

## General paper

# Tree collections in Ireland

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## Summary

In contrast to the 33 species which occur naturally, several hundred exotic or introduced species are represented in Ireland. From the 1600s, tree species from the temperate regions of the world have been cultivated in Irish parks and demesnes. In the 18th and 19th century, plant collections were established by private owners who were keen to plant recently introduced species. In this century, tree collections were established by private individuals, the State and by local authorities. Trees were planted in arboreta, such as the John F. Kennedy Arboretum, Co. Wexford, or in informal Robinsonian style gardens, such as Mount Usher Gardens in Co. Wicklow. Some 35 collections are extant on this island. Collections such as those at Powerscourt, Co. Wicklow, Birr Castle, Co. Offaly, and Castlewellan in Co. Down, are of international repute. While the tree collections are important tourist destinations, attracting some 700,000 visitors annually, they also represent a resource for the nursery industry and for genetic and taxonomic studies, and are an integral part of garden design.

## Tree collections

The number of tree species which occur naturally in Ireland is limited. Species of birch (*Betula* spp.) and oak (*Quercus* spp.), together with common yew (*Taxus baccata* L.), are among the 33 species described in *Trees of Ireland – Native and Naturalized* (Nelson and Walsh, 1993). In contrast, several hundred exotic or introduced species are represented. From the 1600s to recent times, trees have been acquired from overseas and grown alongside native trees in Irish gardens, parks and demesnes. A collection is taken to be a representative number of trees from a particular genus, group of genera (such as the conifers) or regions of the world. Areas of parks and estates where trees only are cultivated are known as arboreta (trees, in general) and pineta (conifers, in particular). In most situations in Ireland, trees are cultivated in association with shrubs and herbaceous plants, or in some situations, with native wild flowers. Many of the older collections were established by private collectors, and many of these are now under State ownership. Other collections were established by the State and in recent years, by local authorities in collaboration with the Tree Council of Ireland and the general public. This paper examines the evolution of tree collections in Ireland and describes a representative number of these.

## The 18th century

One of the earliest plant collectors in Ireland was Sir Arthur Rawdon of Moira, Co. Down. In the late 17th century, he sent his head gardener, James Harlow, to Jamaica to collect plants (Nelson, 1984), which were later grown successfully in a prototype greenhouse. Another tree enthusiast, Lord Clanbrassil, is remembered in the nomenclature of *Picea abies* 'Clanbrassiliana', a dwarf form of Norway spruce. There is a fine specimen of this cultivar in his garden at Tollymore, Co. Down, now a forest park.

Records of the plant collections of Rosannagh, Rathnew, Co. Wicklow, held in the archives of the National Botanic Gardens, Glasnevin, Dublin, detail planting undertaken by the Tighe family between 1718 and 1874. They indicate the range of European and Middle Eastern trees in cultivation in Ireland at that time, including horse chestnut (*Aesculus hippocastanum* L.), beech (*Fagus sylvatica* L.), Cedar of Lebanon (*Cedrus libani* A. Richard), evergreen oak (*Q. ilex* L.), common laburnum (*Laburnum anagyroides* Med.), common lime (*Tilia x europaea* L.), common walnut (*Juglans regia* L.) and Spanish chestnut (*Castanea sativa* Mill.). One of the earliest introductions from eastern North America was the tulip tree (*Liriodendron tulipifera* L.). There are several old specimens in existence, including a fine example at the K Club, Straffan, Co. Kildare.

John Foster (1740-1828), who is perhaps better known as the last Speaker of the Irish House of Commons, was also an important plant collector. He had 1,700 different trees and shrubs in his estate at Collon, Co. Louth, and was one of the first to plant copper beech (*F. sylvatica* 'Purpurea') in Ireland. Foster was also instrumental in the establishment in 1796 of the Botanic Gardens (now the National Botanic Gardens) in Glasnevin by the Dublin Society (now the Royal Dublin Society) (Nelson and McCracken, 1987). Some very old but extant specimens of Cedar of Lebanon and common yew predate the establishment of the gardens. Today, the gardens maintain important collections of trees, including oak, maple (*Acer* spp.), birch, poplar (*Populus* spp.) and chestnut. The specimen of Caucasian elm (*Zelkova carpinifolia* (Pall.) K. L. Koch), a relative of the elm (*Ulmus* spp.), is one of the finest in cultivation. The often-photographed weeping atlas cedars (*C. atlantica* 'Glauc Pendula' and 'Glauc') are a familiar image of the Gardens.

Fine examples of the Irish yew (*T. baccata* 'Fastigiata') are grown not only in the National Botanic Gardens, but in many collections throughout the island. The Irish yew was discovered between 1740-60 in the Cuilcagh Mountains. A plant was brought to Florencecourt, Co. Fermanagh, from where it was propagated. It is now in widespread cultivation in Ireland and throughout the temperate world, as an architectural specimen tree in gardens and parks.

John Claudius Loudon describes 18 Irish estates and their trees in *Arboretum et Fruticetum Britannicum* (Loudon, 1838). Several of these estates, including Antrim Castle, Co. Antrim, Castle Ward, Co. Down, Kilruddery, Co. Wicklow, and Castletown in Co. Kildare, are managed as important historic landscapes which are open to the public.

## The 19th century

In the early 19th century, plant collectors such as David Douglas, Archibald Menzies and William Lobb, were sent by horticultural societies and nurseries in Britain to the western United States and South America to collect plants. The subsequent introduction of new trees prompted the establishment of arboreta in parks in Britain and Ireland.

From the 1840s, Lord Barrymore purchased trees from London nursery firms for his estate at Fota in Co. Cork. A catalogue of his collection published in 1912 listed fir (*Abies* spp.), spruce, Douglas fir (*Pseudotsuga menziesii* (Mirb.) Franco), hemlock (*Tsuga* spp.), pine (*Pinus* spp.), coast redwood (*Sequoia sempervirens* (D. Don) End.) and giant sequoia (*Sequoiadendron giganteum* (Lindl.) Buchholz). A specimen of date palm (*Phoenix canariensis* Hort. et Chabaud.) planted in 1894, is the only known example of this species in outdoor cultivation in Ireland. Of particular conservation importance is Bermuda cedar (*Juniperus bermudiana* L.), a relative of the native common juniper (*J. communis* L.),

which was planted in 1916 and is listed as vulnerable in the wild in the *IUCN Red Data Book* (Anon., 1978).

In the 1780s, the monkey puzzle or Chile pine (*Araucaria araucana* (Molina) K. Koch) was introduced into cultivation from Chile by Archibald Menzies. From the 1840s, it became a popular garden tree and was often planted as a specimen on lawns. Avenues of monkey puzzle were less common, with fine examples remaining at Powerscourt, Co. Wicklow, and Woodstock, Inistioge, Co. Kilkenny. A line of giant redwood, planted in the 1860s and now between 30-35 m tall, adorn the formal Italianate garden at Powerscourt. Giant redwoods are easily identified by their soft cork-like bark and massive size. In an area known as Tower Valley, Lord Powerscourt planted a comprehensive collection of North American conifers, many of which are notable specimens of their type in Ireland. A massive specimen of Monterey cypress (*Cupressus macrocarpa* Hartw.), planted in 1898 by Lord Powerscourt, measured 34 m in height in 1980.

Whereas Lord Powerscourt laid out a formal garden on a large scale and grew conifers in a formal manner as well as informally in a pinetum, the Ball Acton family at Kilmacurragh, Co. Wicklow, planted a Robinsonian style garden, where exotic trees were interspersed among native trees in a naturalistic manner. Kashmir cypress (*C. cashmeriana* Royle ex Carr.), a cypress native to India distinguished by its glaucous blue foliage and elegant habit, is uncommon in Irish gardens. Rhododendrons (*Rhododendron* spp.) have attained tree-like proportions in the garden. An avenue lined with a red-flowered hybrid, *Rhododendron* 'Cynthia', is a spectacular sight each spring. While *Cryptomeria japonica* 'Elegans', a cultivar of Japanese red cedar, is common in Irish gardens and often recommended as a dwarf conifer, the massive widespreading specimen at Kilmacurragh gives lie to any such suggestion.

The landscape design at Abbeyleix is typical of many 19th century demesnes, with formal terraces south of the house, surrounding areas of parkland with specimen trees, and a pinetum located some distance from the house. There are also remnants of the ancient oak forest, with one specimen reputed to be 1,000 years old. While Spanish chestnut occurs frequently in Irish collections, *Castanea henryi* (Skan.) Rehd., a specimen of which is found at Abbeyleix, is very uncommon.

The tree collection in the walled garden at Castlewellan, Co. Down, now the National Arboretum in Northern Ireland, was developed from the 1850s by Lord Annesley. Situated in a walled garden on a south-facing site, many trees have attained a large size and are notable specimens of their type. *Juniperus recurva* 'Castlewellan', a cultivar of drooping juniper, is an example of a plant from a garden which has long since entered the trade.

Avondale in Co. Wicklow, the home of Charles Stewart Parnell, was originally planted by Samuel Hayes in the 1700s. In the early 20th century, a forest garden including conifers and eucalypts (*Eucalyptus* spp.) was planted by A.C. Forbes. Forestry plots planted on either side of a broad ride frame splendid views to the surrounding mountains.

Mount Usher in Co. Wicklow was acquired by the Walpole family in the 1860s and developed as a Robinsonian garden from the 1890s. Detailed planting records have been maintained, noting the introduction into the garden of plants from Irish gardens and nurseries and from other countries. Augustine Henry identified a specimen of the eucalypt, *E. johnstonii* Maiden, planted in 1911 from seed obtained from the Sydney Botanic Gardens. A specimen of *Emmenopterys henryi* Oliver is the sole record of this tree in Irish gardens. An example of Montezuma pine (*P. montezumae* Lamb.), a Mexican 5-needled pine, was planted by Lord Powerscourt in 1909 and is now approximately 34 m tall. Two 'pups' or seedlings of this tree grow by the Suspension Bridge over the River Vartry. The garden is

mentioned, along with many others, in *Trees of Great Britain and Ireland* by Elwes and Henry (1906), which gives an account of trees occurring naturally in these islands and those growing in parks and arboreta in the early years of this century.

Certain trees become collector items and are much sought after by garden owners and plant enthusiasts alike. The handkerchief tree or dove tree (*Davidia involucrata* Baill.) is one such example. It was discovered in 1869 by the French collector Abbé Armand David, seen by Augustine Henry but introduced into cultivation by E.H. Wilson in 1903. Wilson described it as “the most interesting and most beautiful of all trees of the north temperate flora”, with its white petal-like bracts likened to “huge butterflies hovering among the trees”.

### The 20th century

Conifers make an important contribution to Irish arboreta, with some 230 species from 45 genera and eight families represented in collections. Perhaps one of the most unusual is the Chinese deciduous cypress (*Glyptostrobus lineatus* (Poir.) Druce), a deciduous species related to the swamp cypress (*Taxodium distichum* (L.) Richards).

Conifers form an important part of the collection of trees at Birr Castle in Co. Offaly. From the 1930s, the 6th Earl of Rosse gathered a comprehensive collection of trees and shrubs and planted them within an existing parkland landscape. Fine specimens of Mexican cypress (*C. lusitanica* Mill.), Monterey cypress and Nootka cypress (*Chamaecyparis nootkatensis* (D. Don) Spach) are planted on the banks of the River Camcor. Nearby, a specimen of *Carrierea calycina* Franch., a species from China related to the genus *Azara* with white flowers hidden in the evergreen leaves, is a rare find in cultivation. Other interesting trees at Birr include the rare walnut, *J. cathayensis* Dode, and species of hickory (*Carya* spp.). Poplars are often associated with northern France where they can be found lining riverbanks. At Birr, specimens of grey poplar (*P. canescens* (Ait.) Sm.) and the Chinese necklace poplar (*P. lasiocarpa* Oliv.) have attained large sizes. Some plants are grown from seed imported from the wild. One such example at Birr is the unusual lime, *T. henryana* Szyszyl., planted from seed supplied by the Chinese Lushan Botanic Garden in 1938.

The name Henry occurs frequently in relation to Irish arboreta. Augustine Henry (1857-1930) trained as a medical doctor (Pim, 1984). While in China from 1881-1900, Henry collected many plant specimens which he sent to the Royal Botanic Gardens, Kew. He then studied forestry in France and held an appointment in Cambridge before becoming the first Professor of Forestry in the Royal College of Science (now University College Dublin) in 1913.

In the 19th century, botanic gardens and nurseries sent plant collectors to collect seed in the wild. In the period between the two world wars, syndicates of garden owners sponsored plant collectors such as George Forrest and Frank Kingdon Ward to collect seed in China and elsewhere. One such sponsor in this country was Lord Headfort at Headfort, Kells, Co. Meath. Stands of Delavay's silver fir (*A. delavayi* Franch.) and many rhododendrons were cultivated from Chinese seed.

In 1932, H.M. FitzPatrick listed the principal trees in 85 collections in Ireland. FitzPatrick's work, *The Trees of Ireland – Native and Introduced* (1932), was to remain a standard reference for many years.

The establishment of tree collections continued after the second world war. From 1946 onwards, the late Roderic More O'Ferrall developed an important collection of medium

sized trees at Kildangan, Co. Kildare, which include ornamental specimens of cherry (*Prunus* spp.), apple (*Malus* spp.), rowan (*Sorbus* spp.) and birch. There is also a notable specimen of *Dipteronia sinensis* Oliver, a relative of sycamore (*A. pseudoplatanus* L.).

While Malahide Castle dates from 1185 and a strong gardening tradition long associated with the Talbot de Malahide family, the current gardens were not developed until 1948, when Milo Lord Talbot de Malahide succeeded to the property. Australian and New Zealand plants in particular are represented in the collection, including eucalypts, daisy bushes (*Olearia* spp.) and *Pittosporum* spp. The specimens of paper bark maple (*A. griseum* (Franch.) Pax) and the mahogany-like barked Tibetan cherry (*P. serrula* Franch.) are among the finest in the country.

While most of the trees in cultivation were introduced prior to the second world war, one exception which has become popular as a garden and park tree is dawn redwood (*Metasequoia glyptostroboides* Hu et Cheng), a conifer originally known only from fossil records but found in the wild in China in 1941. Seed was introduced to the Arnold Arboretum in Boston and distributed to gardens around the world. Specimens from this early distribution of seed occur in the National Botanic Gardens, Glasnevin, and at Mount Usher in Co. Wicklow.

## Recent arboreta

The John F. Kennedy Arboretum in Co. Wexford was opened in 1968 and is managed by Dúchas – The Heritage Service. It includes 125 ha devoted to trees and shrubs, and a further 60 ha of forestry plots. The arboretum, which contains over 4,500 different types of trees and shrubs, is the most comprehensive collection on this island. Also in the south-east, the gardens at Mount Congreve, Co. Waterford, developed by Ambrose Congreve, maintain an important collection of trees and shrubs of both botanical and horticultural importance. Both collections could serve as important sources of propagation material for the nursery trade.

The most recent inventory of woody genera in Irish gardens was undertaken by the author on behalf of An Taisce between 1979-83 (Forrest, 1985). Twenty private collections were catalogued. The results were then amalgamated with records from publicly-owned collections, creating an inventory of 17,500 records representing approximately 7,000 taxa of trees and shrubs.

Since then, two more tree collections have been established, both of which were joint ventures between the Tree Council of Ireland and a local authority, with sponsorship from various groups and private individuals. The Millenium Arboretum at St. Anne's Park, Clontarf, Dublin, was established in 1988 by Dublin Corporation and the Tree Council to mark 1,000 years of Dublin City. The arboretum incorporates over 1,000 different types of trees from all over the world but commonly seen in small private gardens and public open spaces. In the late 1990s, the shape and form of the arboretum are clearly evident, as the trees grow and develop. In February 1996, the first tree in the Famine Commemorative Arboretum was planted. Situated at the Corkagh Park, Clondalkin, Dublin, the arboretum will include 150 different species of trees from around the globe to mark the emigration of Irish people to many countries worldwide. The Famine Commemorative Arboretum is a joint venture between South Dublin County Council and the Tree Council.

## Conclusion

On this island located between the latitudes 52-55°N, we have garnered trees from North and South America, the Antipodes, the Orient, the Himalayas and Europe. Two main factors have contributed to the development of the approximately 35 tree collections throughout this island: our mild temperate climate and the tireless efforts of garden owners and their staff who were, and continue to be, imbued with the spirit of trees.

The tree collections have served and continue to serve many functions. There are many examples of trees which have gone into commerce from Irish collections, and these continue to act as a source of new examples of cultivars for the nursery trade. They represent an important genetic resource in the conservation of rare species, and a source of material for taxonomic study. The tree collections represent an integral part of the gardens within which they are located, and therefore contribute to the tourist attraction these represent. Almost 700,000 visits are made to Irish gardens each year. They also represent a source of enjoyment and pleasure, and of inspiration to artists.

Some collections are no more, others are senescent, and a few are in their juvenile phase and are set to mature at some point well into the next century. Ireland's tree collections are a testament to those who first collected the trees, the owners and gardeners who cultivated them on their land, those who had the foresight to undertake State-funded arboreta, and present day managers of parks, estates and forests.

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