AVONDALE

ÁIT álainn í Avondale, áit chiún shuaimhneach, togha áite do na cuimhní. Fearaimid fáilte chroíúil romhat agus, os eol dúinn go mbainfidh tú pléisiúr agus tairbhe as an gcuairt, tairgímid an leabhrán seo le súil gur taitneamhaíde fós é do thuras.

Is beag eastát sa tír gur tugadh an aire chéanna dó agus a tugadh d'Avondale le breis is dhá chéad bliain anuas. Ba bhreá le Samuel Hayes—an té a thóg an chéad Teach Avondale sa bhliain 1777—ba bhreá leis sin na crainn go háirithe, agus is mór a dhein sé le háilneacht nádúrtha na háite a fhorbairt. An-chuid de na crainn a chuir sé, tá siad ag fás anseo go fóill—crainn a bhí ina bhfinnéithe ar an ngreann agus ar an mbrón, ar an mbua agus ar an mbris, a bhain leis an gclann úd Parnell, ar dhuine díobh Séarlas Stíobhard, an fear ba mhó le rá i gcúrsaí polaitíochta na tíre seo ag deireadh na naoú aoise déag.

Bhí an-luí ag muintir Pharnell lena n-áitreabh álainn: ba é ba ionad dídine ag Séarlas Stiobhard go mór mór, am ar bith gur fhéad sé sos a ghlacadh ina chuid iarrachtaí maidir le saoirse thalún agus saoirse pharlaiminte a bhaint amach do mhuintir na hÉireann. Nuair a fuair Parnell bás tháinig scaipeach ar an gclann, agus ba in Avondale sa bhliain 1903 a chuir dream díograiseach chun oibre le taoide thubaisteach dhífhoraoisiú na hÉireann a chasadh. Fiú fós baineann tábhacht bhunúsach i bhfeidhmiú na foraoiseachta le hiarrachtaí tosaigh na bhfear sin agus is onóir dúinne sa tSeirbhís Foraoise agus Fia-Dhúlra é bheith inár gcomharbaí orthu anseo in Avondale.

Is mó atá in Avondale ná áilneacht chrann agus suaimhneas casán coille. Is cuid dár stair é go fírinneach, blúire dár n-oidhreacht—léiriú ar an spiorad a bhí ag daoine mar Hayes agus Parnell, Forbes agus Henry, a rinne a gcuid féin, gach duine acu ina ré féin, le Avondale an lae inniu a mhúnlú.

Nára fada é do theacht arís.

AVONDALE

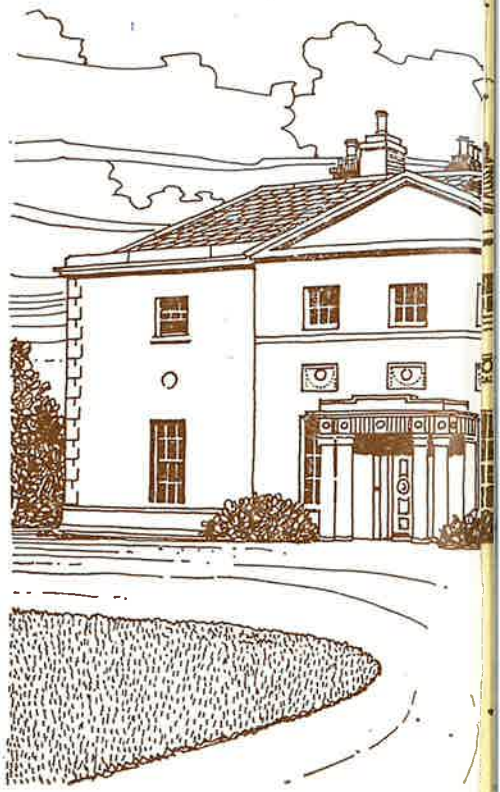
INTRODUCTION

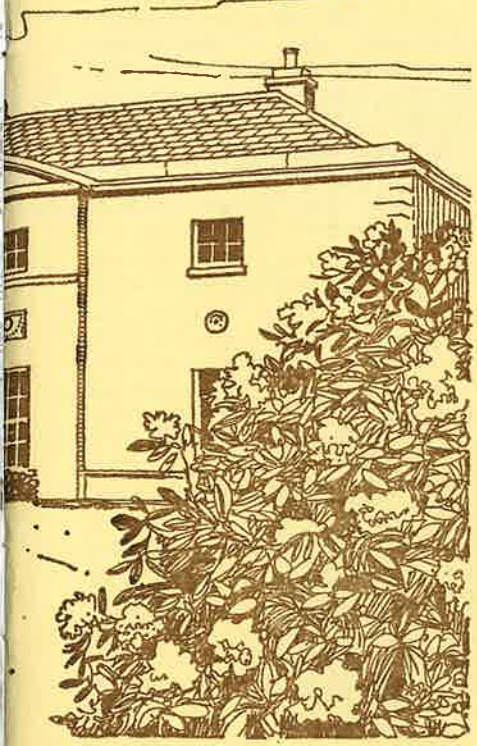
WE of the Forest and Wildlife Service are very glad to welcome you to Avondale Forest Park, and in the hope of making your visit even more enjoyable we offer this booklet as a guide to the history, flora, and fauna of the Park. Avondale is, of course, part of our history, and witnessed the triumph and tragedy of one of the great leaders of our nation : Charles Stewart Parnell. It is also the cradle of modern Irish forestry, and much that has been learned in silviculture from the Avondale plantations has been applied in practice throughout the country.

The Forest Park is some 530 acres in extent and lies mainly on the west bank of the Avonmore River. In its miles of roads and woodland paths it offers endless variety to the walker free from the tyranny of the motor car, and its scenic variety ranges from the magnificent openness of the Great Ride to the towering impressiveness of the massed conifers on the banks of the Avonmore. The booklet includes guide notes on two planned walks in the form of nature trails but if you are one of those people who prefers to wander at will you may be happier to ramble through the Park as your fancy dictates in a personal voyage of discovery. Indeed you could have the best of both worlds by taking the four-mile River Walk which is sign-posted throughout by a series of green arrows but where we will otherwise leave you to enjoy the "populous solitude" of the woodland without intruding upon you !

Avondale is a beautiful place and we ask our visitors to co-operate in keeping it free from litter or damage and to avoid lighting fires. Fire is the greatest enemy of the forests and every year hundreds of acres are destroyed—together with the habitats of many species of wildlife—through carelessness or indifference. So please be careful with that lighted match or cigarette—decades of combined effort by man and nature can be destroyed by momentary carelessness.

In conclusion we hope that you will enjoy your visit to Avondale Forest Park and that the peace and quiet and beauty that it has to offer will encourage you to come again and again. If you have any comments, commendations, or even complaints, we will be glad to hear from you and if you would like to visit Forest Parks and Nature Trails elsewhere in the country we would refer you to pages 38 and 39 of the booklet.





THE name Avondale appears for the first time in 1777 in Taylor and Skinners Maps of the Roads of Ireland. In that same year Samuel Hayes built Avondale House on a site adjoining his existing residence which he had named Hayesville, and which name thankfully did not survive. From the coincidence of the dates it would seem that Hayes gave the name Avondale (derived from the Avonmore River —Abhann Mór) to the whole area. The old Irish name of the property may well have been "Craoibheach" (wooded land) as the Calendar of the Fiants records the name 'Krewaugh' for the locality as far back as 1582.

Hayes, a barrister, represented Wicklow in the Irish House of Commons and in 1788 presented a Bill to the Parliament entitled *An Act for encouraging the cultivation and better preservation of trees*. His love of trees and enthusiasm for afforestation found further practical expression when in 1794 he wrote the first book on planting in Ireland. This book, *A Practical Treatise on Planting and the Management of Woods and Coppices* was first published in 1794 and ran into three editions. It was embellished with charming woodcuts of woodland scenes a few of which we have attempted to reproduce throughout this booklet. All the oldest trees still surviving on the estate were planted by Hayes and are most prominently represented by the beeches, oaks, larches and two gigantic silver firs by the river.

When Samuel Hayes died in 1795 Avondale passed to the Parnell family and remained in its possession until the heavily encumbered estate was sold by John Howard Parnell, brother of Charles Stewart, following the death of the latter in 1891. The entire property was eventually acquired by the State in 1904 from William Boylan of Phibsboro, Dublin, and a plan for the planting of a series of experimental plots embracing a wide range of tree species, mostly exotic, was made by the then Director of Forestry in Ireland A. C. Forbes, in co-operation with the late Professor Augustine Henry. The performance of these plots has been and still is of fundamental importance to silvicultural practice in this country, and the plots, generally one acre in extent, were for the most part laid out on the lines of a continental forest garden. You can see these today, flanking the magnificent Great Ride, which provides possibly the

A

Practical Treatise

ON

PLANTING;

AND

The Management of

Woods and Coppices.

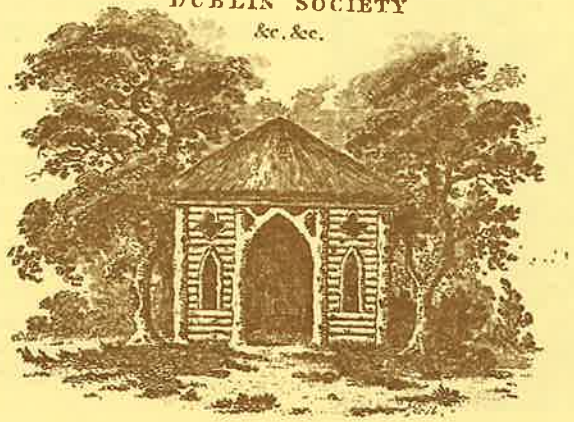
By S.H. Esq. M.R.I.A. and

Member of the Committee of Agriculture,

of the

DUBLIN SOCIETY

&c. &c.

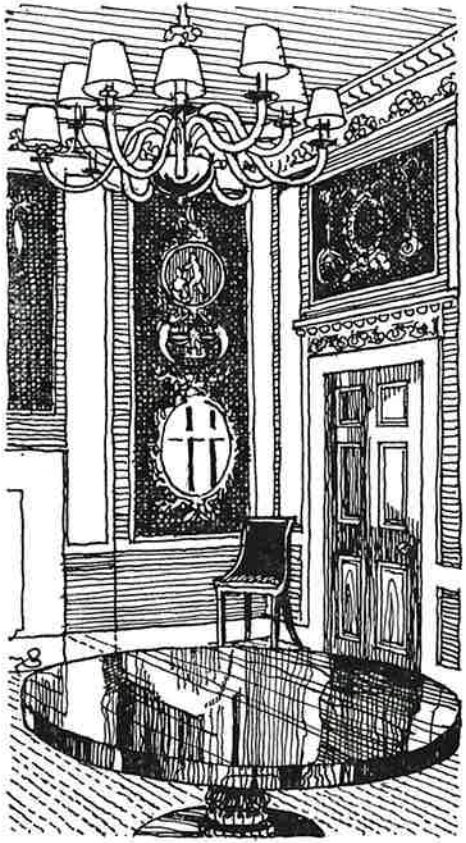


The frontispiece of Samuel Hayes's book on planting in Ireland, which was first published in 1794. This, and other illustrations on following pages are reproductions of woodcuts from the original book.

most beautiful of Avondale's many walks.

Avondale House itself was used as a training school for foresters and some repairs to the decaying building were carried out in 1935. More recently, however, a much more extensive job of adaptation of the house as a Forestry School was undertaken by the Office of Public Works. Little structural alteration was required but the building generally was in poor condition and in addition it was necessary to provide good dining and kitchen services and accommodation for matron and staff, as well as central heating and other modern amenities. That the task was so successfully carried out, while at the same time preserving and highlighting the main architectural features of the old house, is a tribute, which we gladly pay, to our colleagues of the Office of Public Works. A second part of the contract provided for the erection of a separate two-storey building flanking Avondale House to provide dormitory accommodation and study quarters for those attending the School.

Because of its extensive use as a Forestry School we have had to restrict public admission to the building but it is open during the months of May to September inclusive (Friday to Monday, 2.00 p.m. to 6.00 p.m.) when a curator is always in attendance to conduct visitors around the high-ceilinged hallway, the sitting-room and the beautiful Blue Room with its ornamental plaster work. These rooms contain furniture and other articles associated with Parnell and his period. There is no charge for admission to the House.



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"As a great tree, the greatest in the forest
Sheltering a myriad birds,
And in the tempest, when the need is sorest
The trembling flocks and herds.

Lo! but our tree is down! Who shall restore it?
There's ruin in its place
And every meanest weed, once crouched before it,
Lifting a living face"

—Katharine Tynan

THE Parnells, a Protestant landowning family originally came from Congleton, Cheshire, and counted various distinguished persons among their members. Thomas Parnell, who migrated to Ireland after the Stuart Restoration and settled in Queen's County, had two sons, Thomas, clergyman and poet, and John, who became a judge and from whom Charles Stewart Parnell descended. Sir John Parnell, Chancellor of the Exchequer in Grattan's ill-fated Parliament was grandson of John the judge.

When Samuel Hayes, barrister and forester and builder of Avondale House, died without issue in 1795 he bequeathed his beloved Avondale to his cousin and "dear friend Sir John Parnell". Throughout his life, Sir John ("the Incorruptible") stood steadfastly for an independent Irish Parliament and although he was offered the bribe of office under the British Crown if he would vote for the Act of Union he refused resolutely to sell his vote.

On his death in 1801, Sir John bequeathed Avondale to his youngest son, William, a life-long advocate of Catholic Emancipation and of the spread of education in Ireland. William died in 1821 leaving the estate to a much travelled son, John Henry, who married Delia Tudor Stewart, daughter of Admiral Charles Stewart who played an important part in the war of 1812 against the British and took his nickname "Old Ironsides" from that of the most famous of American fighting ships, officially known as the *Constitution*.

John and Delia Parnell had eleven children in all—five sons and six daughters—nine of whom, including Charles Stewart, were born at Avondale. Charles, the fourth son and the sixth child, was born on 27th June 1846 when Ireland was in the grip of famine and the seeds of revolution were being sown. Throughout her life, his mother was outspokenly anti-English in her opinions and some of Parnell's biographers have conjectured that he inherited his intense nationalism from her. However his own later accounts laid more stress on stories of the 1798 rebellion which he heard in childhood, and, without question, he was strongly influenced in particular by the fate of the Manchester Martyrs in 1867, and by the activities of the Fenian Brotherhood in general.

Essentially, however, Parnell was a constitutionalist, and when he entered politics as member of Parliament for Co. Meath on 19th April 1875 he supported Isaac Butt's Home Rule Party then striving ineffectually to obtain local self-government for Ireland. He immediately set up a liaison with Joseph Gillis Biggar, a Belfast provision merchant who had entered Parliament in 1874 and who set out to deliberately obstruct the business of the House of Commons by making lengthy speeches. Biggar's contempt of England and English parliamentary institutions was equalled only by English contempt of Biggar as is evidenced by the following extract from the London *World* of 5th March 1876 :

> "Mr. Biggar brings the manner of his store into the illustrious assembly, and his manner, even for a Belfast store, is very bad. When he rises to address the House, as he did at least ten times last night, the air is heavy with the odour of kippered herring."

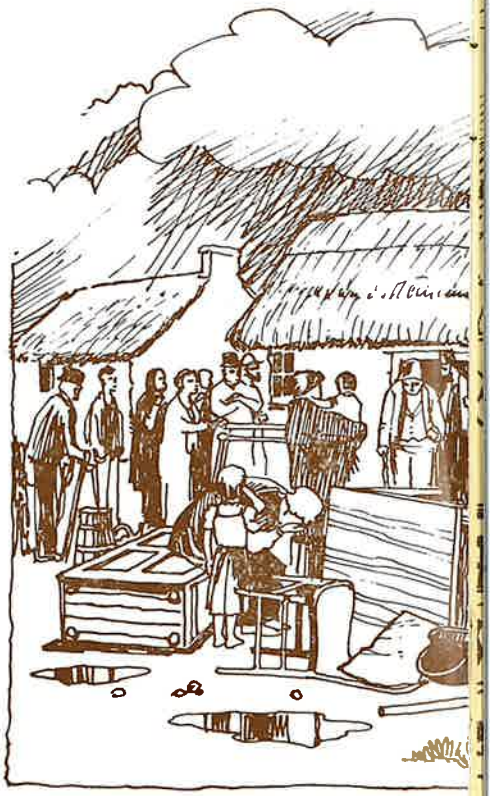
Parnell was subsequently to forge and polish obstructionism into a parliamentary weapon of deadly effect which forced a hearing of Irish grievances on

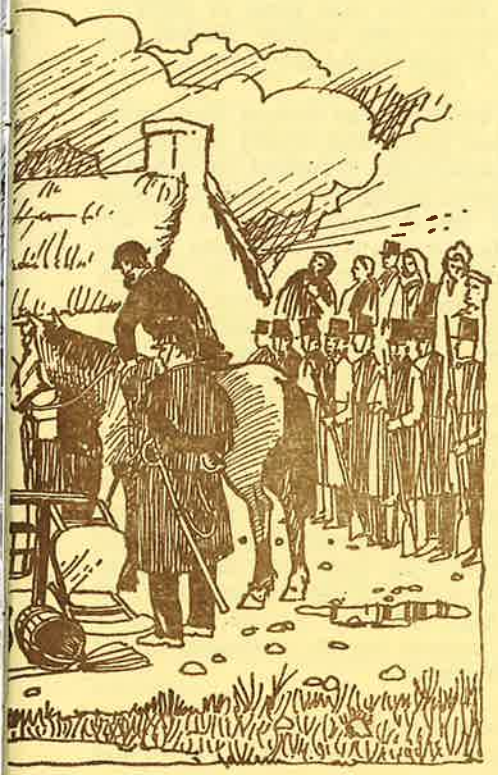
an outraged House of Commons. Within a few years he was leader of a party which was formidable for its discipline and talent and which he directed with an eye of genius for the proper action in any emergency. In turn he supported the Liberal and Conservative sides with a sole regard to the balance of power in Parliament and a fixed determination to hold it in his own hands if possible.

The real source of Parnell's power however was among the ordinary people of Ireland whose economic distress, bordering on famine, was aggravated by a land-holding system which gave the mass of tenant farmers no security in their small holdings. These conditions led Michael Davitt the Fenian leader to create the Land League in 1879 and when Parnell agreed to become President of the League the two leaders—the revolutionary and the constitutionalist—"found themselves in control of a vast human machine that carried out orders such as the boycott of the League's enemies, the withholding of rent payments etc. with alacrity and thoroughness". This great Land War in the 70s and 80s was the immediate cause of the setting up of the Irish Land Commission in 1881 and of the passing of the remarkable body of legislation known as the Irish Land Code that ultimately achieved a veritable revolution on Irish land, supplanting the landlords by the people as full proprietors of their farms and holdings.

Between 1879 and 1882 Parnell adroitly combined parliamentary pressure with agrarian agitation and his vehement campaign on behalf of the Irish tenant farmers led to his imprisonment in Kilmainham Gaol by Gladstone in October 1881. Parnell in prison however was an even greater scourge to the British Parliament than Parnell free and the campaign throughout the country was taken up by the Ladies Land League which event marked the entry of Irish women into the national struggle for the first time in modern history. Their defiant attitude is well illustrated in the following resolution which was put forward at one of their meetings :

> "We will never marry a young man who is not a Land Leaguer, but let him live and die an old bachelor that he may be as tired of Skellig as we are of the English Government."





Meantime, Parnell's sister Fanny was adding poetic fuel to the rising fires of patriotic enthusiasm by verses such as this :

"Rise up and plant your feet as men
Where now you crawl as slaves
And make the harvest fields your camps
Or make of them your graves."

The borderline between constitutional agitation and open revolt was now very thinly drawn.

From Kilmainham Parnell continued to direct the affairs of the League and on 18 October 1881 a 'No Rent Manifesto' was issued which, in essence, was a call for a general strike against the payment of rents. An enraged Government suppressed the Land League and this in turn led to a new wave of agrarian violence :

> "It rained evictions, it rained outrages. Cattle were houghed and maimed ; tenants who paid unjust rents or took farms from which others had been evicted were dragged out of their beds and assaulted. Graves were dug before the doors of evicting landlords, murder was committed. A reign of terror had in truth commenced."

With the situation getting more and more out of hand a *modus vivendi* was desired by both sides and this took the form of what came to be known as the Kilmainham Treaty whereunder Parnell and his supporters were released from prison in April 1882 on their undertaking to use their influence to put down lawlessness whilst the Government agreed that coercion would be relaxed. The 'Treaty' marked the point in Parnell's career where he abandoned the land war and concentrated on the parliamentary struggle for Home Rule.

The infamous Phoenix Park murders of Cavendish and Burke by the "Invincibles" which followed shortly afterwards, and which he roundly condemned, did much to harm Parnell's policy and in the following two years his influence in Parliament, and even in Ireland, was exerted only intermittently. "His health was bad, his absences from the House of Commons were frequent and mysterious and he had already formed those relations with Mrs. O'Shea which were ultimately to bring him to the divorce court." His semi-obscurity however was soon reversed by the London *Times* which in 1887 accused him of being connected

"This is the state of man: today he puts forth
The tender leaves of hopes; tomorrow blossoms,
And bears his blushing honours thick upon him;
The third day comes a frost, a killing frost;
And when he thinks, good easy man, full surely
His greatness is a-ripening, nips the root
And then he falls, as I do."

—Henry VIII, Act III, Scene II

with Irish terrorism and with the "Invincibles" in particular and printed facsimiles of letters allegedly in Parnell's own handwriting. These accusations were investigated by a special commission in 1888/9 and the letters were shown to have been forged. Parnell was found innocent of the charges made against him, became the idol of London society and in Ireland was hailed as 'the uncrowned king'.

The stage seemed set for a triumphant climax to Parnell's career but tragedy stood in the wings and took its cue from Capt. William O'Shea, a former member of the Irish Party, with whose wife, Katherine, Parnell had been living since 1886. Although O'Shea undoubtedly knew of the relationship between his wife and Parnell he had seemingly delayed seeking a divorce in the hope of obtaining a substantial sum of money from Katherine when her aged and bedridden aunt, Mrs. Benjamin Wood, would die. This wealthy lady had named Katherine as her heiress but obviously would alter her intentions in the event of a scandal. In every sense, therefore, silence was golden as far as O'Shea was concerned, but ceased to be so in 1889 when following the death of Mrs. Wood, Katherine refused to pay £20,000 demanded by her husband. O'Shea promptly filed suit for divorce and when the case came to court in November 1890 neither Parnell nor Mrs. O'Shea offered any defence.

The verdict of the divorce court found Parnell guilty and caused a sensation in England and in Ireland. In Victorian England, indulgent to those who kept their moral weaknesses out of the public eye, his real crime was that of being found out, while in Ireland, where he had been revered, the discovery that their 'uncrowned king' was a mortal man led to a cataclysmic *volte face* in public opinion in which Parnell suffered every kind of indignity, apart altogether from withdrawal of support by all but twenty-seven of the closely knit Irish Parliamentary Party of seventy-two members. It is significant that in the heart-searching decades that followed the death of their former leader, a sense of deep responsibility for his death filled the national conscience and various legends coalesced around his memory.

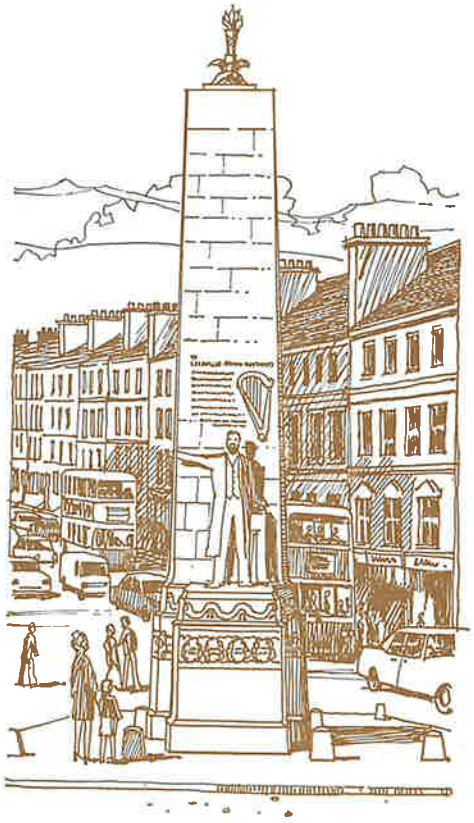
At ten o'clock on Friday morning, 26th June 1891, Charles Stewart Parnell and

Katherine O'Shea were married at Steyning by the Registrar "who was enjoined in the most strict manner not to give any information in regard to the matter". The only witnesses to the ceremony were two servants from Mrs. O'Shea's house at Walshingham Terrace, Brighton. Less than four months later, on 6th October 1891, broken in health if not in spirit he died of pneumonia in the presence of his wife.

In Glasnevin cemetery a granite boulder marks his last resting place and in O'Connell Street, Dublin, a massive triangular obelisk of Shantalla granite, fronted by a bronze statue of the leader, carries Parnell's own words :

"No man has a right to fix the boundary to the march of a nation. No man has a right to say to his country—thus far shall thou go and no further. We have never attempted to fix the ne plus ultra of Ireland's nationhood and we never shall."

In the peace of Avondale there are only memories.



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FOR most people, a woodland would not be complete without squirrels and Avondale has its handsome chattering population of *Sciurus vulgaris*—the red squirrel. The showy tail of this popular little rodent earned for it the scientific name *Sciurus* which means shadetail, and from which derived the popular name 'squirrel'. To the squirrel, its tail is much more than a decoration. It serves to correct the animal's balance in flying leaps from tree to tree. It operates as a rudder to turn right or left and it acts also as a brake and even as a parachute when necessity calls for a drop from a high branch to the ground.

The red squirrel builds its nest or 'drey' of small branches high in the trees and lines it with moss, hair and wool. A litter of 3-7 young is born in Spring. Contrary to popular opinion the squirrel does not hibernate but lies up in its drey wrapped inside its warm furry tail. Its food consists of beechnuts, acorns, berries and seeds, especially from pine cones. You are sure to find evidence of its presence along the Pine Trail (p. 32) in the form of stripped cones lying on the ground.

The badger is a shy animal living in deep holes or "setts" from which it emerges at night to forage for food. It is a stocky, flat-bodied, short-legged mammal with a coat of long shaggy fur generally grizzled in colour and hence the expression "grey as a badger". Its head, however, carries the "badge"—a black line or mark around the eye and ear on each side of the white face—which gives the animal its popular name. The badger is much maligned and is not only harmless but is extremely useful in destroying vermin. Although primarily a land animal it is a fast swimmer.

There are several badger setts to be found throughout Avondale. Badgers are sociable animals and several will live together in one sett. The young badgers make their appearance in April/June and at first play only around the entrance to the sett. Later they become braver and tend to wander off further in search of worms, insects, rodents and even dead birds. The badger (Irish : *broc*) is commemorated in many of our place names such as Brockagh (a hill above Glendalough) and the delightfully named Clonbrock—*Cluain Broc*, plain of the badgers—in Co. Galway.

Another nocturnal denizen of the Avondale woodlands is the hedgehog, who makes up for lack of agility by rolling into a prickly ball to discourage enemies. If you are lucky enough to encounter the hedgehog in the late evening it is likely that you will first have heard him snuffling his way through the loose leaves on the ground in search of his favourite diet of worms, snails and beetles. And if he sees you he can put on a surprising turn of speed for such a small creature.

Large numbers of hedgehogs are killed

crossing roadways where their instinctive reaction to danger is of no protection against passing vehicles. One of its few natural enemies is the fox who is credited with rolling hedgehogs into nearby pools of water where they must open up and swim rather than drown. It is an interesting fact that the hedgehog has retained many of the structural peculiarities characteristic of the primitive species and true hedgehogs, much as they are today, lived in Europe during the Miocene Epoch about 30,000,000 years ago.

Of the carnivores, the fox is probably the best known if not the best loved and as he is an untidy animal, his "earth" can often be identified by feathers or other animal remains near the entrance. The female is called the vixen and the male, the dog fox. They usually mate for life but if one is killed the other will find a new mate before the following season. At the mating season (January) the scream of the vixen or the bark of the dog fox can be heard at night over long distances.

The fox is noted for its cunning in avoiding traps and, where it is hunted, for its methods of breaking the line of scent. It will backtrack on its route or follow a stream to hide its trail. The fox's cunning increases with age and few of the older and experienced foxes ever get caught.

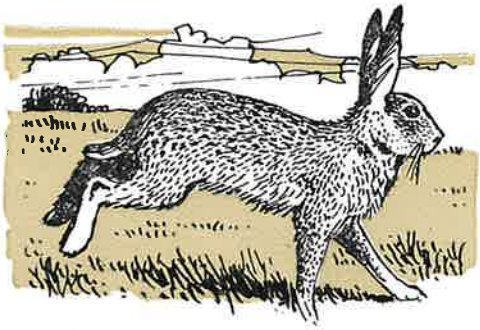
Down by the Avonmore you may see the otter, a shy friendly animal which tames easily, making an affectionate pet. The young, who remain with their mother for as long as a year, are at first reluctant swimmers but become the fastest of all swimming mammals. Characteristic features of the otter are short legs, webbed hind feet, hairy tapering tail, a broad flattened head on a long muscular neck and a coat of dense, glossy, dark-brown fur. Otters are amongst the happiest and most playful of animals and a family will take great enjoyment in sliding down a mud bank, one after another, into the water. As each otter reaches the bottom it scrambles back as fast as it can to the top and repeats the performance.

The hare is the "loner" of Avondale, leading a solitary existence, unlike some of its gregarious neighbours. It is an inoffensive creature that always seeks safety in flight and has been credited with speeds in excess of 40 m.p.h. The hare has large eyes set well back on the head which enables it to see in front, behind and above at the same time. In the mating season (March) the bucks fight with their claws and teeth for possession of the does and, in their

frenzy, can be seen leaping high in the air. The expression "mad as a March hare" originated from this seemingly senseless behaviour of the bucks at mating time.

And so to the familiar rabbit which is not, by any means, the forester's friend (p. 24). The rabbit is appearing in greater numbers following the ravages of myxomatosis and it would seem that a new strain, resistant to the virus, has now developed. The brownish-grey rabbit is the normal form but colour variations from pure white (albino) to black (melanic) have been known to occur in the wild state throughout the country. The rabbit is gregarious, multiplies rapidly and lives in communal burrows or "warrens" in sandy soil or on dry hillsides. The warrens have communicating passageways and often spread over a considerable area.

It is difficult to imagine that the inoffensive rabbit could ever pose a threat to man, but this in fact happened in Australia when the animal was introduced there around the middle of the last century. Such a fast breeding animal needs an army of predators to keep its numbers under control and



whereas the rabbit in Europe had to contend with formidable natural enemies such as eagles, hawks, owls, ravens, stoats and badgers, there was virtually nothing in Australia to control the terrifying increase in rabbit numbers. Thus the rabbit threatened not merely the prosperity but the very existence of the Australian sheep-farmers as it competed with frightening success for the sparse shrubs and grasses of the grazing lands. Man had made his most notorious deliberate importation and indeed continues to pay the penalty for his error. Nowadays, however, we know from hard experience that the delicate balance of nature can be easily upset and that we either conform to the rules or risk disaster. It is to be feared that occasionally in the pursuit of immediate objectives we prefer to take risks that upset the delicate inter-relationships between plants and animals, soils and climates and cause interferences that may have ultimate results far beyond the original change that we bring about.

Other carnivores at Avondale include the stoat, sometimes and wrongly called the weasel, hunting ceaselessly by day and night for small rodents and occasionally attacking even rabbits and hares. It is said that the stoat is so inquisitive as to come back for another look having scurried away from danger, and so, as an observer, you may find yourself observed.


Gdall Sculp

As might be expected of its deciduous/conifer "mix", Avondale teems with bird-life and more than sixty different species have been recorded here. Some birds show themselves clearly while others stay hidden most of the time but make their presence known by their calls or songs. If you stand or sit still in any of the clearings and watch for a while most of them will sooner or later come into view. Patience and silence will often bring a rich reward.

It is perhaps only fitting that at Avondale we should give pride of place to the blackbird. Parnell was beloved of poets, song-writers and balladeers and among the titles bestowed on him were the "Blackbird of Avondale" and "Avondale's Proud Eagle".

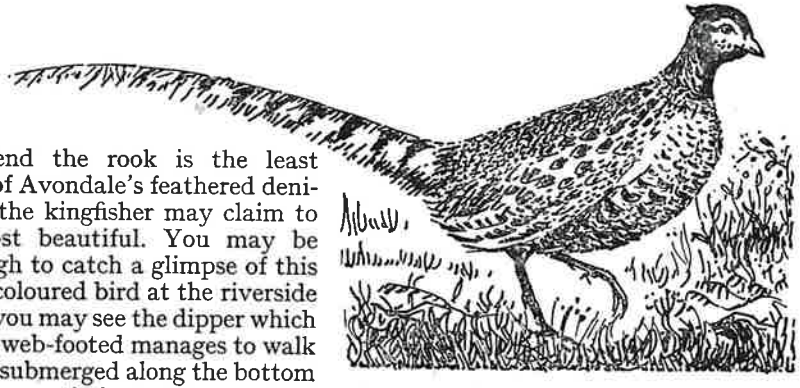
"The fowler waylaid him in hopes to ensnare him
While I here in sorrow his absence bewail
It grieves me to think that the walls of Kilmainham
Surround my sweet Blackbird of sweet Avondale."

It is a matter for regret that the eagle no longer graces our skies having been hunted by man to the point of final extinction, but the pert blackbird may be seen throughout the woodland and is frequently present on the lawns. He keeps his tune for Spring and early Summer, and is probably the finest singer in the park.

One of the smallest of the park's birds is the tree-creeper, a tiny creature whose favourite roosting place is among the giant redwoods (p. 28). The tree-creeper walks up the trunks of the trees hunting for insects in crevices in the bark and when it reaches the top of a tree or the end of a branch it flies down to the bottom of the next in a seemingly ceaseless quest for food.

Quite the opposite of the tree-creeper is the showy jay, a handsome, raucous fellow with a white patch above his tail. Like its relative the rook, the jay shows a higher degree of intelligence than other birds and is more mischievous. It has little fear of man and feeds on fruits, seeds, insects and nuts, while occasionally enjoying the delicacy of the eggs or young of other birds.

The rook is a Eurasian crow found in all temperate regions from Ireland to Japan. One of the most gregarious crows, it nests and roosts in great tree-top colonies known as "rookeries" and the Avondale rookery probably houses all the rooks within a five to six mile radius. In early morning most of the birds spread out to feed in the surrounding countryside, and in the evening return in flocks from outlying trees where they have been gathering to make the flight homeward. Despite its harsh, grating call the rook is technically classed as a songbird ! The familiar expression "getting rooked" derives from the bird's thieving habits.



If our friend the rook is the least handsome of Avondale's feathered denizens, then the kingfisher may claim to be the most beautiful. You may be lucky enough to catch a glimpse of this brilliantly coloured bird at the riverside where also you may see the dipper which though not web-footed manages to walk completely submerged along the bottom in search of aquatic food. Other birds of the Avonmore riverside are the moorhen, the grey wagtail and the long-tailed tit who unlike its relatives the blue tit and coal tit prefers trees like the alder and willow to the conifers and therefore favours locations near the water.

The goldcrest, tiniest of our native birds, is very numerous among the conifers, which are also favoured by the siskin, a member of the finch family. Other members of the same family to be seen in the park are the greenfinch, goldfinch, bullfinch and chaffinch. One of the noisiest birds is the wren which sings all day long and through most of the year. It usually hunts for insect food low down in the bushes. Another common bird is the linnet which has a sweet low song.

If you are occasionally startled by a loud squawk from among the trees you may be sure that the pheasant is concerned. It differs from most of the other birds not only in its size but also in the fact that it nests on the ground rather than in the trees. It is not at all unlikely that you will encounter the pheasant wandering by the paths and forest roads particularly in autumn and winter.

There are about fifty species of pheasant throughout the world and all are native to Asia. The common pheasant, *Phasianus colchicus* derives its name from the Greek place names Phasis and Colchis, the former being the river which flowed through Colchis, legendary home of the Golden Fleece. It is believed that the Argonauts found the pheasant along the river and brought it back to Greece.

The song thrush sings in every month of the year, but the chiffchaff, willow warbler, whitethroat and blackcap—all visitors from other lands—are heard only in the Summer months. In Winter, fieldfare and redwing, two species which breed in northern Europe, hunt for insects in the open ground or feed on berries in the trees and hedges.

These are but a few of the many birds that may be seen at Avondale, and if you are interested in having a full list of those that have been observed we will be happy to forward it to you on request.

Giball sculp.

AVONDALE WOODHOUSE

Designed &c. by S.H.

THE WORLD THROUGH THE TREES: AN EXOTIC TREE TRAIL

IF you have an hour or so to spare, and if you are prepared to give your imagination free rein, we can help you girdle the earth in the course of this very beautiful walk of less than two miles. In it you will meet trees from many corners of the world that have taken happily to the Irish environment. Collectively we describe them as "exotic" i.e. belonging by nature or origin to another part of the world.

It is a botanical fact that due to Ireland's severance from the Continent and Britain at critical times of land migration in our pre-history, many plant species never reached our shores. Indeed the oak, ash, birch, elm and alder are the few forest tree species of importance that are native to our country. The great forests of pine which covered immense areas of the land in the period from 7,500 to 5,500 B.C. died into the spreading bogs without survival. This defunct species, now known as Scots Pine, was of course reintroduced from Scotland and other sources in more recent times.

However, if our native tree "family" is small we have a wide variety of introduced species many of which have become "more Irish than the Irish themselves". You will meet some of these in the course of this trail which commences at Avondale House and largely avails itself of the winding woodland paths and the Great Ride of Avondale. We should perhaps tell you in advance that there are some steep pitches along the trail but there is nothing in it that will in any way over-tax you. In any event there are several sign-posted "short-cuts" back to Avondale House and if you fail to stay the full course no one need ever know! You will find numbered stops en route and the following paragraphs describe what may be seen (and imagined) at each stop. We wish you *bon voyage* on your journey of discovery.

Stop 1

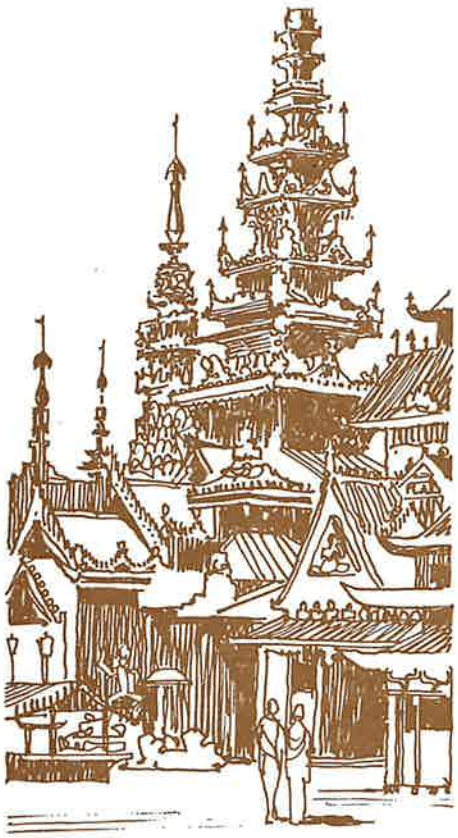
Our first stop is among these giant Eucalyptus trees, natives of Australia and Tasmania. The name means "well covered" and derives from the odd fact that the flowers do not have petals but are encased in a nut-like coat. The Eucalyptus is possibly the only tree from the southern hemisphere that has a future as a timber-producer in our forests, and has been found to grow rapidly in mild parts of the country. The very hard, heavy wood is used for heavy construction work and in ship-building.

On the forest floor you may find the thin spear-shaped leaves which yield an oil mainly used for inhalation purposes. Eucalyptus trees commonly shed their bark exposing the pink-coloured young bark underneath. They were first introduced into Ireland in 1852 from Tasmania which was originally named Van Diemen's Land by its Dutch discoverer Abel Tasman in 1642. Among many Irishmen who suffered imprisonment in its infamous penal colony was John Mitchel following his part in the abortive Young Ireland Movement.

Stop 2

According to Samuel Hayes, Beech was introduced from England during the seventeenth century, and was first planted at Shelton Abbey. This giant specimen is over 200 years old and was grown from seed derived from the original plantings at Shelton. It is salutary to reflect that it would have been about twenty feet high and still competing for life against the surrounding trees when the rebellion of 1798 was taking place.

The Beech is native to Central Europe where the nuts, commonly called beech mast, are used for pig fattening and as an oil derivative. It is an important source of commercial timber, and thrives best on limestone soils. It represents about 5% of our total State planting.



Stop 3

This grove of trees stands in testimony to a man who in the early part of the century helped to steer the young forest service in Ireland through its formative years. He was Augustine Henry who achieved world recognition as a tree breeder and foresaw for Ireland the potential of scientifically produced and managed forests. It was during his service in Shanghai as a medical doctor that he became a plant collector sending back large numbers of plants to Kew Gardens in London. Subsequently he took up the study of forestry in France, became a reader in forestry at Cambridge University, and eventually Professor of Forestry in the Royal College of Science, Dublin.

Some of the trees in this plot might not be seen by our visitors today but for the work of this dedicated scientist in the forested mountains of China and his pioneering work as a tree breeder. The three pine trees (*Pinus armandi*) were introduced by him from Western China in 1897 and the Rhododendron shrub to the right of the memorial stone has been classified to his memory as *Rhododendron henrii*.

Stop 4

We are now deep in the world of mice and mushrooms where many seeds are scattered on the forest floor. They are doomed however because in the pervading gloom there is no lifegiving light for the dormant seeds and the mice and fungi move through the soil and feed on the still-born plants.

The evergreen trees that surround us here can tolerate deep shade but even they are fighting for the precious light in order to live. Notice how the lower branches have been killed by the shade. Only the fittest trees will survive to eventually dominate the tall Larches and Elms that now tower above them.

Our trail will shortly bring us from the green gloom of the plantation into the impressive spaciousness of the Great Ride.

Stop 5

The Hornbeam in its natural home ranges across France and central Europe and stretches its habitat as far as the lands of Persia. The extreme hardness of the wood singled it out in former days for the making of wooden mallets and cog wheels and the intense heat which it could produce made it popular for the winter fires of mediaeval Europe. It is said that bowls and dishes made from Hornbeam will last for ever and never crack or leak.

Today the Hornbeam is used largely as an ornamental tree but in the 15th century John Gerard wrote as follows in praise of its many uses :

> ". . . the wood or timber whereof is better for arrows and shafts pulleys for mills, and such like devices, than elme or wick hazell, for in time it waxeth so hard, that the toughness and hardness of it may rather be compared unto horn than unto wood . . ."

Stop 6

This is a plantation of Norway spruce which in its native habitat sweeps across Europe from Germany into Denmark and Poland and deep into the Baltic lands. More than 140 varieties of the tree are recorded, some growing to over 200 feet and others to less than twelve inches ! The timber is known as "White Deal" and is soft, white and easily worked. It is especially suitable for the manufacture of paper and is also used extensively for joinery, plywood, and fibre-board.

The Norway spruce is, of course, the familiar Christmas tree and it comes from our plantations either as an entire plant grown for the purpose or as the top of a normal thinning. The custom of trimming and lighting trees at Christmas probably originated in the mediaeval German mystery plays when a tree, the *Paradeisbaum* (tree of Paradise) was used to symbolize the Garden of Eden. By the beginning of the 19th century the custom had spread to most countries of northern Europe and it was introduced into England in 1841 by Prince Albert of Saxony, husband of Queen Victoria.

Notice here the evidence of natural regeneration in the form of tiny trees which have grown from seed carried by wind or birds.

Stop 7

Young trees need protection from the nibbling of forest animals and the forester provides this protection by building fences. A deer fence for example must be fully nine feet high and where this is not provided a whole plantation of young trees can be destroyed. This particular fence is used to exclude rabbits but the rabbit being a clever fellow often gets over the problem by digging under it. The forester being still cleverer buries the bottom of the netting wire fence up to a foot deep in the soil to frustrate the opposition. However he has still to cope with more determined opposition in the shape of the badger, who, unlike the rabbit, is a strong-willed muscular chap and will destroy a fence unless his right of passage is recognised. In such circumstances the forester, safe in the knowledge that the badger is not destructive of young trees, bows to superior force and provides the small badger-gate that you see in this fence.

Behind us is a deer tower. Towers like this are used by our wildlife officers to observe deer and yet remain unobserved. At this height the scent of man is kept above the sensitive nose of the deer. This particular tower is only a demonstration model as there are no deer in the wild state at Avondale.

Stop 8

Many of these trees are infected by a disease that is consuming the wood and destroying the roots like a cancer. They are slowly but surely dying, being infected by a fungal growth called *Fomes annosus*. There is no known cure for this disease which attacks the roots of the trees and, as you may see from the shaded area on this stump, works its way up the trunks. It spreads insidiously underground from root to root and also by producing "mushrooms" on the side of the diseased tree which produce wind-borne spores. Behind you at this point our research foresters have planted groups of different species in experiments to ascertain which types might best survive on infected ground.

Fungi are a large group of non-green plants that live as parasites, feeding on other living organisms. Their spores are easily distributed by air currents because of their minute size and it was thus that the potato-blight fungus destroyed the Irish potato crops to cause the Great Famine of 1845 to 1847. In those tragic days more than a million died of starvation and disease while as many more fled their native land travelling in the "coffin ships" to the New World. Even there, death awaited the emigrants as is evidenced by the following grim inscription on a monument in Grosse Isle, one of the landing places :

> "In this secluded spot lie the mortal remains of 5,294 persons, who, flying from a pestilence and famine in Ireland in the year 1847, found in America but a grave."

Perhaps the best-known species of fungi are the mushrooms. The common field mushroom consists of a cap supported by a stem, and underneath the cap is a large number of radiating "gills" on the sides of which the spores are produced in great numbers. These at maturity, are borne away by the wind to reproduce their kind under favourable conditions.

Stop 9

Unlike the fungi, ivy is not a parasite as it takes its own food from the soil. It has no rigid stem however, and has evolved a system of tiny "feet" which

enable it to cling to the trunks of trees as it gropes upwards towards the life-giving sunlight. Ivy will not harm a strongly-growing tree but in the case of old trees it will stretch up into the crowns and hasten their end by its smothering effect.

The trees here are Norway spruce which tower to 100 feet in height. You should find ample evidence of our friend the squirrel (p. 13) in the form of stripped cones on the forest floor.

Stop 10

These sharp-pointed trees are Serbian spruce from the high mountain regions of Yugoslavia. Central Europeans consider them to be the ideal shape for Christmas trees, and because of their ability to withstand pollution they are sought after in landscaping urban areas of Germany. Indeed seed from these same trees has been exported to Germany which is a tribute to the standing of the "Avondale" Serbians.

Stop 11

The domain of the European Oak runs from the Tyrol Alps over the greater part of Europe and Asia Minor and into the Caucasus and Urals. Yet, in order to survive, the oak must contend with almost 500 types of feeding insects and 36 fungi. It was the chief tree in the forests of ancient Ireland and for many centuries supplied the timber for houses, boats, furniture, bridge-building and for all purposes where durability and great strength were essential.

The most famous of our old oak woods was at Shillelagh. Samuel Hayes in his "Practical Treatise" of 1794 wrote as follows :

> "Tradition gives the Shillela Oak the honour of roofing Westminster-Hall and other buildings of that age ; the timbers which support the leads of the magnificent chapel of King's College, Cambridge, which was built in 1444 as also the roof of Henry the Eighth's chapel in Westminster Abbey, are said to be of oak brought from these woods, and I think it by no means improbable that the superior density and closeness of grain which is the character of the Irish oak. . . might have induced the English Architects to give it the preference in such material Works".

Today there are but a few surviving remnants of our primaeval oak forests and these are being carefully conserved as nature reserves by the Forest and Wildlife Service.

Stop 12

We are now in a forest of Western Red Cedar. These trees are upwards of a hundred feet high but in their native habitat from Alaska through British Columbia to California they commonly tower to double this height. Notice that some of the trees here are numbered—these specially selected specimens will supply seeds and cuttings to our research foresters who will propagate them to produce better quality trees for the future.

The North American Indians of the Pacific Coast fashioned their totem poles and war canoes from the trunks of the Red Cedar and indeed the trees are often called canoe-cedars. The Indians also made fish hooks from the roots and wove the inner bark into baskets and mats. These great trees have a natural preservative in their wood which makes it particularly

valuable for outdoor use. The seats at this stop are made from the wood of this tree and you might like to rest here awhile before descending towards the valley floor below.

Stop 13

These trees are representative of the largest and oldest of all living things—the giant Sequoia of California. In their native habitat they reach heights of more than 300 feet—three times as high as these juveniles! At the birth of Christ some of the existing Californian giants were already 2,000 years old. The thick bark of the tree accounts in part for its survival to such a great age as it effectively insulates the tree against the frequent fires that strike the forests in the high Sierra Mountains.

These trees were once called *Wellingtonia gigantea* after a well-known English General, to which the Americans retaliated with *Washingtonia gigantea*. The battle of names was continued when a French botanist named them *Sequoia gigantea* after the American Indian teacher and scholar, Sequoyah, who invented the Cherokee Indian syllabary (a set of characters each one of which is used to spell a syllable). He was the only man in history known to have conceived and perfected a syllabary in its entirety and it is appropriate that his name and fame should be perpetuated in these great trees which are today called *Sequoiadendron giganteum*.

Stop 14

Closely related to the trees that we met at the last stop are these Redwood trees of California—Sequoia sempervirens. Their native habitat is quite humid, and frequently belts of water-saturated fog move in from the Pacific Ocean to envelop the redwood forests in a dense mist.

Redwood needles stay green for up to three years, but even then still cling to the twigs. Eventually the twigs themselves fall to the ground which will explain why there are so many small dead branchlets along this part of the trail.

Stop 15

This great tree, now 142 feet high and more than 200 years old, was planted by Samuel Hayes (p. 3). It is a Silver Fir and contains enough wood under its bark to build eight modern three-bedroomed houses. The Silver Fir was a conspicuous feature of all old estate woods where they over-topped all other trees.

There are two further specimens a few yards further down the road, and although you will have to retrace your steps to rejoin the trail, they are well worth a visit.

Stop 16

Both the swelling on the trunk and the production of the hundreds of tightly-packed twigs on this tree are due to a fungus called fir broom rust. This fungus interferes with the chemistry of the tree causing it to sprout densely packed twigs in this manner. In mediaeval times it was widely believed that this phenomenon occurred where witches alighted on trees and even to this day these masses of twigs are known as

"witches broom". Popular belief in witches was widespread in Europe during the Middle Ages, and the terror engendered by witch trials affected most of the Continent. Estimates running into hundreds of thousands have been given for the numbers put to death during the three centuries when the witch hunt ran its evil course.

Stop 17

You will know these trees as Monkey Puzzles. They are Chilean Pine or Araucaria which in their native habitat range across Chile and Argentine where their northern limits are the slopes of the Copahue Volcano. However it is also found growing outside its apparent native range in these countries and its presence in the extern areas may indicate old encampment sites of the Auracanian Indians who considered the seed to be an important source of food.

The Auracanians were the earliest known inhabitants of Chile. They were largely nomadic and disunited when the Spaniards, hoping to find a rich culture like that of the Incas, invaded their land. They put up fierce and persistent resistance to the invaders who learned to admire them and later to unite with them so that a majority of Chileans today probably have ancestors of this vigorous race.

Stop 18

Cedar is native to Asia Minor among other places. It was the tree chosen by King Solomon to build his Temple which he completed about 968 B.C. :

> "So he built the house and furnished it ; and he covered the house with roofs of cedar. And he built a floor over all the house five cubits in height and he covered the house with timber of cedar." (3 *Kings* 6, 8-9)

Solomon's Temple stood and served God in Israel for about 400 years until it was destroyed by Nabuchodonosor when he captured Jerusalem in 586 B.C.

The durability of cedar wood has been known to man for a long time and indeed the Arabic word "Kedree", from which its name derives, means power. The Cedar is a widely branched tree producing fine-grained, fragrant

timber. It has needle-like leaf clusters and woody cones characteristic of the pine family.

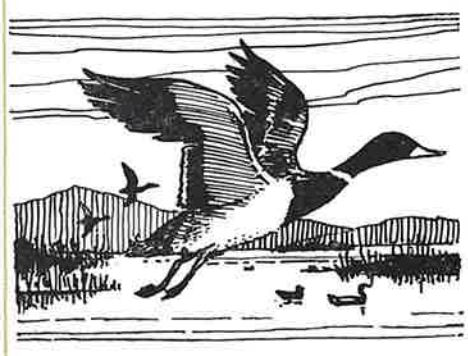
Stop 19

This beautiful vantage point rejoices in the name Lovers' Leap, a fanciful title which was applied to many similar locations throughout the country. We regret that we cannot tell you who the lovers were or why they leaped—if they did leap! The view however will compensate you for our inability to fill in the romantic details. Across the valley and to your left you may see two rock faces, the upper of which was a quarry worked by Parnell as a business venture and to give local employment. You may also glimpse the railway line far below in the trees, this being the main Dublin—Wexford route for the laying of which through his property Parnell received £3,000 compensation. The river is of course the Avonmore which rises in Glendalough and is joined by the Avonbeg (rising in Glenmalure) at the Meeting of the Waters whence the two streams "mingled in peace" flow through the Vale of Avoca to the sea at Arklow.

Stop 20

You are now close to the end of our trail but you may wish to rest a while to watch the mallard and other feathered inhabitants of the pool.

"Ducks are soothy things
And lovely on the lake
When that the sunlight draws
Thereon their pictures dim
In colours cool."



With which restfully poetic thought from F. W. Harvey we leave you to complete the last short stage of your journey! We hope you have enjoyed our walk together and that we can look forward to meeting you on other trails elsewhere.

THE PINE TRAIL

THIS is a pleasant walk of about half a mile forming a loop and while it will return you to Avondale House in half an hour or less we hope you will take longer and enjoy it all the more. It is "easy" walking throughout with no steep pitches, and although we have called it the Pine Trail, you will meet many other trees and plants en route. The trail is fully signposted with numbered stops and what follows is a description of what may be seen at each stop.

Stop 1

This large tree is a Spanish Chestnut. It is a native of Southern Europe, North Africa and Asia Minor. Trunks of the Sweet Chestnut often have girths up to 30-40 ft. It may have been brought to England by the Romans but did not appear in Ireland until the 18th century.

Holly bushes can be seen growing here. These are young trees and you will notice that all the leaves are prickly, this being a natural protection to discourage animals from nibbling the foliage. When the bushes grow large the bottom leaves will still be prickly, but those far out of reach of animals may be smooth-edged and without prickles. Holly trees can grow to as high as 70 ft.

Many species of birds eat the red holly berries, the seed passing unharmed through their digestive tracts. The birds act not only as agents to spread holly seeds throughout the forest, but it seems that for proper germination it is necessary that the seed first be eaten by birds which unwittingly activate the germinating process with their digestive juices.

At the next fork in the road turn left.

Stop 2

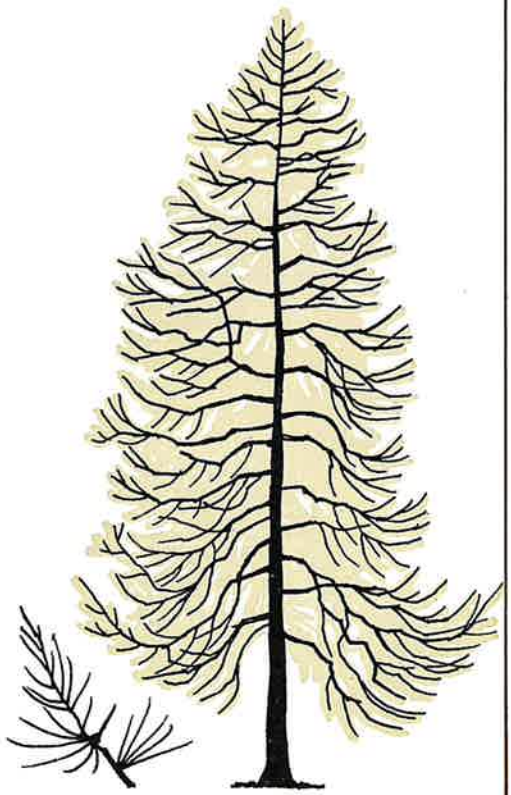
This is the familiar Rhododendron sometimes called a Rose Bay. It blooms in May and June. The common variety produces sprays of light purple blossoms, and other varieties produce every shade of pink and red, and also white flowers. In the autumn the seed capsules split, releasing hundreds of tiny seeds these being so small that as many as five million may be needed to weigh one pound. In winter the Rhododendron acts as a thermometer : when the weather gets very cold the leaves curl up tightly and point towards the ground.

Stop 3

This is a Sycamore tree, which is native to the Pyrenees, Alps, and Carpathians. We can recognize it in summer by its familiar palmate or hand-shaped leaves and the winged seed.

"Polypody ferns" can be seen growing on the lower branches of this tree. These ferns do not harm the Sycamore and are merely occupying a strip of windblown soil that has accumulated here over the years. This soil, together with rain water that runs down the bark of the tree, supplies the simple needs of the fern.

Ferns do not have flowers. They reproduce by "spores" which are produced inside little brown satchels or "sori" on the backs of some of the fern fronds. When these "spores" germinate,



Larch

a surprising thing happens—a new fern does not result and instead, a "prothallus", a strange flattish plant like a piece of lettuce leaf, is produced. This plant in its turn produces "seed" which eventually germinates and produces the familiar fern plant.

Stop 4

The trees here are Larch, which are deciduous i.e. they shed their needles in the autumn. If you examine the twigs you will see that the needles grow singly at the tips of the branches, and in small bundles or rosettes further down the branch. This is the simplest way to identify a larch.

The bark of this tree may be familiar to you because Larch are commonly used in gardens for rustic work, gates, fences etc.

Stop 5

This tree was blown down by the winds the roots having failed the tree. In life, however, these roots not only anchored it in the soil—they also sucked up water and minerals which were then sent up to the topmost parts of the tree to help in the manufacture of food. To supply these needs the roots projected tiny delicate "root hairs" amongst the soil grains in search of water droplets and nutrients. There is nothing haphazard in the growth of the roots which tend to grow towards those areas in the soil which can supply the most moisture.

To stay alive, tree roots need oxygen. Heavy rain compacts bare soil, because each raindrop acts like a tiny military shell exploding on the soil surface, driving the grains close together, and reducing the pore spaces. The result is the cutting off of oxygen from the roots. There are agents however which act to assist the tree—the tree's own dead leaves form a springy layer on the soil surface which absorbs much of the force of the raindrops, while worms, mice, beetles, millipeds etc. all work for the good of the tree by burrowing through the soil thereby allowing oxygen to reach the roots.

If you count the rings on this stump you should get about 46, which means

that the tree was 46 years old when it was blown down. Note that some of the rings are broader than others, indicating that the weather during the years in which these rings were laid down was quite mild.

Stop 6

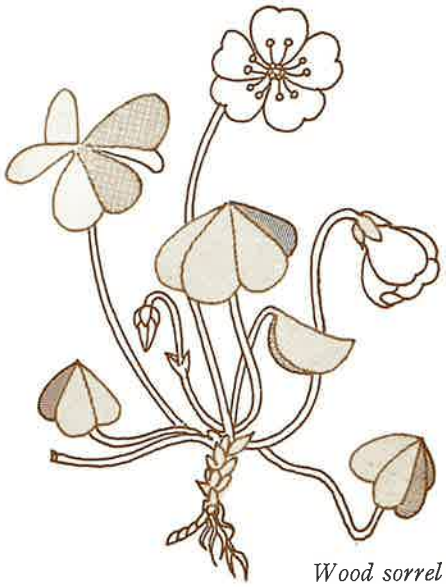
We have already met one fern on our walk. This tall feathery plant is bracken, and it too is a fern, thriving on very dry soil. This is because it can send its roots as far as 20 feet deep in search of water. Bracken commonly spreads itself by thick underground stems somewhat in the manner of strawberry plants. When it produces spores the "prothallus" (see Stop 3) must find a damp spot in which to grow and this is often a rabbit burrow or in the shade among loose rocks. Where the bracken is thickest it produces a dense shade which kills any plants attempting to compete with it. However, the bracken here is also doomed, and for the same reason. The trees above it are each year stretching their branches nearer to one another and so are steadily reducing the amount of light reaching the bracken. So in time, this bracken will die, starved of sunlight.

Over the next section of trail keep an eye open for squirrels! If you find half-eaten cones on the forest floor these have been chewed by red squirrels. Fifty yards ahead we will be leaving the road and cutting down through the woods on the left so watch out for the trail marker.

Stop 7

Feel the bark on this tree, but please do not damage it. This is a Redwood and the softness of its bark protects it from the frequent fires that occur in its natural home in North America. Sometimes the fires burn all the branches from a redwood, leaving merely the trunk of the tree standing. However, all is not lost as hundreds of short branches sprout through the insulating bark giving the tree a second chance of life.

Unlike those of most other evergreens, the redwood needles stay green for up to three years and still cling to the



Wood sorrel

recurvata because the small branches curve upwards. It may be of interest that the aromatic fruit of the Juniper is used to flavour gin.

Stop **13**

This tree has the impressive name of '*Arthrotaxis selaginoides*' and it comes from the mountains of Western Tasmania. Note the sharp stiff leaves, on the inside of which are bands of tiny white dots. It is through these "stomata" that the leaves "breathe".

At this moment hundreds of chemical reactions are taking place inside this tree. From some of these reactions, oxygen is produced and expelled through these "stomata". We, in our turn, inhale this oxygen for our own body chemistry. Without green plants there would not be enough oxygen produced and animals including men would suffocate.

Stop **14**

The tree with the drooping foliage below this stop is called '*Chamaecyparis nootkatensis*'. The drooping nature of this tree allows it to shed heavy snow from its branches which would otherwise break under the heavy burden. There is little opportunity for the Nootka cypress to show off its snow-shedding ability in Avondale, but in its snow-bound native Alaska this is an important facility.

Most of the trees near this stop are '*Chamaecyparis*' or 'Cupressus' species. They all have their tiny leaves overlapping each other and pressed against the stem : this minimizes the evaporation of precious water from the leaf surfaces, and is especially important to species that are native to the hot dry countries around the Mediterranean region.

Stop **15**

We have already seen that all pines have their leaves in sets of two, three or five depending on species. These pines are "two needle pines" and are called Scots Pine. The reddish bark also helps in identification.

Scots Pine

Notice that these pines have been planted in rows and that the rows are further divided by wooden stakes. All trees between the same pegs are identical in shape—for example they all have their branches sweeping upwards or outwards. This block of pines is a "genetic bank". Trees within the same sets of pegs have been produced not from seed but from graftings from the *same* parent tree. In effect they appear like identical twins since the genetic material is exactly the same.

These trees were planted by our research foresters to help them in their tree breeding programme.

Stop 16

This wall was built sometime in the mid 18th century. It partially served the purpose of a retainer wall for an old road that ran along the top of the embankment. It may also have been built simply as a "folly"—a mock ruin—often built on estates in the 18th century to give employment during slack times and to add to the historic atmosphere of an estate.

Stop 17

This tree goes under a variety of names —Japanese cedar, Peacock pine and the more ponderous 'Cryptomeria japonica". It is a native of Japan and China and was first discovered in China in 1701.

Japanese cedar is one of the most widely used timbers in Japan. It is allowed to grow from 60-120 years in the Imperial forests before being cut for its commercial timber. The bark is used for roofing houses, and the wood for making furniture and panelling in Japanese homes.

A story is told that when Ieyosu, the founder of the Tokagawa dynasty, passed away in the 17th century the word went forth that the Daimyos (feudal lords) of the empire were each to send a stone or bronze lantern to adorn the grounds about the tomb of this venerable man. One man was too poor to send a lantern so instead he planted an avenue of Japanese cedar leading to the tomb of Ieyosu. Today this avenue is considered among the finest in the world and it far surpasses in its beauty the stone and bronze lanterns of Ieyosu.

You are now only a short distance from Avondale House and the end of the trail. We hope you have enjoyed it and that you will visit other trails elsewhere.

THE STATE FORESTS AND YOU

IF you have enjoyed your visit to Avondale you may wish to visit our other Forest Parks at Dún a' Ri, Co. Cavan, Gougane Barra, Co. Cork Ards, Co. Donegal and Lough Key, Co. Roscommon. Dún a' Ri Forest Park near Kingscourt is a delightful place and boasts the famous Wishing Well in the romantic beauty of a sweetly-wooded glen. By contrast, the Forest Park at Gougane Barra is set in a great mountain amphitheatre where glaciers once scooped out a magnificent cliff-fringed coomb. Very different again is the setting of our newest Forest Park at Ards, near Creeslough, Co. Donegal where the forest marches down to golden Atlantic strands on Sheep Haven Bay.

You could spend a long week-end if not an entire holiday at Lough Key Forest Park by using our fully equipped caravan and camping grounds. Amenities here include shop, restaurant, deer enclosure, an exotic bog garden, boat trips among the wooded islands, planned walks etc.—all in a restful woodland environment. And you don't have to own a caravan—you may hire one on site. We will be happy to forward full details to you on request.

In a different category is the internationally-known Kennedy Park, New Ross, Co. Wexford, where a scientifically laid-out Arboretum, and a Forest Garden representing tree species from all five continents are combined in an amenity park which not alone provides a place of leisure in beautiful surroundings but also serves to stimulate interest in the more enlightened use of woody plants.

Apart from car park fees (20p. per car) there is no charge for admission to the Forest Parks or to Kennedy Park. Car park tickets valid for a full year may be purchased at each site for 50p.

Did you know that there are now more than 300 forest areas open to the public in all parts of the country? Many of these areas contain car parks, picnic sites, nature trails, viewing points etc. and all are listed in a free booklet, "The Open Forest", which we will gladly let you have on request. There is no charge for admission to any of these areas or for use of the car parks. We also have a booklet listing areas of ornithological interest throughout the country and this, again, may be had free on request.

PUBLICATIONS

Forest Park Booklets

Lough Key	20p
Dún a' Ri	8p
Avondale	25p
Gougane Barra	In preparation
Ards	*do.*
Kennedy Park Trails	5p

Booklets available on sites or from Forest and Wildlife headquarters (post free). Special quotations for orders of 50 copies and upwards.

Nature Trail leaflets

Glenbower Wood, Glengarriff Woods, Gougane Barra Forest Park	Co. Cork
Cruagh Wood, Tibradden Wood	Co. Dublin
Ravensdale Wood	Co. Louth
Dooney Wood	Co. Sligo
Bellevue Woods, Devil's Glen Wood, Glendalough Woods	Co. Wicklow

Leaflets (2p each) are available from dispenser boxes on sites. Complete set of ten leaflets in presentation wallet available from Forest and Wildlife headquarters, 35p post free.

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