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## COUNTY WICKLOW — ITS GARDENS AND DEMESNES

**T**he east coast county of Wicklow has long been known as the 'garden of Ireland' and its landscape ranges from mountains and moors to river valleys, seashore and plains. These, together with a mild climate have contributed to the development over several centuries of many and varied gardens and parks. Within a 20 mile (32km) radius in north Wicklow, four major gardens of international repute are open to the public: Ireland's oldest extant seventeenth century garden at Kilruddery; the most elaborate nineteenth century Italianate garden at Powerscourt and two remarkable Robinsonian gardens at Kilmacurragh and Mount Usher. Also, the National Garden Exhibition Centre at Kilquade represents modern garden design. This article explores how gardens in Wicklow echo trends in garden history through the years.

### **Kilruddery, Bray**

The formal garden at Kilruddery, near Bray dating from the mid seventeenth century, is one of the few French style gardens extant in Ireland. The present layout was devised by M. Bonnet, a French gardener, in the 1680s for the fourth Earl of Meath whose descendants still own the property. The garden is similar to that of the Chateau de Coureances near Paris by Le Nôtre. It was laid out with two 550ft (168m) canals and a circular fountain as the centrepiece. On either side were areas thickly planted with trees with radiating walks called the Labyrinth. These were further divided into the Angles, the Bowling Green, the Wilderness, the Beech Circle and the Sylvan Theatre, respectively. All of these were used for walking, sport and theatre, popular activities in a period when gardens were used as a display of wealth and a place of entertainment. Much of this garden remains today. The cascade, modelled on that at Marly, France and copied in many European gardens, no longer exists. With the development of the English landscape style the garden was further extended in the early eighteenth century to include a Lime Walk and views to the Sugar Loaf mountain. In the nineteenth century formality returned to the areas surrounding the house and at Kilruddery a parterre was laid out by Daniel Robertson who also worked at nearby Powerscourt. A conservatory was constructed in 1852. It was designed by William Burn, a Scot, and is an example of the increasing popularity of greenhouses in Victorian garden design.

### **Rossanagh, Rathnew**

From 1718–1874 various kinds of trees, both native and introduced were planted at Rosannagh, Rathnew by the Tighe family. It was an example of an estate planted with trees, shrubs and woodland. From planting records held in the archives of the National Botanic Gardens, Glasnevin, the pleasure ground and the proximity of the River Vartry can be pictured. Specimen trees in the fields were planted as commemorations of family events.

### **Russborough, Blessington**

An eighteenth century landscape park, with woodlands, trees in a parkland setting and a lake surrounds the Palladian house by Richard Castle. What were known as 'improvements' were made by the landscape gardener Jacob Smith, who also worked for the Dukes of Leinster at Carton, Co. Kildare.

### **Luggala, Roundwood**

This is an example of a picturesque landscape popular in the late eighteenth century. The park was created by Peter Shanley for the La Touche family in a secluded mountain valley. A gothic style house was transformed to look like a knight's tent or pavilion. A serpentine driveway at the head of Lough Dan leads beneath great trees to a springtime bluebell meadow, where a herd of deer graze. The house sits at the opposite side of the lake, a rusticated stone bridge crosses the river which lies between the house and the lake. The dark valley side is unplanted and great glacial boulders tumble down the brooding mountain into the lake. All around the mountains seem to soar into the clouds. Conifers planted in the nineteenth century dot the landscape and many of them are now very large. The valley also contains a native oak-wood of great age. Garech Browne, the present owner is adding new plantings.



### **Powerscourt, Enniskerry**

In the nineteenth century the landscape style became transformed into what became known as the gardenesque. In the Victorian period, Italianate gardens were in vogue. In Ireland the foremost example of an Italianate garden is Powerscourt laid out in the 1840s by Daniel Robertson on the site of an existing garden. The sheer grandeur of the scale and view to the Sugar Loaf mountain makes it one of the most impressive designed landscapes in this country. A series of stone terraces lead down through a great circular amphitheatre of eighteenth century sod work to a large oval lake where a large fountain plays. The change in levels is achieved by an elaborate staircase, paved with cobbles, reminiscent of Caprarola, in Italy. Superb statuary and ornamental gates acquired by Lord Powerscourt play an important role in the garden design. The formal gardens lead to the informal parkland. An important pinetum laid out by Viscount Powerscourt, is one of the finest in the country and demonstrates the interest in the cultivation of conifers popular in the mid 1800s. The fine avenue of monkey puzzles, *Araucaria* is a feature seldom seen in Irish gardens.

### **Kilmacurragh, Rathdrum**

Plant collecting in the wild became more common in the nineteenth century when plant explorers such as Sir Joseph Hooker travelled to the Himalayas and David Douglas to California. The new plants greatly expanded the range of material available for planting and areas devoted to such new plants were laid out in collections. Examples are the pinetum at Powerscourt and Kilmacurragh near Rathdrum. The walled garden at Kilmacurragh contains a wonderful specimen of *Magnolia campbellii*, which has beautiful pink flowers each spring and ranks among the finest in these islands. The rhododendron collection demonstrates the popularity of this genus with garden owners of the period. There is also a magnificent *Podocarpus salignus* considered to be one of top specimens in Europe. The garden was considered among the best in Ireland before the First World War, since then it has passed through many vicissitudes until recently when it was acquired by Dúchas, the Heritage Service and is now linked with the National Botanic Gardens. This is very appropriate because much of the collection came from Glasnevin in the last century. The garden is an early example of Robinsonian or wild gardening begun in the 1840s around an older Dutch style seventeenth century garden of which the fish ponds and one of the rides remains. The often quoted letter of the head gardener to Sir Frederick and Lady Moore of the Botanic Gardens, Glasnevin; 'Let yez come soon, rosydandry falconyera or lowther is an admiration' is still true today.

### **Other plant collections**

At Tittour, Newtownmountkennedy where John Nuttall planted 20 species in 1834 including *Pinus ponderosa* and *Araucaria araucana* which exist to this day. At Avondale, Rathdrum, the home of Charles Stewart Parnell, early planting of trees was undertaken by Samuel Hayes. In the late nineteenth century a collection of exotic trees was planted to examine their potential as forestry species in Ireland. Following the death of the plant collector and forester Augustine Henry, a memorial stone and a small collection of plants associated with him were planted in 1930.

The interest in southern hemisphere plants was evident at Old Conna near Bray. In 1860, Phineas Ryll planted a *Metrosideros floribunda* and in 1878 a *Cordyline australis*, now a very common garden plant especially in coastal gardens.

### **Mount Usher, Ashford**

William Robinson, an Irishman, known as the 'father of English gardening', gave his name to a style of informal planting which became popular in the late Victorian era and was at odds with the formal 'bedding out' which was common in villa gardens of the period. Robinson advocated the planting of exotic material in association with native plants in a naturalised setting. Several Irish gardens of the period took his ideas and translated them into Robinsonian style gardens.

One of the most important examples is at Mount Usher, Ashford, where from the 1880s to the present day a wide range of trees, shrubs, herbaceous and bulbous plants have been cultivated on the banks of the River Vartry. Mount Usher is listed as a botanical collection of international importance. While the garden is excellently tended today and the collection constantly added to, and the garden has been enlarged, it is difficult to equal Robinson's own words to describe it.



Mount Usher: a quaint creeper laden mill house at Ashford, with an acre or two of ground partly wooded, through which the silvery Vartry flows, gentle as it falls over its little rocky weirs in summer, but swollen and turbid after winter storms. The place is really an island at the bottom of the valley; the hilly country round it is beautifully diversified, and is graced by the finest of native trees...

Mount Usher is a charming example of the gardens that might be made in river valleys, especially those among mountains and hills. In such places there is often delightful shelter from the violent winds, while the picturesque effect of the mountains and the hills offers charming prospects from the garden.

In the late nineteenth century the gardenesque period emerged and designed gardens around villa gardens became popular. One garden designer, William Sheppard of Churchtown, Dublin laid out several gardens and public parks in the Dublin area. A commission at Glencormac, Kilmacanogue remains extant. While the house is now the site of the Avoca Handweavers the adjoining gardens with several fine specimen eucalyptus, a weeping macrocarpa, *Cupressus macrocarpa* 'Pendula' and in a woodland area a dripping well, a typical feature of the Victorian period still remains. Predating the garden is an avenue of yew, *Taxus baccata* several hundred years old.

### Plants of Wicklow origin

The names of gardens, nurseries and hillsides of Wicklow are recorded in various plants found in those localities. About 1780 Edward Hodgins established a nursery at Dunganstown north-west of Wicklow town. Hodgins grew many unusual trees and shrubs and supplied plants to the newly established Botanic Gardens at Glasnevin. He raised two holly seedlings *Ilex x altaclerensis* 'Hendersonii' a female clone and *I. x altaclerensis* 'Hodginsii' a male clone. Both are hybrids of the common holly *I. aquifolium* by the Maderian holly *I. perado*. Hodgins later discovered an unusual form of the common ivy and introduced it into the trade as *Hedera hibernica* 'Digitata' which has been in cultivation since 1825. About 1840 the family moved to Cloughjordan House, Co. Tipperary. A variegated sort of 'Hodginsii' was raised there in the mid nineteenth century and named 'Lawsoniana' after the Edinburgh nursery of that name. More recently a further sort of 'Lawsoniana' was discovered growing on a tree at Dargle Cottage, Enniskerry at the home of Sir Basil and Lady Goulding and named 'Lady Valerie' for her by Dr Neil Murray. In 1857, Mrs Frizell found an unusual form of the Lady Fern on the banks of the Avonmore river at Castle Kevin near Annamoe and it was named *Athyrium felix-foemina* 'Frizelliae'. The mountains of Wicklow are clothed in heaths and heathers. In 1933 Miss Meta Archer noticed a double pink form of the common native ling, *Calluna vulgaris*. Propagation material was put into the trade and this heath is now freely available from garden centres as *C. vulgaris* 'County Wicklow'.

Two taxa bear the names of the gardens where they first occurred. *Eucryphia x nymansensis* 'Mount Usher' was a deliberate cross carried out at Mount Usher in 1916. This *Eucryphia* grows some 20m tall by the tennis court and is wreathed in white flowers each September. Many cultivars of Lawson cypress have been selected. One in particular, *Chamaecyparis lawsoniana* 'Kilmacurragh' has a narrow pencil like habit and dark green foliage. The original tree no longer exists but there are specimens in several Irish gardens including Mount Usher.

### Recent gardens — Graigueconna, Bray

The garden was begun by Lewis Meredith, the author of a book on rock gardens early this century, however by the time his grand daughter and her husband (Rosemary and John Brown) came to live there in the 1970s the rock garden had been lost to scrub. Since then a wonderful garden of beautifully arranged choice plants has been re-established. The former line of the railway tracks once used to move the rocks into place for the rock garden has been converted to a grass path flanked by herbaceous borders. There is also a pond garden. The garden is noteworthy for wonderful *Arbutus x andracnoides* and *Acer griseum*, paperbark maple. It is typical of many such gardens in Wicklow where the personal touch of a plant enthusiast in a well tended garden is evident.

### Dargle Cottage, Enniskerry

This garden was laid out in the 1950s and 1960s by Sir Basil Goulding. From the cultivated garden filled with many unusual trees and shrubs in imaginative plant associations there are views from the banks of the River Dargle over a deep gorge. It was one of the first to have modern sculpture included as part of the garden design. There are several large specimen plants, such as *Gevuina avellana*, Chilean hazel.

#### **National Exhibition Centre, Kilquade**

This permanent exhibition, unique in Ireland was established in 1993. A series of 16 gardens designed by various designers adjoin a well established centre and nursery. It has become a popular place to visit and provides inspiration for gardeners with much to see in terms of not only plants, but also water features, paving and patios, fencing and walls, and garden ornaments and statuary.

#### **The Glenview Hotel, Glen of the Downs**

The garden was established in 1960s on the site of an orchard on a south facing slope overlooking the Glen of the Downs, which is an example of picturesque landscaping of the eighteenth century by Shanley for the Belvue Estate. The present layout has been designed by John Ducie in the last few years. The formal garden of approximately one acre (0.40ha) is on natural terraces in front of the hotel and consists of two levels flanked by mixed herbaceous borders almost 100m long punctuated by connecting steps and paths. The wild garden further down the slope is made up of rhododendrons mixed with trees and shrubs. The rest of the 30 acre (12.14ha) property includes 10 acres (4.05ha) of oak-wood and a wild flower meadows which is managed for public access with paths leading through it. The new leisure centre is fronted by massed plantings of old roses including the Irish cultivar *Rosa* 'Souvenir de St. Annes'.

Many of gardens mentioned take part in the Wicklow Gardens Festival — Irelands oldest and largest — which together with local gardening societies such as the Delgany and District Horticultural Society, garden centres, nurseries and the many dedicated plant enthusiasts continue the tradition of gardens and gardening begun several centuries ago.

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## PLANT COLLECTIONS — THE WAY FORWARD

The Irish Garden Plant Society (IGPS) is a young organisation and like a sapling it has reached an important point in its growth. Over the years it has encouraged gardeners all over Ireland to grow the rare and unusual, pushing the boundaries of hardiness for many plants. By occasional exhibits at the Chelsea Flower Show it has advertised the potential for plants in Ireland, and the skill and enthusiasm for growing them by Ireland's gardeners.

Now comes another stepping stone, and perhaps it is worthwhile here to record what the Society would like to aim at. It is affiliated to the National Council for the Conservation of Plants and Gardens (NCCPG), based at The Pines, Wisley, Woking, Surrey, UK. One of their functions is running the National plant collections which now totals 600 collections, with 50,000 plant species or variety accessions, based in many private and public gardens, both large and small, throughout the UK and Ireland — a remarkable achievement. These collections are largely genera based, but can be varietal collections based on one species, or themed around a person or plant type such as variegation. The IGPS has decided to encourage more members to start and maintain collections within their gardens. Maintaining a collection dictates a considerable amount of work, so the following questions arose:

- (1) What does the Society encourage people to collect?
- (2) Should the encouragement aim at neglected plants, especially including species perhaps common in cultivation but now endangered in the wild?
- (3) How can the most benefit be gained from the work entailed, both for the plants and for the Society?

Modern genetic research has given us an invaluable tool for examining a collection. Two examples demonstrate this. Chocolate cosmos, *Cosmos atrosanguineus* (Hook) Voss, originally from Mexico, is believed extinct in the wild. However, it is popular in gardens and the possibility of reintroduction to the wild was considered. Genetic examination showed that the plants available in the UK came from a very narrow genetic base, perhaps even one plant, repeatedly propagated. The genetic search was on to check for cross compatibility and other characters important for successful reintroduction (Kew Scientist 1994).

The Patagonian cypress, *Fitzroya cupressoides* (Molina) Johnson, has been extensively felled for its valuable timber that is extremely long lasting outdoors. It is represented in cultivation. Edinburgh Botanic Gardens has co-ordinated a conifer programme for several years and this included *F. cupressoides* and genetic research showed that in fact all the specimens checked were actually identical. This again has probably arisen from a limited seed germination and repeated propagation (Gardner 1997 unpublished lecture). Within Ireland there are at present few collections. The NCCPG National Plant Collections Directory (1998) lists the following:

### *Republic of Ireland*

National Botanic Gardens, Glasnevin, Dublin — *Garrya* and *Potentilla fruticosa*.  
Fingal County Council, Malahide Castle, Co. Dublin — *Olearia*.

### *Northern Ireland*

City of Belfast Parks Department, Belfast — Slieve Donard plants.  
Gary Dunlop, Newtownards — *Celmisia*, *Crocasmia*, and *Euphorbia*.  
The National Trust, Mount Stewart Garden, Newtownards — *Phormium*.  
The National Trust, Rowallane Garden — *Penstemon*.  
Seaford Gardens, Seaford — *Eucryphia*.  
University of Ulster at Coleraine — *Narcissus*.

Obviously concerted efforts on particular genera or varieties is beneficial, and to encourage more collections in Ireland a limited and selective list of good garden plants, obtained by checking the Collections Directory against the Royal Horticultural Society Plant Finder 1997/8, was distributed. The criteria for collection were:

- (1) Genera — all species within a particular genus;
- (2) Part genera — selected species within a genera;
- (3) Varietal — all varieties within a selected species;
- (4) Themed — centred on a person, place or event.

In addition to collections that members chose themselves, it was felt that there were many plants that needed more encouragement, that should be targeted particularly. These are:

- (1) At risk genera, where the natural habitat is threatened;
- (2) Neglected genera that have not yet formed the basis of a collection;
- (3) Species and genera new to cultivation here — the process of plant introduction should continue;
- (4) Species, rather than varieties, from a conservation need.

Links to botanists will hopefully enable the Society to target at risk genera, or by using the International Council for the Conservation of Nature Red Data books it can be seen which cultivated plant species are in fact endangered in the wild. The two examples quoted above illustrate the importance of co-operation. Below is a limited, selective list of genera that are not recorded as National collections so far (from 1998 NCCPG Directory).

<b>Bulbs</b>	<i>Desfontainea</i>	<i>Staphylea</i>	<i>Arisaema</i>	<i>Lotus</i>
<i>Amaryllis</i>	<i>Dipelta</i>	<i>Tamarix</i>	<i>Armeria</i>	<i>Lythrum</i>
<i>Crinum</i>	<i>Drimys</i>	<i>Ulex</i>	<i>Arium</i>	<i>Macleaya</i>
<i>Galtonia</i>	<i>Eupatorium</i>	<i>Ulmus</i>	<i>Bidens</i>	<i>Moraea</i>
<i>Lilium</i>	<i>Euryops</i>		<i>Blechnum</i>	<i>Mutisia</i>
	<i>Fothergilla</i>	<b>Irish natives</b>	<i>Centaurea</i>	<i>Persicaria</i>
<b>Woody</b>	<i>Genista</i>	<i>Carex</i>	<i>Cephalaria</i>	<i>Phyllodoce</i>
<i>Arctostaphylos</i>	<i>Griselinia</i>	<i>Dryas</i>	<i>Cirsium</i>	<i>Polygala</i>
<i>Atriplex</i>	<i>Kalopanax</i>	<i>Ulex</i>	<i>Cleome</i>	<i>Polygonatum</i>
<i>Banksia</i>	<i>Kerria</i>	<i>Ulmus</i>	<i>Codonopsis</i>	<i>Pulsatilla</i>
<i>Callistemon</i>	<i>Larix</i>	<i>Crataegus</i>	<i>Dietes</i>	<i>Ranunculus</i>
<i>Calothamnus</i>	<i>Lavatera</i>		<i>Echinops</i>	<i>Raoulia</i>
<i>Campsis</i>	<i>Morus</i>	<b>Irish connections</b>	<i>Echium</i>	<i>Sanguisorba</i>
<i>Cestrum</i>	<i>Myrica</i>	<i>Crinum</i>	<i>Eremurus</i>	<i>Senecio</i>
<i>Chaenomeles</i>	<i>Myrtus</i>	<i>Dierama</i>	<i>Francoa</i>	<i>Sidalcea</i>
<i>Chimonanthus</i>	<i>Nandina</i>	<i>Solanum</i>	<i>Hieracium</i>	<i>Silene</i>
<i>Choisya</i>	<i>Nyssa</i>	<i>Trifolium</i>	<i>Iberis</i>	<i>Solidago</i>
<i>Clerodendrum</i>	<i>Osmanthus</i>		<i>Impatiens</i>	<i>Stipa</i>
<i>Clethra</i>	<i>Ozothamnus</i>	<b>Herbaceous</b>	<i>Incarvillea</i>	<i>Teucrium</i>
<i>Clanthus</i>	<i>Perovskia</i>	<i>Aconitum</i>	<i>Knautia</i>	<i>Townsendia</i>
<i>Crataegus</i>	<i>Pterocarya</i>	<i>Agastache</i>	<i>Liatris</i>	<i>Tradescantia</i>
<i>Cedrus</i>	<i>Rhamnus</i>	<i>Alyssum</i>	<i>Limonium</i>	<i>Tricyrtis</i>
<i>Celtis</i>	<i>Solanum</i>	<i>Anagallis</i>	<i>Linaria</i>	<i>Trifolium</i>
<i>Cryptomeria</i>	<i>Stachyurus</i>	<i>Anthemis</i>	<i>Lithodora</i>	<i>Veronica</i>

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ANNE JAMES

## THE HARDINESS OF THE GENUS *OLEARIA* AT THE TALBOT BOTANIC GARDENS, MALAHIDE CASTLE

The Talbot Botanic Gardens, Malahide Castle lie 16km north of Dublin city and are largely the creation of the late Lord Milo Talbot de Malahide. In his introduction to *The Endemic Flora of Tasmania* (Talbot and Curtis 1967), he said of himself:

I inherited a house (in 1946) and with it a garden and more important still, they were in a climate favourable to growing many of the tenderer and less common plants. An interest in gardening developed and inevitably, led over the years, to the collecting of plants especially the rare and more delicate kinds.

The choice of plants is limited by the alkalinity of the soil (approximately pH 7). Lord Talbot's second estate was in Tasmania and he had a keen interest in Australasian plants and endeavoured to grow as many as possible in the garden at Malahide, in particular the *Olearia* genus. After his death in 1973 the estate of 111ha was acquired by Dublin County Council in 1976, and later transferred to Fingal Co. Council (FCC) in 1994. Originally the gardens covered an area of 9.3ha — 7.4ha of shrubbery and 1.9ha of walled gardens. In 1985 to accommodate a range of trees, in particular, *Nothofagus* and *Quercus* spp. the garden was extended by 2.5ha.

The genus *Olearia*, family *Compositae*, forms a small but very important group among the large range of Australasian plants growing very happily in the gardens. The genus is called after a German botanist J. G. Oelschlaeger and latinised to *Olearia* (*Dictionary of Gardening*, Royal Horticultural Society). There are approximately 130 species, from Australia, including Tasmania, New Zealand and a couple of species from New Guinea and Lord Howe Island. They hybridise freely and this has caused much confusion in their identification. It is a very diverse genus ranging in size from dwarf shrubs to quite tall plants. The leaves vary in shape from linear to large ovate, opposite to alternate and the colour from green to grey. The flowers are mainly white, though a number of species have blue, pink and mauve blooms. In general, the flowering period is quite long when compared with many other flowering shrubs and outdoors can extend from April through to late August. Once planted the *Olearias* require very little aftercare and are free from the usual pests and diseases.

Lord Talbot's interest in this genus stemmed from the fact that the majority could withstand the fury of the prevailing south-westerly gales to which the garden was exposed to in the 1950s. In 1964, he wrote an article (Talbot 1964) entitled 'The Genus *Olearia*' outlining the hardiness or otherwise of the genus for the *Royal Horticultural Society of Ireland's Yearbook* for 1964, which was reprinted in the *Journal of the Royal Horticultural Society (Wisley)* Vol. XC, parts 5 and 6. In the article he indicated the worst years for frost — 1961/2 and 1962/3 when the temperature dropped to -6.6°C (20°F). He grouped the species into various categories (see Table 1) according to his perception of their hardiness, mainly within the garden at Malahide. In 1996, after the very hard winter, which was unusual for Malahide, as temperatures fell quite sharply in the last week of December 1995 — the air temperature dropped to -7°C on December 27, while the minimum grass temperature fell to -9°C and the soil temperature at 50mm depth was -1°C. With the recording of this exceptionally low soil temperature it was time to update the earlier article by showing, with the aid of Lord Talbot's plant records, all the species which had survived the winters 1962/3 and 1995/6 and to include a number of newly planted species which survived the winter of 1995/6.

He grouped the genus into six categories according to his own evaluation of their hardiness (see Table 1), from his knowledge of the plants growing in the gardens at Malahide or in a few cases, plants which were growing in other gardens in Ireland, or his knowledge of the species' native habitats and their local climatic conditions. Categories B and C were sub-divided into groups according to their general appearance. It must be emphasised that a number of specimens of each of the species and varieties were planted throughout the gardens, but the planting date refers to one particular plant. In many cases plants of the same species were obtained from different sources.

Table 1. *Olearia* species, hybrids and varieties categorised according to Lord Talbot's evaluation of their hardiness. See text after table for category details.

Category	Species/variety	Planted year	Survived 1962/3	Survived 1995/6
A	<i>O. x haastii</i>	1958	yes	yes
B Group (i)	<i>O. avicennifolia</i>	1956	yes	yes
	<i>O. albida</i>	1961	yes	yes
	<i>O. arborescens</i> (syn. <i>O. nitida</i> )	1960	yes	yes
	<i>O. capillaris</i> (syn. <i>O. arborescens capillaris</i> )	1961	yes	no
Group (ii)	<i>O. x ilicifolia</i>	1960	yes	yes
	<i>O. macrodonta</i> 'Major'	1951	yes	yes
	<i>O. x rossii</i> <sup>*1</sup>			
Group (iii)	<i>O. lineata</i> (syn. <i>O. v.</i> 'Lineata')	1957	yes	no
	<i>O. virgata</i> <sup>*1</sup>			
	<i>O. odorata</i> <sup>*2</sup>	1960	yes	
Group (iv)	<i>O. moschata</i>	1960	yes	yes
	<i>O. mollis</i> <sup>*2</sup>	1960	yes	
Group (v)	<i>O. nummularifolia</i>	1958	yes	yes
	<i>O. n. var. cymbifolia</i> (syn. <i>O. cymbifolia</i> )	1958	yes	yes
Group (vi)	<i>O. solandri</i>	1962	yes	yes
C Group (i)	<i>O. paniculata</i> (syn <i>O. forsteri</i> )	1957	yes	yes
	<i>O. paniculata</i> var. <i>minor</i>	1962	yes	no
Group (ii)	<i>O. 'Henry Travers'</i> (syn. <i>O. semidentata</i> )	1957	no	
Group (iii)	<i>O. phlogopappa</i>	1954	no	
	<i>O. gunniana</i> 'Splendens'	1960	no	
	<i>O. x scilloniensis</i> <sup>*3</sup>	1967		no
	<i>O. lyrata</i> <sup>*3</sup>	1964		no
	<i>O. stellulata</i> <sup>*3</sup>	1963		no
	<i>O. phlogopappa sub-repanda</i> <sup>*3</sup>	1963		no
	<i>O. phlogopappa v. salicifolia</i> <sup>*3</sup>	1964		no
D	<i>O. erubescens</i>	1960	yes	yes
	<i>O. myrsinoides</i> <sup>*4</sup>			
	<i>O. excorticata</i>	1961	no	
	<i>O. traversii</i> <sup>*3</sup>	1966		yes
	<i>O. viscosa</i>	1960	yes	no
	<i>O. pachyphylla</i>	1960	yes	no



Category	Species/variety	Planted year	Survived 1962/3	Survived 1995/6
E	<i>O. argophylla</i>	1951	no	
	<i>O. chatamica</i>	1959	no	
	<i>O. colensoi</i>	1960	no	
	<i>O. floribunda</i>	1960	no	
	<i>O. furfuracea</i>	1961	no	
	<i>O. forsteri</i> x <i>furfuracea</i> *4			
F	<i>O. ramulosa</i>	1961	no	
	<i>O. tomentosa</i>	1961	no	

\*1 Cuttings only received in 1964.

\*2 Original plant destroyed later as better specimens obtained.

\*3 Species mentioned in article, but had not been planted prior to the winter of 1962/3.

\*4 No record of planting date.

#### Category A

Species considered totally hardy — only one species, *O. x haastii* native to New Zealand was included. It was planted in 1958 and survived both hard winters. The species still remains very popular with the landscape trade.

#### Category B

Species and varieties considered hardy at Malahide — all are native to New Zealand.

##### Group (i)

Leaves leathery, untoothed, felted beneath, flowers white — *O. avicennifolia*, *O. albida*, *O. arborescens* (syn *O. nitida*) and *O. capillaris* (syn *O. arborescens capillaris*)

*Olearia albida* was the only species not to survive the winter of 1962/3, but a later planting of the species in 1964 did survive the winter of 1995/6. Many plants sold by nurserymen as *O. albida* are in fact *O. 'Talbot de Malahide'*. According to Lord Talbot his plant of *O. albida* was queried and considered by the Royal Botanic Gardens, Kew to be *O. forsteri* x *fragrantissima* though Mr Krussman a German botanist, confirmed the plant as *O. albida*. Lord Talbot considered them to be the true species from specimens seen at Christchurch Botanic Gardens, New Zealand.

*Olearia capillaris* is well worth growing for its silvery foliage, present throughout the year. It retains a freshness not always associated with silver leafed plants. The tiny yellowish flowers on the previous years growth are insignificant.

##### Group (ii)

Leaves grey-green, sharply toothed, flowers white (*O. x ilicifolia*, *O. macrodonta* 'Major' and *O. x rossii*). Cuttings of *O. x rossii* were only received in 1964 and did not survive. *Olearia x ilicifolia* and *O. macrodonta* 'Major' have proved to be very hardy and wind tolerant and the latter has proved an invaluable shelter plant in the garden.

##### Group (iii)

Leaves narrow, dull green above, white-felted beneath very small, almost insignificant white flowers (*O. virgata*, *O. lineata* (syn. *O. v. 'Lineata'*) and *O. odorata*). There is much confusion about the *virgata* group and its varieties. *Olearia virgata* was included in the article as being completely hardy, but at that time it

had not been exposed to a hard winter. *Olearia virgata* 'Lineata' was considered very hardy having survived at Birr Castle, Co. Offaly, in the centre of Ireland where much colder temperatures than at Malahide are experienced. While it is certain that Lord Talbot did cultivate the true species of *O. v.* 'Lineata', plants which were labelled as such in the garden were not true to type and according to his notes were only seedlings found close to the parent plant. They differ quite considerably from the accepted species description, are much larger in all their parts without the true pendulous form. The latter characteristic was very evident in the specimen seen at Guincho Garden, Helen's Bay, Co. Down. Even from a distance there was no doubt that the plant at Guincho fitted the description in the *Flora of New Zealand* (Allen 1982). New plants of *O. virgata* 'Lineata' (all from cuttings) have since been obtained from the National Botanic Gardens, Glasnevin and Mrs M. Cunningham, Ballymun, Dublin. Both show the typical form of the very fine leaves and pendulous habit giving the impression of a grey mist. They were planted in the walled garden in 1995. The description of *O. virgata* 'Dartonii' mentioned in *Trees and shrubs hardy in the British Isles* (Bean 1980) identifies readily with the Malahide seedlings of *O. virgata* 'Lineata'.

*Olearia virgata* included in this group was only planted in 1964, but has proved hardy. The plant of *O. odorata* survived the 1962/3 winter but was destroyed in 1966 as a second, superior specimen was obtained in 1963.

#### Group (iv)

Leaves pale grey, musk scented and conspicuous flat, white inflorescence (*O. moschata* and *O. mollis*). Both of these species have proved hardy and are worthy of a place in any garden. *Olearia mollis* was transplanted from its original site but it remained poorly and was later destroyed.

#### Group (v)

Species which are untypical of the genus and have greenish yellow recurved leaves with white flowers each floret having only one petal (*O. nummularifolia*, *O. n. var. cymbifolia* (syn. *O. cymbifolia*)). Both the species and the variety survived and give a welcome splash of gentle colour to a border.

#### Group (vi)

Species with yellow foliage and white flowers, only one species included — *O. solandri*. This species is often confused with *Cassinia fulvida* and *C. vauvilliersii*. The leaves of *O. solandri* are opposite while those of *Cassinia* are alternate. *Cassinia fulvida* has the golden leaves and stem, and in general, is sought rather than *O. solandri*.

### Category C

This group of ten species, varieties and hybrids was considered less hardy than Category B and liable to suffer some damage in hard winters.

#### Group (i)

Bright green undulate leaves and white insignificant flowers (*O. paniculata* and *O. paniculata* var. *minor*). There is great similarity between *O. paniculata* (syn. *O. forsteri*) and *Pittosporum tenuifolium*, both having elliptical, undulating leaves, however, the *Olearia* is a bright apple-green colour while the *Pittosporum* is a duller glossy green. While the specimen of *O. paniculata* in Malahide is a fine plant, it does not equal in stature the specimen in the garden of Mr and Mrs B. Coyle of Howth which has grown to a height of 17m. *Olearia paniculata* var. *minor* did not survive at Malahide.

#### Group (ii)

Species with grey-green lanceolate leaves which are silvery beneath and large lilac ray florets with purple disc florets. Only one species — *O. semidentata* — which is widely grown, is in fact a variety and is now known as *O. 'Henry Travers'* (note — Dr E. C. Nelson). This variety along with *O. chathamica* are possibly the most sought after of the genus due to their attractive flowers. Despite numerous attempts at establishment neither have survived any length of time at Malahide and it is thought that the growing conditions may not be suitable. A young plant of *O. 'Henry Travers'* did survive the winter of 1995/6 outdoors. It is interesting to note that a specimen of *O. 'Henry Travers'* planted outdoors in a private garden in Swords survived well over ten years. It



was placed in the shade of two *Prunus* trees where the soil was dry. It is considered very important to protect the root collar against excessive moisture and to keep the roots in the shade. Lord Talbot noted in 1964 that Arnold Foster wrote in his book *Shrubs for the milder counties* (Arnold Foster 1948) that the species liked to have its roots in the shade.

#### Group (iii)

Species with narrow linear toothed leaves and flower heads of white, blue or pink from Tasmania and south-eastern Australia. They are the first of the *Olearia* species to flower, commencing in April (*O. phlogopappa*, *gunniana* 'Splendens', *phlogopappa sub-repanda*, *phlogopappa salicifolia*, *O. x scilloniensis*, *O. lyrata* and *O. stellulata*). The latter five were included in this category, but they had not been planted in the garden prior to the winter of 1962/3.

This group is possibly the most confusing of all. Lord Talbot mentions that the name *phlogopappa* is used for this species in Tasmania while the specific name *gunniana* is used in Europe. In recent years named plants or cutting material have been received of *O. phlogopappa*, *x scilloniensis* and *gunniana* — all are very similar. Until a true identification has been made of the *phlogopappa* group in the gardens, all species and varieties of this group are being treated as varieties of *O. phlogopappa*, as the phyllaries of all the variants have coloured tips, the same colour as the ray florets. This characteristic corresponds with the description in the *Students' flora of Tasmania* (Curtis 1963) for the *O. phlogopappa*. The larger flowered varieties are generally called *O. 'Comber's White'* and *'Comber's Blue'*.

While Lord Talbot mentioned *O. phlogopappa sub-repanda*, *O. lyrata* and *O. x scilloniensis*, he had no experience of their hardiness. After the winter of 1995/6, it was noted that in many cases it was newly planted material that had survived that winter, while several of the older plants died. *Olearia phlogopappa sub-repanda* has white flowers similar to the variety *O. 'Comber's White'* but its leaves are much smaller. A small plant of *O. lyrata* received from the Scottish collection of *Olearias* at Inverewe Garden (National Trust for Scotland, Ross-shire), does not appear to be the true species. It bears no resemblance to that illustrated in Curtis's *Botanical Magazine* (t. 1509; November 1st 1812) and is possibly another form of *O. virgata* — *O. v. 'Dartonii'*.

#### Category D

A group of seven species and hybrids — a miscellaneous group as neither the flowers or leaves are similar (*O. erubescens*, *mysinoides* (no record of planting date), *excorticata*, *traversii*, *viscosa* and *pachyphylla*). In this group *O. erubescens*, *viscosa* and *traversii* survived (there was no planting record for *O. mysinoides*) and the other species died out. The original plant of *O. viscosa* died later but cuttings had been rooted and were planted in 1970. They survived the winter of 1995/6. *Olearia traversii* has proved an exceptional hedge in seaside areas, is completely tolerant of the salt laden winds and is popular on the western seaboard of Ireland.

#### Category E

In this group six species are listed — *O. argophylla*, *O. chathamica*, *O. colensoi*, *O. floribunda*, *O. furfuracea* and *O. forsteri x furfuracea*. All survived mild winters, but none survived the lower temperatures of 1962/3 and 1963/4. However, a later planting of *O. argophylla* in the walled garden did survive the winter 1995/6.

#### Category F

Both of the species (*Olearia tomentosa* and *O. ramulosa*) are considered to be tender and died. *Olearia tomentosa* was replanted in the autumn of 1992, but did not survive the winter of 1993 and really requires glasshouse conditions. This was a pity as it was a very nice foliage plant with dark green downy leaves. The parent plant at the Royal Botanic Gardens, Kew has also died.

*Olearia ramulosa* planted out in the autumn of 1995 did survive the cold winter but was badly scorched. However, in the walled garden at Ardgillan Demesne, FCC, Balbriggan, it has survived outdoors since 1992. It is worth growing in a glasshouse as it makes a wonderful container plant with its tiny starry-blue flowers lasting for many weeks.

Lord Talbot listed nine species or hybrids (see Table 2), which he had grown or was attempting to establish at Malahide, but at the time of writing his article he was still uncertain of their hardiness.

Table 2. *Olearia* species whose relative hardiness were unknown prior to writing the 1964 article.

Genus/species	Planted year	Survived 1962/3	Survived 1995/6
<i>O. x zennorensis</i>	1957	no	
<i>O. cunninghamii</i> (syn. <i>O. ranii</i> ) * <sup>1</sup>			
<i>O. lacunosa</i>	1959	no	
<i>O. glandulosa</i>	1963		no
<i>O. megalophylla</i>	1963		no
<i>O. x waikariensis</i>	1963		yes
<i>O. aculeata</i> * <sup>2</sup>			
<i>O. angustifolia</i> * <sup>3</sup>			
<i>O. speciosa</i>	1964		no

\*<sup>1</sup> No planting date recorded\*<sup>2</sup> Cuttings were only received in 1964.\*<sup>3</sup> Cuttings failed to root.

In this group all species died, though a later planting of *O. x waikariensis* survived the winter of 1995/6. This plant is in the walled garden and is a very fine specimen. Lord Talbot considered this hybrid to be similar to *O. mollis*, but now that the plant at Malahide has matured, it is very different, having much larger steel-grey leaves and fine white flower heads of great intensity. Numerous plantings of *O. lacunosa* have not survived outdoors at Malahide. However, a fine plant which Lord Talbot mentioned in his article still survives at the Kilbogget Garden of Mr and Mrs Troughton-Smith, Killiney, Co. Dublin.

An *O. x zennorensis* planted in 1973 has survived outdoors in a well sheltered area, but is rather a poor specimen given the length of time it has been growing. A very good specimen has survived a number of years growing in a well drained border on the north side of a hedge in a private garden, at Swords, Co. Dublin. There are also very good specimens at the Glenveagh National Park, Letterkenny, Co. Donegal, one of a number of gardens belonging to the Department of Arts, Culture, Gaeltacht and the Islands.

Of the 40 original species listed in Table 1 and described by Lord Talbot in his article, 20 survived the winter of 1962/3. Of those 20 surviving species, 13 survived the winter of 1995/6, the original plants of two of the species were destroyed, as finer specimens had been obtained. Nine species were mentioned but had not been planted prior to the winter of 1962/3. One of the nine species listed in Table 2 survived. Since writing the article Lord Talbot continued to add to his collection (see Table 3). He collected seeds of a number of Tasmanian species, of which only *O. obcordata* survived.

Table 3. Species planted in the Talbot Botanic Gardens after the publication of the 1964 article.

Species/variety	Planted year	Survived 1995/6
<i>O. cheesemanii</i>	1965	yes
<i>O. odorata</i>	1965	yes
<i>O. avicennifolia</i> 'White Confusion'	1966	yes
<i>O. fragrantissima</i>	1967	yes
<i>O. mollis</i>	1967	yes
<i>O. hectorii</i>	1969	yes
<i>O. albida</i>	1973	yes
<i>O. obcordata</i> * <sup>1</sup>		yes

\*<sup>1</sup> No record of planting date.



The plant *O. albida* (see Table 3) is the true *albida* and is well worth growing in a warm position. At Malahide it is tucked away in an inaccessible corner and on first seeing it, without any flowers, it was apparent that it must surely be the true species of *O. albida*.

A far greater number of *Olearia* species could be grown outdoors in Ireland than are generally cultivated at present. Low temperatures are often blamed for their demise, but lack of sunshine to ripen the wood could be a contributory factor. Ireland lies much further north of the equator between latitudes 51°–55° than the south island of New Zealand which lies south of the equator between latitudes 40°–47°.

Propagation material of a number of *Olearia* spp. and varieties has been received over the years, and the resulting plants have been planted in the two new *Olearia* borders in the walled garden. Should they prove hardy, they will in time be planted in the main shrubberies of the 'West Lawn' area of the garden. Cutting material of *Olearia* is very easily propagated, but alas, seed which has been received on a number of occasions has failed to germinate. It is believed that a lot of the seed received is not viable and that only fresh *Olearia* seed will germinate.

Species and varieties of the group *O. phlogopappa* have been planted close together on a south border within the walled garden along with the *O. virgata* species and its varieties, so that a true identification may be made of these plants. This study is part of FCC's contribution to the research programme of the National Council for the Conservation of Plants and Gardens (NCCPG) national plant collections brief, which aims to encourage collection holders to correctly identify the species and varieties of their chosen collection.

With such a good collection of the genus at Malahide, FCC has continued to acquire new species whenever possible and a number have been planted in recent years. Of nine species (see Table 4) planted prior to the winter of 1995/6 seven species survived.

Table 4. Species which were planted at the Talbot Botanic Gardens prior to the winter of 1995/6.

Species/variety	Planted year	Survived 1995/6
<i>O. chatamica</i>	1990	no
<i>O. phlogopappa sub-repanda</i>	1993	yes
<i>O. 'Comber's White' and 'Comber's Blue'</i>	1993	yes
<i>O. phlogopappa</i>	1994	poor
<i>O. lepidophylla</i>	1995	yes
<i>O. algida</i>	1995	yes
<i>O. ramulosa</i>	1995	no
<i>O. semidentata</i>	1995	yes
<i>O. 'Henry Travers'</i>	1995	yes
<i>O. glandulosa</i>	1995	yes

*Olearia lepidophylla* and a similar species *O. algida* were received from Mr Allanson, Isle of Man. The *O. lepidophylla* was planted on the corner of a raised south facing border and in the Victorian conservatory. Both plants survived the 1995 winter, but the extra protection, ensured that the *O. lepidophylla* retained its silvery-white felted leaves. This plant is most attractive in flower and it is well worth protecting it from the rain. The *O. algida* was planted outdoors on the scree bed and has much darker leaves, is less silvery and the branches less felted.

*Olearia chatamica* has not proved hardy having been acquired on several occasions, as also has *O. ramulosa*, but the latter is well worth keeping in a glasshouse. Cuttings of the true *O. semi-dentata* were received from the Revd Wilkes, Belfast, Co. Down, N. Ireland. One was planted on the new *Olearia* bed in 1995 and a second has been retained in a glasshouse. *Olearia glandulosa* has survived one winter, but a specimen has also been retained in the glasshouse. Varieties of the *O. phlogopappa* group are very variable. A number of the plants succumbed to the winter of 1995/6, while others survived both in the walled garden and in the larger garden. They are short lived plants and would need to be propagated on a regular basis. Since the hard winter of 1995/6 additional species have been planted including the tender *O. lacunosa* which is being grown under glass until there is ample cutting material to allow it to be planted in the garden.

Table 5. Species which were planted at the Talbot Botanic Gardens after the hard winter of 1995/6.

Genus species	Planted year
<i>O. lacunosa</i> * <sup>1</sup>	
<i>O. frostii</i>	1996
<i>O. traversii</i> (thin leaf form)	1997
<i>O. rossii</i>	1997
<i>O. virgata</i> var. <i>divaricata</i>	1997

\*<sup>1</sup> Planted in glasshouse only.

Three plants of *O. frostii* were obtained, two from Mr Allanson, Isle of Man and a second was purchased from Kiftsgate Garden, Gloucestershire, UK in 1996. Only one has been planted in the garden as previous seedlings died.

In 1990 the NCCPG accepted the Talbot Botanic Gardens as a 'National Collection Holder' of the genus *Olearia*, along with Inverewe Garden in Scotland and Ventnor Botanic Garden, Isle of Wight, UK. At the present time, it appears that a greater number of species have survived at the Talbot Botanic Gardens. Since 1950, Lord Talbot and FCC have cultivated a total of 99 species, hybrids and varieties in the garden and to-date 50 species and varieties have survived with two species given glasshouse protection. The gardens have matured and the microclimate much altered from the earlier days when Lord Talbot first started the garden in 1950. It is possible that a number of the more tender species could now survive if planted in the walled garden, including the larger leaved species from New Zealand, which would give a truly representative collection of the genus *Olearia* at the Talbot Botanic Gardens.

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## AUTUMN IN YUNNAN — AN EXPEDITION TO SOUTH-WEST CHINA

**K**unming is the 2000 year old capital of Yunnan province in south-west China and lies at an altitude of 1894m (6213ft) above sea level. Despite this elevation and because of its proximity to the tropic of Cancer the area enjoys a warm temperate climate with short, dry sunny winters and warm, damp seasons, thenceforth earning this oriental capital the title 'City of Eternal Spring'.

It was in September 1996 that the expedition finally made its way into Kunming. The group of 12 was made up of English, Scottish, American, Danish and Irish horticulturists, the other Irish traveller being Sean O Gaoithin from Glenveagh National Park, Co. Donegal. The expedition was led by Alan Clark, curator of Muncaster Castle Gardens, Cumbria, UK, a garden noted for a fine collection of Chinese trees and shrubs collected by Forrest, Kingdon Ward, Ludlow and Sherriff.

The aim of the expedition was to collect seeds from rhododendron and other plants. The route was selected by Alan Clark based on the travels of Forrest and Kingdon Ward and also on his own previous expeditions to China and he considered it would be a rich botanical trip.

### Kunming Botanic Gardens

After a night's rest at the Kunming Hotel the group made its way through broad boulevards of *Grevillea robusta*, *Ginkgo biloba*, *Araucaria heterophylla* and *Cupressus torulosa* to Kunming Botanic Gardens. Established in 1938 by Cai Xitao, the gardens span 33ha with a collection of almost 4000 species and varieties in cultivation. Economic botany plays a major role here, the latest project was a trial of 90 different cultivars of olive. The party was met by Guan Kaiyun, the garden director and Sun Weibang, the deputy director. Sun was to be the expedition's guide/botanist for the next five weeks. The garden employs a staff of over 300 people, two-thirds of whom are involved in the departments of ethnobotany, phytochemistry and taxonomy. Within the laboratories research is carried out into seed physiology, chromosome counting and micro-propagation. The bulk of the plant collection was composed mainly of Yunnanese plants. This is not so surprising, as half the total flora of China is found within Yunnan. Plant growth is prolific here and this was particularly noticeable in many of the conifers (many of which are on the preliminary list of threatened conifer taxa). For example, here *Fokienia hodginsii* forms trees 7m tall after 20 years, whereas in Inacullin, Co. Cork a specimen planted in 1932 is still only a dwarf bush. *Taiwania cryptomerioides*, the coffin tree, made elegant specimens sheltering rarities like *Cathaya argyrophylla* (*Pinaceae*), *Amentotaxus argotaenia* (*Taxodiaceae*), *Taxus yunnanensis* and *Keteleeria pubescens*, among others.

Many new genera of the family *Magnoliaceae* were introduced to the group that day. One of the first plants shown by Guan Kaiyan was a red flowered *Magnolia delavayi* which as yet remains to be introduced to Western cultivation. *Michelia yunnanensis* made a small bush up to 1.5m carrying small, cream, goblet-shaped flowers. What a pity the genus *Mangletia* is so poorly represented in European gardens (Forrest 1985). A group of about 25 species, all of which are confined to low altitudes in their Himalayan home, yet if ever successfully introduced would make a valuable addition to milder coastal gardens. Other *Magnolia* relatives in this area included *Kmeria septentrionalis*, *Mangletia duclouxii*, *Parakmeria lotungensis*, *Paramichelia bailonii* and *Tsoongiodendron odorum* (Zhengyi 1987).

One of the more interesting members of the *Hamamelidaceae* was *Loropetalum chinensis*, a wiry evergreen shrub with particularly eye-catching white, spidery, witchhazel-like flowers. Its tender nature means it is rarely seen in Northern Europe, but a young plant thrives at the Fota arboretum in Co. Cork.

### Dali and the Cangshan range

A change was made to the itinerary the following day when the luggage jeep crashed on the historic Burma road. It was with some excitement that the group discovered they were now on their way to the ancient city of Dali at the foothills of the Cangshan range. Dali is a landmark in the history of botanical exploration and at one time or another provided refuge to names like Delavay, Forrest, Kingdon Ward and Rock. These pioneers faced all sorts of hardships and danger to send home the plants that now grace the great gardens and demesnes. It was to Dali, then Tali-fu, in 1905 that George Forrest fled after losing all his collections when his travelling companions were chased, captured and murdered by lamas.



Early the following morning, hearts pounding, the expedition left the city behind and made its way towards the towering bulk of Cangshan, one of the most floristically rich sites in the world. The Cangshan range stretches 31 miles (49.88km) with summits averaging 3658–3962m (12,000–13,000ft), the tallest peak being 4121m (13,520ft). Unlike other mountains in the region the range is basically composed of underlying granite, though limestone and marble are also found. To the east lies Er-hai lake, noted by Marco Polo when he visited Dali in 1273. The first European to botanise in the area was the Austrian geologist Ludwig Loczy in 1879 (Lancaster 1993). From 1882–92 Perc Delavay collected more than 200,000 herbarium specimens from the region and it is thought that 1500 of these were new to science at the time. However, Cangshan's golden era began early this century with the arrival of professional plant hunters — Frank Kingdon Ward (1911 and 1922), Joseph Rock (several times from 1922), while the great Scottish collector George Forrest is always associated with this region. Between 1904 and 1930, Forrest mounted several expeditions, and made a particularly thorough exploration in 1914.

A drive along the lower slopes took the party past vast areas of *Hypericum*, *Colquhounia coccinea*, scarlet salvias and *Osbeckia stellata*, a member of the *Melastomataceae*, quite close in appearance to *Tibouchina*. The route taken went up to 3100m and gave an excellent example of the vegetation's altitudinal sequence. The lower slopes were well clothed by *Pinus armandii* giving way to the more common *Pinus yunnanensis* and above that again a more open range of *Lithocarpus*, *Deutzia*, *Philadelphus*, *Sorbus*, *Gaultheria* and the like. *Rhododendron edgeworthii* had been encountered on the lower slopes on rock faces at verges of *P. armandii* woodland, rather scattered and infrequent unlike the abundant *R. decorum*, *R. yunnanensis* (named for the province), *R. rubiginosum*, *R. racemosum* (one of the most frequently encountered species) and *R. maddenii* and *R. neriiflorum*, a few species illustrating the richness of Cangshan in one genus alone.

*Buddleja forrestii* was a particularly pleasing find and displayed considerable variation in flower colour, ranging from lilac to pale red into deepest maroon. A common plant was *Leycesteria formosa*, the pheasant berry or Himalayan honeysuckle which is now naturalised in several areas of Ireland. Near a large group of *Iris delavayi* and a flowering *Gentiana millandrifolia* grew *Geranium sinense*, hardly the most showy plant but of interest only for its tiny, deep purple-black flowers.

The Three pagodas are a famous landmark beneath Dali. Built by Xi'an engineers in the ninth century AD under the Song Dynasty (960–1279), these beautiful buildings are amongst the oldest standing structures in south-west China. The tallest rises to 69m (227ft) and is divided into 16 storeys. One of the smaller ten storey pagodas has leaned approximately 1 metre out of perpendicular for 400 years as a result of an earthquake.

### Lijiang — Joseph Rock territory

The next destination was Lijiang, a day's drive away on dirt roads lined with *Eucalyptus*, a commonly planted tree in Yunnan, giving an almost Australian feel to some areas. The sun scorched hillsides here were clothed for miles with *Pinus yunnanensis*, a medium sized tree with long exotic needles like those of the Mexican *P. montezumae*. On the rock face beside the road thousands of opuntias had naturalised themselves among the *Strelitzia* like *Musella lasiocarpa*, with its strange orange terminal flower and curious banana like seedpods beneath. *Ceratostigma minus* and *Incarvillea arguta* both revelled in the baking heat transforming the surrounding area into sheets of blue and pink.

Joseph Rock lived near Lijiang almost continuously between 1922 and 1949 and is still remembered in the area by older locals (Buckley *et al.* 1994). A man of quick and violent temper, he burdened his large caravans with 'necessities' such as his gold dinner service, sedan chair and a collapsible bath tub. Set in a picturesque valley, Lijiang is home to the Tibetan Naxi people who until recently lived in a matriarchal society. Rock dedicated his life towards researching the Naxi culture and traditions and their unique written language of pictograms which culminated in *The Ancient Naxi Kingdom of South West China* written by Joseph Rock in 1947 (Buckley *et al.* 1994).

The old town was a delightful maze of narrow cobbled streets lined with gushing canals, old wooden buildings and a busy market life. Near the edge of town was Black Dragon Pool Park, a typical Chinese garden on a grand scale in which many of its temples, bridges and pavilions date from the Ming dynasty. A small distance from the park, at the base of Mount Yu Long Xue Shan is the Yu Feng temple dating from 1756. The temple's main attraction is a venerable 280 year old *Camellia reticulata* hybrid. It is known throughout China as 'the camellia tree of 10,000 blossoms'; somewhat of an exaggeration, although locals claim it does produce over 4000 blossoms each spring. During the Cultural Revolution when the monastery was sacked and destroyed by the army, a monk from the temple risked his life to keep it secretly watered. Temple gardens are often full of rare and much prized plants and near the famous *Camellia* grew the extremely rare *Michelia lijiangensis*. This beautiful magnolia relative has never been introduced to Western cultivation and so it was with some excitement



that the author found three seeds, and promptly sowed them on returning to Ireland. Beneath a series of terraces (dominated by a monstrous sized *Magnolia delavayi*) grew a young grove of beautifully weeping *Cupressus torulosa*, which in turn provided a canopy for a large colony of *Arisaema* which were laden with large pendulous clusters of bright red fruits. As the party left the temple, local men were high up in large trees of *Pinus armandii*, cutting down huge cones for their edible seeds which were delicious when roasted.

Following a wholesome lunch of deep-fried wasps and their larvae the group restarted plant hunting. After climbing up a stream, past camellias, *Cotoneaster* and a host of *Berberis* species, amongst a wood of Armands pine, a little known shrub in the rose family called *Prinsepia utilis* was found. It is common here in the Himalayas yet strangely neglected for cultivation (Polunin & Stainton 1997). This first rate plant makes a vigorous medium sized shrub with green, dangerously spiny, arching stems, and would be a valuable addition to any spring garden as it produces a mass of white flowers in axillary racemes. In this particular area it provided a support for *Aconitum hemsleyanum*, one of the climbing monkshoods with deep blue racemes of helmet like flowers.

The reason for travelling to Lijiang was to visit Mount Yu Long Xue Shan or Jade Dragon Snow Mountain, another area well recorded in the annals of botanical exploration. Here the expedition split into a number of smaller groups to cover as much ground and collect as many species as possible. The lower sun scorched slopes seemed barren of any interesting plants apart from a highly desirable alpine *Anaphalis* which formed cushions of evergreen, steel-grey foliage against limestone of a similar hue. The yellow flowered *Primula forrestii* also occurred here. This apart, it seemed as though it was going to be a disappointing day, but the mountains were full of sudden surprises. Changing its orientation, one group moved onto a north-west facing slope and within minutes were in a whole new vegetation zone of lush mixed forest. Beneath a canopy of *Abies delavayi*, *Sorbus* spp. and *Quercus semi carpinifolia* grew a rich understorey with many desirable plants in fruit.

*Viburnum betulifolium* is a pretty common woodland plant and here it made a magnificent sight as dappled sunlight peered through pendant clusters of redcurrant like fruits set amongst fiery autumnal foliage. The seed capsule of *Paris polyphylla* had split to reveal a mass of fleshy red berries surrounded by a collar of sea green bracts. The scarlet berries of *Schisandra rubifolia* showed through other well known garden plants like *Dipelta yunnanensis*, *Rosa sericea*, *F. pterocantha*, *Parasyringa sempervirens* and *Pyrus pashia*. Other woodland dwellers in this area included *Sarcococca hookeriana*, *Lyonia ovalifolia* and *Leptodermis pilosa*. In the intense heat at the base of the mountain the group crossed a dry salt lake towards a colony of *Paeonia delavayi*. As luck would have it, a previous expedition had stripped most of the seed. However, the party made its way down with backpacks heavy with large quantities of seed to be cleaned and logged that night.

### On the Zhongdian plateau

The autumn colours were by now a spectacular sight, with whole mountain sides ablaze with the intense fiery colours that the Fall brings to the eastern Himalayas. On the Zhongdian plateau, the alpine plains became a sea of intense scarlet as early frosts brought rich colour to acres of the Zhongdian spurge, *Euphorbia nematocarpa*, a little known species that deserves to be better used in cultivation.

Tian Chi means heavenly lake and how aptly named it was. Beating its way through thickets of *R. russatum* and *R. complexum*, the expedition made its way towards the edge of the lake to be greeted by acres of *Gentiana sinoornata* and *G. arethusae*. What a marvellous sight it was that day, millions of small blue trumpets swaying on every breeze, transforming subalpine moorland into what could have been an azure blue sea. Great drifts of *Primula sinopurpurea* dominated the landscape likewise, with a scattering of the more choice *P. amethystina* var. *brevifolia* and *P. nanobella* between. Towards the edge of the moor, beneath a wood of *Abies delavayi*, an understorey of *Sorbus reducta*, *Arisaema elephas*, *Nomocharis aperta* and *Panax ginseng* nestled beneath *R. wardii*, *R. glaucocephalum* and the rather common *R. hippophaeoides*.

Several roses were collected during these five weeks of travel and at the base of Napa hai, *Rosa moyesii* bowed beneath the weight of its countless bright crimson fruits. On the rocks above it, among vigorous plants of *Philadelphus delavayi* grew small trees of a remarkable thorn new to the author. The accompanying botanist, Sun Weibang, named it as *Crataegus chungtienensis* (Chungtien being the former Pinyin name for Zhongdian — the town the expedition had made its base). This was by far the finest thorn the author had ever seen, massed with small clusters of large red berries, its handsome leaves by now tinted deep claret. *Hippophae rhamnoides* subsp. *yunnanensis* (or var. *procera* as some authorities state) seemed most abundant by riversides in sheltered valleys. Here it made graceful medium sized trees with twisted, gnarled trunks and silvery-grey leaves topped on female specimens by orange and yellow berries; altogether a far more attractive plant than its European relative.

In this area *Pinus yunnanensis* had been replaced by the small two needled *P. densata* and *Larix potaninii*.



The genus *Incarvillea* forms a conspicuous part of the flora of much of western China. *Incarvillea arguta*, as previously mentioned, was particularly abundant in hot dry valleys where it formed sprawling sub-shrubs. Around Zhongdian, near the Tibetan border, grew a plant previously called *I. mairei* var. *mairei forma multifoliata*, a delightful plant with sumptuous, magenta-crimson flowers. A few months previous to the expedition's departure it was decided this plant represented a new species and so the group was more than happy to find a heavy crop of seed (Grey-Wilson 1996). Alongside the *Incarvillea* grew an equally exciting find, a yellow flowered *Daphne*, forming a dense ground hugging bush no more than 15cm high, with flowers in clusters at the shoot tips. For a long time this *Daphne* was lumped together with the taller growing *D. aurantiaca*, which was originally introduced from the Jade Dragon Snow Mountain by George Forrest in 1906. Now after many years of confusion his dwarf yellow flowered *Daphne* has been recognised as a distinct species under the name *D. calcicola*.

Much to the delight of collectors garden worthy plants abound in this region and gems like *Podophyllum hexandrum*, *Meconopsis horridula pratii* or *Lilium lankongense* can be found. The former is named after Lan kong, the village in which Joseph Rock lived for many years. *Rhododendron wardii* had hybridised with a number of other species here, a feature the group spotted occasionally where new roads had been opened, thus upsetting the altitudinal sequence (*Rhododendron* have a very strict altitudinal sequence and only grow between precise altitudes). One very obvious cross was *R. wardii* x *R. vernicosum*. As the expedition climbed up a small dirt road they caught their first glimpse of the mighty Yangtze river and there above it, the towering snow capped peaks of Beima Xue Shan rising 6500m into the clouds. As usual the younger members of the party raced for the higher reaches, eager to see what laid in wait on the distant alpine screes. The sub alpine forests here were almost entirely composed of *Abies forrestii* var. *smithii*, sombre dark trees draped with metre long *Usnea longissima*, a vigorous and common lichen giving the woods a haunting feel.

Beneath loose boulders at the base of the scree, *Bergenia purpurascens* and *Diapensia purpurea* had made their homes amongst *Primula capitata* subsp. *sphaerocephala*, *R. sanguineum*, *R. selense* and *R. beesianum*. At 4100m on steep, slippery screes the expedition finally stumbled upon one of the most important finds of the trip — *R. proteoides* — one of the most handsome species in foliage and unaccountably rare in gardens. Plants here had layered to cover several square metres and were obviously several centuries old. It is an extremely slow grower and can take several years to flower. For example *R. proteoides* Rock151 introduced in 1948 (Davidian 1992), took almost 40 years to flower. The species was first introduced by Forrest in 1914 (Davidian 1992) and he noted that he encountered forms only 8-15cm (3-6") tall in the Mekong-Salween divide. Another interesting find nearby were plants which were obviously hybrids between *R. proteoides* and the very closely related *R. roxieanum*.

The expedition pressed on higher still until glacial peaks loomed above and tiny alpine abounded in an otherwise barren landscape. Dwarf willows, rhodiolas, gentians, saxifrages and minute delphiniums abounded. What more can a plantsman ask for? But Beima Xue Shan was to give its greatest offering that day in the form of *Saussurea leucoma*, one of the most exciting and unforgettable finds of the expedition. This small, odd plant, no less than 20cm tall, is fully adapted to the harsh environmental conditions it endures at such high altitudes. A covering of long, white, velvety hairs acts as a thermal blanket in winter, giving the plant a highly decorative and woolly appearance. Mist freezes over these hairs allowing an ice layer to develop, insulating the plant from the freezing winter conditions. Deep reaching taproots ensure that it can quickly catch water from the thawing glaciers in spring.

### Moving west towards Dapaoshan

Moving further west the expedition made its way to Dapaoshan, a mountain near the small town of Weixi, close to the Mekong-Salween divide. Like many other areas previously visited this is a closed area to Western visitors. However, the group's class 'F' visa meant that the visit was for scientific research and this luckily opened many doors. That night the group camped at the base of the mountain — the first Westerners to do so. Early the next morning the expedition made its way up a steep sided valley between tall trees festooned with the giant vines of *Parthenocissus tricuspidata*. *R. sinogrande* was unmistakable, even from a distance of half a mile away. Many of the larger trees had been cut for firewood or completely destroyed to clear the ground for growing maize. Nearby, what had once been a magnificent *Magnolia campbellii mollicomata* tree had been reduced to a sad relic; all that remained was a burned out re-shooting stump. It was just another sad example of the destruction that the Chinese flora has suffered over the last century, indicating how important it is to conserve these plants in Western cultivation until a solution for their conservation in the wild can be found. A little further on the group's spirits lifted when they stumbled across a dark glade full of the giant Himalayan lily, *Cardiocrinum giganteum*. It was first grown outside the Himalayan range at Glasnevin in 1848 when Major Madden sent David Moore seed (Nelson & Walsh 1984). So when the author saw the capsule covered spikes his



thoughts went back to Ireland and remembered the much told story of the lilies' early years in Dublin and how as a little boy, Sir Frederick Moore, had destroyed his father's much prized lilies. *Meconopsis betonicifolia* grew in great swathes beneath the *Cardiocrinums* and nearby a species of *Hymenophyllum*, a delicate filmy fern, indicated a favourable humid climate. *Sorbus harrowiana* grew as a single tree, stretching to 7m. Bean (1980) includes this species with *S. insignis*, however, *S. harrowiana* is a very different plant than the latter with fewer and larger leaves. It is rarely seen in gardens although there is a good tree at Mount Usher, Co. Wicklow.

*Clethra delavayi* formed mammoth trees, up to 10m tall. Clambering its way through the *Clethra* and a small tree of *Enkianthus chinensis* was a species of *Actinidia* with small but delicious fruits, tasting far better than shop bought kiwis. Rhododendrons once again grew in abundance and on the steep slopes above the wild kiwis grew an isolated tree of *R. rothschildii*, a member of the *Falconeri* section and only found in the most comprehensive *Rhododendron* collections (Kneller 1995). What a pity this noble fellow has been overshadowed by its more free flowered cousins like *R. falconeri* and *R. sinofalconeri*. Above a forest of *Picea likiangensis*, *R. rex* subsp. *fictolacteum* formed forests of its own. Other species of interest in this area included *R. bergii* (*augustinii* var. *rubrum*), *R. rubiginosum*, *R. uvariifolium*, dwarfing at higher altitudes to *R. calostrotum riparioides*, *R. haematodes* subsp. *chaetomallum* and the very beautiful *R. campylocarpum* subsp. *caloxantum* to mention but a few.

### Ninety-nine Dragon Pool

The expedition first saw *R. roxieanum* on Beima Shon where it made dwarf shrubs. However, in the valleys at Laichun Shan near Ninety-nine Dragon Pool the group passed through venerable forests of it, estimated to be at least 500 years old. This was one of the most untouched and unspoiled areas visited, possibly because of its inaccessibility to logging. Because of this the expedition was able to witness virgin forest and many magnificent trees like 50ft (15m) tall *R. rex* subsp. *fictolacteum*. Rare scenes like this had only been witnessed by early collectors. At the base, growing along a brook in thick sphagnum moss one of the most beautiful choice alpine was found — the little grown *Primula sonchifolia*, a species which overwinters by means of resting buds the size of a small hen's egg. This was one of Reginald Farrer's favourite species and he praised its virtues on more than one occasion. Further on *Acer davidii* made a splendid contrast against the vivid white stems of *Rubus cockburnianus*, glistening as it did in the low October sunlight.

Zibenshan was an area the author had been particularly looking forward to since at that time he was Head Gardener at Glanleam, Valentia Island. Zibenshan's lower altitude flora is warm-temperate and therefore suited to milder coastal gardens like Glanleam. The route took the group through mist shrouded mountains right down to the spectacular Mekong gorge. By now the first rice crop had been harvested and farmers were busy ploughing with water buffalo in preparation for a second crop. The landscape was punctuated with giant subtropical bamboo, bananas and several species of naturalised cacti, all interspersed with large cannabis bushes! *Agave sisalana* is commonly cultivated in this region for its fibre and here on the hillsides many had thrown up innumerable evil smelling yellow-green flowers.

At the base of the mountain the group hired a coal truck to take them up a rough mountain track. Just after they had settled themselves onto some uncomfortable boxes someone noticed that they were actually full of dynamite! These were promptly unloaded, allowing the journey up the track to continue, often with 150m drops at the roadside. At the top the ashened faced group gladly bade goodbye to the 16 year old driver. On the mountain top was yet another sad example of the vulnerability of virgin forest in this country. A ragged copse of *Juniperus recurva* var. *coxii*, once the finest in western China, now reduced to a mere hillside grove as all the larger trees had been felled for house building or firewood. The group's search for the famous 1200 year old *Tsuga dumosa* proved to be in vain and it is now thought this ancient tree, once an object of pilgrimage has become yet another victim of slash and burn. A little further on, however, the party did find more fortunate trees of the Himalayan hemlock. As on Dapoashan they formed magnificent cedar like trees standing high above the woodland canopy and often were the host of epiphytes, like *R. edgeworthii*, sedges and even *Sorbus* grew 15m (50ft) up its towering gnarled trunk. Below the hemlock, alongside 12m (40ft) trees of *R. sinogrande*, grew an exotic *Pseudopanax* with lush, jungly palmate leaves giving the surrounding area an almost tropical feel. A number of different species of *Zanthoxylum* grew here, all viciously armed with razor sharp thorns on every branch and leaf. The fruits of *Zanthoxylum* are used as an excellent spice in Chinese cooking as the group had sampled. Despite the lateness of the season, *Hydrangea heteromalla* was still covered in broad corymbs of white flowers. Its chestnut coloured stems held high above a fast flowing stream that quickly crashed into a steep sided gorge below. The most important find that day was a young grove of *Davidia involucreata*, the illusive dove tree, loved by all who have seen its spring spectacle. E.H. Wilson (Bean 1980) described it as one of the most beautiful trees of the north temperate flora, comparing its large white bracts to huge butterflies, hovering amongst the branches.

Table 1. Numbers and types of seed lots collected.

Named rhododendron species	101
Natural rhododendron hybrids	5
Species to be identified	16
Total rhododendrons	122
Species of herbaceous, alpine, trees and shrubs	462
Total species collected	584
Collections	881

The expedition began on September 21 1996 and continued to October 26 (see Table 1 for collections). While there were signs of severe damage in many areas, there still remained vast areas of untouched and regenerating forest. It is hoped that the Chinese authorities will take a step towards preserving this important natural resource. The expedition saw not only many plants but a beautiful ancient landscape managed by a hard working but happy people.

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## ORCHIDS FOR GLASNEVIN FROM BELIZE

### Introduction

In Volume one of this journal, E.C. Nelson (Nelson 1982) tells of the reasons for bestowing the title *Moorea* on the journal of the Irish Garden Plant Society. 'In honour of David and Frederick Moore' was the title of his article. Both these men had a great influence on Irish horticulture, especially on orchid cultivation. David Moore was the first to flower orchids grown from seed in cultivation and his son Frederick was obsessed with the family *Orchidaceae* and amassed what was considered to be one of the best collections world-wide. Their names are immortalised in the many generic and specific epithets given in their honour.

In 1994 the orchid collection at the National Botanic Garden, Glasnevin needed revitalising. Research, conservation, education and amenity are the main roles of the gardens and therefore of the orchid collection. A plan was drawn up, and priority given to research and conservation. In order to fulfil both these roles it was decided to collect wild plant material. This enables the research and conservation roles to be fully implemented as the necessary information for research is collected along with the living specimen. In January 1994 the gardens had been given a small number of species of wild origin from a past student, Brendan O'Donoghue, who then resided in Belize. Building on these would allow the gardens to hold a good research collection, to work in areas of conservation and to continue the traditional emphasis of concentrating on New World orchid species. Other aspects of the collection would benefit from this decision. Also, expeditions are not commonplace for staff at the gardens and this would lead to new field education for those involved. A benefit of visiting plants in their native areas is that it enables the garden cultivator to more closely reproduce the ideal climatic conditions. The collection would also allow the public visitor to the orchid house the opportunity to study the variety of orchids from a single country before taking on a family of over 15,000 species.

The collection in the past had been amassed from plants purchased at auction and from the many orchid nurseries in the UK.



Figure 1. *Encyclia cochleata* — the national flower of Belize.

Plants were also donated and exchanged. This was the first expedition from Glasnevin to collect orchids and the team was comprised of two staff members, Brendan Sayers and Noeleen Smyth, along with Gerard Doyle and Brendan O'Donoghue.

The Belizean orchid flora is relatively small for a Central American country and it would not be an impossible task to hold all these species in the future. *Native orchids of Belize* (McLeish, Pearce and Pearce 1995) lists 278 species in 92 genera and is the most current reference book for work in this field.

Belize, formerly British Honduras, is a small country about half the size of Ireland. It forms part of the Yucatan peninsula, with Mexico bordering the north and Guatemala the west and south. Divided by the Belize River, the north of the country is mainly low tableland and the south a coastal plain rising to form the Cockscomb and Maya Mountains. The highest point in the country is Victoria peak at 1120m. Temperature and rainfall vary greatly; the coastal temperature ranges from 15°–38°C, the recorded range being greater inland, and rainfall varies as much as 1300mm in the north to 4250mm in the south.

### Vegetation types

The flora of Belize is of particular interest as some of the species found there do not occur in the neighbouring countries. Travelling inland, the expedition team examined four major vegetation types; mangrove, savannah (freshwater and brackish water types), mountain pine ridge and both intermediate and advanced jungle. An orchid flora is not recorded from the mangrove, dominated by *Rhizophora mangle* (red mangrove) (McLeish *et al.* 1995). Inland savannah is dominated by *Pinus caribea* (pine) mixed with *Crescentia cujute* (Calabash) and *Paurotis wrightii* (Palmetto palm) in moister areas, while in drier areas with *Quercus* spp. (oak), *Curatella americana* (yaha), and *Brysonima crassifolia* (craboo). These savannahs support an orchid flora (both terrestrial and epiphytic) that includes members of the orchid family subtribes *Spiranthinae* and *Haberiinae*, in particular *Brassavola nodosa*, *Myrmecophila tibicinus* and *Encyclia* spp. on the oaks. Mountain pine ridge is another distinct vegetation type, again dominated by pines and various oaks. Marginal forest alongside the many streams that flow across this area provide a rich orchid habitat where many of the rarer species are found. Primary and secondary forests are most evident in the south and are identified by the abundant presence of *Orbignya cohune* (Cohune palm). This is another rich orchid habitat and was the most rewarding for the expedition.

### The orchid flora

Mangrove forest was visited at White Ridge Farms in the Stann Creek District. Four species of orchid were recorded; *Myrmecophila tibicinus*, *Brassavola nodosa*, *Oncidium sphacelatum* and *Pleurothallis grobyi* grew epiphytically on branches above the brackish water. *Myrmecophila tibicinus* was encountered as close as 10m from the beach.

Inland savannah, which occurs immediately behind supports the same flora as the mangrove forest, plus many more new species. *Catasetum integerrimum*, *Epidendrum nocturnum* and *Encyclia alata* were recorded. Members of the sub-tribes *Spiranthinae* and *Haberiinae* were not evident as they are terrestrial and are mostly dormant in the dry season. However it was the mountain pine ridge and primary and secondary forest habitats which provided the team with the most species.

One man made habitat was visited — a citrus farm. Many species, mainly miniature ones, have found favourable conditions and grow as epiphytes in the citrus trees. Two of the larger orchids to be seen are *Epidendrum imatophyllum* and *Coryanthes speciosa*, and along with an *Aechmea* sp. (*Bromeliaceae*) and the epiphytic vine, *Codonanthe* sp. (*Gesneriaceae*), grow in specialised 'ant-gardens', their roots forming the structural support for the ant nest. It is considered difficult to cultivate these plants without the live ants being present. Ant-plants growing in similar situations are cultivated with the use of fresh ammonium as a replacement for the nitrogen supplied by the ants. This method is undergoing trials at present in Glasnevin.

### Cultivation

Miniature species can be short-lived and difficult to cultivate. Belize has a good representation of these miniatures and even though a magnifying glass may be needed to reveal their beauty they often exceed the larger, more flamboyant species for intrigue and complexity. Sir Frederick Moore had a good collection of these miniatures and it is intended to continue to collect these much-neglected orchids. The expedition returned with four species of *Pleurothallis* that had never been represented in the Glasnevin collection. *Pleurothallis brighamii*, *P. hondurensis*, *P. lewisae* and *P. tribuloides* are all small species the largest being *P. hondurensis*, growing to 20cm. tall. Another miniature is *Ornithocephalus gladiatus*, with fan shaped leaves and arching inflorescence



carrying tiny white and green flowers resembling a bird's head. Since collection this species has been hand pollinated and the seeds scattered around the tree fern mount on which the parent plant grows. Seedlings developed to protocorm stage in profusion but many later succumbed and there only remain ten seedlings alive that have produced their first leaves. They were germinated in the same manner that David Moore sowed his seedlings in the early 1870s.

*Campylocentrum fasciola* is a leafless epiphyte usually found growing in citrus groves. It is considered a difficult plant to bring into cultivation as there is considerable damage done to the roots when collecting. Nevertheless it is growing well at Glasnevin and has flowered twice since collection.

#### New locality data

Five new locality records were documented by the expedition.

*Encyclia alata* was collected on savannah oaks at White Ridge Farms in the Stann Creek District (lat. 17° 57', long. 88° 16' approx.). Previously recorded from the Orange Walk, Cayo and Toledo Districts, it favours moist to wet, broad-leaved forest between 50 and 600m. A 70cm tall plant with large glossy pseudobulbs and leaves, it is striking even when not in flower. The inflorescence can be up to 1.6m long with many large, yellowish-green flowers that are strongly scented. It is considered an uncommon plant in Belize. *Encyclia* is a genus of approximately 150 species, of which 23 are listed for Belize.

*Stelis ciliaris* was collected at Pretty See Ranch in the Belize District (lat. 17° 12', long. 88° 16' approx.). Previously recorded from the Cayo and Toledo Districts it is considered fairly common and is usually found in moist broad-leaved forests from 50 to 400m. Growing to 20cm tall it produces a 25cm inflorescence from the grooved petiole of the leaf. The inflorescence is covered in numerous 5mm maroon flowers. *Stelis* belongs to the subtribe *Pleurothallidinae* and contains approximately 500 species, seven of these are known from Belize.

*Epidendrum secundum* was also collected at Pretty See Ranch in the Belize District and is considered an uncommon orchid. A medium-sized plant with stems holding many green to purple coloured leaves. The flowers are arranged in a terminal cluster and



Figure 2. *Stelis ciliaris* with details of flowers.

each flower is slightly fragrant and about 1cm in diameter. It had been previously recorded from the Orange Walk and Cayo Districts, growing on trees in damp forest. The plant here named *E. secundum* is the same as the plant named *Epidendrum anceps* in *The manual of cultivated orchid species* (Betchel, Cribb and Launert 1992). It is a plant with a confused nomenclature. *Epidendrum* is one of the largest genera, containing several hundred species; 22 are known from Belize.

*Brassavola nodosa* var. *grandiflora*, a plant with no known locality was collected at Santana (lat. 17° 52', long. 88° 18' approx.) in the Belize District. Found growing on a lamppost in a garden, it had been originally collected from the nearby forest. It is a plant reaching 25cm high with cylindrical, tapering leaves and it produces large, showy, white flowers from the terminal bud of the stem. The species is a common orchid in Belize, favouring trees and stumps in coastal savannahs and mangrove swamps. The variety *grandiflora* differs in its choice of wet lowland forest as a habitat and in having larger and unspotted flowers. *Brassavola* is a genus of about 15 species, four of which are recorded from Belize. *Brassavola nodosa* var. *grandiflora* is considered a rare species in the country.

*Maxillaria hedwigae*, a plant with no previous known locality was collected at Maya Falls near San Antonio, in the Toledo District (lat. 16° 15', long. 89° approx.). This species was described as recently as 1982 and grows about 40cm tall with monophyllous pseudobulbs and a creamy white flower with an orange labellum. It is similar to *Maxillaria rufescens* in appearance. *Maxillaria* is one of the largest American genera with about 300 species, 20 of which are known to occur in Belize.

The expedition collected approximately 60 species of orchids, 45 of these were new to the current collection at Glasnevin. Many of these were in the collection in the past but had been lost over the years. Some of the species were introduced into the gardens for the first time and most probably the first introduction to cultivation in Ireland.

#### Acknowledgements

The expedition team would like to thank the Stanley Smith Horticultural Trust, the Merlin Trust, the Northern Ireland Alpine Garden Society, the Royal Horticultural Society of Ireland, and the Office of Public Works (Department of Arts, Culture and the Gaeltacht) for financial support. They also acknowledge the support of the people in Ireland and Belize who were involved with the expedition. The line drawings are by Berni Shine, National Botanic Gardens, Glasnevin.

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KEITH LAMB

## 'FOR FLAKES AND PICOTEES'

A silver dessert spoon inscribed 'Adjudged to J.W. Armstrong Esq. for best Flakes and Picotees, 1834' gives an interesting glimpse into a horticultural show of a past era. The stem of the spoon bears the words 'Connaught Horticultural Society'. The date letter is for 1834 and the maker's mark is that of R.W. Smith, who had premises in Wicklow Street, Dublin (see Figure 1).

On turning up Volume one of the *The Irish Farmer's and Gardener's Magazine* (1833-4) an account of this show was found. The meeting was held on August 12 '... in the Great Room of the Farming Society's Buildings, at Ballinasloe' and the award of the spoon to J.W. Armstrong is recorded. The list of awards gives a picture of the fruits and vegetables grown in the gardens of big houses of that time. Prizes were given for black and white grapes, melons, peaches, nectarines, plums (*sic*) apples, gooseberries and currants. The vegetables included cabbages, parsnips, carrots, beans and turnips. In every case the owner's gardener was given credit.

It is to be noted that not only the big gardens were catered for. There were classes also for amateurs and for cottage gardens. Indeed the report states:

We are happy to add that several premiums were given for the superior cultivation of Cottage Gardens, and that the main object of the Society, the encouragement of useful Horticulture among the humble classes was greatly advanced during the present season.

*The Irish Farmer's and Gardener's Magazine* was 'conducted' (*sic*) by Martin Doyle and Edmund Murphy. In the same volume a report on a meeting of the North Wexford Agricultural Society states: 'Another toast which was received with enthusiastic cheer, was, Martin Doyle, our county author and his magazine...'

The spread of horticultural activities around this time is shown by a statement at the annual dinner of the Royal Horticultural Society of Ireland in 1839 (see *Irish Farmer's and Gardener's Magazine* Vol. VI, p. 87, 1839) in which it was reported that by that date there were 17 local horticultural societies in Ireland. Soon though, such activities were to be crippled by the tragic famine years.

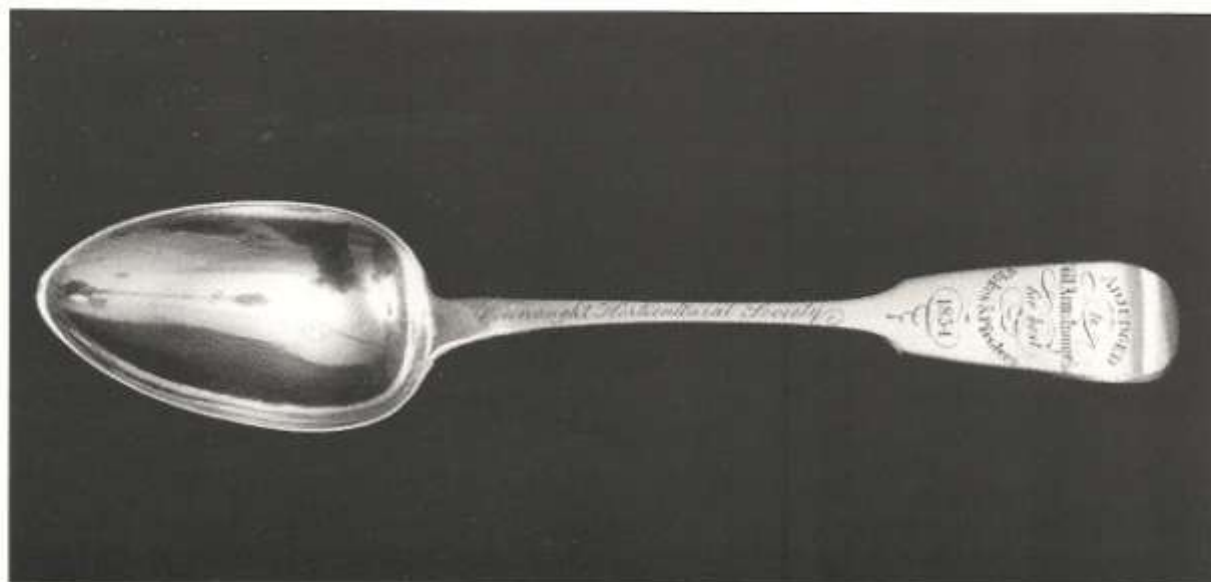


Figure 1. Silver spoon awarded to J.W. Armstrong, 1834.

Woodfield, Clara, Co. Offaly.

MARY BRYAN

## AN URBAN GEORGIAN GARDEN

Fitzwilliam Square lies south of the River Liffey, in the heart of Georgian Dublin, and consists of 69 houses, still virtually intact, on four sides of a central garden. The square was laid out by Richard, seventh Viscount Fitzwilliam in 1792, on lands known as Baggotrath, part of the large estate which had been in the family for many years. Owing to the exigencies of the time (the Napoleonic wars and the approaching Act of Union), building on the square was slow and spasmodic. Four houses were built in 1797, but the square was not finally completed until 1828, by which time the estate had passed to the Earls of Pembroke. In 1813 an Act for enclosing, lighting, and improving Fitzwilliam Square in the County of the City of Dublin (2nd July 1813) was passed, thus creating the centre garden. Fourteen commissioners were appointed and all the procedures for running the garden were set out in detail in the Act, from the number of meetings to be held per year to the annual payment required of the residents for the upkeep of the garden.

The author fell in love with the garden whilst doing research on the history of the square for an architectural conservation thesis several years ago. The as yet uncatalogued archival documents pertaining to the running of the garden by the Commissioners of Fitzwilliam Square is the source for the information about planting and maintenance contained in this article. Carefully maintained by the Commissioners and, in more recent times, by the Fitzwilliam Square Residents Association, the garden is the result of the communal efforts, over the centuries, of those who have lived and worked in the houses around the square. It is a unique garden, not because it contains any rare plants (in this respect it is uninteresting), but because it is the only such urban space in Ireland to remain virtually unchanged since Georgian times. Having turned the large key necessary to open the gates, the visitor steps into a timeless leafy oasis in the heart of the busy city.

In *The Story of the County and City of Dublin* (1815), the various gardens in the squares of Dublin are described (c. 1812). The gardens of St. Stephen's Green, Merrion Square and Mountjoy Square, at that time, all had a perimeter walk planted with flowering shrubs, and an open grassed area in the centre. This layout was typical and the result of a wish to reproduce the delights of the rural estate in an urban context. In the country, a belt drive usually wove its way around the boundary through a belt of trees and shrubs, with more or less open ground in the centre. This was transposed to the urban scene in the form of a belt walk following the perimeter of the garden, shaded by informally planted shrubs and trees. The area of unadorned grass in the centre of the urban garden symbolised the rural open parkland.

There is no documentary evidence as to the original planting of Fitzwilliam Square garden. However, it was probably planted fairly soon after the Act of 1813, so it seems logical to assume that it would have been laid out in a similar fashion to the gardens in the existing squares. This is borne out by the first Ordnance Survey map, and if this is compared with the present day map (Figure 1, OS map 1838 and a recent OS map), it can be seen that the garden of Fitzwilliam Square is remarkable in that in its 180 years of existence the layout has not changed. One reason for this is the fact that, of the great Dublin squares, only Fitzwilliam Square garden remains private. St. Stephen's Green, Merrion Square and Mountjoy Square are all public spaces, as a result of which they have been much changed from their original layouts.

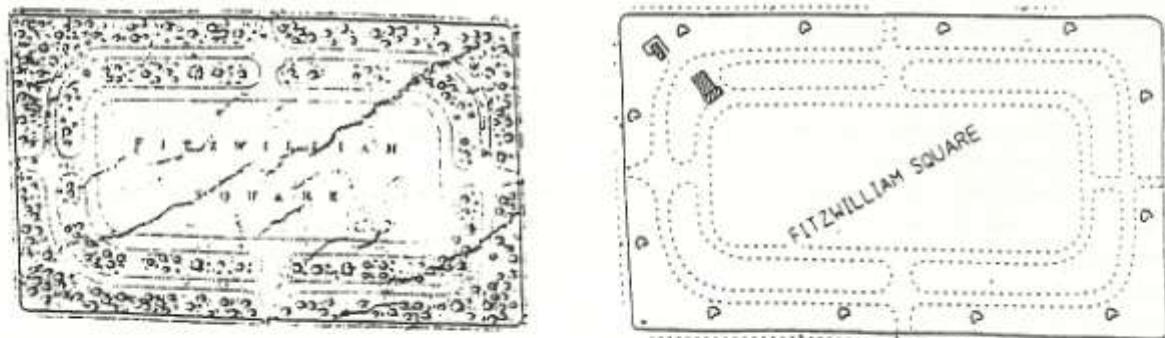


Figure 1. The Fitzwilliam Square garden in 1838 and today. Based on the Ordnance Survey by permission of the Government (Permit no. 6462).



The documents in the archive begin in the 1840s and the typical Georgian garden, which concentrated on greenery relieved only by flowering shrubs, has given way to a more ornate and colourful Victorian style. During the 1840s bulbs were popular and many tulip, snowdrop and crocus bulbs were planted, provided by nurseries like Thomas Bridgeford. Flower seeds were ordered in profusion and manure was delivered in loads; colour had arrived and the flower bed became a permanent fixture. Some major tree and shrub planting took place in 1849 including 100 mahonia, 12 arbutus, 12 jasmine, 100 laurels and 12 escallonia.

During the 1850s and 1860s, seedsmen Edmondson and Co. continued to supply the garden with bulbs and seeds. In 1855 the list of bulbs included hyacinth, anemone, narcissus, snowdrop, tulip and 1000 crocuses. Types of seed ordered included sweet pea, mignonette, candytuft, lupins, poppy marseilles, stock and wallflowers — one single order listed 45 different kinds of seeds. Thomas Barnes was the main supplier when tree and shrub planting took place in 1856. Hollies, laurels and 12 evergreen oaks were planted at this time.

During the rest of the nineteenth century, and into the twentieth century, the cultivation of flowers and the planting of trees continued. Edmondsons, Bridgefords and Charles Ramsey of Ballsbridge continued to supply the Commissioners. The propagation of flowers was taken seriously with a Dunphy stove being purchased from Dockrells for the propagating house. Receipts show that Patrick Lunny regularly brought cut hay for the plants in the glasshouse frames and a tarred cover was bought for the nursery frames, to protect the geraniums. There were several more waves of tree and shrub planting during the 1870s including chestnut, fig, limes, mountain ash, yews and six more evergreen oaks. Hollies, euonymus and laurels were planted at various intervals as an understorey to the trees, and many survive today. These various plantings appear to have been for replacement and infill, as the basic layout of the garden remained unchanged.

During the twentieth century, except for some of the current hawthorn, laburnum and lilac relatively little planting seems to have taken place compared to the previous century. Recently some variegated maple, silver birch and Norwegian pine have been introduced; these latter trees are not appropriate to the garden. The flower beds around the edge of the centre grassed area were cultivated up to the 1960s but the previous intensive propagation ceased after the Second World War, because of cost and changing conditions. For a period after the war the flower beds were maintained by the families living on the square. When the use of the houses changed from residential to commercial use and families left the square, the flower beds disappeared. This restored the garden to its original more austere appearance.

There are many documents in the archive indicating the regular maintenance needed, from the care of garden implements to the painting of the railings and the repair of gate locks. The firm of Grant and Lennon regularly supplied new handles for the wheelbarrow, a maintenance cost listed almost as often as new blades and sharpening stones for the scythes. A pony or donkey was used to pull the lawn mower in the summer, supervised by a boy; this was especially important during the years in which the Irish Open Tennis Championships took place in the Square (1877–1903) (see *The story of Fitzwilliam 1877-1977*). Metered water was piped into the square in 1865 and at this time, the perimeter was lit by fourteen gas burners. Also in the 1880s Dublin Corporation agreed to widen, kerb and concrete the pathway outside the railings. A few years later a small timber summer house was erected in the north-west corner and a fine polished granite fountain in the south-east corner — both are still in existence.

In 1963 the original lease of the garden expired and the land reverted to the Earl of Pembroke. The Commissioners of the square thus no longer had any legal standing and the 150 year old link with the early days of the square was broken. After several years of discussion a non-profit making company limited by guarantee was agreed to be the best solution and the Fitzwilliam Square Association Ltd was formed in 1971. The Earl of Pembroke leased the garden to the Association for another 150 years at the peppercorn rent of 5p per annum. There are various conditions attached to the lease, that it must be used as a private park, for instance. This is an important factor from the point of view of conservation.

From 1963 until the Association became active in the 1970s the garden was completely neglected and became overgrown. It was also the time when the fate of the square itself was in the balance. The medical profession had left (at one time 94 doctors had their practices in the square), ten houses were vacant and one had gaping holes in its roof and the front facing windows filled in with concrete blocks. The danger passed, the Association took charge and the garden has since been well maintained.

A professional survey of the trees is currently being carried out and some appropriate infill planting is being planned. The plane trees are probably the oldest trees in the garden (six were planted in 1871) and there is a gap on the north side where a new plane could be successfully inserted. The mature beeches have well formed

canopies but could do with investigation as they are among the oldest inhabitants. Four mature elms were cut down some years ago, apparently due to Dutch elm disease and only the stumps remain. There are some fine evergreen oaks and lime trees dispersed through the garden. The main shrubs are mature hollies, robinia, laburnum and lilac, interspersed with spotted laurels and euonymus. There is a flourishing ground cover of ivy in the shrubbery and the garden is now a settled mature landscape with a low maintenance factor. In this type of natural landscape the clipping of shrubs and trees is not necessary and the few rather straggly flower beds should be got rid of as they detract from this authentic garden.

To have a garden with its early nineteenth century layout and landscape virtually untouched is a major asset and maintaining it is vital from an historical point of view; this is a garden which must be conserved. As it is not a public garden, there are no plans, fortunately, to landscape or prettify it, as has been done to its detriment in the Merrion Square garden; such treatment should be avoided at all costs. The garden is integral to Fitzwilliam Square as a whole and not just in the physical sense. Seen constantly through the windows, it clearly belongs to its red brick houses in a way which is not possible with the public spaces of St. Stephen's Green, Mountjoy Square and Merrion Square. The large, open, grassed area in the centre still remains, the belt walk with its informally planted shrubs and trees is untouched, and the intact square of rosy red brick houses continues to stand guard. On a summer's evening, with the noise of the traffic stilled, it can be little different from when the original Commissioners first strolled along the paths, nearly two centuries ago.

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## WALLED GARDENS IN IRELAND

### A REPORT ON THE NORTHERN IRELAND HERITAGE GARDENS COMMITTEE CONFERENCE

#### Introduction

This conference brought together gardeners, owners and experts from Ireland, the UK and Europe to review the history of walled gardens, and to discuss their preservation and management. Efforts to preserve walled gardens are directed and informed by records and traces of their past, however the quantity and detail of evidence available varies enormously from site to site.

Many walled gardens have been in cultivation until relatively recent times. Surviving gardeners, owners, or local inhabitants can provide a matchless, if steadily vanishing resource, making the drive for preservation more urgent. The six inch Ordnance Survey maps of c.1834, c.1857, c.1900 and c.1920 are a less ephemeral source of information. In most editions bed layouts were the invention of the cartographer although the 1920 maps show a reasonable level of accuracy. Archaeological digs can reveal even greater detail of path location, width and materials.

The walled garden has always had a dual purpose both ornamental and utilitarian. It has, during a large part of its history, been seen as a status symbol, for pleasure and promenade as well as productivity. At one stage they were a feature of nearly every demesne and in Ireland several thousand are recorded in the seventeenth and eighteenth centuries.

#### Historical records

The earliest walled gardens followed on from the medieval tradition of defended grounds. Walled enclosures were related to the house or castle, their orientation and shape limited by existing buildings and boundaries. At Lemanagh, Co. Clare there are the remains of walls typical of a medieval enclosure, while at Lismore Castle, Co. Waterford there are defensive walls and turrets dating to the 1640s.

In the late eighteenth century the development of the informal landscape park led to the removal of the walled garden from the immediate vicinity of the house for reasons of aesthetic continuity, and to fulfil the fashion for keeping services and servants out of sight. For example at Coolatin, Co. Carlow the walled garden is two miles from the house. However, smaller Irish demesnes continued to locate the garden beside the stable yard, at the edge of the pleasure grounds, although away from the main facade of the house.

Eighteenth century walled gardens were often experimentally shaped, with walls orientated to capture maximum sunshine. Ends were sometimes rounded to reduce dark corners, although this created a weaker structure which was usually buttressed. Acreage varied according to the size of the demesne. Shane's Castle, Co. Antrim, for example, is a large demesne with a 10 acre (4.04ha) walled garden. A medium sized one would have had 4-6 acres (1.62-2.43ha), while small ones of 400 acres (161.88ha) or less would have had 1-2 acres (0.40-0.81ha). Strips of land along the outside walls were often used for extra space and were protected by another wall, a hedge or a ha-ha.

#### Design of gardens

The walled garden was normally surrounded by a low density shelter belt of mixed conifers and deciduous trees set back from the wall. This was essential to reduce windspeed, and to limit the eddying effect caused by the walls themselves. The south side was usually left open, or lightly planted. The space inside the garden was customarily quartered by wide axial paths, and served by additional subsidiary paths. The main axis was usually flanked by flower borders and became the primary location for hardy herbaceous perennials in eighteenth and nineteenth century gardens. These borders were often backed with espalier fruit and arched over with more fruit on trellises.

Peach and apricot cultivars, such as 'Gross Mignon' and 'Moore Park' respectively, would normally have been grown on the south wall. The same cultivars were often grown both under glass and out of doors to maintain continuity of production. Apples and pears were grown on the east and west walls, while plums would have been restricted to the west wall to reduce the risk of frost damage to blossoms. Morello cherries were usually situated against the north wall, where their greater height did not cast shade over the garden.



The borders under the walls would have been approximately the same width as the height of the walls. These beds have a season extended by up to two weeks at each end, and were used for growing early salad crops. Vegetable and root crops would have been grown in box edged beds in the cooler central area of the garden, and well away from the fruit tree roots. Formal ponds for fish production and bee gardens for honey were common features of earlier gardens. Bee gardens were sited upwind of the orchard area to encourage pollination of fruit.

#### Garden walls

The standard wall height was 13ft (3.96m), or 8–10ft (2.44–3.05m) in sheltered areas. Most walls were stone and were brick lined to absorb and reflect the sun's heat. Until the nineteenth century they were constructed of locally handmade brick which was smaller, thinner and more irregular than later industrial brick. Handmade brick can now be very hard to source for repairs, unless taken from redundant structures on site.

The type of bond may help dating, for example English — 3 course stretchers and 1 course headers repeated, or Flemish — alternate courses headers and stretchers. Wall fittings can also provide clues — earlier walls had nails and leather straps. Later fittings were more sophisticated — Castleward, Co. Down has pierced metal verticals with wire strung through them, while Rowallane, also in Co. Down, has threaded glazed bricks built into the wall. Walls are usually the principal part of any restoration programme, and there is conflicting advice regarding methods. Lime mortar was used for all old walls. Original lime sources would have produced a much coarser product than that obtainable today. Crushed grit can be added to new lime mortar to achieve an appropriate texture.

Prior to repointing, the joint should be excavated back to twice its width with a diamond tipped tool, avoiding damage to the surrounding brick. Small stones or 'pinnings' should be collected as they fall out, for later replacement. Restoration of rusting wall fittings may involve removal, shot blasting, galvanising and reinstatement, or alternatively replacement with stainless steel fittings (obtainable from steeplejacks). 'Hot walls' with internal flues were common from the seventeenth to the early nineteenth century, the main period of popularity being in the eighteenth century. These were largely superseded by glasshouses after the 1840s repeal of the glasshouse tax, and can now be hard to detect.

#### Glazed structures

The earliest glass structures were cold frames. Orangeries were a later development, becoming popular in the 1690s, although these were not exclusively sited in walled gardens. In the seventeenth century cultivation of exotic plants became fashionable, and glasshouses were constructed to accommodate expanding collections of tender specimens. The first glasshouse in Ireland was built in the late eighteenth century for Sir Arthur Rawdon at Moira Demesne, Co. Down.

In the mid to late eighteenth century a typical structure had a central cool conservatory flanked by hot houses. Cultivation of the pineapple and vines was extensive. To use border space efficiently, vines were usually planted outside the glasshouse, the vine being trained in through an aperture. When planting fruit species, it was common practice to bury an animal carcase to provide nutrients at the base of the planting pit.

Between 1790 and 1800 the new cast iron technology was applied to the glasshouse. This permitted the construction of large and ornate structures such as the recently restored 'Turner house' at the National Botanic Gardens, Glasnevin, Dublin.

Glass structures are an important source of information about a site. Surviving ironmongery and their heating systems may show makers' marks, for example Boulton and Paul, Richardsons, or Mackenzie and Moncur, while standard pipe dimensions can be useful for dating. Towards the late nineteenth century more space in walled gardens was given over to decorative planting. Rose gardens were often included in the layout at this stage. Productive walled gardens became more or less redundant by the 1920s, a few surviving until the Second World War.

#### Restoration

There are a number of restoration projects planned, on-going or indeed complete in the surviving walled gardens of the UK and Ireland. At Erddig, Wrexham, Clwyd, in the Welsh-English borders, a National Trust project restored the walled garden, which dates from the 1600s. The garden had a later Victorian overlay, but had been subject to 40 years of neglect. The restoration programme aimed to preserve the essence of both periods. It included the reinstatement of a vanished dividing wall with pleached lime, relaying paths with hoggins (a self binding gravel), planting and training roses for a Victorian 'cushion of flowers' effect and renovating the wall trained fruit.



In the north Dublin area, Fingal County Council is carrying out a restoration and redevelopment programme on three walled gardens — Newbridge, Ardgillan and Malahide. Plans are under consideration to restore a further two medieval walled gardens in the area. The walled garden at Newbridge (1738) was replanted in the nineteenth century as an orchard and now contains nineteen old apple varieties dating 1850–70, e.g. 'White Russet' (first recorded in Londonderry 1802) and 'Blood of the Boyne'. A collection of old apple and vegetable varieties is currently being established in the garden.

At Ardgillan the ornamental garden had been lost, but a very good walled garden remains. Prior to restoration the walls were in poor condition. The garden contains two free standing walls, one with alcoves in which peaches, now replanted, were grown. The redevelopment programme includes a herb garden, the design of which is taken from the Book of Kells. Sections illustrate culinary, medicinal and pot pourri herbs. Buddleia and bee plants have been planted on the south wall, and a French style ornamental 'potager' produces a wide variety of summer vegetables against the south wall, and winter vegetables under the north wall. A rose garden has been replanted to the original 1885–6 design, using mainly modern varieties, with some old varieties on the walls. Future developments are scheduled to include the reconstruction of garden buildings for use as a museum of gardening.

A walled garden has existed on the site at Malahide Castle from the thirteenth century, however its primary horticultural importance has been in the twentieth century under the ownership of the plant collector Lord Milo Talbot who was in residence until 1973. It houses an important collection of non ericaceous plants especially *Olearia*. A restoration and maintenance programme has included the erection of a glasshouse brought from another site in the Dublin area. The plant collection continues to be developed, with particular emphasis on Australasian species.

Another Irish walled garden which has benefited from restoration and redevelopment is at Seaford in Co. Down. The demesne includes a Regency house, a Repton style landscape and Loudon style pleasure grounds. The walled garden is a quarter of a mile from the house. An extensive range of glass houses was erected in the walled garden in the 1850s and subsequently demolished in the 1930s. Surprisingly, the foundations were 8ft (2.44m) deep, with 5ft (1.52m) of soil over rubble. The walled enclosure included a flower garden, a kitchen garden, a mushroom house and a peach and plum garden. It was abandoned in the 1950s, however restoration began in 1961.

A commercial production nursery is now operated within part the walled garden, while the remainder is maintained as ornamental grounds open to the public. Features include a hornbeam maze, the National collection of *Eucryphia*, a 'mogul' viewing tower, an exotic butterfly house and a tea room (run by a franchise). There were 11,000 visitors to the garden in 1995 and the garden makes a modest profit. Old paths in the walled garden remain grassed over although they may be regravelled if public pressure increases. Planting, particularly of border lines within the nursery area maintains an ornamental feel in the commercial production area.

### Conclusion

There is an increasing number of walled garden 'rejuvenation' projects in Ireland in addition to those described above. Some were already underway at the time of the conference (October 1995), such as at Creagh, Co. Cork; others have commenced, or reached an advanced planning stage, in the subsequent year, including the gardens at Kylemore and Enniscoe, both in Co. Mayo.

The restoration of heritage gardens in the Republic of Ireland is additionally being fuelled by the 'Great Gardens of Ireland' restoration project. As part of £650m granted from the European Community to the Department of Tourism and Trade, £4m is allocated to the gardens restoration project. The fund is on a once-off basis and finishes in 1999. Owners must match the funding awarded. Where an owner is prepared to open full-time from Easter to October, a community employment scheme can be funded for the garden by the government agency, An Fás. The value of the employment scheme is then allowed as part of the owners contribution, rising to a maximum of 25% of the total funding. Up to October 1995 there had been 250 enquiries, and 100 initial applications. Of these, approximately 20 had been encouraged to proceed immediately with their application.

A garden is assessed for eligibility for funding under a number of criteria, including its national or international importance, the presence of significant features, its historic and heritage importance (including architecture), its scientific interest (including plant collections) and any aspect of literary interest. The garden's relationship to tourism and its geographic location are of particular importance, the programme's aim being to

establish international repeat tourism. This being the case the owners ability to maintain the property on a business-like basis and to raise funds are essential qualifications.

It seems that the moment of the walled garden's integration into the modern world of 'garden heritage' has arrived. It has been sadly neglected since the early part of this century, its usefulness outlived, however the quiet enchantment of the *hortus conclusus* remains, an area defined and made precious by its walls.

#### Conference contributors

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Dr Edward Deistekamp	Finola Reid
Patrick Forde	Jim Reynolds
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The conference took place at Brook Hall, Londonderry, Northern Ireland, in October 1995.

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**T**he 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.

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