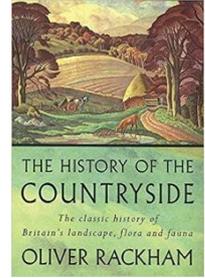


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**A History of the Countryside**

Phoenix 2000 (1986)

Notes AJM April 2016

*Italics – my summary* : Normal font – extracts



## Preface

‘Much of the material for this book has come my way in the course of other researches: facts have turned up and have been filed away until enough has been hoarded to suggest questions and answers. Insights may also come at random from travels made, or documents read, for some quite different purpose. I went to Texas to discuss Cretan archaeology, and what I saw made me revise my views on hedges.

This book is about the ordinary countryside. In my south Norfolk childhood I wondered why roads had bends, why lanes were sunk into the ground, what dogwood and spindle were doing in hedges, why fields were of odd shapes, why elms stopped abruptly just north of Bungay, and so on. These are difficult questions, and their roots go deep into the past.

The ordinary landscape of Britain has been made both by the natural world and by human activities, interacting with each other over many centuries. This is not an easy idea to grasp. In the last century people (that is, writers) often thought of the country as the world of Nature in contrast to the town. The opposite exaggeration now prevails: that the rural landscape, no less than Trafalgar Square, is merely the result of human design and ambition....

In reality the countryside records human default as well as design, and much of it has a life of its own independent of human activity. Trees are not just things that people plant, like gateposts: a friend of mine has cut a good crop of ash trees which have arisen where his predecessor planted pines. The landscape ranges from the almost wholly artificial, like the middle of a barley field, to the almost natural, like the moors of Caithness. Most of this book is about 'semi-natural' areas - those that are neither virgin vegetation nor planted crops. With many features, such as ponds and hedges, it is still not possible to say where stops and human activity begins.’ Xlii

*Book covers post-glacial (or present interglacial) period – the 12,000 years of temperate climate since the last Ice Age. There were at least 5 interglacials before that.* In the first half of the present interglacial the vegetation was almost wholly natural – largely wildwood peopled by Mesolithic men. Civilization began quite suddenly with the arrival of Neolithic men in about 4000 BC. The second half of the post-glacial is concerned with the development of the cultural landscape.

‘This book deals particularly with the Middle Ages and earlier. I do not disparage eighteenth- and nineteenth-century contributions to the landscape, but they are well known and easily over-emphasized. The outstanding mystery is what happened to the English landscape in the Dark Ages between the Romans and the literate Anglo-Saxons (AD 410-700). Most of us were taught that the Angles and Saxons moved as pioneer settlers into an abandoned land, whose previous inhabitants had fled or been slain. Many recent excavations reveal a gradual changeover with little apparent effect on the landscape; sometimes, as at Rivenhall (Essex),<sup>1</sup> it is not easy to tell at what point the Romano-Britons turned into Anglo-Saxons. The ecological evidence strongly favours continuity. When the curtain is raised by Anglo-Saxon documents, much of what we now regard as the 'classic' English landscape was already there, had already acquired its regional differences, and as far as we can tell was not new. It increasingly seems likely that, at least since the Iron Age, every inch of the British Isles has either belonged to somebody or has been expressly set aside for communal use. Not just main roads but wide areas of fields and lanes are Roman (or earlier) antiquities, and survived the Dark Ages almost intact.’

## 1. Regions

*Lowland England has two landscapes:*

- *Ancient countryside – hamlets and small towns, ancient isolated forms, mixed crooked hedges, many unstraight often sunken roads, public footpaths, small woods, pollard trees away from habitations, antiquities of all periods*
- *Planned countryside – villages, C18-19<sup>th</sup> isolated farms., straight hawthorn hedges, few roads, straight, few footpaths, few woods, pollard trees (except riverside willows) only in villages, few antiquities (usually prehistoric)*

*Historic differences:*

- *Ancient countryside – little open field, most hedges ancient, many small woods, heathland, other trees oak, ash, alder, birch, many ponds*
- *Planned countryside – open field beginning early and lasting till Enclosure, modern hedges, few (large) woods, few heaths, bracken, broom, other trees thorns & elders, few ponds.*

## 2. Historical methods and the use of evidence

*Pollen analysis, archaeology, place names, Anglo-Saxon charters, Domesday Book, medieval records, maps, boundaries, plants, aerial photographs, testimony and tradition.*

*Domesday is surprisingly accurate, and records an England that was about 35% arable land, 15% woodland and wood-pasture, and 1% meadow. Pasture can be estimated at 30% of the country. This leaves 1/5<sup>th</sup> of England as mountain, heath, moorland, fen, houses & gardens, and waste land.*

Accurate map making appears suddenly about 1580.

*The parish system with its boundaries was already old by Domesday Book. Minor changes were possible till the early Norman period, but in about 1180 the system froze and could no longer be altered.*

## 3. Conservation

I cannot analyze the historic landscape without noticing how much of almost every aspect of it has been lost since 1945 (see the Luftwaffe's aerial photographs)

There are 4 kinds of loss:

1. Loss of beauty, especially that exquisite beauty of the small and complex and unexpected, of rog-orchids or sundews or dragonflies
2. Loss of freedom, of highways and open spaces
3. Loss of historic vegetation and wildlife, most of which is gone forever: to recreate an ancient wood is beyond human knowledge
4. Loss of meaning. The landscape is a record of our roots and the growth of civilization. Each individual historic wood, heath, etc. is uniquely different from every other, and each has something to tell us.

Except for town expansion, almost every hedge, wood, heath, fen, etc. on the Ordnance Survey large-scale maps of 1870 is still there on the air photographs of 1940. Much of England in 1945 would have been instantly recognizable by Sir Thomas More, and some areas would have been recognized by the Emperor Claudius.

*The need for reclamation of land has been undercut by plant breeding.* In 1945 the (official) average yield of wheat was 0.95 ton per acre; in 1982 it was 2.44 tons per acre. The wheat that we grew in 1945 can now be grown on well under half the acres. 27

'The landscape is like a historic library of 50,000 books. Many were written in remote antiquity in languages which have only lately been deciphered; some of the languages are still unknown. Every year fifty volumes are unavoidably eaten by bookworms. Every year a thousand volumes are taken at random by people who cannot read them, and sold for the value of the parchment. A thousand more are restored by amateur bookbinders who discard the ancient bindings, trim off the margins, and throw away leaves that they consider damaged or indecent. The gaps in the shelves are filled either with bad paperback novels or with handsomely-printed pamphlets containing meaningless jumbles of letters. The library trustees, reproached with neglecting their heritage, reply that Conservation doesn't mean Preservation, that they wrote the books in the first place, and that none of them are older than the eighteenth century; concluding with a plea for more funds to buy two thousand novels next year.' p30

## 4. Animals and plants – extinctions and new arrivals

**Extinct animals** lion, leopard, hyaena, elephant x2, rhinox2, cave bear, Irish elk; sabre toothed cat. Mostly died out due to hunting in Palaeolithic times.

Auroch – until Bronze Age. Corpus has a horn. Now extinct worldwide.

Bear – until Roman times at latest

Beaver – place names like Beverley; survived till Anglo-Saxon times in E Yorks.

Wolf – Welsh borders, and the north, in medieval times; bounty on their heads in C13th, last record 1394-96. Survived longer in Scotland – till C17.

Swine – rare by MA, except where kept in parks. Probably died out due to destruction of wildwood.

Crane – luxury article of diet, ceased breeding C16th.

Great auk, common till Iron Age, extinct by C17.

### Declining animals

Wild cattle – the white park cattle, survivors from MA. Park cattle are supposed to be descended from wild ones.

Deer – reindeer until last ice age, elk till Mesolithic period. Red deer common, and their antlers used as picks in Neolithic period. Declined with advance of farmland, surviving to C19 only in north and Exmoor, and of course Scotland.

Roe deer.

Polecat, martin, wildcat – recent decline.

Kite – common in C15th. London kites were red, not black, and probably not scavengers (this comes from Shakespeare).

## Plants

Known extinctions confined to last 300 years – we have lost 15spp of flowering plants and ferns, 2spp of mosses and liverworts, 40spp of lichen. This is 1, 2 and 3% respectively.

Causes of extinctions – destruction/alteration of habitat, collecting and eradication, air and rain pollution. The biggest change a medieval would notice now is the appearance of tree trunks, which used to be covered with a patchwork of differently coloured lichens, as now only in remoter regions. Cause is sulphur dioxide.

**Naturalised animals, rats/mice** (medieval rat was the black rat from India which had arrived by the C3; the brown rat arrived C18th.

Rabbit appear C12th, introduced, kept in warrens, kept all over the country by C19th. 99% died following introduction of myxomatosis in 1953. They used to maintain heaths and grassland, which declined.

Fallow deer – present in previous interglacials but unknown in Saxon Britain. Probably introduced by Normans, along with rabbits.

Pheasant – by C12th. Native in Central Asia and SE Russia.

Squirrel – C19th.

Collared dove – from 1930, spreading spontaneously from Asia and SE Europe.

## New & naturalised plants

Willowherb introduced from N America c1890.

Weeds – many are survivors of arctic plants living in the late glacial tundra. Others depend on agriculture and are linked with farming.

Chestnut – native in Italy, and introduced by Romans, as was the walnut. Horse chestnut is unrelated and was introduced from Albania in the C16th.

Rhododendron, C19th.

Rosebay willowherb – rose from rarity to abundance within 150 years. First recorded 1597, then 1666 in Greenwich. It spread sporadically over many decades. Highland populations are probably indigenous, but lowland rosebay was probably introduced from America or Central Europe in the C17th. It spread only with the railways – it likes poor, disturbed ground, and its seeds travel in carriages.

Ragwort – S Europe original brought from Etna. Also spread with railways.

Cordgrass.

## 5. Woodland

The history of woods is infiltrated and corrupted by myth and pseudo-history. Trees arouse strong feelings and give rise to complaints, regulations, policy statements, textbooks, laws, and Letters to the Editor. The things that people have said about woods have an unreasonable fascination for scholars, who even now retail them at face value without investigating what was happening to the woods themselves. 64

In the beginning, and for millennia after the end of the last Ice Age, the British Isles were covered with natural forests collectively known as *wildwood*. .. Our great wildwoods passed away in prehistory and have left neither written record nor legend. They have to be reconstructed from pollen analysis.

There are 6 ways in which trees interact with human activities:

1. Woodland – woods are land on which trees have arisen naturally. They are managed by the art of woodmanship to yield successive crops. When cut down the trees replace themselves.
2. Wood-pasture – involves grazing animals as well as trees
3. Plantation – forestry, we call it
4. Non-woodland – the tradition of trees in hedgerow and field
5. Orchards
6. Trees of gardens and streets

All of these except plantations go back to at least Anglo-Saxon times. Woodland is the closest to wildwood.

A Forest is land on which the king has the right to keep deer. To the medievals a Forest was a place of deer, not a place of trees.

Coppice – the stump sends up shoots and becomes a stool from which poles can be cut at intervals of years – ash and wych-elm; willow can grow 2" a day

Suckering – aspen, cherry, elms – the stump dies but the root system sends up successive crops of poles

Pollards – cut between 6-15' above ground, leaving a permanent trunk called a bolling (rhymes with rolling) – done where animals could not be fenced out

The trees of a wood are divided into timber, trees and underwood. Timber and wood had different uses. Timber is beams and planks, wood is rods, poles and logs. Underwood was for fires.

Almost all land reverts to secondary woodland if left alone

Wildwood began c 11,000BC, after the last glaciation ended. In order: birch, aspen, willow, pine, hazel, alder, oak, lime, elm, holly, ash, beech, hornbeam, maple. Fully developed by 4000 BC.

Wildwood was in five regional types:

1. Pines- E Highlands

2. Birch –W Highlands
3. Oak-Hazel - S Scotland, Highland England, Wales, parts of Ireland
4. Hazel-elm Ireland, SW Wales
5. Lime - Lowland England

*In England you can't produce wood-pasture by burning - only pine will burn standing.*

*4000 BC Neolithic settlers had a sudden impact - they cleared forest and started agriculture. They were not numerous, but they were widespread. Within 2000 years large tracts of country had been converted to farmland or heath. In some areas the wildwood would never return - E Anglia, chalklands, Somerset Levels, coastal Lake District. Probably half England had ceased to be wildwood by the early Iron Age (500BC).*

*Most British trees are hard to destroy - they won't burn, and grow again after felling. British woodlands (except pine) burn like wet asbestos. By the earliest Neolithic period, someone had made the discovery that the regrowth shoots from a stump are of more use than the original tree.*

*The world's earliest evidence of woodmanship comes from the wooden trackways buried in the peat of the Somerset Levels. The Sweet Track was elaborate - oak timber, underwood poles of ash, lime, elm, oak, alder, and small poles of hazel and holly. Many of the poles were grown for the purpose. Later trackways are made of wattle hurdles of hazel. The wattle hurdles still made in Somerset are a 6000-year-old industry.*

*In Roman Britain farmsteads and villas covered the countryside.*

*Domesday Book makes clear that England was not very wooded - maps pp 76-77. Even the bigger woods were not uninhabited woodland - you couldn't go into a wood and reach 4 miles from habitation. Many villages were over 4 miles from any wood.*

*Anglo-Saxon period - Forest of Neroche nr Taunton was the biggest concentration of woodland.*

*Place names: -ley and 'hurst mean an inhabited clearing surrounded by woodland. 'eld means an open space in sight of woodland with which to contrast it. —land, lound come from Norse lundr (wood); -leah means wood/clearing; names ending —ett refer to particular trees, the only common one being spinney - a wood of thorns. Recent names include plantation, cover, jubilee wood, furze/firs wood, hundred acre wood.*

*Most medieval buildings are made from large numbers of small oaks. A typical C18th Suffolk farmhouse used 330 trees. The Ely Octagon of 1330 is probably the grandest timber structure ever built in England.*

*C14th woods were relics of an Anglo-Saxon & Norse social system. Rising population caused woodland to shrink from 15% in 1086 to 10% by 1350 (ie to their present extent). This stopped with the Black Death in 1349.*

*Woods were valuable sources of income - greater than arable land, a little less than meadow.*

*Fuel using industries developed near woodland - and helped preserve it. Ship building did not deplete woods - most of it came from hedges and parks, not woodland. HMS Victory is built from very small oaks.*

*Oak bark was used for tanning leather; oak underwood was essential.*

*Ordnance Survey maps show that almost all the ancient woods surviving in 1870 were still there in 1945. Since then we have lost half our remaining ancient woodland - the rate of loss in the 50s and 60s was without parallel in history.*

*Woods were on land unsuitable for other cultivation - gradient, soil, poor drainage. Straight edges are of the C8th or later. Ancient woods have a zigzag outline, as bits are taken here or there, or where individual large trees stood in the way. In planned countryside irregular ancient woods sit among the straight hedges of the Enclosures.*

*An ancient wood has a bank and ditch around it; in the Mendips they may have dry stone walls. A normal wood has underwood and timber trees. You don't get ivy in ancient woods, or cow parsley, hedge garlic, lords & ladies. Nettles, elder and goose grass indicate previous human habitation (dependent on phosphate in the soil). Irish —derry means oak.*

## **6. Wood pasture - wooded commons, parks, forests**

*For his Christmas dinner, 1251, Henry III had 430 red deer, 200 fallow deer, 200 roe deer, 200 wild swine, 1300 hares, 450 rabbits, 2100 partridges, 290 pheasants, 395 swans, 115 cranes, 400 tame pigs, 70 pork brawns, 120 peafowl, 80 salmon, and lamphreys without number.*

*Neolithic men practised wood pasture (using the some land for trees and grazing). Many of the Somerset trackways are from hazel which has been cut twice, perhaps with the leaves from the first cut being used to feed cattle.*

*Our park tradition derives from the Normans' interest in deer husbandry; they multiplied with the newly introduced fallow deer in the C12th. Some medieval parks became C18th landscape parks, which were often formed round existing trees, not created ex nihilo.*

*The word forest meant land on which deer were protected by special byelaws, both the laws and the word being introduced by William the Conqueror. It does not imply woodland. Confusing forest with woodland is the source of the mistaken view that medieval England was covered with woodland. Kings took deer from these lands - even when owned by someone else. Most were wood pasture. Hatfield Forest in Essex is the best surviving small wooded forest - you can still see what a small medieval forest looked like in use. Leigh Woods is another, still with coppice stools and pollard trees. Wychwood has lost its historic features, though the abundant maple and the boundary banks remind us of its medieval predecessor. The Forest of Dean has been effaced by plantations.*

*Old trees are a speciality of England - old trees are rare on the Continent. Oaks and limes live to 150 years, longer if pollarded.*

## **7. Plantations**

Rare before the C17th.

## **8. Fields**

Typical of the British landscape since civilization began.

- Dartmoor - low stony banks called reaves, running for miles in parallel lines, revealing country planning on a gigantic scale, already in full use by the Bronze Age
- Celtic fields - small squarish fields still to be found in areas which escaped medieval cultivation, often with great banks - square because they were ploughed in 2 directions at right angles. Mostly Iron Age.
- Iron Age and Roman fields - grid planning, indicating that semi regular field systems may have been widespread by the Roman period
- Anglo-Saxon and medieval - much of this enclosed field system was effaced by medieval open plan fields, but in Ancient countryside it persists. Many such fields go back to the late Middle Ages.
- Open field or strip cultivation - established by the time of the Domesday Book. The arable land of a township was divided into strips, grouped into furlongs and these into fields. The same crop was grown by all the farmers on each furlong. Animals were turned loose to graze stubble and weeds after each harvest and in fallow years. Few hedges, strips ploughed into ridge and furrow. Open field was largely ended by Enclosure in the C18th.
- Ridge and furrow - wave like undulations, made because the plough turns the soil to the right. Oxen till C13th, then horses. Some also formed later (eg 2WW by Land Girls) but lacking the S shaped furrows.
- Open field - Enclosure Acts covered 117th of England. Widespread by 1300, except in areas we now know as Ancient Countryside. Probably developed in the Dark Ages, perhaps at the time people took to living in villages instead of hamlets, and usually from pre existing farmland.

## **9. Hedges and field walls**

*Myths -they ore specially English, they are artificial, they are under 200 years old. Nope - Normandy has lots of hedges (cp WW2); France is a mix of hedged bocage areas and hedgeless champagne areas.*

Three ways to get a hedge:

1. *Planted*
2. *Hedges spring up naturally along fence lines -they arise where men are few and acres many, especially in times of agricultural depression where the fences are not managed (perhaps 25%)*
3. *Hedges which are the ghosts of woods that have been grubbed out, leaving their edges as field boundaries.*

*Prehistoric Hedges: The Land's End Peninsula offers one of the most impressively ancient farmland landscapes in Europe - tiny irregular postures separated by walls formed of boulders cleared from the fields. The banks are contemporary with the fields.*

*Roman hedges - lots in Italy. Contemporary texts tell you how to create one - seedlings in ditches, or stuck to ropes then buried in ditches. Julius Caesar discovered plashing (cut and bend) in Flanders.*

*Earliest UK record of a hedge being planted is one made by Aelfric in Wiltshire in 940. Most hedges were there or not there by the C9th. Field walls occur instead in Mendip. Medieval hedges were as now - overgrown, flowering, a haven for wildlife.*

*The Enclosures planted much new hedging, probably about 200,000 miles, and equal to those planted in the previous 500 years. New hedges run in straight lines. The loss of hedges began after 1945 and is the most familiar aspect of the destruction of the English countryside.*

*Hooper's Rule: Species of plant in a hedge reveal its age: no of spp in 30 yards = the age of the hedge in centuries. Works for hedges up to 1100 years old - doesn't distinguish Anglo-Saxon from Roman hedges.*

- Hawthorn plus ash/oak/briar/blackthorn

- Maple and dogwood may be the 4th/5th spp in Tudor hedges
- Hazel and spindle come in pre Tudor hedges, where there are 6spp

## 10. Trees of hedgerow and farmland

*In 1980 we probably had 20-50 million hedgerow and field trees - offering up to a third of the total tree-covered area of England. This represents a big increase on the 23m of 1870. Much reduced again in the last 30 years; the best old trees are preserved in places that have become parks; but ancient trees are almost everyday objects in England, as they are in no European country except Greece.*

- *Black poplar one of the rarest and most distinctive —flood plains and meadows*
- *Lombardy poplars are always planted -'always male and incapable of looking after itself.'*

*Lots of place names refer to trees - eg —try.*

*Yaws - nothing, in fact, to connect them with pagan religions; the only written evidence for yews as sacred comes from the Christian laws of Wales, which require compensation for destroying a 'saint's yew'. A big one may be as old as a church, but unlikely to be older than its Anglo-Saxon predecessor - they can grow quite fast when young. Nor is there any evidence that they were grown for longbows!*

## 11. Elms

*About 40 different types! They grow from suckers, mostly, and only occasionally from seed, which produces a slightly different elm each time.*

*In the Levels, elm is the 5th commonest tree in the Sweet Track. By the end of the MA it was one of the four common hedgerow trees. It's always been subject to disease and death, centuries before Dutch Elm Disease. Probably the fungus has been with us for millennia, turning occasionally virulent.*

## 12. Highways

From the Neolithic onwards Britain has had a fully-developed network of major and minor communications., the known Roman roads are but a small part of a system that penetrated to every part of England; they are no more representative of all roads in the roman period than motorways are representative of all twentieth-century roads.

Much of our minor road system, at least in Ancient Countryside, is really prehistoric.

Prehistoric long-distance highways - Ickniel Way, Ridgeways, Pilgrims Way.

The roads we recognize as Roman are merely the trunk roads among a network of lesser roads which, over much of England, can scarcely have been less dense than it is today. The trunk roads were not a pioneering enterprise: they were added to an existing Iron Age network, and they involved expropriating the lands of people who happened to be in the way.

*Cambridge was a small Iron Age town.*

*Lane = a minor road between hedges (MA onwards)*

*In the MA the road system was denser than now.*

*Edict by Edward I stipulated that all woods through which there was a right of way should be cut down to 60' from the road - to avoid highwaymen.*

Any rural road with its own proper name will be of at least medieval antiquity.

Roman roads were not exactly straight - in practice it went round small obstacles. Completely straight roads are more likely to be Enclosure Act roads.

Holloways are more than 1000 years old, mostly resulting from centuries of erosion on unpaved roads.

*Some roads were made with verges, some were just rights of way. Verges have for centuries been misappropriated by house owners - mow the verge outside the house, put boulders on it, and eventually absorb it into the garden!*

## 13. Heathland

*Heath means certain undershrub plants. Often the result of continued grazing.* Heathland was widespread in Anglo-Saxon England.. much more common in Ancient Countryside. Tree-land and heath were uses of land too infertile for tillage.

Furze is an important fuel; it produces a quick hot blaze suitable for heating ovens, getting up a fire in the morning, or burning heretics. Ling was used as fuel and as low-grade thatch. Burning bracken for potash was a large industry in the 18th and 19th centuries (used in glassmaking, soap making, and as a detergent).

*Few heaths survive in full use; no grazing or fuel cutting, fewer rabbits. England now has at most a tenth.. of the heath of two centuries ago.*

## 14. Moorland

*We use the word moor to mean uncultivated hill land; Anglo-Saxons used it to translate Latin mans, mountain. But place*

names usually use it to mean a low lying wet place such as Sedgemoor. They are probably two separate words whose meanings are coincidental.

Pollen analysis shows many moors in Scot/and are natural tundra which have never had trees. Conversely in Mesolithic times trees covered the present moors of N England right up to the highest summits of the Pennines. There are Bronze Age villages on moors, but probably short lived due to the lack of fertility of the soil. Much cultivated in the Iron Age. All our large moors existed by the end of the Iron Age. Many royal Forests were chiefly moor/and. Deserted villages in the Highlands were probably mostly not evictions - the Highlands were over populated and poor, then there was potato famine in 1845. Many moved away.

The grass *molinia caerulea* (purple moorgrass) grows in tussocks on moors

## 15. Grassland

All sites of old grassland were once wildwood and revert to woodland in a few decades if not grazed or mown. Grassland is what you get where places are too dry, too high, or too grazed for trees. It was rare before civilization (though common towards the end of the last glaciation); the only natural grassland in small areas on high mountains. Grassland is a product of the transformation of the landscape which began in 4000 BC and continued into Roman times. Grassland is divided into pasture and meadow to do with feeding animals round the year. Meadow was special, used for growing hay to store and feed to animals during Jan-Apr when pasture was not able to feed them.

After the Black Death, the remaining population could not use all the arable land; lots of arable became pasture - hence the grassed over ridge and furrow.

Irrigated water meadows were created from 1500 onwards, increasing the crop of hay.

Greens and commons are a survival of old grassland, mostly in Ancient Countryside. Often they are older than their medieval villages.

Fairy rings are produced by fungi which start at a point and gradually spread outwards - some are centuries old.

## 16. Ponds, dells and pits

Field ponds may be natural - kettle holes formed in glacial times by melting blocks of ice which had been embedded in ice. Swallow holes and sinkholes character/se limestone and chalk country. Depressions conform by gradual dissolving, enlargement of fissures, coves collapsing. Pingos are formed by ice action in E Anglia (water trapped beneath an ice layer form an ice bubble).

The oldest artificial excavations in Britain are Neolithic mine-shafts.

Word pond appears in the MA - the normal Anglo-Saxon word is mere.

The Broads are holes left by a huge industry of peat-digging, of which no memory or legend remains. But since 1965 mat of the plant and animal life has disappeared — partly a natural change as they fill up, partly pollution (fertilisers, sewage, motor boats).

More than 5000 moats are known in England - mostly in the East of England. They began not earlier than 1150, reached the height of fashion in mid C13, were démodé by 1325. There was an Elizabethan revival. So most are C12-C13th. They were status symbols, ornamental as well as symbolic.

Fishponds - almost all ponds in the MA were fishponds. Fish farming was fully developed by the C12th. Decoy ponds were established by the C1 7th (may have been medieval ones).

Dewponds lie on high and arid hilltops - C1Bth - and are lined with clay.

Grimes Graves is a Neolithic flint mine, c2700 BC.

There is said to have been no brickmaking between Roman times and the C13th - but the Anglo Saxons wrote about tiles.

## 17. Marshes, fens, rivers and the sea

There is in the midland regions of Britain a most terrible fen of immense which begins at the banks of the river Gronta [now the Cam] not far from the little fort which is called Gronte [Cambridge]; now in fens, now in flashes, sometimes in black oozes swirling with mist, but also with many islands and groves, and interrupted by the braiding of meandering streams. . . up to the sea...

When [Guthlac] was questioning the nearest inhabitants as to their experience of this solitude., a certain... Tatwine declared that he knew another island in the more remote and hidden parts of this desert (heremi); many had tried to live there but had rejected it because of the unknown monsters of the desert and the divers

kinds of terrors. Guthlac, the man of blessed memory, heard this and besought his informant to show him the place. . . . It is called Crugland ['Barrowland', now Crowland], an island sited in the middle of the fen. . . no settler had been able to dwell there before... because of the fantastic demons living there. Here Guthlac, the man of God. . . began to dwell alone among

the shady groves of the solitude... He loved the remoteness of the place which God had given him.... There was in the said island a barrow... which greedy visitors to the solitude had dug and excavated in order to find treasure there; in the side of this there appeared to be a kind of tank; in which Guthlac,.. began to live, building a shanty over it.  
Felix's *Life of St Guthlac*

The history of wetland is very largely the history of its destruction. About a quarter of the British Isles is, or has been, some kind of wetland. Much of our natural vegetation, from alders to primroses, is adapted to differing kinds, degrees, and seasons of waterlogging.

*Most wetlands consist of a seaward silt marsh and a landward peat fen, with a transition zone in between. Lands called washes are set aside to be flooded when necessary - often by setting the river walls back from the river. Floods may come from sea surges, or from rainwater in rivers. Coastal fen systems are the creation of rising sea level. Civilization came to fenland as the sea began to influence it. The Sweet Track dates from 4000 BC, the oldest and most sophisticated, with oak plants. Hurdles were laid from 3000 BC. Other trackways consist of twigs and birch branches, split alder logs, oak planks - continuing into the Iron Age, linked to the lake villages of Glastonbury and Meare.*

#### Drainage of the fens

1. *Falling sea level at the end of the Iron Age made management for habitation possible*
2. *Anglo-Saxon The resettling of the Fens began in the Anglo-Saxon period, with settlements on islands. Sea levels fell, and by the C12 there was the option for expansion, with new sea banks in the C13th.*
3. *A third drainage took place in the C17th -individual landowners.*

*Salt making was important in coastal marshes, beginning in the Iron Age.*

*The best relic of medieval silt fens is the Ouse Washes, and Wicken Fen.*

*Fish weirs - wooden fish traps placed across the current between an island and one bank.*

*And there he stops!*

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