

A REVIEW OF IRISH FORESTRY

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PRE-HISTORY

THE history of our present flora and fauna date, naturally, from the Ice Age. During that period when our climate resembled that of Greenland to-day, the country was covered by an immense ice-sheet, thousands of feet thick in places, which obliterated from view the native topography with its mountains and valleys and plains. The plant and animal population which had previously existed was more or less completely destroyed so that, when the ice sheet finally receded to the north and our climate became warmer, an arid waste had to be re-populated. We may picture the earliest post-glacial vegetation as rather like the Arctic Tundra, completely treeless. The earliest post-glacial plant remains, found in clay and gravel deposits, show no trace of forest trees. The next oldest plant remains are those found in the bottom layers of bogs—those bogs which began to form on the bottoms of glacial lakes. In these we find pollen grains of birch and willow and we may take it that these were the first tree colonists following the retreat of the ice.

At this point we may digress for a moment to discuss the methods of the historian of pre-historic time. In the bogs was hidden the key to the closed pages of history and only in the last forty years have these pages been opened. The microscopic remains of plants embedded in peat—visible to the unaided eye—had previously been examined but the picture remained incomplete. It was then discovered that under a high-powered microscope the tiny pollen grains of plants had distinctive, characteristic and constant shape and markings for each species so that the expert, given the pollen grain, could tell accurately the species. Now peat preserves pollen grains almost indefinitely and when peat was examined under the microscope, samples from different depths showed greater or less frequency of the pollen of various species and hence it was concluded that these species flourished and waned in the vicinity of the bog. By comparison of peat from different bogs a rough tabulation of the age of different layers was obtained so that a sketchy time-table for the arrival of the various trees was made out. Archæological investigations of crannogs (lake dwellings), etc., helped to define more accurately the later stages.

To return to the thread of our story: Following on the heels of the birch and willow came the Scots Pine (now familiarly known as

Scotch Fir, Fir Dale, etc.) and the aspen. This would be about the Old Stone Age *circa* 8000 B.C. Next came the hazel which spread rapidly 7800-5000 B.C. The oak followed much more slowly and also the elm and ash. In fact, from the geological point of view, these species arrived in the nick of time—before the land-bridge with Britain was cut off by the formation of the Irish Sea. This water barrier did keep out beech, hornbeam and lime.

It may be mentioned here that species such as birch and sally which bear good seed within ten years of establishment, are indifferent of soil fertility, and the light seeds of which have wings or parachutes which bear them long distances in the wind, have a great advantage in advancing over and colonizing bare ground. Oak may take over fifty years to produce ripe acorns most of which drop within a few yards of its own crown.

COMING OF MAN

Now we come to deal with the first human settlers. We are told that the first settlers on our shores, Dr. Mahr's River Ford people, lived mainly by hunting and fishing—two sports still very popular in Ireland. They can have had little effect on the forest (in which some of the later arrivals may still have been spreading) as they neither tilled nor kept flocks. Before the Bronze Age, in which the stone implements previously in use were superseded by bronze tools, we may take it that all the lowlands and the lower hill slopes were covered with forest growth. The Bronze Age probably coincided with the Sub-Boreal Climate, which was drier and warmer than ours and in which forest possibly reached its highest elevations and maximum extensions in the mountains. The Bronze Age settlers (*c.* 2000 B.C.) differed from the Stone Age inhabitants in that they developed agriculture, herded flocks and tilled the land, living chiefly on the higher ground on the upper margins of the forest and on the dry esker ridges. We know from archæological investigations that these Bronze Age people engaged actively in commerce with Europe and were a settled population forming organized civil communities, skilled in various crafts. It is not surprising that they appear to have avoided the dense forest with gross timber difficult to fell with primitive tools, concentrating instead on the probably scrubby upper forest. It may be of interest to mention here that a mode of life essentially similar to that of the Bronze Age survived in Wicklow until very recent times. In Glenmalure and Glendalough the local people will still show you the "boleys" which were once the summer residences of the inhabitants, from which they tended their herds on the hills, in which they made their butter and cheese, and stored the wool clip. They retreated before the autumn winds to the winter home in the valley or glen, harvested the crops in the few enclosed fields and made the wool into frieze and flannel for marketing. The boley sites are still well known. In planting on Derrybawn over Glendalough an ancient copper pot was unearthed on the upper

slopes near one of these and is now in the National Museum—a relic of a life that has disappeared.

Towards the end of the Bronze Age there was a deterioration in climate which became colder and wetter, possibly accounting for the fact that the succeeding Iron Age people kept to the lowlands, leaving their traces in the “crannogs” on lake dwellings. This wetter climate caused an increase of peat growth with consequent destruction of forest in the mountains.

The period from the Bronze Age, when only the edges of the forest can have been touched, to 1600 A.D., when substantial areas had been cleared, must have been a time of constant diminution of forest which is almost entirely unrecorded. Casual references in MSS. and state papers the evidence of place-names and of the Brehon Laws, together with the remarks of occasional literary travellers, provide the only clues.

BREHON LAWS

These laws, indicating the existence of a well-ordered society based on the clan system, were comprehensive and precise in regard to woodland. They show that all the forest was not parcelled out amongst individual clansmen (private owners). The bulk was held in common, together with waste land over which every member of the clan was free to graze his stock. This arrangement was general in European forests in early times when there was more than enough forest for all and timber had no appreciable commercial or exchange value. The emphasis *then* was on grazing and pannage (feeding of pigs) and the timber was of quite secondary importance. The appropriated woods were probably those having a value by reason of their nearness to a village settlement. They could be fenced off and swine could feed untended on the mast—principally acorns. Flocks would be safer in these appropriated woods, too, from raids by prowling wolves—which, by the way, survived up to the eighteenth century. The last wolf is said to have been killed near Powerscourt.

Even in the privately owned woods the people in general had certain rights to commodities considered essential. These were: wild garlic (presumably for culinary purposes in place of the modern onion), a night's supply of firewood, framework for a vehicle (or cart), timber for a bier for a corpse, for a spear-shaft, a bavell-hoop, a churn-staff, a spancel, a yoke for a plough. Also the wild animals of the wood were not preserved.

The law gives a list of trees divided into chieftain trees, common trees and shrubs. The chieftain trees are oak, hazel, holly, yew, ash, pine, apple. Again it is apparent that timber quality is of minor importance as compared with the feeding value of the trees; fruit, e.g., hazel and apple, are included, and elm passed over. The common trees were alder, willow, hawthorn, mountain ash, birch, elm. Aspen and arbutus were accounted shrubs. There were fines for unlawful interference with chieftain trees. Indeed this can be said

to be the earliest Irish record of restrictive forest legislation. And the punishment fitted the crime very neatly, e.g., for stripping as much bark as would tan leather for a woman's shoes the offender forfeited a cowhide and he must cover the stripped part with a mixture of smooth clay, cowdung and new milk.

PLACE-NAMES

Townland names in their Irish form are said by Professor McNeill to date chiefly from about 800 A.D.—a time of great agricultural activity. They therefore give us a clue to the state of woodland in those times. Out of 62,205 townland names in the whole country fully 1,310 have “derry” (a wood) as prefix or suffix. Joyce (who who wrote *Irish Names of Places*) states that “the belief that Ireland was well wooded is fully borne out by the vast number of names that are formed from words signifying woods and trees of various kinds. “If a wood were to spring up,” (he continues), “in every place bearing a name of this kind the country would become an almost uninterrupted succession of forests.”

Words signifying woods and trees in Irish and their occurrence in place-names provide interesting clues to the past.

Forest and Wood : Doire (derry—Derrybawn, etc.): (birch wood); Fidh: The Fews in County Louth, Feemore in Offaly; Ros: Rosmore, Roscommon, etc.—also a peninsula: Coill: (“kill”), but often means church—pronunciation is a clue; Quilty (plural).

Shrubby places : Scairt, Muine: Moneystown, Baile an Mhuine; Gaertha: Beal Atha an Ghaertha (Ballingeary).

Trees : Crann (Craanmore); Bile: Garran a' Bhile “Garranavilla.”

Oak : Dair: Leach an Daire (Lackandarragh); Omna: Portumna.

Ash : Fuinnse, Fuinnseog: Ballinafinshoge (Glenmalure).

Birch : Beith: Gortaveha, Glenbeigh, Bahana.

Elm : Leamh(an): R. Leane (Killarney).

Yew : Eo, archaic: Eo-choill (Youghal), Oghill, near Redcross; Iubhar—more modern—Killinure; Ceim an Iubhair—over upper lake in Glendalough where yew still flourishes naturally, protected by its inaccessible position.

Mountain Ash : Caorthann: Famous old Irish story of Brughean Céise Corthainn: also Drumkeeran, etc.

Holly : Cuilleann: Cullentragh.

Hazel : Coll: Collon, Co. Louth, seat of Foster family prominent in the Irish Parliament of 1780, 1790's.

Arbutus : Cuinche: Quinn, once more widely distributed.

Aspen : Eacha, Crann Creathach.

Alder : Fearn(og): Ballyfarnon, Glenfarne.

Willow : Saileog: Ballynasillloge near Woodenbridge.

Firewood : Connaidh: Pollahoney near Arklow.

West Clare has practically no place-names referring to woodland and was probably always poor in timber.

CLEARANCE PROCESS: (1) GRAZING

Probably clearance of woodland was seldom a deliberate act of uprooting or felling of a particular area. Rather was it a slow deterioration under grazing. It was not dramatic, therefore it went unchronicled, almost unnoticed. The first stage in the case of an oakwood is the destruction of the shrub layer of holly, hazel, etc. which grow under the canopy of the oaks. As these disappear grasses replace the fraughans, woodrush, etc., on the ground. Old trees gradually die off and the tree seedlings which spring up in the opening are cut back by grazing so the veterans are not replaced. The result in the course of time is an open type of wood resembling parkland. Much of our old woodland was probably of this open type.

(2) FIRE

Another factor in the destruction of woodland which must have been particularly important in this country was moor-burning. Successive fires would spread from the heather of the mountain-top down into the oakwoods of the slopes, killing all but the bigger trees, especially young regeneration. Only three years ago I saw a case of this occurring at Glenwood, County Wicklow, and I have seen a similar process on the Slievenamuck Hills in Tipperary. Heather forms the ground-cover under the oak as the canopy opens and *it* is still more inflammable so that the deterioration is progressive.

GIRALDUS CAMBRENSIS

Up to the Norman invasion Ireland, while having considerable areas of pasture as evidenced by the large cattle herds and frequent "tain" or cattle raids, still remained heavily wooded. Chief witness to this fact is Giraldus Cambrensis, who accompanied King John to Ireland in 1183. He found Ireland well-wooded with, however, "in some places very beautiful plains though of limited extent in comparison with the woodland." He mentioned that "yews abound"—and vast herds of boars and wild pigs."

To mention a few other points from early Norman times which help to give us a picture of that time: In 1209 the O'Byrnes and O'Tooles attacked Dublin from Cullenswood. Dublin was then a small town sheltering behind its walls and woods were still found near its gates. Cullenswood is just beyond Ranelagh on the 'bus route from the city. Again in this century oak to roof Westminster Hall was felled at Oxmantown—now also within the city. In 1290 timber was exported to Haverford in Wales for a castle for Queen Eleanor (wife of Edward II) from Newcastle and Glencree, County Wicklow. Other writers up to 1600 continue to give us a picture of a well-wooded country.

The first voice indicating a change is that of Fynes Moryson writing in 1603. "Ulster," he says, "and the western parts of Munster yield vast woods but I confess myself deceived in the

common fame that all Ireland is woody, having found in my long journey from Armagh to Kinsale few or no woods by the way excepting the great wood of Ua bhFailghe and some low scrubby places they call 'glens.' "

Around Elizabethan times the military and political aspect of woodland—as a hindrance to military traffic, a lair for ambushes, and as a refuge for the lightly armed Irish gallowglasses, is constantly emphasized. Elizabeth herself summed up this attitude in the saying: "The Irish will never be tamed till the leaves are off the trees." Thus O'Neill, after the failure at Kinsale, consented that "all and singular the thickets, groves and woods lying between his country and the bordering Englishry should be cut down and made plain land" (State Papers).

In 1579 Sir Warham St. Leger advised employing 4,000 English soldiers, besides the army already in the field under the Earl of Ormonde, to protect labourers in hewing down and burning certain large woods which served as safe retreats for the Irish, viz., Aherlow, Dromfynon, Glanmore, Glenflesk—chief strongholds of the Desmonds. Aherlow forest was 10 x 4 miles.

About the same time Baron Finglas recommended that the Lord Deputy should spend eight days every summer cutting passes on the borders of the Pale. He mentions as overgrown with wood two passes into Kalry—(Calary) (probably near Newtown and Glencree); also two passes into Ranelagh (the O'Byrne country—probably Deputy's Pass, etc.). In February, 1594 Lord Deputy Russel actually caused three passes to be cut into Glenmalure at Ballinacor (where Capt. Kemmis still owns several hundred acres of native oakwood) and at Kylaman (now Glenealy).

In 1608 Chichester reported that the woods of Shillelagh were sufficient for the King's ships for twenty years. (State Papers).

As in our general history, Kinsale marks a turning point, the end of an epoch. After Kinsale the commercial exploitation of our remaining forest assumed more and more importance in view of the growing shortage of timber in Britain. Ireland became the home of timber adventurers, and "planters," and state officials, Sir W. Petty joined in the scramble to cash in on the standing timber. Sir Jonah Barrington puts the prevailing attitude of land-holders—not too secure in their tenure—in a pithy phrase: "Timber is an excrescence produced by nature for the payment of debts."

The production of wood charcoal for iron smelting boomed and iron furnaces and portable "bloomeries" were introduced and resulted in the rapid exhaustion of woods. In Wicklow the Earl of Stafford (to whom Elizabeth's magnificent, if not altogether altruistic grant of the whole of County Wicklow will be remembered) was the chief woodland owner. He owned the woods about Coolattin, Kilaveney, Auhtrim (Roddenagh) and Rathdrum (Croneybyrne, Ballygannon, etc.). He introduced iron masters of the rather unwieldy name Cholmondley from England. The family name

became shortened to Chamney in which form it still survives in the county. They had fifty-two iron works in all, the larger works being at Shillelagh, Clash and Furnace in the Vale of Clara—hence the name. Iron was mined at Ballard, Ballycapple, in Avoca area, and ore was also imported. Large quantities of pipe or barrel staves and ships' timbers were also exported.

Unsettled conditions—rebellion, plantation, restoration, rebellion again—continued throughout the century and woodland continued to be devastated. Not until some twenty years after the end of the Williamite Wars (say 1710) were conditions favourable for the "peaceful art of tree-planting" and for interest in the preservation of what remained of our native woods. Although previously laws and royal ordinances requiring tree-planting had been frequent enough, it was not till this time that a real beginning was made. Many of the plantations seen by Arthur Young in 1777 on his Tours were laid down around this time. Unfortunately, side by side with planting, neglect continued and Young had frequently to deplore the felled and unfenced oak coppices. At that time too (1778) the last two of the iron works were reduced to part time by lack of timber at Killaughrim near Enniscorthy (where twenty years later the '98 rebels sheltered on the retreat from New Ross) and at Mountrath.

During this eighteenth century while oak remained the most important timber species, Scots Pine, European Larch and Scots Fir began to be used in plantations. Rarer species were also tried and we owe a debt of gratitude to these early planters for their enterprise in trying new species and also for the fact that they planted much of the over-mature hardwood beech and oak, etc., which provided much needed firewood during the emergency.

The '98 rebellion caused a temporary set-back to planting and we have accounts of cattle being stolen in Glenmalure and grazed without licence in Croneybyrne woods of the Earl of Fitzwilliam, now part of Rathdrum State Forest.

NAPOLEONIC WARS

Commercially, Oak, which yielded first quality tanbark and ship's timber from the knees of its spreading branches, remained the most important species throughout the boom period of the Napoleonic Wars when European imports were cut off. The bottom fell out of the market after 1815 and prices for oak coppices never again reached a high level. Various new factors came into play which steadily curtailed the market for oak. Iron began to replace oak in ship-building soft woods began to replace the more durable (but also more expensive to work) oak in house construction; and new and more potent tanning agents were discovered in the bark of South American trees such as Quebracho. To-day only one firm in Britain and Ireland uses oak-bark for tanning. Still later, synthetic agents were introduced. The net result was that oak coppices became uneconomic and many which had previously been felled

every thirty years or so were allowed to grow more or less untended into high wood. It is these oakwoods from coppice which have yielded so much valuable firewood and sleeper timber during World War II. A few were felled in the first World War for trench timbers and pit-props.

Coinciding with the decrease in oak values, soft wood prices appreciated steadily as the market for them expanded. Most of the plantations laid down after 1840 were of soft woods and to-day about 90 % of plantations laid down are soft wood, pine, larch, fir and spruce.

Forest statistics show slight but steady increase in acreage over most of the nineteenth century; the increase being checked with the introduction of the first Land Acts, involving division of estates.

Figures : 1841, 345,000 1851-80 increase of 29,000
 1891, 311,000
 1905, 301,000
 1930, 248,000

Planting had depended entirely on the landlords and, once their continued proprietorship was threatened, planting practically ceased outside the demesne proper. The situation was aggravated by a flaw in the early acts owing to which no compensation was payable for the timber growing on land acquired for division. This resulted in many landlords selling off the timber before acquisition. The new tenant proprietors too often disposed of their timber.

STATE AFFORESTATION

Public anxiety regarding our timber resources eventually resulted in the State taking a hand. In 1885 an area of bog and moor was acquired at Knockboy in County Mayo and planted up with a remarkable variety of species. The result was a dismal failure. Whatever the cause—and exposure to salt-laden westerly gales, infertility of the peat and inexperience in the work, must have had their effects—this failure delayed the entry of the State into the timber-growing business for almost twenty years. In 1904 the Avondale estate of some 500 acres was acquired and a fresh start made under more favourable conditions. On this occasion there was no false start and the State forestry organization which at first consisted of one forest of 500 acres and a few individuals, has grown steadily.