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Forestry in the Weald

Kent, Surrey, Sussex and Eastern Hampshire

Cover picture by I. A. ANDERSON, Forestry Commission: View north-east from Queen Elizabeth Forest, near Petersfield, Hampshire, over the central Weald. Young woods of beech, with larch nurses, on the steep, chalk scarp slope of the South Downs. Red earth beyond is typical of the Greensand

Photographs from the *Forestry Commission Collection*, except for Figures 2, 5, 10, 18, 19, 20, 24 and 25 which are by Leonard and Marjorie Gayton

Geological map by Geological Survey, reproduced from *British Regional Geology: The Wealden District* (H.M.S.O. 1965, 6*s*.)

FORESTRY COMMISSION

Booklet No. 22

Forestry in the Weald

Kent, Surrey, Sussex and Eastern Hampshire

by C. A. BARRINGTON, B.A.

Conservator of Forests for South-east England

LONDON: HER MAJESTY'S STATIONERY OFFICE

1968

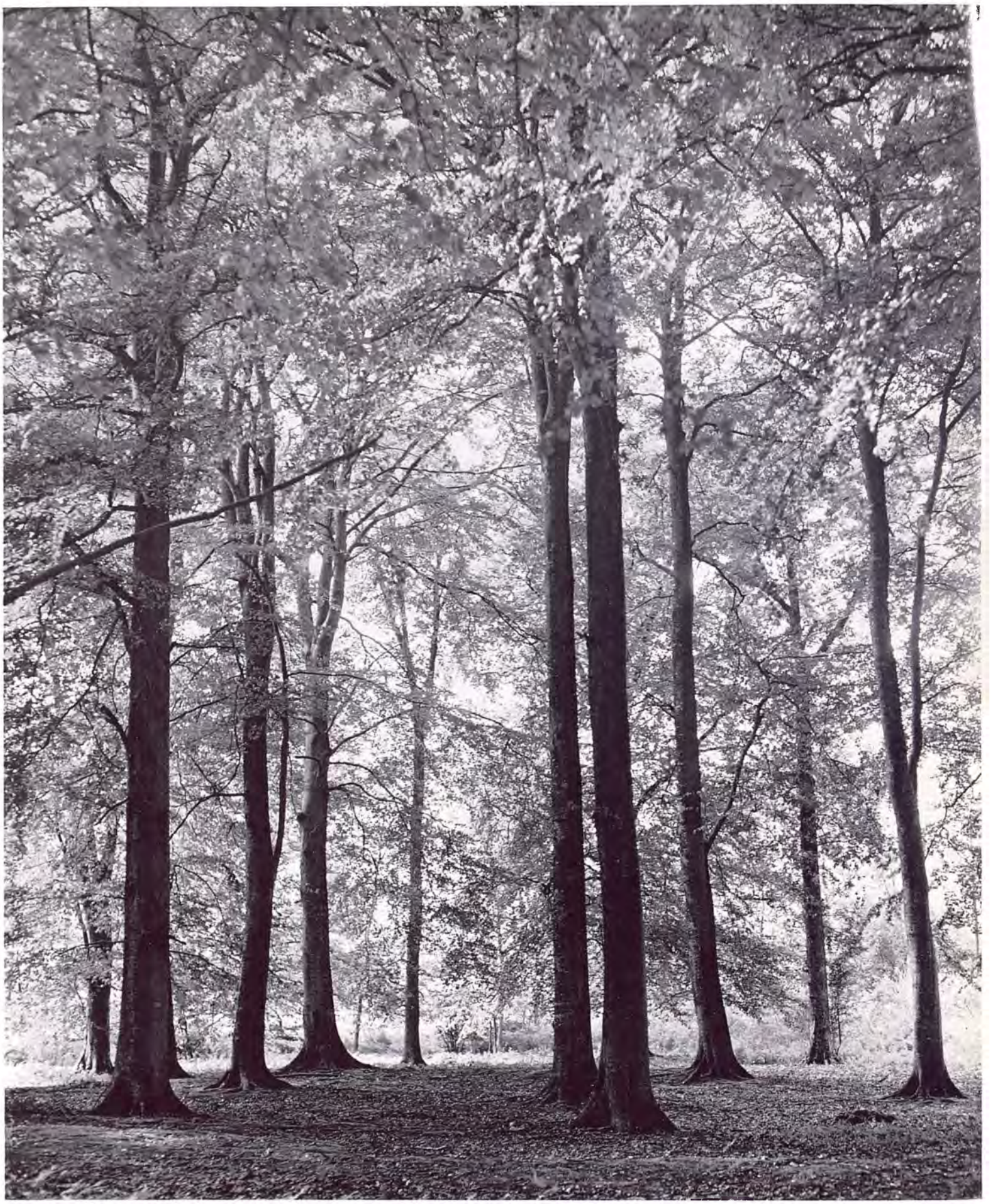


FIG. 1 Beechwoods at Slindon Park, near Bognor, Sussex, owned by the National Trust

Forestry in the Weald

This booklet sets out the natural setting of the woodlands of the Weald, a compact geographical region in the south-east of England, discusses their history and economic value, and aims to show how they can be preserved both as scenery and as a source of useful timber.

Woodlands in Relation to Geology

The Geological Survey, in their bulletin called *The Wealden District*, say that the Weald proper comprises the tract of land enclosed on the north by the North Downs, which extend from Farnham through Guildford, Wrotham and Wye to Folkestone; on the south by the South Downs, running from Petersfield through Steyning and Lewes to Beachy Head; and on the west by the Butser Hills near Petersfield and Alton. This is illustrated in the map on our centre pages. The Survey bulletin goes on to explain that, from a geological point of view, the Weald proper is continued across the Straits of Dover into the Bas Boulonnais, where a semicircle of chalk hills forms the eastern counterpart of the Butser Hills. This booklet deals with forestry in the Weald proper, as defined above, and also with forestry in the North and South Downs, because I do not think it would be sensible to think of the Weald proper in isolation.

FIG. 2 Scots pines on the Ashdown Forest Ridge near Wych Cross
A northerly view from mid-Sussex over the Low Weald towards the North Downs

Corsican pine in Alice Holt Forest, Hampshire
This mature crop, which stands close to Rowledge Church, near Farnham, Surrey, is one of the best in Britain

The Weald is, very roughly, 100 miles long from east to west and about 40 miles deep from north to south at its maximum. Six County Authorities are officially concerned with it, namely Hampshire, Kent, Surrey, London, East Sussex and West Sussex. The whole area comes within the Forestry Commission's South-East England Conservancy.

The soils of the area that we are discussing vary from the Chalk of the North and South Downs to sands and clays. The sands, known as the Ashdown Sand and the Tunbridge Wells Sand, are separated by the Wadhurst Clay. These three formations are collectively known as the Hastings Beds, and form the Forest Ridge or High Weald of Ashdown Forest in the middle of the area. This ridge is fringed on three sides—north, west and south, by a wide belt of Weald Clay, forming the Lower Weald.

FIG. 4 Sweet chestnut coppice
This unusual crop, characteristic of the High Weald of Kent and East Sussex, yields hop poles and pales for cleft chestnut fencing. Cut over every twelve years or so, it renews itself from stumps

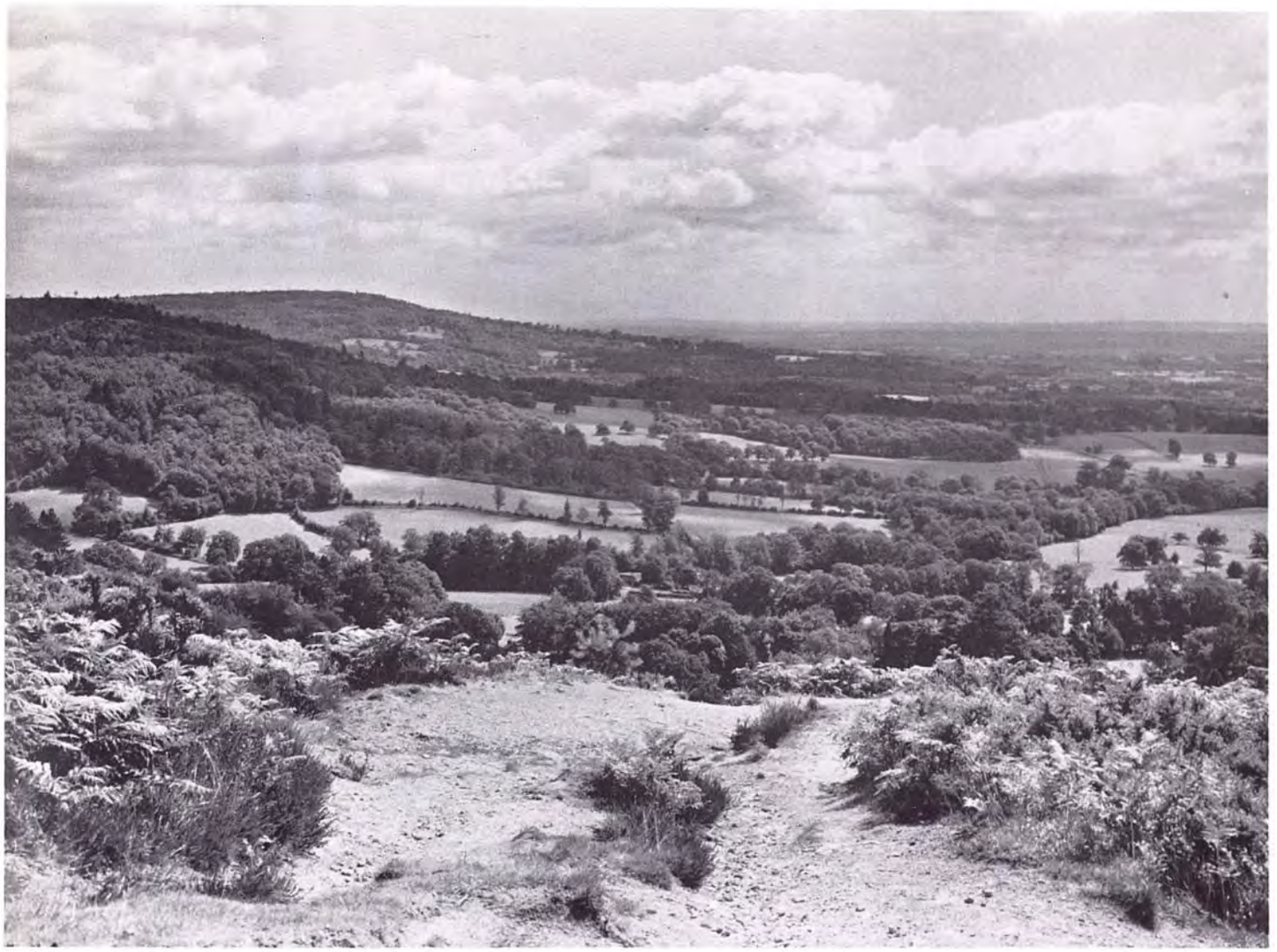


FIG. 5 Leith Hill, Surrey, seen from Pitch Hill
An eastward view over the Low Weald towards distant Ashdown Forest. Leith Hill, which at 960 feet is the highest point in South-east England, belongs to the National Trust. It forms part of the Northern Greensand Ridge, well wooded with Scots pine, birch, and beech trees

The Lower Greensand forms a bold escarpment on the northern and western edges of the Weald Clay and rises to nearly 1,000 feet at Leith Hill, Hindhead and Blackdown in Surrey. There is a narrow belt of heavy, bluish Gault Clay (overlying the Lower Greensand) which forms a valley between the heights of the Lower Greensand and the Chalk. The Upper Greensand forms a narrow belt between the Chalk and the Gault and is a very fertile soil of considerable agricultural value.

The Chalk outcrop of the North Downs forms a plateau and has an appreciable surface deposit of Clay-with-flints; the Chalk of the South Downs, however, just has a thin capping of loam. On the Chalk escarpments there is only a very sparse covering of soil.

Owing to this complicated geological structure the semi-natural woodland of the Weald varies considerably; in contrast, for example, with the Chilterns where there is a much greater uniformity in geology and woodland characteristics. Beech dominates on the Chalk, and oak, with hazel or hornbeam coppice, the Clay-with-flints. Birch and pine regenerate naturally on the heath soils of the

Lower Greensand; and slow-grown oak, again with an under-storey of coppice, has long been dominant on the Weald Clay.
On the Forest Ridge Sands of the Hasting Beds the woodland is birch, pine and slow-grown oak; this tends to a much better type of oak on the Wadhurst Clay. Gault clay also carries a natural crop of oak with hazel coppice. The exotic chestnut coppice, which was introduced as a system of management about 1880, grows satisfactorily on the Hastings Beds, but the best type of chestnut coppice is found on the Clay-with-flints.

Historical

The forest resources of the Weald have been of great economic importance to this country from the earliest days. The Saxons, who called the Weald 'Andreds-

FIG. 6 A thriving plantation of Japanese larch on the Redleaf Estate, near Penshurst, Kent
This quick-growing conifer gives early yields of rustic poles from thinnings, with later crops of pit props and strong saw timber from mature trees

FIG. 7 Douglas firs five years after planting; on fertile soil this American conifer grows fast and gives high yields of strong softwood timber. Note the rabbit-proof fencing

weald' and later the Normans, who named it 'Sylva Andrea' and referred to it as a 'wooded waste', obtained from it timber, charcoal and oak-bark for tanning, and, of course, fuelwood.

During the Middle Ages the management of the oakwoods as coppice-with-standards was established. This resulted in what is known as an 'open canopy' oakwood, consisting of short, spreading trees with a continuous coppice layer below. The oak, which of course was grown commercially, as it was by the Saxons and the Normans (there is nothing new about commercial timber production), yielded short planks and curved timber for ship-building, just exactly what is *not* wanted today. The coppice, which was usually hazel or hornbeam, was in great demand—especially in the Weald itself—for smelting the iron ore of the then industrial south. Again, a market that has completely disappeared today.

The coppice-with-standards system of forest management has been of very great

economic significance in the Weald, where it has been ubiquitous, from the Middle Ages right up to about the time of the Second World War. Indeed, the coppice part of it was at one time so profitable that as long ago as 1544 a statute was passed requiring 12 standard trees to be spared in each acre of woodland—so eager was the Forest Authority of the day to sustain the production of commercial timber.

Modern Management

Now, alas, there is little demand for hazel or hornbeam coppice, or for what the timber trade today somewhat contemptuously refer to as 'scrubby oaks'; that is the poor quality (by today's standards), short-stemmed oak trees, with spreading crowns, which for many centuries the nation so desperately needed for building warships. There is, however, still a keen demand for good quality chestnut coppice, which is usually cut on a 14- or 15-year rotation. To obtain best quality, the coppice must not only be grown on the most suitable soils, such

FIG. 8 Bedgebury Pinetum, near Hawkhurst, Kent
A national collection of useful and ornamental coniferous trees, maintained jointly by the Forestry Commission and the Royal Botanic Garden, Kew, and open to the public. A ride between slender cypresses and an exceptionally fine native oak

FIG. 9 Oakwood at Gravetye, near East Grinstead, part of Maresfield Forest, in East Sussex
These trees were sown as acorns by William Robinson, the famous Victorian gardening expert who left these woodlands to the Forestry Commission

FIG. 10 Chanctonbury Ring, near Worthing in West Sussex
Beeches planted as a hill-top 'folly' by a private landowner over 100 years ago. A view from the South Down scarp north-east over the southern Low Weald

as the Clay-with-flints, but it must also be grown as pure coppice, and not under the harmful shade of standard trees. The chestnut coppice industry, which is a relatively modern one, is peculiar to this corner of England; its produce is used for cleft chestnut pale fencing.

With the final disappearance of the coppice-with-standards system of management, hitherto so extensively practised in the Weald, there remain four main methods of woodland management.

Firstly, Clear Felling followed by replanting.
Secondly, the Group System, which entails the felling and replanting of small groups in a wood: this, really, is the clear-felling system on a small scale.
Thirdly, the modern Shelter-wood System, whereby a wood is heavily felled over but enough poles below about 8 inches diameter are left scattered over it to provide a canopy for replacement by underplanting.
Fourthly, the Selection System, which entails the felling and replacement of individual trees as they mature in an uneven-aged wood.

FIG. 11 Hornbeams in Great Wood, near Cobham, Kent
This unusual tree is native only to the south-eastern counties. Its exceptionally hard timber is used for butchers' chopping blocks

FIG. 12 Mixed crop of Scots pine and beech on the South Downs at Marden, Slindon Forest, West Sussex
The pines will be thinned out later, to let the beech develop to full size and maturity

This last system is seldom practised today, mainly because it requires a high degree of skill to carry out, and industrial demand is usually for a large number of even-sized logs of one species: in short, it doesn't pay.

The group and shelter-wood system of management, especially the shelter-wood system, are generally the most suitable ones to use in areas of high scenic value because there is no apparent sudden change from one crop to another. In the Forestry Commission woods we are using this shelter-wood system extensively, because it combines good forestry with good amenity—although it is rather more costly to carry out than is the clear felling system which is generally the cheapest of the four.

The clear felling system is a convenient one. It is sometimes the only way of working a wood profitably, and, under certain conditions, it has an important part to play in our Wealden forestry. But if large prominent woods are suddenly clear felled the results can be most harmful to amenity. So the Commission strongly discourages clear felling anywhere in the Weald if we think it would

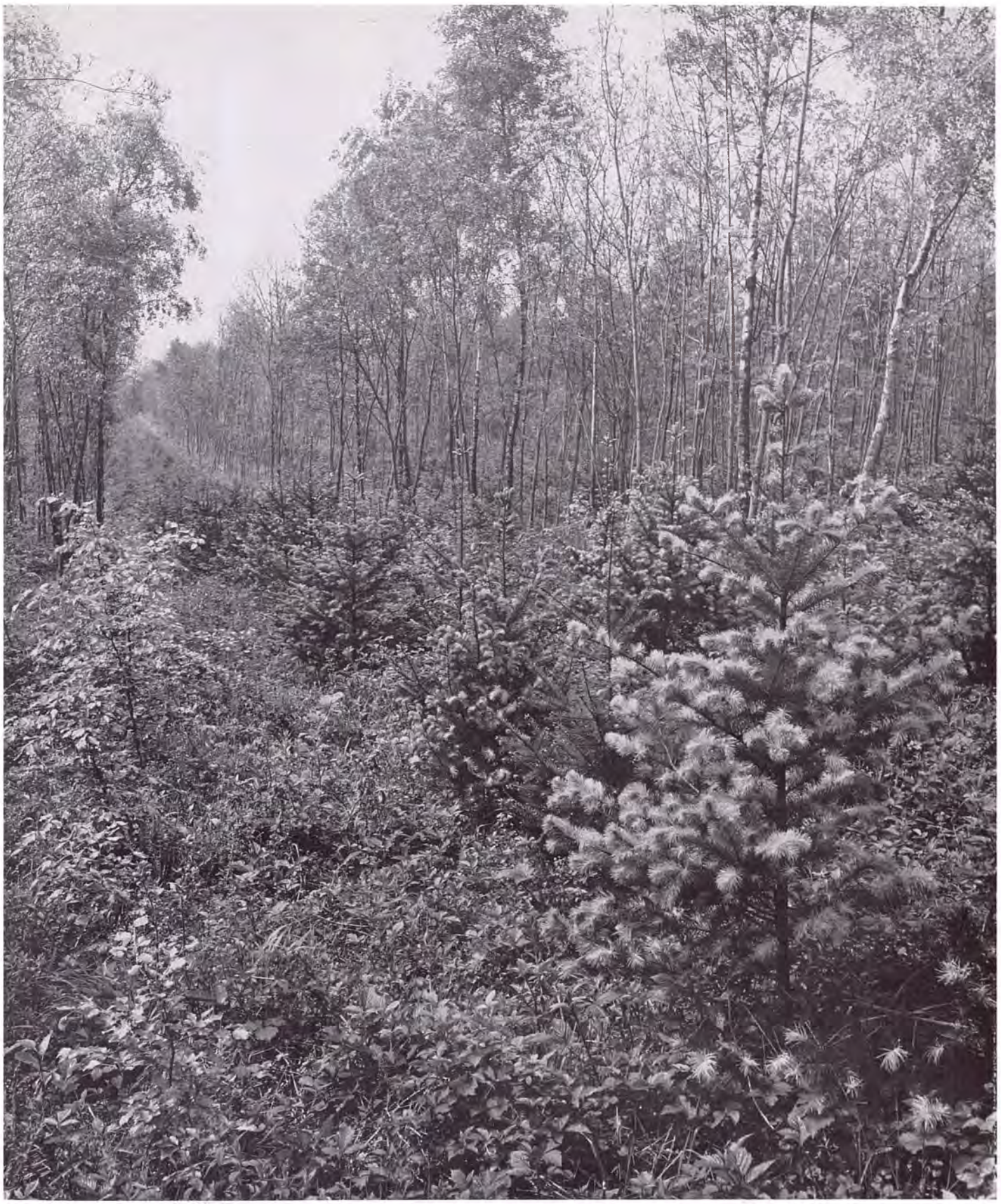


FIG. 13 Strips of natural birches are retained to form screens against sun and frost, so sheltering the young crop of planted trees, using a 'dappled shade' method. On the right, Douglas fir; to the left, beech. Arundel Forest, West Sussex

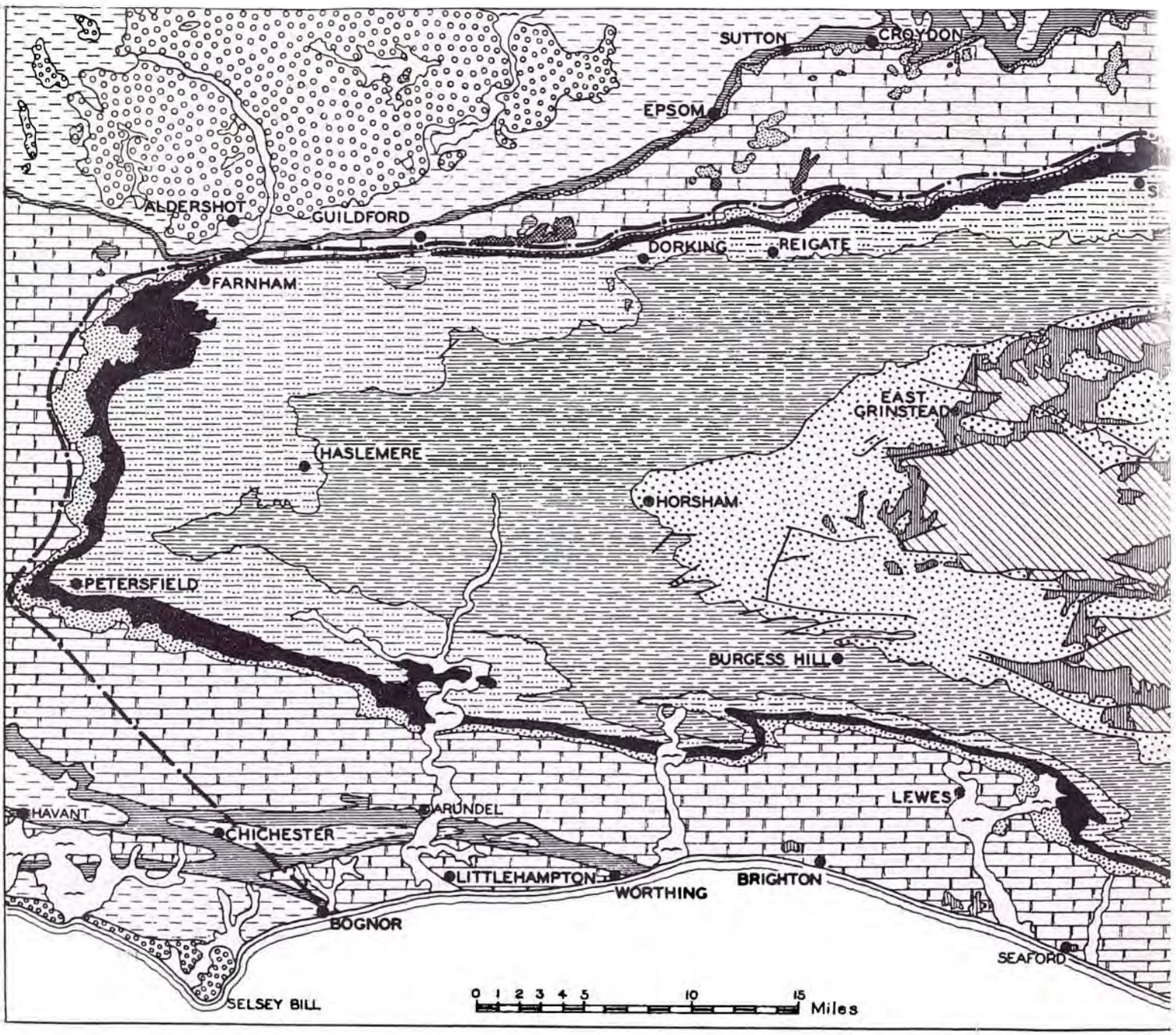
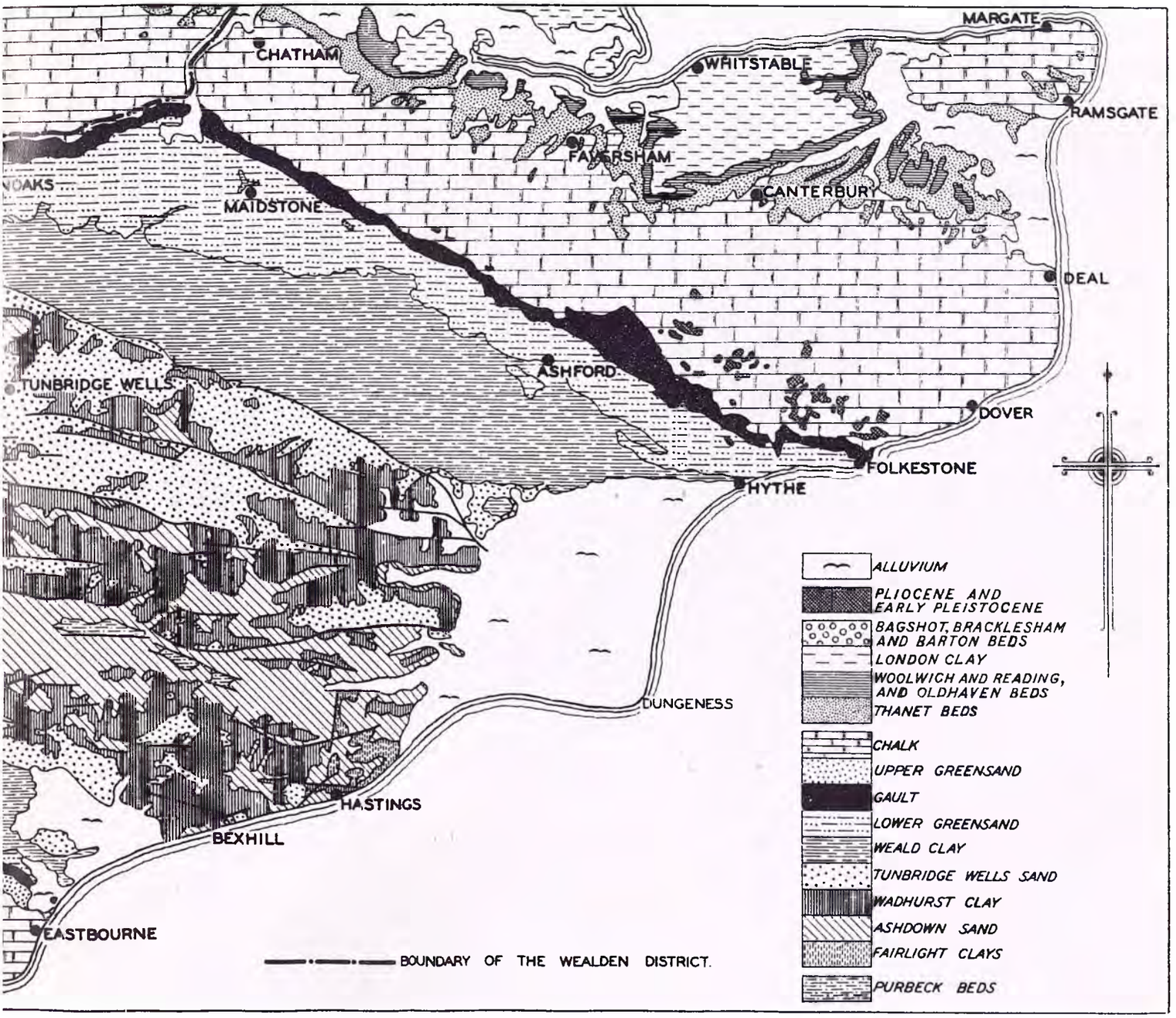


FIG. 14 Geological map of the Weald
The High Weald in the centre is enc
Greensands and the Chalk of North D



cled by the Low Weald Clay, surrounded in turn by
vns and South Downs

FIG. 15 Another view of a 'dappled shade' method at Arundel Forest
Here the birches form a light continuous cover or 'shelterwood', which will be gradually removed as the beeches and Douglas firs grow taller

harm the scenery. But if no harm will be done to the scenery, and if it is not thought to be bad forestry practice, then the Commission support it: indeed it practises it itself under those conditions.

On the Chalk Downs beech is recognized, subject to it being possible to keep away the grey squirrel, as being the most suitable tree for the final crop, just as it is in the Chilterns—and across the Channel on the Chalk lands of northern France. But on silvicultural and economic grounds this final beech crop can be grown only if the plantations are formed with an admixture of conifers. The conifers nurse up the beech, and having done this they can be cut out as thinnings and sold for a good price, leaving, ultimately, a pure beech wood. This in its turn can be sold for a good price when it is mature. So, if you want beechwoods to be perpetuated on the Downs, get rid of the grey squirrels and don't complain if you notice that the young plantations at first contain many more conifers than beech. The famous Goodwood Estate beechwoods on the South Downs were

FIG. 16 Birches retained to shelter a young crop of Norway spruce
A scene in the Southwater woods near Horsham, part of St. Leonard's Forest, Sussex

planted in the eighteenth and nineteenth centuries with conifer nurses. So the twentieth-century forester is doing nothing new in using conifers to nurse up hardwoods.

Over all the rest of the Weald, that is excluding the Chalk Downlands, and with the possible exception of the Wadhurst Clay, the growing of hardwoods (other than chestnut coppice, possibly elm and perhaps the odd poplar here or there) is justified only by a love of beautiful scenery. So whenever landowners in the Weald plant hardwoods or keep hardwood standing today for the sake of amenity, and there are a lot who are doing this, they deserve the public's thanks, because it is costing them money to do it. The Navy no longer wants their small crooked oak, the tanners have disappeared, the iron smelting industry long ago vanished, British Rail are converting their few remaining oak goods trucks to ones made of steel (railway oak used to be a wonderful market), and scarcely any charcoal kilns are burning in the Weald today. And to grow hardwoods just for pulpwood is to head for bankruptcy!

FIG. 17 Woodland is only too-easily lost to housing development
An example of productive broadleaved woodland broken up by building sites near Rogate in Hampshire

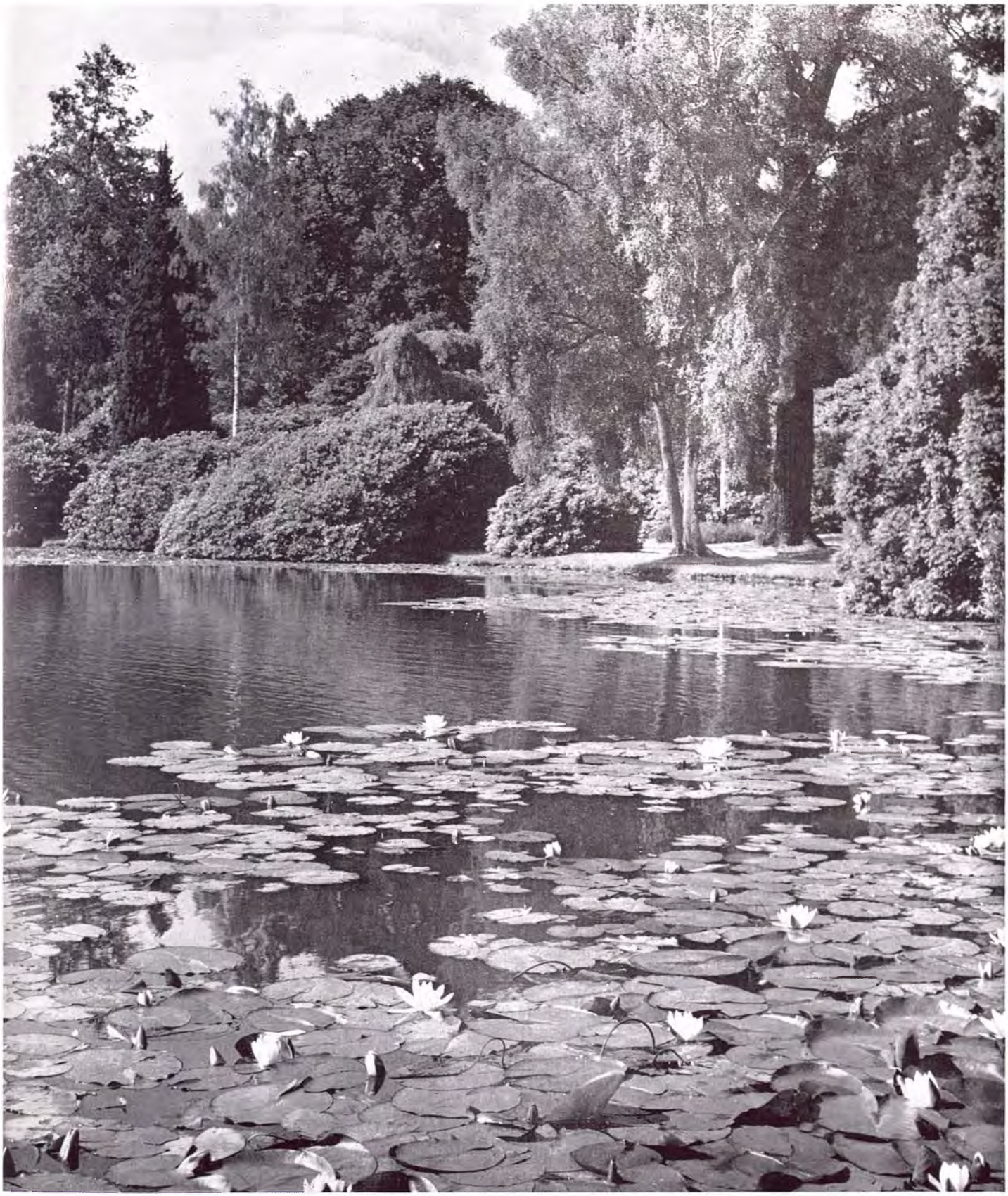


FIG. 18 Ornamental trees beside the Upper Lake at Sheffield Park, near Lewes in Sussex
An example of skilled landscape planting by a private owner, now in the care of the National Trust

On the Weald Clay, oak, with its slow rates of growth and small increment, does not pay to grow, but whether we like it or not, Norway spruce, Corsican pine, and Western hemlock, for example, *do* pay to grow, because there is an ever-increasing demand for softwood timber, indeed there will soon be a world shortage of it. On the sands, the most suitable species to grow, ecologically and economically, are the Scots pine, the Corsican pine, Western hemlock again and Larch. The decision has to be the same on the Greensands and the Gault Clay. On purely financial grounds, from the point of view of the forest and timber industries and the nation's trade, hardwoods are not a viable proposition, but on aesthetic grounds they can be priceless—especially along our Wealden hedgerows.

So this is where a crucial decision must be faced. Amenity? Or trade? Need there be any conflict here at all? It is now more than thirty years since I started to practise forestry in the Weald, and I am convinced that profitable forestry can be absolutely beautiful. I do not agree that there is a hard dividing line between profitable forestry and visual amenity; that we can only have one or the other. In the South-East Conservancy the Forestry Commission does not approve any Plan of Operations, for an estate with Dedicated or Approved Woodlands, until amenity has been properly considered and discussed. No difficulties arise because good amenity is synonymous with good forest management.

FIG. 19 The westward view from Pitch Hill in Surrey, over the well-wooded Greensand Ridge and Low Weald. Blackdown and Hindhead Hills, both near Haslemere, lie on the horizon, with Hascombe Hill, near Godalming, nearer at hand

FIG. 20 Scots pines in Brantridge Forest, on the High Weald near Handcross in Sussex

It is not that hardwoods will not grow on any of the many different soil types to be found in the Weald, because they will grow on all of them. But, to be profitable today, hardwoods must be large, fast-grown, straight and fat; and these characteristics, with the exception perhaps of the Clay-with-flints, the Wadhurst Clay and some of the Chalk, the Wealden soils cannot produce on any large scale. But hardwoods do not have to be saleable to be beautiful, and when visual amenity is important they can be planted in the knowledge that they will do what is asked of them—albeit ever so expensively.

FIG. 21 A young crop of Western hemlock, a beautiful, high-yielding conifer from British Columbia, planted below a screen of oak and ash in the Gravetye woods, south of East Grinstead, Maresfield Forest, East Sussex

FIG. 22 A well-pruned plantation of the North American Grand fir, *Abies grandis*, in the woods of the Redleaf Estate, near Penshurst, Kent

Facts and Figures

(i) The total area of woodlands in the Weald, including the North and South Downs, is roughly 400,000 acres, of which about 50,000 acres are managed by the Forestry Commission. The situation and extent of the Commission's individual forests is shown in the map on page 31, and the table in the Appendix. About 40,000 acres of woods on private estates are Dedicated and about 28,000 acres are managed under the Approved Woodlands Scheme. Thus about 120,000 acres enjoy systematic management approved by the Commission. Felling licence procedures apply to most of the remaining woodland, and ensure a substantial, though less detailed, degree of control. Details of Commission aid to private estates are given in the pamphlet, *Grants for Woodland Owners*, available free of charge from:

Forestry Commission, 25 Savile Row, London W.1.

FIG. 23 Natural regeneration in a beechwood near West Dean, West Sussex
A gap caused by the felling of mature trees for timber has been colonized by seedlings of beech and ash

FIG. 24 View from Puttenham Common, west of Guildford, across the northern Low Weald south-west towards Hindhead. Pine on the hills, oak in the vale

(ii) The Forestry Commission manage just over 2,000 acres of the 26,000 acres of chestnut coppice. Most of the coppice grows in Kent.

(iii) The acreage of potential permanent beech forest is 25,000 acres, of which some 20,000 acres are under Forestry Commission management.

(iv) The remainder of the Wealden woodlands is either conifer of comparatively recent origin or hardwood derived from the original woodland, largely of oak. This natural hardwood area amounts, nominally, to 268,000 acres or two-thirds of the total woodland; but in general it is understocked and comparatively unproductive.

(v) It is estimated that 81,000 acres are now under conifer crops, of which almost 28,000 acres are within the woods of the Forestry Commission.

In 1966 the Commission issued Felling Licences for the cutting of approximately 422,000 cubic feet of conifers and 980,000 cubic feet of hardwoods (both in hoppus measure). The Commission's policy in the Weald on felling licensing is the same as in other parts of the country. Local Planning Authorities are consulted whenever it is thought that public amenity may be harmed by the proposed felling, not only in areas where the Planning Authorities have indicated

a special amenity interest, but also outside such areas, if in the opinion of the Commission's field staff, felling would be harmful to amenity.

No paper about forestry in the Weald would be complete without making reference to England's greatest Forester, who was in fact a Weald man because he was born and bred at Wotton, in Surrey. I refer of course to John Evelyn, who, in 1664, published his famous work *Sylva*; in doing this he gave a strong impetus to the practice of forestry, and also to the planting of hedgerow timber. His appeal was to the 'aesthetic as well as to patriotic motives'. It is an appeal which I suggest we should all follow. Foresters should never overlook the aesthetic results of their work: planners should never ignore the disastrous effect which their woodland Tree Preservation Orders can have on the economy of an estate, and, indeed, if there are too many of them, on the trade of the nation. If foresters and planners both do what John Evelyn urged more than 300 years ago, that is, if they both take into consideration the requirements of the scenery and of profitable timber production, the public will certainly get the best of both worlds, while here in the Weald England's grandest woodland scenery will be preserved for future generations to cherish and enjoy.

FIG. 25 Westward view from Mariners' Hill, a National Trust property south of Westerham in Kent
The vast well-wooded expanse of the Weald, viewed from the northern Greensand Ridge

FIG. 26 Magnificent mature beech in Slindon Park, a National Trust property at the foot of the South Downs, close to Bognor

APPENDIX
FORESTS OF THE SOUTH-EAST ENGLAND CONSERVANCY

Areas in acres in 1966

	Land use at 30th September, 1966				Planted in forest year 1966		
	Total	Under plantations	To be planted	Agricultural and other land	Total	New planting	Restocking
TOTAL AREA	63,966	53,744	7,507	2,715	1,382	611	771
Abinger, Surrey	2,575	1,907	483	185	44	—	44
Alice Holt, Hants and Surrey	2,544	2,262	44	238	37	—	37
Alton, Hants	1,352	1,318	13	21	14	14	—
Andover, Hants	1,776	1,524	96	156	26	—	26
Arundel, Sussex	2,633	2,411	132	90	39	—	39
Bedgebury, Kent and Sussex..	3,399	3,055	29	315	73	9	64
Bere, Hants	2,233	1,795	401	37	55	—	55
Bramshill, Berks. and Hants ..	4,718	4,427	99	192	5	4	1
Brightling, Sussex	2,109	1,674	400	35	56	56	—
Bucklebury, Berks. and Hants	1,733	1,202	516	15	121	93	28
Challock, Kent	4,981	4,750	194	37	185	54	131
Chiddingfold, Surrey and Sussex	2,867	2,600	248	19	101	27	74
Friston, Sussex..	2,867	2,501	—	366	1	—	1
Gravetye, Sussex, Kent and Surrey	1,030	470	159	401	1	—	1
Havant, Hants and Sussex ..	955	691	247	17	15	15	—
Hursley, Hants	4,426	3,326	1,083	17	131	125	6
Maresfield, Kent and Sussex..	1,789	995	789	5	70	4	66
Micheldever, Hants	3,383	3,138	173	72	46	—	46
Mildmay, Kent and Surrey ..	1,559	1,015	536	8	52	—	52
Orlestone, Kent	1,405	1,389	—	16	61	—	61
Queen Elizabeth Forest, Hants and Sussex	3,065	2,494	421	150	76	76	—
Rogate, Sussex	891	737	78	76	31	27	4
St. Leonards, Sussex	1,997	1,465	474	58	22	—	22
Shipbourne, Kent	1,267	741	501	25	33	33	—
Slindon, Sussex	4,991	4,524	338	129	54	53	1
Vinehall, Sussex	1,421	1,333	53	35	33	21	12

Notes: 1. All these forests *except* Andover, Bere, Bramshill, Bucklebury, Havant and Hursley lie within the Weald or on its encircling downlands.

2. For locations, see map opposite.

FIG. 27 Forestry Commission forests in the South-east England Conservancy, 1968

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