accepted that a site left undisturbed has the potential for investigation in the future when our knowledge and techniques will have improved. So it is with buildings, with the obvious bonus that, provided a building is not demolished, it can be investigated both now and in the future.

We have come a long way since the RCHM surveys of the 1920s. There is some danger of complacency, but not among those actively working in the field. The day to day problems are such that one cannot escape the realization that we know very little. In Essex, 1977 has shown that there are still important discoveries to be made and there is the possibility of further major breakthroughs in research.

References

Gibson, A V B, 1974   Small un-jettied medieval houses in Essex, *Essex J*, **8**, 1, 22–32

Hewett, C A, 1969   *The development of carpentry, 1200–1700*

———, 1973a   A medieval timber kitchen at Little Braxted, Essex, *Medieval Archaeol*, **17**, 132–4

———, 1973b   The smaller medieval house in Essex, *Archaeol J*, **130**, 172–82

———, 1973c   Songers, Cage Lane, Boxted, Essex, *Medieval Archaeol*, **17**, 131–2

Pantin, W, 1962–3   Medieval town house plans, *ibid*, **6–7**, 202–40

RCHM, 1921–23   *An inventory of the historical monuments in Essex*, Royal Commission on Historical Monuments (England), **1–4**

Smith, J R, & Wadhams, M C, 1975   Robert D'Arcy's chantry priest's house, Maldon, Essex, *Medieval Archaeol*, **19**, 213–19

Wadhams, M C, 1972   The development of buildings in Witham from 1500 to *c* 1800, *Post-Medieval Archaeol*, **6**, 1–41

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Abbreviations used: AS Anglo-Saxon; BA Bronze Age; IA Iron Age; Med Medieval; Meso Mesolithic; Neo Neolithic; Palaeo Palaeolithic; R Roman; RB Romano-British