Moorea

Vol 1

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The Irish Garden Plant Society was formed in 1981 to assist in the conservation of garden plants, especially those raised in Ireland. It also takes an interest in other aspects of the preservation of Ireland's garden heritage.

This journal will be devoted to papers on the history of Irish garden plants and gardens, the cultivation of plants in Ireland, the taxonomy of garden plants and reports of work carried out by the society and its individual members.

The editorial committee would welcome manuscripts from members of the society and others. Typescripts should be on A4 paper, double-spaced and typed only on one side of each sheet.

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IN HONOUR OF DAVID AND FREDERICK MOORE

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In choosing the title MOOREA for this journal, the Irish Garden Plant Society honours the unique contribution of the Moore family to horticulture and gardening in Ireland. David Moore (1807-1879) and his son Frederick (1857-1950) were the main promoters of Irish horticulture during their combined 84 years in charge of the Botanic Gardens at Glasnevin. However, Charles Moore (1820-1905), who worked at Trinity College Botanic Gardens, Dublin (like his brother and nephew) and later became director of the Royal Botanic Gardens in Sydney, is also included in this dedication as is Phylis Moore (née Paul) who remains today a powerful memory to many Irish gardeners and who followed her husband's example by giving good plants to those who could grow and preserve them. These four people enriched our gardens in their several and diverse ways.

David Moore

He was born on 23rd April, 1807 in Dundee, Scotland; his father Charles was a gardener and David was named after his grandfather. The family name was spelt in the baptismal register Moir, but occasionally they used the form Muir and in the late 1820s all the family adopted the spelling Moore. David was taught natural history by Douglas Gardiner of Dundee, and then served an apprenticeship in the garden of the Earl of Camperdown, before moving to Edinburgh to work in James Cunningham's nursery at Comely Bank. In 1828, David Moore emigrated to Ireland and worked as assistant to James Mackay in the Trinity College Botanic Garden at Ballsbridge. Moore published his first paper on the cultivation of orchids while working there. In 1834, he tried unsuccessfully to obtain the vacant curatorship in the Royal Dublin Society's Botanic Gardens at Glasnevin, but he was appointed botanist to the Ordnance Survey and for five years he worked mainly in the north of Ireland collecting and listing the native plants of counties Londonderry and Antrim. In 1838, Ninian Niven resigned as curator in Glasnevin and David Moore was elected to succeed him; he took up the position on 24th November, 1838 remaining there until his death on 9th June, 1879.

David Moore, although trained as a gardener, established a considerable reputation as a botanist; he was the author of many papers on the Irish flora and received an honorary doctorate from the University of Zurich for his work in cryptogamic botany. Under his direction at Glasnevin, orchids were raised from seed to flowering stage for the first time, and hybrids were produced between species of *Sarracenia* (pitcher plants) - the first cross between *S. flava* and *S.drummondii* was named *Sarracenia* x *moorei* after him. He also encouraged people travelling or residing abroad to send seeds and living plants to Glasnevin; in this way he was able to introduce many very fine plants into cultivation. Moore corresponded with Edward Madden in India who sent *Abelia triflora* and *Cardiocrinum giganteum* to Dublin and is commerorated in *Rhododendron maddenii*. Charles Moore sent tree ferns and Australian plants from Sydney in Wardian cases. William Grant Milne shipped orchids and palms from West Africa to Glasnevin. John Tweedie, a Scot resident in Buenos Aires, sent seeds and plants from the Argentine.

Moorea - the first genus

In 1839 Tweedie sent some packages of seeds collected in the pampas. When they arrived in Dublin, Moore had the seeds sown. Among the resulting plants was a fine, tall grass which was planted out in the open at Glasnevin in 1840. It produced flowering spikes for the first time in the autumn of 1842. Moore sent plants and pressed specimens to the Royal Botanic Gardens, Kew, and in a letter to the director, Dr. William Hooker, noted that this "... noble and interesting grass ... has flowered in this collection recently ... Tweedie calls it Aira gigantea with the following observation: 'This is the most showy plant of any class in this country, the flower stem 6 - 12 feet high, with large spikes of 12 - 18 inches appearing like white sheets hung on poles and seen at a distance of many miles in our flat plains...' I think it is likely to be perfectly hardy having stood out in a low cold situation of the garden during the last two years without the slightest protection...".

The grass proved not to be the species Tweedie suggested, but another which was then called Gynerium argenteum. John Lindley argued that it belonged to a distinct but undescribed genus, yet he suggested that the commonly used Latin name should be retained. In 1855, however the French botanist Charles Lemaire (1855), noting Lindley's comments on the species' differences from Arundo and Gynerium, suggested that it should be called Moorea argenteum - "notre genus est avec justice dedie, on le voit, a M. Moore, botaniste distingue et directeur du Jardin botanique de Glasnevin, a qui ... on en doit l'introduction dans nos jardins".

Unfortunately Lemaire's generic name was never taken up by botanists, even by Moore. In 1897, Otto Stapf decided that the pampas grass required placing in a separate genus for which he proposed the name Cortaderia. Later, finding that Lemaire had proposed Moorea, Stapf (1903) discussed the history of the name and indicated that he considered that Cortaderia should remain and that Moorea should not be resuscitated. His opinion was confirmed under the rules of botanical nomenclature; Cortaderia is now conserved against Moorea. Thus Moorea is invalid and Tweedie's pampas grass (depicted on the journal's cover) is correctly named Cortaderia selloana.

Frederick Moore

Frederick was the eldest son of David and his third wife Margaret; he was born at Glasnevin on 3rd September, 1857. His father sent him to school for several years in Germany, and later he trained at the famous nursery of Van Houtte in Ghent, Belgium, and studied at the botanic garden of the University of Leiden. At the time of his father's death, Frederick was curator of the Trinity College Botanic Garden and he was appointed to succeed his father at Glasnevin within a matter of a few weeks. He took up the post on 2nd September, 1879.

Frederick was not a botanist like David Moore, but he was an incomparable horticulturist. His passion was orchids, and he established a collection of orchid species at Glasnevin which was renowned worldwide. In order to record the living plants, Frederick Moore engaged three artists over a period of about 35 years to work at the Botanic Gardens painting the flowers; their work remains at Glasnevin today, a testimony to the diversity of the orchids grown there.

Under Frederick Moore, the Royal Botanic Gardens, Glasnevin, reached their zenith. Many new plants were introduced, especially from the great expeditions to the Himalayas and the Far East after 1900. Private collectors were also

encouraged ; for example Lady Charlotte Wheeler-Cuffe of Kilkenny sent seeds and living plants, including the white flowered Rhododendron cuffeanum, from Burma and in return Moore sent plants from Dublin for a botanical garden which she established at Maymyo in central Burma. Moore also formed a network of gardening friends throughout Ireland whom he supplied with rare exotics propagated at Glasnevin - William Gumbleton and Lord Barrymore in Cork, Samuel Heard and Annan Bryce of Rossdohan and Ilnacullen respectively, Sir John Ross, Lord Annesely and Hugh Armitage Moore in County Down, Lord Headfort at Kells and Edward Walpole of Mount Usher are a few of the people who benefited from Moore's policy of distributing plants. Robert Praeger summed up Moore's attitude thus: "He was generous in his distribution of rare plants to those who were qualified to ensure their health and he recognized the climatic and edaphic restrictions of Glasnevin by placing specimens in gardens especially favoured by nature". Moore also encouraged the breeding of new garden plants, and under his direction a number of fine cultivars were raised at Glasnevin, inclusing Escallonia 'C. F. Ball' and 'Alice', raised by Charles Ball and named for him and his wife.

In 1911, Frederick Moore was knighted for his services to Irish horticulture. On the formation of the Irish Free State in 1922, he retired having reached the age of 65, but he continued to live in Dublin, and with his wife Phylis, maintained an active interest in gardening and concern for horticulture.

Moorea - the second genus

In 1890, Frederick Moore sent an orchid to the Kew botanist Robert Rolfe for identification. The orchid had been bought at a sale but its precise origins were unknown although it had come from South America. Rolfe (1890) decided that it represented a new genus and, unaware of previous publication, coined the generic name Moorea - "it affords me great pleasure to be able to connect the name of Mr. F. W. Moore, Curator of the Glasnevin Botanic Garden, with so striking an orchid". An elegant plant, it has rich reddish-brown flowers marked with creamy-yellow. Unfortunately it is very rare in cultivation, but like Cortaderia selloana it was first grown in and distributed from Glasnevin.

Rolfe was later informed about Lemaire's publication and realized that his new genus was invalidly named. He formed a new generic name for the orchid (Rolfe 1904) which today is called Neomoorea irrorata, still commemorating Frederick Moore.

David Moore is not remembered by a valid generic epithet, but a number of species are named after him including Crinum moorei and a dwarf willow which he found on Muckish Mountain, Donegal, in 1868, Salix x moorei. Frederick Moore is not only commemorated by several orchid species such as Coelogyne mooreana, but also by a number of cultivars including Rhododendron 'Sir Frederick Moore' and an ivy Hedera helix 'Sir Frederick Moore'.

The Moores adorned the gardens of Ireland with great variety - the pampas grass, many orchids and other eponymous plants are their living memorials.

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HOLLIES IN IRELAND

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Ilex aquifolium is one of four hundred species of holly, which are distributed in the temperate and tropical regions of the world. The common holly (cuileann) is a familiar sight in Ireland whether seen in its natural habitat, which varies from the stunted, windswept growth of the Burren to the more lush, subdominant layer of the Killarney oakwoods, or as a frequent plant in gardens. Ilex aquifolium has been in cultivation since ancient times and over one thousand names have been applied to its 150 or so cultivars. In this paper, I attempt to trace the history of hollies in Irish gardens. At the end, I include a survey of Ilex found in Irish gardens today.

In pre-Christian times, the holly was used by druids in their winter ceremonies and also in connection with holy wells as a sacred tree. Considering that it is one of our few native evergreen trees, and by far the most widespread, it is surprising that it was not held in greater respect.

By the 8th century A.D. one finds holly mentioned in one of the Brehon promulgating laws which protected ornamental and useful trees -

> "Airigh timber are oak, hazel, holly, yew, Indian pine and apple; five cows penalty for cutting down these trees; yearling cow-calves for cutting the limbs; and heifers for cutting the branches".

But gardening in Ireland did not come into its own until the late 16th century. Until then, it had largely been the preserve of monks in their peaceful abbeys and monastries; according to Walker "the perturbed state of the kingdom during many ages forbade it". But even this was halted by the Reformation. One observer who travelled through Ireland at the time of Elizabeth I (r. 1558-1603) remarked that "the best sort of flowers and fruits are much rarer in Ireland than in England". All this was to change. As Walker so aptly noted, "as soon as the English had subdued the martial spirit of the Irish, and obtained for themselves the peaceable enjoyment of the lands which they had won with their reeking swords, they introduced the formal style of gardening", which had prevailed in England for some years. Around that time, Charles Smith mentions that at Bangor in County Down "there are gardens which are large and handsome and filled with noble evergreens of a great size, cut into various shapes".

In the reign of Charles I (r. 1625-1649) an act was passed protecting trees ("An Act to Avoid and Prevent Divers Misdemeanors in Idle and Lewd Persons in Barking of Trees"). The mucilaginous bark of the holly was the main source of birdlime which was used to snare birds.

The arrival of William III (r. 1688-1702) brought a change in the style of gardening. His Dutch followers loved evergreens and topiary as well as flowers. With the Flight of the Wild Geese (1691) and the influx of Protestant landowners many new houses and gardens were built. About this time Edmund Ryan wrote - "Sweet would seem the holly's shade,
Bright the clust'ring berries glowering"...

By the end of the 17th century conditions were more favourable for gardening. Between 1689 and 1791 there were seventeen parliamentary acts concerning tree planting. One of these (1710) stated that trees for compulsory planting had to be obtained from a nursery and not from an existing wood or some such place, thus emphasizing the need for public nurseries.

Although Dublin was particularly well served with nurseries, they were scarce in other parts of the country. However, most landowners who undertook large scale planting did have their own nurseries, and some supplied the needs of their tenants. By the end of the 1700s, it was difficult for an ordinary person to obtain seedlings or transplants and they usually had to be brought from Dublin or Scotland. The Dublin and Cork growers combined nurseries with seed shops while growers outside these areas concentrated on producing young plants. The stock of the former was limited and so part of it was imported from abroad - England, Scotland, Holland and France - and then supplied to the country districts. Some of the larger nurserymen issued price sheets or catalogues, few of which survive today. Most of their advertising was done in newspapers.

In 1728, Charles Carter of Chapelizod, Dublin included evergreens in his stock. John Hares of Otway, Tipperary, in 1768-69, had holly for 30s per 1000. He only had 5,000 holly plants for sale. William Fennesy of Limerick (C. 1777-92) also had holly for sale.

George Newsom noted in his diary for 1785-1790 (Ms. 139, Quaker Library, Dublin) that he had "received from J. Sheehan .... Variegated Holly 3". Maria Edgeworth, whose family were all keen gardeners, in Castle Rackrent (3rd edition) includes in a description of the garden at Fuller's Court, Co. Kildare in 1767 ".... quite in the antique taste, with large yew and holly trees ....".

In about 1760, a move back to nature was started by "Capability" Brown and his contemporaries, and many of the parks in Ireland with their vistas of wood and lake stem from this period. This created a demand for trees of all sorts and many new species were imported. This was led by the Earl of Clanbrassil and John Foster, who planted many exotic species on their estates in County Down and County Louth. Around this time many American trees were introduced by John Templeton and were cultivated by him in his demesne near Malone, Belfast. By the end of the century Foster had more exotic plants on his estate at Oriel Temple than anyone else in Ireland. He was a friend of the Edgeworth family and Maria Edgeworth obtained many plants from him.

While researching for this article, I fould few direct references to hollies for this period and earlier. Loudon (1822), in his Encyclopaedia of Gardening complained that there was little information about the state of gardening in Ireland. In Arboretum et Fruticetum Britannicum (Loudon 1838), he mentions that Lord Ferrard had a variegated holly 100 years old and 20 feet high at Antrim Castle. And at Charleville Forest in King's County (Offaly) there was a common holly 40 feet high. The Botanic Garden at Trinity College, Dublin had the Madeira Holly (Ilex perado) and the African Holly (Ilex mitis) flourishing in the open air in 1825.

At Dunganstown near Wicklow was the well-stocked tree and shrub nursery of a Mr. Thomas Hodgins. The nursery had been established around 1780 and in the early 1800's he raised two hollies that were to become increasingly popular in the Victorian era, and magnificent specimens of Ilex x altaclarensis (aquifolium x perado) 'Hendersonii' and Ilex x altaclarensis 'Hodginsii' can be seen all over the British Isles today. There has been much confusion about the correct identity of these two cultivars: I hope the following charts will help to clarify matters.

'Hodginsii' - ♂ rarely ♀

Raised by T. Hodgins in early 1800's
Before 1836, he sent it to
↓
John Shepherd, Curator of Liverpool Botanic Garden,
who sent propagation material to
↓
Fisher and Holmes (later Fisher, Son and Sibray) of Handsworth,
Sheffield and they distributed it as
↓
'Shepherdii'
But other nurserymen called it after the raiser and today the
established name is
↓
'Hodginsii'

Other epithets for 'Hodginsii' included Ilex hodginsii, Ilex shepherdii, 'Shepherdii' and 'Nobilis' but today they are placed in synonymy. 'Hodginsii' has produced one sport 'Nobilis Picta' ('Nobilis Variegata') which is sometimes seen in collections.

'Hendersonii' - ♀

Raised by T. Hodgins in early 1800's
who sent it to
↓
The Lawson Company, Edinburgh, who distributed it,
as did other nurserymen as
↓
'Hodginsii'
↓
Mr. John Shepherd, sent propagation material to
↓
Fisher and Holmes and they named their stock after a
friend of Shepherd, a Mr. Henderson.
↓
'Hendersonii'

The epithet 'Hodginsii when applied to 'Hendersonii' must be placed in synonymy.

'Hendersonii' has produced three well-known sports; 'Golden King' ♀ ('Hodginsii Aurea', 'King Edward VII'); 'Lawsoniana' ♀ (Ilex lawsoniana, 'Lawson's Bronze') and 'Hendersonii Variegata' ♀ ('Hodginsii Variegata').

The popularity of hollies reached its zenith under the Victorians who were passionately interested in evergreen plants, especially those that were variegated. Nurserymen vied with each other to produce new cultivars and to stock rare and unusual plants. This can be seen from some catalogues of the period.

In his catalogue of 1868-69, Fergus Farrell and Son of Capel Street, Dublin sold common holly at 6d to 2/6 and variegated holly at 1/- to 5/-. Patrick B. O'Kelly of Ballyvaughan, Co. Clare, offered Ilex aquifolium as a "rare" British plant at 7d to 5/6 per dozen!

In 1893, Rodger, M'Clelland and Company of Newry, Co. Down had the largest selection of any Irish catalogues (that I have seen). It lists Ilex cassine, Ilex decidua, Ilex opaca and Ilex vomitoria from North America; Ilex cornuta, Ilex crenata and cultivars, Ilex dipyrena, Ilex insignis (now Ilex kingiana), Ilex integra, Ilex rotunda and Ilex serrata from Asia and several cultivars of Ilex aquifolium and Ilex x altaclarensis. Prices ranged from 1/6 to 10/6.

The well-known Daisy Hill nursery at Newry which was founded in 1887 by Thomas Smith had a huge range of plants. Hollies in Catalogue no. 77 included Ilex cornuta, Ilex crenata, Ilex integra, Ilex latifolia and Ilex pernyi from Asia; Ilex cassine, Ilex glabra, Ilex myrtifolia and Ilex opaca from North America and Ilex perado from Madeira. Many variegated and green cultivars of Ilex aquifolium and Ilex x altaclarensis were also listed. Prices ranged from 1/6 to 10/6, with weeping standards from 12/6 to 21/-. It is interesting to note that the cultivars of Ilex aquifolium and Ilex x altaclarensis were more expensive than the rarer species! Later Daisy Hill catalogues included Ilex fargesii, "a new and distinct holly from China", Ilex pernyi var. veitchii, Ilex corallina, Ilex fujisanensis (now Ilex pedunculosa) and Ilex intricata, all from Asia. The last of these is only now being reintroduced into cultivation in the British Isles. Ilex crenata 'Mariesii', a dwarf holly ideal for the rock garden was also much in demand.

The Pennick Company of Delgany, Co. Wicklow was founded before 1880 and specialized in trees and shrubs, many of which were imported from Holland. Their catalogues mention Ilex aquifolium in variety at 2/6 to 7/6 each, with Ilex in variety at 1/6 to 10/6 each. Ilex crenata was also in stock at 1/6 to 2/6.

The cultivars of Ilex aquifolium mentioned in the above catalogues included 'Angustifolia', 'Argentea Marginata', 'Aurea Marginata', 'Ciliata', 'Crassifolia', 'Donningtonensis', 'Ferox', 'Hastata', ' Myrtifolia Aurea' and 'Ovata'. The most common Ilex x altaclarensis cultivars mentioned were 'Camelliifolia', 'Hodginsii' (it is difficult to know whether they meant true 'Hodginsii' or 'Hendersonii') and 'Nigrescens'.

At Old Conna Hill, near Dublin, Ilex latifolia was noted in the 1870s. And in 1906, in an article on Irish gardens, William Watson, a curator of Kew, mentioned a 12 foot high Ilex latifolia in the garden of Mr. Thomas Acton of Kilmacurragh. He noted a 40 foot specimen of the same species at Fota, the seat of Lord Barrymore. At "Darreen on the south side of Galway Bay" - he surely means Dereen on the Kenmare River - he saw Ilex crenata 15 ft x 15 ft. At Ashbourne House in Co. Cork, W. H. Paine noted in 1911, Ilex pernyi, Ilex kingiana and Ilex fragilis, all from Asia. The last of these is rarely seen in cultivation today.

Also in 1911, the holly collection in the National Botanic Gardens at Glasnevin was started. According to the old planting books, hollies were obtained from the following nurseries; Rodger, Mc Clelland of Newry, Cutbush of Barnet, Paul and Son of Cheshunt, R. Smith of Worcester, James Smith and Sons of Darley Dale, Fisher, Son and Sibray of Handsworth, Hillier of Winchester, Dickson, Veitch, and H. Hesse of West Germany. The collection is now in its prime and can be seen at the end of the Far Grounds while there are many magnificent specimens dotted around the Gardens.

From 1906 to 1913, a seven volume work entitled Trees of Great Britian and Ireland by H. J. Elwes (1846-1922) and A. Henry (1857-1930) was published. Henry's notes and herbarium specimens which he collected for this work are today in the Augustine Henry Forestry Herbarium which was presented to the National Botanic Gardens at Glasnevin by his widow. Most of the descriptive accounts of Ilex are based on Kew material but Ilex perado is mentioned at Kilmacurragh and Powerscourt, the latter being the best specimen in the British Isles today.

Both Elwes and Henry wrote the accounts for Ilex; the former noted that "In Ireland [Ilex aquifolium] formerly attained an enormous size, the most famous tree being one on Inisfallen Island, Killarney which Hayes [Treatise on Planting, p.143, 1794] recorded as 15 ft in girth in 1794 but I [Elwes] could find no trace of in 1909. There were also remarkable woods in which holly grew nearly pure and produced valuable timber in quantity. The late Earl Annesley informed Henry that out of a wood of this kind by the lake at Castlewellan, his brother sold in 1871 more that £500.00 worth of holly timber, but in 1906 the largest tree remained scarcely 6 ft in girth. Near Mt. Usher in Wicklow, Henry measured in a wood in 1904 a tree 70 ft in height and 6 ft in girth". (One of the tallest specimens of Ilex aquifolium in the British Isles today is at Johnstown Castle, Co. Wexford and is some 69 ft high).

In the Augustine Henry Forestry Herbarium, the following specimens were collected in Ireland; Ilex aquifolium 'Argentea Marginata' at Ballycurry; Ilex x altaclarensis 'Hendersonii' at Fota; Ilex dipyrena at Ashbourne, Co. Cork; Ilex kingiana at Ashbourne and Rostrevor; Ilex latifolia at Fota; Ilex opaca at Ballycurry, Powerscourt, Kilruddery and Ballyarthur, County Wicklow and Ilex pernyi at Ashbourne.

From about 1910, hollies began to be less in demand, and by the 1920s many nurseries had considerably reduced their range of Ilex species and cultivars. In his catalogue of 1912, J. A. Cooper of Lissadell, County Sligo had Ilex aquifolium 'Ferox' for sale at 1/-. The well-known rose firm of Samuel Mc Gredy and Son of Portadown had in 1926-27 Ilex aquifolium variegated gold and silver, and in variety from 4/- to 15/-. They also had 6-8 ft specimens of Ilex aquifolium 'Laurifolia' from 12/6 to 25/-. In their catalogue of 1929-30, they were also offering Ilex x altaclarensis 'Hodginsii' and 'Golden King' and also Ilex aquifolium 'Silver Queen'. The Powers Nurseries of Waterford offered in the mid 1920s, Ilex aquifolium 'Ferox','Ferox Aurea','Argentea Marginata', 'Aurea Marginata' and Ilex x altaclarensis 'Camelliifolia' and 'Wilsonii', also Ilex pernyi. But by 1976, they sold only Ilex x altaclarensis 'Golden King' and Ilex aquifolium 'Silver Queen'.

The famous Slieve Donard Nursery, Newcastle, Co. Down offered in 1938, Ilex crenata, Ilex crenata 'Latifolia', Ilex glabra, Ilex pernyi and Ilex pernyi var. veitchii. Later catalogues included Ilex x altaclarensis 'Golden King', Ilex aquifolium 'Argentea Marginata', 'Golden Queen', 'Ferox', and 'Silver Queen', Ilex latifolia and Ilex crenata 'Mariesii'.

The nursery of William Watson at Killiney, which has many interesting and unusual plants from 1916 until its closure in 1966, had Ilex aquifolium 'Golden Queen', 'Argentea Marginata', 'Pyramidalis' and Ilex pernyi.

Today, many of these well-known nurseries have closed down and most of the garden centres and nurseries stock a very limited range. From the few modern catalogues that I have seen, they appear to be Ilex x altaclarensis 'Golden King', 'Lawsoniana'; Ilex aquifolium 'Argentea Marginata', 'Ferox Aurea', 'Golden Milkboy', 'J.C. van Tol' (a parthenocarpic cultivar) and 'Silver Queen'; Ilex crenata 'Convexa' and 'Golden Gem'. An exception is Neil Murray of the Regional Nurseries, Dundrum, who is an avid collector of hollies, and although he has a limited selection for ready sale, will always propagate for demand. His best sellers include Ilex aquifolium as a pollinating ♂, 'Silver Queen'; Ilex x altaclarensis 'Golden King' and Lawsoniana' but he has a marvelous collection of young plants behind the scenes.

Hollies are on the upsurge in the United States, fostered by the thriving Holly Society of America (organized in 1947 and with several foreign members), and to a lesser extent in England. They can be used as hedges, screens or barriers, or for topiary or bonsai. In the U.S.A. they are often used as a formal feature, as mass plantings, or even as ground cover. There is a holly to suit every niche. Although many are slow growing, the evergreen species will give pleasure all the year round and will provide colourful fruits for long periods. Hollies in the British Isles are relatively disease-free and pollution-tolerant, and more widespread use could be made of them in Ireland. The evergreen foliage is also extremely attractive for flower arranging.

I became interested in Ilex several years ago, and although I work on hollies from all over the world, I have a particular interest in cultivated Ilex in the British Isles, especially Ilex aquifolium, Ilex x altaclarensis and their cultivars. Eventually I hope to compile an updated version of the Holly section in W. Dallimore's Holly, Yew and Box (1908), dealing with descriptions, nomenclature, origin and horticultural status.

Many cultivars appear to have vanished; some I have rediscovered, while others still elude me. Among this latter group is the legendary white-berried holly which according to Dallimore (1908) was "well-known a century ago but has not been met with at the present time". It resembled the Common Holly in every respect except that the fruits were white or cream-coloured. The earliest reference to this cultivar that I have been able to find is in Evelyn's Sylva (1664), while von Schelle (1915), in a list of noteworthy plants, mentions "Ilex aquifolium leucocarpa, weissfruchtig". In 1977, I placed a notice in several horticultural trade journals, requesting information on old Ilex cvs. including the white-berried holly. Among the replies was the following "there was a white-berried holly growing in the wild in the Dungannon area of County Tyrone, it was destroyed in a bush fire about 10 years ago; it came to our notice by reports of white-berried holly being sold in the shops at Christmas. At the time we tried to find the tree, however, it had been destroyed before we got to it ... ". (R. H. Park, pers. comm. 1977). I still have not seen any white-berried holly despite various reported sightings and would be most interested to hear if anyone else has seen it.

Since 1976, I have been working at the Herbarium, Royal Botanic Gardens, Kew, therefore the following survey has been based on odd visits home and from personal communication. Some of the following specimens have not yet been checked by me but at least it gives an idea of what Ilex exist in Ireland today. I am more than willing to identify specimens of holly provided some, if not all, the following data is supplied - origin, height, stem colour, leaf colour if variegated, sex or has it ever produced fruit, and habit.

1. National Botanic Gardens, Glasnevin, Co. Dublin.
2. Castlewellan, Co. Down.
3. Fota, Co. Cork.
4. Powerscourt, Co. Wicklow.
5. John F. Kennedy Park, Co. Wexford.
6. Bourn Vincent Memorial Park, Killarney, Co. Kerry.
7. Avondale, Co. Wicklow.
8. Johnstown Castle Research Station, Co. Wexford.
9. Ashbourne House Hotel, Co. Cork.
10. Muckross National Park, Killarney, Co. Kerry.
11. Castleforbes Estate, Co. Longford.
12. Headfort Estate, Co. Meath.
13. Kilbogget, Killiney, Co. Dublin.
14. Mount Usher, Co. Dublin.
15. Dargle Cottage, Enniskerry, Co. Wicklow.
16. Birr Castle, Co. Offaly.
17. Abbeyleix, Co. Laois.
18. Ilnacullen, Glengarriff, Co. Cork.
19. Annesgrove, Castletownroche, Co. Cork.
20. Malahide Castle, Co. Dublin.

\+ = taxon has still to be worked upon.

	Ilex 'Accent' (integra x pernyi)	1.
	" x altaclarensis (aquifolium x perado)	
+	" " " 'Balearica'	1, 5.
+	" " " 'Belgica'	1.
	" " " 'Camelliifolia'	1, 5, 13.
	" " " 'Golden King'	1, 2, 3, 4, 5, 6, 8, 10, 13, 14, 15.
	" " " 'Hendersonii'	1, 5, 7, 18.
	" " " 'Hodginsii'	1, 2, 3, 5, 7, 14, 15.
	" " " 'Lawsoniana'	1, 2, 6, 15.
+	" " " 'Maderiensis Variegata'	1.
	" " " 'Marnockii'	1.
	" " " 'Mundyi'	1, 5.
	" " " 'Nigrescens'	1, 5.
	" " " 'Nobilis Picta'	1.
+	" " " 'Platyphylla'	1, 14.
	" " " 'Silver Sentinel'	2.
	" " " 'Wilsonii'	1, 5, 14.
	" " " 'W. J. Bean'	5, 14.

	Ilex aquifolium		1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 17, 19.
	"	'Amber'	2, 5.
	"	'Angustifolia'	1.
	"	'Argentea Longifolia'	1, 2, 5.
	"	'Argentea Marginata'	1, 2, 3, 5, 6, 11, 14, 15.
	"	'Argentea Marginata Pendula'	1, 2, 5.
	"	'Aurea Marginata'	5, 6, 8.
	"	'Aurea Marginata Pendula'	1.
	"	'Aurifodina'	1, 4.
	"	'Crassifolia'	5.
	"	'Crispa'	1, 3.
	"	'Crispa Aurea-Picta'	2, 5.
	"	'Donningtonensis'	1, 7.
+	"	'Dutch Queen'	1.
	"	'Elegantissima'	1, 4.
	"	'Ferox'	1, 5, 6, 7, 10, 13, 14, 16, 19.
	"	'Ferox Argentea'	1, 2, 5, 6.
	"	'Ferox Aurea'	4, 5, 14, 16.
	"	'Fisheri'	1, 2.
	"	'Flavescens'	1, 2.
	"	'Foxii'	1.
	"	'Fructu Aurantiaco'	1.
	"	'Fructu Luteo'	1, 2, 5, 19.
	"	'Golden Milkboy'	5.
	"	'Golden Milkmaid'	5.
	"	'Golden Queen'	1, 2, 4, 5, 6, 7.
	"	'Grandis'	1, 3.
	"	'Handsworthensis'	5.
	"	'Handsworth New Silver'	1, 5.
	"	'Hastata'	1, 5.
	"	'Heterophylla Aurea-Marginata'	1.
	"	'J.C. van Tol'	5.
	"	'Laurifolia'	1, 3.
+	"	'Laurifolia Argentea'	1.
	"	'Laurifolia Aurea'	5.
	"	'Madame Briot'	1, 5, 6.
	"	'Monstrosa'	1, 5.
	"	'Myrtifolia'	5.
	"	'Myrtifolia Aurea'	5.
	"	'Myrtifolia Aurea Maculata'	1.

+	Ilex aquifolium	'Myrtifolia' cv.	1, 5.
	" "	'Ovata'	1, 5.
	" "	'Pendula'	1, 6.
	" "	'Pyramidalis'	2, 3, 5.
	" "	'Pyramidalis Fructu Luteo'	2, 5, 19.
	" "	'Recurva'	1.
	" "	'Repanda'	1.
	" "	'Rubricaulis Aurea'	1, 5.
	" "	'Scotica'	1, 3, 5.
	" "	'Scotica Aurea-Picta'	1.
	" "	'Silver Queen'	1, 2, 5, 6, 10, 14, 15.
	" "	'Smithiana'	1.
	" "	'Victoria'	1.
+	" "	'Whittingtonensis'	8.
+	" x beanii (aquifolium x dipyrena)		3.
	" cassine		9.
	" ciliospinosa		1, 3, 5, 12, 14.
	" corallina		1, 5, 14.
+	" corallina var. pubescens		5.
	" cornuta		5, 14.
	" "	'Rotunda'	5.
	" crenata		2, 3, 5, 6, 14.
	" "	'Convexa'	3, 5.
	" "	'Latifolia'	5.
	" "	'Mariesii'	2, 12.
	" "	'Variegata'	5.
+	" cyrtura		5.
	" decidua		1, 5.
	" dipyrena		1, 5, 9. 20.
	" 'Elegance' (integra x pernyi)		1.
+	" fargesii		5, 18.
+	" ficoidea		5.
+	" fragilis		14, 18.
+	" georgei		14.
	" glabra		5.
+	" hookeri		5.
	" integra		1, 5.
	" kingiana		3.
	" latifolia		1, 2, 5, 14.
	" myrtifolia		5.
	" opaca		3, 5.

Ilex	pedunculosa	5.
"	perado var. perado	4, 5.
"	perado var. platyphylla	5, 14.
"	pernyi	1, 2, 3, 5, 7, 14.
"	pernyi var. veitchii	1, 5, 14.
+ "	pernyi var. (ined.)	20.
"	serrata	6, 14.
"	sikkimensis	5.
"	verticillata	5, 14.
"	yunnanensis	5.

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TOWARDS AN INVENTORY OF TREES AND SHRUBS

By MARY FORREST,
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How many trees and shrubs are grown in our gardens? A difficult question but one presently being investigated by An Taisce. In September, 1979, with the co-operation of the National Botanic Gardens, Glasnevin, the Heritage Gardens Committee of An Taisce established the Heritage Gardens Fellowship. The aim of the fellowship was to catalogue the trees and shrubs in cultivation in major Irish gardens. Each garden chosen for inclusion in the project maintains a plant collection of botanical importance; a list of gardens is given in the appendix. The work of the fellowship is in two parts; firstly, the preparation of a catalogue for each garden in private ownership, and secondly, the amalgamation of these catalogues with those of gardens in public ownership so that a countrywide inventory of trees and shrubs is produced. This is a daunting task but one which is well on the way to completion.

A project such as this involves a lot of fieldwork and clerical work. Before beginning fieldwork, maps and plans are examined and, in consultation with the owner, the garden is divided into sections using paths or natural features as boundaries. A metal numbered identity tag is attached to each plant. Specimens of leaves, flowers, or fruit are collected, and note is taken of characteristics such as colour of the flowers, plant size or growth habit. Plants are identified on the spot or brought back to the National Botanic Gardens for identification. In some gardens, rare plants are discovered; perhaps they were grown from seed collected in China or Australia and it may take extensive investigation through botanical literature before they are finally identified.

On the clerical side, record cards, similar to those in use at Kew and Edinburgh, are completed, corresponding to each numbered tree and shrub. The plant's Latin and common name, planting date and source (whether it was a direct introduction from a native habitat or supplied by a nursery) are entered on the record care in written and coded form. The coding system adopted will allow for easy transfer of the information to computer at a later date. Some detective work is often necessary, such as looking through old catalogues or garden records and then piecing together this information concerning a particular plant. This task was made much easier at Mount Usher where records were maintained since the 1890's; in most other gardens only partial records were kept. Once the record cards have been completed a numerical and alphabetical list of the plants is prepared and given to the owner, who will submit each year a list of new plantings or plants that have died. With the continued help of the garden owners, the catalogues can be kept up to date.

Since the project began in 1979, eight gardens have been examined. In excess of 10,000 trees and shrubs have been tagged and named. The catalogues of the eight gardens, along with those of Castlewellen and Fota form the basis of the inventory of woody plants growing in Ireland. A record card, similar

to the card used for the garden catalogue, is assigned to each species, cultivar or variety, and given details of each plant's occurrence in Irish gardens. At present the inventory includes some 4,000 different trees and shrubs, but this figure will rise as each new catalogue is added. The inventory will remain in the National Botanic Gardens, where it will be available for consultation by botanists, horticulturists and amateur gardeners.

Such a project is an important tool in the conservation of our botanical and horticultural heritage. A plant collection in a garden can deteriorate rapidly; for example, the gardens of Sir John Ross of Bladensburg at Rostrevor, Co. Down and that of Thomas Acton at Kilmacurragh, Co. Wicklow, have almost disappeared.

From a purely economic point of view, heritage gardens are tourist and amenity attractions. In 1980 out-of-state visitors brought £359.7 million to the Republic of Ireland. They had come to see natural sights, monuments, stately homes and gardens. To continue to encourage these visitors, it is necessary to maintain and improve the standard of planting in our gardens. By consulting the inventory, nurserymen and plant breeders can locate propagating material and in turn make plants available to the public through nurseries and garden centres. Botanists can use it to further their study on particular genera. Already enquiries have been received concerning Acer and Ilex species in Irish gardens. The inventory has also been consulted by the National Council for the Conservation of Plants and Gardens in their search for Aesculus, Pinus, Hypericum, and Wisteria species. The Irish Garden Plant Society has used the inventory in the search for Irish cultivars. But by far the most important use of the inventory will be in the preparation of a flora of European cultivated plants, currently being prepared by a panel of experts. It is expected that some of the plants in Irish gardens will be the sole representative of their kind in cultivation in Europe, and as such may require special conservation measures.

Already some plants from the IUCN Red Data Book, a list of plants extinct or threatened with extinction in the wild, have been located in Irish gardens. They are Franklinia alatamaha, Cupressus macrocarpa, Clianthus puniceus, Pittosporum dallii, and Juniperus bermudiana. Franklinia alatamaha, a small tree or shrub, with leaves 6-20 cm. long, downy underneath, and large white flowers 6-12 cm. in diameter, was native to a small area near Altamaha River in McIntoch County, Georgia, U.S.A., but now it is extinct in its natural habitat. This plant is in cultivation at Mount Usher. Two species, Pittosporum dallii and Clianthus puniceus are in danger of extinction. Pittosporum dallii, a native of New Zealand, has distinctive, leathery, elliptic leaves, 5-10 cm. long and bears white flowers, but these have not been seen on the plants in this country, at Ilnacullen, Mount Usher and John F. Kennedy Arboretum. Clianthus puniceus bears racemes of red, claw-shaped flowers, hence the common name "Lobster Claw". Usually grown as a wall shrub, this plant grows easily from seed. "Lobster Claw"is cultivated in numerous gardens including, Fota, Castlewellan and Kilbogget. Juniperus bermudiana, a native of Bermuda, is considered vulnerable due to a devasting attack by scale insects earlier this century. This conifer has reached a height of almost 18 metres at Fota, where it was planted in 1916. The last plant on the list Cupressus macrocarpa, native to Monterey County, California, is rare in the wild. This flat topped tree, with spreading branches and dark green foliage, is a familiar sight all over Ireland. The tallest specimen is to been seen at Powerscourt; planted in 1867 by Viscount Powerscourt, it had reached 34 m. by 12.5 m. in 1980. If plants such as these can be propagated in sufficient numbers they might be reintroduced to their native habitat and not lost to science or horticulture.

The inventory is bringing to light special collections that exist in our gardens. The desmense at Birr Castle contains a comprehensive collection of deciduous and evergreen trees. Of particular interest is the Lime (Tilia) collection, including species from China, Europe and North America. There are two fine specimens of Tilia henryana, discovered by Augustine Henry in Western Hupeh. It is easily recognisable by the bristle teeth set on the margin of the leaves. This species, along with a lesser known one, Tilia chingiana, was grown from seed distributed by the Lushan Botanic Garden in 1938. The Earl of Rosse also contributed to the expeditions of Professor Hu into western China. Many plants from these expeditions are in cultivation at Birr. They include Malus, Sorbus, Pyrus, Berberis and Koelreuteria species. Among the Magnolia collection in the River Garden is a little known tree Carrierea calycina. This is a deciduous tree with a domed head, 14m. high, and alternate green leaves and white cup shaped flowers.

The gardens at Annesgrove contain an extensive collection of rhododendrons, species and hybrids. Richard Grove Annesley who began planting the garden in 1905, contributed to the expeditions of Frank Kingdon Ward. Rhododendron concatenans, with open, campanulate, apricot-coloured flowers and glossy, green oval to oblong leaves, grows to 1½ metres. It was collected during Kingdon Ward's expedition to Burma and Tibet in 1924-25. Another collection from a later expedition, Rhododendron leucaspis (KW7171), was found in the Di Chu Valley on the Assam-Tibet border in 1926. This is an early flowering plant with glistening, white flowers and conspicuous chocolate-brown anthers. Juniperus recurva cv. Castlewellan is perhaps the most spectacular conifer at Annesgrove; a weeping tree, almost 10 metres tall, clothed to the ground in lax thread-like branchlets.

One of the oldest specimens of Huon Pine, Dacrydium franklinii, was planted at Fota in 1855, where it has reached almost 10 metres. This graceful Tasmanian tree bears minute, scale-like leaves which are similar to those of a cypress. Another Tasmanian genus, Athrotaxis is in cultivation in a few Irish gardens but the finest specimens are to be found at Mount Usher. The genus has three species; Athrotaxis cupressoides with scale-like leaves, hanging in threadlike branchlets; Athrotaxis selaginoides with spreading awl-shaped leaves resembling Cryptomeria japonica, and Athrotaxis laxifolia with leaves intermediate between the two.

One of the most impressive sights at Mount Usher is a very tall eucalypt and in it's shadow a Montezuma Pine. Eucalyptus johnstonii, with a distinctive white bole, was grown from seed received from the Royal Botanic Gardens, Sydney in 1911 and is now over 40 metres tall. Pinus montezumae was planted in 1909 by the 9th Viscount Powerscourt and supplied by Richard Smith of Worcester. This magnificent five-needled pine has leaves 25-40 cm. long, held stiffly from the stem; the tree is 27 metres tall and 53 metres in circumference.

At Rossdohan, Australian plants predominate. This is a relatively modern garden with some older planting dating from earlier this century. Acacia melanoxylon, Brachyglottis repanda, Melicytus ramiflorus and Griselinia littoralis have all become magnificent specimens. In the past few years a wide range of Callistemon, Banksia and Eucalyptus species and many other genera have been planted. It will be interesting to see how these plants develop in the "subtropical" climate of Kenmare Bay. One of the most unusual plants which grows here and also at Fota is Restio subverticillatus, a rush-like plant with suckering habit; the stems are 1 metre to 1½ metres high with persistent, usually brown leaf-sheaths.

The preparation of this Inventory will have been in vain if it does not create an awareness among garden owners, state or semi-state organisations and plant societies, of the need to preserve and maintain these plant collections for present and future generations.

Footnote

The Inventory has been limited to a number of gardens, but many more rare trees and shrubs are in cultivation in Irish gardens. The assistance of other gardeners in locating these rare plants would be greatly appreciated.

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A P P E N D I X

The gardens included in the Inventory of Trees and Shrubs.

Abbeyleix, Co. Laois.

Annesgrove, Castletownroche, Co. Cork.

Ardsallagh, Fethard, Co. Tipperary.

Birr Castle, Birr, Co. Offaly.

Dargle Cottage, Enniskerry, Co. Wicklow.

Dereen, Lauragh, Co. Kerry.

Dunloe Castle Hotel, Beaufort, Co. Kerry.

Headfort, Kells, Co. Meath.

Kilbogget, Killiney, Co. Dublin.

Kildangan, Monasterevin, Co. Kildare.

Mount Congreve, Co. Waterford.

Mountstewart, Co. Down.

Mount Usher, Ashford, Co. Wicklow.

Powerscourt, Enniskerry, Co. Wicklow.

Rossdohan, Tahilla, Co. Kerry.

Rowallane, Saintfield, Co. Down.

Castlewellan Forest Park, Castlewellan, Co. Down.

Bourn Vincent National Park, Killarney, Co. Kerry.

Ilnacullen, Glengarrif, Co. Cork.

Fota, Fota Island, Co. Cork.

John F. Kennedy Arboretum, New Ross, Co. Wexford.

Johnstown Castle, Wexford, Co. Wexford.

TWELVE ELEGANT FALLACIES FOR WOODLAND GARDENS

By BASIL GOULDING *
Dargle Cottage, Enniskerry,
Co. Wicklow.

It is not only immodest, but hazardous too, to pretend to be professional when you cannot sustain the role. On the other hand, it could be over-modest to cling to amateur naivety when you are capable of some practical sagacity; it may be a bit too simple for the professional and therefore of a kind that he is, by very seniority, incapable of giving the amateur. So that is whence and where this article shall strike.

I shall aim to puncture a number of rotund assumptions with which many an earnest sort of person is liable to load himself when setting out, in creative and cultural zest, to make a certain kind of garden.

The certain kind that I write of is the kind called "Woodland". It happens to be the kind wherin I have adventured over thirty five years. But I put in quotation marks above, because some of my asserverations apply to other forms of garden making too.

So let us bring on now, without further ado, my Twelve Elegant Fallacies. Later we shall play dandelion-clocks with them.

* Sir Basil Goulding gave permission for the editing and publication of this article in September, 1981. He died on 16th January, 1982, before it's publication. We are grateful to his family for allowing publication to proceed.

The Twelve Elegant Fallacies

1. Make sure to clear the site of all existing growth, except trees, before you start planting. If you leave any wild plants or suckers, or worse, weeds, you will never cease to criticize yourself later.

2. Do not cut many trees: they have taken long years to grow, and they will be needed to give an appearance of maturity to your young garden.

3. Decide whether to compose your plan in straights or in curves. Straights will give the best formal garden; curves the most romantic. To mix them is to arrive at neither effect.

4. Plan and plant section by section, completing one before starting into the next. Sections will thus be seen to be satisfying because of their balanced entity.

5. When planning each section do not feel restricted by the form and leafage of plants: these can be dealt with by pruning. It is the flowers and their colours that are going to be the test of your success. Hold in mind that it is a summer afternoon in full sun to which your planting must compose.

6. It is stupid, shows you outdated, and is anyhow unnecessary given the modern range of plants, to include subjects which take ages to develop. A fine garden is now attainable quite quickly.

7. Similarly, the idea that soil types - in particular the range from acid to alkaline - are delimiting has been quite out-dated by the advent of chemicals which correct these conditions.

8. Put shrubs and trees together so that as they mass they will include the utmost variety of component subjects.

9. Include, at intervals throughout your plan, some subjects which burgeon in that neglected season, the winter.

10. When you plant make the hole bigger than the size of what you are planting. Thereafter fertilisers and manure, applied from time to time, will ensure health to the extending plant.

11. Pruning is a complex subject; you must not expect to master it easily, for it requires a good deal of book-study and experience. Read before practising.

12. Transplanting is rather similar: there is only a short safe season, differing by subjects, within which to accomplish it. For both this and the last subject you must expect that only time and application will inform you.

It occurs to me at this point that it might well occur to the reader that he proceed no further in my exegesis until he has first jotted down, in merely self-notation, his reactions to the twelve pretty fallacies.

Which does he accept as truths? Which challenges? On what grounds does he challenge?

If he makes his notes here I believe he will find the greater interest or amusement or righteous indignation in what follows.

I have set down these fine principles in the approximate sequence by which a casual - that is to say, an average - garden-maker would stub his mind upon them. But herein, one finds, they breed a further, composite fallacy. For this is not the rational sequence in which they had best be encountered.

My prescription of the right sequence would move down four horizons; those of "Philosophy", "Composition", Execution", "Development".

These four take into their charge our grand fallacies thus:

Philosophy: No. 6

Composition: Nos. 3, 5, 8, 9.

Execution: Nos. 1, 2, 4, 7, 10.

Development: Nos. 11, 12.

Philosophy

Fallacy No. 6

> "It is stupid, shows you outdated, and is anyhow unnecessary given the modern range of plants, to include subjects which take ages to develop. A fine garden is now attainable quite quickly".

Modern knowledge has done nothing whatever to shorten the period that slow plants require to grow to maturity, or to extend the range of those that require a shorter. What it has done is to shorten the patience of the projecting gardener. For the requirement of instancy is a galloping epidemic of the age.

The effect of these two statements of fact is that the scope for having an exceptional garden is now, by the innumerable decisions of separate individuals, hugely delimited. One quick "Oh, I'd never live to see it", cuts down, before planting them, most fine trees and a great many noble shrubs. This is a gravely sudden false decision, and for double reasons. Not only does it condemn your garden to mediocrity - a sentence which you would not like if you were to face it - but it is curiously untrue that slow things are either unattractive or unrewarding for long years.

Once you shed the mortal coil of impatience time travels at a different rate. On the one hand your visualisation improves - you come to "see" the object in it's later form well before it is thus visible, and on the other it is surprisingly evident that half-mature subjects of nobility already show their nobility and can point out, as it were, their structural importance in a composition.

Another pleasant experience, if you just carry on planing and planting, is that from time to time and quite of a sudden something that you planted some years ago and have not been thinking of taps you confidently on the consciousness with a "Remember me? I'm the little girl you adopted in 19__;" and you suddenly see how big she has grown and how elegant and beautiful is her figure.

Beating the time restriction is, mundanely, a bit like pre-breakfast exercises. They are such a fearful incubus that few people become inured to keeping them up. But once the mental philosophy about them is hook-and-line accepted they become a healthy routine.

Somewhat so is it that I place first in time and importance, for the making of a woodland garden, a fine contempt for instancy, a sweeping disregard for the time scale. Once discarded, it will race to your aid.

Composition

Fallacy No. 3

"Decide whether to compose your plan in straights or in curves. Straights will give the best formal garden; curves the most romantic. To mix them is to arrive at neither effect".

Perhaps this one is a little obvious; yet perhaps not wholly.

On the whole, it seems a safer generalisation to aver that so far from a mixture of straights and curves being confusing, the one depends for its force of statement upon the adjacency of the other.

Of course, it must be fairly true that in a woodland garden, more than any kind, straight lines should be scarce.

But even here there is a limit to that truth. For it is the habit of nature to writhe and swirl, eschewing straights. Thereby she tends to become a bore, and her components to lose their identity. Here it is that man can be sensitively clinical.

The introduction of a vista has the general character of a straight line even though the grass-sward or avenue through it is somewhat irregular; you could call this a straight line of a curvy nature.

It would be in distinction from the many pathways that more literally wind through and around the banks of planting.

What must be identified, as to this matter of straights versus shapes, is that in Nature there are so many, so variant, so inter-mixed, forms of the latter as to amount in aggregate to shapelessness. She badly needs pulling together, poor thing.

Some people (though not I) assume as if by reflex that a man-made factory or refinery in a scenic setting is a monstrous assault upon the ordinary man's natural culture. If men were less ordinary and culture less frozen, this would be an open question depending on cases.

But I address these extremities here only in order to claim that the profusions of nature in a woodland garden are so cumulatively formless as to require a guiding composition; that this is best introduced, in the large, by both straights and curves, neither of them too regular; and that both need each other in that each is only valid in the degree by which is <u>not</u> the other.

The architect of most woodland gardens will rightly be quiet, unobvious, in its ways of introducing these principles. On the other hand, it is very satisfactory to include at strategic locations, at points suddenly encountered, occurrences of stark contrast - in the form of sculpture.

The long historical tradition of marble or stone plinths and figures in gardens has been based on this need of counterpoint to nature - "something for her to lean against". And now it is even more possible, and perhaps even more effective, to use the modern sculptural forms, of plainer or starker or abstract idiom; and not necessarily in the older materials but admitting also iron, steel, aluminium, fibreglass and so on.

Fallacy No. 5

"When planning each section do not feel restricted by the form and leafage of plants: these can be dealt with by pruning. It is the flowers and their colours that are going to be the test of your success. Hold in mind your planting must compose".

This is a statement of shallow prettiness, and thereby a signpost to a garden of weak character and transitory charm.

It would be better to put the matter almost oppositely;

thus: "Garden composition requires imagination for shapes, perspectives, textures, predominantly. Colour of flower is an adjunct. Whole forms colouring are grander than most shows of bloom. Moonlight is the best test of composition".

All the above is particularly true of a woodland garden; for here man does well to follow in the footsteps of nature - instead of hauling her in by the tresses and decking her out in the flash confections of a municipal park.

The scope for impact and change of key and variety and delight which is given by all the attributes of plants other than their flowers is the scope that permits of captivation and grandeur in a woodland garden.

Fallacy No. 8

"Put shrubs and trees together so that as they mass they will include the utmost variety of component subjects".

From this proposition we can extend the lesson of the previous. For a discovery emerges as to the practice of arranging plants in conjunction.

This finding is contrary to the principle proposed - that nature can do no wrong; that all plants mix with indiscriminate satisfaction.

Try it this way. Take a shrub catalogue and a sheet of paper. Draw a left hand vertical column for the names of the shrubs as you come upon them through the catalogue; then two other columns headed "Choral" and "Individual".

Then going through the list, put a cross in either column, or both, according as you see the shrub to be an Individual or a Choral subject.

You may be surprised to find, as you fill in your sheet, how firmly how many shrubs fall into one of the two categories and how these shrubs cannot effectively exchange labels.

As examples take two well-known families - the Lilacs (Syringa) and the Maples (Acer). The former simply have to go in the "Choral" column, the latter in the "Individual"; and one can scarcely, without perjury, put either of them in the amphibious role.

We will come back, shortly to the question why there are seen to be so many fewer subjects in the Choral column than in the Individual. But first let us ask the point of these distinctions. What good does it do one to recognize them?

They arise chiefly from the elements of form and texture; which are indeed just those that lead us to the discovery.

The form of a lilac bush is practically non-existant; it has indefinacy, drab dullness (when not flowering; i.e. usually) and no arresting character, of either definable or indefinable kind.

The form of a maple by contrast, is that of a principal actor - arresting, elegant, soignee, versatile, and essentially personified. I exemplified the maple, by the way, because the claim is almost equally true as to each of the hugely variant members of that family, from the cut-leafed, umbrella-mounded, lawn-specimen to the chic, striped-bark, symmetrically-archant avenue sub-tree. And notice, I haven't even mentioned their most evident attribute, autumn colour.

The way in which this distinction is found to have great importance in composition is by dividing shrubs suitable for massing, the Choral - either in clumps of themselves or with others of their category - from those which, to show their special personifications, need to be lime-lighted before a backcloth of the choral plants.

Fallacy No. 9

"Include, at intervals throughout your plan, some subjects which burgeon in that neglected season, the winter".

Do no such thing; or, rather, do not do it "at intervals throughout". For a finding which I can save you the irreversible effort of discovering is the law that "nobody will walk out of doors twenty yards in the winter to see anything".

So you must plant winter things along the avenue to the house or so that people fall into them as they enter or leave the house.

In such places do indeed plant for the winter; indeed it were sound, if necessary, to displace summer things there.

And the range of subjects, from carpeting Erica x darleyensis through low bushed Pernettya, the larger Skimmia, Mahonia, Viburnum to the very large Hamamelis mollis, not forgetting the not-necessarily climbing jasmine and the splendid range of berrying plants, Cotoneaster, Pyracantha, Viburnum betuloides, the Sorbus species - all these and more (I have not tried to be inclusive), are so prize-worthy at a season of few prizes that they affect people, particularly non-gardeners, almost as impressively as do the expected hoards of spring or summer.

Execution

Fallacy No. 1

> "Make sure to clear the site of all existing growth, except trees, before you start planting. If you leave any wild plants or suckers or worse, weeds, you will never cease to criticize yourself later".

I do believe it will surprise knight-errant gardeners to hear how totally untrue this statement is; but surprise them by the simplicity of its reasons.

Of these the prime is the need of new plants for shelter.

If you start by reducing the pristine confusions of laurel and bramble and sucker to a smooth desolation of windswept orderliness you are starting with a situation remote from what you aim to attain. And nobody will like it less that the wretched children, taken callow from their nurseries, whom you plant out in full frontal exposure to the elements.

But suppose, instead, that you employ an unsuspected combination - Imagination and Chemicals.

By use of the first you shall visualise the structure of shrubs that you plan for an area; then you shall use stakes to imagine, relate, and mark their positions; then, making small clearings, you shall plant them (generously: see later).

Time passes. They are comfortably cossetted by the surrounding shelter.

You sprinkle meantime a little weedkiller around them (e.g. Casoron G) to hold their claims to their clearings. They grow gratefully, off to a vigorous canter.

Comes the great day. Your structural installation of important subjects is now adequately reared to face the rigours of real life. You shall suddenly open your garden.

So forth you go with many forms of "sheets" - anything you can find in the way of old dust-covers, curtains, bed-sheets - and with your chemical spraying gear. You are using, say, Trioxone. It is a windless day. I repeat, it is a windless day.

Covering three or four or more of your shrubs (depending on proximity) you spray the wild brambles etc. between them. Then, moving say from east to west, you remove the coverings from the east-most shrubs, huffing them over the others and placing them on the next lot west: then spraying the intermediates there: and so on.

All this may or may not be a discovery of mine. But starting from the wrong ("clear out") method of development I finally arrived at, and have proven to my satisfaction, this other.

What to say of it in summary?

It is certainly sounder, certainly establishes a structure of shrubs more quickly and more nearly (in my experience) without loss. It requires, however, better visualisation and an initial - though less lengthy! - patience.

Fallacy No. 2

"Do not cut many trees: they have taken long years to grow, and they will be needed to give an appearance of maturity to your young garden".

There is going to be an element of contradiction between what I claim here and what I have claimed above: for fair reasons, however.

In what way - to develop the point most simply - do trees most differ from shrubs and other plants?

They are vastly bigger, heavier.

It follows that you cannot fell them without crushing what lies in the area around them.

Hence - you see it coming - we must decide, as to trees, to cut initially all but those we shall eventually need as primary structures in our composition.

This principle, however easily acceptable, nevertheless requires steely decision, and will almost surely give rise to instant remorse.

For the wild coppice of numerous trees that you start from will on inspection be found composed of but few noble and many crippled: but, the latter being remorsely removed, the whole will at first look like an area of coarse builder's vandalism.

But you must be hugely confident: for what you have left is merely a sub-structure. You yourself are at once going to plant - with the aid of my shelter-principle already explained - a small range of exactly-located "grand" subjects, some to be of full tree size, some of sub-tree, each chosen from among the finest subject which fit the site.

All these will join the trees that you have left standing. And you will be most surprised how, after fifteen or twenty years, (a twinkling, (see fallacy 6)), the difference in scale between them is entirely consonant.

Fallacy No. 4

"Plan and plant section by section, completing one before starting into the next. Sections will thus be seen to be satisfying because of their balanced entity".

The entity of composition which this proposition claims as its justification is precisely what it will certainly lack.

For the total planting of a bare area must mean the simultaneous planting of all its subjects, the slow, skeletal, towering subjects along with the bushy or spreading, thrusty, rapid.

True, you can call in your friends and show off your labours. But the balance within what you have done will for a long while be notably lacking, the senior subjects remaining junior to the senior.

On the contrary the sound practice is to proceed well ahead of the sector in which one is particularly working - to the planting first of some of the slow but focal subjects in an advance sector.

Indeed since the number of "grand" subjects required at perspective points in new areas is small, you could well be dealing with more than one new area ahead of its time using my methods of shelter-planting to haul in an advantage in time and relative scale.

Fallacy No. 7

"Similarly, the idea that soil types - in particular the range from acid to alkaline - are delimiting has been quite outdated by the advent of chemicals which correct for these conditions".

Here I can be pathetically brief - for science is pathetically ineffective in allowing me to encourage. One's duty indeed is to discourage. I could only wish I had myself been stronger with myself.

The horrid truth is that trying to take acid-addicts off acid is going to be near-fatal, if not fatal to them. But let me just see how far I can authorize it with any confidence.

Well, if you have a small garden that could mean that you are able to attend to plants personally. In that case it is just tenable that you build peat beds upward, sustained by a front wall of say two feet, and plant heathers or small rhododendrons in them. That is a most pleasant idiom - you meet your friends at a more congenial level than ground-level and it should work well enough, two things provided: that the ground below is not aggressively limey, and that you feed the plants something like bonemeal (both acid and sustaining) from time to time.

One can't go further than this; at least one shouldn't though there is, I incline to think, a tenuous extension which may be valid.

This latter reflection arises from the experience of mine, that the pH definition of acidity/alkalinity is a blunt instrument.

It notices not two potentials; the importance, in limit conditions, of outlying chemicals in the soil; and the curious ability of some varieties of the acid-lovers to adapt their way of life to something other than they had hoped for.

This is not a place to develop those extenuations: and I doubt how far anybody can do so in principle - as opposed to practice.

So the outcome of my commentary is merely a thing called an assumption, and an unwelcome one: that you will fail to beat the ban on defying the pH rules. So you had better knuckle under - unless you're an unexplained "natural": you probably aren't.

Fallacy No. 10

"When you plant make the hole bigger than the size of what you are planting. Thereafter fertilisers and manure, applied from time to time, will ensure health to the extending plant".

The fallacy here is rather a matter of wording. You may have half-perceived it as such. But the half of something important is not enough of it.

Let us pretend that you are yourself a rarity who has attended to my thesis (Fallacy No. 6) about the time-scale. Accordingly, you have bought Magnolia campbellii which will not flower for 20/25 years: by which time it will be 20/25 feet high by 20/25 feet wide.

It comes to you from the finest nurseries who can supply it at say 18 inches to 2 feet high, with a little sacked root-ball of 1 foot diameter. How big shall the hole be? Full of what?

The distinction I am emphasising is between planting it in a "nice" hole, of say 3 feet across, that will last it five years, thereafter become a pot-in-outer-space; and a hole of extensive width, certainly twice 3 feet, with the limit-edge broken and interdug, with a friendly mixture of peat, peat-moss, neutral soil, compost or leavage, throughout, though of no great - because unnecessary - depth.

Almost no gardener performs adequately in this respect: they are like Christians in the matter of Love. But it is the more necessary to preach.

Development

Fallacy No. 11

> "Pruning is a complex subject; you must not expect to master it easily, for it requires a good deal of book-study and experience. Read before practicing".

Pruning is a mystique set up and sanctificated by gardeners, much as pebble-dashing is by plasterers or stippling by painters. You have only got to have a bash at any of these presumptions to unfrock them.

Assuredly "a bit of feeling" must go with the attack; but I do think we must postulate that for a gardener, as one must a sense of balance to a skater.

You prune for very simple reasons, and by very simple limitations. Forget the exceptions to these generalities.

The reasons are the purposes of strength and shape; the limitations are restrictions of weakening and flowering.

Of the reasons shape is obvious, except to say that it loosely includes non-shape; i.e. cutting the excessive or decaying or exhausted growth out of older subjects. Strength is partly related to this latter point and partly also to the validity of checking weak lanky growth in order to put the plant's available force into stout assertive growth.

I can't be shorter, nor need to be longer, about these reasons.

As to the limitation, the check to flowering is not crucial either. All it means is that if you ignore the flowering season of plant, then you may strip its flowering twigs before they come to flower; so "Prune after, not before, flowering".

Fallacy No. 12

"Transplanting is rather similar: there is only a short safe season, differing by subjects, within which to accomplish it. For both this and the last subject you must expect that only time and application will inform you".

The advice as to the previous topic - to attend only to basic factors - is as true or truer for this.

Pay attention to the physical and the mechanical: forget the rest.

There are only two main component points: the moving of the root-system without wounding it, and the adequate catering for it in its new home.

Plants have depth and width, mostly width. Also it is the extremities of the root-system which are the feeders.

Some of them - a further point - develop nice tight aggregations of root-nexus, others wide-spreading finger-systems. With some the soil forms a complete ball: from others it drops away.

From these factors it is foreseen with ease that where an entity of roots-and-soil can be moved the plant may well sleep through it, nor know that it was operated on. But where either the soil drops apart or the feeler/feeder roots are chopped then the patient goes to the intensive care ward.

At the end of the operation, and assuming that the most basic and skillful attention has been paid to the physical factors of moving the subject, the factors are equally primal: food, drink, heat.

Most essential of the factors is drink. Indeed it might be well to state here a contention which could probably be sustained as to all plants, whether or not transferred: "More plants are killed by drought than by frost".

So the truly vital factor in transplanting is moisture - at both ends of the move.

It must be present before lifting; otherwise the fall-apart of the root-ball and the chopping of the tendrils (from frustration in up-lifting) will be caused: and it must be present in the reception-bed, so that the soil may snug the feed-tendrils of the patient plant.

Also, and underlined, one must thump the need for continuance of care. The immediate tender reception is not enough. The critical phase will lie through the next week or several weeks. If left to depend on the weather, it may well perish. So you must double for the weather.

Of the other two requirements, food and heat, there is much less to be said. The food is obvious, however disregarded: and it does not require, as the water, continued attention, for it should have been lardered in the receiving hole.

As to heat - or rather cold - there is limited scope for our attention. If the plant is a hardy one, then only a very weak or sick specimen - a doubtful mover anyhow - may be stricken by frost. If it is known to be tender then it were better to await the end of the frosts (whenever you guess that to be) even though you must probably watch humitity the closer.

So read no books. Instead, master the techniques of unchopped, integral lifting and of nicely-moist, well-refreshed sustenance.

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BASIL GOULDING - AN APPRECIATION. By W. J. C. Milne.

For nearly half his life Basil found joy and relaxation in one of his hobbies - his garden.

Anyone who has visited the garden in recent years and has had the privilege of being shown round by Basil may have some idea of the work which he has personally put into creating this unique place.

He was fortunate to buy a most interesting site with the Dargle River flowing through it and a number of mature trees already established. It was possible to find sites in the garden which afforded a measure of shelter from wind and frost, or an aspect facing any point of the compass. Over the years he has carefully planned each new stage of development in the garden, even before he cleared the ground.

It is interesting to study and recognise the thought that Basil gave to each new section of the garden and the planting of each and every shrub and tree. He made a careful study of each one so that he knew in advance the type of environment which best suited the plant ... soil condition, light, shade, etc., not least the size and shape when fully grown. He considered carefully the type of plant which he required for each location, whether it be for its blooms, or the colour of its leaves, particularly in Autumn, and how it would fit in with other planting in the immediate vicinity. He was able to introduce to his garden plants not only indigenous to Ireland but others from Europe, America and Australia.

Basil was always ready to listen and accept advice and comment from people he recognised as experts. One name in particular comes to mind - Lady Moore, who in her time became one of the leading horticulturists in this country.

It would be difficult to say which were his favourites because he carefully planted so as to provide features in the garden throughout the year. In the early months azaleas and rhododendrons of many varieties provide a blaze of colour and he was particularly proud of a magnolia which he planted and which, according to its species, did not reward him with its first blooms for some 20 odd years. A most unusual feature of the garden was his collection of old roses with their profusion of blooms and exquisite perfume.

I think he loved best the autumn colouring of trees and shrubs and, in particular, the maples which he had so carefully selected and planted.

Basil's interest in gardening was not confined to his home in Dargle Cottage. He enjoyed visiting other people's gardens and his knowledge and advice about existing plants were readily given. He enjoyed being asked for advice about the planning and planting in a new garden or new site. His wide knowledge of plants and their growing requirements and habits enabled him to avoid many of the usual pitfalls. He was always ready to praise and admire colour and beauty of every plant in other people's gardens. One can perhaps see a connection with another of his hobbies ... his love for modern art with its blend of colour and composition.

It was a privilege to know Basil and to spend some time in his company either in his own or in other people's gardens.

THE STORIES OF SOME IRISH HEATHER CULTIVARS

By DAVID MC CLINTOCK,
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Members may like to have these notes on the history of some heathers collected in Ireland and now grown in gardens

Erica erigena 'Irish Dusk' and 'Irish Salmon'

Among the sea of low bushes of Irish heath on the north-western shore of Lough Carrowmore in County Mayo on MaundyThursday, 7th April, 1966, two, some two or three yards apart, stood out with their good pink flowers, in contrast to the usual paler, and bluer, colour. I collected cuttings of both and passed them on my return to John Letts, the enterprising nurseryman, then at his Foxhollow Nursery, Windlesham, Surrey.

Three years later as I was leaving his garden, he remarked "We like your salmon-coloured heather from Ireland; what name do you suggest for it?". My answer was that he had himself produced the appropriate name, 'Irish Salmon'. Soon thereafter he was distributing plants of it.

In my own garden in Kent, I had, have, plants I propagated myself from both the original bushes, now some four feet high. 'Irish Salmon' soon flowered, but the other did not. It made however a compact, darker bush and I considered it worth growing just for its good shape and foliage.

A year or two afterwards, this too produced equally good pink flowers, and clearly needed a name. In view of its dusky colour and the state of my ancestors' island, 'Irish Dusk' seemed appropriate. It has since proved to be the better plant, and it is unfortunate that it has the less saleable name.

About five or six years ago, it became evident that most of the plants being sold as 'Irish Salmon' were in fact 'Irish Dusk': it now seems that John Letts must have failed to keep the two stocks separate. He had some time earlier sold his house, closed his business and left for New Zealand and does not do anything now with heathers.

To put this right was a big undertaking, notably for John Hall of the Windlesham Nurseries, who had sold tens of thousands under the wrong name. Nevertheless, to his great credit, he did correct the name. But meanwhile countless people must be unwittingly growing 'Irish Dusk' as 'Irish Salmon'; the latter has fewer, paler leaves and a more open growth.

E. x stuartii

This plant, for so long enigmatic, was found by a well-known gardener, Dr. Charles Stuart (1825-1902), on 11th August 1890 during an excursion of the Scottish Alpine Botanical Club to Connemara, the patch being several square feet in extent. It has been in cultivation ever since, the attraction of its curious, narrow purple-tipped corollas undiminished. It was fortunate that this has been so, because since then nobody has ever seen it in the wild and without a living plant its true identity would never have been revealed. It was formally named E. stuartii in 1902.

All sorts of guesses were made about what this oddity was, but the solution came only in 1977. In August of that year, Marinus (Rinus) Zwijnenburgh, a keen-eyed nurseryman of Boskoop in Holland, noticed an aberrant shoot on one of his plants. It was sent to me and the shoot was clearly a reversion to what we then called E. x praegeri, the hybrid between E. mackaiana and E. tetralix.

The name E. x praegeri was published only in 1912, ten years later than E. stuartii. Both names now being known to relate to forms of the same hybrid, the earlier has to prevail, a most unwanted change, and despite its being originally published for a most unusual form. E. x stuartii is therefore the correct name for all forms of this hybrid, Dr. Stuart's plant being distinguished as 'Stuartii'.

E mackaiana 'Donegal' and E x stuartii 'Irish Lemon', 'Irish Orange' and 'Nacung'.

On 26th August, 1966, I was on the moor dominated by Errigal, north of Lough Nacung, in County Donegal. E. mackaiana, and its hybrid with E. tetralix, E. x stuartii (praegeri), here have larger flowers than the populations in Connemara. I took cuttings, and an example of E. mackaiana is now in the trade as 'Donegal', which has won prizes at Royal Horticultural Society competitions.

It seems true that hardy heather hybrids (but only one of the tree heaths, E. x veitchii) have their young foliage yellowish, whitish, pinkish, or at least not the normal green - E x veitchii 'Gold Tips' has yellow young shoots. There are a few forms of true species which have this feature, but they are rare. Without such foliage a hardy Erica is unlikely to be a hybrid, all the many known forms of E. x darleyensis, E. x stuartii and E. x watsonii (whose Irish record is of doubtful validity) and E. x williamsii being thus distinguished.

On that day in late August 15 years ago it was impossible to know what the colour of the young foliage of the hybrids would be, and the three I collected were at first called Nos. 1, 2 and 3. No. 3 proved to have pale green shoots and is now grown as 'Nacung'. By sheer luck, Nos. 1 and 2 proved to be outstanding. No. 1 had lemon-coloured shoots and was soon dubbed 'Irish Lemon'. No. 2 had orange shoots and was at first called 'Tangerine' but soon came into line as 'Irish Orange'. Both are now very widely grown, especially on the continent, their fine flowers coming before the young growth has lost its special colour, and lasting many weeks.

In 1978 Major-General P. Turpin, Chairman of the Heather Society, showed me a witch's broom on a plant of 'Irish Orange' in the garden of the Heidberg hospital at Hamburg. Despite its fiddly size, he has propagated this and hopes to get its compact dwarf character fixed.

E. mackaiana 'Plena'

This has a remarkable history of persistence, and elusiveness. Specimens have proved that A. G. More (1830-1895) found it in the Craiggamore area in 1869. But alas, he took no cuttings. All we have are his dead vouchers.

On 6th August, 1901, however, Dr. F. C. Crawford (1851-1908) of Edinburgh and two friends of the Scottish Alpine Botanical Club paid a flying visit to Craiggamore in search of E.'Stuartii', but "were unable after careful examination to discover it again". However, "Dr. Crawford was fortunate enough to find in some quantity the particularly fine very double variety" (apparently the identical plant) rejoicing, wrongly, that this was the first recorded specimen of a double-flowered Erica. (It still is however, the only hardy Erica definitely known to have occurred with double flowers. They have occurred on two South African heaths, E. x hyemalis in 1868 and about 1975, and E. x wilmoreana in 1908, but none of these survived). This time the find was propagated and called E. crawfordii. Practically all the plants at present in cultivation are the progeny of this 80-year-old gathering. Double flowers are however not enough to make a new species, and 'Plena' is now the agreed name for this form.

But no-one else could find it, and the assumption was that, like E. stuartii, it had died out. But it had not, for in 1965 Father Brennan was in the area, and found and picked, a double-flowered E. mackaiana indistinguishable from Crawford's plant. But he has not refound it.

The fourth chapter in this remarkable chronicle was in September 1969 when Mr. Dermot Burke did the same, reporting that his plant overhung the bog road, which was how he noticed it. Since then, not only I have more than once closely searched that bog road for it. Is it really gone after over 100 years? - gone from the wild that is, for it is quite widely available in nurseries. (Those interested in details of its flowers should consult J. C. Uphof, Bericht der Deutschen Botanischen Gesellschaft. 57 (1939):176-181).

Erica mackaiana 'Maura'.

On 31st August, 1874, A. G. More, found E. mackaiana "a little east of the newly built police barracks at Carna", also described as "½ mile E of S of the bridge near Carna by which the Kilkiernan road crosses the effluent from L. Skannive", in south-eastern Connemara, eight miles from the standard area based on Craiggamore. What the able More did not apparently notice was that the long hairs were eglandular, whereas everywhere else they were glandular. On to one of his herbarium sheets he glued a dissected floret demonstrating its duplicated corolla.

On 13th August, 1885, the Rev. E. F. Linton was in the area and left some notes on Carna Erica (not to be confused with Erica carnea!). He wrote "...± glabrous leaves with eglandular bristles ... stamens petaloid". No specimen of his seems to have survived.

The only other person known to have visited this station was Miss. Knowles on 30th July, 1910, who also noted that plants had eglandular hairs, a fact never followed up, perhaps because her and Linton's notes were only in her own notebook. Her own three specimens all have normal corollas. Thereafter, the locality of the plant was lost, despite her having found it "extremely abundant in a very wet bog behind Carna and L. Sheedagh" and "extremely abundant for nearly a mile along the roadside and for a long way back" - but it seems not to be by the road at all today. Professor D. A. Webb tried twice to see it in vain, finding only E. x stuartii. I certainly spent much time searching an area too far west. Indeed R. Ll. Praeger never knew the locality and wrote that it was lost.

On 6th August, 1969, Professor Webb, with Dr. G. Halliday and R. Mc Mullen, using Miss Knowles' notes, refound the area. No specimens they collected had a duplicated corolla. I well remember meeting him on the stairs at the National History Museum in London, shortly after, when he beamingly told me the news.

On 29th August next year, Miss. M. Scannell visited the spot, and returned in 1971. She did not notice until she got home that she had collected plants apparently with a duplicated corolla: she was then unaware that More had collected it 97 years earlier. Its corollas are smaller and narrower, but of a purer pink (red-purple 72D.H12) than the usual form. I showed it to the Scientific Committee of the Royal Horticultural Society on 26th September, 1972, and was taken by her to see it on 23rd August, 1974.

The nature of the duplicated corolla was minutely examined by Major-General Turpin in 1979, who found all twelve flowers on one raceme to differ in the extent to which their anthers and stigmas were deformed or absent - the details will be in a forthcoming book on double flowers by Mrs. J. Reynolds. The clone was named 'Maura' after the finder of the plants now in cultivation, who at that time was doing good work on Irish heathers, and to whom I am indebted for many of the details included here.

'Maura' makes a good garden plant with its pure colour and long flowering period, in addition to its technical interest. It is now also grown on the continent. On 18th August, 1980, in company with Dr. Nelson and Major Magor (see Heather Society Yearbook 1981, pp. 52-60), I saw it for a third time at Carna, and we later found somewhat analagous petaloid plants of the normal, glandular form among the Craiggamore population, now conveniently dubbed "Maura forms", which are being studied. These forms had in fact been unwittingly collected on earlier occasions, the first by Professor C. C. Babington on 2nd September, 1835.

In connection with the single-flowered eglandular plants, it may be a clue to its origin that the old cultivar 'Lawsoniana', which was catalogued by 1880 and was a "well-known garden form with no history" in 1893, is similarly eglandular, as is its fine white-flowered sport 'Dr. Ronald Gray'.

Daboecia cantabrica 'Charles Nelson'

There was absolutely no record on any double-flowered form of any Daboecia, St. Dabeoc's heath, until 8th August, 1978. That summer, Dr. Nelson noticed not far from the Carna station of Erica mackaiana, a plant of this heath which seemed to have double flowers.

On 13th August, 1980, he took Major Walter Magor and myself to try to relocate it. He did. We took cuttings, and in 1981 Dr. Nelson, Major-General Turpin and myself all had plants in flower. It is being given to nurseries as cutting material becomes available.

Both Dr. Nelson and Major-General Turpin have examined the flowers closely and found that there is variation in the precise extent of the doubling in different flowers, much as in E. mackaiana 'Maura'. Its flowers are the same colour as the general run of wild plants, and have the drawback that they stay on the plant when faded. In the normal single-flowered plant, they drop as soon as they fade, a great boon, notably with the white-flowered forms. No other heather does this.

It has been named after its discoverer, who is also a most diligent student of hardy heathers.

Other cultivars

Not so much detail is known of other heathers found in Ireland, some very well known, such as Miss Meta Archer's find in the 1920s, the double Calluna 'County Wicklow'. All of those then known were referred to in my article on "The Wild heathers of Ireland" (Report of the Recorders' Conference, Dublin 1972, pp. 24-35).

To complete the record may be added Calluna 'Bray Head', a dwarf with coloured foliage in spring, found there by Joseph Murphy in 1969 and 'Roland Haagen', a coloured sport on a green-leaved Ling found by the same Rinus Zwijnenburgh of Boskoop, near Carrick-on-Suir in June 1970. Erica cinerea 'Galway Blazer' was collected near Ballinaboy by L. Woolner in 1978, and 'Joseph Murphy' was found by him at the same time and place as 'Bray Head'.

For sure there are more good forms lurking in the island - where?

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CLEMATIS 'HENRYANA' - A CORRECTION TO A. HENRY'S BIOGRAPHY

By SHEILA PIM,
Old Bawn,
Old Connaught,
Bray, Co. Wicklow.

In my biography of Augustine Henry, The Wood and the Trees (1966) I included a photograph of the well-known Clematis called "C. henryi". I had assumed on the strength of the name that it was one of his discoveries. Had I been more knowledgeable about plants I think I would have realized that it was a hybrid and not a species.

Some fifteen years after my book was published I learnt from Christopher Lloyd's book on Clematis (1965) that "C. henryi" is a hybrid raised by Isaac Anderson-Henry, a nurseryman of Edinburgh. According to the most recent edition of W. J. Bean's Trees and Shrubs hardy in the British Isles (vol. I: A-C, 1970), it was produced by fertilizing Clematis lanuginosa with pollen from Clematis 'Fortunei' a large, double-flowered variety of Japanese gardens, introduced by Robert Fortune. "C. henryi" is now correctly named Clematis 'Henryana'.

We owe Dr. Augustine Henry very many good garden plants, but, alas, not this one.

TWIN SCALING AS AN AID TO NARCISSUS CONSERVATION

By DAVID WILLIS,
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Northern Ireland.

Somewhat in advance of the recent commendable trend to conserve our garden cultivars it was decided at the New University of Ulster to expand the original concept of The Guy L. Wilson Daffodil Garden from that of a collection of Irish-raised hybrids to one which was much more widely based. This involved the acquisition of bulbs from either end of the time scale over which hybridisation has taken place (i.e. about 140 years), from the old and historic sorts of yesteryear to the very latest cultivars, normally seen only on show benches during the first several years of their existence.

It was soon realised that many of the older types were only to be found in the collections of New Zealanders and Americans, and those which did occur closer to home were frequently only available in very limited quantities. At the other extreme, the new hybrids are so highly priced, or are in such short supply, or both, as to make the price of a single bulb seem astronomically high, especially to a government funded institution experiencing the international ill of spiralling inflation. Yet it seemed that these problems had to be overcome if the collection at Coleraine was to be truly representative and up-to-date. The difficulties of transporting bulky material such as bulbs over long distances by expensive air passenger freight had to be tackled as had the even more difficult task of purchasing sufficient numbers of expensive new cultivars to make impressionable plantings. At about the time a solution was being sought an approach was made by one of the hybridists working in Northern Ireland to see if the University could help in any way in the bulking up of new hybrids.

It was decided to look at the possibility of carrying out the relatively new technique of twin scaling and it was found that the growth chambers, normally much in use during term-time, were available during the period required between mid-August and late-October. The first trials commenced in 1980 and it was with some trepidation that I commenced to cut up bulbs catalogued at anything up to £75.00 each. Before the actual slicing took place, however, the bulbs were thoroughly washed using formalin in order to kill any pathogenic fungi which may have been present on the outer scales. After this the nose of the bulb was cut off to give a flat and stable surface when the bulb was turned upside down and placed on a bench. With the bulb in this position it was sliced through vertically using a scalpel, first into halves and then into quarters and finally into eighths. Each segment was subsequently divided into pieces consisting of two leaf scales attached by a piece of the base plate to give the so-called twin scales. Once this had been done the twin scales were immersed in a solution of the systemic fungicide benomyl for half an hour, after which they were taken out and allowed to dry in a sieve. The twin scales were then placed in thin polythene bags

which contained sterilized vermiculite chips using approximately equal volumes of vermiculite and twin scales, the vermiculite being slightly moistened by the addition of 1/12 of its volume of water. After gently shaking up the contents of the bags, they were tightly sealed by twisting the necks, doubling over and securing with a wire tie. The next step was to place the bags into a growth chamber at a constant 20°C, the chamber being lit with warm white fluorescent tubes. The date was August 16th, and the bags remained there until November 7th. The time between these two dates was a most anxious one; would the twin scales rot? This dreadful thought was not without foundation for it was soon seen that the fungus Penicillium was developing rapidly on the scales. The most probable reason for this was the ineffectiveness of both formalin and benomyl against this organism which although not normally too troublesome as a plant pathogen found itself in a situation from which all competition has been eliminated. It consequently developed very rapidly and became rather troublesome and destructive. The other worry was, that even if the twin scales did not rot, would they produce bulbils? The wait for this to occur seemed interminable, but suddenly there they were nestling like pearls on the small pieces of base plate between the scales. I had expected there to be only one bulbil per scale but in some cases two were developing and in others as many as five. In all 21 cultivars and unnamed seedlings were propagated with great success and when the bags were finally opened on November 7th and counts were completed it was seen that the most successful had produced 94 bulbils from 1 bulb while the average increase for all varieties was 29 bulbils per bulb, when the final counts were done in August 1981.

After removal from the growth chamber the bulbils were planted in peat-based potting compost in trays, these being kept under glass until late April. No attempt was made at planting time to separate bulbils where more than one occured on a single piece of base plate.

During subsequent development a careful photographic record was kept and this shows both the rapidity of growth and rate of increase. After April, when the trays of bulbs were placed outside they were kept well watered and well fed regularly with a liquid fertiliser. Netting was also necessary to prevent birds scratching the compost from the boxes. In early August the bulbils were carefully lifted, washed, dipped in benomyl and counted, the results being given in the accompanying table. The number of bulbils recorded at that time was that found after dissection of those joined together on a single piece of base plate, using a scalpel.

The results indicate that twin scaling is a useful method of ensuring the rapid build-up of stocks of bulbs which are in short supply. It could also be useful in increasing the chances of survival of bulbs from the southern hemisphere which one is never quite sure how to deal with in order to ensure survival. Frequently such bulbs go soft and rot shortly after arrival when treated with either of the conventional methods, e.g. immediate planting or storage at room temperature until our Autumn. In future, it may well be advisable to twin scale a bulb or two of each cultivar as soon as the bulbs arrive. Another use for twin scaling cultivars worthy of conservation is in propagation from virus tested stock. Propagation of this type tends to enhance a cultivar's chances of survival as the stock takes on increased vigour as a result of its freedom from virus infection.

All in all twin scaling appears to be a very useful technique in the conservation of bulbous plants, which may be applicable to other genera in addition to Narcissus.

CULTIVAR OR SEEDLING	NUMBER OF BULBS TREATED	NUMBER OF BULBILS November	NUMBER OF PAIRS LEAVES March	NUMBER OF BULBILS August	AVERAGE August
'Ballet'	1	56	31	46	46
'Doctor Hugh'	5	184	55	125	25
'Fragrant Rose'	2	45	38	48	24
'Golden Joy'	1	59	24	43	43
'High Society'	2	70	57	65	32.5
'Lilac Charm'	2	59	39	47	23.5
'Midas Touch'	1	41	16	22	22
'Pink Pageant'	1	36	31	34	34
'Pismo Beach'	3	93	27	89	29.6
'Snowcrest'	1	79	48	57	57
'Verdant'	1	32	24	28	28
'White Star'	3	68	35	57	19
B287	1	94	78	73	73
B289	1	35	2	20	20
B291	2	22	17	26	13
B306	1	60	49	58	58
B384	2	63	37	41	20.5
D306	1	13	6	4	4
D383	2	62	19	45	22.5
D588	1	18	5	9	9
D603	1	24	6	9	9
TOTALS	35	1213	644	946	29.2

The Irish Garden Plant Society was formed in 1981 to assist in the conservation of garden plants, especially those raised in Ireland. It also takes an interest in other aspects of the preservation of Ireland's garden heritage.

This journal will be devoted to papers on the history of Irish garden plants and gardens, the cultivation of plants in Ireland, the taxonomy of garden plants and reports of work carried out by the society and its individual members.

The editorial committee would welcome manuscripts from members of the society and others. Typescripts should be on A4 paper, double-spaced and typed only on one side of each sheet.

Correspondence concerning the Irish Garden Plant Society, including applications for membership, may be addressed c/o National Botanic Gardens, Glasnevin, Dublin 9, Republic of Ireland or to Dr. D. Willis, c/o New University of Ulster, Coleraine, Northern Ireland.

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Front Cover - Cortaderia selloana by Wendy Walsh

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