

Bringewood Chase and surrounding countryside

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Contents	Page
Introduction, summary and acknowledgements	i to iii
1. Herefordshire/Shropshire border - Domesday to the Black Death	
1.1 Strife and stability of border manors	1
1.2 Role of woodland and grazing at the time of Domesday	2
1.3 Land hunger and agricultural expansion	3
1.4 Grazing, woods and hunting	4
1.5 Chases and forests	5
1.6 The Wigmore surveys of 1324 and 1325	6
1.7 Parks.	9
2. The 15th century	
2.1 Bringewood Chase and Wigmore woods become royal	10
2.2 Origins of Oakley Park	10
3. Bringewood chase in Tudor times	
2.2 Tudor accounts for the chase: grazing, woodland, honey, wax and bark	11
2.3 The erosion of commons rights in the forest and chase	12
2.4 Deer of the chase and problems for the neighbours	12
2.5 Taverner's survey of 1565	13
3.5 Customs of the chase	13
4. Elizabeth I and the commercialisation of Bringewood chase	
4.1 The whingeing foresters of Bringewood	14
4.2 Entrepreneurs of the chase	16
4.3 New enclosures on the Chase – opportunists and improvers	17
4.4 The map of Bringewood 1577	19
4.5 Elizabethan wood sales from Bringewood – an analysis	
4.5.1 Overview of the wood sales manuscript data	20
4.5.2 Weights, measures and prices for wood and trees	21
4.5.3 Sizes, ages and species of tree	22
4.5.4 Coppice woodland, 'Prestwood', trees in pasture and tree species	24
4.5.5 Wood fuel sales for the household	25
4.5.6 Uncertainties in the records: hidden sales, thefts and time scales	25
4.5.7 Wood from Bringewood used by Ludlow castle	26
4.5.8 Non-fuel uses of Bringewood timber	27
4.5.9 Estimating the area of Bringewood Chase	27
4.5.10 Was wood consumption from Bringewood sustainable?	28
4.5.11 Why the Crown gave up accounting the forest economy	28
5. Managing game and common grazing rights in Elizabethan Bringewood	
5.1 Stocking deer and apprehending poachers, a family career	29
5.2 Dealing with dogs and weapons	29
5.3 Rounding up livestock	30
5.4 Impact of enclosures on livestock management	30
6. Bringewood Forge: from satanic mill to picturesque idyll	
6.1 A brief history of the Bringewood iron works	31
6.2 Iron works vs agriculture - impact on woodland, 'forests' and chase	32
6.3 Wood consumption of Bringewood forge	35
6.4 The final years of the Iron Works, Downton and 'the Picturesque'	36
6.5 Enlightenment forestry and the wood famine myth	37

7.	Bringewood 1625 to 1948, final enclosures and partial reversion	
	7.1 Disputes over enclosure and the “Vaughan’s Ditch”	39
	7.2 The Crown disposes of Bringewood, Mocktree and Deerfold	40
	7.3 Lord Craven’s map of Bringewood “as it is now enclosed”	40
	7.4 Reversion of enclosures to semi-natural pasture and woodland	42
8.	Oakley and Norbache Parks – Elizabethan to Victorian times	
	8.1 Oakley Park	43
	8.2 Norbache Park	45
9.	The nature of Bringewood, Oakley and the Haltons in the 19th century	
	9.1 Oakley Park	46
	9.2 The Haltons	46
	9.3 Bringewood and Whitcliffe	46
	9.4 Juniper in Bringewood and surroundings: 1840 to present	47
10.	The landscape of Bringewood and surroundings – the last 160 years	
	10.1 Victorian observations of forest, plantation and coppice woodland	48
	10.2 20 th century forestry and the making of the ‘Mortimer’ forest	49
	10.3 Oakley and Norbache parks – post war changes.	51
	10.4 The Haltons	52
11.	Biological records of the Bringewood, Vinnals and Mary Knoll	
	11.1 Botany	53
	11.2 Butterflies and moths	53
	11.3 Other orders of wildlife	54
12.	Prospects for restoration of the Bringewood countryside	54
	12.1 Economics, the Mortimer forest and a ‘word from our sponsors’	55
	12.2 ‘Ancient’ woodland and present forest policy	56
	12.3 From ‘dig for victory’ to parkland restoration	57
	12.4 End piece	58
	Table 1. Domesday manors their values and mentions of woodland	1
	Table 2. Revenue from all land in the honour of Wigmore 1325	7
	Table 3. Woods and parks in the honour of Wigmore 1325	8
	Table 4. Average annual sales of wood and timber from Bringewood	22
	Table 5. Pollard productivity and size on Bringewood	23
	Table 6. Number of mentions of species in MSS PRO E178/969	24
	Table 7. Household fuel requirements from Bringewood	25
	Table 8. Consumption by Ludlow castle of wood from Bringewood 1579 – 1587	26
	Table 9. Descriptions of the enclosures of the Chase 1662	41
	Appendix 1 Survey of the honour of Wigmore 1324 and 1325. Analysis and text	59
	Appendix 2 Example of wood sales and witness statements	62
	Appendix 3 Extent of Bringewood chase. The soils and game	64
	Appendix 4 1662 Bringewood Enclosure particulars	66
	Appendix 5 Plants of Victorian Bringewood, Oakley and the Haltons	67
	Appendix 6 Lepidoptera recorded at Bringewood Chase 1995-2002	69-74
	List of figures 36 pages following page 74, in separate file <i>ReportFigures.doc</i>	

Introduction and summary

The tract of countryside that is the subject of this study is a border area in a number of ways.

It comprises some 16 square kilometres straddling the Herefordshire/Shropshire county boundary, from the river Teme south to Norbache Park in Richards Castle, Downton bridge to the west and Mary Knoll to the east. Most of the high ground is occupied by Forest Enterprise's Mortimer Forest which includes much of the former royal chase of Bringewood and rising to nearly 400 meters at the 'the High Vinnals'.

Just south of the Teme at Bromfield lies Oakley Park while upstream to its west is the spectacular wooded gorge of Downton, the location of what was once one of the most productive charcoal iron works in Britain. Descending northwards from the high ground of the chase on the Shropshire side are 'the Haltons'; Lady Halton, Hill Halton and Prior's Halton, small farming settlements occupying the fertile glacial terraces of the Teme.

In the Middle Ages the area occupied the north east extremity of the honour of Wigmore, seat of the powerful Mortimers, Lords of the March, while the 'High Vinnals' was the western edge of the pre-conquest manor of Richards Castle. Oakley, Prior's Halton and Lady Halton on the Shropshire side of the county boundary were part of the extensive lands of Bromfield Priory.

Documentation from Domesday to the Black Death in c1350 indicates rising agricultural productivity, a wood pasture economy of marginal lands and only a few enclosed woods. The study analyses a fourteenth century survey (1321) of the Mortimer manors of the honour of Wigmore to shed some light upon the character of the woods, parks and wood pasture of these manors at this time. It is also clear that local people retained a complex set of conditional rights to grazing, wood, bark and other resources of the chase which probably pre-dated Domesday.

When Edward Mortimer earl of the March was crowned king Edward IV after defeating the Lancastrian army at the battle of 'Mortimer's Cross' in 1461, his estates became part of the royal lands of Britain and administered accordingly. Bringewood became a royal chase and the nearby forests of Mocktree and Deerfold become royal forests. They remained in crown hands until sold off by the crown under James I.

Many surveys, accounts and inquiries relating to Bringewood, Mocktree and Deerfold have survived from Tudor and Elizabethan times many of which are transcribed and analysed for the first time in this study. Feudal traditions, preserved by the semi-autonomous Marcher lordships, became weakened by the various statutes of Henry VIII who sought to unify the governance and legal systems of England and Wales. Customary rights to the resources of forest and chase, enjoyed by generations of people of the nearby manors, were gradually dismantled. By the Elizabethan era, the administration and exploitation of royal forests had become a semi-privatised industry whereby forest officials and leaseholders of royal lands made themselves small fortunes and carved little estates out of the forests.

Original documents from the Tudor and Stuart periods show this process in great detail for Bringewood Chase along with many vignettes of every day life such as impounding livestock, confiscating weapons and the hanging of hunting dogs owned by poachers. We also have details of the amounts and types of wood and timber taken out of Bringewood Chase for a wide variety of uses including fuel, repair of houses and mills, supplying Ludlow Castle and even the making a new clock. The documents tell of the people involved in the wood and timber trade and of those responsible for maintaining and protecting the resources of the chase.

At the eastern end of the chase the river Teme flows through the long ravine of Downton gorge where the Bringewood iron forge was erected in the 1580's to take advantage of its fast and

reliable water to supply power bellows and trip hammers. Over the decades this forge developed into one of the most productive in England. The heavy demand for charcoal from the tree resources of the surrounding area competed with the traditional uses which had been largely sustainable. While the enclosed coppice woods in and around the chase were maintained in rotation to exclusively supply the forge, with many remaining to this day, the extensive population of trees in the unenclosed wood pasture areas, often huge pollards, were gradually felled and converted to charcoal as a precursor the conversion of such areas of the chase to enclosed fields when the chase was eventually sold to private interests in the early 17th century. This process was strongly resisted by local people who found themselves excluded both from the coppice woods and the multiple resources of wood pasture areas that they and their forebears had enjoyed for centuries. Despite petitions to Parliament and violent incursions into the new enclosures, Bringewood Chase became private farmland within a few decades.

The enclosure of Bringewood Chase came at a time of intellectual radicalism, which straddled the period of the civil war and can be described as ‘Puritan utopianism’, which included many novel but often impractical schemes for the improvement of agriculture and forestry. So it was to prove for Bringewood Chase many of whose enclosures failed to be viable and by the 19th century much of the attempted ‘improvement’ had reverted to secondary woodland.

The inheritor of the Bringewood iron works and much of the surrounding land in the late 18th century was Richard Payne Knight, classicist, connoisseur and advocate of ‘natural’ school of landscape appreciation that became known as the Picturesque. These ways of seeing the countryside were reflected in the observations of woodlands and forests of north Herefordshire by local natural historians in the 19th century. Some sense of the character and ecology of Bringewood chase, Oakley Park and the Haltons at this time is derived from a review of the records of Victorian botanists.

The Forestry Commission acquired Bringewood Chase, the coppice woodlands of Richards Castle and Norbache Park in the 1920’s to establish conifer plantations now known as the ‘Mortimer Forest’. The rationale of the Commission in the 20th century and its espousal of plantation forestry can be traced back to ideas of 17th century utopianism, alarmist claims of impending timber famine and fear of dependence on imports, most famously expressed by John Evelyn. Changes in forestry policy in the last two decades are traced as the Commission reassessed what constitutes forestry and public benefits. Prospects for the restoration of Bringewood Chase, Norbache Park and the coppices of Richards Castle are discussed in the context of present state ownership objectives and economics.

The histories of Oakley and Norbache Parks are examined, as are their differing fates at the hands of agriculture and forestry policy in the third quarter of the twentieth century. The study investigates the effect of post-war agricultural policy on the farmed countryside of the area. Despite radical changes to its structure and character, the Mortimer Forest still retains a wealth of wildlife resources. Evidence for this in the case of butterflies and moths is reviewed. Enhancement of the remaining semi-natural areas and the eventual restoration of Bringewood Chase back to native vegetation is likely to result in regionally significant increases in biodiversity.

The study relies heavily upon maps of the area from the earliest in 1577 to the most recent. Use is made of digital techniques to rectify historic maps and aerial photographs to allow detailed comparison between different periods and complements written records.

The study includes much data in visual form particularly maps and aerial photographs so there two versions – this one which is text-only so a small file size – another one with illustrations .

Origins of the study and acknowledgements

This work started as a review of the Ancient Woodland Inventory for Forest Enterprise's land in south Shropshire and north Herefordshire. This was just at the start of the Foot and Mouth epidemic that effectively closed down the countryside for much of 2000/01 making site surveying impossible. I am grateful to David Bole and Helen Millar of the Ludlow office of the Forestry Commission for allowing me to divert contract resources to research in Records Offices and experimentation with techniques for digitising, rectifying and analysing old maps to produce time sequences for the characterisation of site histories.

I am indebted to Helen Stace and Tom Wall of English Nature (EN) who commissioned the work in 2001. The historical work subsequently took on a life of its own with the discovery of so many original documents about Bringewood, its nature and use from Medieval to Stuart times. Personal accounts and witness statements sprang from the parchments demanding voice.

My thanks go to the staff of the Public Records Office (PRO) at Kew especially Carole McCormack for her encouragement of the use of cameras for recording and conserving manuscripts. The new and enlightened PRO policy of allowing anyone to photograph documents without charge constitutes a great public service to historical research. Thanks also to Andrew Davidson of the Shropshire Records Office and to Sue Hubbard of the Herefordshire Records Office. I am grateful for the many illuminating discussions I have had with Jonathan Spencer, FE's ancient woodland specialist, Rebecca Roseff of the Herefordshire Archaeology Service and Paul Stamper of English Heritage.

The role of local historians has been crucial to this work especially that of Patricia Cross whose work on the history of Richards Castle manor, its parks and coppices, I have relied upon to a considerable extent. Discussions with Penny Oliver, Beryl Lewis and John Voysey who given me further insights, information and valuable criticism. David Lloyd and Michael Faraday helped me with some of the historical connections with Ludlow town.

I am most grateful to Dr. Michael Harper for his time and for sharing with me his uniquely detailed knowledge of Lepidoptera both for Herefordshire generally and Mortimer Forest in particular. I have reproduced the fruits his knowledge and recording together with that of other members of Butterfly Conservation to provide an up-to-date (as of 2003) account of the area's butterflies and moths and the significance of particular species.

The report does not include detailed recommendations for the area. This would be a major undertaking in its own right, but it is hoped that the information herein will further investigation and will be useful to anyone in the area drawing up land management plans.

Note on the use of brackets and quotations marks in this report:

Text in round brackets (..) contains my comments, square brackets [..] refers to implied or unclear original text, curly brackets {..} means brackets in the original text.

Single quote marks around passages of text '...' means that it is rendered into modern English.

Double quote marks "... " means actual text.

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1. The Herefordshire Shropshire border - Domesday to the Black Death

1.1 Strife and stability in border manors

The Marches had been subject to periods of Anglo-Welsh border strife well before Norman authority was imposed by some of William the conqueror's more brutal barons such as William Fitz Osbern, Earl of Hereford¹. A few years after the conquest, the Saxon nobleman Edric Silvaticus 'Edric the Wild', in league with Welsh princes, 'laid waste the county of Hereford as far as the bridge over the Lugg'² in one of the few sustained uprisings against Norman rule in England.

The Domesday survey, which assessed manors in 1085/6 and compared them with pre-conquest values, records the disruption to life and economy in border manors with frequent references to west Herefordshire manors being partly and wholly 'waste'. In one example, farmland in the Manor of Lye 3km SSW of Wigmore had reverted to secondary woodland 'On these waste lands have grown up woods in which this Osbern hunts and thence he has whatever he can catch'.

The manors of the area studied here (figure 1) seem relatively stable during the transition from Saxon to Norman rule. This may be due to the pre-conquest military presence of the Norman warlord Richard Scrob³ whose son Osbern fitzRichard is the Osbern in the above Domesday passage. Scrob settled in Herefordshire in the 1050's, established the manor and castle that bears his name and was a favourite of Edward the Confessor, himself of Norman origin.

The following table lists the areas, values and any mentions of the woodland or waste for the manors which surround the high ground of Bringewood, Mary Knoll and the Vinnals starting with Burrington to the west and proceeding clockwise. For some of the original Domesday text for this area see figure 2.

Table 1, Manor:	Hides	Value TRE	Value	Woodland mentions	Waste
Burrington	5 ¼	40s	40s	'very little woodland'	
Downton	4	30s	30s	'woodland ½ league long and 5 furlongs broad' [~120ha]	
Bromfield	10	'20 hides'	£3 6s	see discussion below	yes
Ludford	1	?	20s		
Richards Castle	5 ½	£7	£7		
Elton	2	12s	20s	'two furlong strip of woodland'	
Aston	3	waste	30s		yes
Total	25 ¾	~ 1,290 hectares	£17 6s		

TRE = tempore regis Edwardi i.e in the time of Edward the Confessor before the conquest.

The Domesday survey was an assessment of manors mainly for the purposes of raising royal revenue so measures of land do not easily relate to actual areas⁴. Even so, one 'hide' is usually taken roughly as 120 acres (~50 ha) of cultivated land. The use of linear measures for the extent of woods is more difficult to interpret but may refer to the length of boundaries with farmland. The king's surveyors had an additional interest in recording possible potential increases in manorial revenue over the time before the conquest (TRE).

¹ Rowley, Trevor, The Welsh Border. Tempus 2001 chapter 6.

² Forester, T (Ed.) The Chronicle of Florence of Worcester. Bohn 1854.

³ F.M. Stenton, Anglo-Saxon England 1971 OUP, P. 562

⁴ For a discussion of Domesday as a source of land use information see: Domesday Book, Special Studies, Alecto 1987 and P.D.A. Harvey, Manorial Records, British Records Association 1999.

If the value of a manor remained similar before and after the conquest this may be an indication that the productive land continued to be worked without major disruption from the time of its Anglo-Saxon ownership. Discounting Ludford and Bromfield which are not valued before 1086, the average value per manor increased by only 17% (from 11s 3d per hide to 13s 2d per hide) from the time of Edward the Confessor (TRE) to 1086.

Bromfield, the largest of these manors occupies a large tract of the fertile Teme valley and had a pre-conquest assessment of 20 hides, but for 10 hides Domesday states that ‘there is waste and it is recorded as waste’ but that ‘in total land for 54 plough teams’. This contradictory entry seems due to a pre-conquest ownership dispute between the crown and the canons of Bromfield Priory details of which occupy 7 out the 12 lines of the manuscript. Subsequent documents of the 12th and 13th centuries show that Bromfield had part of the pre-conquest ‘forest of Mocktree’ and two other named woods (see 1.4 below) which may have formed part of the disputed 10 hides that surveyors described as ‘waste’.

With the building of Ludlow castle in the early 12th century to its NE, the upland area of Bringewood, Mary Knoll & the Vinnals was surrounded by castles by on three sides, Richards Castle to the south and Wigmore castle to the west.

One can reasonably conclude that for these seven manors there was little interruption in the land use economy during the Saxon to Norman transition. The period from the 11th century to the Black Death was one of sustained population growth with little opportunity for the reversion of land to secondary woodland. What Domesday suggests is the land use can only have become more intensely managed so that any woodland which survived to be mentioned in documents of the next two and half centuries is very likely to have been present pre-conquest.

1.2 Role of woodland and grazing at the time of Domesday

Notable is the small area of woodland recorded by Domesday for many of these manors; only Downton is mentioned as having a significant quantity at about 120 hectares. The entry for Burrington, which includes most of the area of what was to become Bringewood Chase had ‘a tiny piece of woodland’ [Domesday text: “*paululum silve*”, Figure 2]. This entry is similar to that for Covenhope another Mortimer manor 5km south of Wigmore and mostly hill land which had “not much woodland” [Domesday text: “*parvula silva*”]. Covenhope is now part of Aymestrey parish now one of the most wooded in the county. Elton’s recorded woodland is ‘2 furlongs’ and even if it’s extent was twice that in the other dimension this only amounts to 30 hectares (one square furlong = 4 hectares). For Bromfield’s Domesday woodland we have to extrapolate back from later documents (see 1.4 and 1.6 below) to give an estimate of 160 hectares, making a total of 310 hectares for the 8 manors considered here which is one fifth of the area of cultivated land.

The fact that Domesday bothers to record small parcels of woodland or comments how little there is in certain manors indicates their importance. Subsequent and more detailed medieval surveys (1.6 below) show that the larger areas of woodland contributed very little direct revenue to the Manor due to their primary use as common grazing with other customary rights. The Domesday meaning of ‘*boscus*’ and ‘*silva*’ in these cases seem not to refer to land dedicated to trees as we would understand it today and but to wood pasture or land that could not be cultivated without infringing the customary rights of local tenants. Much of the ‘woodland’ recorded for the 8 manors is likely to have been in this category.

Oliver Rackham's analysis of Domesday shows England to comprise 43% arable, 38% pasture & meadow and 18% wood and wood pasture⁵, excluding mountains, heaths and moorland. Domesday surveys are brief and must necessarily omit the finer structure of the countryside, including some small woods, so there is no need to fill in unaccounted land with tracts of hypothetical woodland.

A meticulous study⁶ of the medieval records of Warwickshire woodlands cross-checked against Domesday indicates that small woods were often omitted. For our area, later medieval documents also throw up a few additional woods, which must have been present at the conquest. With the exception of Bromfield which is especially poorly described, later documentation is broadly consistent with what Domesday indicates are the major land uses of the 8 manors. Woodland is not one of them.

Domesday is a record of potential manorial revenues flowing to the Lord and visible to the royal exchequer. Any 'internal economy' of the manor such as ancient customary rights to hill, common, marginal or wood pasture areas enjoyed by the tenants will be under-recorded or not at all. This is especially true in the Marcher lordships whose frontier role gave them unusual freedom from royal prerogatives and where ancient feudal tenures and customs were solely the business of the Lord.

1.3 Land hunger and agricultural expansion.

The population of England grew considerably after Domesday and by the mid 14th century such that settlement and land development⁷ was approaching the limits of contemporary agrarian technology. Herefordshire Archaeology's Woodlands Pilot Project's first two years of survey (2002 & 03) has regularly found evidence of medieval cultivation and settlement in most of the county's 'ancient' woodland⁸. This land hunger gives rise to an increasing number of documented disputes in the decades up to the Black Death of 1348-9.

A few records survive that give a glimpse of farming on the land between the Teme and the north flank of Bringewood and Whitcliffe, comprising the 'vills' of Hill Halton, Lady Halton, Prior's Halton (aka 'the Haltons') and Oakley:

In 1313 a group of men (and a woman) broke into the house of William Orm at Priors Halton, assaulted him, drove away 40 of his sheep (price 6 marks), killed them, drove away a further 100 sheep and 6 oxen (price £20). They cut his standing corn and carried them away with other of his goods⁹. Seven years later William Orm, now living in Ludlow, is a witness to a grant of 'certain fields of Okleye next Bromfield'¹⁰.

Records of land exchanges and leases imply a mixture of enclosed and open fields at this time. A typical example from 1374 concerned '6 acres of land and appurtenances in the fields of Okeleye of which 4 acres lie between the land of John of Haughford on one side and the land of Henry de Halghton on the other and extending from the green road from Okeleye to Ludlow up to Holeweysiche (ie Holloway Ditch)' and '5 selions (arable strips) lie in the field of Werebroke between the lands of the Lord of Okeley on either side and extends from the land

⁵ Rackham, O., *The History of the Countryside* Dent, 1986. p16.

⁶ Wager, Sarah J. *Woods, Wolds and Groves, the woodland of medieval Warwickshire* BAR 1998.

⁷ Postan M. M. *The Medieval Economy and Society* Berkeley 1972. pp21, 25

⁸ Ray, Keith & Hoverd, Tim. *Archaeological surveys of individual Herefordshire woodlands*, Herefordshire Archaeology Wood Reports 2002 & 2003

⁹ *Calendar of Patent Rolls (CPR) 1313*

¹⁰ SRO 20/6/121

of “Orangie by Bromfield up to Oystremedwe”¹¹ together with a certain parcel of meadow adjoining¹².

In 1221 Oakley was a ‘vill’ (a small township) included with West Halton as part of the lordship of Adam de Halton and having a ‘quarter of a hide’ of arable with some common pasture. By 1385 Oakley had expanded and was described as a manor.

Oakley Park was not created until the late fifteenth century (see 2.2 below).

1.4 Grazing, woods and hunting

The fattening of livestock on marginal land, usually by ancient right was an essential part of the economy. If the hills and slopes of Bringewood, Mary Knoll and the Vinnals were mostly rough pasture, wood pasture and a little woodland in 1086, then by the 14th century such grazing pressure would only have increased, as would the upland limit of attempts at cultivation.

A charter¹³ of c1156 from Henry II licensed the monks of the Bromfield priory to assart and otherwise do as they pleased with the ‘forest already granted to them’. This is likely to be the ‘forest’ of Mocktree which later boundary surveys show extended from Leintwardine to the western half of Bromfield manor north of the Teme. A second royal charter c1180¹³ gave them the right to hunt deer referring to two woods separate from Mocktree and called Ailrichewude¹⁴ and Esrugge, which like Mocktree must have been present at the time of Domesday. These last two wood names are long gone but they can be tentatively located between the Teme and Bringewood as follows:

The ‘Bosc’ of Ailrichewude is described as extending as far as the ‘fount [source of] of Werebroc’ a stream name now lost. We know however that it was part of Oakley manor, since in 1374 “2 acres land in Okeley” is described as being “between the land of John de Brun and the brook called Werebrock”¹⁵ which is likely to be one of the many streams flowing from springs on Bringewood’s north flank towards the Teme through Oakley. This places Ailrichewude between what is now Oakley Park, and the lower slopes of Bringewood scarp above Lady and Hill Halton farms. Since the wood would have occupied the more fertile ground and does not seem to appear subsequently in other documents it may have been converted to farmland during the general population increase and land hunger of the decades preceding the Black Death.

The ‘Bosc’ of Esrugge (eastridge) is described as extending from ‘Eilsichewey even into Ludford along the road called the Rugwey’. This is consistent with the Esrugge occupying the eastern end of the Bringewood scarp perhaps Mary Knoll and descending to Ludford bridge through Whitcliffe common.

We can only guess the areas of these two woodlands but they are unlikely have been more than about 30 hectares apiece while Mocktree ‘forest’ extended over many times that area either side of the county boundary between Leintwardine and Bromfield.

The 14th century survey of the part of Mocktree in the honour of Wigmore (1.6 below) gives it as ‘300 acres of great trees’ and subject to common grazings rights. Assigning a similar

¹¹ ‘Oyster meadow’ Could this imply a meadow next to the Teme where fresh water clams are harvested?

¹² SRO 20/6/123

¹³ Eyton’s Antiquities of Shropshire volume V – chapter on Bromfield p212. See also Monasticon Anglicanum by William Dugdale (Royal Commission 1817-30), the entry for Bromfield.

¹⁴ ‘Alric’s wood’. Alric was a minor Saxon Shropshire landholder

¹⁵ SRO 20/6/123

wooded area to Bromfield makes Mocktree 600 acres and we can assume it had been reduced by agriculture and other pressures from its Domesday extent. If we assume a reduction of a third then 800 acres seems a not unreasonable estimate of the extent of Mocktree at Domesday that is 320 hectares split between Leitwardine and Bromfield.

The building of the castle encouraged the expanding settlement of Ludlow which emerges as a centre of the local livestock trade and for which grazing rights on nearby land were important. In 1221¹⁶ the burgesses of Ludlow were defending their right to graze stock on the priory land of Whitcliffe (this is presumably the origin of present day Whitcliffe common) claiming that they had bought the rights. As well as assart of 'forest', reference is made at this time to an assart of the 'moor of Wulnroughale'¹⁷ (yet to be identified) at 'West Halton' one of the Haltons between Oakley park and Bringewood.

In c1200 Alexander, the Prior of Bromfield, allowed Symon son of Robert of Bromfield to make assarts in the wood of Mocktree in Bromfield and to have common pasture and pannage for their pigs in the wood of Mocktree 'as their ancestors had done'. The reference confirms Mocktree as a pre-conquest 'forest' along with the two woods above.

Downton's woodland appears to have remained separate from Mocktree according to a now lost document, which was used as evidence to an inquiry by the Council of the Marches into Mocktree and Bringewood in 1595. It is quoted as saying that: 'the said Edward Hopton [forest keeper] about 30 years past saw in a book owned by Mr. Fox deceased [Sir Charles Fox] now called the Black Book of Wigmore a release in French whereby the Lord of Downton released to Roger Mortimer Lord of Wigmore all the chase of his Woods of Downton for savage beasts'. A copy of this document was then produced for the council members to see. This Black Book dates from between six possible times between 1149 and 1398 since there were six Lords of Wigmore named Roger¹⁸.

1.5 Chases and forests

'Chase' is similar to 'forest' in defining a tract of land where game and its habitat were preserved by 'forest' laws. These included restrictions on land use and fines payable for transgressions (felling, assarting, grazing etc) by the local population some of whom also lived and farmed within it. These fines became formalised as rents for grazing and farming activities such as assarts¹⁹ or as one off payments earning the Lord or the crown a regular income. In a 'chase' the Lord had the prerogative (by royal permission) and could raise fines in his own court while the 'forest' was the King's and administered by his officials. Neither necessarily imply the presence of woodland although they tended to include marginal land and wood pasture. 'Wood' (*boscus*) is difficult to interpret in original documents since it includes wood pasture, marginal land as well as what we would describe as woodland.

The boundaries and extent of chase and forest were of two kinds: the physical extent and the game extent, a source of confusion for modern historians as well as for local people at the time. The physical extent, sometimes referred to as its 'soils of the forest', was defined in boundaries and landmarks. The 'game extent' could go well beyond these bounds into

¹⁶ Eyton volume V 213 and SRO 356/MT/720

¹⁷ Eyton volume V reference 47 on page 212.

¹⁸ The possible time windows for the lost Black Book are the Lordship dates of the six possible Roger Mortimers: Roger (I) 1149 – 1153, Roger (II) 1180 – 1214, Roger (III) 1247 – 1282, Roger (IV) 1301 – 1330, Roger (V) 1346 – 1360 and Roger (VI) 1393 – 1398.

¹⁹ Young, C. R. *The Royal Forests of Medieval England* University of Pennsylvania Press 1979. pp121 122 Shows that for England generally "large areas of the forests were drawn more closely into the agricultural life of the country".

neighbouring manors and farmland and was a cause of disputes, for example, when neighbouring tenant's crops were damaged and where forest officials exercised the right to patrol, arrest and fine outside recognised boundaries. The two extents for Bringewood have been found in documents and are transcribed in appendix 3. Examples of disputes over the 'game extent' are detailed in 3.3 below. For Bringewood and Mocktree, the Lords of surrounding manors had an annual token gift of venison for the nuisance involved (see section 3.5 below) while all the tenants could do was complain.

In the 14th century 'woods called Boryngewode and Derfold' are included as part of the lordship of Wigmore at the Inquisition Post Mortem (IPM) for Roger (II) de Mortimer. In a 1301 IPM, the 'Chases of Moktre, Buringwode & Deerfold' are mentioned among 'chases & parks' belonging to Edmund de Mortimer. The Wigmore manor accounts²⁰ include expenses for falconers 'carrying three sparrow hawks to Wigmore 3d', the cost for feeding bread and oats to hounds and 'two round barrels bought for sending venison to Wigmore 6d'. Locations within the manor of Wigmore manor are not recorded but these quotes gives a general idea of the importance of the game culture at this time.

By the late 14th century hunting was declining and the lord's main use of 'chase' and 'forest' was income from fines or rents from expanding agriculture and provisions (meat, fuel etc) for castles and halls. Customary grazing by the local population still remained the primary land use on the marginal land whether or not 'forest' laws applied. W. Rees²¹ considers that common rights were exercised without restriction throughout the Marches at this time. While the lord was unable to levy fines for ancient rights there was nothing to stop his home farm exercising those rights and adding to the numbers of livestock in forest and chase.

We have yet to see direct documentary evidence for this period detailing the precise nature of these customary rights for Bringewood chase and Mocktree 'forest', how they were exercised, by whom and what other uses were made of chase and woodland. Welsh medieval records for 'forest' and woodland, including those of other Mortimer manors, have been studied in greater detail than for Herefordshire, which perhaps have not survived. The Welsh manuscripts give an insight into the multiple uses of these areas which, in addition to wood and hunting, included charcoal, bark, mast, foliage, herbage, honey & wax and wood ash²². We have yet to find documents earlier than the Tudor period, which give the equivalent level of detail for Bringewood and surrounding areas (3.1 below).

1.6 The Wigmore surveys of 1324 and 1325. Wood, park and farmland in the 14th century.

Two surviving surveys of the Honour²³ of Wigmore²⁴ for the years 1324 and 1325 give some figures for land use for the home farm, tenancies, fish ponds, markets as well as woods and parks. Woods such as Bringewood are described as having 'great trees' but appear to have been open structured sustaining the common grazings of the entire estate, sales of underwood, feeding of pigs and, in the parks, deer as well as livestock.

While fairly brief, these 'extents' record the revenues for the manors in Wigmore and give us a picture of the structure, economy and extent of parks and woods in the Shropshire/ Herefordshire border area in the decades just before the Black Death. Although we do not have

²⁰ Rees, W. South Wales and the March A social and agrarian study OUP 1924 References 2 and 3 page 111

²¹ Rees, W. op. cit.

²² Linnard, W., Welsh Woods and Forests – A history. Gomer 2000 pp 40-49.

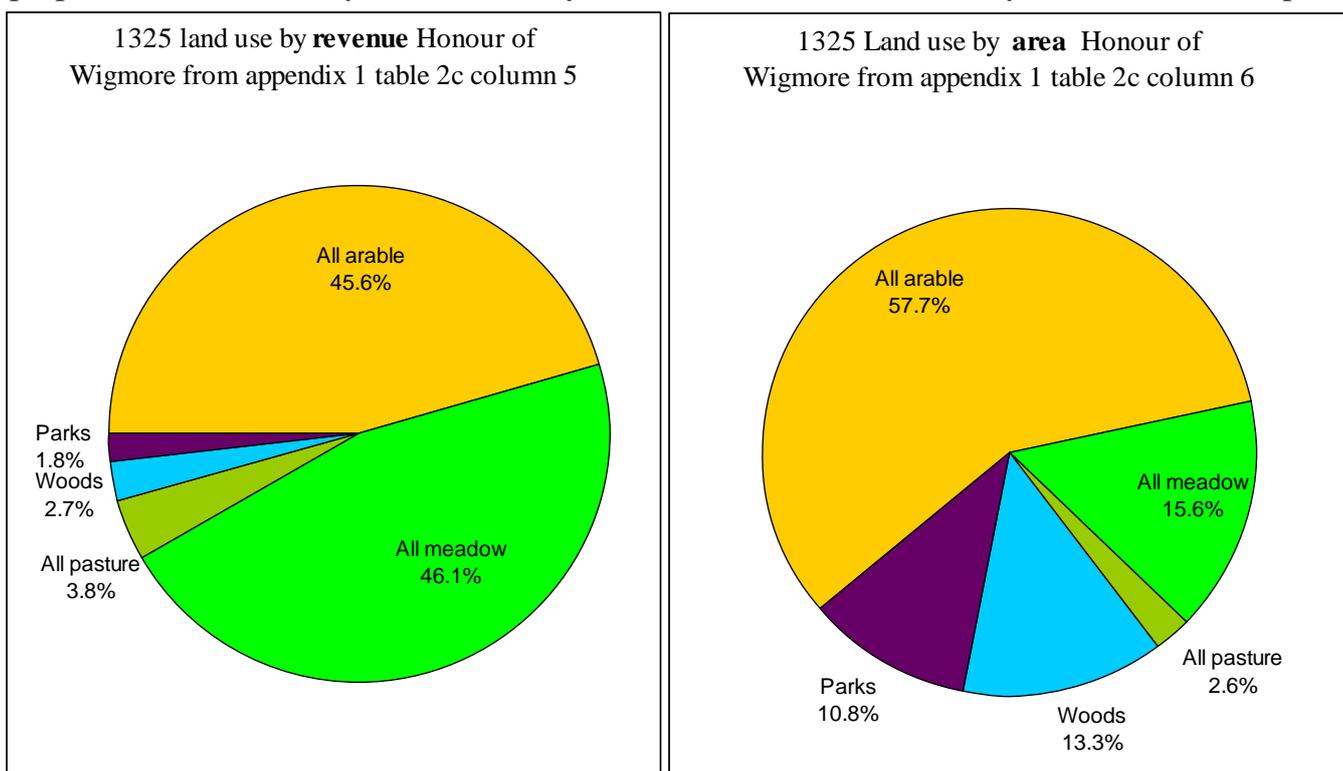
²³ Honour: A lordship of several manors.

²⁴ PRO SC 12/8/18 Wigmore: Extent of the castle and lordship. 18, 17 Edw. II.

equivalent surveys at this time for the manors of Downton, Bromfield and Richards Castle it is fair to extrapolate the generality to neighbouring land.

The Honour of Wigmore and its castle was the power base of Roger Mortimer IV, Earl of the March who also had extensive holdings in Wales, the March & elsewhere in England and Ireland. Roger was part of a group of barons who rebelled unsuccessfully against Edward II in 1321 and for this he was imprisoned in the Tower of London in 1322. King Edward requisitioned Roger's estates, which is how they came to be surveyed and stored in the archives of the royal exchequer. At the time of the surveys Roger had escaped the tower, fled to the continent where he was plotting to overthrow Edward II in the company with Edward's estranged wife Isabella²⁵.

PRO SC12/8/18 is three parchment sheets in the same hand. Two are dated April 15th 1324, the one an annotated and corrected copy of the other, while the 3rd sheet is dated February 8th 1325. Part of the original is shown in figure 3, transcription and analysis in appendix 1. The proportion of land use by revenue and by area of the c6,000 acres surveyed is shown in the pie



charts below. Although the results of the analysis are given to 0.1% the uncertainties in the figures are much greater than this as discussed in appendix 1.

Woods and parks occupied a quarter of the countryside but contributed only 5% of the revenue. The 60% arable area probably represents the maximum that a medieval agriculture could sustain. Meadowland was nearly four times and pasture twice as valuable as arable. Although the precise meaning of 'acre' in the documents of this period is a source of uncertainty I am here basing most of my analysis on area ratios of different land uses.

²⁵ Hopkinson, C. & Speight, M. The Mortimers Lords of the March. Logaston Press 2002. Chapter Five.

Table 2 gives the actual revenue break down and for consistency the later 1325 survey is used:

Table 2 Revenue from all land in the honour of Wigmore 1325			
	revenue	acres	average d/acre
Arable	£43 5s 6d	3,462	3.0
Meadow	£43 13s 9d	937	11.2
Pasture	£3 11s 11d	154	5.6
Table 2 Revenue from all land in the honour of Wigmore 1325 cont.			
	revenue	acres	average d/acre
Woods	£2 11s 8d	800	0.8
Parks	£1 14s 4d	650	0.6
All land	£94 17s 3d	6,003	3.8
Revenue from woods and parks by type			
pasture	£1 0s 0s	650	0.4
pannage	£1 2s 8d	1,150	0.2
underwood	£2 3s 4d	1,050	0.5
All parks & woods	£4 6s 0d	1,450	0.7

Livestock grazed the woods and parks that were also browsed by deer, but the revenue generated is very small considering the value of pasture and meadowland. The reason is found in Table 3, which lists the six parks and woods detailed in the manuscripts. For consistency this table uses the 1325 survey.

Table 3 Woods and parks in the honour of Wigmore 1325							
Name of park or wood	acres	comments	deer	rights of	revenue d per annum		
				common	pasture	pannage	underwood
Wigmore Park	300	only young oaks	100		80		
Gatley Park	350	few oaks	100		160	12	160
Foreign wood by Gatley	100			yes		40	
Bringewood	200	great trees		yes		80	120
Mocktree	300	great trees		yes		80	160
Deerfold	200	great trees		yes		60	80
Total parks and woods	1450		200		240	272	520

The total area of woods (as distinct from the parks) is 800 acres and all have rights of common grazing important for the 'internal economy' of neighbouring manors. Wood pasture revenues for woods are zero yet the pasture contributed to the wealth of the estate. The lord would have had indirect benefits through rents levied upon the free tenants exercising their common rights. This explains the very small acreage of pasture since it is likely that for generations cattle and sheep for surrounding manors would have been pastured in the woods/wood pasture. Rights for pasturing pigs (pannage) were more restricted, for example they were excluded from the forest in the 'fence month' (mid summer) when deer were fawning and by custom the Lord was paid for an annual fee for each pig. These rights for Bringewood were only detailed when compensation was being assessed at the time when they were extinguished. (3.5 below).

There are of course no such rights in parks, created under royal license as deer preserves for hunting. But no grazing potential is wasted and so, as the manuscript puts it 'beyond what the

deer need' Wigmore and Gatley parks²⁶ generate 20s a year in pasture revenue. Wigmore park is now the area occupied by Forest Enterprise's 'Wigmore Rolls'

An annual cut of underwood produced as much revenue from the woods (and Gatley Park) as the grazing. Even though Bringewood, Mocktree and Deerfold are described as having 'great trees' they must have been at sufficiently low mean density to sustain both common grazing and coppice regeneration (which were probably protected from stock). In Gatley Park there were 'few oaks' while Wigmore Park only had 'young oaks' which comments explain the low pannage revenue in the former and its absence in the latter (see above table).

There are discrepancies in the areas of woods and parks between the two differently dated surveys and the total increases from 960 to 1460 acres in the 10 months between the two dates. D.G. Bayliss has claimed²⁷ that this was evidence that Roger Mortimer was increasing the area of woodland by tree planting, presumably on farmland. His thesis and subsequent publication made an analogy with, and justification for, modern conifer planting on the 'Mortimer forest'. This claim is far fetched for many reasons, three of which are: (a) There are only 10 months between surveys, (b) The estate was in the hands of royal officials concerned with annual revenue and (c) Roger Mortimer was in Holland at the time with other things on his mind such as the invasion of England to foment a baron's revolt, not to mention his affair with Isabella.

The manuscripts themselves give some clues in that they are heavily corrected with many crossings out, annotations and changes to the monetary values expected from woods and parks. In one version the scribe misses out Mocktree completely and has to add it in to the margin afterwards. While the area of demesne farmland is measured to the nearest acre and is the same for all three versions of the survey, acreages of woods and parks are mostly rounded to the nearest 100 acres. There is a more plausible explanation for the changes in apparent area of woods and parks. Namely, that crown officials surveying the newly requisitioned Wigmore estate made little effort to account for tracts of marginal common land on the periphery and which contributed a tiny fraction of the revenue. By comparison, the meadowlands would have been easily measured, accessible and valuable while the arable lands would have been in well identified strips. Wigmore and Gatley Parks both have 100 acres added to them in the 1325 survey but there is no evidence of more trees. The comment 'only young oaks' in Wigmore Park occurs in all three surveys so could not refer to new ones appearing in 1325. This observation in the text is made as an explanation for the lack of pannage revenue. The most serious discrepancy is for Bringewood, which is described in April 1324 as 'mostly waste' with an area of 50 acres while in February 1325 it is 200 acres of 'great trees' with income from pannage and underwood. Since Bringewood borders the adjacent manors of Richards Castle, Bromfield and Downton for several km this probably reflects uncertainly as to the location of its eastern boundary. There is also the possibility that Bringewood was shared in some way with the manor of Richards Castle (see 1.7 below).

²⁶ In 1337/8 an IPM of Wigmore manor and its outlying members mentions 'two great parks viz Gatelithe (Gatley) and Wygemor park'. Gatley is south of Bringewood.

²⁷ Bayliss D.G. M.A. Thesis "The Leintwardine area of Northern Herefordshire" University of Manchester 1957. pp 59, 60 "they [these surveys] are the most important record of a policy of afforestation in the Borderland, necessary after the use of much wood in the past centuries ... is interesting in view of modern afforestation ... the modern picture must approximate to that of the fourteenth century" and referring to the post WWII conifer plantings for the Forestry Commission p133 "It is fitting that the new woodland is called the Mortimer Forest after the forest-planting barons of that name...". This claim is repeated in an article "Lordship of Wigmore in the 14th century" published in the Transaction of Woolhope Naturalists Field Club 1958 pp 42-48.

1.7 Parks

A 'park' was the Lord's private enclave but required royal permission to establish. The two parks of the honour of Wigmore detailed above also appear in an IPM of 1303, which refers to the 'park of Wigmore' and 'Gatelith park'.

Just south west of the Vinnals (between Climbing Jack Common and Hanway Common) is Norbache Park (SO480710) now better known as Hays park within the Lordship of Richards Castle that survived intact until the early 1950's when it was cleared and coniferised (10.3 below). Calender of Patent Rolls for the year 1284 refers to '...persons who hunted and took deer in the park and free chase of Robert de Mortuo Mari of the Richards Castle'. The 'free chase' here could well refer to Bringewood which may have had some shared arrangement between Richards Castle and adjacent manors.

Hugh Mortimer²⁸ confirmed a charter of 1301 which gave the burgesses of Richards Castle (1 mile south of the Vinnals) and his tenants in outlying townships within the manor 'common of pasture for all beasts in all my woods within my said lordship of Richards Castle .. at all times of the year except my park called Norbach and my Hay lying betweene New ditch called the Twithyings Lawnde and one hedge called the Ray and which are enclosed and parked in at all times of the year..'. Norbach is an old name for Hays Park²⁹. This grant also included rights to collect wood for fencing, house repair and fuel from the above mentioned 'woods'. His tenants were to pay £20 for the pasture rights and 12s a year for the wood.

Apart from confirming the existence at this time of the park, the document shows that 'woods' were grazed for much of the year and probably comprised the higher marginal land of the west and north part of Richards Castle, and/or the eastern flank of the Vinnals and the Mary Knoll valley. Mortimer's grant of these rights in western Richards Castle would lead to later disputes with the royal officials of Bringewood chase (see section 4.3 below).

Oakley Park (SO480760) and Ludford Park (SO505735) do not appear in the records until the 15th century.

2. The 15th century.

Compared with the centuries before and since, the 15th century is notable for the virtual absence of documentary evidence so far discovered pertaining to the project area. There was a general dearth of documentation at this time as Rackham observes³⁰ "The 14th century was well documented in England; records then gradually fade away, and there is another dark age from 1450 until record keeping was again revived at the dissolution of the monasteries." Sources and locations for this century not yet researched include the Court Rolls and the various Harley papers held in the British Library, Bodleian and at Brampton Bryan.

For the year 1418/9 there is an account of payments for the carriage of four large oaks for a chamber at Ludlow Castle being brought from 'Madiknell wood'³¹ considered to be a reference to Mary Knoll wood and if so it is the earliest so far found.

²⁸ Cross, P. Coppices and Commoners; an account of the Richards Castle woodlands. TWNFC Vol XLIX 1999. This Mortimer is a quite different branch of the family to the Wigmore Mortimers.

²⁹ Cross, P. *ibid*.

³⁰ Rackham, O., *The History of the Countryside*, Dent 1986. p17

³¹ PRO SC6/967/21 Ministers Accounts. I am indebted to Michael Faraday for this reference.

2.1 Chases and woods become royal

When Edward Mortimer became king Edward IV in 1461 following his victory over the Lancastrian army at Mortimers Cross, Bringewood Chase with all the ‘forest’ areas (mainly Mocktree and Deerfold) of the Mortimer Honour of Wigmore became Royal Forest. Previously, Bringewood chase was the baron’s own land although the deer on it were the king’s. Bringewood remained a royal chase until it, along with Mocktree and Deerfold ‘forests’, were sold off during the reigns of James I and Charles I.

2.2 Origins of Oakley Park

The earliest reference to Oakley park is from Ministers Accounts³² for 1478 which record a fee of 60s 8d a year paid to Richard Sherman for the post of parker, this reference comes from the accounts of Richard Crofte receiver of the Archbishop of Canterbury. The park could not have been in existence for long before that, because the 1490 Calendar of Patent Rolls has the same Sherman being granted the ‘keepership’ of the ‘new park’ at Oakley, for 51 shillings a year to be paid ‘as part of Ludlow Corporation’s fee to the crown’. This arrangement could mean that the new park was managed by Ludlow corporation on behalf of the Crown.

A question arises as to why the Crown should wish to establish a new park on fertile agricultural land next to the Teme and bordering an existing chase and ‘forest’? This was at a time some two centuries after the heyday of park creation when generally “parks went out of use”³³. We know from later accounts (see section 5.1 below) that both Bringewood and Mocktree were regularly ‘replenished’ with deer. Other studies show that parks were used for deer farming in the middle ages³⁴ and that live deer were moved about to re-stock park and forests some miles distant from the source³⁵. Oakley Park’s creation in the years preceding 1478 was not long after the enthronement of Edward Mortimer in 1461 placing the land and the game in all the forest and chase areas of the Wigmore manors under unified royal administration. It is therefore tempting to speculate that Oakley Park was created out of Bromfield Priory lands as a deer farm and breeding ground conveniently placed to maintain the deer populations of Bringewood and Mocktree, both of which are adjacent. It was also easy to manage from Ludlow, the seat of the Council of the Marches, and may also have been for the enjoyment of council members.

3. Bringewood chase in Tudor times.

The royal forest and chase was dominated by the mutual feudal obligations of commoners and king or his tenants in chief. Land use in the forests and chases of the Honour of Wigmore had become a complex interaction of commoners exercising a range of customary rights, a bureaucracy of forest officials controlling ‘infringements’ of the royal forests, deer hunting and re-stocking. A system of ‘fines’ for ‘transgressions’ or ‘spoile’ had become formalised into a beaucracy of rents and standard payments that produced revenue for the exchequer but even more for the local officials of forest and chase, the forester, keepers and underkeepers.

³² PRO SC6/966/19 Ministers Accounts. This reference is also courtesy of Michael Faraday

³³ Rackham, O. The History of the Countryside. Page 126 Dent 1986.

³⁴ Rackham, O. The Last Forest. Page 55. Dent 1989. “Havering Park yielded four times as many deer as Hatfield forest for the same area of land.”

³⁵ For example, 15 does and 5 bucks were transported ‘at the king’s expense’ from the forest of Wibbel (Weobley) to Sugwas to stock the bishop of Hereford’s park there. Cal LR vol II 1240-45 p 67

3.1 Tudor accounts for the chase: grazing, woodland, honey, wax and bark.

The earliest document³⁶ relating to Bringewood so far found from the Tudor period is an exchequer revenue account dated 1508 (Figure 4) giving some hints as to the internal structure of the chase. Seven named coppices and woodland are mentioned 'Bradley Grove'³⁷, the vallets³⁸ of 'Prestwode, Busshley, Redehurst, Maryknoll, Quenesvalet and Blakestone' from which there is income from timber and mention of wind blown branches and trees. Most of the income is from pannage for swine and from 'pasture called Fennalles' - the earliest reference so far found to the ridge now known as the High Vinnals. There is also 'grazing from one enclosure lying in the waste of Mary Knoll'. Of particular interest in this document is mention of wild honey and wax, bark and 'wormtak' an obscure Welsh term referring to payment for the Lord's obligation to allow the pigs of the manorial bondmen to be pastured in the forest³⁹. Since this is an account of the 'issues from the forest' there is no mention of common rights details of which only become documented with their demise (3.5 below). It is clear from these brief accounts that Bringewood Chase was not a uniform tract of land but had many defined areas and even enclosures. A later set of accounts for Bringewood⁴⁰ of 1540 has income from the same sources but some of the woods are differently spelt⁴¹. In addition there is now income from 'an enclosure from the waste called the Shuttes alias Onereves'. These are just south east of the Vinnals in the southern most part of Bringewood and became smallholdings in later documents and are depicted on the map of 1577 (4.4 below).

3.2 The erosion of commons rights in the forest and chase

Medieval Marcher Lordships were semi-autonomous fiefdoms separate from the English realm having their own courts and officials. They were finally abolished under the Act of Union of 1536 after which local power in the Marches became vested in the Council of the Marches in Ludlow which became the regional centre of crown administration in 1543. The Act unified laws governing Welsh and English parts of border manors and removed any remaining manorial obligations of tenants to the Lord. While the demesne agricultural land had already become free tenancies, the ancient and complex system of grazing and other rights in 'forests' and chases continued but was weakened and undermined. Many tenants of Marcher manors found themselves losing their feudal customary rights to 'forest' resources as newly mobile peasants settled in the 'forest', yeoman farmers expanded their land and forest officials took new opportunities for private gain. The late sixteenth century was a time of increasing prices and population with rising demands for wood from Ludlow town, its castle and surrounding villages. The Crown's concern was to increase its revenue from 'fines', rents and wood sales while also upholding old customs of deer preservation. These two objectives became increasingly incompatible.

³⁶ SC6/HenVII/1690 dated 1508.

³⁷ 'Bradley Green' appears on the c1840 Tithe map of Burrington (parcel 43) as pasture as it is today just north of the FE Vinnals car park (SO474732).

³⁸ A 'vallet' is regularly coppiced woodland

³⁹ Linnard, W., *Welsh Woods and Forests*. Gomer Press 2000. page 239

⁴⁰ Harleian 4151 MS in British Library dated 30 to 33 Henry VIII. I am indebted to Dewi Bowen Williams for showing me a copy of this document.

⁴¹ 'Bradley Grove' becomes 'Bentley Grove', 'Redehurst' becomes 'Budhurst' and Blakestone Vallet is not mentioned.

3.3 Deer of the chase and problems for the neighbours

Deer remained a major concern of the crown, shared by the tenants of neighbouring manors, though for different reasons. In 1551 Lord Ferrers, chief justice of the King's⁴² forests, received complaints from the Bringewood keeper Edward Hopton about incursions by one William Heath into the eastern part of Bringewood chase. Heath had just acquired the tenancy of Richards Castle manor, was killing deer straying from Bringewood and disputing Hopton's right to stop him. He did not accept that the 'liberty of the game' extended beyond the physical bounds of Bringewood Chase.

As far as the crown was concerned the king's deer had the right to wander well into the manor of Richards Castle right up to the Ludlow road. Thomas Hopkis the keeper stated to a Council inquiry 36 years later 'of her majesty's forest of Bringewood, for the game there [he] says that he always heard his elders say that the soils and liberties for the game went unto the Lordship of Richards Castle and so down to the way that leads from Richards Castle towards Ludlow and so unto all the wood above Overton and so towards Ludlow and so into all the woods and vallets above Ludlow and Halton.' (see appendix 3)

Ferrers ordered Hopton to review the state of the boundary and report how many deer had been killed (Heath had dispatched about 60). The key issue here was who had the responsibility for the royal deer and the effects of their browsing outside the royal 'soils' in a neighbouring manor. Ferrers was clearly not sure himself and ordered Hopton to report back as to 'whether that any other keeper or keepers have been accustomed to walk the woods grounds & pastures of Richards Castle as keeper of the deer there other than the king's rangers foresters or keepers of the said forest or chase and whether it has not been at all times lawful to the same rangers foresters or keepers to fetch in the deer out of the said woods pastures or grounds of Richards Castle into the said forest or chase'⁴³

3.4 Taverner's survey of 1565

Elizabeth's 'Chief Justice of the Forests South of the Trent' was Roger Taverner whose 1565 'book of survey' for Bringewood and Prestwood states that they are "set with old Oaks of 200 and 300 years growth whereof the most part have been lopped and shredd to make cole for the council at Ludlowe and set with birches and lyme trees of 100 years growth by the said measure 1068 acres"⁴⁴. These ages are consistent with calculations based on pollard crop weights derived from detailed accounts a decade later (section 4.5.3 below). His acreage seems low compared with later surveys unless measured in 'wood acres' which would give an area of 1700 statute acres⁴⁵ (section 4.5.8).

A statement of accounts dated 1571 shows that Ludlow castle had permission by the royal warrant to pollard "two hondred hedes of fuell wod and allso hath taken on hundred hede in colle"⁴⁶. Analysis of the price of pollard poles (see 4.5.2) show this to be the equivalent to about 1000 tonnes of wood. It is not clear over what time period this refers or what proportion came from Bringewood chase rather than the more distant Mocktree and Deerfold forests. Later accounts give more details of wood consumed by the castle from the chase (see 4.5.7).

⁴² This is Henry VIII's successor the young and sickly Edward VI.

⁴³ PRO E178/2903

⁴⁴ PRO Land Revenue Record office 5/39.

⁴⁵ 'Wood acres' were still used in Herefordshire in the 18th century: A 1708 survey (HRO C99/III/242) of the Chandos Herefordshire estates gives woodland areas in both statute and 'customary' wood acres, the latter being 61% larger than the former. By 1662 some enclosures within Bringewood had been sold by the Crown so its area would be expected to be smaller than that of Taverner's time.

⁴⁶ PRO E10/138 30 & 13Eliz

3.5 Customs of the chase

When in 1595 Elizabeth leased Bringewood to her favourite (at the time) Walter Devereux, the Earl of Essex he wished to establish what rights had formerly existed in order to assess compensation for aggrieved commoners. His review⁴⁷ of manorial rights in Bringewood was partly based upon interviews with a number of local octogenarians. These were written down so we have some idea of the ancient customary rights ignored in previous surveys and accounts:

For example: ‘all the ancient tenants of Aston have time out of mind had and used to have common of pasture in Bringewood chase and all manner their cattle without number .. and their swine fed in Bringewood in pannage times for 2d a piece and a store boor and a store sow tackfree. Also custom wood: - a bough or a shell and 3 carriage load of wood. Every Christmas tenants exercising these rights gave 1 hen and 2d and 1d yearly to the lord of Wigmore {now to the lord of Leinthall Starks}. Also heyboot (hedging) for the fencing of their corn.’

Burrington tenants had similar rights but in addition: ‘free liberty to browse their cattle in winter season within the said chase by cutting pulling down and lopping all manner of underwood with hook and hand and also common of estovers, housebote, heibote, firebote, plowbote and cartbote to be spend and employed in and upon their several messuages, tenements and lands in Burrington. They pay the lord of Wigmore 2d at Michaelmas for their wood called woodmall money’.

Landowners of manors neighbouring the ‘forest’ were eligible for a token compensation called ‘fee deer’ for the fact that royal game could roam beyond the physical boundaries of chase and forest and still be protected by royal statute administered by forest officials. This old custom was hardly compensation for deer damage to crops and boundaries which was anyway born by the landowner’s tenants.

“towchinge the payem^t of ffee dere owt of the said fforest of Mocktree and Bryngwoode ther was a ffee buck & a ffee do paid to Charles ffoxe esquire for the Lordship of bromfilde also to Sir John Savage knight the like for the Lordship of wotton also to Sir Andrew Corbet the like for the Lordship of Shelderton the like to Mr Hopton for the Lordship of Downton all wch dere he hath known to be paid but in the tyme of the restraynt⁴⁸ all wch dere are paid furth of the fforest of Mocktree also he hath knowen a ffee bucke & a doe paid to Mr varnam of stokesaye for the soyles of Ladie halton.”

4. Elizabeth I and the commercialisation of Bringewood chase.

How royal ‘forests’ and chases were utilised and managed, especially in Wales and the Marches, changed greatly during Elizabeth’s reign as local people’s customary rights were eroded by commercial exploitation organised by forest officials. Woodward, keepers and under-keepers turned the forests and chases into their own private businesses with the tacit agreement of favourites of the royal court who ‘farmed’ forests and chases as Crown leaseholders. Parts of the chase were also sub-let to tenant farmers, some of whom were also forest officials, keen to expand onto to the former margin lands of the manor.

In Bringewood, as in other Crown forests, chases and woods, Elizabeth’s exchequer found that the enormous numbers of tiny individual wood sales proved impractical to police and to administer fines for. Increasingly, the Crown found it easier to lease ‘forests’ and chases such as Bringewood for a set annual amount and to leave their exploitation to the local economy.

⁴⁷ HRO LC 5887

⁴⁸ What the ‘restraynt’ referred to here means I am not sure.

The uses and the nature of Bringewood Chase and Mocktree forest during this transitional period from 'medieval manor' to 'private estate' are illuminated in a series of detailed royal inquiries administered by the members of Council of the Marches at Ludlow. The investigations involved many sworn statements from the commoners, keepers and vendors of wood and timber and include details of what they remember of past practices. These have been preserved on long parchment rolls at the Public Records Office occupying several large boxes - they have been transcribed for the first time by this project.

The documents provide a wealth of detail on the working lives of the people in and around Bringewood chase and their reliance upon its various resources. The quantitative nature of much of the evidence allows estimates to be made of the quantities of wood and timber, species, value, effects of enclosure and the relative impacts of different end users.

4.1 The whingeing foresters of Bringewood

In 1568 Thomas Gwilt and John Brimell were appointed as 'sworn regarders and perservers' of Bringewood chase by Roger Taverner. They reported⁴⁹ over the next few years on the "waste spoyles hurtes and trespasse donne and committed in the Quenes maiesties woodes in the forrest of preste woode and in the chase of Brindgewoode" in what is simply an account roll of the sales of wood, timber and browse. Most of the 50 or so entries are for felling, pollarding, cutting browse for stock and for fencing enclosures: Here are some typical examples:

"John Dyronde dwellinge in Astonne cutt downe one stubb tree valued at 12d and the same John falled one Byrche 6d.

John Shin[] dwellinge in Astonn ... cutte downe the heads of some tres valued at 8d.

William Blakwaye dwellinge in the parishe of Burington have felled for browse for his cattell to the value of 12d.

Thomas Tyler dwellynge in Overton cutte downe 4 trees for reparations of maricnowle (=Mary Knoll) hegges valued at 2/6d every tree". (Note the use of dead hedges for enclosures).

A responsibility of the 'regarders' and 'preservers' was to maintain the deer population, including making sure they had enough browsing. "Also that the kepers have fallen for browse for the Queen's maiestys deer." The implication of this entry maybe that the ground vegetation could become heavily grazed by stock to the detriment of the deer.

There is an interesting reference to the enclosure of a coppice wood within Bringewood:

"Roger Hopkins fell 4 poles by the appointmet of William Hopton esquire for the inclosing of the Quenes majesty's coppices." 21 years later we read that "sixe trees fallen by Thomas hopkins for the enclosure of Prestwoode Vallett".

This and other references, including the one above for the repair of Mary Knoll hedges, show that enclosure 'hedges' in the chase were generally dead hedges. This is confirmed by the depiction of hedges in the 1577 map of the chase (see 4.4 below) and figures 5 and 6.

"Thomas Hopkins being under tenant in maryknowll hath fell 2 powlles for the ringe hegg [value] 2s, the keper hath taken to ther fee all brows wod and winfall wod". Hopkins was one of the keepers of the chase who was developing his farmstead and taking payment in kind.

Bringewood supplied timbers to Oakley manor, for a new bridge and for a mill on the Teme: "we do present that .. Thomas Chroft esquire hath fell by warant 4 timber treis for the reparacion of the Occley parcke that Elton Burrington and Aston hathe fallen 3 tember

⁴⁹ PRO E10/138/30

trees for the making of the quenes brigge wch is called burington brigge by warond the reparacions of the quenes ma^{is} mill in the parishe of burington.”

The keeper’s lodge at Bringewood was in a poor state at this time and the account for 1570 states that “the lodge in Bringewood is fall in decaye for wante of syll..[parchment damaged]” and in the 1572 “william hopton esquire hath fallen v stube tres for the reparacion of the loge in bringwod valued at vs”. From later documents (see 4.3) we know that the lodge was in Burrington and that it was taken over and expanded by the later keepers.

Vestiges of the old ways continued: “Also we do present all that the quenes maiustie tenantes of the manors of Elton and Burington hathe had by deleverance accordinge to ther olde ancient Costom sold stubbes trees with other under wood and the heades of dead trees.”

Such quaint old customs were evidently not enough to recompense the forest officials who complain at the end of the parchment in an uneducated scrawl:

“to the right worshippefull Roger Taverner esquire this shall be to understand that we the said regarders have ben unpayed this 7 yeres and never had our waggas but one yere therfore we shall desier your worshippe to let us have our wagees according to the accouties and then to put others in our places”.

Forest keepers Gwilt and Brimell were ‘of the old school’ and failed to appreciate that the new political climate was about to create undreamed of opportunities for holders of their office.

4.2 Entrepreneurs of the chase

“Edward Edwardes, John Hamond and Thomas Hopkyes were nothinge worthe when they were fyrst underkeepers there and nowe they are of great wealthe havinge no allowance as aforesaid and that the lodge of Bringewood beinge in Burrington is rented out by the keper to a tenante, and the keper hathe made buyldinges in sundry places in Bringewood”

So reads a passage from manuscript E178/969 a detailed Elizabethan exchequer inquiry⁵⁰ into sales of wood from, and enclosures in, Bringewood which was conducted by the Council of the Marches at Ludlow on behalf of the Crown in 1576. Just a few royal keepers were between them selling wood and timber out of Bringewood to the local population and making about £35 a year by the late 1570’s. These keepers had no need to be a burden upon the royal purse nor did they need to write begging letters the Chief Justice of the Forest. The inquiry was held in front of the members of Council, in effect a jury of local worthies and it records the details of 191 sales of wood and timber made by royal officials to 88 trades people and cottagers surrounding Bringewood. More than half of them lived in Ludlow town and 53 gave their sworn statements in person which were written down by the Council scribes. The inquiry also includes unauthorised enclosures, unlicensed ploughing and erection of buildings.

Such was the amount of wood coming out of Bringewood and Mocktree that it seems to have been the main traffic on the roads at this time. Thomas Harris (witness number 40) of Priors Halton who managed the woods of its owner Charles Fox told the jury that

“On the worke dayes he hath seene diverse halliers of the towne of Ludlowe and others passe from said wood of Bringewoodd in the highe waye neere adioyninge towards Ludlowe aforesaid with their horses loden with woodd of diverse sortes some greene woodd and other wherof the certen number he cannot sett downe but thinkethe he hathe seene some dayes 12 and some dayes 16 or above beside some waynes and cartes.”

⁵⁰ PRO E178/969 Part of the Exchequer Special Commissions and Returns

The traffic out of Mocktree to Ludlow was hardly less according to Roger Hill (witness 24) a smith in Bromfield who “saieth that .. workinge in his shopp in or neere the highe way that leadethe from Mocktree to Ludlowe hathe seene for the moste parte of these 8 yeres last paste one carte of the said John Hamonde passe that way three or foure tymes every weeke for the moste parte of the yere and somtymes twice in a daye towards to the towne of Ludlowe loden somtymes wth clifte oken woodd somtymes wth greene woodd and somtymes other woodd And thinkethe in his conscience that he hathe carried yearly at the leaste 80 or 100 carte loades that waye during the said space of 8 yeres”.

Andrew Sonybank (witness 52) the Ludlow goldsmith recorded that John Hamond’s servant “goethe and comethe all the sommer longe with his carte to the towne of Ludlowe sometymes once a daye & somtymes twice a daye and all the winter once a daye .. and thinkethe in his conscience that the under keepers doe sell out of the forest of Mocktree and Bringewoodd so muche as ys worthe £40 by yere”.

Once in the town, wood was being further retailed: “Johane Rocke of the towne of Ludlowe wydowe a keeper of a vitteling house (=the grocers) for muche fyrewood as two horses contynually wynter and sommer have carryed from the said chase to her house in Ludlowe beinge distant asunder aboute a myle, which hathe risen to suche a quantitie as besydes the fyndinge of (=supplying) her house wth sufficyent fyrewood some yeres she hathe solde to her neighbours at home”. In some cases wood was stolen. Griffithe ap Rees was hired to fell about 200 wain loads of wood for the Council of the Marches but ‘60 or more’ of them were stolen by Harry Howle and sold in Ludlow to various people including Rees the hatter and Charles Wigley.

There was also some freelance wood gathering as when Hugh Edwards of Lady Halton took 2 or 3 ‘blocks’ containing 3 or 4 cart loads which he took without license or permission “but paid 3d when challenged by Edwardes”. Edward Edwards was a keeper.

A number of reasons are advanced to explain some of the felling; including cutting ‘under the pretence of gathering branches for browsing’, a tree ‘burned by the collier by mischance’ and in one case a tree set on fire ‘to kill a wasps nest’.

The forest officials were happy to accept payment in kind for wood. For example, Thomas Bethel a Ludlow dyer “paid no certain price but by dying clothe for Hamonde and his children” as did another Ludlow dyer William Backhouse who “paid cash sometimes but mostly be dyed cloth and other things for Hamond and his household”. John Hamonde probably cut a dash as an increasingly wealthy forest keeper being attired as befitted his office⁵¹. John Rawlings a Ludlow sadler had “20 or 40 loades of wood in Bringewood aforesaid wherof some was oke some birch and did not paye any monye for the same but paied them wth sadlers geerthes (= horse girths)”. Rawlings exchanged a ‘scotts bridle’ for one old tree and a saddle for 10 ten ‘wayne loads’ of wood - about 17 tonnes - so the saddle was a ‘top of the range’ model. For ‘about 5 wood loads a year’ John Sheppard “did sometymes plowe and husbandrye the ground of the said Edward (Hopton) and sometymes carried his heye and did other wurke for him”. John Fletcher a baker paid keeper Edward Hopton 24 loaves for a ‘stub tree’.

⁵¹ Forest officials had a distinctive uniform, a tradition that carried on at least another 2 centuries. For example when agents for the Guy’s Herefordshire’s Estates appointed Samuel Morris of Aconbury as wood reeve “We confirmed him in the same office within that district and gave him a green coat that he might appear in character”. HRO C99/III/235 (c1759)

4.3 New enclosures on the Chase – opportunists and improvers

Enclosures of some kind have always been part of the life of the ‘forest’ and Chase, for example to protect the coppices or ‘vallets’, to create pounds for sorting livestock, to define areas for grazing tenancies and for capturing deer. The Bringewood place names of ‘Evenhay’, ‘Overies’ (aka Overhay) and ‘New Tynings’ indicate such enclosures while the name ‘Shuttes’ implies a funnel or channel as in ‘cockshoot’.

The loosening of controls on settlement and enclosure at this time began a process that was to lead eventually to parts of the chase becoming permanent private farmland. These kinds of incursions in the chase conflicted with the traditional rights of commoners and were regularly reported to the Council of the Marches by forest officials. The ‘penalty’ for such speculative developments was invariably to pay an entry fine and then an annual rent, in effect formalising it as a new tenancy. Some of the ‘culprits’ were themselves forest officials. Complaints of the kind: “great destruction & spoil of her majesty’s woods within the said chase and hindrance of her majesty’s customary tenants” appear regularly in the documents appealing to royal custom and a feudal era already lost (Figure 7).

Edward Hopton felled “certeine birches and croppes of diverse trees towards the fencinge of enclosures wthin the said forrest and chase” and Lawrence Beck “dyd erect and buyld one newe barne upon the said parcell ground called maryknoll lynge wthin the said chase of Bringewood wch barne conteynethe in lengthe 4 bayes or [parchment damaged] storey? strong buylt, and that the said Becke had all the tymber that went to the buyldinge thereof [from] said parcell of ground called maryknowll”. (See figure 8).

Beck furthermore “in the 17th yere of the raigne of Quene’s ma^{js} (1575) without warrant or lawfull authorities knowen to the said jurors, dyd cutt downe and converte to his use out of the said parcell of ground called maryknoll the quantytie of 2 acres of wood worth 40s, and aboute the same tyme the said Becke dyd cydd (i.e. seed) and stocke aboute 8 acres of roughe ground in maryknowell aforesaid and plowed and sowed the same, and one John Coston tenante to [Be]cke aboute marche last past dyd fell and carrye away 3 oken polles worthe 4s out of maryknoll aforesaid”.

Becke’s building and his enclosures were beautifully depicted two years later on a 1577 map (figure 6) which sought to confirm that a number of enclosures newly rented by Edmund Walter were separate from the Chase even though they were clearly still part of it at the time.

New unauthorised enclosures in Bringewood mentioned in the manuscript of 1576 as follows:

name	acres	made by
Bradleys Green (SO474732)	1	Edward Edwards
Byrles (in Burrington, by the Teme)	2	William Hopton
Hullocks (in Burrington), Mounstiers (=Monstays) Vallets	30	William Hopton
The Hey (Burrington)	140	‘the keeper’
Black Ven (Lady Halton)	4	Richard Roe

The Byrles which is somewhere near where Bringewood forge was to be erected a few years later and rented to ‘Thomas the charcoal burner’ for 5s a year. The Hey is ‘the Heyes’ on Craven’s 1662 map (see table 7 section 7.3 below).

The Council received complaints about this enclosure because the fields ‘ought to lie open in common from midsummer to March 25th that the same hay now is kept by the keeper all the year, so as the Queen’s tenants cannot have their common of pasture there as they were accustomed & of right ought to have’. This entry shows that it is not the enclosure *per se* that caused the complaint by the commoners but the fact that it was permanently closed off denying them their customary hay and aftermath grazing.

The Black Ven was part of Lady Halton on the northern edge of the Chase, the complaint being that Roe had built a house and cottages on it, was living there and that the wood and firewood to supply this holding produced “great destrucion & spoyle of her woodes wthin the said chase and forreste and hynderance of her majs customry tenantes”. The council also heard that “that the lodge of Bringwood beinge in Burrington is rented out by the keper to a tenante, and the keper hath made buyldinges in sundry places in Bringwood.”

A survey of the manorial customs of Mocktree and Bringewood 1595⁵² lists other recent enclosures: ‘Thomas Canland gent has enclosed about seven years ago one parcel of wood ground called the Powles about 50 acres and one other parcel of land common or wood ground about 30 years ago enclosed about 12 acres called Scotts Wood.’ The Poles farm is at SO467747 and Scotts Wood, or its remnant, survives to this day SO470755.

‘Edward Edwards about 5 years ago enclosed about 30 acres of land called the Scallets. Edward Crowther about 30 years past enclosed about 30 acres of land called Wellers Vallet.’ For locations of ‘Wellers Vallet’ (Whealers Vallet) and ‘the Scalletts’ (Shallets) see figure 26. ‘William Langford and Thomas Christall about 15 years ago enclosed two leasowes or pastures of Mr Foxes land near Burringtons Bridge wherein the tenants of Burrington time out of mind have had common of pasture after sickle and scythe’. This latter comment confirms the custom of common of aftermath grazing following haymaking.

These relatively small-scale enclosures were precursors to the planned whole scale enclosure of the entire Chase following Bringewood’s final disposal by the crown in 1638 (section 7).

4.4 The map of the eastern part of Bringewood in 1577 (Figure 6)

This stylised map provides an unusual visual insight into conditions on the chase and its surroundings at this time. The map complements much of the contemporary manuscript records regarding ‘unauthorised’ enclosures, tree felling, building and ploughing. Only the eastern part of the Chase is depicted but all the land northwards up to the Teme, Ludlow town and quite a bit of Richards Castle manor is included. The map seems to have been made as a result of a dispute over the occupancy of enclosures by Edmund Walter, an important person in Ludlow and later chief justice of South Wales. The enclosures in question are given an exaggerated scale while other areas are contracted or omitted, see articles published in 1913⁵³ and 1996⁵⁴. Because of its interesting detail this project has photographed the original at high resolution (Figures 5 and 6). The map is unusual in another way in that it depicts felled trees from a timber sale described in an unrelated contemporary document.

The chase itself is shown with images of deer, trees, stumps and pollards, dead hedges and the “dyche and hedge that divideth the Chase from the other grounds”. This ditch and hedge ran along the north-south spine of the Vinnalls ridge, then NNE through what is now Sunny Bank Dingle to Mary Knoll. It is clearly seen in the 1948 RAF air photograph taken just after the

⁵² HRO LC 5887

⁵³ Weyman, H.T. The Walters at Ludlow – an Elizabethan plan. Transactions of the Shropshire Archaeological Society (TSAS) Vol III part II 1913 pp 263-282.

⁵⁴ Cross, P. A 1577 plan ... A re-evaluation of the landscape TWNFC Vol XLVIII 1996 pp 573-581.

felling of the Victorian plantation on the Vinnalls (figure 15). The mapmaker seems to imply that the Chase stops at the western boundary of the Vinnalls and Shuttes enclosures. However Walter's lease a year earlier (March 1576) states "the premysses are parcell of the sayd fforest of Boringwood ... yielding to the Queen's Majties the yerelie rent aforesaid (10/4d)".

Lawrance Beck's house 'Beck's barn' appears in the Mary Knoll enclosure which is shown as quite wooded, as we know it was from the documentation. The wavy red lines depict his 'unauthorised' ploughing and seeding as documented 4.3 above.

The five fields of the "Fennals" enclosures occupy the eastern slope of the High Vinnalls from the Mary Knoll valley to the depicted house next to one of the park gate entrances to Norbache park. This entrance and the adjacent banks are still visible today (figure 28). Three of the Fennals enclosures are shown as arable but the most northern one has trees that appear to have their lower branches lopped.

"Shutte alias Overies & Overies alias Shutte vallet", as it is called on the map, is divided into six fields surrounding what is now Vallets Farm SO476710 whose name derives from 'Shutte Vallet'. The north two are "leased to Mr. Walter" but the south four are "sould to one Hopkies". This explains why private ownership of the Chase, following its disposal by the Crown, only extended as far as the boundary between these two occupancies (green arrow figures 6 and 15). The semi-circular eastern boundary is also that of Elton Parish as it bulges eastward towards the Castle abutting Hanway Common – described on the map as the 'waste of Richards Castle'. This common is where the trees are shown lying which have been felled from the north most enclosure in which are depicted the stumps of trees with one remaining.

These three enclosures (Mary Knoll, Vinnalls and Shuttes) were already established at the time of map since they appear in the accounts of 1508 (4.2 above) as being let for pasture. It was customary (4.3 above) for such enclosures to be opened for common aftermath grazing and/or hay in summer. It was the exclusive use by the new tenants that caused contention. The felled trees depicted on the map are almost certainly from the following transaction involving 60 oaks that is also the largest of the 191 listed in the inquiry of 1576 E178/969.

"Thomas Hopkyes and Edward Crowther of Ludlowe .. aboute ij yeres nowe last paste without warrant or lawfull authoritie knowen to the said jurors dyd cutt downe, converte to their owne use and sell away to Roberte Wright of Ludlowe, taylor, and to the inhabytantes of Ashford and Richardes Castell and others about fyve score okes and tymber trees out of a parcell of ground called Overies alias Shutts lyinge wthin the sayd chase of bringwood which trees the said hopkyes and crowther dyd cutt downe and sell away under the couller of a supposed purchase they supposed theymselves to have thereof of one Roberte Bury and John Amyas." ("under the couller of" = in the pretence of). This is 3 years before the date on the map showing the oak butts awaiting collection after being dragged out of Overies alias Shuttes down Hanway Common just west of the Ludlow road.

The house of Thomas Hopkis is shown prominently. Hopkis was by this time a wealthy 'underkeeper' of Bringewood and recent buyer of part of the Shutte fields. This house at Mary Knoll house was demolished and re-built on the present site by Richard Payne Knight. The map was mainly concerned with these enclosures so that the northern part of the chase, Haltons, Oakley are highly truncated. Oakley park is not actually mentioned and the Haltons only feature as 'Mr. Foxes land'. Norbache park is omitted. It is interesting to compare the 1577 map with the almost contemporary boundary statement by Thomas Hopkis in appendix 3.

The enclosure and lane boundaries are drawn as dead hedging of woven sticks and stakes consistent with what the documentation implies.

4.5 Elizabethan wood sales from Bringewood – an analysis

4.5.1 Overview of the wood sales manuscript data

Nearly 200 transactions involving wood and timber from Bringewood Chase are described in the exchequer commission of inquiry PRO E178/969 dated 1576. . Some 88 witnesses mainly from Ludlow gave evidence under oath about their purchases of wood from forest officials as well as observations about comings and goings in the Bringewood chase and Mocktree forest. The inquiry gives names, occupations, amounts of wood, payments and tree species. Comments and asides of witnesses provide glimpses of life in and around the Chase. The detail and thoroughness of the inquiry invites a quantitative estimate of the wood and timber resource of Bringewood and its uses. The Bringewood iron works had not been constructed at this time.

Most people were buying wood for fuel so there is more detail about its price and quantity than its origin or species. The wood they were buying is typically described as ‘trees’, ‘poles’, ‘boughs’, ‘stubbs’, ‘hedes’ or ‘crops’ of trees or ‘windfall’ trees. The species of wood or timber is mostly unspecified but some 11 species appear in the manuscript with Oak as the most frequently mentioned followed by Birch, Hazel, Hawthorn, Maple, Holly and Lime, see table 6 below. The phrase ‘oak and diverse sorts’ is typical, so Oak is over represented.

The inquiry details wood sales from Bringewood Chase equivalent to **an estimated annual extraction of 870 tonnes per year** of which Ludlow Castle accounted for 30 tonnes (about 5% of the total). Some 115 tonnes a year came from the more distant Mocktree forest. Forest officials, mostly just three forest keepers, are documented as receiving a £41 15s per year. Witnesses gave their age, occupation and many (55 out of 88) their place of residence of which 37 were from Ludlow, 7 from Bromfield and remainder from Lady Halton, Priors Halton, Burrington, Stanton Lacy, Ludford and Stokesay.

4.5.2 Weights, measures and prices for wood and trees

Wood from Bringewood was delivered and paid for in a variety of units such as ‘horse loads’, ‘wain loads’, ‘seames’⁵⁵, and ‘faggots’. The price and quantity of these units is recorded for each transaction but the actual weight per unit has to be estimated. The most frequent unit is the ‘horse load’ which is estimated at 80kg, the amount a pack horse of the time would be expected to carry from Bringewood to Ludlow, a distance downhill of 1 to 4 miles depending on location in the chase. The average price per horse load from nearly 2000 such loads was almost exactly 1 pence.

To estimate the quantity of wood sold out of Bringewood at this time the assumption is made that the wood was being sold at a similar price whatever its type or origin. Since the documents invariably state the prices, this allows a conversion based upon the horse load of 1d = 80 kg (12½ d per tonne) to be applied to all sales. This assumption is justified since almost all the wood, including whole trees, was converted to smaller material as fuel, transported and paid for by local buyers at a fairly constant price whether it was from a tree, pole, pollard etc. Averages based upon the large number of sales will smooth out variations in quality and other variables. Whole trees would be expected to produce timber and so have a higher value per unit volume than poles or branches, but there are two reasons why this may not have applied in Bringewood and neighbouring forests.

⁵⁵ The OED states that “a seam” can be a ‘horse load’ or ‘cart load’, the meaning I use here. A ‘seam’ also had a meaning as an official volumetric measure = 8 bushells which = 64 gallons. As a measure of weight for grain, the bushel could vary enormously and even in late Victorian times a bushel could mean anything from 35lbs to 90lbs (Report of the House of Commons Select Committee into Weights and Measures 1893.)

(a) Most trees would be growing in an open situation with short trunks, low branches, frequently hollow and shaped by decades of lopping (see Taverner's survey 3.5 above). Such trees would be unsuitable for conversion into more valuable beams. 'Stubbs' and 'hollow trees' are frequent descriptions of the Bringewood trees on the chase. Even armed with modern chain saws, trees of oversize girths present severe difficulties in felling and converting to utilisable timber.

(b) Trees on Crown land were traditionally felled only by royal warrant and we know from other accounts that the recipients with customary rights to trees to repair houses (housebote) paid a standard 'fee' per tree of 16 pence (see 4.5.8 below) which was actually much less than the average tree's 'market' value when converted to fuel. With the relaxation of royal bureaucracy controlling felling, locals buying whole trees rather than wood would not have been willing to buy such trees for more than they were worth as fuel. Since the locals themselves constituted most of the market, the sellers would have had to accept such prices.

The transcriptions of a typical sample of two of the 88 witness statements and the methods used here to extract the data and create the database are shown in appendix 2. Details of the transactions and the analysis are contained on the accompanying Excel spreadsheet *bringewoodsales.xls*.

All wood and timber sales have been sorted according to the units used: 'horse loads', 'seames', 'croppe of a tree' etc. The total amount and number of all sales for each of these units was summed and an average price per unit calculated. Using the conversion for a horse load of 1 penny per 80 kg (=12½ d per tonne) allows the weights of the other units to be derived and these are listed in table 4 below.

Table 4: Average annual sales of wood and timber from Bringewood (1)

No. of units	Wood sale units	total paid in pence	average pence per unit	Weight per unit tonnes	tonnes of all sales by unit	% of all wood sales
270	faggots	66	0.24	0.02	5.3	0.5
330	firewood	330	1.00	0.08	26.5	2.6
288	wood	258	0.90	0.07	20.7	2.1
31	blocks	34	1.10	0.09	2.7	0.3
1800.5	horse loads	1797	1.00	0.08	144.0	14.4
799	loads	1110	1.39	0.11	89.0	8.9
547.5	seames	775	1.42	0.11	62.2	6.2
282	cart loads	1235	4.38	0.35	99.0	9.9
83.5	wain loads	848	10.1	0.81	68.0	6.8
19	trees	794	41.8	3.35	63.6	6.4
69	oaks	4084	59.2	4.74	327.4	32.7
5	birch	33	6.60	0.53	2.6	0.3
7	stub & hollow trees	82	11.7	0.94	6.6	0.7
7	croppe of a tree	157	22.4	1.80	12.6	1.3
7	poles (some oak)	91	13.0	1.04	7.3	0.7
2	windfall oaks	136	68.0	5.45	10.9	1.1
13	pieces of timber	176	13.5	1.09	14.1	1.4
2	acres with trees	480	240	19.24	38.5	3.8
	Total	12,486			1,001	100
100	All whole trees	4993	49.93	4.00	400.2	40.0

Notes about the above table:

(1) The total 1,001 tonnes includes some sales from Mocktree which are included because a few transactions stated that wood was from “Bringewood and Mocktree”. To estimate the 870 tonne total from Bringewood these transactions are assumed to have been split 50:50 between the two.

(2) The row in blue italic “all whole trees” is the sum of the 4 rows for whole trees in blue giving an average size of a whole tree of 4 tonnes.

(3) This table excludes the estimated 30 tonnes a year taken by warrant for Ludlow Castle (see below)

There is a distinction between a ‘cart load’ which was about 1/3 of a tonne and a ‘wain load’, probably a four-wheeled wagon, able to carry nearly over 3/4 tonne of wood. A bundle of faggots weighing about 20 kg was a farthing.

4.5.3 Sizes, ages and species of trees

We have an independent check on the conversion rate of 1 pence per 80 kg based upon the horse load above because some entries give both ‘horse loads’ and other units for the same transaction. For example:

John Rawlings a Ludlowe sadler said in his evidence that “one Bedowe of wigmore hadd one tymbre tree in Bringewood wch so affirmed was a fee tree⁵⁶ wch tree the said Bedow bargayned to this examinate for a sadle wherof this examinate had aboute ix or ten wayne loades of timber and woodd”. Using the conversion table above this tree would have been 7 or 8 tonnes (9 or 10 x 0.81 tonnes per wain load from the above table).

Richard Cother a Ludlow clothier said “aboute fower yeres past he also bought of Edward Edwardes one windfall oke for xvjs and hath therof aboute xx wayne loades of wood”. This tree was about 16 tonnes (20 x 0.81) and his payment of 16 shillings is very close to the 12½ d per tonne derived from the horse load estimate of 1 pence per 80 kg.

Pollards of the Chase

The information regarding oak pollards is especially revealing and we have three transactions featuring individual oak pollards and where the resulting crops are given as amounts of wood:

Table 5, Pollard productivity and size for 8 oak pollards in Bringewood						
Pollard description	No.	converted to	number of	pence	Total tonnes	Tonnes/pollard
‘tops of oak’	3	wain loades	7.5	96	6.1	2.0
‘crop of oak’	1	seames	60	78	6.8	6.8
‘crop of oak’	4	cart loades	40	132	14.0	3.5
total	8			306	27.0	
<i>Average/oak pollard</i>				38		3.4

At an average of 3.4 tonnes of pollard crops per tree, these must be fairly large spreading individuals growing in an open situation, one of which appears to have produced a staggering 7 tonnes of branchwood. These trees are presumably at the upper end of the size distribution on the Chase. It is reasonable to assume the volume of the stemwood and the branchwood of these oaks would be similar⁵⁷ just before pollarding so one can estimate an average of 6.8 tonnes per individual oak pollard tree.

⁵⁶ A ‘fee tree’ would be one felled by royal warrant

⁵⁷ Corbyn, I.N. et al “The estimation of the branchwood component of broadleaved woodlands”. Forestry, Volume 61, No. 3, 1988 pages 193-204. Table 1 (page 197) has figures for branchwood as a % of stemwood increasing quadratically with diameter for oaks in a high forest situation. The resulting regression formular is: $b=0.0096*d^2+0.093*d+13.6$ where b =% branchwood and d =diameter at breast height in cm. $b=100\%$ (ie branchwood=stemwood) for $d=90$ cm and 75% for $d=75$ cm. The proportion of branchwood for the open grown

For comparison the average weight of the other 7 “croppes of trees” in table 4 is 1.8 tonnes and the average weight of 69 ‘oak trees’ is 4.7 tonnes.

Ages of the trees

The age of the Bringewood oak pollards at this time can be estimated as follows:

Assume a pollard height of 3 meters⁵⁸, an equal split of volume between branchwood and stemwood just before pollarding and 1 tonne = 1 cubic meter of green oak⁵⁹. A cylindrical stem of volume of 3.4 cubic meters requires a diameter of 1.20 meters⁶⁰, which, at a mean ring width⁶¹ of 2 mm gives an age of 300 years (1200/(2*2)).

The same calculation for the above 7 ‘croppes of trees’ gives an average age of 220 years and for the 69 ‘oak trees’ an average age of 250 years. These ages are consistent with Roger Taverner’s 1565 survey above “set with old Oaks of 200 and 300 years growth whereof the most part have been lopped and shredd to make cole for the council at Ludlowe”.

Area of crowns of felled trees

The area occupied by the trees felled on the chase can be estimated from Hummel’s formula⁶² that relates crown diameter to trunk diameter for free grown oak. The largest of the 8 pollards above had a crown diameter estimated at 35 meters (covering about quarter of an acre), the crowns of all eight oak pollards together them would have covered just 1 acre or 0.4 hectares. If all the recorded 870 tonnes of wood extracted per year from the chase came from felling average sized trees (217 trees at 4 tonnes per tree) their total crown area would amount to just 6.6 hectares or 0.9% of the area of Bringewood chase. If all the wood had come from pollards rather than whole trees the area per year would be about 2%. Both are well below the natural rate of regrowth as discussed in section 4.5.11 below.

Tree species

The inquiry is terse about the species of wood since it was mostly for fuel. ‘Diverse sorts’ or ‘Oak and others’ are common descriptions, yet there are 76 instances where species are mentioned, although it is clear that Oak is over represented. 11 species are nonetheless mentioned:

Oak	41
Birch	17
Hazel	6
Hawthorn	3
Lime	2
Maple	2

pollard oaks in the Chase would be much greater than for oaks in woodland so ‘b’ would be equal to or greater than 100% for size ranges much less than d=90 cm.

⁵⁸ Oliver Rackham ranges pollard heights 8 to 12 feet. I’ve taken them here as 3 meters

⁵⁹ This green oak density is within 6% of the figure published in Forest Mensuration Handbook Forestry Commission booklet No. 39 1988.

⁶⁰ $D = (4 * V / (\pi * H))^{0.5}$ in excel formula notation. D, H = diameter and pollard height respectively in meters, V = volume in cubic meters.

⁶¹ Fletcher, J.M. Annual Rings in modern and medieval times. Paper in The British Oak eds Morris, M.G. and Perring, F.H. BSBI 1974.

⁶² Hummel, F.C. Forestry Commission Report on Forest Research for the year ending March 1950 pages 65-66. 1951 Crown diameter (c) relates to stem diameter (d) in meters for free grown oak as $c = 20 * d + 1.2$.

Crab	1
Wych Elm	1
Alder	1
Ash	1
Holly	1
total	76

A couple of typical statements mentioning tree species are as follows:

Anne Hopton a Ludlow widow bought “xij horse loades of Birche oke hasyll and other sortes” and Williams Williams a Ludlow hatmaker bought “vi dussins of woodd in Bryngewoodd aforesaid wherof some was oke, some birch some orle and some lyme”. It is interesting to see that Birch and Lime are both mentioned in Roger Taverner’s 1565 ‘book of survey’ quoted 3.4 above although he doesn’t mention Maple. Birch is characteristic of regeneration on open or disturbed soils.

4.5.4 Coppice woodland, ‘Prestwood’, trees in pasture and tree species of the Chase

We know from the Tudor surveys that there were at least seven individual woods or coppices named in Bringewood (3.1 above) and that these coppices had to be regularly fenced against stock (4.1 above). Accounts of their management only rarely appear separately in these inquiries but we do have an account⁶³ from Robert Berry the fines clerk at the Council of the Marches. He reported that between 1580 and 1584 the 10 acre Prestwood vallett was sold to ‘diverse inhabitants of Ludlow’ for £14 13s 4d and that 16 acres of Ratcliffe⁶⁴ vallet sold for £28 6s 8d (=34s 4d per acre in both cases). Using the above conversions this works out at 65 tonnes per acre or 30 years growth at a yield class of 5. Some of the produce may have been between trees growing within the coppice, which would reduce this estimate of the age of the standing coppice. Coppice cycles varied between 8 and 30 years at this time although more usually 14 to 20 years. 30 years was typical for oak bark for tanning.

We can surmise that Prestwood was not pure coppice as John Rawlings the Ludlow sadler said in 1576 he had “one olde tree of the said Hopkys in Prestwood parcell of Bringewood”. The name Prestwood sometimes confusingly appears in legal documents as an alternative to Bringewood for example “Bringewood alias Prestwood”, but more often Prestwood appears as the name of one of the enclosed coppices within the chase. An explanation may be that Prestwood was the most accessible coppice to Ludlow and one of the first that a land agent would encounter as he travelled up the Whitcliffe road from the town to make his inquiries. The name Prestwood does not appear in Lord Craven’s 1662 list and map of the enclosures of Herefordshire part of Bringewood chase (see section 7). Taking the evidence together Prestwood coppice can tentatively be placed on the Shropshire side of the border between Mary Knoll and Whitcliffe Common.

Robert Berry also reported that ‘400 saplings had been sold for £20 (12d/tree) out of a pasture called Maryknoll’. Indicating that areas of pasture on Bringewood could have growing trees upon them. Lawrence Beck felled ‘the 2 acres of wood worth 40s’ as part of his farming operations at Mary Knoll (see 4.3 above) which is the equivalent of 5 trees per acre.

4.5.5 Wood fuel sales for the household

A number of individuals stated that their requirements were for their own household, three of whom are listed in table 7 below and average 1.3 tonnes a year. Traders such as bakers are

⁶³ PRO/LR2/258

⁶⁴ Is this another name for ‘Redehurst vallet’ in the 1508 accounts see 3.1 above?

excluded. This will be a minimum amount as doubtless fuel would have been augmented by unaccounted wood gleanings from a variety of other sources and places.

Witness	Wood sale units	Number of units	Years	Total purchase in pence	Pence per year	Tonnes per year
Richard Backhouse	loads	104	16	243	15.2	1.2
William Hardinge	loads	90	18	270	15.0	1.2
A saddler (name unknown)	firewood	120	7	120	17.1	1.4
	<i>Average</i>				<i>15.8</i>	<i>1.3</i>

4.5.6 Uncertainties in the records: hidden sales, thefts and time scales

Hidden sales and pilfering will not appear in the records but the evidence is that the keepers and underkeepers kept a close eye and a tight hold on the Chase. The records appear to be comprehensive since even payments ‘in kind’ (see 4.2 above, last paragraph above) and the occasional theft are recorded. There is also an independent check on the worth of the recorded annual consumption of £42 which comes from a remark by the Ludlow goldsmith, Andrew Sonybanke who “saiethe and thinketh in his conscience that the under keepers doe sell out of the forest of Mocktree and Bringewoodd so muche as ys worthe xl£ (£40) by yere and so yt ys comonly reported by neighbors”. This is less than is accounted from Bringewood alone.

The inquiry asked about wood use over a period of 18 years and this is where a major uncertainty resides. People would tell the Council how much they had used over so many years or that they had so many horse loads per year for so many years. Often only the last year or so was mentioned so one has to decide whether this was typical of the other years or that they had just started buying wood. The approach taken here is to derive an average annual use from the number of years specified. If they only mention sales in the last year this is taken as the annual consumption for that year. So if someone had 10 horse loads over 5 years and someone else said they received 5 horse loads last year this is taken as an average for the two customers of 7 horse loads a year for the year of the inquiry.

4.5.7 Wood from Bringewood used by Ludlow castle

Ludlow castle relied heavily on Bringewood for its fuel and the charcoal mentioned below is presumably for the castle smithy: Entry for 1575 includes: “Also we present all that is delivered by warond from the steward of the quene of wigmore and all that is donne by costome and also the quenes maiustie counsell in the marche of wales hath had by deleverance and by warand in the quenes foreste 2 hundred lodes of fuell wood to be delivered in the quenes chastell at Ludlow and also hath on[e] hundred lodes in colle to the foresaid Castyll”.

Accounts for Ludlow castle for 8 years to 1587 include:

“**Item** the collier hath falen and coaled wthin these viij yeares last paste one thousand loades or thereabouts by estimacion for provision of her ma^{js} howse in Ludlowe wthin viz. walke (i.e. within Bringewood).

Item more for her ma^{js} howse wch was cropped three score and vij trees betwene the could thorne and the park gate and twelve trees fallen for the same.

Item delivered by the woodward for the provision of her ma^{js} house in Ludlowe three score and vij trees wch doeth amounte to viij C loades wthin the compas of these viij yeares last past wth other croppes and underwoodes.”

Items for Ludlow castle appear without prices as that they are ‘by warrant’ and supplying the needs of the crown. The amounts involved above (1587) are expressed in tabular form below:

Quantities	Units	Est'd tonnes
1000	loads for charcoal	104.5
800	loads (including from 67 pollards)	83.6
12	trees assuming an average of 6.9 tonnes	50.0
Total		238.0
per year		29.8

This consumption of the Bringewood resources by Ludlow castle is less than 5% of that being sold to private individuals and trades people by the keepers and is the equivalent of the requirements of 24 households (see table 7 above). The castle would also be deriving its fuel from outside Bringewood Chase, a possible location being the nearby and extensive Richards Castle coppice woods which may be the reference to “other croppes and underwoods”.

4.5.8 Non-fuel uses of Bringewood timber

We have already seen (4.1 above) that timbers from Bringewood were supplied to Oakley park, used for a new bridge and for a mill on the Teme. The following entry indicates there had recently been a serious fire in Leintwardine:

‘Item - two timber trees fallen by Sir Richard Pawfroy vicar of Downton which were delivered by the woodward by warrant granted from the prince toward the repairing of his buildings that were burned in Leintwardine at the Queen’s majesty’s price which is 16d a tree’ and ‘item - sold by the woodward to the inhabitants of Leintwardine 15 trees at 16d a piece.’

From Mocktree: ‘three timber trees fallen by Sir Richard Pawfroy clark of Downton by warrant granted from the prince toward the re-edifying of his houses being burned in Leintwardine 16d a tree.’ This was the standard price for trees felled by royal warrant.

The following entry is first known mention of the fish pools of Oakley Park.

‘Item: one tree fallen by John ap Brymeld of the parish of Orleton for to make troughs⁶⁵ for the pool head in Oakley park by warrant from the council - 3/4d.’

Other entries include: ‘4 timber trees fallen by Richard Clenche of the wardrobe of her majesty’s house toward the making of the clock in the castle of Ludlow.’ Richard Clench was a Ludlow clockmaker and this is the first evidence of where he obtained his timber.

A William Harding had “one Stubbe wytche tree whereof the said hardinge made weynescote⁶⁶”.

‘Item: one timber tree fallen by the keeper to make shingles for the Lodge 3/3d’. This passage is from an account of Mocktree but is of interest since it shows the use of wooden roofing shingles.

John Map of Ludlow farm worker bought 6 or 7 blocks some of them to serve as bridges over his ditches for which he paid 21d.

4.5.9 Estimating the area of Bringewood Chase

⁶⁵ OED ‘trough’ 4. late ME. A channel, pipe or trunk for conveying water

⁶⁶ ‘Wainscot’ in Elizabethan England meant panelling for room.

Roger Taverner's 1565 figure of 1068 acres seems far too small unless he used 'wood acres' which would make it 1700 statute acres. Later surveys may have excluded contemporary enclosures and surviving documents which describe the boundary of Chase are difficult to follow in places. Lord Craven's 1662 survey of the Chase 'as it is now enclosed' (section 7) accounts for 1509 acres but this excluded any part of the chase in Bromfield manor in Shropshire nor did it include the 100 acres or so of the western flank of the Vinnals ridge (i.e. that part of the Chase west of the 'ditch and hedge' and depicted as Chase in the 1577 map). Evidence from witnesses in 1625 (section 7.1) referring to the Chase as they remembered it gives estimates of 2000 and 1900 acres. What is now the Poles Farm and Scotts Wood were enclosures within the Chase in Bromfield along with other locations in Lady Halton manor and these occupy in total about 1km square (~250 acres). Adding this and the western Vinnals to Craven's 1509 acres we arrive at 1850 acres or 760 hectares for Chase, a bit less than witness estimates but rather more than Taverner's figure (unless he used wood acres). This is about the best we can do with currently available evidence.

4.5.10 Was the wood consumption from Bringewood sustainable?

The total annual amount of wood and timber consumed according to all recorded combined with that for Ludlow castle amounts to 870 tonnes, equivalent to 1.14 tonnes per hectare (870/760) from the account figures.

The key unknown for Bringewood Chase is what proportion of its total vegetative production was wood? The overall production from native woody species known to grow on the Chase (see table 6 above) would have been around 5.5 tonnes per hectare year so a sustainable yield of 870 tonnes per hectare could come from just 160 hectares or 21% of the Chase. Even if the accounts have missed out a quarter of all actual wood exploitation due to concealed sales, theft, gleanings etc. (220 tonnes per year unaccounted for) the wooded proportion of the Chase required for this rate of exploitation to be sustainable is still less than 30%.

We know that the distribution of woody vegetation on the Chase was uneven, that there were at least seven areas of dedicated coppice and that some areas of pasture had trees. There were many old pollards and a lot of trees had to be removed to create farmable enclosures in the later decades – for example those in Mary Knoll and the Shuttes. We also know that there was abundant natural regeneration both within the coppices and in the pastures. Indeed the colonisation of new enclosures by secondary woodland was to become an obstacle to the planned expansion of farming on the Chase (see 7.3). The 1662 enclosure map of the Chase shows that significant areas of wood and trees remained even 80 years later. Even though there will be a fair margin of error in my estimates, the documented output of wood from the Chase does not appear to exceed its annual wood increment. The evidence is certainly inconsistent with the idea that uncontrolled felling was destroying the Chase, whether to supply Ludlow, its castle, surrounding inhabitants, or even the later iron making interests.

It was not the keepers selling wood, nor the commoners exercising their ancient rights nor was it the charcoal burners who planned the removal of the trees and their roots. It was not them that mapped out and created enclosures or rented them out for arable cultivation.

4.5.11 Why the Crown gave up accounting the forest economy

In a letter⁶⁷ to Robert Berry the Queen's surveyor in Herefordshire dated 14th June 1586 from his officials: 'there were diverse sales of coppice wood and great trees in sundry of her majesty's woods in the county. Some by warrant others by pretence of warrant it seems there is

⁶⁷ PRO/LR2/258

no money answered nor accounts made thereof, a matter surely very strange which should be considered for reformation thereof

The huge number of individual wood sales, some very small, from Bringewood alone would have been expensive and quite impractical for a local bureaucracy to administer, and for England as a whole would have defeated any centralised accounting procedure. Net Crown income from all royal forests in Herefordshire was apparently zero in 1559 and just £65 from 1580 to 1586⁶⁸. The Crown took the line of least resistance and ended up leasing the resources of its forests to various court favourites (such as the Earl of Essex). In so doing it allowed the keepers and the local market in wood to reach their own market equilibrium and rent for enclosures to be levied by the leaseholders bailiffs.

Even with modern technology, keeping track of all the activities and transactions that were going on in Elizabethan Bringewood Chase would have kept a local office very busy.

5. Managing game and common grazing rights in Elizabethan Bringewood

Although the forest keepers were running a free market in wood sales from Bringewood and Mocktree they remained assiduous in upholding the Queen's interest by protecting deer, apprehending offenders and controlling commoners' livestock. Manuscript PRO E178/2903 dated 1587 details deer protection, rounding up of livestock, checking up on enclosures and defining boundaries. Of particular interest are the many descriptions and place names within Bringewood which can be cross referenced to other accounts.

5.1 Stocking deer and apprehending poachers, a family career.

The official posts of keeper and under-keeper were passed down father to son as keeper John Hamond testified "that he doeth and hath knowen the fforeste of Mocktre and Bringewood this xxixth yere and more of good memorye for he was brought up in the lodge and hath walked as an underkeper ther sethens the death of his ffather Thomas Hamonde who died keper therof".

Forest and chase were regularly re-stocked with game and a number of keepers stated that "that they hath byn replenished wth dere and other game all the tyme of his remembrance". Elizabethan foresters had the opposite problem with deer to that of the modern woodland manager: a continuously dwindling population. It cannot have been due to unsuitable habitat.

Keeper William Hopton esquire the keeper 'hunted in the company of diverse persons with bows and hounds to serving all warrantes out of the Lordship of Lady Halton and also in the Lordship of Richards Castle [and] any other part [of] the forest of Bringewood and that Thomas Hamonde a keeper in Mocktree, was sent over the water (ie the Teme) into Bringewood to watch in the Lordship of Lady Halton to take a stealer of deer called Bryswood the which he did take in a place called the Skalled in the Lordship of Halton and arrested him & his bows & arrows'.

5.2 Dealing with dogs and weapons

Deer poaching was a popular past time and locals regularly had their weapons confiscated. These include handguns, cross bows and bows and arrows. Hunting dogs were hanged when caught there being several instances recorded for this. Keeper Edwards when in 'Lady Halton did take one John Cooke of Ricards Castle with a brace of dogs in a place called Whellers Vallett within the Lordship of Lady Halton which dogs Edward Edwardes did presently hang in a tree not far from the place where they were taken.' This presumably is the origin of the

⁶⁸ Hammersley, G. The Crown Woods and their Exploitation in the 16th and 17th century Bulletin of the Institute of Historical Research Volume XXX (1957) pp 154-159

name of the enclosures on Lord Craven's 1662 map of Bringewood (see figure 12) on the top of Bringewood above Deepwood called 'The Dog Hanging'.

Some dogs fared better from these encounters: 'he (ie keeper Edwards) found a foil (track of a hunted animal) in a place called Winter Acre Moor within the Lordship of Lady Halton and drew after it into the house of one Robert Wall and there watching the house sent for his master who when he was come did send for one Sheppard of Hill being a constable & went into Wall's house and found the flesh in a salting trough which he gave part to his hounds & gave the rest away & also took certain skins which they found there with them ... he had also took the aforesaid Robert Wall in the night time with a tiller bow⁶⁹ and arrows with forked heads in one of the fields of Lady Halton which bow & arrows he seized to the Queen's use'.

Suspects could expect nocturnal visits as shown by this account by keeper Hopton who went 'to a place called Long Acre Moor being within the Lordship of Lady Halton where there was a house, lately erected wherein dwelt one Meredith Lewes who the said Edward Hopton did call out of his bed and did charge him with keeping of the crossbow in his house which the said Meredith denying the same Edward Hopton commanded Ivan ap Ivan to go into a little house, where there was a stack of oats & searching of the same, found the crossbow with a border and arrows with forked heads which the said Edward Hopton did arrest to her majesty's use and took away.'

The following gives the place name of Deptwood, the first occurrence of which I am aware of 'Deepwood' on the county border on Bringewood's north flank '[the keeper] did take one Thomas Breem and Richard Beddow of Ludlow in a place beneath the way out of the Deptwood in the Lordship of Lady Halton having with them a brace of dogs of one Anthony Rowdens & Mr Hodley which dogs he presently hanged.'

Being owned by a substantial landowner and secretary of the Council of the Marches did not exempt a dog from being strung up from the nearest tree if found acting suspiciously within the extent for game of the chase. Keeper Thomas Hopkys "did take away hounds of mr seckeretery ffox in a place called the ocker(n?) vallett wthin the Lordship of of ladie halton aforesaid & did hange the dogges & aboute that tyme he did take a good bytch of Richard Huckes of Ludlowe in ffrindes vallett beinge wthin aforesaid Lordship of halton & did hange the same".

The keepers foiled what appears to be an attempt to snare deer: 'one Richard Gylley and Richard Parks of Richards Castle had hanged wethers⁷⁰ and cords for to take deer in a place called Hanny Bank within the Lordship of Richards Castle.'

5.3 Rounding up livestock

Every so often livestock, mainly cattle, pasturing by right in Mocktree forest and Bringewood chase would have to be rounded up, impounded in a special enclosure called the Queen's pound, sorted to find strays and rest given back to their owners. The Crown confiscated strays and owners with no rights were fined. A detailed explanation of the process for Bringewood is given in Hopkys's statement that also has place names allowing the location of the pound to be roughly determined:

'Upon a warning given by the forester or his keepers of the said forest to the inhabitants of the township of Aston, Elton, Burrington and Halton [and] they or the most part of them would

⁶⁹ OED 'tiller'= wooden beam in a cross bow grooved for arrows.

⁷⁰ OED 'wether' = fleece obtained from the second or subsequent shearing of a sheep, so presumably this is a snare made from woollen thread.

come themselves or send over the next morning, but commonly Aston & Elton would go to Gatley park pale, and so drive from there all such cattle as were thought to be strangers and drive them to the Queens pound by Bradleys green, or in bradleys green, and then those persons would go into some other part of the forest over that side the crest and bring the like drift to that pound and Burrington men would drive all the other part of the forest from Burrington to the Haye hedge and so all the other part of the forest from the Hay to the Queen's pound .. then the whole company, or the most part of them, would go into the woods of Lady Halton and so drive from Frinds Vallet hedge which lies within the great ditch that comes from the gate called the park & so drive all those woods throughout [and] beyond the Skallet to the Queen's woods and also the Black Fen & Poles, and the Skottes wood as long as it lay open & all those woods were driven to her majesty's pound aforesaid. Which done, the tenants of Aston, Elton & Burrington would come and draw out their cattle [and] have them freely.' A similarly detailed account of the 'drive' in Mocktree is also given.

Commoners' pigs were required to be taken out of the forest and chase during the 'fence month' of mid summer when the deer were fawning. The custom for Bringewood and Mocktree was for the priest of the parish churches of Aston, Elton, Burrington, Bromfielde, Downton, Leintwardine & Onibury to announce on the appropriate Sunday that "all persons should voide their swyne owt of the said fforeste .. and if any swyne were founde after they were impounded". By the 1580's pigs are never mentioned as being in the forest but the local vicar was still expected to remind their congregation to round up all their swine from Bringewood and Mocktree after the service. Sir Richard Hill vicar of Bromfield and Leintwardine refused to interrupt the flow of his services with such medievalisms and was duly reported to the Council for his contempt of ancient customs.

5.4 Impact of enclosures on livestock management

An increasing amount of enclosed farmland, both arable and pasture, was appearing around and within the forest boundaries. Not only did this cause more problems of deer damage for the occupiers but also the enclosure hedges interfered with the annual round up of stock. 'he says that all the time of his service he has driven to the Queens use all the freeholders soils whose it was thought needful or any strangers cattle thought to be, some times diverse of the commoners & their servants with the keepers and some time he & his followers & their servants with them but all times quietly without comptrolment or let, until of late, in the said drift the drivers for their ease have omitted to go over & throw certain hedges & new enclosures made within some part of the freeholders soils lying within the said Forest of Mocktree, which have & ought [still] to be common.' This passage also confirms the impression from other sources that enclosures were often made of 'dead hedges' designed to be temporary.

In Bringewood along the northern boundary with Lady Halton there was a similar dispute regarding new enclosures and six elderly witnesses had to be called to the Council to state that they "have deposed that three parcells of lande in the Lordship of Ladie Halton called by the names of the Skallett Blackfen & Powles & are wthin the precynctes lymyttes & bounds of the foresaid fforest of Bryngwood and that the fforesters & kepers did alwayes use to dryve those groundes for all strangers cattell depasteringe ther and to dystrayne & impounde them in the Quenes pounce in Bryngwood".

6. Bringewood Forge: from satanic mill to picturesque idyll

6.1 A brief history of the Bringewood iron works

The Bringewood iron works was built on the Teme by the orders of Walter Devereux, Earl of Essex. Its location was chosen with care at a place where the Teme is confined by a long narrow gorge between Burrington and Downton on land that was part of Bringewood Chase which Essex had leased from the crown. It had become operational by the early 1580's, a time of rapid expansion for the charcoal iron industry in areas outside the traditional centres of the Weald and the Dean. This Bringewood location was especially well suited for iron making for these reasons:

- ◆ Motive power for trip hammers, bellows etc. provided by the fast and reliable flow of the Teme through the natural Downton gorge, to be augmented by a mill-race and wheels.
- ◆ Availability of labour recently freed from manorial ties.
- ◆ Ready access to wood for charcoal from coppice woodland in north Herefordshire and south Shropshire as well as to the wood resources of Mocktree, Deerfold and Bringewood following their enclosure and partial conversion of agricultural tenancies.
- ◆ Access to nearby limestone quarries for flux (see figure 27).
- ◆ Access to ore or 'ironstone' deposits of the Clee hills delivered by mule pack and river.

After a century of successful operation the then owner Lord Craven leased the Bringewood forge, furnace and chase to Richard Knight who improved the works, adding the tin plate rolling mill which gives its name to the nearby wood. In its hey day it was one of the most productive forges and iron mills in England helping to make the fortune of Richard Knight who was able to buy the works outright and buy up neighbouring land including Bringewood Chase to augment his extensive iron making interests in the West Midlands⁷¹. During the 1720's Knight bought the manors surrounding Bringewood: Burrington, Elton, Leinthall Starkes, Leintwardine and Downton.

The Bringewood charcoal iron works was one of the last in England when it finally closed in the early 19th century. Knight's grandson was Richard Payne Knight, connoisseur, classicist, collector and advocate of the naturalistic 'Picturesque' philosophy of landscape design and appreciation. Operations finally ceased sometime around 1810 leaving the 'natural' character of the gorge as a quiet haven of 'picturesque' beauty admired to this day.

6.2 Iron works vs agriculture - respective impacts on woodland, 'forests' and chase.

Most published accounts of the history of North Herefordshire have held Bringewood Forge responsible for denuding the surrounding 'forests' of Mocktree, Bringewood and Deerfold of wood during the seventeenth century. The reality was rather different. Certainly there were complaints by commoners, their representatives and the burgesses of Ludlow who found themselves competing with the forge for wood and timber in Bringewood and other 'forests'. A petition of 1611⁷² is typical, complaining that

'there is apportioned to the maintenance of the Iron Works in Bringewood and Mocktree a 1000 cord of wood yearlie to be taken. So that in a short time it will be utterly consumed ... and the tenants and inhabitants destitute of the relief for buildings & necessities they have been

⁷¹ Downes, R.L. The Stour Partnership 1726 – 1736. Economic History Review III 1950 pp90-96.

⁷² HRO formerly Hereford City Library Local Collection (LC) 5571

formerly accustomed to receive’ and ‘so general a spoil of all kind of wood, save a little remnant in Bringewood, as they now dig up the ground and pull out the old roots’.

Many contracts were indeed drawn up with a succession of leaseholders from the 1590’s onwards to supply the forge with wood and charcoal from the forests of Deerfold, Mocktree and Bringewood Chase. Such was the local feeling against these contracts that those responsible for implementing them had to be permanently ‘on site’ to prevent harassment. Hugh Evans was responsible for “for the delivery of the cord wodd for ye iron works in ye said forest” for the iron master Henry Wallop who had the lease of Bringewood. He had made a 4 acres enclosure in Bringewood Chase, built a cottage and “nowe (1605) in consideration of his charges and for his better attendance upon the said workes & preservation of the said woods from dayly spoylers humbly praieth to have a lease of the premisses for xxj^{ty} yeares”.⁷³

Any unsustainable felling or uprooting in forest or chase was confined to areas of planned conversion to agriculture. For example, in 1638 Sampson Eure paid £1000 to Earl Lindsey for ‘the roots of woods and trees and to cut, fell, dig up by the roots’ in Deerfold forest. ‘After the said Earl’s part of Darvoll is enclosed from the commons’ Eure paid 2s per acre for ‘that enclosed part with all the timber trees woods underwoods and roots for 30 years’. Eure’s lease required him to ‘enclose the said ground, maintain mounds, hedges & fences at his own expense’⁷⁴. The conversion of most of Deerfold to farmland was realised within the century.

In contrast, parts of the ‘forest’ and chase earmarked for coppice woodland to supply charcoal to the forge were treated with great care to ensure natural regrowth after felling, as was universal practice in such woods at the time. This of course meant excluding commoners and their stock, so the protection of the coppice was regarded as much an infringement of their rights, and a source of complaint, as enclosure for agriculture. Ludlow castle’s consumption of charcoal has been described above and they may well have found themselves in competition with iron works for coppice contracts in local woods. For example, the nearest coppice woods to Ludlow were the extensive ‘Vallet woods of Richards Castle’ of which 420 acres were leased from the early 17th century to various iron making interests including the Foleys and the Knights. The commoners of Richards Castle considered it their right to take wood for routine hedge and building repairs and to be able to graze animals in the woods after the coppice had grown up. The iron masters however regarded them as common wood stealers and despoilers of coppice. The resulting dispute⁷⁵ ended up in legal proceedings with the commoners basing their claims on Hugh Mortimers grant of 1301 (see 1.7 above).

In 1619 the Prince of Wales leased the Bringewood iron works together with the royal ‘forests’ of Mocktree and Deerfold and Bringewood chase to iron master Edward Vaughan for 41 years. This lease included 231 hectares of coppice woodland, ‘woodground’ and ‘treed ground’ of which 59 hectares were in Bringewood Chase:

“And all those treed grounds within the said chase of Bringewood also as the same doe now lye inclosed called by the name of Radletts & Hullockes ... conteyning by estimacion 140 acres ... & one other vallett or coppicewood lying in the said chase of Bringewood nere unto a place called Maryknowle containing about 5 acres”

Radletts and Hullocks occupy the NW flank of the chase down to the Teme, opposite Downton and the coppice at Mary Knoll can be identified as ‘Kings Copse lying at the east end of Mary Knowle’ on the map of 1662 see figures 13 and 16. This enclosure of the wooded part of

⁷³ PRO/LR2/258 1605 Exchequer accounts

⁷⁴ HRO/T74/184

⁷⁵ Cross, P. Coppices and Commoners; an account of the Richards Castle woodlands. TWNFC Vol XLIX 1999

Bringewood Chase amounted to fewer than 10% of its 710 hectares. The contract protected the coppice woods from grazing and ensured their exclusive management for wood for the duration of the lease.

“Vaughan ... shall not nor will not at anie tyme hereafter during the said terme cutt or fall anie the coppices aforesaid but at seasonalle tymes of the yeare & fitt mann'r as shalbe best for the new spring & growing againe of said coppice woods”. Vaughan had to secure boundaries against stock:

“And shall also upon every fall & cutting of the coppices aforesaid & every of them to well & suffeciently preserve & defend the young spring of the said woods from distrucion and hurte by anie mann'r of cattle or othr wise and to that end shall make suffecient hedges ditches fences & mounds in & about the coppice woods soe cut downe & the same fences & mounds & well & suffeciently preserve untill the said woods shall be growne past the danger or hurte of cattle.”

He had to conserve and make an inventory of all the timber trees and to “maintaine & preserve [them] from felling spoile & distrucion during the said terme and in the end of the said terme shall leave the same growing upon the said premysses”. Trees were also required to be conserved within any worked woodland “[leave upon] the said coppices and wood grounds such & so manie storrers & standers as are appointed by lawes & statutes of this realme”. A reference to the 1543 Act for the Preservation of Timber, which required 12 standards per acre to be maintained within worked coppice.

The lease conditions forbade any ploughing in the royal forest and chase: “nor will at anie tyme hereafter during the said terme plowe or teare up any meadowe ground or auntion (=ancient) pasture grounds or sheepe walks parcell of the demysed premysses but the same shall remaine & continue as now they are.”

This contract was hardly a license to despoil and waste the whole area or to dig up tree roots, indeed it even protected ‘ancient pasture or sheep walks’, further evidence of a long history of grazed open ground on these ‘forests’ and chases.

The lease had a similar effect on the commoners to the agricultural enclosure of ‘forest’ and chase since it created an exclusive land use in place of the multi-functional mainly grazed ecosystem which had developed over centuries of people exercising their customary land rights. As we shall see (7.1 below) Vaughan’s enclosures of the Hullocks and Radletts were pulled down soon after he had created them, an action which brought leading members of the Council of the Marches into legal conflict with the crown.

A couple of years after this contract expired Lord Craven drew up his map for the further enclosure of Bringewood chase “The Chase of Bringewood as it is now enclosed 1662”. On the map (figure 13) the Hullocks and most of the Radletts are shown enclosed for agriculture. The Hullocks appears virtually treeless and the main part of the Radletts split up into rectangular fields with just a scattering of remaining trees and only a 10 hectare strip next to the Teme mapped as dedicated woodland.

The enclosure of Hullocks and Radletts produced the feature known as the “Vaughan Ditch” which appears in a number of documents and was the cause of a disputed enclosure of the chase (see section 7 below). The Radletts & Hullocks are now the main part of Deepwood Farm.

All the woodland described in the above lease as ‘coppice’ (totalling 42.5 hectares) has remained as woodland to this day. By contrast, the land described as ‘treed ground’ or ‘wood

ground' (totalling 188 hectares) became farmland within a century. The charcoal supply contracts happened to be a convenient and profitable way to clear land for agriculture.

One of the coppices in this 1617 agreement was Gravely Wood (now called Garden House Wood) some 8 miles from the works showing how far it was practical for charcoal to travel.

In 1640 another contract was drawn up to supply 'for the first seven years .. at least 3000 cords of wood and roots to be delivered within 6 miles of the works' this averages 931⁷⁶ cubic meters per year. In 1663 Edward Harley was selling between 400 and 800 cords a year at 5s to the iron master Richard Walker who also had another supplier guaranteeing between 400 and 1000 cords. This is an average of 1,100 cords a year equivalent to 2,500⁷⁷ cubic meters a years.

The coppices of Richards Castle, 420 acres of which were leased to iron making interests at this time, would by themselves have been yielding an average of 800 tonnes a year of cord wood (420x5.25/2.471). More than 200 years later in 1861 there were 741 acres of coppice in Richards Castle called Hayes Coppice, Wood Eaves, Lower & Middle Valletts, Upper Valletts, Hope Coppice, Sunny Hills, Upper and Lower Evans. These were "cut periodically at about 20 years growth and the best sticks left for two falls and are then cut as timber"⁷⁸.

Iron masters quantified their input costs showing that the process of cutting, cording and charcoal made up a significant proportion. Regularly managed coppice woods with their high density of straight uniform poles would have been many times quicker and more economic to convert into charcoal than the scattered old pollards, stubbs and roots being cleared as a one-off operation for agriculture on parts of Bringewood chase, Deerfold and Mocktree.

The iron works were not the only commercial users of wood at this time. Local coppice was considered profitable even without a nearby charcoal iron industry as a survey⁷⁹ of Bringewood and Mocktree dated 1604 makes clear: 'If there be noe Iron workes the woods may yearlye be sould for ever for £250 [per annum]'. 50 years after the closure of the last iron works in c1810, coppice, mainly for charcoal, was still the major user of woods (section 10.1).

This 1604 survey also estimates the increase in rent to be had from 'improvement' of land in Bringewood and Mocktree: 'Landes enclosed there and let by lease at £5 10s 4d to be improved to £26'. The manor of Burrington 'is lett for £12 4s 2d per annum and may be improved to £156 6s 8d.'. This enormous estimated increase reflected the fact that Burrington manor included most of the western parts of the Chase.

It was in the commercial interest of the leaseholder of these royal lands to specialise the land use, either coppice or improved farmland, but not both on the same ground. This was the opposite of the medieval multi-purpose use of forest and chase which had served the multifarious needs of local communities for generations.

6.3 Wood consumption of Bringewood forge

About 2 ½ 'loads'⁸⁰ of charcoal were needed to smelt ore for a ton of unrefined 'pig iron' and a further 3 'loads' for forging and refining it to utilisable 'bar' iron in the late 17th century.

⁷⁶ These are 'statute cords' 8 x 4 x 4 feet which, using the Forestry Commission's hardwood stack conversion factor of 0.6 (Forest Measurement Handbook 1988 p32) gives a cord volume of 2.2 cubic meters.

⁷⁷ The cord dimensions in this contract = 9 x 4 ½ x 4 feet (TWNFC 1868 p270) work out at 2.75 cubic meters.

⁷⁸ Cross, P *ibid.* Reference 8. Valuation of Moor Park Estate.

⁷⁹ Harley Manuscript 354 folios 1-2. From Weyman, H.T. TSAS Vol III part II 1913 pp 263-282.(op cit)

⁸⁰ A 'load' is a cartload of 12 sacks of charcoal and would have been a reasonably consistent quantity. Its precise weight doesn't effect the following calculation since we know the amount of wood used to make a 'load'.

Some 8.5 cubic meters of wood were required to produce a 'load' of charcoal⁸¹ and using Linnard's⁸² yield class estimate of 5.25 cubic meters/hectare/year for coppice woodland managed for charcoal in Wales in 1700's, one ton of finished iron per year from the ore required the annual increment of 9 hectares of woodland (5.5 x 8.5/5.25).

Estimating the rate of utilisation of wood from the output of Bringewood forge is difficult since there are few reliable figures for iron making at the works⁸³, irregular production was a feature of the charcoal-iron industry and there was wide variation in the relative amount of effort put into pig iron (from the furnace) as opposed to its refinement (at the forge and mill)⁸⁴. In other words, finished 'bar' iron output for one year may have been forged from pig iron cast from the furnace the year before or even from another furnace. H.C. Bull⁸⁵ writing in 1869 quotes an 'old pamphlet of about 1714' saying that 'Bringewood formerly produced 350 tons yearly, but at that time only 300 tons'.

Records of the number of cords required and amounts of charcoal consumed at the Bringewood works are more numerous and consistent than that for the iron output. An inventory⁸⁶ made between 1714 and 1719 allows the average annual cost of charcoal entering the works to be £1765 16s 4d. Published figures for iron works in the west of England at this time give an average cost per delivered load of charcoal as 32s 2¾d or 1,096 loads a year. While this is necessarily an approximate figure it is not inconsistent with the above production rate of 300 tons of iron per year using 3.7 loads of charcoal per ton. After cording and 'coaling' this rate is equivalent to the annual volume increment of 1,774 (1,096 x 8.5/5.25) hectares of coppice woodland an area which is a mere 3.4% of a circling around the works with an eight mile radius, the distance of the furthest documented source of charcoal for Bringewood, Gravely wood, Aymestrey.

By this time the 'forests' of Mocktree and Deerfold and the chase of Bringewood had already suffered the majority of their enclosure and whatever was to be uprooted and unsustainably felled had already been so. Yet there is no documentary evidence of concern about lack of wood for the iron works or any interest in new woodland at the expense of agriculture. This is despite the fact that some higher enclosures, for example on Bringewood, were already showing signs of being agriculturally non-viable.

6.4 The final years of the Bringewood Iron Works, Downton and 'the Picturesque'

By the 1760's the charcoal iron industry was in decline as a result of technological developments allowing the use of coal rather than charcoal and steam engines rather than running water as motive power for bellows and hammers. It appears that low river flows in

⁸¹ Hammersley, G, The Charcoal Iron Industry and its Fuel 1540 – 1750, Economic History Review, 2nd series, Vol XXVI No.4 Nov 1973.

⁸² Linnard, W op cit. P 87, This figure comes from an estate in Breconshire and it seems a reasonable assumption that coppice woodland in upland north Herefordshire would not be too different. Published figures for present-day pure oak coppice give an average yield class of 4 m³ per hectare per year (Crockcroft, K.J. and Savill, P.S. Forestry, Volume 64, No. 1 pages 30 – 49. 1991). Other species eg ash will have a higher yield. Hammersley uses a higher coppice yield class of 7 cubic meters/hectare/year for his calculation of the fuel requirements of the British Charcoal iron industry.

⁸³ van Laun, J. Bringewood Furnace and Forge. A preliminary report (unpublished) 1979.

⁸⁴ Hammersley, G, Op. cit. p 599. He cites the case of the Lydney furnace at the end the 17th century which 'operated for only 5 months in 24, just to provide 600 tons or so of pig iron which could then be worked up by the owners forge'.

⁸⁵ Bull, H.C. TWNFC 1869 pp54-59.

⁸⁶ Bull, H.C. Op. cit. £7,504 14s 4d worth of charcoal entered the works from Christmas 1714 until Lady Day (March 25).

summer was a key factor favouring coal and steam over charcoal and water wheels in iron manufacture. Evidence to a Parliamentary Committee in 1723 stated: “the extraordinary scarcity of water this long dry season [has] laid farr the greater part of the Iron Works of this Kingdome idle”⁸⁷. While the Teme was not the only river rising in the Welsh hills and so having advantages over rivers in the Midlands and Southern England, its passage through the long and narrow natural channel of Downton gorge made the water supply for the Bringewood iron works unusually reliable. Ceasing production c1815 Bringewood was the last major charcoal-based iron works to be operational in England.

When in c1770 Richard Payne Knight inherited Downton, nearby manors and Bringewood iron works, he was a wealthy gentleman connoisseur with interests in arts, classics and poetry. He collected coins, fine paintings and classical sculptures. He is best remembered as an advocate of the naturalistic ‘Picturesque’ philosophy of landscape appreciation in opposition to the formality of landscape engineering typified by Lancelot ‘Capability’ Brown. He started designing Downton ‘castle’ on open ground a mile upstream from the iron works in 1772, the same year that Brown was drawing up designs for a formal makeover of Oakley Park on the neighbouring estate of Lord Clive (section 8 below). A series of watercolours by Thomas Hearne made between 1784 and 1786 shows the castle in both ‘formal’ and ‘picturesque’ settings and ‘clad with rich wood in a variety of shapes to its very summit and opening at parts into rude sheep walks’⁸⁸.

For all his aesthetic interests Knight did not neglect the management of his estates nor his interests in iron manufacture. In 1784 he leased the Bringewood iron works and its surrounding lands to William Downing iron master of Strangeworth forge Pembridge for 31 years (i.e. to 1815) for £114 a year. This is a rather small sum for what was, a few decades earlier, one of the most productive iron works in England and indicates that it was at this time operating at a fairly low level of production. Nonetheless, the lease protects Knight’s ‘natural’ environment, game interests and views. For example Limestone “is not got or burnt within sight of the castle”. Knight excluded ‘all timber and other trees, woods, underwoods, bushes and shrubs now growing or may grow hereafter on the leased land which lies on the north side of River Teme’ although Downing could have timber ‘in the rough for repairs of walls, piles etc within 2 miles of the works’.

It is not clear whether this contract ran its full course since there is no mention of any industrial operations in accounts from the late 1790’s of Downton’s now famous ‘natural’ landscapes. “The most wild, rich and solitary path I ever trod” wrote a correspondent to the Gentleman’s Magazine in 1797. Bayley and Britton’s ‘Beauties of England and Wales’ 1805, describes Downton as “one of the most picturesque seats in England” and with the ruins of the tin mill as its highlight: “The river meanders through the grounds to an extent of about three miles, its banks being fringed with wood, rising to a considerable height through a great part of that distance: indeed, the landscapes are particularly rich; the most eminent perhaps, is that which includes a mill between one and two miles below the house, and, with its adjuncts, composes a scene of uncommon grandeur”.

The ideas of Knight and others in the ‘picturesque’ movement such as Uvedale Price of Foxley (just south west of Weobley, Herefordshire) soon found expression in the opinions of Victorian naturalists such as the Rev. Thomas Woodhouse and Dr. Bull as they regarded with regret the remains of Mocktree, Deerfold and Bringewood Chase (see 10.1). Knight and Price

⁸⁷ Evidence from John Crowley Iron Master, PRO Adm. 106/753 30 September 1723

⁸⁸ Quoted from Clarke, M & Penny, N *The Arrogant Connoisseur* Manchester University Press 1982.

can also be seen as precursors of the modern conservation movement. They would have applauded current ideas of restoration of ancient forest from the damage of ‘improvers’.

6.5 Enlightenment forestry and the myth of a wood famine

The idea that charcoal wood fuel became ‘exhausted’ or scarce so causing of the demise of the charcoal-iron industry is part of an enduring myth⁸⁹ of timber famine that has influenced woodland history and occasionally forestry policy for at least four centuries. John Evelyn’s famous work ‘*Sylva, or a discourse of Forest Trees*’ published in 1664 advised the Government that “twere better to purchase all our Iron out of America, than thus to exhaust our Woods at home”. This fallacy was challenged by Andrew Yarranton in his ‘*England’s Improvement by Sea and Land*’ 1677: “I affirm that Iron-works are so far from the destroying of Woods and Timber, that they are the occasion of the increase thereof. For in all parts where Iron-works are, there generally are great quantities of Coppices or Woods which supply the Iron-works: And if the Iron-works are not in being, these Coppices would have been stocked up and turned into Pasture and Tillage.” Far from there being a wood shortage at the height of the charcoal iron industry, the Shropshire based Edward Knight (Richard Knight’s third son and Payne Knight’s uncle) stated to a Parliamentary committee⁹⁰ that he was paying twice the amount per cord before 1718 than he was now (1736).

John Evelyn based much of his ‘*Sylva*’ on the writings of authors before him such as Arthur Standish⁹¹ and Silvanus Taylor who both warned of a serious and impending ‘timber shortage’. This was claimed to be a dire and immediate threat to the economic and social well being of the British realm. Government must plant up ‘waste ground’ and land owners plant (or to be made to plant) five trees for every one they fell. These ideas⁹² were in keeping with the spirit of the age which sought radical means to ‘improve’ nature and society in the decades leading up to the civil war and contributed to the intellectual climate of the Restoration. The enthusiasm of these polemicists and pamphleteers often far exceeded their practical knowledge. Many failed to realise that woodland regrew or that ‘waste grounds’ like Bringewood Chase were already productive and an important resource to local people.

Evelyn appears strangely ignorant of woodlands, even those of his own family’s estate that supplied a forge, as this passage shows: “That a Forge, and some other Mills, to which he furnish’d much Fuel, were a means of maintaining, and increasing his Woods; I suppose, by increasing the Industry of planting, and care; as what he has now left standing of his own planting, enclosing and cherishing in the possession of my most honour’d brother, Geo. Evelin of Wotton, does sufficiently evince; a most laudable Monument of his Industry, and rare Example”. He genuinely thought that woodland owners had to plant a coppice wood after every coppice fall. No wonder he was worried about the effects of iron making! Other recommendations by Evelyn are pure fancy: “For the improvement of the speedy growth of Trees, there is not a more excellent thing then the frequent rubbing of the Boal or Stem, with

⁸⁹ The myth was exposed as such in the 17th century but persisted into the 20th to be demolished by two key papers: Flinn, M.W., *The Growth of the English Iron Industry 1660 – 1760 Economic History Review 2nd Series 1958* pp 144-153 and Hammersley, G. *The Crown Woods and their Exploitation in the 16th and 17th century, Bulletin of the Institute of Historical Research Vol XXX (1957)* pp 154-9.

⁹⁰ *Common’s Journal XXXIII 113-4 1737.*

⁹¹ Linnard, William. *Arthur Standish: An Appreciation of Evelyn’s Forgotten Predecessor, Quarterly Journal of Forestry Vol. 68, 1971* pages 34-40

⁹² For this section I have drawn from Lindsay Sharp’s detailed article ‘*Timber, Science and Economic Reform in the Seventeenth Century*’. *Forestry, Volume 48 Number 1 1975* pp 51-86.

some piece of hair-cloth, or ruder stuff, at the beginning of Spring: some I have known done with Seales-skin”.

Author Standish wanted to establish high yielding plantations and so release more land for arable cultivation. In a 1613 ‘New Directions of Experience to the Commons Complaint’ Standish predicted that “..within thirty years all Spring Woods [i.e coppice woods] may be converted to tillage and pasture”. 1642 Gabriel Plattes published a reformist tract which envisaged high yielding plantations so that “Crowns lands be improved to the utmost, as Forrests, Parkes and Chases etc. by which means his revenues are so great that, that hee [the King] seldome needeth to put impositions upon his subjects”.

Silvanus Taylor’s 1652 “Common Good: Or, The improvement of Commons, Forrests, and Chases by Inclosure” advocated the state sponsored enclosure of marginal and forest lands and parks in order to create plantations. These authors assumed that their imagined plantations would be more valuable to the nation than existing woodlands.

These utopian ideas were to re-emerge virtually intact three centuries later to drive the national forestry policy in the early and mid 20th century (10.2 below) which was to profoundly transform Bringewood Chase, Norbache park and the coppices of Richards Castle.

There is no evidence of tree planting in Bringewood or its surroundings until the Victorian period except the occasional requirement for a small number to be planted as part of a farm lease for repairs (see following section) and for amenity in Oakley park (section 8.1).

7. Bringewood 1630 to 1948, final enclosures and reversion of higher ground.

7.1 Disputes over enclosure and “Vaughan’s Dyke”

In 1625 a Crown commission⁹³ of inquiry heard complaints about the breaking down of new enclosures on Bringewood Chase, damage to crops from deer and disputes over livestock access to the Chase. It is significant that this inquiry was held at Leominster rather than Ludlow since the Crown had reason to regard the Council of the Marches as biased since key members were local landowners with interests in Bringewood. One of the main complaints concerned Vaughan’s 1619 contract with agents of the Prince of Wales over his right to enclose and take wood from the Hullocks and Radletts (6.1 above). At over 100 acres this was a sizeable new enclosure leased by the Crown’s agents but without agreement with commoners who retained customary rights or thought they did. William Lemor employed by Vaughan to ditch and hedge the enclosure gave evidence on behalf of the Crown telling the court that:

‘In midsummer three years ago [the enclosure] was broken down and defaced in several parts thereof by one Thomas Powell and Griffith Powell with their hedge bills and other weapons part thereof was done by day and part by night and they affirmed that they had warrant so to do from the Lord President [of the Council of the Marches] Sir Robert Harley and Sir Charles Foxe.’ Then these Powells and ‘diverse others brought their cattle into the said grounds and there depastured the same and said grounds do ever since then lie open.’

A number of commoners appeared for the defence using the opportunity to complain about recent previous enclosures naming amongst others Mary Knoll, the Vinalls, Evenhay, Bringewood Heyes and Deepwood which they said amounted for some 800 acres of enclosure of the Chase. The Hullocks and Radletts were just the most recent enclosures to threaten their right to pasture in the Chase and to collect wood for fuel and to repair houses. John Weale aged 74 of Aston was pleased to state that ‘Since the breaking open of the enclosure made by

⁹³ PRO E134/22Jas1/Mich32

Mr. Vaughan the farmers & tenants have continued the use of their commons in the said Chase & parcels enclosed as formerly they used the same.’ ‘Vaughan’s Ditch’ became a well-known local feature and was used in surveys to identify fields (see 7.3 below).

Those defending the breaking of the enclosures said that there was not now enough of the Chase left unenclosed for them to exercise their rights and that the deer damage to their crops neighbouring the Chase had become intolerable. As Weale expressed it on behalf of his fellow tenants ‘they are much oppressed & damnified in their corn, grain and grass growing upon their own several grounds by the deer and game of the said Chase.’ Thomas Bridgewater said that the deer damage was so bad that tenants of Elton ‘are enforced to leave much of their tillage unmaintained.’

When answering the question concerning the acreage of Bringewood (including the enclosures) William Bird vicar of Burrington said ‘two thousand acres’ and Robert Hopkys of Aston a yeoman aged 84 gave the figure of one thousand and nine hundred acres. Hoskys also complained about enclosures in the Bromfield part of the Chase that Lord Vernon late of the manor of Halton ‘hath at several times enclosed about one hundred acres of the said Chase the which do still remain enclosed.’

7.2 The Crown disposes of Bringewood, Mocktree and Deerfold.

The commoners lost their case in Leominster and in 1638 they lost their rights to the entire Chase when the High Court revoked all commoners’ claims to Bringewood. Supported by their landlords the surrounding tenants did manage to achieve a little recompense for the loss of these ancient rights. The tenants and commoners of Burrington were given 300 acres of allotments and the commoners of Elton, Aston and Petchfield received 500 acres out of the chase. Bringewood was acquired by the Earl of Lindsey who was given a royal license to kill all the deer in Mocktree and Bringewood, a necessary pre-cursor to the planned enclosure of the entire chase. The deer cull was part of the deal with the commoners affected by browsing damage on their crops.

A year earlier Lindsey had leased to Sampson Eure the enclosures of Evenhay, Munstie and the Crabtree Leasow totalling 100 acres as well as ‘all that coppice wood next to the Park Gate’ but reserved ‘all timber trees and saplings fit for timber.’ Eure could ‘cut down timber for house repairs, shall not damage woods or underwoods, leave sufficient underwood for covert and shade for cattle’ and agreed to pay 40s for each acre ploughed.

7.3 Lord Craven’s 1662 map of Bringewood “as it is now enclosed”

After Lindsey was killed at the battle of Edgehill, the Herefordshire part of Bringewood Chase passed to the Earl of Craven, who in 1662 drew up a map⁹⁴ of planned enclosures which was unusually detailed for this period. Entitled “A Particular of the Chase of Bringewood as it is now enclosed” the map covered 1509 acres giving details of enclosure, building and tenant. These are listed in appendix 4 with their areas estimated to the nearest perch (0.0025 hectares). Note the parcel identified as “D5” and described as “The land below Vaughans Dike from the Heyes to the forge”. The map depicts the distribution of trees throughout the Chase confirming that, despite a century of ‘exploitation’ and enclosure starting with Elizabeth’s reign, remaining areas of wood pasture and coppice had not been stripped bare by greedy keepers or voracious iron works.

⁹⁴ HRO T87/1

It is interesting to compare Craven's map with the tithe map 1840, the 6" to the mile 1886 Ordnance Survey and the 1946 RAF aerial photographs - see rectified map sequences figures 12, 13, 14 and 16. Some of the enclosures had reverted to secondary woodland by the mid-Victorian period. It is also possible that some of the planned enclosures were in fact never carried out.

The survey⁹⁵ of these enclosed lands gives some indication of their nature and valuations:

Table 9. Descriptions of the enclosures of the Chase 1662. Compare with appendix 4.		
Name of Bringewood enclosure	Comments	rent/ac
Mary Knoll, Kings Coppice & small piece at East End (83 acres)	Part of it rough & uneven & some good corne land on the south side & some good corne land on the top	3s 4d
The Hassalls worth (17 acres)	High yet reasonable good corne land	3s 4d
The Hill (15 acres)	Being steep & high to be coppiced in for wood	2s
Crabtree Leasow (19 acres)	Rough & uneven	3s 4d
The new Tineing (59 acres)	Steep & uneven north side of the hill	
The Wignolds (106 acres) (= The Vinnalls)	The greater part steep rough and uneven but the top towards the middle & west good corne land	3s 4d
Earles Arbour (109 acres)	Steep mountain & heathy	2s
The Dog Hanging (92 acres)	Barren on the south side the hill on the north side rough & uneven but better grassland	?
The Lodge & Leasow (56 acres)	Rough uneven apt to cast birch hasle & other woods	2s
The Hullocks (69 acres)	Well husbandred but apt to cast wood	4s
The lands below Vaughans Dyke (128 acres)	Uneven & rough & full of rocks steep etc [as in all] by good husbandry is made meadow	3s 4d
The Radletts wood (54 acres)	Pasture & meadow	3s 4d
House & part of the [Upper] Radletts (138 acres)	Part of it heathy apt to cast birches hasles & others some reasonable pasture little good corne land	3s 4d
The Fire Place (105 acres)	High mountain ground & very barren on south side	2s 6d
A piece called Mosty (=Monstay) (55 acres)	south part steep & rough fit to be coppiced for wood the other part good land	?
Part of Brindgwood Hays, the east part (102 acres)	high uneven ground the good grass land towards the north part the rest barren	2s 6
[Other] Part of Brindgwood Hays	high rough uneven ground good especially tow'ds the west which is fit for wood no bringing the wood of[f]	2s
Evenhay lying near Gatley park (26 acres)	good corne land if well manured	4s
Two small crofts (2 acres)	lately taken out of the common of Brindgwood adjoining to Even Hey	

Note the comments "apt to cast woods" for some of the enclosures indicating the tendency for woodland regeneration. This includes the Hullocks which was only recently woodland when converted to farmland under Vaughan's 1619 lease above. Woodland would return after the failed attempts to make a viable agriculture out of the higher enclosures (see 7.4 below).

Lord Craven subsequently leased the eastern and southern Bringewood enclosures to Richard Salwey who had the bought the manor of Richards Castle in 1650. A number of new farm holdings were created at this time and many of the original associated leases⁹⁶ drawn up between Salwey and his tenants have survived showing that a succession of yeoman and small farmers were keen to take on a new farm enterprise or expanding their existing one.

⁹⁵ HRO T74/554

⁹⁶ HRO R33 11,738

While Craven sold the remaining trees on these enclosures to Salway he ensured that enough trees remained to be used on his estate. He also retained the right to enter his properties to take these retained trees. For example, in 1676 Craven leased ‘Mary Knoll alias Sunny Hill recently split into several parcels’ and sold Richard Salway ‘all timber and trees on the property except 100 marked young oaks none under 20 years to be preserved for timber which Craven can take during the 99 year lease’. Salway’s leases (effectively sub-leases) to tenants included similar provisions, for example his lease October 1662 to Arnold Roberts of ‘The New Tynning & part of Vynnals, I hold of Lord Craven’ included the covenant ‘to plant 8 trees of oak, ash, elm, crabtree or appletree & wthin 2 years quickset all, suffer no waste any upon my coppesies & liberty of water for my cattle in other part of the Vynnals’. This is one of the very few references to tree planting on the Chase but is associated with estate husbandry - repairs of buildings etc - not forestry in the modern sense.

Title of land was sometimes disputed due to the unauthorised nature of many enclosures and settlers could find themselves homeless. Roland Cooper recalled being evicted around 1700 as a nine year old child after the death of his parents from a house his grandfather built ‘on the waste’ on the edge of Evenhay when “that disagreeable gentleman Mr. Littleton of the More being Lord of Manor (i.e Richards Castle) turned me and brother out doors to seek our bread in dissolate places [and] seased what little rubbish we had”⁹⁷. In describing the origin of nearby settlement Cooper gives a rather charming image of the process of piecemeal enclosure “Hopkins built his house & he throwd up a ditch round this spot of ground & quicked itt planted the inside with frute treese & likewise at the same time planted the slip of ground on the north side of the house on the left hand as you go down to thee spring toward Elton.”

7.4 Reversion of enclosures to rough pasture and woodland

These Bringewood chase enclosure plans were being drawn up and implemented in ways similar to what was happening to the remnants of Mocktree and Deerfold forests. However, the height, exposure and poor soils of the higher and steeper parts of the chase would doom many of them to failure. Lord Craven’s neat lines on his 1662 Bringewood map with its hopeful tenants and expected rent receipts only materialised in the sheltered valleys and lower slopes like Mary Knoll, Monstay, Shuttes and Overies (now Vallets Farm) or the lower Hullocks and Radletts (now Deepwood Farm) which all remain as farmland to this day.

The new enclosures near the ridge such the Dog Hanging, the Fire Place and the upper Radletts struggled to remain viable and by the time of the 1840 Tithe survey more than 200 acres of them had reverted to secondary woodland and scrub with scarcely a trace of the 1662 enclosure boundaries. By the time of 1886 6” series Ordnance Survey the area of secondary woodland had increased still further. Much of the Vinnalls, ‘sheep walk’ on the 1840 tithe map, had by 1886, become a conifer plantation and precursor to the Forestry Commission’s wholesale conversion of the area to conifers in the 20th century.

The 1930 Land Utilisation Survey maps many of these high areas as scrub or heath while the 1948 RAF aerial photographs reveal that large areas remained natural scrub, rough pasture and trees. The same aerial photograph also shows the advancing dark blanket of new conifer plantations which were about to smother what remained of the chase left over by unsuccessful agriculture.

⁹⁷ HRO/R33/11738 Letter 24th March 1749 from Cooper, then about 60 years old, to Richard Knight.

This novel instrument of ‘improvement’ to the chase was to become uneconomic in an even shorter time than Lord Craven’s high enclosures, but being backed by Government persisted into 21st century. See the map regressions figures 12 to 16 (separate file).

8. Oakley and Norbache Parks – Elizabethan to Victorian times

8.1 Oakley Park

From its creation some years before 1490 (2.2 above) the park remained in royal hands administered by the council of marches until its acquisition by the Herbert family in 1635. In the late Elizabethan period Oakley Park’s grazing and pannage was leased to various officials for example in 1588 to Thomas Crofts who was appointed keeper of the Park ‘with all profits etc of that office including ‘herbage and pannage’’. In 1590 to Katheryn Weste, widow of the one of her majesty’s servants, leased by letters patent ‘herbage and pannage of her majesty’s Park of Okeley’⁹⁸.

Oakley park lodge was rebuilt at royal expense in 1553 for which the original accounts survive⁹⁹. “The costes charges and expences as well in pulling downe one house being utterly decayed as also in the new buyldyng of a nother house in the same place of the same length and breadth disbursed and layd for the by Thomas Croft keper of the same parke”. This involved felling 90 trees from Mocktree and Bringwood “and within the said parke of Okeley” as well as 220 loads of timber from Mocktree and Bringwood and from ‘from dyverse places in the said parke’. There is an interesting entry which relates to the destruction of the Carmelite Priory¹⁰⁰ in Corve Street Ludlow, recently excavated¹⁰¹: Bromfield parishioners were paid £7 for “cariage of clx lodes of stone from the late whitt friers in Ludlow to the said lodge being distant one myle after xij d the lode”.

When the park was surveyed by John Woodward in 1609 it extended to 120 acres, contained 400 “doted” Oaks and 200 timber trees, had 2 enclosures of meadow within it of 5 acres and 2 other pieces of ground ‘adjoining the pales of the park and part of it called Billetts 4 acres used for pasturing the swine of the underkeeper’¹⁰².

In 1617 the chancellor Sir Henry Hobart in trust to the prince of Wales (the future Charles I) leased its herbage and pannage rights to Sir Charles Foxe¹⁰³ for 31 years with the stipulation that he ‘must maintain the deer and game in the park – at least 100 deer – allowing them feeding and keeping both winter and summer’¹⁰⁴. Foxe was clearly not interested in this part of bargain and that same year the Council of the Marches demanded that he show “by what title he doth hold Oakly Park and keepeth more sheep and cattle than deer”. Whatever the outcome 10 years later in 1627 Fox remained renting the park described as “130 acres pasture and 10 acres of meadow with lodge and houses and all appurtenances together with all woods, deer, liberty of the park to keep deer there”¹⁰⁵. In 1628 Charles I granted the reversion of Oakley Park to Fox and his heirs for all time. In 1670 fee farm rent of “£20 issuing out of Okley

⁹⁸ SRO 20/6/127-8

⁹⁹ PRO E101/478/24

¹⁰⁰ Faraday, M., Ludlow, A Social, economic and political history 1085–1660. page 64 Phillimore 1991

¹⁰¹ Klein, P. The Carmelite Friary, Corve Street, Ludlow Excavation. English Heritage 1990.

¹⁰² SRO 20/6/132

¹⁰³ This is the son of the Sir Charles Fox who appears in section 5. This son’s daughter marries a Herbert whose son Francis Herbet acquires Oakley from the crown in 1635.

¹⁰⁴ SRO 20/6/130-1

¹⁰⁵ SRO 20/6/133-4

Park¹⁰⁶ was payable to Charles II's Surveyor General. By this time Matthew Herbert, Sir Charles Foxe's son in law, had become owner of Bromfield manor.

Descriptions of the fields and boundary of Oakley park appears in a deed of exchange of 1710 whereby Francis Herbert of Oakley acquired certain lands from the 'bailiffs and burghesses of Ludlow'. These include for example 'Inclosure out of Priors Halton Field joining the Park pales' and 'piece between the park pales and field adjoining the Great Pool'¹⁰⁷.

Examination of the probate valuation¹⁰⁸ of Francis Herbert's effects at Oakley Park estate in 1759 indicates that a century later the park was adjunct to and part of farmland and livestock grazing land. "A true inventory of the cattle, sheep and swine pt. of the said Francis Herbert at Oakey Park aforesaid taken & valued and apprizd by Thomas Duppa and Richard Bishop the thirty first day of March 1759 as follows vizt:

ten feeding oxen	£75
12 working oxen	£64 10s
24 milch cows and 13 suckling calves	£107
1 Bule (sic)	£3
10 young cattle	£25
13 yearling calves	£20 15s
40 swine of all sorts	£33
26 polesall hog sheep at 8 shillings a peice	£10 8s
20 welsh weathers and a ram	£5
23 clun weathers	£9
144 store sheep	£50 8s
64 tuns of old Hay about and in the barns	£96
4 tuns in the deer house	£6
Barley unthreshed about 200 strikes (strike=bushel)	£22
Pease unthreshed about 80 strikes	£10
Oats unthreshed about 200 strikes	?

This reads as a fairly typical mixed livestock farm of the period with no mention of deer, except a 'deer house' from the old days, now used to store hay. The Herbert and Clive families had been linked by marriage since 1751 and in 1767 Oakley and Walcot parks were bought by Robert Clive on his second return from India.

By 1772 Clive was considering plans for Oakley drawn up by Lancelot 'capability' Brown fashionable for his formal sweeping vistas with clumps of trees. Professor Mainwaring, a friend of Brown, who had the rectory at Church Stretton wrote to him August 1773 saying: "I am happy in finding that you think so highly of Oakley Park, because I have no doubt of Lord Clive's concurring with your opinion, and of your making it, rude and savage as it now lies, the glory of this county."

Brown plans were notable for taking little account of previous land use or historic features and these are never indicated in his plans. Land 'improvements' such as grubbing and levelling of hedgerows, the burying of land-drains in place of field ditches, were major expenses in the implementation of a typical Brown plan¹⁰⁹.

Clive died in 1774 and it is not known whether Brown actually drew up any plans, but his son Edward Clive had already been employing the Shropshire landscape architect William Emes.

¹⁰⁶ SRO 20/6/145-6

¹⁰⁷ SRO 20/6/107

¹⁰⁸ PRO PROB/3/18/271

¹⁰⁹ Stroud, D. Capability Brown. Faber and Faber 1975

Emes was however a follower of Brown and he worked on both Oakley and Walcot. One of the entries in the 1773 Clive accounts has a Mr. Bennet being paid £80-13-6 for “Levelling ground and planting trees at Oakley park”¹¹⁰.

Two 18th century maps of Bromfield manor and Oakley park survive. One dated 1733 is in private hands with a tracing deposited at the Shropshire Records Office (SRO) and another also at the SRO is undated but is between 1745 and 1764 for reasons examined in figure 26. These dates are consistent with the map being prepared shortly after the death of the occupier Francis Herbert in 1759. The southern boundary of the park was extended between the dates of the two maps to take in some of the fields of Lady Halton (figure 19). The 1733 map shows only 2 avenues one along the road from Bromfield bridge to Priors Halton and another to its east. The c1760 map shows these as well but also the ‘Duchess Walk’ and a number of other avenues nearby.

There is some evidence that the Oakley Park part of the c1760 map was more a plan than a true survey. The only avenues depicted in c1760 and mapped on the 6” Ordnance Survey c1880 map are the Duchess Walk and the western half of the Prior’s Halton to Bromfield road. Elsewhere there is no trace of alignments of trees in the places where they appear in the c1760 map. Crucially, two short lines of trees south of the Duchess Walk (a, b, c in figures 18b & 19) appear in 1880 (and in an air photo of 1951) but are not on the c1760 map. Yet these trees must have been present in 1760 since they are clearly hedgerow trees of boundaries that existed in 1733. The east-west line of trees ‘a’ marks the 1733 southern park boundary while tree line ‘b’ and ‘c’, transverse to the Duchess Walk, are on the line of 1733 field boundaries.

Both maps predate Mainwaring’s comments about Oakley being “rude and savage”. How far Emes’s ‘taming’ of this park extended beyond the vicinity of the main house is difficult to judge. Certainly the 1840 tithe map, which does not show trees, depicts the southern boundary of the park as a single sweeping boundary which, sometime since 1760, had obliterated the sinuous line of the ancient enclosures of Lady Halton seen in c1760. (Figures 19 and 20).

Oakley’s neighbour, of course, was Richard Payne Knight of Downton, famous castigator of the ‘formal school’ and whose poem ‘The Landscape’ published in 1794 was aimed at Brown’s style of landscape make over and could well have applied to his neighbour’s park.

“ See yon fantastic band,
with charts, pedometers, and rules in hand
advance triumphant, and alike lay waste
the forms of nature and the works of taste!
t’improve, adorn and polish, they profess:
but shave the Goddess whom they came to dress
level each broken bank and shaggy mound,
and fashion all to one unvaried round”

If any 18th century ‘improvements’ at Oakley Park merited Knight’s scorn they would be dwarfed by the destruction wreaked upon the park by 20th century agriculture (figures 18 and 21).

8.2 Norbache Park

Norbache Park (SO480710) is 1 km north of the castle of Richards Castle bordering the SE flank of the High Vinnals ridge. The park dates back to at least 13th century (see 1.7 above) and remained intact until most its trees were felled and it was coniferised in the early 1950’s.

¹¹⁰ SRO 515 2/10/685

The name Norbache disappeared from maps by the 19th century and is forgotten. The most recent document mentioning it is the 1861 valuation¹¹¹ of the Moor Park Estate that refers to “the well known valley of Norbatch”. On modern maps it is referred to simply as “deer park” and although smothered in conifers its boundary banks survive as do a few old Lime trees.

A rent account of the mid 17th century has 5 tenancies totalling 95 acres under the heading of Norbache Park. In July 1652 another part of the park ‘all that parcell of wood land called Ruffe Norbache 16a with all the woodes thereupon’ is leased. Reserved out of the lease are ‘the body of all oaks ashes & crabtrees and all the present wood now growing upon a bank with the said premisses from a place called the Bentlies to a banck now in the possession of John Rea & adjoining to a common called Hanway common on the south side’.

9. The Victorian Botany of Bringewood, Oakley and the Haltons

9.1 Oakley Park

Whatever the changes to Oakley Park over the proceeding decades, it was still a botanist’s paradise in the 19th century. The botanist William Leighton was supplied with 81 plant records from Oakley Park for his first county flora of Shropshire published in 1841. Most of the plant records came from two local botanists, Mr. Henry Spare and Miss McGhie, who focussed their attention upon the pool and the park grassland. It is interesting to note the presence of Greater Burnet characteristic of flood plain meadows (and even then considered ‘very rare’) as well as plants such as Meadow Clary (now extinct in the West Midlands) and Columbine. All these plants were clearly of general occurrence in the “Oakley park meadows” as well as seven species of Orchid. The list of Oakley’s notable Victorian plant records published by Leighton are listed in appendix 5 along with a reference to discussions as to why some of Spare and McGhie’s records (not included in the list) are disputed.

9.2 The Haltons

From the farmland between Oakley and Bringewood Chase, Leighton lists Autumn Lady's Tresses, now rare but known until recently from fields around New House Farm (SO453730). Leighton lists Spider Orchid from Prior’s Halton but his source, Henry Spare, is now considered unreliable possibly confusing it with Bee Orchid (see reference 135 appendix 5). At the Poles Farm, Spare recorded Buckbean *Menyanthes trifoliata* which at that time in the Shropshire countryside was “frequent, marshy places and boggy margins of pools”. At Oakley, and generally for Bromfield, Corn marigold is recorded which would have been a common arable weed.

9.3 Bringewood and Whitcliffe.

Leighton’s Shropshire flora does not mention Bringewood Chase since it was mostly in Herefordshire but nearby Whitcliffe coppice was a favourite haunt of Ludlow botanists being just up the road from the town. Whitcliffe coppice would probably have been fairly typical of coppice woods in Bringewood or Richards Castle at this time and may serve as a proxy in the absence of equivalent Herefordshire records. Some 40 plant records were supplied to Leighton from Whitcliffe coppice including plants such as Milkwort, Petty Whin, Bilberry, Heath Bedstraw and Rock Rose typical of heath or scrubby open habitat. Petty Whin *Genista anglica* was generally found in Shropshire in “moist heaths and moory ground” it is now “very rare”. Broad-leaved Helleborine was observed “In great profusion and beauty on the borders of a

¹¹¹ Cross, P. *ibid* reference 8.

horse-tract through Whitcliffe woods near Ludlow.” Three of the plants in Leighton’s Whitcliffe list now appear to be extinct in Shropshire (appendix 5 page 67).

Straying into Herefordshire, Leighton lists McGhie’s record of Butterwort *Pinguicula vulgaris* from “Vinnals” presumably from a sunlit spring, perhaps at the head of the Mary Knoll valley. For Butterwort he says “Bogs and moist heaths, not very common”.

Victorian Herefordshire records for the Bringewood/Vinnals area are sparse but we have a diary entry¹¹² for the Rev. Augustin Ley who walked from Ludlow station via Mary Knoll valley over Bringewood to Downton on the 6th July 1878. He recorded Petty Whin *Genista anglica* from the south side of Bringewood Chase which, together with the 1841 Whitcliffe record above, indicates that the plant was distributed both sides of the county border along the ridge. He also records Tawny sedge *Carex hostiana* there.

Ferns: Purchas and Ley’s ‘A Flora of Herefordshire’ published in 1889 gives records for Stags-horn Clubmoss *Lycopodium clavatum* on the Vinnals and Wood Horsetail *Equisetum sylvaticum* was recorded between the Vinnalls and Mary Knoll. The former has been recorded only at Brampton Bryan in recent years but seems to be absent now. (see 11.1).

9.4 Juniper in Bringewood and surroundings, 1840 to present.

Leighton includes Miss McGhie’s records for Juniper “in the neighbourhood of Ludlow” and four other sites¹¹³. Cross checking with the Purchas and Ley’s Flora of Herefordshire which lists six Juniper locations including “Aymestry and Vinnals”, it seems reasonable to assume that McGhie’s record refers to the Bringewood/Whitcliffe/Vinnals area. Leighton’s general comment on Juniper is “woods and heaths; rare” while Purchas and Ley has “native, on open hills, preferring calcareous soils; rare”.

In the 1905 volume of the Transactions of the Woolhope Naturalists Field Club there is an enigmatic record of “a small hill covered with Juniper” in Deerfold Forest in ‘Notes additional to the Flora of Herefordshire’.

It seems that the last time wild Juniper was identified in Herefordshire was in the early eighties by Martin Noble on the Herefordshire part of Bringewood Chase, and published in the ‘Ecological Flora of Shropshire’ 1985 (page 178). Martin (now working for Forest Enterprise in the New Forest) gave a couple of grid references when recently contacted but says the area was planted up with conifers. Attempts to find it have so far failed. The more easterly grid reference he gave is next to the enclosed fields, formerly Aston common, on the knoll known as ‘Juniper Hill’ (SO473728) on the 1886 Ordnance Survey but not so named on the 1840 tithe map. These fields appeared as rough scrubby pasture on the RAF 1948 air photo and John Voysey (letter to the author dated 12/12/2003) knew Juniper there in the 1960’s. Professor Clifford-Smith also remembers Juniper as a youth in the late 1950’s growing on the south side of ‘Juniper Hill’ (email to author 30/1/2004). Mark Lawley’s ‘A Botanical Stroll through North Herefordshire’ - undated but printed c1999 - reviews some Juniper records (including Noble’s) but does not list the plant now.

Juniper seems to be able to hang in unsuitable habitat for some years since it was recently (2003) re-discovered in secondary woodland on the northern slopes of Westhope Hill where it was last recorded 30 years ago. Juniper in this area is remembered as locally frequent up to the 1950’s by living residents: Mrs Joyce Underwood of Westhope Hill and Mr. Thomas Jay of Derrndale. A review of Juniper in Herefordshire is available on CD from this author.

¹¹² Quoted in Lawley, M. ‘A Botanical Stroll through North Herefordshire’. - undated but printed c1999

¹¹³ ‘Near Kingswood, truly wild. ..Woods Burford Ashford Carbonal and the Wyre’.

10. The landscape of Bringewood and surroundings – the last 160 years

10.1 Victorian observations of forest, plantation and coppice woodland

By 1840 many of the enclosures created out of Mocktree, Bringewood and Deerfold forest and chase two centuries early had become well-established farmland. However those on the higher, steeper and thinner soils especially on Bringewood Chase such as the Dog Hanging and Vinnalls had reverted to rough pasture and secondary woodland. The coppice woodlands that supplied the Bringewood iron works remained as coppice wood but were now supplying other local industries, for example the local potteries, or were promoted to broadleaved high forest.

A new element in the landscape of North Herefordshire and the borders was the plantations, mainly of Larch, a development subject to debate that is surprisingly familiar to present times. The Rev. Thomas Woodhouse vicar of Aymestrey wrote in the Woolhope Club Transactions for 1870 comparing these plantations to his parish's native coppice woodland that included those such as Gravely, Pyon and Sned which supplied the forges and furnaces of Bringewood.

“Such woodlands as these are immeasurably more picturesque than the formal coverts and plantations of the modern improver and lead ones thoughts back to the time when these hills were clad with veritable forests, of which the present woods are doubtless the descendants and counterparts.”

Half a century after the closure of the Marches iron industry charcoal was still the primary output from these woods. “Considerable quantities of charcoal are made here. The charcoal burners pitch their rude huts on some clearing in the woods, and often remain there throughout the summer. The level patches on which the heaps are burnt, blackened with small fragments of charcoal, are familiar features of these woods. I have known Aymestrey long enough to remember this phenomenon occurring in almost all parts of these extensive woods.”

Woodhouse observed the cyclical flush of ground flora “The underwood chiefly consists of hazel and young oaks. The coppice wood is generally cut down and cleared off at intervals of about twenty years, some taller standards being spared; and as this process is going on every year in some part or other of the many hundred acres of wood which this parish contains, one is always sure of finding some open spaces amidst the "Boundless contiguity of shade". From such clearings the eye catches the most charming glimpses of woodland, hill, and valley; and underfoot they are often carpeted with flowers, of the gayest hues.”

He was less complimentary about the plantations established on places such as the Vinnalls. “If a new plantation is made, it is in nine cases out of ten composed of Larch, stiff, monotonous, wiry looking trees, which cannot compensate by their fresh verdure during the short month of spring for their dreary meagreness through the rest of the year.” He also published what may be some of the first concerns about the effects of conifers on ground flora when he described conifers in generally as “gloomy in colour, monotonous in outline, and fatal to all undergrowth”.

Another Woolhope Club contributor was Dr. Bull, the first to publish¹¹⁴ a description and history of North Herefordshire's forests and Bringewood forge. Although he was referring to Deerfold his comments could equal well apply to Mocktree or to much of Bringewood.

“The Forest has now lost its wild character. It is completely inclosed and for the most part under cultivation... It will be some time too before that sign of a forest district disappears, the remains of the charcoal burner's fires, which the plough turns up in almost every field. The

¹¹⁴ Bull, Dr. ‘Some Account of Bringewood Forge and Furnace’ and ‘The Ancient Forest of Deerfold’ pp 164-192 Transactions of Woolhope Naturalists Field Club 1869.

“charking places” are very numerous all over the Forest”. He observed the loss of common rights: “The whole land is now freehold, and the poor have no more right to the woods of Overlye than they have to cut the shrubs of Yatton Court or to gather flowers in Lord Bateman’s garden at Shobdon”.

Writing about 60 years after the closure of the Bringewood works Dr. Bull was able to record Bringewood’s oral history. “It is still within the memory of man that bands of mules, or pack horses, in single file, carried iron ore down the steep slopes of Bringewood Chase, in direct route from the Clee Hill to the Forge”. “There are still those who remember the busy scene at the Forge with all its life and activity; and who can still recall vividly the picturesque effects produced [by] the column of sparks rising high above the woods brightly reflected in the river below”.

10.2 Twentieth century forestry policy and the making of the ‘Mortimer’ forest

“Now the multitude of Timber bought yearly from Norway, and other parts, doe plainly demonstrate the scarcitie thereof here; also it may be conjectured what a miserable case the Kingdom will be plunged into about an Age or two hence for want of timber”.

So wrote Gabriel Plattes in his 1638 tract ‘A Discovery of Infinite Treasure’. Plattes was one of a number of writers and intellectuals in the tradition of puritan utopianism who tried unsuccessfully to influence the Government and landowners of their day to create plantations. As discussed in section 6.5 above, such forestry ideas ignored the nature of real woodlands and conceived scarcity from lack of data. Nearly three centuries later in 1916 the Forestry Sub-Committee of the Ministry of Reconstruction was set up under Sir. F.D.Acland “To consider and report upon the best means of conserving and developing the woodland and forestry resources of the United Kingdom, having regard to the experiences gained during the war”. The committee recommended the afforestation of 1.77 million acres by 2000 by a Forestry Commission with powers of land acquisition and a budget for its first decade of £3.4 million. The Forestry Act was given royal assent August 1919.

The argument, as before, was an imminent and perilous ‘timber shortage’ which could not be denied since there were no meaningful statistics available at this time regarding woodlands, wood or timber. The Lloyd George Government was persuaded that absence of evidence was evidence of absence and that ‘modern’ forestry was the salvation.

In 1923 121,000 acres of former royal woodlands including many of the UK’s largest ancient woodlands were transferred from the Crown Commissioners to the Commission by Act of Parliament¹¹⁵. The Commission augmented these lands by acquiring or leasing private woodlands and tracts of hill land. Much of Bringewood Chase and the Wigmore Rolls were acquired by 1924, as were other Herefordshire woods at this time such as Haugh Wood. By 1948 the ‘Mortimer block’, which included Bringewood Chase and a number of other significant woods around the Herefordshire/Shropshire border, totalled 2,326 hectares. These were expanded in the early 1950’s at a time of low land prices and high tax rates for landowners. Examples in this category are the FE plantations on the Croft and Gatley estates.

The RAF 1948 aerial photographs show the state of Bringewood and its surrounding areas in the immediate post war period (see figures 14 to 17). The young Forestry Commission plantations are clear as uniform dark grey blocks occupying the western flanks of the High Vinnalls and on the Burrington ridge of Bringewood. There is a surprisingly large area of rough pasture, scrub and native woodland remaining outside the FC parts of Bringewood (see

¹¹⁵ Forestry (Transfer of Woods) Act 1923.

figure 14 bottom left image). Of particular interest is Norbache Park whose distribution of broadleaved trees almost identical to its depiction in the 6" 1885 Ordnance Survey (figure 17). This similarity between 1885 and 1948 also applies to Oakley Park and the fields, hedgerow and field trees of the Haltons (figures 21 to 23). The boundary banks of Norbache are clearly visible (figure 15). The extensive Richards Castle coppices can be seen at this time intact but just before being clearfelled and planted with conifers (figure 16 1948 image).

The 1953 compartment survey¹¹⁶ of Bringewood shows that many of the plantations established by the FC in the 1920's were suffering at this time from a variety of problems. The surveyor's comments ranged from 'overstocked', 'poor stem form', 'unthinned', 'canker' to 'windthrow'. Using a 100 hectare sample block of NW Bringewood (what are now FE compartments 2002-2007 from what used to be the Wheelers Vallet to the Dog Hanging) comprising 26 of the then 103 compartments of the Mortimer forest, only the seven Douglas Fir (DF) compartments planted in 1927 escaped his disparaging observations. Except for the DF, all the FC planted compartments are recorded as having significant natural regeneration of broadleaves. These were recorded as 'minor' species and typically Oak, Birch, Ash, Sycamore, Hazel and ranging from 5 to 30% of the compartment.

Popular reaction to this increase in plantation forestry is unrecorded at this time but the writer H.J. Massingham was not impressed. In his book 'The Southern Marches' published in 1952 he talks of the "monstrous uniformity of the light green of larch and the dark green of spruce. A more gloomy and forbidding contrast to the general grandeur of the natural environment could not be imagined". He did not get to Bringewood but was horrified by recently established plantations at the nearby Croft Estate. "Before planting its beggarly spruces ... it (FC) had ring barked these massive oaks, so that one by one they had died as they stood, surrounded by this ragged regiment of coniferous conscripts that had supplanted them. There could hardly have been a more telling example not merely of the wastefulness and ecological ignorance of covering this highland of hardwood... (page 225)".

The natural regeneration of coppice coupes had for millennia been the harbinger of the next crop of wood and timber as well as being an essential part of a cyclical woodland ecosystem, so eloquently described by the Rev. Woodhouse (10.1 above). To the Forestry Commission hierarchy at this time this regrowth was seen as a national disgrace. "What was to be done with the enormous acreage of grossly under-stocked, unproductive, scrub and outmoded coppice woodlands?" This rhetorical question was asked by Sir George Ryle a former deputy director-general of the FC in his memoirs¹¹⁷, a detailed insider's account of the ethos which drove post war forestry policy. Its answer was self-evident for the FC, so much so that even if "natural seedling trees of oak, ash or other useful trees were present" in a woodland, foresters were advised against "'rehabilitation' merely to produce another crop of low-grade timber, slow grown and wanted by no-one...in only very few instances was this justifiable." The preferred option was "clearing out the rubbishy coppice and scrub with powerful 'dozer rakes and so providing a clean ground for normal replanting". The FC extended its campaign against natural regeneration to the private sector introducing in 1954 a scrub clearance grant "aimed at removal of the re-growth, particularly from war time fellings".

For the FC there was no difference between open uplands and native woodland. "What proportion of their state programme should be concerned with new planting on bare land –

¹¹⁶ PRO F22/554. This was the first detailed survey ever undertaken of the nation's woods but it was halted almost as soon as it began with only six counties completed including Herefordshire.

¹¹⁷ Forest Service: The first 45 years of the Forestry Commission of Great Britain' by Sir George Ryle CBE. David & Charles 1969

much of it the hill lands in the north and west – and what proportion should proceed on the felled or unproductive woodlands. What did it matter?”

The Forestry Commission’s conviction was that establishing conifer plantations on any piece of ground deemed ‘unproductive’ was automatically in the national interest. It looked forward to a time when, in Ryle’s words, “the relics of the wastelands would have gone, to be replaced by an entirely different rural industry”. The FC’s objectives were more than an improved silviculture; it was imbued with an ideology remarkably similar to that of the 17th century puritan utopians whose forestry was a means to improve both nature and society¹¹⁸. The main difference between the Commission’s policies and those of Arthur Standish and his fellow polemicists was that the latter never got their hands on Treasury funds to put them into practice.

The FC’s obsession with conifers was to have a negative impact on local timber businesses and trade as the timber merchant and sawmill owner C.J. Venables records:

“..the Government’s forest policy to encourage the growing of softwood in place of hardwoods ... led to the clearing not only of low grade oak stands but also of many stands of thriving young oak to make way for Douglas fir and larch. This led to the flooding of a diminishing market with large quantities of inferior and small diameter oak trees with a consequent depression of prices. Many sawmills among them some of the very long standing were forced out of business. In fact today there are fewer members in the Home Timber Merchants’ Association of England and Wales than there were in the Midlands Section alone at the end of the war.”¹¹⁹ The negative impact of state forestry policy on local timber trade continues today (see section 12.1 page 54 and associated reference 126).

‘Mortimer Forest’ is a microcosm of the consequences of this ideology. The productive coppices of Richards Castle, the seven centuries old Norbache park and the remaining rough pasture of the high chase all had to be erased and turned into conifer plantations starting from the forestry equivalent of the ‘year-zero’. Although much of this is history, the old ideology can still surface. As recently as 1996 a recommendation by consultants for English Nature to restore a Herefordshire FE ancient woodland Site of Special Scientific Interest (Haugh Wood, 10 km east of Hereford) was met with the following statement from FE’s Dean office:

“what we are not committed to is the wholesale removal of all conifers from Haugh Wood to satisfy some doctrinaire ideology”¹²⁰.

Since the concept of restoration was outside the parameters of the forestry ethos of this writer such a recommendation could only be interpreted as a threat from a rival ideology. This view was an exception. A few years after this statement, FE started an ambitious programme of restoration aimed at the entirety of Haugh Wood, actions that have continued successfully.

The influence of current forestry policy on ‘Mortimer’ forest is examined in section 12 below.

10.3 Oakley and Norbache parks – post war changes

Whatever changes were made by Williams Eames to Oakley Park in the 18th century or by Mr. Salway’s tenants to Norbache in the 17th, both parks appear as rich and historic places on the 6” c1885 Ordnance Survey map. With each mature tree plotted on these 6” maps it is of interest to overlay them with the rectified post war aerial photography of the late 1940’s

¹¹⁸ Ryle even went so far as to quote Chairman Mao Tse-Tung in his last chapter “A look ahead” (p285).

¹¹⁹ Venables C. J. Uses of Oak, Past and Present, paper printed in: The British Oak, its history and natural history, edited by M.G. Morris and F.H. Perring BSBI, published by E.W. Classey 1974, pages 113 to 122.

¹²⁰ Letter dated 26 January 1996 from District Forester, John Westlake to English Nature’s officer Helen Stace.

(figures 18 and 21). While two world wars had almost no effect, both parks had been severely damaged by the beginning of the 1960's.

In 1951 Oakley Park had dense concentrations of parkland trees as well as a variety of smaller trees and scrub habitat and there are no visible signs of wartime ploughing. Victorian botanists could probably have found the same range of species as they had in the 1830's and 1840's. Yet by 1963 most of Oakley Park had been destroyed for large scale arable cultivation.

Comparison of the aerial photos of 1951 and 1963 (Figure 21) show just how extensive was the loss - the entire parkland tree cover south and west of the Duchess Walk has vanished apart from the Walk and a few isolated trees in an arable expanse. The fate of Oakley Park was replicated over much of the British countryside in these 1950's and 1960's. There was greater change in Oakley Park, the Haltons, Bringewood and Richards Castle in these two decades than over all the last four centuries if not since Domesday.

The fate of the 13th century Norbache park was sealed with its post war acquisition by the Forestry Commission. As with Oakley, Norbache Park changed little between 1885 and 1948 (figure 17). By the mid 1950's the park was submerged in a sea of conifers after most its trees were felled (a few Lime pollards were retained). It is not known how much mechanical 'ground preparation' was done before the planting or how the old trees and their roots were extracted, but the only visible history seems confined to its boundary banks.

10.4 The Haltons

The sequence of rectified maps in figures 20 to 23 shows the changes to the fields and hedgerows of the Haltons over the last 240 years starting with the c1760 map of Bromfield manor. As with the southern boundary of Oakley park between c1760 and 1840 (section 8.1), there was some restructuring of field boundaries even before the 1840 Tithe surveys.

Figure 22 highlights the changes to the countryside between the Teme and the Poles farm in the western part of Lady Halton. In c1760 there were 21 fields many of which were restructured by the 1840 tithe map to 16. By c1880 there were 14 fields and these appear exactly the same not only on the 1948 RAF aerial photograph but also the 1999 Ordnance Survey map (1:10,000 digital edition). However the 1999 air photo shows all these boundaries have in fact been removed except one. The terrestrial photograph of the same area (2002) is figure 32 (2).

After most of Oakley park had been destroyed in 1963, an interesting 600m long ancient boundary still survived. This was the pre-c1760 sinuous outline of the old enclosures of Lady Halton which extended westwards from the farm (arrowed in figure 20 middle image and figure 21 bottom left). This boundary and most of its trees had been destroyed by 1999.

The countryside of Prior's and Hill Halton has similarly changed from that rich in hedges and trees, having survived virtually intact from 1880 to 1948, to become mainly large fields of arable seen today (figure 23). Even so, there still remains fragments of the former countryside and its habitats including unimproved pasture. (figures 32 (3, 4) and 34)

An important part of the farmland landscapes of the Haltons are the many historic farm buildings which have survived better than their surrounding countryside (figure 33).

11. Biological records of the Bringewood, Vinnals and Mary Knoll.

11.1 Botany

There seems to be little recent available data. The Herefordshire Biological Records Centre has some plant records but only to within 2km square 'tetrads'. 'A Botanical Stroll Through North Herefordshire' was produced privately in 1999 by Mark Lawley and this includes Bringewood, Richards Castle and Mocktree but he has one plant list for the area covered (>400 km²). He includes a useful review of the Victorian records with extracts from the Woolhope Field Club articles and others. More specific are Lawley's review of fern records published in the Flycatcher (the journal of the Herefordshire Nature Trust) September 1991 in an article "The ferns and fern allies of north Herefordshire" the following are his records of notable species.

Bringewood fern species		Location in or near Bringewood
Wood Horsetail	<i>Equisetum sylvaticum</i>	In scrub between Mary Knoll Valley and High Vinnalls
Beech Fern	<i>Phegopteris connectilis</i>	Steep north facing banks overlooking Mary Knoll Valley
Oak Fern	<i>Gymnocarpium dryopteris</i>	Mary Knoll Valley
Brittle Bladder Fern	<i>Cystopteris fragilis</i>	Downton Gorge, Whitcliffe 'where water drips over rocks just above the river Teme'
Soft Shield Fern	<i>Polystichum setiferum</i>	Mary Knoll dingle, Downton Gorge
Narrow Buckler Fern	<i>Dryopteris carthusiana</i>	Sunny Dingle Wood (in Mary Knoll Valley)
Adder's-tongue	<i>Ophioglossum vulgatum</i>	High Vinnals, Juniper Hill, Sunny Dingle wood
This last record also from Mark Lawley is from the Biological Records Centre		

11.2 Butterflies and moths

Lepidoptera are sensitive indicators of habitat quality and historical continuity as each year they must complete a full life cycle of four phases, each with its particular requirements. The structural variety that Bringewood Chase has had over many centuries suggests that there is a good chance of finding remnants from a formerly high invertebrate biodiversity.

There are few published records of lepidoptera for this area, a similar situation to Shropshire as a whole whose "lepidoptera have been relatively poorly recorded in years"¹²¹ according to Riley in 1991. Recent work by Butterfly Conservation (BC) and Dr. Michael Harper have begun to rectify this lack of data. Their combined records between 1995 and 2002 have produced some 314 species of moth and butterfly from the immediate vicinity of the Vinnals and Mary Knoll valley. For the complete list of recorded species in these years see appendix 6.

It is notable that 12 out of the 15 species which are considered of conservation significance require open habitat either of heath/moor or early regeneration scrub/woodland phases.

BC last recorded Pearl Bordered Fritillary *Boloria euphrosyne* in 1995 and noted a small colony of the Small Pearl Bordered Fritillary *Boloria selene* on Forest Enterprise land in a wet valley just below the western slopes of the Vinnals at SO470719 but this species has not been recorded since 1997. Sadly it seems as if we may be just too late for these Fritillaries as the

¹²¹ Riley, A.M. A Natural History of the Butterflies and moths of Shropshire Swan Hill 1991 is the most recent publication but locations are not indexed. Whitcliffe, Bringewood and Oakley seem to be outside the main areas frequented by county entomologists. Sources of Shropshire lepidoptera data include: The Victoria County History of Shropshire – Lepidoptera section published in 1908. Lists by Smith, K.G.V., published in the Entomologist magazine 1952-6. Unpublished Lepidoptera records of the Caradoc and Severn Valley Field Club.

habitat has been made increasingly unsuitable by recent planting. However BC intends to continue the search since Small Pearl Bordered Fritillary numbers are notoriously variable.

Wood whites, though, seem to be increasing while a colony of the Red Data longhorn micro-moth *Lampronia fuscata* which feeds on Birch galls was recently found at the Vinnals. The only other county site for this micro-moth is the Wigmore Rolls where Dr. Harper discovered it in 1997. For Shropshire the only known site for it is from Whixhall Moss, 1987. Other notable, rare or seriously declining species found at the Vinnals, Mary Knoll or their vicinity are as follows (food plant in brackets):

Macro moths:

Satin Lutestring *Tetheella fluctuosa* (Birch), the Wood Tiger *Parasemia plantaginis* (polyphage on heathy, open woodland), Silvery Arches *Polia trimaculosa* (young Birch), Flounced Chestnut, *Agrochola helvola* (requires recent coppice) and the Angle-striped Sallow *Enargia paleacea* (mature Birch).

Micro moths:

Stigmella continuella (mines on Birch only known from Queen's Wood Dymock, not recorded from Shropshire), *Stigmella betulicola* (young Birch less than 4 years old), *Bryotropha politella* (species of open montane also Malvern Hills/Black Mountains), *Caryocolum fraternella* (similar montane habitat to last species), *Clepsis senecionana* (Bilberry feeding tortrix), *Epinotia trigonella* (Birch feeding tortrix), *Scoparia ancipitella* (a pyralid moth feeding on foliose lichens only other known West Midlands site is the Wigmore Rolls) and *Assara terebrella* new county record for Herefordshire - a pyralid moth on mature Spruce.

11.3 Other wildlife records

Recent (1993 – 2003) **dragonfly** surveys¹²² of ponds either side of Juniper Hill west of the High Vinnals have recorded 14 species including 4 considered local or notable: *Aeshna grandis* the Brown Hawker, *Aeshna mixta* the Migrant Hawker, *Sympetrum sanguineum* the Ruddy Darter, *Sympetrum danae* Black Darter and from the Mary Knoll valley: *Brachytron pratense* the Hairy Dragonfly (this latter record from 1978).

The **deer** of the Mortimer forest are considered to be a distinct breed. Their particular character was noticed 400 years ago according to the 1603 survey of Bringewood and Mocktree (reference 78 above) which stated that “These forests are statelie growndes and doe breede a greate and large deare and will keepe of redd and fallow deare twoo or three thousand at the leaste”. John Voysey discusses their origins and characteristics in a 1996 paper¹²³.

Reviews of data for other orders of wildlife remain to be investigated; these include **birds, mammals, amphibians** (adders are seen by locals) and other families of invertebrates. There is anecdotal evidence that dormice are declining in the area and that the impact of the greysquirrel population on native biodiversity is considerable¹²⁴.

12. Prospects for the restoration of the Bringewood countryside.

Land use specialisation is such a feature of the present day countryside that we take it for granted. This applies especially to the separation of ‘forestry’ and ‘agriculture’ which have their own separate Government departments. Bringewood Chase, Oakley and Norbache parks have a complex history but for the most part they could be classed as neither agriculture nor

¹²² Garner, P.G. Herefordshire Biological Records Centre

¹²³ Voysey, John. The long-haired fallow deer of Mortimer fores. The Flycatcher (Journal of the Herefordshire Nature Trust) September 1996.

¹²⁴ Professor Clifford-Smith, personal communication January 2004.

forestry in any modern sense. Understanding and restoring Bringewood and its countryside today presents difficult but rewarding challenges.

FE have recently made a commitment to begin the restoration of the 1029 hectare ‘Mortimer’ forest block which includes much of the land studied in this report. Announcing the consultation on the forest design plan FC Area Forester, Richard Boles stated

“One of their key aims is to restore the existing conifer plantation to the type of native broadleaved woodlands that would have grown there in medieval times... Elsewhere in the medieval woodland site no more conifers will be planted.” FC news release 12 August 2003.

One under-researched issue is the changes to the hydrology of Bringewood Chase believed to result of forestry operations and the characteristics of conifer stands. Locals who remember particular streams and springs say that they started drying up beginning with establishment of conifer plantations in the 1950’s.

12.1 Economics, the Mortimer forest and a ‘word from our sponsors’

Forestry policy objectives have changed dramatically since the inception of the Forestry Commission from ‘strategic’ then ‘import substitution’ to ‘employment’ to the present focus upon the delivery of public benefits. The original objective for state intervention in forestry as proposed in the 17th century and put into practice in 20th was that such public benefits were synonymous with the creation of plantations.

A recent economic review of UK forestry policy¹²⁵ by Pearce and Willis concludes: “There is virtually no case for public provision of timber either through the public estate or through intervention in private sector forestry.” The report cites Keilder, one of the most economic of FE’s UK forests, whose timber plantations have internal rates of return (IRR)¹²⁶ of less than 1% so producing timber at a financial loss. The Mortimer block plantations do not have Keilder’s economies of scale nor such simple infrastructure and so are unlikely to have IRR’s greater than 0%. A strategic objective of the FC 2002-04 Corporate Plan is to “reduce the unit cost of producing a cubic metre of timber on the public forest estate from £14.00 to £13.55 per cubic meter”. At the time of writing the most recent coniferous standing sales index (to March 2003) gives an average price per cubic meter of £5.74¹²⁷.

On the 20th June 2003 members of the Royal Forestry Society (RFS) stood on the remains of the 13th century Norbache park gazing upon a vista of freshly planted Douglas Fir. We were informed that just disposing of the brash from the previous DF crop (planted just after the 1948 air photo figure 17) had cost £1500 per hectare. The theme of the day was ‘commercial softwood production’ but FE was unable to give cost figures let alone IRR’s for their plantations. The only justification offered was that FE’s timber production was a necessary ‘commitment to the forestry industry’. This commitment appears to be not much appreciated by the private forestry sector who accuse FE of depressing prices. David Bills director of the Forestry Commission has subsequently publicly acknowledged that FE timber dumping is

¹²⁵ Economic Analysis of Forestry Policy in England, Final report for the Department for Environment, Food and Rural Affairs and H. M. Treasury. David Pearce, Ken Willis. April 2003. www.defra.gov.uk

¹²⁶ Internal Rate of Return (IRR) of a long term investment is the interest rate at which the sum of time discounted revenues equals the sum of time discounted costs. An IRR less than the bank base rate is effectively a loss. The IRR figures quoted assume that any land cost is zero.

¹²⁷ FC web site www.forestry.gov.uk

damaging the timber market. This was in response to complaints expressed on the letters pages of the Quarterly Journal of Forestry (QJF)¹²⁸.

On the other hand, non-timber benefits from woodlands are considerable. For the West Midlands region these have recently¹²⁹ been estimated at between £346 and £397 million equivalent to £380,000 per square km of the region's woodland.

Expenditure to remove conifers to gain environmental and heritage attributes can therefore have positive economic effects. Pearce and Willis estimate that, generally, expenditure for biodiversity outputs have a long term Present Value¹³⁰ of £29,000 per hectare. For recreation, the equivalent estimate is £5,000 per hectare. While these are rough estimates, as the authors acknowledge, projects that improve the environmental, heritage and visitor experience of areas such as Norbache park or Bringewood Chase are likely to benefit the economy of the region. Early removal of immature FE conifers has the additional benefit of removing potential future timber dumping on a softwood market of long term fragility.

Despite the negative economic case for doing so, many FE woods from Shrewsbury to Aymestrey have recently been planted with conifers following final felling of mature conifer crops including in such historic places such as Norbache Park and Wapley Hill.

The above August 2003 FC press release shows recently revised thinking, at least regarding the 'Mortimer' forest. Just in case any district forester remains unsure as to who are his ultimate sponsors and which side of their bread is likely to be buttered, the FC director David Bills spells it out in the QJF (October 2003) page 241:

"In order to maintain grant levels we have gone to Government for top-up finds. Our success with these bids has not been because of arguments based on timber production but on the overall benefits of forests and woodland to society based, of course, on values imputed to non-timber benefits."

12.2 'Ancient' woodland and present forest policy

In 1985, the Forestry Commission introduced the Broadleaves Policy which recognised the concept of historic land use in woodlands. This was however confined to 'ancient woodland' that had not been planted, so-called 'ancient semi-natural woodland' (ASNW) which were in practice the remaining coppice woodlands or their high forest derivatives. Ancient Woodland Inventories (AWI) of English counties were drawn up by the then Nature Conservancy Council which identified plantations on ancient woodland sites (PAWS) but these were not recognised by the 1985 policy since there was no requirement to use broadleaves when restocking. PAWS is not a simple classification being continuum from 100% conifers to almost complete reversion to semi-natural. Each site has to be surveyed as to the extent of surviving/re-colonising semi-natural vegetation, wildlife populations or historic features.

The AWIs are based upon the c1820 1st edition 1" Ordnance Survey, a rather late phase in the historic sequence. It may be reasonably accurate for East Anglia where most of the research on ancient woodland had been carried out in the 1970's. Applied uncritically to the Marches counties the method has often proved erroneous while ignoring the remnants of medieval

¹²⁸ Bills, David, Director FC, "We have been very concerned about allegations that FE selling activity on a poor market has depressed overall prices". QJF October 2003 in response to letter by Barry Gamble of Fountains plc QJF July 2003.

¹²⁹ Forestry Commission, A Growing Resource – Woodlands and Forestry in the West Midlands. 2003

¹³⁰ The Present Value (PV) is the time discounted sum of revenues less the time discounted sum costs at a particular interest rate. Pearce and Willis use 3.5% which is the treasury discount rate for forestry.

forest, chase and park. Indeed the whole concept of ‘ancient woodland’ is undergoing revision with the realisation that the role of grazing in historic woodland ecosystems has been seriously under-estimated¹³¹. Attention has recently focused¹³² upon the restoration of PAWS as a means to increase the area of biologically rich semi-natural woodland. This has been mirrored by work on the FE’s forest estate¹³³. The restoration of PAWS and wood pasture are objectives under the UK Biodiversity Action Plan (www.ukbap.org.uk/habitats.htm).

Archaeology in woodland is now recognised as an under-researched area and several programmes are now in operation, e.g. Herefordshire Archaeology has been commissioned by the FC to survey archaeological features in private and FE woods in Herefordshire.

Current forestry policy as expressed through the Forestry Commission Corporate Plan for England and Great Britain 2002–2004 lays particular emphasis upon public benefits. A key “strategic objective” of which is to develop “the public forest estate as an exemplar for Government policies on the environment, conservation and the cultural heritage.”

The section on heritage is more specific “The character of the countryside today owes much to the activities of previous generations, and the remains of their settlements, burial sites, fortifications, field systems, earlier industrial processes and designed landscapes are all around us. Areas of ancient woodland often contain features that relate to earlier woodland management as well as archaeological sites.”

The ‘Mortimer’ forest will be a sensitive test of the commitment to this policy objective.

12.3 From ‘dig for victory’ to parkland restoration – a changing agricultural context

The ethos of the WWII ‘Dig for victory’ campaign informed Government agricultural policy with the 1947 Agriculture Act and its successors. This ushered in an era of capital grants, area payments for land ‘improvement’ and market intervention for farm produce. The loss of much of Oakley park to arable production in the 1950’s would have required a considerable effort with tree and stump clearance, ground levelling and draining. Such work would have been eligible for Government grant aid. The introduction of ‘agri-environment’ schemes in the late 1980’s allowed payments to be made for countryside conservation. As with forestry, agricultural subsidy is shifting from food production towards a wider range of public benefits. Unlike forestry, Common Agricultural Policy (CAP) main stream subsidies are not under state control yet compete directly with conservation schemes. Recent figures for regional expenditure on agriculture obtained by Prof. Iain McLean¹³⁴ show that only 2.1% of the £129 million DEFRA direct payments to farmers in the West Midlands region in 2002 was for agri-environment (£2.47 million) and forestry (£0.24 million). The large arable fields of the former Oakley Park and those on the former pastoral field systems of the Haltons (figures 21 to 23) will have been eligible for arable area payments¹³⁵ of over £200 per hectare per year since the McSharry CAP ‘reforms’ of 1992. With this level of subsidy, management of such land for conservation or restoration is almost unthinkable even though most farming including arable is

¹³¹ Vera, F.W.M. *Grazing Ecology and Forest History* CABI 2000

¹³² Pryor S.N., Curtis T.A. & Peterken GF *Restoring Plantations on ancient woodland sites*. The Woodland Trust 2002 and Smithers, R (Ed.) *Restoring planted ancient woodland sites*. Conference proceedings British Ecological Society and Woodland Trust held September 2002.

¹³³ Spencer, J. *Ancient woodland of the Forestry Commission estate in England*. FE 2002

¹³⁴ Prof McLean has been reviewing Government support for regions for the Treasury and he has kindly supplied me with recent (October 2003) figures from DEFRA’s Rural Payments Agency.

¹³⁵ The arable area payments scheme applies to combinable crops and maize. The precise level of payment depends upon the crop type, the £/euro conversion rate and agri-monetary compensation all of change from year to year. For 2002, the payment was £220/ha for all combinable crops except protein crops which were £254/ha

barely breaking even. The latest (2003) published figures¹³⁶ for midland and southern regions show predominantly cereal farming making a net loss in 2001 of £74/ha despite arable area payments of £241/ha. For 2002 the net loss was £48/ha and subsidy £234/ha per hectare. For 2004 subsidy will be £245 and better prices yet cereal farming will only just break even at £25/ha¹³⁷.

As with UK forestry, EU agricultural policy objectives are changing even if only very slowly. From 2005 farm support will be 'decoupled' from production with an increased proportion of subsidies funding environmental and rural development activities. This should allow opportunities for interesting and beneficial land use projects.

The main agri-environment scheme, the Countryside Stewardship Scheme (CSS)¹³⁸, now (2003) has a suite of historical landscape management options including generously (80%) funded parkland restoration plans. Such schemes are likely to continue or be enhanced under future decoupled support. They could well be applied to the farmland of Oakley, the Haltons, Downton and other farmed areas adjacent to 'Mortimer' forest.

Note added in 2005: Agri-environment schemes have been replaced by Environmental Stewardship which includes Higher Level Stewardship (HLS), the successor to CSS. HLS has a number of significant new options including the restoration of woodpasture, see www.defra.gov.uk.

12.4 End piece

*If the amenity land manager is ever in doubt as to his best course of action, he has merely to think of what a modern farmer or forester would do, and do the opposite*¹³⁹

Prof. Bryn Green's 1986 observation belies the complexity of land management for objectives other than pure production. Detailed recommendations for the future of the more than 16 square kilometres of countryside considered here requires detailed good knowledge of the area, good quality surveys, discussions with locals and the costing of management options. These are outside the scope of this study and would anyway be pointless without the involvement, enthusiasm and skill of local land managers and owners.

Even then there are other questions as to environmental priorities. With so many layers of history what should land managers aim for when considering restoration? How compatible are the objectives for history, archaeology, biodiversity and landscape? What will be the future products of land management throughout such a diverse tract of countryside?

It is hoped that the information in this report, which is primarily desk bound, may encourage more practical outcomes towards the revitalisation of this unique area for future generations.

¹³⁶ University Of Reading Farm Business Data for central southern England. Editor R. Vaughan Dec 2003.

¹³⁷ Nix, J. Farm management pocket book September 2003. Tables pages 14 and 172.

¹³⁸ DEFRA Countryside Stewardship Scheme applicants pack 2003

¹³⁹ Prof. Bryn Green, Controlling Ecosystems for Amenity in 'Ecology and Design in Landscape' ed A.D. Bradshaw et al. Blackwell 1986. I've taken this quote from Oliver Rackham's 'The Last Forest' Dent 1989.

Appendix 1 Survey of the honour of Wigmore 1324 and 1325. Analysis and text.

Table 1 Extract of data in the three surveys PRO SC6/8/18 concerning woods and parks									
Blue = survey of 5 Apr 1324, <i>Blue italic = second version of 1324 survey</i> , Black = Survey of 8 Feb 1325									
Name of park or wood	acres	manuscript comments	deer	rights of common	revenue d per annum				d per acre
					pasture	pannage	underw'd	total	
Bringewood	50	most is waste		yes		40	80	120	2.4
<i>Bringewood</i>	<i>50</i>	<i>most is waste</i>		<i>yes</i>		<i>120</i>	<i>160</i>	<i>280</i>	<i>5.6</i>
Bringewood	200	great trees				80	120	200	1.0
Wigmore Park	200	only young oaks	100		60			60	0.3
<i>Wigmore Park</i>	<i>200</i>	<i>only young oaks</i>	<i>100</i>		<i>80</i>			<i>80</i>	<i>0.4</i>
Wigmore Park	300	only young oaks	100		80			80	0.3
Gatley Park	250	oaks few	100		80		yes	80	0.3
<i>Gatley Park</i>	<i>250</i>	<i>oaks few</i>	<i>100</i>		<i>160</i>		<i>yes</i>	<i>160</i>	<i>0.6</i>
Gatley Park	350		100		160	12	160	332	0.9
Foreign wood by Gatley	60			yes		24		24	0.4
<i>Foreign wood by Gatley</i>	<i>60</i>			<i>yes</i>		<i>48</i>	<i>80</i>	<i>128</i>	<i>2.1</i>
Foreign wood by Gatley	100			yes		40		40	0.4
Mocktree	300			yes		40	60	100	0.3
<i>Mocktree</i>	<i>300</i>			<i>yes</i>		<i>60</i>	<i>180</i>	<i>240</i>	<i>0.8</i>
Mocktree	300	great trees		yes		80	160	240	0.8
Deerfold	100			yes		24	24	48	0.5
<i>Deerfold</i>	<i>100</i>			<i>yes</i>		<i>60</i>	<i>80</i>	<i>140</i>	<i>1.4</i>
Deerfold	200	great trees		yes		60	80	140	0.7
Total parks and woods	960		200		140	128	164	432	0.5
<i>Total parks and woods</i>	<i>960</i>		<i>200</i>		<i>240</i>	<i>288</i>	<i>500</i>	<i>1028</i>	<i>1.1</i>
Total parks and woods	1450		200		240	272	520	1032	0.7
Percentage total revenue from park and wood by sector (1325)					23	26	50	100	

Table 2 Land use summary for the Honour of Wigmore (1325)						
Table 2a Demesne lands						
	assessment d	acres	average d/acre	% revenue	% land area	
All demesne arable	2094	698	3.0	48	76	
All demesne meadow	2114	189	11.2	48	21	
All demesne pasture	174	31	5.6	4	3	
Total	4382	918	4.8	100	100	
Table 2b All honour lands & agrarian holdings by demesne, non-demesne and woods + parks						
All demesne farmland	4382	918	4.8	19	15	
Non-demesne land (note 1)	17353	3635	4.8	76	61	
Parks and woods	1032	1450	0.7	5	24	
Total	22767	6003	3.8	100	100	
Table 2c All lands of the Honour of Wigmore by type						
All arable	10386	3462	3.0	45.6	57.7	
All meadow	10485	937	11.2	46.1	15.6	
All pasture	863	154	5.6	3.8	2.6	
Woods	620	800	0.8	2.7	13.3	
▲Of which woods "of great trees"		700			11.7	
Parks	412	650	0.6	1.8	10.8	
All land	22767	6003	3.8	100	100	

Note 1: Only for the Lord's demesne lands do the manuscripts give precise acreages for arable, pasture, meadow with their expected revenues. For tenanted non-demesne land only revenues are given. From the demesne totals of land acreage and their revenue average output per acre of each land use can be derived to a reasonable degree of accuracy. The ratios of arable, meadow and pasture (76%, 21% and 3% by area – table 2a last column) and the mean revenue per acre (4.8d total 4th column table 2a) are used here as a proxies for the generality of farmland throughout the honour of Wigmore. This allows estimates of the area and allocation between arable, pasture and meadow of non-demesne lands to be estimated and added to demesne land to obtain figures for all land in the honour. This about the furthest one can go with the data from these manuscripts however this method probably under-estimates the area of non-demesne land since the Lord's demesne lands would have been generally the better lands so the 'demesne proxy' method 'over-values' the lands of the tenants. For example most of Wigmore manor was demesne land but none of more marginal Burrington and Elton Manors had any demesne – they were all the Lord's free tenants. One could perhaps perform an agricultural land class analysis and derive a reduction factor applicable to non-demesne manors.

Transcript of PRO SC6/8/18 concerning the woods and parks:

Membranes 1 and 2. Survey of the castle and honour of Wigmore 15th April 1324

Membrane 2 is a copy of membrane 1 but with some minor differences and corrections. The scribe missed out Mocktree on membrane 2 realises his mistake and has to include it in the margin. Text from membrane 2 which differs from 1 is in {red}. <text> indicates above the line, ~~cross-outs~~ as in text.

Extents of the castle and domain of Wigmore 15th April 1324

“There is a certain park next to Wigmore castle containing about 200 acres in which there are about 100 wild beasts namely fallow deer, bucks and hinds, and beyond what they graze the pasture is worth 5s {6s 8d} and nothing from pannage in said park because the oaks are only saplings.

and there is in our demesne a park called Gatylit (Gatley) containing about 250 acres in which there are 100 wild beasts and pasture, after they have grazed it, is valued at 6s 8d a year {6s 8d <13s 4d>} and no pannage as the oaks are few and all the rest is underwood.

And there is a wood outside the demesne next to Gatley park which contains about 60 acres from which common pasture is worth nothing {worth ½ mark} but its pannage is worth 2s {2s <4s>}

And there is in our demesne that wood called Boringwode containing an estimated 50 acres of which most is waste from which common pasture and underwood are valued at 1/2 mark (6s 8d) {1/2 mark <1 mark>} and its pannage is valued at 40d {40d <10s>}

And there is in our demesne that wood called Mocktree {Deerfold} containing about 300 {100} acres from which common pasture and its underwood is valued at 5s {2s <1/2 mark>} and its pannage valued at 40d {2s <5s>}.

In our demesne there is a wood called Deerfold containing an estimated 100 acres from which common pasture and underwood is valued at 2s and its pannage is worth 2s a year.”

On membrane 2, the Mocktree entry is written vertically in the parchment margin alongside the main body of the manuscript (see figure 3), the scribe presumably having inadvertently excluded it from the body of the text:

“There is in our demesne a certain wood called Mocktree containing about 300 acres from which common pasture and its underwood are valued at 5s <13s 4d> per year and its pannage is valued at ~~40d~~ 6s 4d a year”

Membrane 3 Survey of the castle and honour of Wigmore 8th Feb 1325

“There is a park next to Wigmore castle containing about 300 acres in which there are about 100 fallow deer, bucks and hinds, and beyond what they graze, [pasture] is worth 6s 8d a year and nothing from pannage because there only young oaks.

There is in our demesne that park called Gatelitic (Gatley) containing about 350 acres in which there are about 100 fallow deer, bucks and hinds and beyond what they take in grazing the pasture is worth 13s 4d a year and the pannage is worth 12d a year and from the said park comes underwood worth 13s 4d.

There is a wood outside the domense next to Gatley park which has within it 100 acres and from this wood the pasture, with common rights all year, together with the pannage from said wood is worth 40d a year.

And there is in our demesne a certain wood called Boringwod containing therein 200 acres of large trees and with underwood in said wood worth 10s a year and the pannage of the said wood 6s 8d a year.

And there is in our demesne that wood called Moctree containing therein 300 acres of great trees and pasture with common rights all year from which the underwood is valued at 13s 4d a year and pannage from said wood is valued 6s 8d.

And there is in our demesne a certain wood called Deerfold containing therein 200 acres of great trees from which pasture with common rights all year and underwood is valued at 6s 8d and pannage from said wood 5s”

Appendix 2

Sample entries of witness statements to the Council of the Marches PRO E178/969 1576

Witness number 4. (note reference to Lime trees)

“Will[ia]m Will[ia]ms of Ludlowe aforesaid hatmaker of the aige of Liiij yeres or therabouts also sworne and exa[m]i[n]ed towchinge the said articles deposethe and saiethe that h knowethe the Quenes ma^{js} wooddes of Mocktree and Bryngewood in the first article named and hath so done these xxx yeres paste To the seconde article he saieth that for the space of three yeres paste he hath hadd no woodd at all in any of the said woodes until the laste yere that he bought of Edward Edwardes one the underkeepers of Bryngewood aboute vi dussins of woodd in Bryngewoodd aforesaid { wherof some was oke, some birch some orle and some lyme } accomptinge to ev[er]y dussin xij seames or horseloads and payed for the same aboute iijs iiijd and before these three yeres and wthin the space of viij yeres nowe paste this exa[m]i[n]ate hadd also of the said Edwarde (to his nowe remembrance) fifty or threescore horse loades of like woodd some olde some greene what he payed for the same he dothe not remem[b..] and hadd not more or other wood wthin the said woode for the said space of viij yeres to his nowe remem[b..]”

Witness number 28:

“Edward harryes of Ludlowe aforesaid Baker of the aige of xxx yeres or therabouts also sworne and exa[mi]ned towchinge the saied articles deposethe and sayethe to the firste that he knowethe the woodes of Mocktree and Bringwood in in that article named and hath knowen the same aboute vij yeres To the seconde that aboute three or fower yeres paste this exa[mi]nate bought of the said John hamonde the loppes of certen Birches in Mocktree and other wood wherof some was greene some olde so muche as he made cxlv faggottes and for the same paied iijs also bought of him more at that tyme two seames of Birche and oken woodd | he bought also of Thomas hopkys in Bringewoode (neere that tyme) aboute c of faggott woodd aboute xx horse loades of oken and cleefte woode and payed after the rate of a peny for ev[er]y loade | and aboute xij monethes paste he also bought of the said hopkys the butt of an oke for ijs vjd and hadd therof aboute xl horse loades | and this laste som[m]er he bought more of the said hopkys c of foggottes or theraboute | and aboute xvij or xx horse loades of cleefte wood and some croppes of oke and other wood payenge after the rate of xij the dussin | This exa[mi]nate also bought of the said Richard Alcocke aboute a dussin or xiiij olde blockes in Bringewoodd wch coste him viij s or ix s & hadd thereof three or fower score horse loades | he hadd also more of the said Alcocke the toppes of certen birches wch made him three or fower hundred faggottes { beinge fallen for the cou[n]sail} and boute xx or xxiiij olde blockes in a place there called the lodge lesow wch cost him xd or therabouts and hadd therof aboute a dussine & half of woodd”

These are two out of the 88 transaction statements made by witnesses to the council of the Marches.

Quantitive information with relevant comments extracted from these two statements, see over:

Data from the two witnesses above extracted from the 191 records from the database of transactions *bringewood.xls*:

no	Examinee	age	home	Occupation	no	units	no. yrs	d/ item	spp	general comments	from whom
4	Williams, William	54	Ludlowe	Hat-maker	72	seames or horse loads	1	3	Oak, birch, alder, lime	aboute 6 dozens of wood in Bringewood, whereof some was oak, some birch, some orle and some lyme	Edward Edwardes
4	Williams, William	54	Ludlowe	Hat-maker	55	horse loads	8	?	?	some old, some grene	Edward Edwardes
28	Harris, Edward	30	Ludlowe	Baker	145	faggots	3.5	0.3	Birch & other	lops of certain birches and other wood	John Hamond
28	Harris, Edward	30	Ludlowe	Baker	2	seames	3.5	?	Birch, oak	birch and oaken wood	Thomas Hopkys
28	Harris, Edward	30	Ludlowe	Baker	100	faggots	3.5	?	?	faggot wood	Thomas Hopkys
28	Harris, Edward	30	Ludlowe	Baker	20	horse loads	3.5	1	oak	oaken and cleft wood	Thomas Hopkys
28	Harris, Edward	30	Ludlowe	Baker	40	horse loads	1	0.8	oak	from an oak butt	Thomas Hopkys
28	Harris, Edward	30	Ludlowe	Baker	100	faggots	1	?	?	faggot wood	Thomas Hopkys
28	Harris, Edward	30	Ludlowe	Baker	19	horse loads	1	1	oak & other	cleft wood, crops of oak and other wood	Thomas Hopkys
28	Harris, Edward	30	Ludlowe	Baker	70	horse loads	1	1.5	?	12 or 13 old blocks	Richard Alcock
28	Harris, Edward	30	Ludlowe	Baker	350	faggots	1	?	Birch	from the tops of certain birches felled for the council	Richard Alcock
28	Harris, Edward	30	Ludlowe	Baker	22	blocks	1	0.5	?	20 or 24 old blocks in a place called the lodge leasow. These produced 18 of wood.	Richard Alcock

Appendix 3

Statement defining the boundary of Bringewood by keeper Thomas Hopkis 48 years old and living in Elton in year 1587. Transcript of part of PRO E178/2903 in modern English.

1. Extent of the royal land of Bringewood.

‘Her majesty’s soils of her own land lying within the Forest of Bringewood extend from the Teme along a boundary between the her lands and Lady Halton’s Lordship. This boundary goes from the river Teme up by the Radlett to the Lord’s Orchard, then up a ditch to Blackstones Pike, then up the land between Blackstones Pike and the Scallet & then along the top of the Scallet (which is part of Lady Halton’s Lordship) and from there along the side of the crest by a ditch & hedge made by George Heywood (Bailiff of Lady Halton) about 16 years ago. The boundary goes along this ditch to a vallet called Frindes Vallet whose hedge runs to the lane that comes from the Park Gate, go down that lane to a hedge which divides the royal lands called Mary Knoll (now rented to Edward Crowther) and other lands of Pryors Halton and Richards Castle called the Broad Vallet and Smith Held.

Carry on between these two pieces of land to a stream in the lower part of Mary Knoll and the Queen’s hedge then crosses the stream & follow along the other side of the Queen’s land called the Vennal to Clymis Oak and then along a way to a new pale which Edmond Walter has made around a piece of royal land called Shuttes Vallet and follow that pale almost to a house recently built by Mr Walter on land bought from Thomas Hopkis of Elton (who had bought it from the crown). This land is within the pallings and to the south joins Hopkis’s land and extends eastwards a little beyond Mr. Walter’s house to a grove of wood which is her majesty’s land. The boundary with Mr. Walter’s ground goes ‘over a water’ from the ‘lone[]’ (?) pale to the top following the pallings where they end, then along a great ditch and hedge which extends to Evenhay and then meets the Gatley park pallings which in turn gets you to the ring hedge of Elton Lordship (recently bought from the crown by the Earl of Leicester). The crown’s boundary follows along closely by the ring hedge & dytch of Elton’s fields to a place called Haversley where another hedge joins this ring hedge and leads away from Elton fields ‘down a water’ to the ‘end of a bottom’ and to a gate called Castle’s gate and enclosed by this hedge there are three parcells of wood belonging to the crown called ‘Butterte’, ‘Standlee’ and ‘Addytree’ which together extend from the above mentioned hedge intersection by Haversley all along a ditch upon the top of the hill called Botterstone and on to Stand Hill and then on to Addytree outside whose boundary ditch are the top parts of Elton fields. These fields extend from Haversley all along and around part of Addytree where Edward Harley deceased recently had made a hedge and ditch and from there the three crown woods extend along the fields of Aston (which belong to Mr. Wigmor of Luckton). Now, this part of the crown’s boundary (i.e. from Mr. Harley’s new hedge, along under Addytree, to Castle gate) is rather uncertain because some arable lands now stretch up into the wood much further than others. But this keeper has always regarded the area with the great oaks as crown land because that is where he has felled trees by royal license for timber required in Aston or Elton. Also he has always apprehended unauthorised people going into these woods as if they were in any part of the forest.

From Castle’s gate and these three crown woods, the boundary extends all along the ring hedge of that Aston field to the corner of the hedge at Aston lane, and, coming out of the Queen’s woods from that hedge and turning right along the lane to Ludlow from Aston and going through a two acre piece of bare land with no wood which is the freehold of Robert Matthew of Burrington. The boundary then extends from that hedge upwards to Chednoles brooke & to

the edge of the Queen's wood on the upper side then to the brook on the opposite side and towards the Lodge near a parcel of woodland owned by William Wigmor of Lucton called Rough Stocking which has three oaks which for 18 years have denoted the boundary. Then to another field, still in Aston, with a ring hedge called Monstyes hedge which extends to her majesty's Lordship of Burrington, the boundaries of which are now the responsibility of her Majesty's manorial tenants and answerable at any Court Baron. But previously the royal boundary was two 'parcels of woodland' called Whytley and Holnay both within the fields of Burrington but otherwise the boundary ran outside the ring hedge of Burrington fields down to the Teme and then to the first place mentioned above next to the Lordship of Halton.'

2. Extent of the liberties of the game of Bringewood.

'According to what his elders used to say, the 'soils and liberties' for the game of her majesty's Forest of Bringewood went into the Lordship of Richards Castle to the road from Richards Castle to Ludlow and included all the woods above Overton and towards Ludlow as well as all the woods and vallets above Ludlow and Halton. These 'soils and liberties' for the game included parts of Lady Halton fields and also of Priors Halton although he is not sure there exactly which parts. They extended from Richards Castle southwards to the Evenhay ditch and parrings of Gatley Park and along to a place called [? text in crease] .. the lane from Petchfield and from that gate to a ford over a little brooke [text unclear] Leinthall Starkes called Marbrook Ford and then along the lane to Shep[herd's?] ['he' or 'lo']dge and then to the Teme and along the river bank to the best part of Lady Halton.

In summary, the liberties of the game of Bringewood extend over much of the manor of Richards Castle, all Overton, part of Ludford and [S?] Jones, part of Priors Halton, part of Lady Halton, most of Burrington, part of Elton, all of Aston and Petchfield.

The game extent is confirmed by Edward Edwardes another keeper of Bringewood Forest who is 51 years old. He says that the 'limit for the game of Bringewood' extends from the Teme below the Radlet brook in Lady Halton, then to Mylwarde's holding and along by Greenly lane to Griffith Webb's leasow to the end of the Greenly lane and along it to Smith Plock (now occupied by Thomas Atchley) and from there up the hedge under Bengate Car Moor to Robert Wall's leasow and so the port way to Prior's Halton. He is not sure how far the game limits extend into Richards Castle and the Ludlow road under the Wolfpit gate. Nor is he exactly sure how far they extend into Lady and Prior's Halton but for 24 years he has hunted and patrolled the woods of Priors Halton, S[?] Jones? and throughout the Lordship of Richards Castle above the Ludlow road.

Appendix 4

A Particular of the Chase of Bringewood as it is now enclosed 1662							
see map			Acres	Rods	Perches	Hectares	
		<i>Mr John Aston Houldeth for lives</i>					
A	1	Mary Knowle now divided into 6 pieces	75	0	36	30.4	
A	2	Kings Copse lying at the east end of Mary Knowle	5	0	21	2.1	
A	3	A small parcell the east end of Park gate Poole	2	2	8	1.0	
			<i>(total)</i>	3	25	33.6	
		<i>The Widdow Poulton houldeth</i>					
B		The Parke gate lessowes now divided into 5 parcells	34	0	18	13.8	
		<i>Mr. Richard Salway houldeth for lives</i>					
C	1	The Vignolles copse, Lying Portman lane on the north along the top of the hill to Widdow Willcox house South	106	1	8	43.0	
C	2	The new Tying	58	3	9	23.8	
C	3	Crabtree lessow	18	3	7	7.6	
C	4	Trapsty Banke	15	0	33	6.2	
C	5	The Hasles	16	3	22	6.8	
C	6	Parke Gate Poole Lessow	10	3	39	4.4	
			<i>(total)</i>	226	3	38	91.9
		<i>Mr. Francis Walker houldeth</i>					
D	1	The Earles Arbor	119	1	9	48.3	
D	2	The Dog Hanging	92	2	3	37.4	
D	3	The Lodge lessowes	56	0	19	22.7	
D	4	The Hullocks	69	2	37	28.2	
D	5	The land below Vaughans Dike from the Heyes to the forge	128	1	32	52.0	
D	6	The Lower Radletts	53	3	27	21.8	
			<i>(total)</i>	520	0	17	210.5
		<i>Mr. William Walker Houldeth</i>					
E		The Upper Radletts now divided into 10 parcells	138	1	29	56.0	
		<i>Mr. Edward Mathewes houldeth</i>					
F		The Fire Place divided into 4 parcells	105	0	5	42.5	
		<i>Richard Cole Houldeth</i>					
G		Cole's lessow divided into 4 parcells	107	3	36	43.7	
G		Monsty divided into two parcells	55	2	30	22.5	
			<i>(total)</i>	163	2	26	66.2
		<i>William Collier houldeth</i>					
H		The east part of Bringewood Heyes in 7 Parcells	102	2	21	41.5	
		<i>Mr. Wright Parson of Burrington houldeth</i>					
I		The most part of Bringewood Heyes in 10 parcells	102	2	22	41.5	
		<i>The Widdow Pitt Houldeth</i>					
K		A parcell of land called Even Hey adjoining to Gatley Parke in the South West	26	1	20	10.7	
		<i>Davis Houldeth</i>					
K		A cottage by 2 small parcells adjoining to Even Hey	2	0	3	0.8	
		<i>Mr. Frazer Walker Houldeth</i>					
M		The Furnace & Forge & land thereto belonging	4	2	16	1.9	
		The Totall Contents of Bringewood	1509	2	0	610.9	

Appendix 5 Plants of Victorian Oakley and Whitcliffe

Notable plants from Oakley Park 1841		Plant's county status 1841 - 1991	
English	Scientific	Leighton 1841	Sinker ¹⁴⁰ 1991
Marsh Speedwell	<i>Veronica scutellata</i>	not very common	rather local
Marsh Valerian	<i>Valeriana dioica</i>	frequent	local in lowlands
Small scabious	<i>Scabiosa columbaria</i>		surprisingly uncommon
Lady's mantle	<i>Alchemilla vulgaris</i>	not very common	damp unploughed pasture
Great Burnet	<i>Sanguisorba officinalis</i>	very rare	rather rare, decreasing
Spreading bell-flower	<i>Campanula patula</i>	frequent	rare outside Clun area
Nettle-leaved bellflower	<i>Campanula trachelium</i>	not uncommon	sparse outside limestone scarp
Saxifraga tridactylites	<i>Rue-leaved saxifrage</i>	not uncommon	rare outside Oswestry /Wenlock limestone
Columbine	<i>Aquilegia vulgaris</i>		doubtfully native outside limestone hills
Lousewort	<i>Pedicularis palustris</i>	not very common	very rare in lowlands
Trifid Bur-marigold	<i>Bidens tripartita</i>	not very common	local
Elecampane	<i>Inula helenium</i>		sparse
Green winged orchid	<i>Orchis morio</i>	not unfrequent	only a few localities
Early Purple Orchid	<i>Orchis mascula</i>		locally frequent
Heath Spotted Orchid	<i>Dactylorhiza maculata</i> (1)		sparse outside Clun forest and central hills
Early Marsh-orchid	<i>Dactylorhiza incarnata</i> (2)		rare
Fragrant Orchid	<i>Gymnadenia conopsea</i>		2 records in south of county
Lesser Butterfly Orchid	<i>Platanthera bifolia</i> (3)	not unfrequent	sparse
Tway Blade	<i>Listera ovata</i>		sparse outside Oswestry /Wenlock hills
Great Reed-mace	<i>Typha latifolia</i>		frequent in suitable habitats
Branched Bur-reed	<i>Sparganium erectum</i> (4)		frequent
Meadow Clary	<i>Salvia pratensis</i>	rare	extinct in region
Creeping Spike-rush	<i>Eleocharis palustris</i>	not frequent	frequent in suitable habitats
Mat grass	<i>Nardus stricta</i>	moors and heaths	very locally frequent in lowland
Blue Moor-grass	<i>Sesleria caerulea</i>	rare	not mentioned
Oval sedge (5)	<i>Carex ovalis</i>		sparse in lowlands
True Fox-sedge (6)	<i>Carex vulpina</i>		Perhaps <i>C. otrubae</i> sparse in Teme valley
Cyperus sedge	<i>Carex pseudocyperus</i>		local in lowlands

Numbers refer to different names used by Leighton¹⁴¹. Leighton relied upon Henry Spare and Miss McGhie for some records from the Ludlow area. Their competence has been recently questioned and I have not included any records now considered dubious. See articles by Alex Lockton, Sarah Whild and Mark Lawley in the Shropshire Botanical Society Newsletters of Autumn 2000 to Spring 2002 – web address (as of late 2003) http://website.lineone.net/~margaret_cole/index.htm.

¹⁴⁰ Sinker, C.A. et al. Ecological Flora of the Shropshire region Shropshire Wildlife Trust 1991. Sinker regarded Henry Spare's record of Spider Orchid at Prior's Halton as erroneous and likely to have been Bee Orchid.

¹⁴¹ Names for some plants were different from modern usage. Leyton's names are as follows: (1) Spotted palmate orchis, *Orchis maculata*. (2) Marsh Orchis, *Orchis latifolia*. (3) Smaller Butterfly Orchis, *habenaria bifolia*. (4) *Sparganium ramosum*. (5) Oval-spiked sedge. (6) Great carex. (7) Common Bird's Nest *Neottidium nidus-avis*. (8) *Potentilla verna*. (9) *Helianthemum vulgare*. (10) White water bedstraw. (11) *Epipactis latifolia*.

Notable plants from Whitcliffe 1841		Plant's county status 1841 - 1991	
English	Scientific	Leighton 1841	Sinker 1991
Milkwort	<i>Polygala vulgaris</i>	dry hilly pastures, not uncommon	locally frequent
Petty whin	<i>Genista anglica</i>	moist heaths and moory ground, not common	now very rare
Spring vetch	<i>Vicia lathyroides</i>	limestone districts, rare	no longer recorded
wood vetch	<i>Vicia sylvatica</i>	shady and bushy places, not common, "Whitecliffe coppice, woods above Oakley park and other woods near Ludlow"	frequent, locally abundant
Common saw-wort	<i>serratula tinctoria</i>	borders of woods, thickets, etc. not common	very local. Old species rich grassland, open scrub
Golden rod	<i>Solidago virgaurea</i>	not unfrequent	locally frequent (frequent in the Wyre)
Lesser Butterfly Orchid	<i>Platanthera bifolia</i> (3)	pastures in the limestone districts, not unfrequent	sparse
Bird's Nest Orchid	<i>Neottia nidus-avis</i> (7)		Sparsely scattered along limestone outcrops Ironbridge to Stokesay, marked decrease
Heath bedstaw	<i>Galium saxatile</i>		locally frequent
Sweet Woodruff	<i>Galium oderata</i>		frequent
Sheep's bit	<i>Jasione montana</i>	dry sandy soils hilly places	locally frequent W. central hills, uplands.
Winter green	<i>Pyrola minor</i>	rare	Last county record: 1971 from Whitcliffe
Spring cinquefoil	<i>Potentilla neumanniana</i> (8)	dry pastures, rare. On the bank going up Whitcliffe woods	no record
Rock rose	<i>Helianthemum nummularium</i> (9)	not very common	Rare outside Oswestry & Breidden hills, apparently absent from Wenlock edge
Basil thyme	<i>Acinos vulgaris</i>	limestone soils, not very common	Rare, now restricted to a few sites on Wenlock Edge
Common Marsh Bedstraw (10)	<i>Galium palustre</i>	hilly pastures, abundant	widespread
Broad-leaved Helleborine	<i>Epipactis helliborine</i> (11)	In great profusion and beauty on the borders of a horse-tract through Whitcliffe woods near Ludlow.	local in SW
Bilberry	<i>Vaccinium myrtillus</i>	abundant	locally frequent to abundant in hills

Appendix 6.

Recent moth and butterfly records from Butterfly Conservation (BC) and Dr. Michael Harper.

B&F = The species number on Bradley and Fletcher's list. **Yellow highlight = considered rare or notable**

Lepidoptera recorded at Bringewood Chase, the Vinnals & Mary Knoll Valley 1995-2002				
B&F	Scientific name	English name	Status	Comments/food plant
11	<i>Eriocrania haworthi</i>	a micro-moth		
13	<i>Eriocrania semipurpurella</i>	a micro-moth		
15	<i>Hepialus sylvina</i>	Orange Swift		
18	<i>Hepialus fusconebulosa</i>	Map-winged Swift	Local	
28	<i>Ectoedemia angulifasciella</i>	a micro-moth	Local	
37	<i>Ectoedemia albifasciella</i>	a micro-moth		
38	<i>Ectoedemia subbimaculella</i>	a micro-moth		
50	<i>Stigmella aurella</i>	a micro-moth		
64	<i>Stigmella continuella</i>	a micro-moth	Local	Mines on Birch, very rare in county, only from Queen's Wood, Dymock.
77	<i>Stigmella tityrella</i>	a micro-moth		
92	<i>Stigmella anomalella</i>	Rosy Leaf Miner		
110	<i>Stigmella betulicola</i>	a micro-moth	Local	On young birch regeneration
111	<i>Stigmella microtheriella</i>	a micro-moth		
112	<i>Stigmella luteella</i>	a micro-moth		
113	<i>Stigmella sakhalinella</i>	a micro-moth		
125	<i>Tischeria marginea</i>	a micro-moth		
128	<i>Phylloporia bistrigella</i>	a longhorn moth		
138	<i>Lampronia fuscata</i>	a longhorn moth	pRDB3	Very local, larva in a twig gall on birch
150	<i>Adela reaumurella</i>	a longhorn moth		
263	<i>Lyonetia clerkella</i>	Apple Leaf Miner		
274	<i>Bucculatrix ulmella</i>	a micro-moth	Local	oak
283	<i>Caloptilia betulicola</i>	a micro-moth		Birch feeder
293	<i>Caloptilia syringella</i>	a micro-moth		
294	<i>Aspilapteryx tringipennella</i>	a micro-moth		
301	<i>Parornix betulae</i>	a micro-moth		
304	<i>Parornix devoniella</i>	a micro-moth		
315	<i>Phyllonorycter harrisella</i>	a micro-moth		oak
320	<i>Phyllonorycter quercifoliella</i>	a micro-moth		oak
321	<i>Phyllonorycter messaniella</i>	a micro-moth		oak
335	<i>Phyllonorycter salicicolella</i>	a micro-moth		
337	<i>Phyllonorycter spinolella</i>	a micro-moth		salix
341	<i>Phyllonorycter maestingella</i>	a micro-moth		beech
344	<i>Phyllonorycter strigulatella</i>	a micro-moth	Notable	Alder
353	<i>Phyllonorycter ulmifoliella</i>	a micro-moth		
357	<i>Phyllonorycter stettinensis</i>	a micro-moth		Alder
396	<i>Glyphipterix fuscoviridella</i>	a micro-moth		
397	<i>Glyphipterix thrasonella</i>	a micro-moth		On Juncus
401	<i>Argyresthia laevigatella</i>	a small ermine moth		
410	<i>Argyresthia brockeella</i>	a small ermine moth		
411	<i>Argyresthia goedartella</i>	a small ermine moth		birch or alder
417	<i>Argyresthia mendica</i>	a small ermine moth	Local	flowering shoot of blackthorn
424	<i>Yponomeuta evonymella</i>	Bird-cherry Ermine	Local	
437	<i>Swammerdamia caesiella</i>	a small ermine moth		
453	<i>Ypsolopha dentella</i>	Honeysuckle Moth		
460	<i>Ypsolopha parenthesella</i>	a small ermine moth		
485	<i>Schreckensteinia festaliella</i>	a micro-moth		
491	<i>Coleophora gryphipennella</i>	a micro-moth		
493	<i>Coleophora serratella</i>	a micro-moth		birch

526	<i>Coleophora laricella</i>	Larch Case-bearer		
584	<i>Coleophora alticolella</i>	a micro-moth		
658	<i>Carcina quercana</i>	a micro-moth		
660	<i>Pseudatemelia josephinae</i>	a micro-moth	Local	
663	<i>Diurnea fagella</i>	a micro-moth		
666	<i>Semioscopis avellanella</i>	a micro-moth		
688	<i>Agonopterix heracliiana</i>	a micro-moth		
697	<i>Agonopterix arenella</i>	a micro-moth		
702	<i>Agonopterix assimilella</i>	a micro-moth	Local	
731	<i>Eulamprotes atrella</i>	a micro-moth		
782	<i>Bryotropha senectella</i>	a micro-moth		
787	<i>Bryotropha terrella</i>	a micro-moth	Local	grasses
788	<i>Bryotropha politella</i>	a micro-moth	Local	Montane grassland & heath.
822	<i>Scrobipalpa acuminatella</i>	a micro-moth		Larvae in spear thistle
830	<i>Caryocolum fraternella</i>	a micro-moth	Local	Montane grassland & heath.
854	<i>Anacamptis blattariella</i>	a micro-moth		A local Birch Galechiid
858	<i>Hypatima rhomboidella</i>	a micro-moth		
873	<i>Blastobasis lignea</i>	a micro-moth	Local	
937	<i>Agapeta hamana</i>	a micro-moth		
969	<i>Pandemis corylana</i>	Chequered Fruit-tree Tortrix		
970	<i>Pandemis cerasana</i>	Barred Fruit-tree Tortrix		
971	<i>Pandemis cinnamomeana</i>	a tortrix moth	local	Species with westerly distribution
972	<i>Pandemis heparana</i>	Dark Fruit-tree Tortrix		
980	<i>Archips xylosteara</i>	Variegated Golden Tortrix		
987	<i>Ptycholomoides aeriferanus</i>	a tortrix moth		
991	<i>Clepsis senecionana</i>	a tortrix moth		Local on Bilbery
1010	<i>Ditula angustiorana</i>	Red-barred Tortrix		
1021	<i>Cnephasia interjectana</i>	Flax Tortrix		
1024	<i>Cnephasia incertana</i>	Light Grey Tortrix	Local	on Birch
1025	<i>Tortricodes alternella</i>	a tortrix moth		
1029	<i>Eana osseana</i>	a tortrix moth		
1032	<i>Aleimma loeflingiana</i>	a tortrix moth		
1033	<i>Tortrix viridana</i>	Green Oak Tortrix		
1038	<i>Acleris laterana</i>	a tortrix moth		
1043	<i>Acleris aspersana</i>	a tortrix moth		wet grassland/fenland species
1044	<i>Acleris ferrugana</i>	a tortrix moth		
1045	<i>Acleris notana</i>	a tortrix moth		Birch feeder
1076	<i>Olethreutes lacunana</i>	a tortrix moth		
1084	<i>Hedya ochroleucana</i>	a tortrix moth		
1087	<i>Orthotaenia undulana</i>	a tortrix moth		
1092	<i>Apotomis turbidana</i>	a tortrix moth		birch
1093	<i>Apotomis betuletana</i>	a tortrix moth		birch
1103	<i>Endothenia ericetana</i>	a tortrix moth	Local	
1111	<i>Bactra lancealana</i>	a tortrix moth		
1133	<i>Epinotia bilunana</i>	a tortrix moth		
1134	<i>Epinotia ramella</i>	a tortrix moth		
1136	<i>Epinotia immundana</i>	a tortrix moth		
1143	<i>Epinotia fraternana</i>	a tortrix moth	Local	
1151	<i>Epinotia trigonella</i>	a tortrix moth	Local	Larva on Birch
1155	<i>Epinotia brunnichana</i>	a tortrix moth	Local	
1156	<i>Epinotia solandriana</i>	a tortrix moth		
1159	<i>Rhopobota naevana</i>	Holly Tortrix		
1163	<i>Zeiraphera ratzburgiana</i>	a tortrix moth		Spruce
1166	<i>Zeiraphera diniana</i>	Larch Tortrix		Larch

1175	Epiblema uddmanniana	Bramble Shoot Moth		
1178	Epiblema roborana	a tortrix moth		
1186	Epiblema farfarae	a tortrix moth		Roots of Colts Foot
1201	Eucosma cana	a tortrix moth		
1205	Spilonota ocellana	a tortrix moth		
1205a	Spilonota laricana	a tortrix moth		
1219	Lathronympha strigana	a tortrix moth		
1260	Cydia splendana	a tortrix moth		
1293	Chrysoteuchia culmella	Garden Grass-veneer		
1294	Crambus pascuella	a pyralid moth		Local, wet acid grassland/ moorland
1301	Crambus lathoniellus	a pyralid moth		
1304	Agriphila straminella	a pyralid moth		
1313	Catoptria pinella	a pyralid moth	Local	
1331	Acentria nivea	Water Veneer		
1334	Scoparia ambigualis	a pyralid moth		
1335	Scoparia ancipitella	a pyralid moth	Notable	Lichens in western wooded valleys. 1995 record from Wigmore Rolls first for Herefordshire.
1338	Eudonia crataegella	a pyralid moth		
1340	Eudonia trunciolella	a pyralid moth		
1344	Eudonia mercurella	a pyralid moth		
1345	Nymphula nymphaeata	Brown China mark		
1362	Pyrausta purpuralis	a pyralid moth	Local	
1376	Eurrhynx hortulata	Small Magpie		
1377	Eurrhynx lancealis	a pyralid moth		
1388	Udea lutealis	a pyralid moth		
1392	Udea olivalis	a pyralid moth		
1405	Pleuroptya ruralis	Mother of Pearl		
1428	Aphomia sociella	Bee Moth		
1433	Cryptoblabes bistriga	a pyralid moth	Local	
1452	Phycita roborella	a pyralid moth		
1461	Assara terebrella	a pyralid moth	Naturalised	Mature spruce. New county record
1521	Thera obeliscata	Grey Pine Carpet		A moth of conifer plantations
1526	Thymelicus sylvestris	Small Skipper		1995-2002 Butterfly Conservation
1531	Ochlodes venata faunus	Large Skipper		1995-2002 BC
1541	Leptidea sinapis	Wood White	Notable	1995-2002 BC
1545	Colias croceus	Clouded Yellow	Migrant	1995-2002 BC
1546	Gonepteryx rhamni	Brimstone		1995-2002 BC
1549	Pieris brassicae	Large White		1995-2002 BC
1551	Pieris napi	Green-veined White		1995-2002 BC
1550	Pieris rapae	Small White		1995-2002 BC
1553	Anthocharis cardamines	Orange Tip		1995-2002 BC
1557	Quercusia quercus	Purple Hairstreak	Local	1995-2002 BC
1558	Satyrium w-album	White Letter Hairstreak	Notable	1995-2002 BC
1561	Lycena phlaeas	Small Copper		1995-2002 BC
1574	Polyommatus icarus	Common Blue		1995-2002 BC
1580	Celastrina argiolus britanna	Holly Blue	Local	1995-2002 BC
1590	Vanessa atalanta	Red Admiral	Migrant	1995-2002 BC
1591	Cynthia cardui	Painted Lady	Migrant	1995-2002 BC
1593	Aglais urticae	Small Tortoiseshell		1995-2002 BC
1597	Inachis io	Peacock		1995-2002 BC
1598	Polygonia c-album	Comma		1995-2002 BC
1600	Boloria selene	Small Pearl-bordered Fritillary	Local	1995-2002 BC
1601	Boloria euphrosyne	Pearl Bordered Fritillary	Notable	1995-2002 BC
1607	Argynnis aglaja	Dark Green Fritillary	Local	1995-2002 BC

1608	<i>Argynnis paphia</i>	Silver-washed Fritillary	Local	1995-2002 BC
1614	<i>Pararge aegeria</i>	Speckled Wood		1995-2002 BC
1615	<i>Lasiommata megera</i>	Wall		1995-2002 BC
1625	<i>Pyronia tithonus britanniae</i>	Gatekeeper		1995-2002 BC
1626	<i>Maniola jurtina</i>	Meadow Brown		1995-2002 BC
1627	<i>Coenonympha pamphilus</i>	Small Heath		1995-2002 BC species declining
1629	<i>Aphantopus hyperantus</i>	Ringlet		1995-2002 BC
1640	<i>Euthrix potatoria</i>	Drinker		
1645	<i>Falcaria lacertinaria</i>	Scalloped Hook-tip	Local	The larva feeding on <i>Betula</i>
1648	<i>Drepana falcataria</i>	Pebble Hook-tip		
1651	<i>Cilix glaucata</i>	Chinese Character		
1652	<i>Thyatira batis</i>	Peach Blossom		
1653	<i>Habrosyne pyritoides</i>	Buff Arches		
1656	<i>Tetheella fluctuosa</i>	Satin Lutestring	Notable	Larva on birch. Very local.
1659	<i>Achlya flavicornis</i>	Yellow Horned		
1665	<i>Pseudoterpna pruinata atropunctaria</i>	Grass Emerald		
1666	<i>Geometra papilionaria</i>	Large Emerald		
1682	<i>Timandra griseata</i>	Blood-vein		
1702	<i>Idaea biselata</i>	Small Fan-footed Wave		
1708	<i>Idaea dimidiata</i>	Single-dotted Wave		
1713	<i>Idaea aversata</i>	Riband Wave		
1722	<i>Xanthorhoe designata</i>	Flame Carpet		
1724	<i>Xanthorhoe spadicearia</i>	Red Twin-spot Carpet		
1727	<i>Xanthorhoe montanata</i>	Silver-ground Carpet		
1732	<i>Scotopteryx chenopodiata</i>	Shaded Broad-bar		
1734	<i>Scotopteryx luridata plumbaria</i>	July Belle		
1738	<i>Epirrhoe alternata</i>	Common Carpet		
1752	<i>Cosmorhoe ocellata</i>	Purple Bar		
1754	<i>Eulithis prunata</i>	Phoenix		
1758	<i>Eulithis pyraliata</i>	Barred Straw		
1759	<i>Ecliptopera silaceata</i>	Small Phoenix		
1760	<i>Chloroclysta siterata</i>	Red-green Carpet		
1762	<i>Chloroclysta citrata</i>	Dark Marbled Carpet	Local	Northern and westerly UK distribution
1764	<i>Chloroclysta truncata</i>	Common Marbled Carpet		
1769	<i>Thera britannica</i>	Spruce Carpet		
1775	<i>Colostygia multistrigaria</i>	Mottled Grey		
1776	<i>Colostygia pectinataria</i>	Green Carpet		
1777	<i>Hydriomena furcata</i>	July Highflyer		
1802	<i>Perizoma affinitata</i>	Rivulet		
1817	<i>Eupithecia pulchellata</i>	Foxglove Pug		
1826	<i>Eupithecia trisignaria</i>	Triple-spotted Pug	Local	Marshy places, rides and verges..
1830	<i>Eupithecia absinthiata</i>	Wormwood Pug		
1838	<i>Eupithecia icterata</i>	Tawny-speckled Pug		
1856	<i>Eupithecia lariciata</i>	Larch Pug	Local	Inhabits larch plantations
1858	<i>Chloroclystis v-ata</i>	V-Pug		
1860	<i>Chloroclystis rectangulata</i>	Green Pug		
1862	<i>Gymnoscelis rufifasciata</i>	Double-striped Pug		
1864	<i>Chesias legatella</i>	Streak		
1865	<i>Chesias rufata</i>	Broom-tip	Local	The larva feeds on Broom
1881	<i>Trichopteryx carpinata</i>	Early Tooth-striped		
1887	<i>Lomaspilis marginata</i>	Clouded Border		
1893	<i>Semiothisa liturata</i>	Tawny-barred Angle		
1906	<i>Opisthograptis luteolata</i>	Brimstone Moth		
1913	<i>Ennomos alniaria</i>	Canary-shouldered Thorn		

1914	Ennomos fuscantaria	Dusky Thorn		
1917	Selenia dentaria	Early Thorn		
1919	Selenia tetralunaria	Purple Thorn		
1922	Ourapteryx sambucaria	Swallow-tailed Moth		
1926	Apocheima pilosaria	Pale Brindled Beauty		
1927	Lycia hirtaria	Brindled Beauty		
1930	Biston strataria	Oak Beauty		
1931	Biston betularia	Peppered Moth		
1932	Agriopsis leucophaearia	Spring Usher		
1937	Peribatodes rhomboidaria	Willow Beauty		
1940	Deileptenia ribeata	Satin Beauty	Local	
1941	Alcis repandata	Mottled Beauty		
1947	Ectropis bistortata	Engrailed		
1948	Ectropis crepuscularia	Small Engrailed	Local	on Birch, Larch and Willow
1954	Bupalus piniaria	Bordered White		
1955	Cabera pusaria	Common White Wave		
1961	Campaea margaritata	Light Emerald		
1962	Hylaea fasciaria	Barred Red		
1981	Laothoe populi	Poplar Hawk-moth		
1991	Deilephila elpenor	Elephant Hawk-moth		
1992	Deilephila porcellus	Small Elephant Hawk-moth	Local	
1997	Furcula furcula	Sallow Kitten		
2000	Notodonta dromedarius	Iron Prominent		
2003	Eligmodonta ziczac	Pebble Prominent		
2006	Pheosia gnoma	Lesser Swallow Prominent		
2008	Ptilodon capucina	Coxcomb Prominent		
2047	Eilema complana	Scarce Footman	Local	larva feeding on lichens
2049	Eilema deplana	Buff Footman	Local	larva feeding on lichens
2050	Eilema lurideola	Common Footman		
2056	Parasemia plantaginis	Wood Tiger	Local	Very local. heath and open woodland.
2057	Arctia caja	Garden Tiger		
2060	Spilosoma lubricipeda	White Ermine		
2061	Spilosoma luteum	Buff Ermine		
2064	Phragmatobia fuliginosa	Ruby Tiger		
2069	Tyria jacobaeae	Cinnabar		
2089	Agrotis exclamationis	Heart and Dart		
2098	Axylia putris	Flame		
2102	Ochropleura plecta	Flame Shoulder		
2107	Noctua pronuba	Large Yellow Underwing		
2109	Noctua comes	Lesser Yellow Underwing		
2111	Noctua janthe	Lesser Broad Bordered Yellow Underwing		
2112	Noctua interjecta caliginosa	Least Yellow Underwing		
2118	Lycophotia porphyrea	True Lover's Knot		
2120	Diarsia mendica mendica	Ingrailed Clay		
2122	Diarsia brunnea	Purple Clay		
2126	Xestia c-nigrum	Setaceous Hebrew Character		
2128	Xestia triangulum	Double Square-spot		
2130	Xestia baja	Dotted Clay		
2133	Xestia sexstrigata	Six-striped Rustic		
2134	Xestia xanthographa	Square-spot Rustic		
2138	Anaplectoides prasina	Green Arches		
2139	Cerastis rubricosa	Red Chestnut		
2149	Polia trimaculosa	Silvery Arches	Notable	Rare and in serious decline, almost lost from Wyre. requires young Birch

2150	<i>Polia nebulosa</i>	Grey Arches		
2155	<i>Melanchra persicariae</i>	Dot Moth		
2158	<i>Lacanobia thalassina</i>	Pale-shouldered Brocade		
2160	<i>Lacanobia oleracea</i>	Bright-line Brown-eye		
2163	<i>Ceramica pisi</i>	Broom Moth		
2176	<i>Cerapteryx graminis</i>	Antler		
2182	<i>Orthosia cruda</i>	Small Quaker		
2187	<i>Orthosia cerasi</i>	Common Quaker		
2189	<i>Orthosia munda</i>	Twin-spotted Quaker		
2190	<i>Orthosia gothica</i>	Hebrew Character		
2193	<i>Mythimna ferrago</i>	Clay		
2198	<i>Mythimna impura</i>	Smoky Wainscot		
2221	<i>Cucullia verbasci</i>	Mullein		
2232	<i>Aporophyla nigra</i>	Black Rustic		
2243	<i>Xylocampa areola</i>	Early Grey		
2245	<i>Allophyes oxyacanthae</i>	Green-brindled Crescent		
2258	<i>Conistra vaccinii</i>	Chestnut		
2259	<i>Conistra ligula</i>	Dark Chestnut		
2262	<i>Agrochola circellaris</i>	Brick		
2264	<i>Agrochola macilenta</i>	Yellow-line Quaker		
2265	<i>Agrochola helvola</i>	Flounced Chestnut	Notable	Rare and declining, likes recently coppice. Few sites in Herefordshire.
2270	<i>Omphaloscelis lunosa</i>	Lunar Underwing		
2272	<i>Xanthia aurago</i>	Barred Sallow		
2284	<i>Acronicta psi</i>	Grey Dagger		
2297	<i>Amphipyra pyramidea</i>	Copper Underwing		
2298	<i>Amphipyra berbera svensson</i>	Svensson's Copper Underwing		Local
2300	<i>Mormo maura</i>	Old Lady	Local	
2305	<i>Euplexia lucipara</i>	Small Angle Shades		
2306	<i>Phlogophora meticulosa</i>	Angle Shades		
2313	<i>Enargia paleacea</i>	Angle-striped Sallow	Notable	Mature birch woodland. also immigrant
2318	<i>Cosmia trapezina</i>	Dun-bar		
2321	<i>Apamea monoglypha</i>	Dark Arches		
2327	<i>Apamea epomidion</i>	Clouded Brindle		
2330	<i>Apamea remissa</i>	Dusky Brocade		
2335	<i>Apamea scolopacina</i>	Slender Brindle	Local	
2338	<i>Oligia versicolor</i>	Rufous Minor	Local	
2339	<i>Oligia latruncula</i>	Tawny Marbled Minor		
2343	<i>Mesapamea secalis</i>	Common Rustic		
2345	<i>Photedes minima</i>	Small Dotted Buff		
2353	<i>Luperina testacea</i>	Flounced Rustic		
2381	<i>Hoplodrina alsines</i>	Uncertain		
2382	<i>Hoplodrina blanda</i>	Rustic		
2410	<i>Lithacodia pygarga</i>	Marbled White Spot		
2434	<i>Diachrysia chrysis</i>	Burnished Brass		
2441	<i>Autographa gamma</i>	Silver Y		
2442	<i>Autographa pulchrina</i>	Beautiful Golden Y		
2443	<i>Autographa jota</i>	Plain Golden Y		
2450	<i>Abrostola triplasia</i>	Spectacle		
2474	<i>Rivula sericealis</i>	Straw Dot		
2477	<i>Hypena proboscidalis</i>	Snout		
2489	<i>Herminea tarsipennalis</i>	Fan-foot		
2492	<i>Herminia grisealis</i>	Small Fan-foot		