Chapter 15

The Later Medieval Period: Resource Assessment

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Introduction

The overall environmental setting of the region is well understood, and as in previous eras this has been an important factor in determining the possibilities for settlement and land-use. The region comprises a cross-section though the geology of southern England:

A.   the Jurassic ridge of the Cotswolds;

B.   the Buckinghamshire clay vale leading down into the vale of White Horse;

C.   the Chilterns and then the Berkshire Downs;

D.   the west end of the London Basin in north Hampshire and east Berkshire

E.   the Hampshire downs

F.   the Hampshire basin

G.   the Isle of Wight.

These major divisions of the region include a varied cross-section of southern land forms:

Downland scarp fronts/wooded backs

Clay vales/gravelled river valleys: champion land

Forested areas on clays/sands

Sandy/clay heaths and wastes

Maritime fringe of drowned harbourlands.

Within this framework there was a large proportion of 'Midland England' parishes of manor or manors coterminous with the parishes, nucleated villages and common field systems. But there were also a great number of distinctive local *pays* – eg Banburyshire, Otmoor, New Forest and the Forests of Bere, Windsor, Wychwood and Whittlewood, and even the relatively compact area of the Isle of Wight has great variety of landscape character.

The area, as with so much of south-east England, can be said to fall within the greater London region, traversed by road and river routes centred on London, and favoured by the annual travels of a peripatetic monarchy based on Windsor. In terms of more local cultural provinces, Oxfordshire Buckinghamshire and Berkshire occupy the western half of Phythian-Adams' *Thames* Province (7), while Hampshire lies at the centre of the *'French' channel* Province (6) – (Phythian-Adams 1993, fig. I).

The nature of the evidence

Within the setting provided by geography, soils and vegetation, the material culture of the medieval period is abundantly represented by extant, ruined, and buried remains of all kinds (see Figure 15.1 for selected key sites), by visual representations in art (glass, painting, sculpture), and by description or indication in large numbers of written sources (charters, surveys, accounts, narratives). There is enormous potential in all these areas for further research and discovery. On the environmental side, by the later medieval period the main research focuses more fully upon the economic aspects such as foodstuffs, and farmed produce. Most attention is traditionally paid to context, feature and site-specific

Table 15.1 Rough quantification of medieval 'structural' elements by county

	Parishes	*Markets*	*Castles*	*Abbeys, etc.*
Berkshire	193	37	17	<40
Buckinghamshire	202	41	25	<30
Hampshire/Isle of Wight	349	61	35	<70
Oxfordshire	280	35	21	<50
Total	1024	174	98	<190

Sources: Lewis, *Topographical Dictionary*, etc,; Letters et al., *Gazetteer of Markets and Fairs in England and Wales to 1516* (L&I Soc. 2003) not in biblio; King, *Castellarium Anglicanum*, OS *Map of Monastic Britain* (visual inspection)

Sites

Oxfordshire
1 - Abingdon
2 - Ascott Doilly
3 - Banbury
4 - Chalgrove
5 - Charney Bassett
6 - Deddington
7 - Dorchester
8 - Enstone
9 - Ewelme
10 - Faringdon
11 - Goring
12 - Great Coxwell
13 - Harwell / Steventon
14 - Henley
15 - Middleton Stoney
16 - Oxford
17 - Seacourt
18 - Stonesfield
19 - Swalcliffe
20 - Thame
21 - Wallingford
22 - Wheatley
22 - Wing
23 - Yarnton

Buckinghamshire
24 - Aylesbury
25 - Bradwell / Great Linford
26 - Brill/Boarstall
27 - Buckingham
28 - Gorefields, Stoke Goldington
29 - Hedsor
30 - Latimer
31 - Missenden
32 - Notley
33 - Olney
34 - Penn
35 - Weston Turville
36 - Whaddon

Berkshire
37 - Ashampstead
38 - Bisham
39 - Donnington
40 - Eton
41 - Maidenhead
42 - Newbury
43 - Reading
45 - Slough
46 - Wargrave
47 - Windsor

Hampshire
48 - Andover
49 - Basingstoke
50 - Bishops Waltham
51 - Fordingbridge
52 - Highclere
53 - Hurst Castle
54 - Lymington
55 - Portsmouth / Portchester
56 - Romsey
57 - Southampton
58 - Titchfield
59 - Wherwell
60 - Winchester

Isle of Wight
61 - Binstead
62 - Carisbrooke
63 - Cowes
64 - Quarr
65 - Sandown
66 - St Catherine's Hill
67 - Yarmouth

Key:
Boundary of the Solent-Thames Region
Later Medieval Site
Key Towns
County Boundaries
Rivers

0   50 km

1:800,000

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Banbury, Milton Keynes, Aylesbury, Oxford, High Wycombe, Slough, Reading, Newbury, Winchester, Southampton, Portsmouth, Cowes

R. Windrush, R. Cherwell, R. Thame, R. Thames or Isis, R. Kennet, R. Test, R. Itchen, R. Eastern Yar

Figure 15.1 Later Medieval sites mentioned in the text

activities and events that can be determined via environmental scientific enquiry.

To obtain a rough quantification of the 'structural' aspects of the medieval heritage, the area contains the following (Table 15.1).

The medieval antiquities of these counties have been the object of systematic study since the 17th century, with an increasing body of visual evidence being created in the 18th and 19th centuries. Whereas an interest in ecclesiastical remains was predominant in the 19th century, a growing interest in secular and domestic buildings developed in the 20th. Archaeological excavations on medieval sites began with investigation of monastic sites and later turned to castles and other monuments. There is a considerable body of literature on the study of medieval antiquities from before the mid-20th century, whether glass, heraldry and monumental brasses, or architectural remains.

The development of archaeological excavation for research purposes, and then increasingly for rescuing threatened sites, grew in the first half of the 20th century, and then became one of the principal activities of archaeological endeavour. Other developments from the mid-century were an interest in the landscape and in vernacular buildings, which have resulted in a wide variety of fieldwork and discovery. Together these enterprises have produced a wealth of information, some published in journals, monographs, the rest as 'grey literature', which is largely reflected in the county Historic Environment Records. The most recent development has been the systematic recovery of information from collectors of portable antiquities (usually by metal-detecting), which has brought some surprising data into the public domain.

Many lines of palaeo-environmental enquiry have been carried out at the context- and feature-specific level to determine the activities related to excavated evidence. These enquires provide specific information, but have not been used sufficiently to inform the wider context of which the feature, the activities and the site form a small but important part (in addition to external factors such as significant changes in climate within the medieval period). Key deposits remain garderobe deposits, waste and refuse pits and deposits, which are often rich in charred, mineralised and sometimes waterlogged remains, and may require multiple sampling and subsampling.

The nature of the evidence base thus consists of a large number of field monuments, landscape features and environmental evidence, a growing body of literature describing excavations and fieldwork, and an ever-increasing amount of objects in museum collections. And there is of course an abundance of documentary sources (as there are buildings and art-works) waiting the attention of those who take the trouble to find them.

Chronology

The political and social shock of the Norman Conquest provides a firm enough date for the commencement of the later medieval period in England, if a slightly fuzzy one for significant change in material culture. No entirely new kind of material evidence appeared in 1066, and the shock of governmental change did not rupture the continuity of eg coinage or pottery production. Even in specific areas associated with Norman rule and culture: the castle and Romanesque church architecture, both have pre-conquest flags of forthcoming changes.

Likewise for the end of the period, in the mid-16th century, the political and social shock of the 'age of plunder' has long been believed to inaugurate a profound economic reorganisation of land and resources. This can be recognised in changes in housing (the end of the hall house), and some other developments in material culture, whether pottery or the introduction of renaissance decoration, but there was no immediate or very distinctive change. Indeed, taking a broader view (and disregarding for a moment the rise and fall of feudalism, and the elimination of the small landowner and monasteries), the cultural milieu of the English countryside (manor and church; ox- and, from the 13th century, horse-drawn ploughs and manual haymaking) may be seen as an unbroken continuum, established before and after the Norman Conquest, changed by the age of 'improvement' but finally fractured only by the First World War.

Within the broad continuum there were of course major political events: invasion, French and civil wars, demographic events: population growth and post-plague collapse, and economic change. Archaeology will produce its own indicators of cultural change and chronological distinctiveness that have their own validity, and as always the interesting issue is how a single narrative may derive from such disparate areas of investigation (Pantin 1958).

Pottery remains the most important indicator for assembling medieval chronologies, while the development of scientific methods of dating (especially dendrochronology) have been important in providing some areas of certainty in the chronology of building practice.

Landscape and land use: environmental evidence

Medieval land-use has a clear relation to the landscape, while modified by general considerations of location (proximity to rivers and routeways) and land ownership. With the exception of the Chilterns the entire area falls within the open field zone mapped by Gray (1915) almost a century ago. Long and narrow scarp-foot parishes occur from Lincolnshire to West Berkshire and are able to exploit the resources of hilltop and vale. In chalk downland the parishes often extend up to where there are extensive areas of common pasture. In vales and valleys large parishes typically have nucleated villages. In the more wooded or heathland areas scattered settlement are prevalent, such as the Chiltern region of 'woodland landscape of hamlets, farmsteads, irregular open field and much enclosed

land'. Some of the more marginal land was used for forest (though it is always necessary to understand the physical forest bounds as opposed to the much wider legal boundaries, and recognise the significance of private forests (chases) and nearby parks. Beyond the regional generalisation there are of course distinct local areas like Otmoor or the New Forest and the Hampshire/Berkshire heaths where the soils and drainage produced special local conditions, or the Isle of Wight with great complexity in a small area.

The general impression from landscape studies is of an ordered (if not actually a peaceful or unchanging) landscape, with clear transitions from arable fields to pastures or commons, from wastes and woodlands to forests, that were apparent and understood by all. Important resources were shared (post-harvest grazing in open fields, access to valuable hay meadow or firewood), and demesne resources such as woodlands, warrens, and fishponds carefully conserved and controlled through courts and custom. Water was organised, its energy harvested, as it was channelled, bridged or used for travel and movement of goods. Lords, communities and lowly individuals knew the ownership and value of land, and national surveys from Domesday (1086) to the Hundred Rolls (1279) and numerous episodes of taxation made this a matter of record. Above all, the ordered flow of rural and urban products into local markets and beyond, by road and river, gave the land a continuing function in supplying the county's population, the capital's needs for food and fuel, and international needs for wool or cloth.

There is an overall major shift in some areas, and particularly on the chalk downlands, from arable to sheep pasture (more pronounced in the post-medieval period) and creation of warrens, which essentially created the downland landscape we see today. There are clear economic reasons for this related to wool production, but the change may also be related to soil degradation over the previous three to four millennia, evident from field systems of the later prehistoric and Roman periods. According to Allen, arable cultivation led to decreasing soil fertility due to erosion, soil depletion and degradation, such that these soils were not agriculturally viable using medieval technologies, and thus were laid down to pasture, a position only reversed in the 20th century with mechanisation and enhanced fertilisation (Allen 1988). More environmental evidence is still needed to clarify this issue.

Coupled with this is evidence of subtle shifts in the location of farmsteads and fields; farmsteads and fields shifted towards the edges of valleys and slopes, and fields were often concentrated in the dry valleys where soils are thicker. Although important work has been carried out on the alluviation of the Upper Thames Valley (Robinson and Lambrick 1984; Lambrick 1992b; Robinson 1992a and b), full understanding of medieval land use of some of the larger valleys (eg Middle Thames, Kennet, Itchen, Test etc) awaits further study of their hydrology. Other changes to the rural landscape arose through assarting, small-scale clearances around the edges of woodland and forest that cumulatively resulted in extensive change.

Regional variation and style of rural farmsteads

A number of crop introductions and changes occurred within the later medieval period, although their dating and spread within this region has not been studied in detail. The introduction of rivet wheat (*Triticum turgidum*) was one such, pulses such as peas and beans another, and maslin (mixed) crops such as two-row barley and oats a third. There is considerable potential here to link environmental data with information from manorial and other documentary records.

There is evidence of crop infestation during the later medieval period, and this should be examined on a regional scale to define if there are intra-regional patterns, if these are just isolated outbreaks or if they belong to an epidemic. Are some of the changes in crops, and introductions of new crops, related to this? In tandem with this is the start of an increase in the size of livestock, and the emergence of regional breeds. Can these be detected and defined in the animal bone record?

Across the region there is a clear diversity of the scale of rural farmsteads, but there may be some larger patterns based on intra-regional specialisation – and regionalisation. Certainly the nature and composition of the farm economy (crops vs livestock) varies between the Chilterns and the clay vales, each having distinctive scales of farming and livestock / crop balance. The variation in the style and scale of farming operations is obviously defined in part by the local soils and landscape, but may also be affected by economic aims, for example the balance between self-sufficiency and involvement within the wider economic market and rent/surplus extraction. The examination of crops, crop-processing and storage regimes (including buildings), and of patterns of animal husbandry (including changes in animal sizes) and butchery may help in defining these in the future.

Animal husbandry (pasturage, corralling and stabling), stock composition and animal size

There is clear evidence in the archaeological and building records of barns, byres and outbuildings, but there has been little engagement with archaeological science to aid in defining or confirming either their specific function or to define animal husbandry regimes. This may include pasturage, corralling, stabling (resulting in trampling and increased phosphates etc., from dung), and fodder. The identification of ditched enclosures as paddocks, rather than fields or garden plots, via examination of soil profiles (where buried), soil chemistry and palynological evidence, is important in determining the character of farming regimes. The size of animal bone assemblages need not relate to herd size, though establishing the latter (like human population size) is a huge challenge and some estimates could perhaps be advanced.

Plate 15.1 Felling woodland for timber, Winchester calendar, *copyright The British Library Board, 002515 Cotton Tiberius B.V. Part 1, f.6*

Changes in animal husbandry between the early medieval and later medieval periods are important in characterising 'medieval animal husbandry'. Beyond that changes within the later medieval period, and variation across the regional can only be determined by the acquisition of good, reliably-dated datasets with similar recording attributes to enable extra-site comparisons.

Woodlands and woodland management

There is much documentary evidence for woodland (Plate 15.1), and indeed environmental evidence (charcoal, pollen) for managed woodlands, but we have less understanding of their relationship to present woodland cover, and this is an area that should be addressed. Once again the combination and integration of environmental science with documentary evidence may be valuable.

Fields, field boundaries and hedges

Fields and paddocks are bounded, fenced and hedged, and environmental evidence (soil, pollen, snails) may help define these specific local environments. Land snail evidence is not widely deployed on medieval contexts but this is an area to which it might usefully contribute.

Social organisation

Documentary evidence is the major source of information about social organisation during this period, and necessarily provides the descriptive background against which the material culture and lifestyle can be reconstructed.

The Crown is represented by royal castles and manors, and a landscape organised to provide leisure activities of hunting (and jousting), and to provide timber, food and firewood, or horse breeding. Secular aristocrats and church magnates participated in this lifestyle and replicated similar facilities in greater or lesser degree.

For those in the church, the religious life encompassed a wide ranged experience: of communal life for those in orders (whether enclosed or more open orders), for secular priests living alone or in a collegiate existence, communities of women in nunneries, and solitary hermits or anchorites

Manorial lords were distinct in their landholding and access to control over rural communities, while middling landholders and freeholders might acquire considerable amounts of land outside of manorial control, or with minimal obligations to any notional superior. Small landholders, peasant farmers and the slaves so prevalent in Domesday Book had a clear ranking that came to mean less and less in the later medieval period, as the open land market and declining call on services allowed them to achieve what they could by way of advancement.

Townsmen had for long been largely free of any service due to others, though the stratification of greater and lesser burgages can easily be imagined, and surfaces in occasional disputes. It is in towns that social conflict can best be observed, whether between secular population and ecclesiastical authorities, or racial and ethnic groups.

This basic social organisation of medieval society is a backdrop against which the archaeology will always be considered. Domestic space, organisation of property, the quality of material culture and food preferences can all be investigated archaeologically and lead to consideration of differences between all ranks of society. Some aspects of life, such as migration patterns and diet, can be informed by modern scientific approaches to human and food remains. Faunal remains help to identify variation in diet.

Women and children are not absent from the documentation, but the archaeological aspects of their role and spatial activity is less clearly understood. The location of social outcasts such as lepers and the inhabitants of hospitals are often identified from historical evidence and lend themselves to studies of their homes and burial places.

Settlement

Rural settlement

Settlement types and patterns are being studied at regional level (eg Lewis *et al.* 1997) and nationally (eg Roberts and Wrathmell 2000), which is beginning to establish the necessary framework that crosses county boundaries. It is as well to remember earlier multi-volume syntheses such as the *Domesday Geography* and the *Cambridge Agrarian History of England* which abound with useful information (Darby 1986; Hallam 1988, and Miller 1991). Despite much attention being paid to rural settlement (especially on favoured topics such as moats and deserted medieval villages) much remains to be done. The region has seen important excavations of deserted sites (Seacourt – Biddle 1961/2), moated sites (Chalgrove – Page *et al.* 2005), villages (Great Linford – Mynard 1991), and extensive areas that have included village edges and origins (Yarnton – Hey 2004). The connection between the excavated sites and the present day villages as existing or recorded in maps and documents remains the key problem. The increasing amount of data from evaluation and the recovery of portable antiquities will be important once analysed, but the emerging picture is likely to be a fluid one of shifting extent and focus of rural settlement, as has been suggested in Buckinghamshire.

Village origins (likely to be related to the organisation and exploitation of field systems) may belong to the increasing organisation of rural life along with the formation of parishes and hundreds in the 9th-10th centuries, but there is ample evidence of earlier village nuclei in and around later village centres. Village expansion, whether or not 'planned', is also evident and should be expected from the conventional history of a rising population until the 14th century. Decline and abandonment of settlements can now be seen as a complex process arising from a number of causes, such as re-settlement, economic decline, and decisions of the manorial lord, in addition to population decline from plague (Steane 2001). Archaeological evidence of shrinkage rather than abandonment has been found on sites in Buckinghamshire. In Berkshire the late medieval rise of the cloth trade in Newbury may have encouraged population movement from village to town, though this will not have been a new phenomenon (M Yates 2007).

Manorial sites

The region is rich in standing remains of manorial sites, in the occupied manor houses that have been the subject of architectural investigation for 150 years, and abandoned sites surviving as earthworks or buried and unlocated. Documentation is abundant for seigniorial sites (whether lay or ecclesiastical) and the numerous royal houses in the Thames valley, both large and small are well known. Excavated sites include Whaddon, Buckinghamshire and Chalgrove, Oxfordshire where the quality and complexity of the sites is in stark contrast with peasant housing (Page *et al.* 2005). Episcopal houses at Witney, Bishop's Waltham and Winchester have been extensively explored and are appropriately more palatial (Allen with Hiller 2002, Hare 1988, Biddle

Plate 15.2 Aston Clinton moat, aerial view, *copyright Buckinghamshire County Council*

1986). Apart from Windsor many royal sites await investigation (or even location). Monastic granges such as Dean Court, Cumnor, just west of Oxford (Allen 1994) have provided insights on the monastic economy, as has the exploration of the Faringdon grange at Wyke (now a Scheduled Monument).

Moated sites have been the subject of much interest, and their distribution carefully studied; their owners ranged in status from minor landowners building defended homes to smaller and larger manorial lords, and excavations have shown that they often contained buildings of manorial status (Plate 15.2).

The manorial control of food resources is demonstrated by the presence of fishponds, rabbit warrens and parks. A Buckinghamshire survey has identified 183 fishponds, mostly manorial and some monastic (Croft and Pike 1988). They may relate to moats and other managed water systems, but across the region the presence of fresh-water fisheries was important and widespread. Parks provided an open-air larder for venison and the possibility of a contained hunting ground. The importance of hunting as a quasi-military form of popular recreation cannot be overstated, and this accounts for the prevalence of parks in the landscape (and as likely to be ecclesiastical – as at the Cistercian Thame Park – as secular). Their enclosing features can often be traced in current landscapes, while many survived to become amenity parks subject to decorative 'landscaping' in later centuries.

Towns

The urban hierarchy is well understood, with a prevailing network of rural market towns and larger centres distributed (unevenly) as a result of chance and history. The county centres were relatively small (Buckingham) or multiple (Abingdon/Reading) and both Oxford and Winchester owe much of their prominence to their role as centres of the church and learning. The importance of Southampton as a trading port, partly outgrown by the 12th-century newcomer at Portsmouth by the end of this period, derived from its location. Perhaps more typical of the region are what have been called 'the Banburys of England' (Everitt 1974, 1985), which would include primary centres such as Newbury, Berkshire, Aylesbury, Buckinghamshire and Basingstoke, Hampshire.

Urban excavations in this region have included pioneering work in Oxford, Winchester, and Southampton, and a considerable quantity of excavations in recent decades (see Plates 1.5 and 1.6), with much published but still not all. Small town surveys in the 1970s promoted hopeful agendas for action that have not borne fruit, and the successor surveys of the 21st century are more colourful but perhaps no more informative, while the questions remain. Such exploration as there has been in the smaller market towns has demonstrated the variable amount of archaeology that can be expected to survive, and shown that it is rather the deep stratigraphy of larger centres that is exceptional. The distribution of archaeological exploration has been uneven: Aylesbury has been investigated but not Buckingham, Southampton much more than Portsmouth. The extensive excavations in Southampton, Oxford, Reading and Winchester have provided large amounts of data on all aspects of urban life, from origins and development to industry, diet and environment. Urban buildings range from urban castles and defences (Banbury, Oxford, Winchester, South-ampton) to churches and monastic sites, friaries (Oxford), intra- and extra- mural hospitals (Winchester) and numerous domestic buildings (Reading, Newbury and elsewhere).

The study of urban topography has flourished in places with unusual quantities of written documentation (Oxford, Southampton and Winchester). This compelling body of evidence both points up comparisons and contrasts in the archaeological record. The easy assumptions of historical map analysis have to be subjected to archaeological scrutiny, especially in the matter of 'planned' layouts and extensions. Towns within Hampshire have been subject to plan analysis (Lilley 1999). Recently, a case based on both map and archaeological evidence has been made for a planned extension on the north at Abingdon (Thomas 2010, 51-4)

The urban environment

Palaeo-environmental evidence can aid in determining the nature of local lived-in environments in urban centres. How clean were these? Were animals (other than horses) corralled and penned in towns, is there evidence of cess pits and waste in the lived-in environment? Were streets clean, cobbled and paved areas, or were they weedy environments with herbaceous plants growing along street margins?

The presence of stratified organic deposits is seen certainly in Winchester, Southampton, Oxford and other large medieval centres. These provide the opportunity of examining the nature of medieval urban life and of the medieval urban environment.

Localised and specialist deposits of animal bones, fish bones, shellfish (Mollusca) or plant remains may represent specialist activities such as tanning, bone-working etc, or markets (eg fish markets in South-ampton). Although a systematic approach to sampling such deposits has already been employed on some sites, this needs to be made universal if we are to understand the distribution and significance of these deposits, as well as their nature and manner of accumulations.

Butchery practices may vary in urban compared to rural environments, but also on the scale of meat and food production (see comments on the *Mary Rose* below). Butchery itself provides information about local compared to wider consumption and the scale of preparation for sale or consumption.

Rural and urban economies

It is important to define the economies of both rural farmsteads and of towns to provide the basis for identi-

Plate 15.3 Great Coxwell Barn, Oxfordshire, *copyright Lucy Lawrence*

fying patterns of trade and commerce. The interpretation and integration of a whole variety of palaeo-environmental analyses (animal bone, charred seeds, insects, soil science etc) should be aimed at defining site-based practices, and providing data to aid in interpreting and understanding the regional medieval economic market and market place. As the medieval period progresses, there is also an increase in the trading economy that supplies the growing towns, from which there is now an increasing palaeo-environmental database (for example Oxford, Winchester and Southampton; eg Green 1979).

It is also clear from documentary records, particularly ecclesiastical records, that transhumance (for summer uplands grazing) and the large-scale movements of herds are seen across the region. This raises further questions about the influences of this seasonal activity upon settlements along these routes.

The built environment

The study of medieval buildings has, more than most areas, involved excavation, the study of standing buildings, and the documentary background. Moreover, the study of vernacular (traditional) architecture has been a remarkable instance of a popular academic endeavour over the last half century, largely achieved in the absence of any organised research framework as a self-supporting empirical activity, and producing a huge increase in knowledge and understanding through the emerging synthetic accounts. The more recent addition of widespread dendrochronological dating and more systematic research projects on specific topics have sharpened the edge of our understanding.

Rural building

The pioneering excavations at the deserted village of Seacourt, Oxfordshire revealed what has since become well understood from many sites about the impermanence of some domestic structures, and the tendency (particularly revealed by archaeology) for constant cycles of rebuilding. By contrast, Currie's extensive study of peasant housing in Oxfordshire (1992), and the work of Roberts in Hampshire (E Roberts 2003) have shown just how many peasant houses of the 13th and 14th century do survive, and as substantial buildings rather than the 'flimsy' and impermanent structure once assumed.

Fieldwork in Hampshire has identified hall houses with early roofs, and examined the 'cruck boundary', the eastern edge of the distribution map of cruck buildings that runs through the county (and perhaps the western edge of the common use of crown-post roofs). Timber-framed houses of the 13th century are rare, 14th-century examples more common, and most date to the 15th-17th century, especially because of farm leasing, for example by the Bishop of Winchester.

The significance of the age and survival of houses is not yet fully understood. The quantity of early buildings surviving at Harwell and Steventon, Oxfordshire, for example, is striking, and the number of 14th-15th-century hall-houses in Wargrave (a borough of the Bishop of Winchester) is also notable. Whether these relate to lordship, to the contemporary economy, or to a lack of later prosperity, is however uncertain.

Farm buildings have attracted much interest, and major early barns such as Great Coxwell of c.1300 (Plate 15.3), or the even larger late medieval example at Cholsey south of Wallingford (now lost), represent a

Plate 15.4 Long Crendon Courthouse, Buckinghamshire, *copyright Jill Hind*

body of large farm buildings of various sizes that represent significant monastic or institutional investment on farming. As long ago as 1979 James Bond commented on the small size of those surviving on the Abingdon Abbey estates in relation to those of other Benedictine abbeys, and how these might reflect differing management practices (Bond 1979, 64-5). This remains a fruitful area for future study. Examples such as those at Swalcliffe and Enstone (Oxfordshire) demonstrate the quality of such buildings in their masonry or carpentry (Munby and Steane 1995). It is probable that many more remain to be discovered.

Manor houses from castles to bishop's palaces and modest moated houses have been studied as long as medieval archaeology has been a matter of interest. They can present bewildering complexity (Windsor Castle and Broughton Castle near Banbury), surprising sophistication (Upton Court, Slough) and aesthetic interest (Sutton Courtenay 'Abbey') (Thornes 1988; Currie 1992). The excavations at the Bishop of Winchester's palaces has been mentioned above.

Urban building

As with rural vernacular, town houses and other buildings have benefited from a generation of close study, and much more is known, but more remains to be found. In Oxford a succession of domestic buildings has been recognised, from late-Saxon houses with sunken floors (similar to York's Coppergate houses), through stone houses of the 12th century, and to later stone halls with timber-framed fronts. The appearance of jettied and storeyed buildings is general from the 13th century across the region, with a difference in scale from larger towns (eg Oxford) and

smaller (Thame). The appearance of 'wealden' houses in towns and market centres in Oxfordshire, Berkshire and Hampshire may represent a fashion or a particular use (as inns for example). The varieties of style and planning can be seen in the increasing number of hall houses being recognised in Hampshire; these are of course easier to discover when timber-framed, and there may be many more medieval stone houses awaiting recognition. Typical later medieval survivals include inns (Aylesbury, King's Head; Oxford, New Inn) and town houses of prominent families (Buckingham, Castle House). In Oxford there are distinctive academic 'halls' in which students lived, but little different from other house types. Guildhalls and court houses such as those at Aylesbury and Long Crendon north of Thame (Plate 15.4) are modified for use of large public rooms, while colleges and almshouses are adapted for individual use (more like retainer's lodgings in large domestic establishments). In Oxford as elsewhere the survival of cross-vaulted cellars can be linked to the known sites of wine taverns. The Undercroft, Southampton is cross-ribbed. Inns may be distinguished from large storage cellars, several of which were identified in the survey of Southampton, by the presence of fireplaces (Faulkner 1975).

The quantum of survival is an interesting and largely unexplored topic, which depends on many factors such as destructive urban fires and the later economic history of the town. There are more medieval houses in Winchester, few in Oxford, more in Abingdon than many equivalent places, though fieldwork in Hampshire is constantly producing new examples. In Oxford more houses are known from documentary sources or from their representation on topographical drawings than exist now (and this is particularly notable with the

evidence for early stone houses). Medieval cob-walled buildings do not survive in the region's towns, but excavation has shown that these were an important element of the townscape in the suburb of St Thomas at Oxford (Roberts 1996; Hardy 1996; Cook 1999), and a particularly well-preserved example was found under one of the castle ramparts at Wallingford (Dewey and Dewey 1977, 36 and 38; Christie and Creighton 2013, Plates 5.21-26).

Ceremony, ritual and religion

Monastic houses

Like castles, monasteries have attracted much archaeological attention, but continue to produce new aspects for study in addition to supplying answers to old questions. Many sites remain little known with much uncertainty as to the location of the churches or monastic buildings.

The ancient monastic centres were at Abingdon, Dorchester and Winchester, the last two being cathedrals. Concentrations of urban houses were to be found at Oxford, Reading, Winchester and Southampton (including friaries), and of others in the Thames valley and along the south coast, with a scattering of all sorts in the countryside (especially nunneries). Reading was favoured by royal travellers moving west from Windsor, and Oxford was a centre of monastic as much as secular learning. Winchester was the centre of a Diocese reaching as far as Southwark (though much of Berkshire was in the Diocese of Salisbury), and the Lincoln Diocese encompassed both Oxfordshire and Buckinghamshire, having moved from Dorchester after the Conquest. While the most impressive (if poorly known) ruins are to be found at Reading (Plate 15.5), re-used churches survive at Romsey, Dorchester and Oxford, the last a minor Augustinian priory (St Frideswide) resurrected as a cathedral. At Notley, Thame and Titchfield, significant portions of the more usable buildings were incorporated in 16th century houses. Archaeological work has been uneven. Geophysical survey has been used on the abbey church and cloister at Abingdon (Allen 2011), exploratory work with geophysics (and dendrochronological dating) has located buildings at Wherwell, Hampshire, and a series of rescue observations were employed to recover the plan at Bicester, Oxfordshire (Hinton 1968, 1969; see Fig. 13.1 for location). Major excavations have been carried out at Reading Abbey, Winchester Old Minster and Hyde Abbey, the Greyfriars and Blackfriars in Oxford, Missenden and Bradwell Abbey, Buckinghamshire (Lambrick 1985b; Bucks County Museum 1984-5). Older excavations and observations, eg at Goring, Oxfordshire and Burnham, north-west of Slough, Buckinghamshire, are also valuable.

Subsidiary monastic buildings in precincts and in rural granges have been studied at Gorefields, Buckinghamshire, where a monastic grange had apparently originated as a nunnery, at Faringdon Wyck, Oxfordshire, where the Beaulieu Abbey grange had a group of barns as large as the surviving example at Great

Plate 15.5 Reading Abbey dormitory, Berkshire, *copyright Jill Hind*

Coxwell, and at Dean Court, Cumnor, west of Oxford, where the economy of a small grange of Abingdon Abbey could be explored (Allen 1994). At Dean Court and at Charney Bassett only one wing of the 14th century granges still survives, but more intact survivals include the Abingdon Abbey range of domestic and service buildings, the 'Pilgrim's Hall' at Winchester (Crook 1991), and the small remnant of Oseney Abbey (Oxford).

Hospitals

The lowest common denominator of religious foundations was the Hospital, present in most towns or on travel routes, and besides there were hermitages and occasional anchorites.

While major medieval hospital buildings still exist in use at St Cross, Winchester, the character of most smaller hospitals is imperfectly understood, though parts of the infirmary hall and subsidiary buildings were excavated at the Hospital of St John, Oxford (now Magdalen College) (Durham 1991). The survival of the 15th century church, almshouse and school at Ewelme, Oxfordshire is unusual.

Numerous collegiate buildings of a quasi-monastic plan continue in use at Eton College, Berkshire, Winchester School, and in the University of Oxford.

Parish churches

The parish church has for long been the subject of study, from the early interest in tombs and heraldic memorials, to the rebirth of medieval archaeology in the early 19th century, when the art and architecture of the parish church and its numerous fittings became the object of intense investigation and record. Some key aspects of this study took place in this region as a result of the interest in Gothic architecture promoted by the Oxford Society and J. H. Parker's publications, as a result of which there are copious drawings and photographs of churches throughout the region. Publications on wall paintings, stained glass, church plate and bells have continued from the 19th to 20th centuries. Only Buckinghamshire and Oxford city benefited from RCHM inventories with systematic descriptions of all churches, while the complete *Victoria County History* accounts of *Berkshire*, *Buckinghamshire* and *Hampshire*, and the 14 volumes of Oxfordshire contain substantial church histories and descriptions. Pevsner's *Buildings of England* series, with second editions for *Buckinghamshire, Berkshire* and *Hampshire* provide more recent accounts.

The much more recent interest in the (below-ground) archaeology of churches has added much to our understanding of their potential, and yet there is enormous scope for further work. Very few aspects of the church as a cultural indicator have been mapped or studied in regional terms, even though church types (such as the 'wool' church, steeples, or the early two-cell parish church) are well known.

The place of the church in relation to the parish and village plan has been a matter of interest as has origins in relation to the history of the manor and parish. The existence of a vicarage, rectory or rectory farm and other parochial buildings may be significant aspects, as is the patronage of Religious or lay rectors in building works. The existence of private chapels in houses is another aspect of personal devotion that can be also be seen in the proliferation of manuscript Books of Hours and devotional objects.

Cemeteries

The thousands of burials in parish, monastic and cathedral churchyards are an important resource for human anatomy and anthropology. Burial groups are divided between the religious and the laity, and among the latter the rich are often buried in separate, more prestigious locations than the rest. Despite the large numbers of medieval abbeys and churches, there are very few large cemetery groups excavated in the region, and less that are published. Of the towns, Winchester is best served, and here a group of more than 1000 individuals was excavated at St Swithun's cathedral priory (Kjølbye-Biddle 1992). Other smaller groups have been excavated but not yet published, from the Benedictine nunnery of St Mary Nunnaminster and from Hyde Abbey (Scobie in prep).

A number of groups, mainly of the religious, has been excavated and published from the cathedral and the friaries at Oxford, of which the largest (*c*.100) was at the Oxford Blackfriars (Lambrick 1985b). An assemblage of approaching 100 medieval bodies of lay people was found at the church of St Peter-le-Bailey (Webb and Norton 2009), and there is also a group from the chapel of St George at Oxford Castle. One of the largest groups in Oxfordshire is that of approaching 1000 bodies from the lay cemetery at Abingdon Abbey (Plate 15.6), but although specific studies have been carried out (eg Wakely 1993; Duncan 2000), this is still not fully published.

There are no large cemetery excavations published from Buckinghamshire, although the Anglo-Saxon cemetery at Wing continued into the 12th century (Holmes and Chapman 2008). Outside Winchester, one of the largest studies in Hampshire has been the cemetery of more than 250 individuals associated with the church of the lost settlement at Hatch Warren, Basingstoke (Fasham *et al.* 1995). On the Isle of Wight only one medieval cemetery, that at Flowers Brook, Steephill, has been excavated. About 40 individuals were recovered, but this is not published.

Burials from medieval hospitals are a significant source of information about disease, poverty and other social issues. Studies from the region include a group from the Litten cemetery, Newbury, Hampshire (Clough 2006), and the very recent excavation of the cemetery of the Hospital of St John at Oxford. Other, more specialist groups include the cemeteries of leper houses, but none of these has been comprehensively

Plate 15.6 Excavation in the lay cemetery of Abingdon Abbey, Oxfordshire, *copyright OA*

Religious practice and pilgrimage

Places of veneration, including shrines and holy wells are numerous. In this class may be included preaching and market crosses, and features found in and around parish churches. Portable objects of veneration, such as pilgrim's badges and religious souvenirs (eg lead ampullae for holy water) are not infrequent finds and have often been recorded under the Portable Antiquities Scheme.

Warfare, defences and military installations

The early defences of the pre-conquest *burhs* were the origin of later town walls at Oxford, Wallingford and Winchester, which were maintained and refurbished perhaps largely for reasons of status. Later walled towns include Southampton and Portsmouth (very late), both necessary for their coastal setting, but apparently no other towns in Berkshire or Buckinghamshire thought provision of defences worth the expense. Although defended towns are few their standing remains have perhaps received less attention than buried sections; the Southampton defences have been the subject of a study, but the standing remains in Oxford have been less investigated than the remains of the outer part of the double wall in the north-east sector. The castles of the region are varied in character (Table 15.2); the larger numbers of them in Oxfordshire and Buckinghamshire perhaps reflects seigniorial choices in providing fortified homes, and the prevalence of early castles of the Anarchy in the mid 12th century, most of which are earthwork castles.

Much remains to be learnt from castles, which range from early earthwork constructions to royal and seigniorial centres such as Windsor. The survival of above-ground evidence is remarkable at Windsor but is paralleled elsewhere in less exalted form. On the other hand, castles' level of survival particularly in urban environments is not good, and the loss of Banbury Castle in several phases of development has been unfortunate, while the discoveries at Oxford Castle have shown how much of the medieval castle had been lost to the prison phase (while late-Saxon material had survived).

Excavations at castles such as Wallingford, Windsor, Winchester, Portchester, Southampton, Carisbrooke, Banbury and Oxford have produced important results (Plate 15.7) showing the complexity of development (Windsor and Portchester) and of origins (Carisbrooke), including the pre-castle phase at Oxford. At Portchester, Oxford, Winchester and Windsor excavations have been undertaken alongside studies of standing fabric and

investigated. A small group has been examined from the leper hospital of St Margaret at High Wycombe (Farley and Manchester 1989).

There were few racial minorities in the region in the medieval period, the most notable being the Jewish community. A Jewish cemetery of 88 individuals, mostly subadults, was excavated at Mews Lane, Winchester (Winchester Archaeology Service 1995 archive). The approximate location of the cemetery of the medieval Jewish community in Oxford is known, but no bodies have yet been found. Much remains to be learnt about the diet, lifestyle and life expectancy of Jewish people in medieval England, and in the Solent-Thames region.

Table 15.2 Numbers of castles by county

Type	Berkshire	Buckinghamshire	Hampshire	Isle of Wight	Oxfordshire
Masonry	3	1	10 (7+3)	3	7
Earth	11	23	12	-	9
Unknown	3	1			

documentary sources. Less work has been undertaken on minor and earthwork castles: Jope undertook pioneering excavations eg at Ascott Doilly and Deddington (Jope and Threlfall 1959; Ivens 1984), and mottes have been investigated at Middleton Stoney, Oxfordshire (Rahtz and Rowley 1984), and Weston Turville, Buckinghamshire. Windsor and Portchester are the principal extant castles, with significant remains to be seen at Winchester and Oxford and individual

structures at Donnington (Plate 15.8), Berkshire and Boarstall, Buckinghamshire; the very impressive medieval mansion at Broughton Castle, Oxfordshire has perhaps less claims to 'castle' status.

The current interest in the concept and status of the castle is producing a burgeoning literature, though a wish to discount the defensive aspects of castles is given the lie by the repeated upgrading of coastal defences in the light of invasion threats and actual attacks (eg at
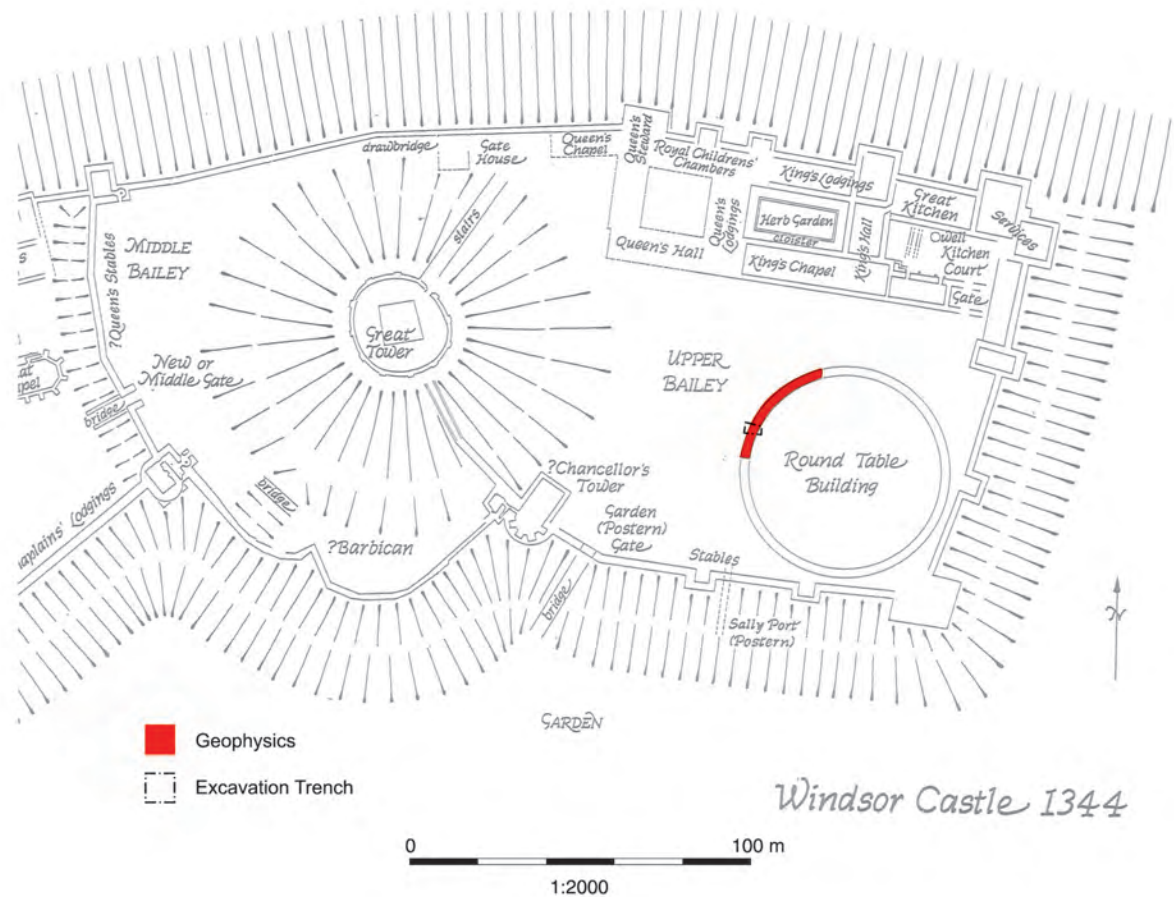

Plate 15.7 Excavation at The Round Table, Windsor, Berkshire and reconstruction: *upper part copyright T Tatton-Brown, drawn by Jill Atherton with additions; lower part copyright OA*

Plate 15.8 Aerial view of Donnington Castle, *copyright Cambridge University Committee for Aerial Photography*

Southampton, Portchester/Portsmouth, and Isle of Wight). Increased risk on the south coast meant that in the early 16th century Henrician castles or defences were provided at Portsmouth, Hurst Castle and the Isle of Wight (East and West Cowes, Sandown and Yarmouth). Other and possibly more productive areas of concern include castles and their landscape setting as manors with adjacent villages and fields, parks and forests (eg Portchester), and the relationship of castles to major seigniorial establishments, such as the king's houses and the 'palaces' of bishops and magnates, and the relationship to landholding and household mobility. At a lower level, concerns for security play a part in the prevalence of moated homes.

Material culture

The indicators of material culture range from the size and status of buildings (whether churches or domestic buildings) to the assemblages of finds from different types of sites indicative of life style and status, personal adornment, and diet. Differing rates of survival make it hard to compare the building stock, but notable instances such as the prevalence of cruck houses in Long Crendon, Buckinghamshire and the quality of early housing in Harwell and Steventon, Oxfordshire are important reminders of the level of sophistication that medieval 'vernacular' building could reach. How these buildings

were used, and what they contained, is less well understood than their structure, while their furnishing and decoration only become better known in the 16th century from the evidence of probate inventories.

With personal adornment and domestic objects the evidence is overwhelming, and small finds can be seen as important indicators of consumer activity and purchasing power in rural and urban households.

0   50 mm

1:1

Plate 15.9 A Medieval copper-alloy and enamelled heraldic harness pendant (PAS IOW-3594A1). The arms of this pendant were borne by Sir Walter de Beauchamp Knt., of Alcester, lived *c.* 1255–1303, *copyright Frank Basford*

Perhaps the most interesting recent development has been the results of the Portable Antiquities Scheme, and the realisation of the quantity of small metal objects that have been found, eg from the Isle of Wight over 600 new items including 'coins, seal matrices, buckles, harness pendants, brooches, purse bars, strap fittings, tokens, padlocks, cloth seals, keys and steelyard weights' (Plate 15.9). Much remains to be done, even at a basic comparative level of, say, the published finds from rural Buckinghamshire (at Milton Keynes) and a major urban centre (Winchester). Comparison of material culture can also be made by consideration of the differences between monastic and military sites, as the analysis of finds from Carisbrooke Castle has shown (Young 2000). Pottery dominates the excavated finds, and allows continuing study of the varieties and quality of pottery usage, with implications for activity and status (and an increasing understanding of production and marketing).

Trade and industry

Building materials

The bulk production and distribution of building materials will always have been a major enterprise.

Stone

Stone quarrying is important in the Jurassic belt for fine limestone and stone slates, as also in chalk areas for chalk rubble and clunch. From the 11th century at least these have been carried by road and river along the Thames Valley, while materials from Dorset, Devon and Cornwall and the Isle of Wight have been delivered by sea.

Cotswold building stones from the Burford/Taynton area of Oxfordshire have been exploited from before the Conquest for fine quality building and sculptural stone, and the quarries around Oxford (Headington and Wheatley) were also well used in the later medieval period, and convenient of access for local use and export to Windsor and London. Although large areas of extant quarries (eg Taynton and Headington) are well known and easily identified, many other local sources were used whose existence is less obvious unless large stone pits are recognised (eg in Wytham, Oxfordshire). The identification of stone types in buildings is important in this respect (eg Berkshire churches). The Isle of Wight had important resources of stone (limestone and Greensand) at, for example, Quarr and Binstead, that readily leant themselves to coastal distribution in Hampshire and Sussex and are found in several cathedrals, churches and castles. The winning of stone slates was a specialised industry, which came to be centred at Stonesfield, Oxfordshire where the quarry pits are still extant.

Chalk digging in Buckinghamshire and Berkshire would always have been a more local process at any point where the material could be easily reached, and with more prominent sites like that at Bisham (used for Windsor) close to river transport.

Brick and tile

Clay resources were widely available throughout the region, and exploited for the production of bricks and tiles. Brick was increasingly important in the medieval period, with important early examples of the use of brick from the 15th century (Windsor, Berkshire, Eton, Buckinghamshire and Ewelme, Oxfordshire). However, the means and location of production is poorly understood, though it may be that as at Eton College the workshop for production and firing of bricks was specially established for the project. There are documentary references to production of bricks at Slough, Brill and Tingewick west of Buckingham, but these are not otherwise verified.

The allied trade of floor tile production is well-known from long study of the distribution of products in churches and major secular buildings of the region, but production is less well understood, with the exception of the Penn industry in Buckinghamshire. A recent study (Keen 2002) has emphasised the prominence of the Penn tiles industry, with an extensive distribution in south-east England including prominent royal sites at Windsor, Westminster and the Tower of London. In Hampshire tile kilns are recorded at Highclere and have been excavated at Andover. The production of roofing tiles may have been more closely related to pottery, as at Olney and Latimer in Buckinghamshire where both were produced in succession on one site (Mynard 1984).

Timber

The region was well-supplied with timber, in forests, woods and hedgerows, and its exploitation for construction is well attested in documentary sources and in surviving buildings. It is also known that timber was imported from outside the region, as with the acquisition of an entire wood from Cakeham in West Sussex for Windsor Castle in the 1350s, while the importation of oak and softwood planks from overseas (especially the Baltic) for doors, shutters and panels was a substantial trade throughout the later medieval period. The surviving timber elements of buildings are an important resource for documenting the origins and conversion of the material, to complement the information on supply and transport gained from building accounts. Accounts also emphasise the use of wood products (eg bark and branches for tanning).

A major wood product was firewood, required for heating and cooking in town and country throughout the region. Best documented is London's timber trade, which encompassed wood from the Chilterns that was carried down river from Henley to London, but supplies to towns like Winchester and Oxford can only have been possible with a widespread and ordered management of woodland resources. Wood products on a domestic level must have been a considerable industry in aggregate, if largely evidenced by the survival of carved and turned items in waterlogged deposits. A carpenter's workshop of the 14th century excavated at Whaddon, Buckinghamshire contained remains of

turned bowls illustrating all stages of the process (Griffiths 1979).

An increase in industrial activities, in both the urban and rural context, requires increasing and sometimes specialised fuel. The examination of charred plant remains, and of charcoals in particular, will help to define the nature of the fuel and tinder, and the presence of managed woods, pollarding and coppicing.

Productive industries

Pottery

Pottery production sites remains somewhat elusive. Discoveries suggest that the pottery industry involved both large and small-scale production. The industry at Brill, Buckinghamshire is well documented and partly excavated (Mellor 1994), while suspected locations at Nettlebed in the Chilterns and sites near Leafield in Wychwood remain to be located. A site in Berkshire has been discovered at Ashhampstead Common (Mepham and Heaton 1995), and another at Camley Gardens, Maidenhead (Pike 1965), while 'imports' from nearby industries in Wiltshire and Surrey were not infrequent. Exotic imports occur mostly in relation to port sites as at Southampton, while late medieval imports of for example German stoneware became widespread across the region.

Cloth

Cloth production was perhaps a major element in town economies in earlier centuries, and re-emerged in small towns and rural areas in later centuries, but its archaeology is hard to identify beyond the records of dyeing, fulling (mills) or tenter fields, most notably recorded in the Brooks Street excavation in Winchester. Cloth industries were also a favoured enterprise in the 16th century for re-using monastic sites.

Leather

Tanning was another major urban activity of which relatively few traces have been reported despite being a reasonably well documented trade (as was the more specialised parchment making trade recorded in Oxford and Winchester). Tanneries have been excavated at several places in the region, for example the late medieval example at Fordingbridge, Hampshire, at Reading, Berkshire (Ford *et al.* 2013; Plate 15.10) and at Abingdon, Oxfordshire (Pine and Taylor 2006)

Iron and metalworking

Despite good documentation and a wide assemblage of artefacts, the production sites and technology associated with these industries are not well understood, though traces of bloomeries and iron-working are occasionally encountered, as at Olney, Buckinghamshire. Much of the production may have been small-scale, and village blacksmiths were in all probability ubiquitous throughout the region as well as urban smiths, making nails, horseshoes, and iron parts for wooden machinery (eg mills and wheels).

Salt

Salt carried from the Droitwich brine wells along the numerous 'salt ways' will have served much of the northern end of the region, but the south coast and Isle of Wight was a major production area for salt from coastal evaporation pans, especially around Portsmouth

Plate 15.10 Tanning pits at Reading Oracle, *copyright OA*

harbour, and is well-documented at Portchester. The industry is documented from Domesday, and survived long enough to appear on 18th century maps, eg at Lymington (Keen 1989). Salt-making becomes a relatively major industry and sites on the Solent coastline at locations such as Pennington provide the opportunity to examine the nature of the estuary fringes (the physical environment), the modifications made to harness salt water and brine, and the technology and fuel (charcoal) required to help in any of the evaporation processes. These activities may be conducted during periods of increased salinity of the local soils, or can themselves result in such increases, changing their nature and fertility.

Processing

Milling

Mills, that is watermills, were very numerous by the time of Domesday Book (1086) throughout the region (except where water was lacking), and must be accounted one of the great achievements of Anglo-Saxon technology, together with the re-routing of water sources to reach them. Many of these will have been on the site of later mills, whose ponds and leats may be much older than the present structures. There may have been a change from horizontal to vertical-driven wheels in the late-Saxon period. Excavations at High Wycombe and Reading have revealed traces of early mills (Ford *et al.* 2013). Oxford castle mill was observed in 1930 and more recently destroyed without record. On the south coast there were tidal mills (eg at Portchester), though their documented use was interrupted by changing tidal conditions in the 14th century.

Windmills are as likely to have appeared first in this region as anywhere in England, when they came into use in the late 12th century (eg at Dinton, Buckinghamshire, *c.* 1180). Much can be learned of their character from a study of the earlier post-medieval survivals (as at Brill), while mill footprints are a not unusual find (eg Great Linford, Buckinghamshire)

Fulling mills operated in areas of cloth production (eg on Hampshire rivers and on the Kennet in Berkshire) but there is little evidence of the physical remains, even where sites have continued in use, though much of their may have been similar to those of corn-mills.

Water environments

There is an increase in mills on rivers, and of management of rivers (leats etc) for milling and other industrial purposes. In addition there may be management of waterways, and cutting of, for example, *Ranunculus* to promote water flow to aid fishing. Thus there is the direct evidence of changing nature of watercourses, water flow, and the river-bed and river-side environments, but also there is the potential that this may have a wider impact on the floodplain. Thus the development of rivers, river systems and management of watercourses

and their implications and impact upon flooding regions and the nature of floodplains, should be considered a theme that requires addressing.

Transport and communications

River

The River Thames was a significant transport route, but its navigability can be hard to demonstrate: for example, the use of Taynton stone in the White Tower does not prove use of the full length of the Thames for stone transport. Weirs and mills were certainly a hazard to navigation (and so mentioned in Magna Carta), and the difficulty of navigation between Oxford and Reading is thought to have led to the increased importance of Henley as the transhipment port for the cereal grown in the south midlands and destined for London. Henley and other local ports (Marlow and Hedsor) were used for exporting Chiltern products such as firewood and tiles, while the restricted upstream distribution of middle Thames Berkshire pottery of the 12th to 13th centuries suggests less was travelling upstream. The use of smaller rivers such as the Kennet in Berkshire and Great Ouse in *Buckinghamshire* is poorly understood, though the former had wharfage in Reading near its Thames confluence, and documentary evidence has demonstrated the supply of large amounts of cloth from Newbury to London in the late medieval period (M Yates 2007).

Roads

Road transport was always more important than is allowed, whether by pedlar, packhorse or two-wheeled cart. The medieval road network will have been well established with the development of the urban and market system, and is attested by eg routes followed by royal progresses in the Thames valley. Changes in the importance of routes include the creation or upgrading of the route to the newly created Portsmouth in the late 12th century (A3), and the development of long-distance routes such as Southampton to the midlands and London to Coventry (A5). Roads are poorly understood archaeologically, especially where they have remained in use, though surviving earthwork evidence of local roads and tracks may be obvious in deserted or shrunken settlements. The most obvious surviving evidence for medieval main roads is in related structures such as bridges, and their associated hospitals, chapels or hermitages. Thames bridges are necessarily sparse, though more abundant upstream. The sequence of fords and bridges at Oxford has been well studied, and its situation has always required long causeways associated with narrower bridging points. In Buckinghamshire there was a series of bridges along the Great Ouse (some 14 by AD1350), and a series of causeways from Aylesbury to Wendover. A hospital was founded on the bridge at Stony Stratford in Milton Keynes, and there was a bridge hermit on Oxford's Grandpont.

Sea and coast

The south coast of Hampshire/Isle of Wight has always been important for overseas trade, coastal trading, and for cross-channel shipping routes to Normandy and beyond. Interest has concentrated on medieval Southampton, which has abundant archaeological evidence for the receiving and storage of goods, much exotic pottery, and a richly documented participation in international trade. The predominance of the main accounting port should not draw away from other nearby places the possibility that they were also engaged in trade. On the Isle of Wight quays have been identified both from remains and documentary sources. Environmental evidence of trade and imports can be recognised where there is evidence of exotics in the form of spices, but not in other areas, eg imported livestock, the recognition, origin and dating of which is important in characterising the medieval economy of the region.

Use of the south coast ports for overseas trade is an obvious topic, but the coastal trade may have been a greater bulk (demonstrated by the distribution of objects such as Purbeck marble mortars), and will have involved many small landing places as well as large ports.

Marine and maritime environment

The development of harbours provide the potential for examining waterlogged contexts relating to the maritime environment, but may also contain materials from the dryland docks. The sediments may provide long pollen

Plate 15.11 Pepperpot lighthouse, Isle of Wight, *copyright Isle of Wight Museum*

Plate 15.12 Mary Rose undergoing conservation, Portsmouth, *copyright Mary Rose Trust*

records relating to the land-use and vegetation history in and around the docks and their interfluves, as well as waterlogged structural timbers and plant remains.

The maritime link obviously provided the landing point for imports, but also for marine fishing which is well-known at this time as evidenced from South-ampton. Studies of fish bones from harbour sites where immediate preparation may occur, or of market sites (eg Southampton) provide important information about local and regional economies, and also provide data about national fishing strategies and economy at this time (Barrett *et. al.* 2004).

Ships and boats

One medieval lighthouse survives on St Catherine's Down, Isle of Wight (Plate 15.11). Wrecks are known from the coasts of the Isle of Wight, but mostly from documentary sources. Existing wrecks of importance include the *Harry Grace-Dieu* in the Hamble, and the *Mary Rose*, now the object of detailed study, and on display in its own museum. By contrast, the development of river boats from the medieval Thames 'shouts' to the post-medieval 'western barges' and punts is not well understood, though it is believed that the 'Blackfriars 3' boat from the London Thames is a shout. A medieval logboat is displayed in the River and Rowing Museum at Henley. Ship-building was carried out on the Hampshire coast, and a dry dock is recorded at Portsmouth in King John's reign.

The *Mary Rose* provided significant understanding about Tudor land-based economies for the provisioning of the ships, via detailed studies of the animal bone (butchery, preparation and packaging of salt beef etc), fish bones (preparation of salt cod), and other food stuffs (waterlogged plant remains of apples, plums, pepper corns etc). The possibility exists via DNA and other studies to start to examine specific crop genetics and species types and development, eg the choice of apples and plums chosen to provision the vessel. Waterlogged plant remains provided details of the clothing, hay and straw stuffing for of shoes and bedding, and the pollen giving evidence of the land-based environment as well as the defining the vegetative nature of the sail fabric (hemp/nettle).

Information from naval vessels indicates the industrial scale of food production and preparation to provision and victual these vessels and fleets, telling us more about the land-based economy needed to supply them, than about the vessels themselves (Allen 2005).

The potential for medieval and post-medieval boats is high, and the *Mary Rose* provides an exemplar (Plate 15.12), but other recent investigations have sadly not engaged with archaeological science, to the detriment of the comprehension of the vessel itself, but more importantly the key crucial and rare insights to the land-based economy and material provisioning the vessels.