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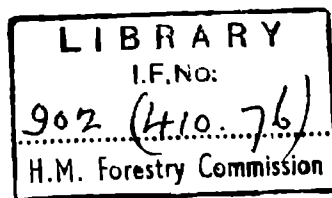
TINTERN

FOREST

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FORESTRY

COMMISSION

HISTORY

of

TINTERN

FOREST

to 1951

SOUTH (WALES) CONSERVANCY

## HISTORY OF TINTERN FOREST

	<u>Contents</u>	<u>Page</u>
<u>GENERAL DESCRIPTION OF THE FOREST</u>	... ..	1
Situation	... ..	1
Area and Utilisation	... ..	1
Physiography	... ..	10
Geology and Soils	... ..	10
Vegetation	... ..	10
Meteorology	... ..	11
Risks	... ..	11
Roads	... ..	13
Labour and Housing	... ..	14
 <u>SILVICULTURE</u>	... ..	 17
Early history	... ..	17
Conversion of coppice with standards to High Forest	... ..	20
a) The standards	... ..	21
b) The coppice	... ..	22
Working Plan 1913 - 1923	... ..	23
Summary of age classes 1914	... ..	27
Coppice woods	... ..	27
Coniferous woods - notes on individual species	... ..	28
Working Plan 1924 - 34	... ..	32
Summary of age classes 1924	... ..	33
Conifer Working Circle	... ..	34
Oak Working Circle	... ..	34
Coppice Working Circle	... ..	35
Miscellaneous	... ..	35
Period 1934-1951	... ..	36
 <u>APPENDICES</u>		
I Notes from Inspection Reports	... ..	<del>36</del> 40
II Record of Supervisory Staff	... ..	<del>46</del> 50
III Map of the Forest		

## HISTORY OF TINTERN FOREST

### GENERAL DESCRIPTION OF THE FOREST

#### Situation

Tintern Forest stretches unbroken from two miles south of Monmouth town to two miles north of Chepstow. It clothes the steep hills and deep valleys of the western or Welsh side of the River Wye which, for this distance, is the boundary between Wales and England.

The woods take their name from the ancient Abbey which stands on the Welsh bank some six miles from the junction of the Wye with the Severn.

The Cistercian abbey and monastery of Tintern was founded on 9th May 1131 by Walter Fitz-Richard de Clare, lord of Striguil, the grandson of William Fitz-Osbern (Earl of Hereford) to whom had been granted the manors of Wolleston and Tudenham (in what is now Gloucestershire) and all he could conquer from the Welsh. In pursuit of this latter project de Clares built the Castle of Striguil (Chepstow) and in time extended their lordship over a wide area of Nether Gwent, the region bounded on the east by the River Wye and on the north by the wide-spreading forest, which in later years came to be known as Wentwood.

The earlier monastic records make some use of the name Dindryn and it is conjectured this may have derived from the Welsh dinas-teyrn, the fort of the King, for near here one of the ancient Welsh over-lords named Tewdric or Theodoric is reputed to have received wounds in a battle with the Saxons about A.D. 600. Tewdric died from his wounds and is said to be buried at Mathern near Chepstow.

By the 16th Century the spelling had changed to Tynnterne and by the following century to Tinterne or Tintern.

#### Area and Utilisation

The early history of the southern Wye Valley and the development and cultivation of lands from the "waste" or forest is closely linked with the rise and fall of the monastery. Reference to the woods and forests are sparse and indirect but suggest that the existent woodlands are a very small part of the wide spreading forests of the 12th Century.

The rules of the Cistercian Brotherhood forbade settlement near the habitations or haunts of men. It follows, therefore, that if the

neighbourhood of the Abbey had ever been a populated place it had ceased to be so when Walter Fitz-Richard founded the monastery in 1131.

Walter Fitz-Richard died without issue in 1138 when the lordship of Striguil reverted to the Crown and was regranted by King Stephen to Walter's nephew, Gilbert Strongbow, whom he created Earl of Pembroke.

Gilbert confirmed the whole donation of his uncle to the Abbey of lands in what is now Tintern South Beat, lands in Madgets (part of Tidenham Chase) and lands as far afield as the Moor of Magor.

The de Clare lordship came to an end with Richard, son of Gilbert and their lands and titles passed to William the Mareschal. William the Mareschal the Younger, Earl of Pembroke in a charter dated 22nd March, 1223 declared the Abbey outwith the Forest (i. e. not subject to Forest Law) and inter alia, granted freedom of pasturage with wood for fuel and building through all the Welsh Forests of the Earl from Wye to Usk. His brother Earl Gilbert, by charter, granted in perpetuity, for the purpose of maintaining the tannery at Tintern Abbey all the bark from timber felled in his forest at Nether Gwent at the rate of 2d. per load.

The Abbey and Monastery of Tintern remained an active and potent institution until the Dissolution in the reign of Henry VIII. During this period the Abbey exercised chartered rights over the woods lying within the lordship of Striguil, roughly in the area south of the Angidy River. The monastic possession extended far afield and included granges or farms near Trelleck, within the lordship of that name.

The Trelleck lordship extended from the River Wye to beyond the River Usk on the west and nearly to the town of Monmouth. The land was heavily wooded, the main wooded area being described as the Forest or Chase of Wye's Wood. The chief fortified strongholds of the owners were the Castles of Usk and Raglan.

The following extract from a grant made by Richard, Duke of York, from "his Castle of Uske" in 1436, stimulates the imagination in picturing the area now prosaically known as Tintern North and Centre Beats.

"By an indenture of the 8th of July, in the 14th year of our most dread sovereign lord King Henry VI, between the high and mighty prince, Richard, Duke of York, Earl of Marche and Ulster, lord of Wigmore and of Clare, on the one part and

John ap Howell ap Jenkins of Pantyglasse, one of the gentlemen ushers of the Chamber on the other part - the aforesaid Richard, Duke of York, grants to the said John ap Howell, and to his heirs for evermore, the office of Master Forester and Keeper of the Forest and Chase called Wye's Wood, lying within the lordship of Trellech : parcel of the earldom of Marche ..... and to be Chief Keeper of all Game within the said Forest or Chase, and liberties of the same; which liberties and bounds extend from the highway leading from Devauden, in length towards Monmouth, and in breadth to the River Wye."

Amongst other rights and privileges this grant gave to John ap Howell, two stags in summer, two hinds in winter and two wild boars, together with the right to a "cut" from every deer killed within the bounds of the Forest of Wye's Wood.

The Act of Union in 1536 united Wales with England to form the single State of England and Wales. By this time, many of the lordships of the March had passed, by one means or another into the possession of the Crown. The Act completed the process of depriving the Lords of their special privileges although allowing them to remain in possession of their lands and in 1536 the lordships of Upper and Nether Gwent were grouped to form the shire of Monmouth, with all administrative and judicial matters linked to the English system.

When, at the Dissolution, monastic lands and possessions were confiscated by the Crown, Tintern Abbey and its lands were granted to Henry, Earl of Worcester then hereditary holder of the lordship of Striguil.

The Trelleck lands passed to the Somerset family and eventually into the possession of the Dukes of Beaufort, who by inheritance and purchase eventually became owners of a large estate in Monmouthshire, including most of what is now Tintern Forest.

In the first quarter of the 18th Century the then owner of Wye's Wood sought to inclose considerable areas but was opposed by the parishoners. Application was made to Chancery and the owner, by decree, was "allotted a certain quantity of coppice woods reserving to the parish the right of pasture and herbage of the soil" (Charles Heath 1828). Other contemporary

writers refer to the area between the Devauden/Trellech/Monmouth highway and the River Wye as being one vast area of common and woodlands. They refer also to extensive grazing by cattle, sheep, goats and pigs to the detriment of the coppice. But the available evidence suggests that by at least the mid - 18th Century enlightened owners were seeking to exclude grazing animals from the woods. It was not until the early 19th Century that extensive areas, such as Wye's Wood Common, Beacon Hill, Trellech Common and Penallt Common were inclosed. In 1810 an Act was passed for inclosing land in the Parishes of Trellech, Penallt, Mitchel Troy, Cwncarvan, Llandogo, Tintern and Llanishen. About 5,000 acres were allotted and inclosed, including much of what is now Tintern Forest. Heath refers to owners actively enclosing their allotments by banks and hedges and in later editions (1828) of his book, writing of Wye's Wood Common says:

"This portion of the Common now belongs to the Duke of Beaufort who has caused it to be planted with larch and other trees. In many parts where it has been inclosed the oak coppice, which spreads itself to great extent, has begun to show its return for protection, and will in a few years become very valuable to its possessor."

Specific reference is also made, by Heath, to trees planted in Nine Wells inclosure by Mr. T. A. Williams "now beginning to erect their crests above the oak coppice wood which grows beneath".

Unfortunately, the Beaufort Estate records for this period were destroyed by enemy bombing of Swansea in 1942, but from the evidence available it seems fairly clear that many, if not all, the woods sold to the Crown at the beginning of the twentieth century were enclosed and brought under some form of systematic forest management less than a hundred years before. Most of the enclosed woods were operated on the coppice with standards system with coppice of oak and hazel under over woods of oak and beech, with many of the oaks very old and massive. On the limestone areas to the south lime and ash were also grown as coppice under standards of oak and beech and nothing was done here to discourage the growth of the native yew.

The Duke's foresters did not confine their activities to the native hardwoods but extensively planted larch into the oak and beech woods, and

also on old cultivated lands included within the woodland inclosures, e.g. Criegiau and Whitelye.

When the Crown purchased the Tintern Woods in 1901, therefore, they were mainly coppice with standards in one stage or another but with planted larch in Beacon Hill, Bargain Wood, Petty Bargain, Creigiau and Whitelye Woods, New Wood, Limekiln Wood and Linenwell Wood. There were also a number of Scots pine bordering the rides in Beacon Hill and Cuckoo Wood.

In addition to the woods, the Crown purchase of 1901 included farms, houses, cottages and the Abbey. The woods at that date extended to 2,848 acres and were purchased for the sum of £49,000.

From 1901 to 1914 when the first Working Plan was prepared, the area had been increased to 3219.5 acres by the purchase of additional areas of woodland and the inclusion of about 128 acres of rough land from the farms. Subsequent transfers and purchases, including the purchase of Trelleck Common from the Vicar of Trelleck, brought the acreage up to 3,790 acres in 1920.

By the Forestry (Transfer of Woods) Order 1924, some 3,742 acres were transferred to the Forestry Commission and by a similar Order in 1926, a further 225 acres were transferred. Since the Forestry Commission officially took over the woods numerous small acquisitions by lease and purchase have been made to bring the acreage to the present total of 4,969 acres. Negotiations are now in hand for the transfer of a number of small areas of rough land from the Commissioners of Crown Lands and further leases or purchases of nearby areas of old woodland are impending. Many of the latter are west of the Devauden/Trelleck ridge into which region the forest has been slowly spreading since the High Glanau Woods were acquired in 1934.

Details of acquisitions up to 1.10.51 are given in the following Table I and in Table II are given details of the utilization of the land up to the same date.



TINTERN

TABLE I - ACQUISITIONS

SECTION II

From	By	Date	Plant- actions Acq.	Plant -able Excl. Col. 4	Nurseries	Agric- ultural	F. W. H.	Un- plant- able	Other Land			Total	
									Land Permanently Transferred to M. A. F.	Land Temporarily Transferred to M. A. F.	Acreage		
(1)	(2)	(3)	(4) acs.	(5) acs.	(6) acs.	(7) acs.	(8) acs.	(9) acs.	(10) Description	(11) Acreage acs.	(12) Description	(13) Acreage acs.	(14) acs.
H. M. Office of Woods	Order in Council	1924 - 1926	1934	1,720	-	127	47	4	-	-	Pair oak Penallt	90 45	3,967
Thomas, Rev. E. G.	" "	7. 8. 25	-	70	-	-	-	-	-	-	-	-	70
Thomas, Rev. E. G.	" "	13. 2. 26	-	6	-	-	-	-	-	-	-	-	6
Pritchard, C.	Conveyance	31. 3. 26	-	10	-	-	6	-	-	-	-	-	16
Hall, Mrs. E.	"	21. 10. 26	-	1	-	-	-	-	-	-	-	-	1
Dicks, H.	"	29. 10. 26	-	-	-	-	2	-	-	-	-	-	2
Swain, Mrs. T.	"	6. 5. 27	-	-	-	-	1	-	-	-	-	-	1
Young, E.	"	22. 12. 27	-	-	-	-	1	-	-	-	-	-	1
Munro, A. G.	"	17. 12. 27	-	-	-	-	7	-	-	-	-	-	7
Watkins, M.	"	26. 3. 26	-	-	-	-	8	-	-	-	-	-	8
Hughes, Mrs. A. Exors. of	"	19. 12. 29	-	-	-	-	3	-	-	-	-	-	3
Ashworth, E.	"	7. 11. 30	-	23	-	-	-	-	-	-	-	-	23
Gallimore, C. O.	"	3. 11. 30	-	81	-	-	-	-	-	-	-	-	81
Tipping, H. A. Exors of	"	7. 8. 34	-	351	-	-	-	-	-	-	High Glanau	14.9	500
Davies, John Oliver	Lease	28. 4. 49	-	208	-	-	-	-	-	-	-	-	208
Commr. of Crown Lands	Order in Council	14. 6. 45	-	6	-	-	-	4	-	-	-	-	10
Morgan, H. C.	Conveyance	29. 9. 51	17	48	-	-	-	-	-	-	-	-	65
			1951	2,524	-	127	75	8	-	-	-	284	4,969

TABLE II  
UTILIZATION OF LAND AS AT 1.10.1951

SECTION II

(a) Plantations

Acquired	2,129 acs.	
Formed by Forestry Commission	<u>2,163</u> "	4,292 acs.

(b) In hand awaiting Planting

Blanks after felling	178 acs.	
Burnt Areas	Nil	
Other land	<u>90</u> "	268 acs.

(c) Nurseries

31 acs.

(d) Agriculture

No. of tenancies	30 Area	286 acs.	
			286 acs.

(e) F.W.H.

No. of F.W.H.s	24 Area	76 acs.	
			76 acs.

(f) Unplantable: Quarries, Ponds etc.

12 acs.

(g) Sawmill Yards and Railway Line

4 acs.

Total 4,969 acs.

Apart from the Abbey, Tintern has a further claim to fame in that what is reputed to be the first works for the manufacture of iron wire were set up there shortly after the Dissolution. The process was introduced to England by Germans or Swedes who settled in Tintern (c., 1570) and set up a factory for the Society of Mineral and Battery Works on or near the site of the present Forestry Commission Sawmill.

Tintern was favoured because of the proximity of the Forest of Dean iron ore supplies; woods spreading over the face of the country affording an unceasing supply of charcoal; adequate water power available in the Angidy River and a navigable river (the Wye). By 1592 the wire works had assumed sufficient importance to be the subject of a Bill, introduced but not passed by Parliament. The Bill sought to prohibit the manufacture in Monmouthshire of any iron other than "Osmonde Iron and that only for the service of the said late erected wyre works at Tinterne". It may be that this Bill ranks as one of the earliest efforts to conserve British woods for the sponsors were greatly exercised by ".....the great spoyle that hathe bene since the erection thereof made of woods in the said Countie of Monmouth in and about the making of marchante iron."

It seems fairly certain that in the early days of the wire works iron smelting was carried out in and near Tintern as well as in the Forest of Dean. This industry was very destructive of timber and iron works were of a temporary character. It is recorded that one acre of timber was required to produce three tons of iron. As coal began to replace charcoal for smelting this industry moved to the iron/limestone belt in Glamorganshire. Several of the early Glamorgan iron masters were interested in the Tintern wire works and supplies of suitable iron came from their works in Glamorgan.

William Coxe describing his extensive tour of Monmouthshire made in 1799 writes of charcoal furnace, forges and wire works as the principal manufactories in Tintern. David Tanner of Monmouth, with iron works at Lydbrook, Redbrook, Pontypool and Blaendare leased the wire works in 1775 and retained them until 1799, when they passed to Robert Thompson who kept them till he died in 1822.

Charles Heath in the 11th edition of his Historical and Descriptive Account of Tintern Abbey (1828) gives the then owners as Messrs. Brown & Co. Brakespear and Evans writing of Tintern Abbey in 1908 speak of the wire

works as having been active to "quite a recent date".

It is difficult to say precisely when the present buildings, known locally as "The Wire Works" and now housing the various sections of the Tintern Forest Sawmill and Depot were erected, but excavations indicate they are of great age and have been used for several purposes. Indeed, this is well known for Messrs. Turners, a Cardiff firm of quarry-masters, appear to have used the place as a stone cutting mill in the early part of this century. John Roberts of Cowbridge, Glam. leased the place for 3 or 4 years, probably 1908 - 1912 and operated a turnery works. He was succeeded by Messrs. Pasks who operated a turnery works and sawmill from 1912 to 1928, after which buildings and yards stood empty until after war broke out.

In 1941 the yard and main structures in the Wire Works were taken over by the Home Grown Timber Production Department of the Ministry of Supply for use as a sawmill. A rip mill was installed for the production of mining timbers from small hardwoods and the sawing of large softwood butts into semi-squared baulks for subsequent conversion in town mills. In July 1942 the sawmill was redesigned and much additional equipment added to deal with the conversion of locally grown ash into tool handle blanks. Shortage of imported hickory tool handles, particularly for the coal mining industry, had made it imperative to develop home resources. Ash grown in Tintern and Highmeadow Woods had long been considered of high quality for tool handles and was in good supply. The Tintern Ash-handle Mill went into full production towards the end of 1942 and continued in operation until 1946 when it was dismantled.

The next step in the long history of the Wire Works occurred in 1948 when the main structure was extensively repaired to house a small rack bench and diesel engine, a carpenter's shop for gate making etc., and the tool handle maker (a skilled craftsman who cleaves ash into billets and prepares tool-handles by hand). The remaining standing walls of other buildings were repaired and incorporated into the range of garages, workshops, stores etc. forming the Tintern Forest Depot, an important component of the modern organisation and economy of the forest.

### Physiography

At the southern end the slopes rise steeply from about sea level in the gorge of the River Wye to about 700 ft. Towards the northern end where the river valley widens, slopes are less steep but elevations greater, reaching to 900 ft. or thereabout and on Beacon Hill, the highest point in the forest, to 1,003 ft. above sea level. The tributary valleys rise sharply from the river and are generally narrow and steep sided. Aspects are very variable but exposure to the south west occurs only locally.

### Geology and Soils

Mainly the soils are derived from the Palaeozoic rocks of the Old Red Sandstone series and the subsidiary overlying conglomerate known locally as "Pudding Stone" and sometimes erroneously described as Millstone Grit. The Old Red Sandstone soils are sandy to clay loams variable in quality but generally fertile. In the northern woods of the forest the soils are typically gravelly and often boulder strewn being better suited to conifers than hardwoods. Peat occurs on the shallower gritty loams of the northern plateaux but is of no great depth or extent. Generally the soils tend to increase in depth and fertility towards the south and are well suited to the growth of hardwoods.

South of Tintern Abbey the geological formation undergoes a change to Carboniferous Limestone. The limestone outcrops are a prominent feature of the scenery in the gorge, appearing as precipitous cliffs both on the English and Welsh sides. On the Welsh side, they are the Black Cliff, the Wyndcliff and Piercefield Cliffs. The soils derived from the limestone support some very fine ash and beech as well as lime and yew.

At one time a thriving industry existed in the "sandstone" woods in the manufacture of grind stones, cider mills etc. from the conglomerate. Completed and partly made stones are still lying in the woods near the native rocks from which they were cut. The presence of old lime kilns and quarries in the "limestone" woods is ample evidence of a form of industrial activity now represented by two large quarries devoted to the production of limestone chippings and tar macadam for road making.

### Vegetation

The ground flora varies widely from the plant associations of the "limestone" woods through the typical ground flora of dry oak woods to

the heath/heather/Molinia associations of the high lying Beacons and Trelleck Common. In the latter, gorse abounds and has been a nuisance to the establishment of plantations. Vaccinium grows prolifically in the Wye's Wood area and was, at one time, a profitable source of income to the villagers.

#### Meteorology

The climate is relatively open and mild, deep or long lying snow is rare and frost is only a factor in the lower lying areas near the rivers or streams. Rainfall averages 32 in. per annum.

A most unusual hailstorm of exceptional force occurred in September, 1935, when considerable damage was done to the tops of young trees in Tintern south. The greatest damage was done in the adjoining Chepstow Park where Douglas fir over about 200 acres had their leaders killed back from 2 ft. to 5 ft. from the top.

#### Risks

Perhaps, regrettably, none of the beasts of the chase can be counted amongst the risks of modern forestry. Red deer are said to have been present in the area now covered by Tintern South and Chepstow Park Forest about the beginning of the nineteenth century. Curiously enough, deer are now non-existent, despite the presence of the animals in Highmeadow Woods east of the river, and in Monmouth Forest a few miles to the north. The last deer recorded authentically was an elderly buck that favoured the southern woods late last century and even he was thought to have been a transient, being one of a number put down in the Dean for hunting purposes. Unwisely returning to his earlier home he was hunted and killed.

No doubt hereditary traits are strong in the local inhabitants and the ability to live off the land the reason for the scarcity of rabbits. For very many years, until comparatively recently, they have not been a risk. Since the end of the war the position has changed and fencing against this pest has become necessary, particularly on North Beat. It is very probable that the scarcity of rabbits accounts for the small number of foxes despite the excellent cover. A pack of hounds hunts the southern end on occasion but finds most sport in the small woods and spinneys west and south west of the Forest.

Before the first World War red squirrels were very numerous and did a certain amount of damage in the older conifer woods. No restrictions were placed on killing them and the woodmen and others held them much in favour as squirrel pie. Numbers appear to have diminished fairly steadily and with the influx of large numbers of grey squirrels the red have practically disappeared. The former appear to have crossed the Wye from Gloucestershire soon after they were reported from the Forest of Dean. That was in 1937 or thereabout and they seem to have found their way over the river within a matter of two or three years. Shortage of labour and preoccupation with other matters during the war years permitted a very substantial increase in the number of grey squirrels in Gloucestershire. With increasing numbers, the annual migration westwards seems to have got well into its stride by 1945, in which year the pest had become such a menace in Gloucestershire and Herefordshire that active measures to combat it were instituted. Soon after the end of the war Monmouthshire Agricultural Executive Committee was very concerned and started vigorously to pursue a policy of destruction (1946/47). By this time the grey squirrel population had increased enormously in Tintern Forest and active steps were being taken. Since then, every known method of dealing with the pest has been applied to keeping down the numbers and while partly successful, a considerable amount of damage continues to be done yearly to young beech, sycamore and ash. This damage is fairly serious in the quieter and less often visited woods particularly where coppice conversion and thinning operations have isolated good stems of beech and ash. These vigorous stems seem to attract the attention of the squirrels and are often to be found so badly barked as to negate their selection as crop trees.

The public make very full use of the woods, which also attract tourists by virtue of the scenic beauty of the area and the fact that Tintern is part of the Dean National Forest Park. In a dry season constant patrols are necessary for the woods are a mass of footpaths and rides, nearly all claimed as public rights of way. In addition there are numerous dwelling houses within the bounds of the forest and human trespass is, therefore, a more or less constant risk.

Because of the above, fire risk during a dry season is fairly high

and precautions have to be taken both near the many public roads used by motorists and within the woods themselves. The Chepstow/Monmouth railway line, contiguous to several of the northern woods is another source of danger.

Tintern Forest has suffered from the usual run of insect and fungal pests but none have become epidemic, although at various times fairly widespread infestations of Pine Weevil have been experienced. Douglas fir has, at times, suffered badly from Chermes cooleyi and Sitka spruce from Neomyzaphis abietina.

Because of the widespread oak woods, honey fungus is prevalent and care has to be taken to avoid extensive planting of susceptible conifers following coppice clearing. Conifer heart rot is occasionally met with but generally only where the affected species is not well suited to the site factors. A rather disturbing attack by an unidentified root fungus on well grown Sitka spruce is causing concern and is the subject of investigation by the Forest Pathologist. What appears to be the same fungus (symptoms are exactly similar) is attacking Sitka spruce and Norway spruce in the adjoining Chepstow Park Forest.

#### Roads

The main roads serving the forest are two in number. The more important is A 466 which follows the west side of the Wye from Chepstow through St. Arvans and Tintern Parva to Bigsweir Bridge and then to Monmouth by the English side of the river. The other (B 4293) roughly follows the line of the only highway of medieval times and is probably even older. It leaves A 466 at St. Arvans, passing between the Fedw Wood (Tintern South) and Chepstow Park Forest to the village of Devauden and continues along the higher ground to Trelleck and on northwards towards Monmouth.

Subsidiary public roads follow all the main valleys linking the two main roads and very conveniently dividing the forest into blocks. Many of these subsidiary roads are themselves linked by winding public roads, generally narrow and frequently steep.

Until the passing of the Turnpike Act in 1755 wagons were not in use in the area. All marketable produce was conveyed either on sledges or the backs of horses. In fact, this last method of transport was used



regularly for bringing charcoal and other produce from the woods, within the memory of the older inhabitants. These forms of horse transport have given rise to innumerable tracks and sunken lanes within the woods or connecting one wood with another. Some are still usable either as tushing tracks or for conversion into haulage roads but many are useless for timber extraction although used as footways by the public and in nearly every case are claimed as public highways or rights of way. This has the great disadvantage that any diversion required in making haulage routes must be approved by all the local councils - a lengthy and tedious process!

During the early years of Forestry Commission occupation (1920-23) a number of new roads were made as a means of relieving unemployment. These roads included Raven's Nest Road from Pont-y-Saeson to the Fedw, the Glyn Road in Compartment 21 and improved access to Tintern Hale Wood and The Oaks and Gethin's Grove. New roads were made also in Parson's Allotment Compartment 70 and, in the north, across Beacon Hill from Cleddon to Maryland and through Cuckoo Wood to the Coniger (Compartments 87 to 92). Very considerable use was made of these roads during the 1939/45 war and some additional tracks were stoned and improved.

Thus, the forest today is fairly well served by highways and forest roads or tracks, but many are over-narrow for present day mechanical transport and in the course of time are gradually being widened and improved. A few problems remain to be solved, as for instance where the present access to a wood is by a narrow lane between houses where widening is out of the question and an entirely new route has to be found and acquired. A number of new roads remain to be made, more particularly in the newer acquisitions, but this forest requires roads much less urgently than many of the newer forests and must wait until these have received attention.

#### Labour and Housing

In the early years of Crown ownership some 10 or 12 men were employed in the woods but were often called on for maintenance work on cottages and other buildings, including the Abbey. With the passage of time and an increase in forestry activities the labour strength grew by recruiting extra labour from the locality. Mostly this was rural labour well suited to woods work.

By 1914 the number of men employed had increased to 30. At this period the standard wage for day workers was 20/- per week but skilled woodcutters on piece work could average about 30/- per week.

In 1920 the labour strength had increased to 48 woodcutters and labourers plus 18 women and girls employed mainly on nursery work.

The 1939 - 45 war interrupted the continuity of management and left very large arrears of every type of forest operation except felling. The forest continued to be managed from the Forest of Dean until transferred to the Welsh Directorate in April, 1946. Post war reorganisation, due to change in supervisory staff, setting up of new offices etc. took a little time to get into stride but by early 1947 initial steps were being taken to catch up arrears at Tintern. At the same time, Fair oak Nursery assumed a new significance as one of the few active nurseries in the Welsh Directorate and production was stepped up.

All these activities demanded more labour so by 1947 the number of employees had increased to 90, again, nearly all recruited locally. With the compilation of the 1948 - 57 Working Plan forest operations were systematised and it was estimated that a labour strength of between 160 and 170 employees would be needed to keep up to date. This was on the basis of 21 acres of nursery at Fair oak and a few acres of lining out nursery elsewhere.

Developments since 1948 include the increase of Fair oak nursery to nearly 30 acres, the establishment of heathland nurseries on Trelleck Common and Broadmeend and the setting up of specialist jobs such as mobile mechanics, a gate maker and a tool handle maker. Taking all these additional activities into consideration it is now estimated that the labour requirements are about 180 regular employees.

The numbers employed at present (1952) are:-

Men and boys (all grades)	147
Women and girls (nursery)	<u>26</u>
	<u>173</u>

Periodically, particularly during the nursery weeding season, the extra seasonal labour required has been obtained by employing boys from the Borstal Institution at Usk. The regular employees are drawn from the

immediate locality and a number of outlying villages, with only a relatively small proportion housed in Forestry Commission houses.

With the transfer of the woodlands from the Office of Woods, the Forestry Commission acquired 22 cottage properties. The majority of these are small detached stone built cottages in somewhat isolated positions. The accommodation and structure are generally on the poor side and most are damp and inadequately lighted compared with modern standards, while few have any services or are capable of being improved in any way. The accommodation varies, usually with two or three bedrooms and one or two living rooms together with a scullery or small outhouse.

These properties form the bulk of the forest holdings in the area and most cottages have a small acreage of land, with suitable outbuildings where a few animals can be kept for the personal use of the household.

Since acquisition and until the outbreak of war the Forestry Commission had built 10 additional dwelling houses. These consist of eight bungalows and two houses which were built in 1927. The structure and accommodation of each property vary slightly but each compares favourably with modern standards for rural properties. The accommodation consists of a living room, three bedrooms, scullery with a sink, pantry and a covered space outside for coals.

Each property was built adjacent to a main road and each is capable of being improved by the addition of a bathroom and W.C. to the existing accommodation.

Also transferred from Office of Woods was the large three storeyed house in Tintern village, known as Crown Lodge, together with the small adjoining building which houses the office. Crown Lodge is too large for one occupant and it is proposed to convert it into two three-bedroom flats each with a living room, kitchen and all modern conveniences.

The post war housing programme has been prepared to provide first for adequate housing of the supervisory staff. One forester's house and two workers' houses are nearing completion at Botany Bay. Foresters' houses are next to be built at The Narth and Fair oak; also at the latter site are to be built six workers' houses. These six are being built by the local authority for occupation by forest workers and a further four are planned for a site near Devauden.

## SILVICULTURE

In medieval times extensive woodlands clothed the steeper slopes and valleys and were mainly of oak, beech, birch, elm and hazel with ash lime and yew on the limestone areas. There are early references to timber for building and bark from trees being used for tanning so it is reasonable to assume that the Tintern lands supported high forest as well as coppice.

The earliest references to the "Forest or Chase called Wye's Wood" imply the presence of large trees, but by the 16th century references are more often to "coppice woods of oak". From the early sixteenth century to the early nineteenth oak was in great demand for shipbuilding and Monmouthshire acquired a reputation for the size and quality of its oak trees. Little or no effort at conservation was made and the quality of the oak woods steadily declined.

Extensive use of charcoal also had a profound influence on the treatment of the deciduous woods of the Wye Valley. The establishment of wire works in Tintern after the Dissolution was in part due to the presence of extensive woods offering an unceasing supply of charcoal. These wire works, for the manufacture of iron wire, became the principal industry of Tintern and their influence on the woods is indicated by the terms of a Bill submitted to Parliament in 1592, but not passed. The object of the Bill was to protect the industry from foreign competition but it sought also to protect the coppice against the depredations of the itinerant iron forges. At or about this time iron for the wire works was being smelted in the Forest of Dean, while other sources of supply, and depending on the Tintern woods for their charcoal, were forges at Whitebrook and Pen-y-van.

Later historians referring to the early seventeenth and eighteenth centuries speak of the very heavy inroads made by the iron industry and of how the rotation once of twenty years had been reduced to twelve or fourteen years and even less to the great deterioration of the Wye Valley woods.

Writing on Monmouthshire in 1794, John Fox particularly mentions the abundance of coppice woods in the valley of Tintern and goes on to say that the charcoal from there made some of the best and toughest iron in the kingdom for the manufacture of tin plate and wire. He describes the County generally as fairly well wooded. The presence of extensive coppice

woods in the Tintern area is confirmed by Charles Hassall who, reporting to the Board of Agriculture in 1810, refers to the "vast extent of coppice woods in Gwent, extending from Bertholey to Chepstow; those in the neighbourhood of Tintern Abbey and stretching towards Monmouth along the River Wye." Hassall in bemoaning the scarcity of ship building timber mentions that some of the old family estates like that of the Duke of Beaufort still carry considerable stocks of large timber, but he deplores the method of cutting coppice for charcoal without leaving tellers or sapling trees to grow for timber.

William Coxe in his, "Historical Tour in Monmouthshire," published in 1801, writes of extensive forests in Chepstow Park and of wide spreading woods between the Devauden/Trelleck turnpike and the River Wye, but having an eye only for buildings (not forgetting private residences and their lavish hospitality) he gives no account of their condition.

Hassall in his 1810 report refers to enlightened country gentlemen planting forest trees and raising large plantations of timber. He gives larch as a favourite tree for planting and states that it was often planted in oak woods with very beautiful effect. This practice was followed by the Duke of Beaufort and others in the Tintern Woods, with the result that when the woods were purchased by the Crown in 1901, much of the coppice with standards contained larch and some Scots pine in addition to the hardwoods.

The ducal planting of larch seems to have begun between 1810 and 1828 and been continued, if not annually, at fairly regular intervals until 1880 or thereabout. The oldest European larch now remaining is in Petty Bargains (Compartment 80) planted 1850/55, but there are several stands planted from 1870 to 1880.

The Dukes' foresters managed the hardwoods on a coppice with standards system on a 25 year rotation for oak coppice. The woodmen were responsible for marking tellers of oak, beech and ash and the remainder of the coppice was then sold standing to the timber merchants or the charcoal burners. Such woods as were mainly coppice hazel, birch and alder etc. were usually clear felled on a rotation of from 15 to 20 years. Generally, the oak standards appear to have had a rotation in these days of not less than 150 years.

With the purchase of the woods by the Crown in 1901 they were placed

under the management of Mr. Popert (father of A.H. Popert, Conservator, S.W. (E)) who was Technical Adviser to the Office of Woods. Mr. Popert was responsible for the silvicultural managements and had as Head Woodman, John Roberts who was transferred to Tintern from Herbert Lodge, Forest of Dean, in June, 1901. Two of the Duke of Beaufort's woodmen were taken over by the Office of Woods viz. Lewis Williams who had had charge of what is now South Beat and William Howells who had been in charge of North Beat.

At the time of purchase the 2,348 acres of woodlands comprised 2,470 acres coppice with standards, 231 acres mainly larch and 174 acres bare or covered with worthless scrub.

Responsibility for the management of the woods remained with Mr. Popert until 1912 when Mr. R. L. Robinson (now Lord Robinson) assumed control from London, assisted by G. H. Crosfield.

During the period 1901 - 12 the poor prices obtainable for coppice material had rendered necessary a change in the system of management while, at the same time, utilizing in the most profitable way the large areas of coppice with standards then aged 0 - 30 years. The policy then practiced aimed at clear felling an area of larch and another of coppice, sufficient to yield an annual income of £2,000. These cleared areas were planted with conifers of various species. At the same time numbers of large, badly formed hardwoods were felled and the resultant spaces filled by planting suitable conifers, of which Norway spruce seems to have been most favoured. A start was made also on the conversion of the more thrifty portions of coppice to high forest, by a series of thinnings aimed at reducing the number of stems on the stools of oak, beech and ash.

Old woodcutters say that the sleepers laid for the Wye Valley Railway Line were prepared from larch felled on the Beacons during this period. (This statement has not been confirmed, but all the evidence points to the quality of the larch having been high).

The pursuance of this policy resulted by 1912 in approximately 600/700 acres of coppice having been thinned. Over most of this area were numerous groups of recently planted conifers, chiefly spruce, but also including Douglas fir, larch and Scots pine. Many of these groups were in danger of total suppression from the surrounding coppice and in the winter of 1912 the formation of further small groups was stopped

while a beginning was made to admit more light and connect up the existing groups.

Treatment in the older larch areas had been restricted to clear fellings and the neglect to thin had resulted in the accumulation of much suppressed material. In the winter of 1912/1913 a start was made on thinning the remaining 250 acres of larch considered capable of responding to treatment. It was estimated that 50 acres could be dealt with annually thus permitting a repetition in 5 years.

During this same period (1901 - 1912) some 185 acres of afforestation had been carried out on land taken in from the farms or otherwise acquired.

Considerable importance was attached to conversion of the coppice with standards to high forest. Hitherto the work done at Tintern had been largely experimental and no attempt had been made to schedule the areas thrifty enough for conversion, nor the areas where the only treatment was clear felling and replanting. The earlier work favoured oak, beech and ash as being the only natural hardwoods likely to make valuable timber and this was endorsed but the following instruction was issued as the first step in systematising the work.

"Conversion of coppice with standards to high forest"

This is an important question and affects the future utilization of very large areas of woodland in England.

The problem at Tintern is as follows:-

The standards consist for the most part of oak with wide spreading crowns and short boles (up to 18 ft. to the first branch). The total height will rarely exceed 40 ft. There are also occasional standards of ash and in places a good number of larch, but it is convenient to disregard the larch at the moment.

The coppice consists of a great variety of species the chief being oak, beech, ash, birch, hazel, willow, white beam and aspen.

Of these oak, ash and beech alone are worth allowing to grow into timber and hence it follows that coppice containing a large proportion of the remaining species is not worth converting to high forest. This fundamental

principle has been recognised and acted on at Tintern but no determination has been made of the area and distribution of the coppice worth converting. The system of conversion has been experimental and the results of the experiments should now be collected to form the basis for a detailed system of treatment. This will entail the measurement of a number of sample plots in the converted areas.

#### Nature of the problem of converting to High Forest

The Standards. With a mixed coppice of oak, ash and beech the spreading standards undoubtedly present the chief difficulty. Under the shade of such trees, beech alone can exist, with the result that a single tree occupies a disproportionate space. I have no figure as to the volume which such a standard puts on yearly but this can be determined by taking systematic borings with an increment borer. Determinations can also be made of the areas occupied by the standards, and from the two sets of data the volume increment per acre from standards alone can be determined. With poor standards the increment will undoubtedly be very low. It has been assumed at Tintern that this is the case and the poorest standards have been cut out and the blanks replanted with conifers. I am inclined to go further and state that all standards should be cut, but as noted above, definite information must be collected.

When a large crowned standard is felled a certain amount of damage is done to the surrounding coppice, though this damage may be minimised in some cases by felling on to roads or rides.

Into the blanks formed by these fellings coniferous trees have been planted - spruce, larch, Douglas fir and occasionally other species. The object of planting up the blanks is to get some increment from the area.

It seems possible to lay down some general rules on this group planting:-

- (1) The groups are relatively small and suffer a good deal from side-shading by the surrounding coppice: consequently only shade-bearing species (Douglas fir, silver fir, beech and Thuja gigantea and similar species) can be used. This puts out of consideration larch, spruce, Scots pine etc.
- (2) The tree planted should be a rapid grower, at least in youth, so that it will get its head well up before the group begins to close over. This



with (1) above, practically limits the species to Douglas fir and perhaps Thuja gigantea or Lawson cypress.

(3) In view of the uncertain length of the rotations of the converted coppice, no special attempt should be made to grow clean timber in the groups. The main point is to obtain trees of timber size in as short a space of time as possible. This means that the trees can be planted widely 6 ft. - 8 ft. apart.

(4) The groups should be enlarged on the southern edge a little from time to time if necessary so as to admit more light to the young trees.

(5) The groups may be smaller on southern than on northern aspects owing to the greater intensity of light on the former slopes. For instance with the sun at an elevation of  $70^{\circ}$  a north slope of  $15^{\circ}$  receives only  $\frac{3}{4}$  the amount of direct sunlight that falls on a south slope of  $15^{\circ}$ .

In the groups hitherto planted up spruce has been used to too large an extent. Such groups should be enlarged to admit more light.

#### The Coppice

It is assumed that an attempt is being made to grow valuable timber though I can find no statement on the files of the object of treatment. In such cases oak and ash and to a lesser degree beech, are the trees to favour in the thinnings. In the first cutting, therefore, all other species which are not required for soil cover should be removed. The beech requires careful treatment. It appears to grow more rapidly than the oak and ash and in some cases threatens to suppress these species. All predominant beech should, therefore, be removed but those beech which are under the crowns of the oak or ash should be carefully retained for soil cover. The question of soil cover is important as signs of soil deterioration in some of the converted woods are not wanting. Bilberry and other weeds usually associated with this state of affairs are making their appearance. The cure seems to be to thin less heavily but more frequently, and to conserve all beech undergrowth.

inid. "R.L.R."

17.12.12."

In 1913 operations were further systematised by the preparation of a Working Plan and the changes in policy envisaged are fully indicated in the following notes on which the plan was based:-

"Note on the preparation of the Working Plan  
for Tintern Woods

I Object of Management

(1) The woods are to be managed to obtain the best financial results.

The cost price of the estate is known and accurate accounts have been kept so that the woods will form in the course of time a good test of the results which can be obtained by the development of wooded estates.

(2) It is desired also to make the net revenue as large as is consistent with the condition that it should not fall off appreciably at any future stage.

(3) Where no financial issue is at stake attention is to be paid to aesthetic considerations in those woods overlooking the Wye Valley.

(1) and (2) above are probably not completely consistent and adjustment may be necessary when the field work has been completed and full data are available.

II Compilation of the Working Plan

It is desired that the formulation of the Working Plan should proceed on the following lines:-

(1) A detailed description of the various woods, mapping the crop into:-

(i) Existing high forest

(a) old larch

(b) converted coppice and coppices with standards.

(ii) Coppice and coppice with standards.

(a) worth converting to high forest

(b) not worth converting to high forest

(iii) Plantations made since the acquisition of the estate.

(2) On the basis of the detailed description proceed to work out:-

- (i) The area or volume of larch to be clear-cut annually with due regard to the succession of age classes, having due regard also to the soundness of the larch crop at more advanced ages.
- (ii) The area which should be converted annually to high forest. This will depend in part on the areas falling into the different coppice age classes.
- (iii) The area of coppice (not worth converting) which should be cut over annually in order that it may not deteriorate nor die.
- (iv) The area to be thinned annually both in the larch and in the converted coppice.
- (v) The area to be planted annually. This will in general be that coppice not worth converting which has been cut over during the same winter. If the area cut over is too great to deal with in one year, part of it will be allowed to grow on another rotation.

The foregoing instructions are based on a general knowledge of the woods and the rate of progress during the period the woods have been under the management of the Crown.

### III Compartments etc.

Before beginning the field work it will be necessary to split the woods up into compartments. These should range from 20-30 acres in extent and indicated by numerals (I, II, etc.). Differences in composition or age are to be indicated by sub-compartments indicated by capital letters (A, B, etc.).

It is desirable not to make sub-compartments too small (less than 3 acres) and to term smaller areas groups -

indicated by small letters (a, b, etc.). I would prefer for accounting purposes to make the number of sub-compartments as small as possible. In any case, the groups in a compartment should be lettered consecutively without regard to sub-compartments.

IV It will be desirable to make the following measurements in conducting the crop description:-

(1) The volume of the standards in coppice with standards. A few volume measurements should suffice as there is probably a relationship between girth and volume.

The trees being felled this season will form a basis for the determination of this relationship.

(2) The volume of thinnings to be taken out from the older larch crop and the volume of the remaining crop. The thinnings conducted this season and the permanent sample plots established will form some basis but it may be necessary to augment this information by measuring a few temporary plots.

V The silvicultural treatment adopted during the present year represents a distinct change from that formerly in vogue and is as follows:-

(1) Treatment of Larch

Clear cutting in the older age-classes has been suspended except as regards small isolated groups which are suffering from exposure. On the other hand, all the larch woods are to be systematically thinned, the period between the thinnings in any one wood being 5 years. It is hoped in this way to run the larch crop on for a longer period, still keep the revenue up and at the same time obtain a "price increment" by producing larch timber of large dimensions.

In thinning the larch all the dead, dying and suppressed stems are removed as well as a small proportion of co-dominant crop and especially any "whips". The thinning is purposely made light as regards the dominant crop as the

woods have not been thinned for a considerable period and danger from windfall arises.

The younger of the larch woods thinned in this way will be underplanted with 1 yr. or 2 yr. beech seedlings, 1,500 per acre.

(2) Conversion of coppice with standards to High Forest

(i) Standards with an undergrowth of beech which with the admission of more light will grow up and fill the gap created by removing the standards are to be lopped in order that they may be felled without damage to the coppice.

(ii) Standards which have no beech underneath them but which are spoiling surrounding vigorous coppice are to be pruned back to allow the converted coppice to grow up.

These standards will be finally removed when the converted coppice is thinned for the first or second time and the pruning can, therefore, be comparatively severe. Strict accounts are to be kept of the cost of pruning and of the value of the resulting material. The operation should, as a rule, pay for itself by the produce obtained.

Coppice is, where possible, to be converted to high forest rather than clear cut. The coppice which is not worth converting is that consisting chiefly of hazel or birch.

Such coppice, however, frequently contains groups of ash, oak or beech and where these groups extend to  $\frac{1}{2}$  acre or more they are to be converted to high forest when the remaining coppice is cut, provided always that the groups are not in exposed places (in which cases they "go back").

id. R.L.R. 21.1.14."

The 1914 - 23 Working Plan prepared by G. H. Crosfield gave the following description of the growing stock:-

"The total area of 3,219.5 acres may be classified as follows:-

Coppice Areas	2,329.7
Conifer Areas	832.4
Unworkable Areas	32.4
Blank Areas	<u>25.0</u>
	<u>3,219.5</u>

The following table shows the areas classed according to ages:

Summary of Age Classes 1914

Description	1-10 acres	11-20 acres	21-30 acres	31-40 acres	41-50 acres	51-60 acres	Total acres
Coppice unthinned	100.7	307.3	1070.3	137.4	-	-	1615.7
Coppice thinned	-	.5	91.2	622.3	-	-	714.0
Total	100.7	307.8	1161.5	759.7	-	-	2329.7
Conifers	548.5	25.0	-	3.8	36.2	218.9	832.4
Total	649.2	332.8	1161.5	763.5	36.2	218.9	3162.1

In addition there are:-

Unworkable Area	32.4
Blank	<u>25.0</u>
Grand Total	<u>3,219.5</u>

The coppice woods occupy an area of 2,329.7 acres and the stocking very generally is complete.

The principal species is oak but in many cases crops occur with a high proportion of hazel, beech, birch and ash. Coppice grows well in this locality, even the beech coppicing prolifically. The coppice grows up very fast for some years, but after about the twentieth year a considerable falling-off occurs unless thinnings are instituted. Hazel coppice which does not respond to thinning, tends to die off about the 20th year, and should then be recoppiced. Over the greater part of the coppice area standards are to be found, generally oak, but sometimes ash, cherry and beech. The standards largely enhance the value of the coppice where they occur, but owing to their very large spreading crowns are difficult of removal when it is desired to thin the coppice, and when removed they leave the coppice that was beneath in a very weakened condition.

From the time of the acquisition of these woods by the Crown in 1901 up to October, 1914, some 714 acres of this coppice were thinned with a view to conversion into high forest.

The thinning of the coppice has been uniformly successful in producing a material which is saleable, but the results vary

with the nature of the coppice. Pure oak coppice appears on these soils to grow rapidly for a few years only after thinning, and then to come to a standstill. Where, on the other hand, there is a good proportion of beech and the stools are sound, there appears to be no reason why the crop should not grow on to form larger timber.

The large number of small groups of conifers scattered through the thinned coppice are for the most part either completely suppressed or in danger of immediate suppression.

The coniferous woods occupy an area of 832.4 acres of which 573.5 acres are young mixed conifers formed since the purchase of the estate, and the rest larch more than 30 years old.

The young coniferous plantations generally are in good condition. In certain cases, however, where the crop has been established among coppice stools the shoots from the latter have been allowed to develop too freely and the young conifers are in danger of suppression. There has been a tendency also in laying out the planting, to employ species and mixtures of species which are not altogether satisfactory. This remark applies particularly to the extensive use of Scotch pine and spruce on soil much better suited to the more valuable species, larch, oak and Douglas fir.

The old coniferous woods are healthy on the whole, larch blister not being very prevalent, but the woods have suffered through neglect to thin regularly. No thinnings, properly so-called, have been made in the larch woods since their purchase by the Crown and probably none were made for some years prior to that date. As a consequence of this the trees are deficient in crown formation, and the proportion of whips is high. The best crops are those which have an underwood of grown up coppice beneath them. Here the larch are wider apart, the crowns are better developed and the boles have good length and diameter. When planting larch in the future it would be advisable either to plant beech

in with it, perhaps up to one tenth of the crop, or to plant the larch pure and underplant with beech after the second thinning."

Crosfield amplified his description of the coniferous woods by this account of the results of the 10 years experience already gained:-

"The larch grows rapidly under practically all conditions; when given ample growing space it is remarkably free from canker. On land formerly under agricultural crops it shows a tendency to become foul at the root towards middle age, and it is quite likely that it may not be possible to grow the tree on a long rotation.

Spruce has not been grown in dense crops and it is difficult to predict its behaviour. It is possible, however, that it is just outside its natural climatic and soil conditions in these woods, and extensive planting on the lines of the past 10 years is not to be recommended.

Corsican pine grows very well in the early stages and should prove of great value on these upper slopes which are too exposed for larch and Douglas fir and too dry for spruce.

Scots pine does not do well. The tree suffers very considerably from damage by wet snow during middle age. The timber produced is consequently very rough, and contains, moreover, little heart-wood.

Douglas fir: The green variety grows with very great rapidity and appears to be quite at home. The blue variety is slower growing and suffers considerably from late frosts.

Sitka spruce promises well, but sufficient experience has not yet been obtained to state very definitely how this species will behave.

Japanese larch grows very quickly outstripping the European variety. Until further experience has been obtained as to its growth after youth, its replacement of the satisfactory common larch is not warranted.

Various conifers - such as Cupressus macrocarpa, Chamae-cyparis lawsoniana, Pinus banksiana and others



all grow very well.

The oak of which the sessile variety predominates, grows with fair rapidity and produces timber of good quality.

The beech grows very rapidly and reproduces itself well from coppice stools.

The ash flourishes particularly well in the moist valleys and on the limestones and produces timber of excellent quality.

Various broadleaved species such as birch, alder, lime, cherry, field maple and hazel grow luxuriantly throughout the coppice woods."

His views make interesting reading in light of the further experience gained in the past 40 years. Unfortunately, many of the conifer plantations on which his views were based were felled during the 1939-45 war and little or no information on their then condition remains. At this point it is perhaps sufficient to say that from recollection the European larch and Scots pine plantations were not of high quality, while Norway spruce, Sitka spruce and Douglas fir had thrived and Japanese larch was still ahead of contemporary European larch. This recollection is supported by the present condition of the 1914 and subsequent plantings of which sufficient examples remain after the war time fellings to confirm that Norway spruce, Sitka spruce and Douglas fir are all well suited to Tintern condition, e.g. Bargains, Pont-y-saeson, Barbadoes Wood and also that Japanese larch has made better growth than the newer European larch, e.g. Barbadoes Hill, the Fedw etc.

The objects of the 1914-23 Working Plan were

- (a) to obtain the highest possible financial results consistent with a sustained yield and
- (b) to provide suitable material for the local wood working (turnery) industries and
- (c) to maintain the aesthetic beauties of the Wye Valley.

To achieve these objects the plan provided for a Coppice Working Circle dealing with 430.8 acres of 0 - 40 years old coppice with

standards to be cut in annual coupes of about 21½ acres on a 20 year rotation. The remaining area of 2,788.7 acres was placed in the High Forest Working Circle and consisted of all the conifers of various ages together with coppice already undergoing conversion and all thrifty coppice suitable for conversion.

The Working Plan was put into operation forthwith and despite the outbreak of war in 1914 and the activities of the Timber Supply Department in the ensuing four years, prescriptions for thinning, conversion and clear felling were fairly closely followed. Conversion of coppice to high forest contributed fairly substantial supplies of saw timber to the war effort for about this time many areas were undergoing second and third thinning and the removal of old standards was accelerated. Many of these trees were massive with large spreading crowns occupying a disproportionate amount of ground and frequently had below, sturdy beech capable of being stored to give a good understorey. In the selection of coppice stems oak was given preference for the upper storey with ash co-equal on suitable sites. Large beech already in the upper canopy were accepted but more encouragement was given to this species as a second storey. The reduction of stems on a stool was a gradual process, care being taken to keep the crop generally dense.

It is recorded that the main operations carried out under the 1914-23 Working Plan were as follows:-

<u>Operation</u>	<u>Prescribed</u> acres	<u>Completed</u> acres
<u>Clear Felling</u>		
Hardwoods	520	377
Conifers	80	78
Coppice	215	185
<u>Thinning</u>		
1st Th. Hardwoods	895	622
2nd " "	502	432
Conifers	420	690
<u>Replanting</u>	600	490 + 384 acres additional on Trelleck Common.

By far the greatest part of the produce resulting from these felling and thinning operations was sold as pitwood, while the small material from the felled coppice woods was sold to local industries such as the turnery works in Tintern and Llandogo.

Such of the old larch as was sold as timber in the period 1915/1918 brought from 1/1d to 1/4d per cu.ft. at stump. Saw timber oak yielded from 11d to 1/8d per cu.ft. according to Q.G. category, cleaving ash (about 6 in. - 8 in. q.g.) sold for 1/- to 1/2d per cu.ft., but beech seldom brought more than 6d to 9d per cu.ft.

The bulk of the pitwood, cut to 4½ ft. 6½ ft. and 9 ft. was sold into the Forest of Dean coalfield and in 1918 the price rose from 45/- per ton f.o.r. to 47/6d per ton f.o.r. Piece work preparation costs at that time were 4/6d per ton plus 12/- per ton for hauling and putting on rail. Cogwood was made for 6/4d per cord and sold for 10/- per cord or 25/- per ton f.o.r. Much the same prices applied to lagging wood but the cordwood piece work rate was 4/8d per cord and the selling price 8/- per cord (5/- when sold to Crown workmen as firewood for home consumption).

Towards the end of the 1914-23 Working Plan period, supervision of the Forest was being carried out by Forestry Commission Officers, and on 1st April, 1924, Tintern passed officially into the Commissioners' control. The policy then adopted was to continue, and if possible, expand the growing of hardwoods at Tintern and with this in mind the second Working Plan, covering the period 1924 - 1934 was prepared by O. J. Sangar.

At the date this Working Plan was prepared the area of the forest had been increased by sundry purchases, including Trelleck Common, to 3735.7 acres made up as follows:-

Existing woods	3464.8
Blank but afforestable	182.9
Blank and unworkable	31.9
Nurseries	11.0
Holdings	<u>45.1</u>
	<u>3735.7</u> acres

The following table shows the 3464.8 acres of woods by age classes. Discrepancies between this table and what could have been anticipated from the operation of the previous ten years are said to be due to a revision of acreages and areas and to fires.

Summary of Age Classes 1924

Description	1-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	Total
	<u>acs.</u>	<u>acs.</u>	<u>acs.</u>	<u>acs.</u>	<u>acs.</u>	<u>acs.</u>	<u>acs.</u>	<u>acs.</u>	
Coppice unthinned	336.3		458.4		57.3				852.0
Coppice thinned			589.3		427.8		92.1		1109.2
<u>Total</u>	336.3		1047.7		485.1		92.1		1961.2
Conifers	809.8	470.4	45.6	14.0	14.2	24.7	109.7	15.2	<u>1503.6</u>
<u>Total</u>									<u>3464.8</u>

It will be noted the area of unthinned coppice had been reduced to 852 acres. In the crop description this is recorded as mainly young, either not ready, or barely ready for conversion to high forest. The thinned coppice is described as having responded well to treatment and to be generally comparable to mixed oak/beech high forest, except for the presence of old standards, which in some areas were so numerous as to be of greater importance than the converted coppice.

Instructions issued in 1926 stressed that the second thinning was the stage at which considerable numbers of standards could be removed, but provided that in cases where

"the standards are of much greater importance in the crop than the coppice, they are to be accepted as the crop and they are not to be removed for the sake of the coppice. All beech below them should be preserved as soil covering."

Third and subsequent thinnings were thought to be the stage when the crop would be taking on the character of high forest and any standards not removed would have to be retained permanently in the crop. On the question of oak versus beech, always a problem because of the latter's better rate of growth, the ruling was:-

"The chief consideration now is to decide between individual beech and oak: dominant beech will be cut back for the sake of good oak, but the mixture should be retained as far as possible, up to one-tenth beech.

The canopy may be broken into a reasonable extent to encourage diameter growth but not so hard as to form a permanent break. All beech below the canopy should be carefully preserved as soil covering."

The 1924-34 Working Plan emphasised the importance of growing oak at Tintern and, therefore, all areas deemed suitable for the growing of oak high forest were placed in an Oak Working Circle. Areas already supporting crops of conifers, together with coppice areas deemed best suited to conifers were placed in a Conifer Working Circle and prescriptions prepared to complete the clearing of the unwanted coppice and replacement by conifers by about 1955. The Coppice Working Circle was greatly reduced but included areas subject to aesthetic considerations. Experience having shown that the 1914-23 Working Plan coppice rotation of 20 years was rather low for growing turnery material suitable for the local works, the rotation was extended to 25 years.

The 1924-34 Working Plan received official approval (subject to a few minor amendments) in February, 1926 and provided for the following total quantities of work to be done in the ten year period ending 30th September, 1934 -

<u>Conifer Working Circle</u>					
<u>Coppice</u>	Clear fellings	...	...	...	380 acres
	1st thinnings	...	...	...	200 "
	2nd and subsequent thinnings	...	...	...	520 "
<u>Conifers</u>	Clear fellings	...	...	...	60 "
	Thinnings	...	...	...	1050 "
	Cleanings	...	...	...	800 "
<u>Replanting</u>	(with conifers or ash)	...	...	...	527 "
<u>Oak Working Circle</u>					
<u>Coppice</u>	Clear fellings	...	...	...	54.1 "
	1st thinnings	...	...	...	87.4 "
	2nd and subsequent thinnings	...	...	...	334.2 "
<u>Conifers</u>	Cleanings	...	...	...	31.0 "
<u>Replanting</u>	etc. with Oak	...	...	...	56.0 "

Coppice Working Circle

Coppice                      Fellings                      ...                      ...                      ...                      52.5 acres

Miscellaneous

Hedge Laying                      ...                      ...                      ...                      1,500 chains

Fence Repairs                      ...                      ...                      ...                      2,500 "

PERIOD 1934 - 1951

The 1935-44 plan was prepared by A.H. Popert, then acting Deputy Surveyor of the Dean, but the 1939-46 war badly disrupted it. The forest totalled 4697.6 acres at 21.10.34, distributed as follows:-

(a) Existing woodland	3843.0	
(b) Scrub	52.2	(Unworkable - included in Aesthetic W. Circle)
(c) Blank	335.4	All afforestable
(d) Nurseries	22.0	
(e) F.W. Holdings	89.0	
(f) Agricultural (Farms)	356.0	
Total .....	4697.6	

The area a, b, c, d, increased by 550.6 acres over the previous plan. This increase was made up as follows:-

<u>By Purchase</u>	High Glanau Estate	328.0	acs.
	Crumblands Plantation	77.0	"
	Priory Park, Llandogo	23.4	"
	Woodlands with F.W.H. at Whitebrook	9.2	"

By transfer from Office of Crown Lands

23.0 "

By Lease      Ninewells Wood      76.0 "

Nurseries      Nurseries planted or to be planted      14.0 "

Total ... 550.6 "

Past Treatment 1924 - 1934

By 1934 the area of unthinned coppice had been considerably reduced, and it was decided to abandon the concept of a coppice working circle owing to the falling off in local demands, and instead have a Conifer, Hardwood and Aesthetic (Amenity) Working Circles. Thinned coppice had improved immensely during the period and was being accepted into the hardwood Working circle. Conifers over 30 years had suffered a severe setback in the disastrous Beacons crown fire of 1933, when a large area of this age class was destroyed. Conifers under 30 years had improved immensely during the same period. Fellings and thinnings had generally fallen behind however, mainly due to low prices, when crops had been left untouched, presumably in hope of a change in

market values. The only operation which showed an increase over the prescribed amount was planting, this being mainly due to work carried out on land acquired subsequent to 1924 (nearly 300 acres).

#### Objects of Management and Prescriptions

These remained practically the same, except that the third object of maintaining a supply of coppice material for local industries had ceased to be of great importance, as only one business, at Llandogo, remained. In view of a general instruction that oak was to be grown wherever possible the Working Circles were reconstituted and large areas of former Conifer Working Circles were transferred to the Broadleaved Working Circle (355 acres of new acquisitions and 795 in the old woods). In the Broadleaved Working Circle itself several areas of unthrifty oak coppice were scheduled for replacement with beech.

The Broadleaved Working Circle was intended to produce oak wherever possible, aiming at a 30' butt length of 15" Q.G. and upwards. The Conifer Working Circle comprised all areas unsuitable and impossible for Hardwoods and a rotation of 80 years was laid down.

The aesthetic Working Circle not only included amenity areas but also areas of very bad access (Wyndcliff area). These were only to be dealt with on a selection felling basis.

#### Subsequent Work

This plan was apparently incomplete, and a set of very brief compartment descriptions (unsigned) for 1939 exists. On the outbreak of war on 30.10.39 Tintern was ransacked for timber, and silvicultural operations reduced to a bare minimum. The buildings at the "Wire Works" were taken over by the Home Timber Production Department in 1941 and used until 1946 as a sawmill and ash Handlemaking Works (see page 9). By the end of the European war (1945) some 913 acres had been clear felled,



and this coupled with manpower and supervision restrictions, seriously upset any pre-war planning.

By 1947, replanting of the felled areas had proceeded apace, "often without regard to the defined Hardwood and Conifer Working Circles, and not always with adequate regard to a sound choice of species"\*. In addition "Since the war the management of the woods had deteriorated substantially ..... during the previous decade or so the conduct of normal essential silviculture and protection had been permitted to fall to a low degree of efficiency". Weeding, cleaning, thinning and roads upkeep was well behind schedule, and in 1947 a new plan was prepared by G.B. Ryle, the then Divisional Officer, for the period 1948 - 57. In this plan the main object was to retrieve the war years by a vigorous schedule of maintenance work, with very little felling and replanting. Ryle was distressed at the build up of the Conifer Working Circles and laid it down that no areas in the Hardwood Working Circle were to be planted with Conifers without the Conservator's written approval. He made provision in the general prescriptions for amenity, and abandoned the Aesthetic Working Circle, most of its area going into the Hardwood Working Circle. Oak was to be the favoured hardwood and ash where suitable. Beech only to be used on more exposed upper slopes, or for underplanting. The use of conifer nurses was frowned upon. Of the conifers, European larch was to be used only on the more favourable sites, where again it was likely to be displaced by oak. Douglas Fir was not approved for future planting, except on a small scale in the most suitable pockets. Corsican pine for the drier sites, and Sitka spruce and Norway spruce for wetter sites were approved, but Japanese larch was not regarded as having any future at Tintern apart from the introduction of a quick weed-smothering crop, to be cut out as soon as its job had been completed.

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\* 1948-57 Working Plan for Tintern Forest by G.B. Ryle.

### Area of Forest

The area of forest in 1948 was 4691.5 acres, mainly acquired by purchase or transfer from the Crown. Approximately half of this was under hardwoods. The figures are as follows:-

Forest Land	4283.6	acres
Nurseries	21.5	"
Agricultural	288.9	"
Forest Workers' Holdings	95.0	"
Other (Mill, ponds etc.)	2.5	"
Total ....	<u>4691.5</u>	"

Subsequent to the beginning of the 1948 Working Plan period, the forest administration was fixed at 3 beat Foresters, North, Centre and South and one Nursery Forester, for Fair oak and the Heathland nursery strips at Trellech and Broadmead, laid down about that time, centralising the whole under a Head Forester with three clerkesses, at the Crown Office, Tintern. The sawmill was kept on to deal with the conversion of awkward material unsuitable for selling as round timber, mainly into material for Forestry Commission estates purposes. A gate-maker and cleft-ash-handle maker were also installed at the mill, plus a mechanical repair bay, covering Chepstow District and parts of two other districts. The whole came under a non-resident District Officer, based on Chepstow, who also covered the Monmouthm Chepstow (Chepstow Park and Itton amalgamated), Wentwood and Nethergwent Forests.

The 1948 Working Plan is now (1956) under revision.

## History of Tintern Forest

### APPENDIX I

#### Notes from Inspection Reports

##### 30/31.12.25. Technical Commissioner (Mr. R. L. Robinson)

The Technical Commissioner was of the opinion that not enough attention was being given to the conduct of thinning work both in the young coniferous plantations and in the coppice woods which are being converted to high forest. There was a tendency to remove only material which could be readily sold and to ignore cleanings and thinnings in some stands which were urgently in need of treatment. With regard to the thinning of coppice for conversion to high forest and more particularly the removal of oak standards, he was concerned that those in charge of Tintern should know not only the present approved thinning methods but also the successive steps by which the method had been evolved.

The Deputy Surveyor, commenting on the Technical Commissioner's report on his visit, noted that for some time there was a rule operative in Tintern that nothing should be cut without a definite order for the produce which on the face of it was sound economically but was liable to be inimical to sound silviculture and sound forest management. It prevented the waste involved in cutting material for which there was no market, but tended to give marketing precedence over silvicultural considerations.

##### 15.6.31. Note by the Technical Commissioner

There are two objects of management which may come into conflict:

- (a) To tend the crops
- (b) To dispose of produce

As regards tending, there are certain operations which are essential to the proper development of the crop. These are on no account to be left undone whether they are remunerative or not. Into this category fall such operations as weeding new plantations and thinning young larch plantations.

As regards the disposal of produce, it is a matter of judgment, except in so far as the produce may result from essential tending operations, as to when material shall be marketed. The delay of a year or two or

anticipation in a final felling may be of far less account than temporary variations in market prices.

Generally, where there is a conflict, the final well-being of such plantations as we already have, should take precedence over such temporary considerations as annual planting programmes.

#### 4.8.32. Chairman (Sir Roy Robinson)

The Chairman commented on the arrears of conifer thinnings shown on the 1929 forms and broadleaved thinnings in the current year and said that conifer thinnings should be brought <sup>up</sup> to date and kept going even if the produce was unsaleable at present and that the same principle should apply to broadleaved thinnings though more latitude was permissible with the latter.

The older Japanese larch and European larch in Compartment 79B which have not yet been thinned should be treated as soon as possible, the Japanese larch particularly.

In Compartment 82, the Sitka spruce appears to have been attacked by Armillarea but is recovering. The trees look healthy above the canker.

The Chairman said that when coppice is being cut back off planted areas, it should be cut back hard so as to give the plants plenty of room - the coppice should not merely be trimmed - and 1 + 0 beech might be notched in at about 600 plants per acre under the older larch woods.

The Chairman inspected the plantations on Trelleck Common, and expressed the opinion that an area of checked Sitka spruce in Compartment 147 would come away if lifted in the sods; this should be done this winter.

#### 20/21.4.33. Chairman

A fairly extensive and detailed two-day inspection was carried out and reported on. The Chairman's minute on the report of his inspection is given below:

"I frequently find at Tintern areas which are disappointing, the reasons, generally, being neglect (though not necessarily recent neglect). I think this has arisen because supervisory officers have been content to assume that things are proceeding satisfactorily, or have not actually inspected plantations in a systematic way. On the other hand, money has been wasted pruning small trees - the reason I understand being to provide

work in bad weather.

It is essential that the District Officer should know his woods intimately and compile in the course of his inspections a reference list of work which requires to be done and the order of urgency. Only in this way can he be sure that there is no neglect on the one hand and no wasteful expenditure on the other."

1.3.35. Chairman

The beating up of a five years old oak plantation was condemned as unnecessary in view of the close planting and the abundance of secondary species, and as bad practice because beech had been used.

The thinning in various coniferous stands was inspected. The larch plantations in particular were regarded as approaching a highly satisfactory condition.

The Chairman minuted as follows:

"Note on the organisation of thinning work

It is highly desirable to map the woods into a series of thinning units which are gone over systematically and in due order. Within such units there are bound to be (under the system of planting formerly adopted) areas which require intermediate thinning. These areas should be noted at the time the general thinning of the unit is made and arrangements made to give them "extra" thinning. The need for this special treatment will gradually disappear".

1.6.36. Chairman and Commissioners

The Chairman explained the general policy that had been followed at Tintern since 1912. The woods had been originally coppice woods, mainly of oak and beech with oak standards. It was decided that the best of the oak coppice should be thinned and allowed to grow on to timber size, the poorer coppice was to be gradually cut down and the areas on which it was growing were to be replanted with conifers (the plan of replanting the better soils with oak instead of conifers was started in 1924). Fedw Wood had come into the category of poor coppice and the result of successive plantings of conifers, the earliest dating from 1912, was seen. The conifers planted were European and Japanese larch, Douglas Fir and Norway spruce. The nature of the original coppice could be seen from

the belts which had been left here and there for sheltering the young conifers from the wind and for fire protection.

The Chairman explained that the coppice higher up the slope in Hale Wood was one of the areas considered fit for conversion to high forest by thinning. The problem in 1914 was what to do with the large branchy standards which were spread over the surrounding coppice. Three plots were laid out to test three different plans. In the first the standards were removed; in the second they were heavily pruned of lower branches, and in the third they were left untouched. In the plot where the standards had been removed, the gaps were filled up with beech coppice so that it was difficult to see where a standard had been taken out ..... Remarking on the growth of oak coppice in Compartment 91 below the Duchess Ride, the Chairman thought that parts appeared to be worth converting to high forest.

24/25.7.37. Chairman

A discussion took place on the subject of pruning, which is not at present done as a matter of routine but is done in the best plantations. The Chairman encouraged the practice of pruning and said that the cost could be kept down by starting the pruning before the trees grew too big, by not carrying it unnecessarily high up the tree and by selecting the finer rather than the rougher trees for pruning.

The Chairman hoped that as thinning of the conifer stands in Upper Hale Wood proceeded, natural seedlings of beech and perhaps of Douglas fir would appear under the larch. Many of the more open Japanese and European larch plantations would benefit by the introduction of beech.

Chairman's note of 15.8.37.

"Regeneration of coppice to Hardwoods

The method employed in the last two years has been to cut strips 20' wide at intervals of 20 ft. through the coppice which is 12-15' high. The cleared areas have been planted up with beech and ash group-wise and the ground kept fully weeded. In some places larch have been added. They will become an unnecessary complication from the weeding point of view and should be omitted in future.

The "take" of both beech and ash seemed good and the growth of ash where hoed and manured with ammonium sulphate very good. No frost affects were seen.

The skill in this type of regeneration lies in the weeding. The coppice re-growth must be so regulated that it nurses but does not choke the ash and beech. A heavy, probably a full, weeding is necessary in the first year after planting, preferably just after the main risk of late frost is over. This is to assess the "take" preparatory to beating up the following planting season.

Thereafter the weeding should be in the autumn so that the young plants get the full nursing effect. In this sort of work it pays to use large stout plants and to plant them well.

The unplanted strips cannot safely be cut until the first ones are well away and by that time the coppice in them may well be too tall to deal with economically by clear cutting.

In a general way I would far prefer to introduce the new crop under tall coppice and lighten the canopy as necessary. Where ash is wanted as well as beech it should be planted in groups and, other things being equal, in blank spaces in the coppice. The usual mistake is not to lighten the canopy over beech quickly enough. Hazel is sometimes a nuisance owing to the spread of the clumps which should be thinned out heavily right from the beginning. If there is birch it should be thinned so that the best trees can be left, if necessary, to grow to timber size."

#### 12.11.38. Chairman

The Deputy Surveyor explained that the poor market for larch timber had made it impossible to clear fell any larch for several years. The poor market for beech pitwood and timber was the cause of arrears both in clear felling and in thinning the coppice. The whole subject of markets needs investigating.

#### Chairman's Minute:

Possibly the most urgent question is the disposal of produce and especially larch (for which low prices have been offered in recent years) and beech (too large for pitwood) which has been more or less unsaleable. I understand that for those reasons thinnings have been delayed, in some cases for several years.

23.3.41. Chairman

Trelleck Common. Thinnings in P.22 Japanese larch in Compartments 143 and 145 should be made as heavy and frequent as possible with the immediate object of eliminating disease and ice damage.

25.4.43. Chairman

The Beacons. Compartments 104, 105, 110 and 111.

The European larch and Japanese larch P.34 showed a marked difference in their development. The Chairman remarked that this area was formerly planted with Scots pine which was responsible for weevil attack during the first three years of their growth. He also commented on the unsuitability of growing larch on this site where Corsican pine showed every indication of being a more suitable species.

25.6.45. Chairman

Crumblands. Groups of oak nursed with European larch were inspected. No material benefit could be detected from the use of larch as a nurse and planting oak with larch was in future to be discontinued.

Chairman's note - Easter 1947

"Here are two silvicultural problems to which considerable attention was devoted during the tour.

- (1) Oak Plantations. The best plantations (they are very good) are those formed by pure planting, closely spaced, with seedlings; the worst plantations (they are often very bad) are those employing larch nurses in intimate mixture with the oak. The simple, straightforward method is the best, the only necessary precautions being protection against grazing and weed growth. I doubt whether it is necessary to plant so densely as has been the custom, and I believe that perfectly good oak plantations could be secured by 4'6" x 3' planting provided there is adequate protection against weeds and grazing.
- (2) Ash (and Sycamore) Plantations. (Ash and Sycamore are grouped together owing to their similarity). Our success with these species in plantations is very low and clearly we do not yet know how to handle them for efficient timber production. In spite of this we have gone on planting them pure on an extensive scale (Monmouth



Forest). Even in small groups in coppice (Fossydd Orles) and in dense natural regeneration (Itton) the individual ash (sycamore) stems leave much to be desired after 10 or so years' growth

Three things are fairly clear to my mind:

- (1) Neither species is gregarious and will reach its best development only when sparsely mixed into other species - which species we have yet to find out.
- (2) Artificial pruning of green branches (forked leaders) will be necessary and should be done as soon as a selected stem forks.
- (3) Having got a reasonable length of straight stem it is essential to build up a large crown as quickly as possible.

We know so little about the silviculture and rate of growth of this valuable species (Ash) that there is a wide field for investigation.

28.9.47. Chairman, accompanied by Chancellor of the Exchequer  
(Rt. Hon. Mr. Hugh Dalton).

An inspection was made of the P.22 and P.23 Japanese larch in Compartment 37. The Chairman remarked on the fact that the thinning of the P.22 Japanese larch had been too long delayed. This had resulted in increased height growth but loss of diameter increment. It was noticed that the P.23 Japanese larch was rather stouter in girth than the P.22, probably due to the wider spacing between the stems. The Chairman thought it time that a first thinning was given to the P.30 European larch in Compartment 37, but when the considerable amount of overdue thinnings were pointed out, he agreed that there was no alternative but for some plantations to wait a year or so. The view was expressed that, in general, too much larch had been planted. In the Chairman's opinion, more use should have been made of Douglas fir and Corsican pine and he remarked that "after twenty-five years practice by the Forestry Commission in these woods we should, by this time, have an entirely new chapter on the selection of species for future replanting. Larch should not hold such an important position as heretofore."

16.4.49. Chairman, accompanied by Lord and Lady Jowitt

The P.22/23 Japanese larch in Compartment 37 had been thinned since the Chairman's last visit. He thought that the current annual increment at this stage was probably low and he suggested that the crop would be fit for underplanting after two more thinnings. Satisfaction was expressed on the progress being made to overcome delayed thinning. He was informed that softwood thinnings would be up to date by the end of the Forest Year. It was hoped to overtake the arrears of hardwood thinnings by the end of the following winter

30.11.50. Director, Wales (Mr. A. P. Long)

Attention was drawn to the small stand of Auracaria in Compartment 89. It was not known how this species, which was growing under a pole sized plantation of ash and beech, was introduced. It was decided that the Auracaria was much older than it appeared. It was considered advisable to give the hardwoods a normal thinning and not to favour the Auracaria although some would probably survive. Subsequently the Chairman minuted as follows:-

"I think I can throw some interesting light on the Auracaria plantation in Compartment 89.

One afternoon in the late summer of 1912 or 1913 Mr. Crosfield and I were looking at the two Auracarias which stand in front of the Beaufort Hotel. One of them was covered with cones and I took my stick and, by a lucky cast, hit one of the cones which immediately broke up and scattered seed on the ground. We decided to gather it up and, rather as a joke, to make an Auracaria plantation. I never saw the plantation but feel that this must be it. In view of the foregoing I would like special steps to be taken to get a few, at least, of the Auracaria into the main crop."

April 1951. Commissioners' Tour

The treatment of the hardwood areas was discussed and it was agreed that it was proceeding very much as was envisaged when the work was started about forty-five years previously. Variations in the age and proportions of oak/beech in the stands made it imperative for each block to be treated on its merits.

The P.15 ash in Limekiln Wood (Compartment 16) was given full marks. The Chairman thought that sufficient height had been obtained and subsequent thinnings should aim at increasing diameter increment. In general it was agreed that promising young ash should be pruned and tended in order to yield "sports" ash. The P.20 Sitka spruce in Compartment 55 was seen and it was agreed that it would be a mistake to clear fell as requested by the Mycologist. Trees were dying very quickly and little would be learned of the progress of the attack if the stand was felled. Subsequently the treatment has been to extend the main gap created by the dying trees and species, chosen by the Mycologist, planted therein. The general opinion of the party was that the standard of thinning throughout the forest was on the light side. It was considered that this could lead to a repetition of the small crowns on the European larch in Compartment 81. Conservancy opinion was that light thinnings, in many cases, were dictated by the fact that the work was considerably overdue and it would be a risk to thin too heavily on the first occasion. The Chairman commented on the fact that Trelleck, in view of its early history, looked much better than he had expected. With proper thinning it should give a reasonable yield of timber.

The pruning of the P.13 Sitka spruce in Compartment 82 was discussed and it was generally agreed that pruning to a height of 32 ft. was not a practice to be generally adopted as 25 ft. was normally the greatest length of clear timber required by the market. The Chairman emphasized the danger of the removal of the lateral support of the branches which causes much movement and severe windblow in cases. In this compartment the Sitka spruce had been underplanted with Abies grandis and he considered that, in view of the good shape of the Sitka spruce and as the effects of windblow were less obvious, the underplanting need not have been undertaken, but in any event, it could have been left until much later in the life of the plantation. Attention was drawn by the Director General to the conversion of coppice to high forest in Compartments 52, 53, 58, 59 and 60. He pointed out that the treatment, although aiming at the same result, would naturally vary with the crop standing on the ground. The crop standing showed variation, particularly in the number of 100+ oak standards and the amount of beech in the underwoods. Conservancy argument was that every

sub-compartment of hardwoods under conversion treatment had to be thoroughly assessed before thinning. The wide variations in quality, age range and proportion of species call for different methods and degrees of thinning. In general, more attention is being given to understorey beech, but even in this direction activities are somewhat curtailed by the present desirability of retaining as much as possible of the mature oak.

## History of Tintern Forest

### APPENDIX II

#### Supervision

##### Office of Woods

- - Popert		1901 to 1912
R. L. Robinson (now Lord Robinson)		1912 onwards
G. H. Crosfield		1912 to 1919
<u>Head Woodman</u>	John Roberts	1901 to 1921
<u>Woodman</u>	William Howells	1901 to ?
	Lewis Williams	1901 to ?
	Fred Nelmes	? to 1914
	C. V. Squires	1914 to 1915 and 1919 to 1920
	G. W. Jones	1915 to 1920

##### Forestry Commission

###### Divisional Officers

W. H. Lovegrove	1920 to 1922
C. O. Hanson	1922 to 1930
D. W. Young (D/S Dean)	1930 to 1932
W. L. Taylor (D/S Dean)	1932 to 1933
A. H. Popert (Act./D. S. Dean)	1934 to 1936
A. P. Long (D/S Dean)	1936 to 1939
W. H. Guillebaud (Act./D. S. Dean)	1939 to 1941
A. D. Hopkinson (D/S Dean)	1941 to 1946

###### Conservators

R. G. Broadwood	1946
W. A. Muir	1947
G. B. Ryle	1947 to 1949
W. D. Russell	1949 to date

###### State Forest Officers

W. D. Russell	1947 to 1949
J. T. Fitzherbert	1949 to date

District Officers

O. J. Sangar	1922 to 1925
R. G. Broadwood	1924 to 1925
D. C. W. Ryder	1925 to 1926
L. A. Newton	1925 to 1926
R. G. Forbes	1926 to 1928
G. B. Ryle	1928 to 1930
A. H. Popert	1930 to 1934
N. A. Wylie	1934 to 1939
R. G. Streets	1941
J. A. Buchanan	1941 to 1946
R. E. Pallett	1947 to 1950
L. J. Slow	1950 to 1951
J. H. James	1951 to date

Head Foresters (in charge)

John Roberts	1920 to 1921
Frank Smith	1921 to 1923
F. Johnson (decd.)	1923 to 1925
J. Edwards	1926 to 1929
T. Lewis	1929 to 1947
A. Jones	1950 to date

Tintern

