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THE JOURNAL OF THE IRISH GARDEN PLANT SOCIETY

Phaius tankervilleae

FOREWORD

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

At its inception the Aims of the Society were listed as:

- The study of plants cultivated in Ireland and their history
- The development of horticulture in Ireland
- The education of members on the cultivation and conservation of garden plants
- To research and locate garden plants considered to be rare or in need of conservation, especially those raised in Ireland by Irish gardeners and nurserymen.
- To co-operate with horticulturists, botanists, botanical and other gardens, individuals and organisations in Ireland and elsewhere in these matters.
- To issue and publish information on the garden plants of Ireland and to facilitate the exchange of information with other interested individuals and groups

The Society continues its efforts to promote an interest in Irish plants and gardens, to emphasise what a valuable heritage they are for our nation, to ensure their conservation and to promote the growth and enjoyment of these plants among our members and others. The society's garden at the Lismacloskey Rectory, part of Ulster Folk and Transport Museum at Cultra in Belfast, is a flagship for the society's work and a wonderful example of community involvement, a very successful volunteer programme, and the forging of links with other agencies.

With three regional groups, the society provides an excellent programme of winter talks and an enjoyable programme of summer garden visits as well as plant sales and other social occasions. Our members are kept informed and entertained by our regular newsletters, by regular e-mail bulletins, via Facebook and through our website.

The society has always taken a particular pride in its journal, Moorea, which is published when material of a suitable nature and calibre is available and we, the Executive Committee of the Society, are delighted to have another volume to offer to our members and others who share our interests. We wish to express our most sincere thanks to the contributors to this volume who have provided us with material which is both informative and interesting. We thank you for responding so generously to our request for material and for giving so patiently of your time while the material was being prepared for publication. We wish to acknowledge and express our deepest gratitude and appreciation for their sterling work in the preparation of this volume to Anne James, Dr. Mary Forrest and Mary Davies and to Rita Craigie and Sally Angel who raised funds for the publication of this volume. It should be noted – with great gratitude – that contributors, editors and co-ordinator all gave their material and time completely gratis, a shining example of the best side of Irish gardening.

I hope this volume finds favour with our members, that you enjoy reading the articles here and that you continue to enjoy your membership of the society. The strength of the society is in its members and we are very fortunate to have people willing to give of their time and energy to organise the regional groups and their activities. Moorea has been the journal of record of the society since its inception and in this foreword I wish to record my gratitude to the members of the various committees for their work on behalf of the society in the promotion of its aims.

Paddy Tobin, Chairman

Distributed free to members of the Society

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BELINDA JUPP

REVIVING A LATE EIGHTEENTH-CENTURY TOWN GARDEN: NO. 63 MERRION SQUARE, DUBLIN

Long narrow gardens, enclosed by high rubble walls, lie behind the houses of Merrion Square. Coach houses and stabling were built at the rear of the gardens, leading on to access roads behind. All but two of these gardens on the south side of the square are now car parks. One is maintained as a contemporary garden, and the other, at No. 63, is also maintained but amazingly has retained its historical layout, exactly as shown on the earliest surviving illustration of the site, the Ordnance Survey (OS) map of Dublin at a scale of 1:1056, surveyed in 1838 and published in 1847.

The house was built in 1792 and has been managed as the headquarters of the Royal Society of Antiquaries of Ireland (RSAI) since 1917. The Society has faithfully conserved the house, notably the fine plasterwork. In the mews, the coach house survives in good condition; the interior was converted in 2004/5 by the Landmark Trust for holiday rental accommodation. The functioning stables, with original stalls, are used by the mounted section of An Garda Síochána. Thus, from the vaults facing on to Merrion Square, the house, the garden, the coach house and the stables remain as an intact unit and collectively provide a fine example of a late eighteenth-century Dublin dwelling.

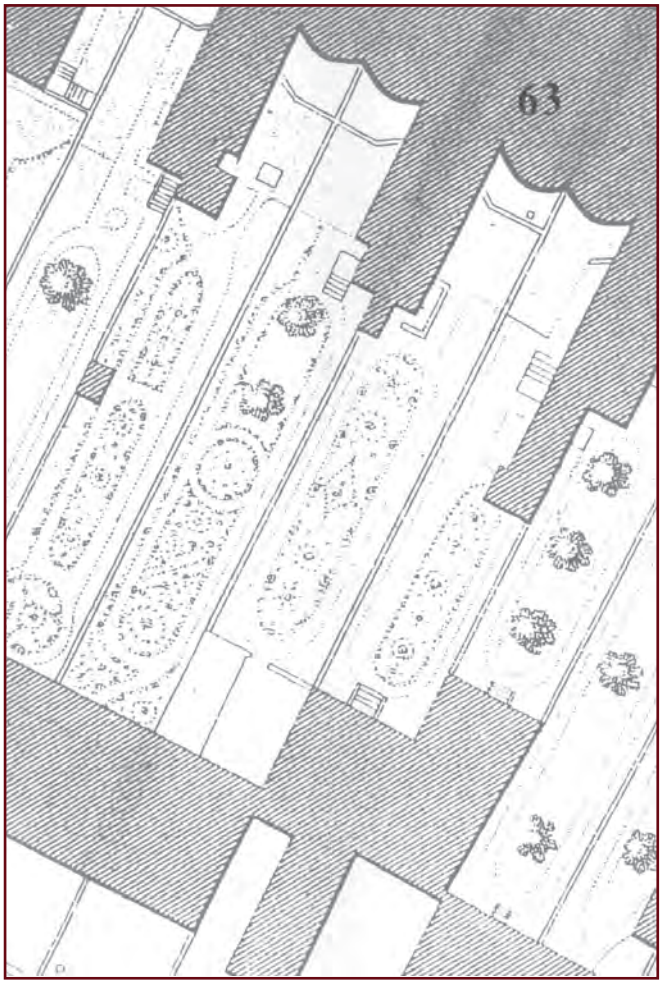

Fig. 1 OS Dublin 1:1056 surveyed 1838 published 1847

The garden plot is as it was built, 8.8m wide and 43m long, a typical townhouse garden shape, the width determined by the size of the house. The high walls to the east and west created a private space of similar dimensions to all of the other gardens in the square. The OS map (Fig.1) shows adjacent gardens laid out in varying degrees of intricacy. According to the map, the garden at No. 63 consisted of Wall borders on either side to the east and west, bounded by paths that joined at the north and south ends of the garden, which gave access to and from the house to the coach house. A large oval area filled the space between the paths. This area is shown to have a central diamond-shaped bed and outer circular beds, with planting throughout.

Whether the garden began like this in the 1790s and remained the same over the years is impossible to say with complete accuracy without further investigation. The later Dublin OS map, published in 1889, lacks garden detail, although it shows the same paths, wall borders and central area. The latter was by then dominated by two large trees, one at the centre and one at the south end. It is possible that both had matured from the original planting, as their positions correspond to plantings on the earlier map.

While the buildings at No. 63 were in full use and good condition, by 2009, the garden was in need of attention. It had been continuously cultivated and latterly fully maintained by the caretakers, Mr and Mrs Behan, since the 1960s. It was thanks to Mrs Behan's father, John Devlin, that the garden had been revived during the 1930s. By the time of the Behans' deaths in 2007 and 2009, the wall borders were full of plants flourishing in good, crumbly soil, but the box hedging had become so large that the paths were impassable — the modern slabs were just about visible. (Fig.2) The box hedging at the south end had been removed to provide space for a vegetable patch, which lay empty. Beyond, privet and euonymus had grown to the height of the wall. The eastern perimeter wall was crumbling in places, ivy and *Centranthus ruber* having taken hold. It was plain to see that the state of the garden was not compatible

with the more pristine buildings in the complex. A committee of RSAI and Irish Georgian Society members was set up under the chairmanship of Brendan Twomey, with the aim of enhancing the garden to bring it up to the standard of the buildings. The committee required thorough historical research and plans for future development that would respect the historical integrity of the site. The garden was to be open to the public by appointment and for special occasions.

The process of rejuvenation was undertaken with the best possible practice in garden conservation at the time. First, the existing plant material was surveyed in 2009 to identify what was suitable to be kept and what should be removed. It was not feasible to propagate cuttings from the existing box hedging and it was decided to change varieties to the small-leaved box *Buxus sempervirens* 'Suffruticosa' so that the hedges would not envelop the paths in future. There was a fig tree growing in a pile of rubble against the south wall, which had to be removed, but a resourceful committee member rooted a cutting. A flourishing clump of nerines was potted up for re-planting. Calendula was sprouting at random, and it was hoped that seeds would reappear after the work was completed. Other than commemorative shrubs, there was little suitable to be kept for the restored garden. Needless to say, anything transplantable found a new home. The clearance of the site was organised by Graeme Hanna of the Happy Gardening Company, the gardener for the project.

Fig 2 The garden before 2008

The second procedure was the archaeological investigation of the garden, an essential part of modern-day garden conservation and restoration. An excavation was to be carried out based on the assumption that the OS 1838 map was accurate and to determine whether any garden archaeology had survived. It was necessary to obtain a licence for the excavation, as the garden falls within the curtilage of a listed house. The team, led by Cóilín Ó Drisceoil of Kilkenny Archaeology, initially carried out a documentary survey of the historical background to the site. There were two main occupiers over a long period of time. Cóilín equated the late Georgian garden with Sandwith occupation c. 1793-1839 and a 'Victorian' garden c. 1830–1917 with the Sankey family. Unfortunately, no specific information about the garden was discovered.

By May 2010 a section was cut across the width in the centre of the garden from wall to wall through what was thought to be the path and bed area. There were no significant findings for the pre-garden era, when the land, known as Gallows Hill, had been agricultural and outside the city walls. Spoil from the basement of the newly built house had been piled into the garden area to serve as foundation. Good soil had been added to the area in the centre of the garden and the wall borders, indicating the planted areas. The pair of original paths was discovered exactly as shown on the 1838 OS map. The Georgian paths had been laid with compacted gravel and clay. During the Victorian era the paths were renewed with compacted gravel, small stones and sand mix. As well as being raised, they were cambered. Also, there was evidence that there had been edging material between the paths and bed, possibly wooden, as it has long since decayed. The paths were well worn, and more good soil had been added to the planted areas, indicating that the garden had been used and maintained. It can be assumed that in the past the owners would have had a gardener to keep the site immaculate at all times.

The map was impressively accurate, as proved by the discrepancy in the widths of the wall borders (the east wall border is wider) exactly as the dig demonstrated. Apart from household detritus, such as fragments of earthenware, stoneware, glass, and clay pipes, the major finds were pieces of a Maignen's Patent 'Filtre Rapide', a late nineteenth-/early twentieth-century ceramic water filter and a cracked but complete headstone, engraved 'PRINCE: (WHITE SPITZ): DIED 4 JULY 1883: AGED 15 YEARS: WINNER OF TWO FIRST PRIZES: A FAITHFUL DOG: F.S. SANKEY'. This has been repaired and re-erected in the garden. In general terms the archaeological excavation was a valuable exercise as a study of a Dublin townhouse garden. There were scores of this type of garden, and so many have been put to other uses relatively recently. The east wall was repaired after the archaeological survey was

completed. A random rubble wall, it was built after the garden was demarked and is narrower than the west wall. The coursed rubble west wall was built for No. 64 Merrion Square, before the establishment of No. 63.

With conclusive evidence of the layout, it was straightforward to prepare the ground. The planting plan could be drawn up, and the plants chosen and ordered. The results of the dig are tangible, the path layout and the width of the wall borders were established and could be confidently revived. However, we can only speculate on the exact shape of the flowerbeds. Following the plan on the 1838 OS map, the central oval area could be interpreted as lawn, surrounded by a narrow band of hedging. This was broken up by twelve dark patches, for which it was decided to plant box balls between the box hedging. The diamond-shaped bed in the centre appears to have been edged with box surrounding a central feature plant.

Although in many ways a simple project because of the excellent evidence of the earlier layout, the conservation and restoration of town gardens remain somewhat speculative as to what was grown there, how the plants were set out and what was the actual purpose of the space. This garden appears to have been decorative, but the paths provided utilitarian access between the house and the coach house. Presumably this was for the use of the family to walk through, or perhaps servants would transport foodstuff and goods to and from the house through the garden. A paved space near the house was probably used for mundane household purposes, as it is adjacent to the stairs leading to the domestic quarters. The decorative bedding beyond would have been an attractive sight visible from the main room of the house on the piano nobile, without anyone having to go into the garden. A rare painting of an early nineteenth-century town garden by Henry Kirchoffer depicts the architect Francis Johnston's garden at 64 Eccles Street, Dublin in 1832 from the inside of the house, the window serving as an inner frame for the picture. Cóilín Ó Drisceoil noted that the differential in the width of the wall borders (1.7m and 1.4m) at No. 63 was to make the view from the drawing room window appear symmetrical.

The painting is useful for many reasons, although the Eccles Street garden is larger than the Merrion Square garden. Francis Johnston owned two adjoining houses, and there was room for lawns separated by gravel paths, several large trees, statuary and a frame. However, it gives an idea of how plants were set out within the beds. They are well spaced, with earth between, so that each plant could be admired as a separate entity. In Mawe and Abercrombie's book *Everyman his own gardener*, published in 1784, they suggest that plants should be 'disposed in such a regular order, that every plant can be regularly viewed with distinction from the walks'.

Mark Laird, in his invaluable book *The flowering of the landscape garden: English pleasure grounds 1720–1800*, has contributed greatly to our knowledge of early gardens. Through research, he has discovered and interpreted planting plans, which he helpfully reconstructs in elevation as coloured illustrations in the book. Usefully, he includes a reproduction of a proposed planting plan of a 1791 London townhouse garden, which had previously been found in the Bodleian Library by Tod Longstaffe-Gowan. Not unlike the Merrion Square garden, this garden had wall borders, paths and a central bed planted intermittently with flowering plants, as listed in a schedule.

At No. 63 it was decided to use, as far as possible, plants that were known to have been grown before or in the late eighteenth to early nineteenth century. Obviously the plants have to be suited to the climatic conditions and planted in the position that each requires within the garden, which captures the sun and has the benefit of shelter from the walls. Each wall border is in deep shade for parts of the day, and the southern end is largely shaded, but the central area gets a lot of light. The neutral soil had been well worked over the years throughout the garden. Two significant differences between conditions then and now are that there used to be a huge amount of soot pouring into the gardens from the multiplicity of chimneys in Dublin and, beneficially, permanent access to manure from the stables.

There are very few plants native to Ireland suitable for growing in town gardens. Early introductions, such as herbs of Mediterranean origin, would undoubtedly have been planted for use in the house. During the eighteenth century a vast number of plant species were brought in from the known temperate world. In 1700 there were thought to be about 1,400 plants of foreign origin growing in Britain and Ireland, but by 1800 there were more than 14,000. To find a suitable range of plants that were available in the era, there are both contemporaneous and modern books that contain plant lists. The first edition of Philip Miller's T*he gardener's dictionary* was published in 1724, and it continued being revised until 1768, the plant list getting longer in each version. The beautifully illustrated *Botanical Magazine* was published as a periodical by William Curtis from 1787 to 1800. John Harvey's *The availability of hardy plants of the late eighteenth century*, published in 1988, is a seminal work resulting from his analysis of the produce of early nurserymen. Owners of the more opulent Dublin townhouses had demesnes elsewhere from which fruit and vegetables

could be sent. It is likely that propagated plant material and seeds were also sent to their town gardens. Owners without land elsewhere could patronise nurseries. Seeds and plants could be bought in markets. Thomas Rowlandson, in a print in the series 'Cries of London', 1799, shows a tradesman selling a potted plant to a lady at her townhouse door from a hand-cart in the street.

With a bit of effort it is possible to obtain a wide range of 'old' plants today. Some names have changed, such as *Laurustinus*, a plant much used since the late sixteenth century but now named *Viburnum tinus*. There have also been a few name changes since Harvey's book was published. Interestingly, *Phillyrea latifolia* and *P. angustifolia*, widely planted in the past, have gone completely out of fashion and are consequently hard to acquire. Since 1987, the RHS plant finder has proved to be the essential tool for finding species plants and old varieties, the latter often having been superseded by hardier modern varieties.

As the garden is to be open to the public, it was necessary to choose plants to give a variety of interest during as much of the year as possible. Therefore a mixture of shrubs and herbaceous plants had to be chosen. There may once have been a few vegetables; almost certainly there would have been fruit grown on the walls.

Dean Swift grew peaches, nectarines, pears and apples at the Deanery in Dublin and in his rented plot, Naboth's Vineyard, but the latter had disappeared by 1815. A famous pear tree grew on the north side of Merrion Square, at No. 14. As it was planted on the front of the house, it faced south, and its roots were found to be benefiting from being in the sewers. Known as 'Sir Phillip Crampton's Pear Tree', it was recorded in The Garden journal in 1873 by the then owner, John Hamilton, as having been planted in 1815. Hamilton gathered 1,700 pears in 1873 and noted that 'it is troublesome to put up and fix sufficiently high ladders, and it tries the nerve of the gardener to nail and prune so high from the ground'.

There are many varieties of old pears and apples that are still available today. The constraints on choice are that they have to be suitable for growing on a wall and be compatible to fruit. Dessert pear varieties 'Jargonelle' and 'Louise Bonne' were chosen, together with dessert apple varieties 'Golden Russet', 'Royal Russet' and 'Ross Nonpareil'. Each one was to be trained as an espalier, although not by the late eighteenth-century method of attachment to the wall with iron nails and rags. Following tradition in walled gardens, a *Prunus cerasus* 'Morello' cherry was planted on the north-facing wall and trained as a fan. A replacement fig was added, *Ficus carica* 'Brown Turkey', along with the potted-up fig that was in the garden before clearance. The new fig was not planted in traditional rubble but had its roots confined in a buried washing machine drum.

Turf, without modern rye grass, was laid in the central 21m-long, 4.6m-wide lawn. Originally the grass would have been cut with a scythe, but nowadays a mower would be set high to give the same impression. The lawn was to be accessed via a narrow path between the box hedging. The beds were cut out, and the site was ready for planting. As a small tree, a quince, was chosen for the centre feature in the diamond-shaped bed, under-planted with violets and strawberries. A pair of 'hedgehog' holly bushes was added on either side in the intermediate area. Two scented roses were chosen as specimens for the outer edges: 'Quatre Saisons', the oldest repeat-flowering rose, and The Apothecary's Rose.

A mixture of flowering shrubs, herbaceous plants, bulbs and corms were distributed along the wall borders in positions that they might favour. There was room for potentially quite large shrubs in the wide bed near the house, such as *Colutea aborescens* and *Syringa x persica*. There was space at the walls for climbers: a hop, honeysuckle and jasmine, each trained up hazel coppicing. The nerines were put back near less eye-catching fennel and wall germander. Mallow and an Old Pink Moss rose were among plants chosen to give colour in the summer, following on from spring-flowering primroses and violets. Bay and myrtle were added to stand out in the winter months. The box balls and hedging created an effective evergreen frame to the garden.

The colour palette emerged to be quite muted, as many of the plants, particularly the herbs, are not showy. Undoubtedly there would have been colourful annuals and biennials growing in the garden, such as poppies and sweet william. Seeds of T*ropaeolum majus* and *Aquilegia vulgaris* were planted in the hope that they would eventually re-seed along with the indigenous calendula. Parsley was likely to have been grown in the past, both for culinary use and as an edging plant. Without a permanent gardener, it was impossible to plan for annual planting in the future. When the planting was completed, Graeme Hanna who had worked on the garden at every stage of the restoration process, handed over his site-specific instructions, 'Garden care guidelines', to managers.

The paths had been laid before planting took place. As the archaeological survey showed, they were originally gravelled. A decision was taken to replace the gravel with cut-stone slabs in a near match to those already laid at the north end. Stone is practical for visitors to walk on throughout the year and needs no edging material to separate the path from the box hedging. The exact width was replicated. In a change from the initial plan, extra slabs were laid in four indentations in the wall borders for seats. (Fig 3)

The garden today has a different purpose from its original one as a private family space, but hopefully it will evoke a sense of what it might have been like in its heyday. The aspiration was to have a pleasant place to visit, corresponding in quality with the buildings at either end. Most importantly, the garden's rare survival should be celebrated.

Fig 3. paths re-laid and planting underway in 2010

On the day of the official opening of the garden in June 2011 by Nick Robinson, small shoots of knotweed appeared from under the west wall. Whatever the age and shape of a garden, the plants always have the last word....

The author is Historic Garden Consultant for the project.

Funds for the conservation and restoration project were successfully raised from the RSAI, Dublin City Council (for the repair of the wall), Brian O'Donnell Solicitors and the Irish Georgian Society (IGS). Assistance also came from the IGS members in the USA as a mark of appreciation of the work of Arthur Prager for the IGS in the USA.

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ORIGINAL PLANT LIST

Shrubs

Artemisia abrotanum
Colutea aborescens
Genista tinctoria
Hedera hibernica
Helichrysum italicum
Humulus lupulus
Jasminum officinale
Laurus nobilis
Lavandula latifolia
Lonicera periclymenum
Myrtus communis
Parthenocissus quinquefolia
Philadelphus coronarius
Phillyrea angustifolia
Rosa 'Alba Semiplena'
Rosa x centifolia 'De Meaux'
Rosa x centifolia 'Muscosa'
Rosemarinus officinalis
Santolina rosmarinifolia
Syringa x persica
Teucruim fruticans
Viburnum tinus

Bulbs/corms/seeds

Allium moly
Allium schoenoprasum
Anemone nemorosa
Aquilegia vulgaris
Crocus sativus
Crocus tommasinianus
Eranthis hyemalis
Galanthus nivalis
Leucojum vernum
Narcissus x odorus
Narcissus poeticus var. recurvus
Ornithogalum pyrenicum
Tropaeolum majus

Lawn plants

Buxus sempervirens 'Suffruticosa' *for edging*
Buxus sempervirens balls x 12
Cydonia oblonga 'Lusitanica'
Ilex aquifolium 'Ferox' *x 2*
Rosa x damascena var. semperflorens
Rosa gallica var. officinalis

Herbaceous plants

Acanthus spinosus
Ajuga reptans
Alchemilla mollis
Bellis perennis
Digitalis lutea
Echium vulgare
Ferula communis
Foeniculum vulgare
Fragaria vesca
Galium vernum
Geranium macrorrhizum
Hyssopus officinalis
Inula helenium
Iris foetidissima
Levisticum officinale
Lychnis coronaria
Malva moschata
Melandrium album
Mentha suaveolens
Monarda didyma
Nepeta cataria
Primula vulgaris
Polemonium caeruleum
Pulmonaria officinalis
Rumex acetosa
Saponaria officianalis
Silene vulgaris
Symphytum officinale
Tanacetum cineraiifolium
Teucrium chamaedrys
Verbascum thapsus
Vinca minor
Viola odorata

Fruit

Ficus carica 'Brown Turkey'
Malus domestica 'Golden Russet'
Malus domestica 'Ross Nonpareil'
Malus domestica 'Royal Russet'
Prunus cerasus 'Morello'
Pyrus communis 'Jargonelle'
Pyrus communis 'Louise Bonne'

Coppers, Policeman's Lane, Hurstpierpoint, Sussex BN6 9TW

BRENDAN SAYERS, CHARLES NELSON and ALEXANDRA CACCAMO

PHAIUS TANKERVILLEAE (BANKS EX L'HER.) BLUME - AN EARLY ORCHID PORTRAIT BY LYDIA SHACKLETON

Lydia Shackleton (1828–1914), of the Lucan-based Quaker family, painted at the Royal Botanic Gardens, Glasnevin, for a period spanning 23 years. The earliest paintings in the Glasnevin collection were executed in September 1884, and her latest in December 1907 (Nelson 1981). Over that time, she amassed a collection of paintings of *Helleborus, Lachenalia, Sarracenia* and *Paeonia*. Miscellaneous paintings include the North American cobra lily, *Darlingtonia californica*, and native Irish plants. Her greatest legacy is the 1,041 orchid portraits that form a pictorial catalogue of the orchid collection of the Gardens at the time. Under the enthusiastic direction of Frederick Moore, the orchid collection at Glasnevin was among the best in Europe. As a result, many of the paintings are of species that were new to science, rarely flowered or of interest to quirky specialists.

Most published material on Lydia Shackleton has appeared in specialist publications such as *Glasra* (Morley 1979), *Orchid Review* (Nelson 1981), The Garden (Nelson 1982) and *Journal of the County Kildare Archaeological Society* (Scannell and Lahert 1984). None of these gives any detail of formal training in the art of watercolour painting. Nelson (1987) noted, on the basis of her unpublished diary (see below), that Lydia Shackleton studied at the School of Art in Dublin in 1850 (see also Nelson et al. 1987, 184, 265 n. 58). However, the *Dublin Society Drawing Schools: students and award winners 1746–1876* has no record of her attendance (Willemson 2000).

The entry in Lydia Shackleton's diary for 12 October 1851 reads:

> When at the school of Design I copied a wild violet which was considered by myself and others a *chef d'oeuvre*, I painted it with excited happy feelings.[1]

Nelson (1987) also noted that some of Shackleton's 'classwork sketches' survived in a private collection, but the whereabouts of these is no longer known. In June 1996 an invitation to view a collection of watercolour studies by Lydia Shackleton was issued by Jackson Cains Watercolours of Rathgar, Dublin. Among these were three painting of orchids, which were purchased at a cost of IR£200.

Two of the paintings are in the style of the majority of the archive at Glasnevin, painted on coloured card. One is named as '*Restrepia antennifera* Kunth No. 2' but in the hand of someone other than David McArdle, a clerk who added the names to most of the orchid paintings. It is probably Lydia Shackleton's writing. (Fig. 1)

(Fig. 1) Restrepia antennifera *(National Botanic Gardens)*

The second is not named but matches a painting of *Cymbidium affine*) Griff. painted in September 1890, and one of *Cymbidium mastersii* Griff. ex Lindl. (Fig.2) painted in November 1890. *Cymbidium affine* is now considered a synonym for *Cymbidium mastersii.*

Fig. 2 Cymbidium mastersii *(National Botanic Gardens)*

The third painting is of the most interest as it is initialled 'L.S.' in a style typical of Lydia Shackleton's other orchid studies. The subject is not identified on the painting, which is inscribed 'School of Art' and dated '1850'. The orchid, portrayed on a painted background, is *Phaius tankervilleae* (Banks ex L'Her.) Blume, (Fig. 3) a species known to have been cultivated in Europe since 1778 under various names (26 synonyms are provided in The Plant List 2010). *Phaius tankervilleae* was listed among the orchids cultivated at Ladiston, near Mullingar, Co. Westmeath, by John Lyons in 1843 and 1845 (Nelson 1983), so we can be certain that it was being grown by Irish gardeners before 1850. Though not verifiable, it is possible that the specimen painted by Lydia Shacklton came from the collection at Glasnevin because, being under the management of the Royal Dublin Society, the Botanic Gardens was responsible for supplying specimens for drawing classes in the Society's School of Art (Moore, 1849-50, 1850-51) (see Nelson and McCracken 1987, 225).

Fig. 3 Phaius tankervilleae *(National Botanic Gardens)*

There is no clear record of what plants were in the collection in 1850, but there is a register created by Frederick Moore in 1879, when he replaced his late father as director of the Gardens. One of the synonyms of *Phaius tankervilleae Phaius grandifolius Lour*., is entered in this register. There is no reference to a source, an indication that it was present in the collection before the register was created.

A miscellaneous set of paintings, which bear annotations referring to the School of Art, and the single diary entry are the only available evidence that Lydia Shackleton studied in the Royal Dublin Society's School of Art in 1850. If the date on the painting of *Phaius tankervilleae* is correct, it is among the earliest extant examples of her work, although the others seen by E.C. Nelson in the mid-1980s cannot be traced now.

Note

[1] Transcribed by George Shackleton from the original, 'Lydia Shackleton's Journal, Jul. 7, 1851–Jan. 16, 1855', archive of the Library at the National Botanic Gardens, Glasnevin.
Thanks to David Clarke and Aidan Diskin for identification of David McArdle's handwriting

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SEAMUS O'BRIEN

IN THE FOOTSTEPS OF JOSEPH DALTON HOOKER — A SIKKIM ADVENTURE

The sun was setting as we made our way from Pankhabari on the edge of the tropical plains of West Bengal and made our initial ascent of the Himalayan foothills towards the former British hill station of Darjeeling.

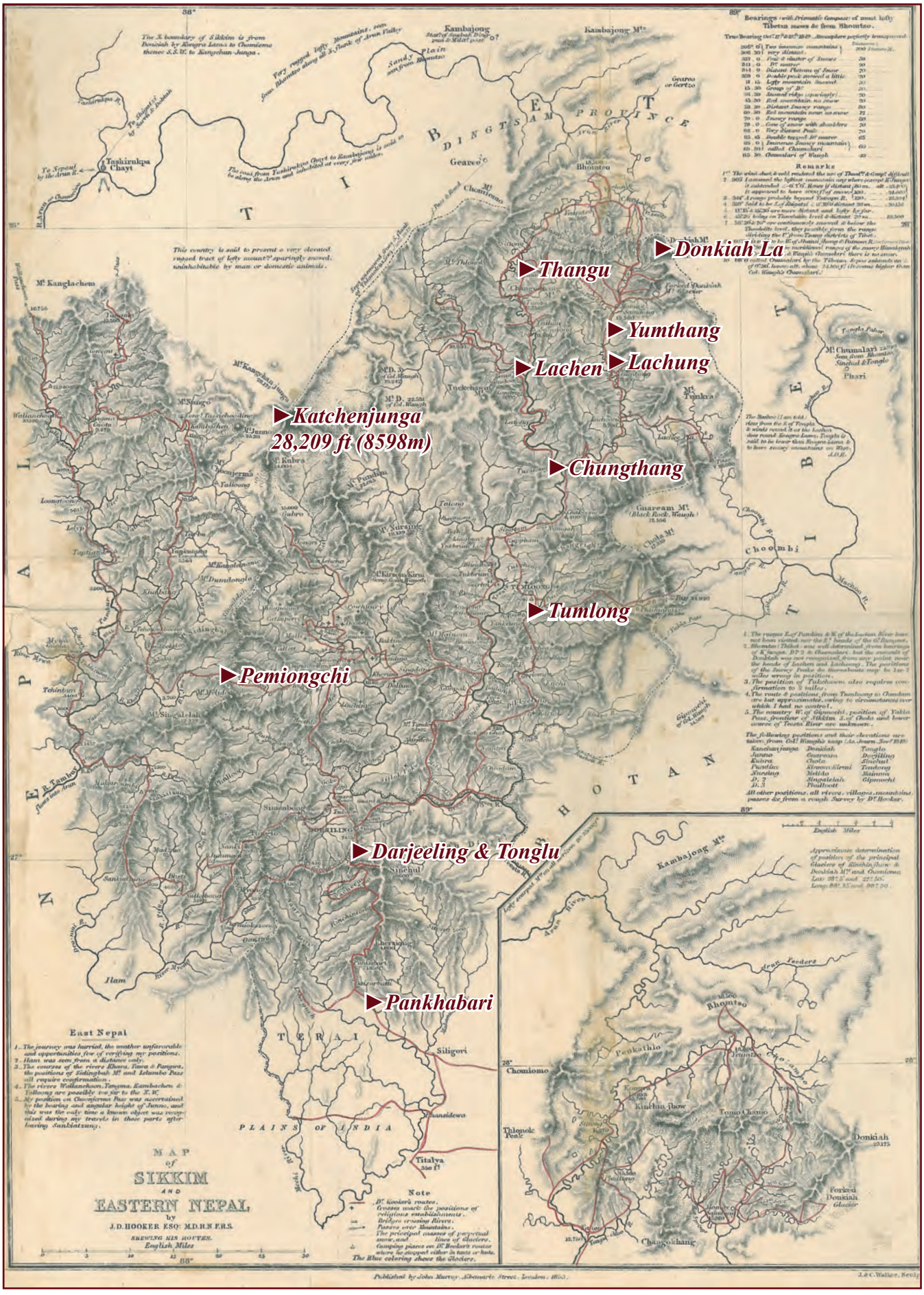
We had departed from Dublin some 36 hours earlier, a group of nine Irish botanists, horticulturists, tree enthusiasts and keen gardeners. The aim of our expedition was to retrace the trail taken by Joseph Dalton Hooker (1817–1911) through Darjeeling District and the Sikkim Himalaya during his visit there in 1848–9.

Fig. 1 Joseph Hooker with his lepcha collectors near Darjeling.he is being presented with a bough of Rhododendron arboretum *in bloom.*

Joseph Hooker, (Fig. 1), was already a well-seasoned explorer by the time he reached India in 1847 (he travelled through India and Sikkim between 1847 and 1851), having previously travelled on board HMS *Erebus*, on an Antarctic expedition led by Sir James Clark Ross (1800–62). The young and energetic Hooker sailed as expedition botanist and assistant surgeon on a four-year journey (1839–43) that would bring him to South Africa, Australia, Tasmania, New Zealand, South America and Antarctica (Desmond 2006, 13).

Antarctica was just one of several remarkable journeys that Hooker undertook during his long and extremely productive career, but it is India (particularly Sikkim), his second major expedition, that he is best known for. On the evening of 17 November 2012 our modern-day, two-week expedition began with a six-hour drive from West Bengal, through tea plantations, to Darjeeling.

Joseph Hooker's original sketch map of Sikkim, highlighted are areas visited by the 2012 Expedition to Sikkim



Darjeeling - Queen of hill stations

It was night by the time that we reached Darjeeling, and so we had to wait till dawn to witness for ourselves the scenery that has made the place world famous. No town in the Himalaya is more spectacularly located. Darjeeling lies at an elevation of 2,135m (7,005ft), and the scene is dominated by the mighty bulk of Mount Khangchendzonga (originally Katchenjunga), just 45 miles (72km) in the distance, which is India's highest peak and the world's third-highest mountain, at a staggering 8,598m (28,209ft). Sacred to the native Lepcha people of Sikkim, the name Khangchendzonga is derived from the Tibetan 'great five-peaked snow fortress', and the main massif is flanked on either side by equally impressive peaks such as Kabru 7,338m (24,075ft), Jannu 7,710m (25,295ft) and Pandim 6,691m (21,952ft), all combining to create a great snow-clad wall that looms magnificently over Darjeeling.

During 1848–9 Darjeeling was Hooker's base while exploring further afield. He stayed on the edge of the town in a comfortable bungalow belonging to Brian Hodgson (1800–94), the former British Resident in Kathmandu, Nepal. Hodgson had retired to Sikkim to pursue his interest in the zoology and ornithology of the eastern Himalaya. Hooker later named several of his discoveries for Hodgson, of which *Rhododendron hodgsonii* is perhaps best known in sheltered Irish gardens.

Fig. 2 The view from Brian Hodgson's Bungalow commanded the finest prospect in the Himalaya, Hooker used the house as his expeditionary base. 1848.

Brian Hodgson's bungalow, (Fig 2), is now the Rectory of St Paul's, one of the most affluent private boys' schools in India. On the evening of 18 November I gave a lecture there on Joseph Hooker and his Sikkim *Rhododendron* collections in Irish gardens. The event was packed to capacity, and members of the Indian press were invited to attend. In the following days, news of the Irish expedition made it into seven national newspapers.

David Moore and Hooker's rhododendrons

Sikkim was a place that I had long hoped to visit. Living on the Kilmacurragh Estate, surrounded by so many veteran rhododendrons collected by Joseph Hooker over 160 years ago, my ambition was some day to see the same species in their native mountain habitats. Hooker's rhododendrons made Kilmacurragh famous and formed the basis for what became the largest collection of Himalayan *Rhododendron* species in Europe (Burbidge 1893). On 22 April 1850 a consignment of seeds arrived at the Royal (now National) Botanic Gardens, Glasnevin, from Sir William Hooker (1775–1865), Director of the Royal (Botanic) Gardens, Kew. In all, it contained '18 papers of seeds of Sikkim Rhododendrons' (RBG 1850), collected by his son, Joseph Hooker, the previous autumn.

Later in that same decade, Glasnevin received further seed consignments from Hooker's childhood friend, fellow botanist and travelling companion in Sikkim, Thomas Thomson (1817–78). Records exist at Glasnevin of two major seed lots being received from this intrepid explorer. On 7 April 1858 Dr Hooker forwarded from Kew '16 parcels of Rhododendron seeds from the eastern Himalaya mountains sent home by Dr. Thompson', and on 20 April 1859 a further consignment of Thomson's seeds reached Glasnevin through the Irish botanist William Henry Harvey (1811–66). This contained '90 papers of seeds from Sikkim Himalaya' (RBG 1858–9). It may be assumed, that like Hooker's seedlings, many of Thomson's collections were also later forwarded from Glasnevin to Janet and Thomas Acton at Kilmacurragh.

It is said that whoever chose the site for a botanic gardens at Glasnevin in the late eighteenth century knew very little about horticulture. The thin, gravelly soil has a pH of 7.9, and this, combined with a relatively low annual rainfall, meant that David Moore had to look further afield to find suitable homes for Hooker's rhododendron seedlings.

In the Dublin area, Moore was quite friendly with the Darley family, who were creating a new garden at Fernhill, near Sandyford. The garden later passed into the hands of the Walker family, and I remember the late Sally Walker relating the history of *Rhododendron arboreum* 'Fernhill Silver' to me. While still based at the National Botanic Gardens, Glasnevin, I would occasionally receive a note from her letting me know that the rhododendrons were in bloom in her garden and I was to visit. 'Fernhill Silver' was (and still is) the finest rhododendron in the collection, and Mrs Walker loved to relate that, when Sir Frederick Moore came to visit, he would take his hat off as a gesture to this superb rhododendron that his father had raised from Hooker's seeds (Nelson and Walsh 2008, 166).

In Wicklow, at Kilmacurragh, David Moore advised Thomas and Janet Acton in garden matters, and they too received a large lot of Hooker's Sikkim seedlings. It is interesting to note that it was not until 1862 that Kilmacurragh received plants

Tonglu and an excursion into East Nepal

On the morning of 18 November we departed Darjeeling after an early rise. Our destination was Mount Tonglu (Tonglo of Hooker), which lies south-east of Darjeeling. This area was first explored botanically by Joseph Hooker in May 1848, and he always regarded it as one of the great highlights to his visit to India, as did we (Hooker 1854, 162). Hooker put Tonglu on the map, so to speak, and it became a place of pilgrimage for later explorers. The English botanical artist Marianne North (1830–90) painted several plants on the mountain's summit in 1878, including the stunning blue poppy, *Meconopsis paniculata* (syn. *Meconopsis wallichii*), which is still displayed in the North Gallery at the Royal Botanic Gardens, Kew.

Tonglu is a good two-hour drive from Darjeeling, along narrow mountain roads and into deep river valleys. *Quercus lamellosa* was one of the most common trees along our route, and its thick, gnarled moss-laden branches were festooned with several epiphytes such as the gorgeous autumn-flowered orchid *Pleione praecox*. Other common epiphytes included *Pentapterygium serpens*, an ericaceous shrub with a swollen turnip-like base to its lower stem (presumably to store water in the dry season), and the glorious *Rhododendron dalhousiae*, collected by Hooker on Tonglu in 1848 and introduced by him from Sikkim in 1850.

We drove mid-way up the mountain keen to leave the lower, subtropical flora behind us, and gaining altitude, we soon entered the temperate zone. Rhododendrons, to our great delight, soon appeared on the scene. *Rhododendron arboreum* var. *arboreum* grew scattered among other forest trees on the mid-slopes, whereas closer to the summit *Rhododendron arboreum* var. *cinnamomeum* clothed entire mountain slopes, and we were told that in spring the blossoms come in shades of white, pink and crimson-red, creating a dazzling effect that may be seen from miles away.

Rhododendron griffithianum soon appeared on the scene, growing alongside *Sarcococca hookeriana*, the Himalayan yew, *Taxus wallichiana, Stachyurus himalaicus, Rubus lineatus, Hydrangea heteromalla* and *Hypericum hookerianum*. The last was named not for Joseph Hooker but for his father, Sir William Hooker. It is a widespread species in north-east India, and we were to meet it several times during our travels. Several natural rhododendron hybrids appeared as we scaled Tonglu's slopes, including *Rhododendron arboreum* x *Rhododendron griffithianum*, forming plants with foliage intermediate between the parents. Soon the aptly named *Rhododendron grande* made an appearance. I was particularly happy to see this because it is one of my favourite species at Kilmacurragh and the earliest to flower there.

Our old tree, collected in this same area 163 years previously by Hooker, has now formed a glorious 12m (40ft) mound, and as I write February 2013, it is smothered in great trusses of creamy white, pink-tinged blossoms. In his magnificent work *Rhododendrons of the Sikkim Himalaya* (1849), Hooker described the form found on this mountain range as a new species, *Rhododendron argenteum*. On Tonglu and the adjoining Singalila (originally Sinagalila) Range, plants have a plastered silvery white indumentum to the underside of the leaves; elsewhere in Nepal, Bhutan and Assam, the indumentum is fawn. The old Kilmacurragh tree, being a Hooker collection, has brilliant silver leaf undersides (Headfort 1918).

We delighted in the richness of the flora of Tonglu. More and more rhododendrons appeared on the scene, such as the delightful *Rhododendron triflorum*, by then, of course, long out of flower but its peeling cherry-like bark more than compensating for the lack of blossom. Even better were the thickets of another great favourite, *Rhododendron barbatum*, with stunning mahogany bark that peeled in thin strips. Caught in the low November sunlight, it made a lovely sight, and on Tonglu it grew with that other garden aristocrat *Rhododendron falconeri*, whose leaves in places were up to 45cm (18in.) long.

Closer to the summit at 3,072m (10,078ft), the panorama of the great Himalayan range opened before us as we marched through *Rhododendron* and *Magnolia* forest. To the north-west, Mount Everest, on the Tibet–Nepal border, rose in great snow-clad peaks, and the scene of enormous snowy mountains piercing the sky continued as far as the Sikkim–Bhutan border, a sweep of several hundred kilometres across the greatest mountain range in the world. On a broad, boggy, flat ridge, local farmers were busy harvesting the dried-up remains of a wild meadow that contained thousands of plants of the glorious *Iris clarkei*, another of Hooker's Tonglu discoveries and named for the English botanist Charles Baron Clarke (1832–1906), who gathered it on the same mountainside in 1875 (Hooker and Thomson 1894, 275). It must have made a stunning show earlier that summer: flower colour is highly variable and ranges from blue to red-purple, and the markings on the falls also show considerable differences.

One of the most abundant and conspicuous trees on Tonglu was *Sorbus hedlundii*, and it was on the same mountain slopes that Hooker discovered it in 1848. This fine whitebeam was first cultivated outside the Himalaya at Kilmacurragh in the late nineteenth century, having been sent there as a seedling from Glasnevin. On Tonglu, it was one of the most beautiful trees on the mountain. By the time of our visit its leaves had turned russet brown, and the gentlest breeze revealed the brilliant silver of their undersides. Hedlund's whitebeam has always remained rare in cultivation, although there are several trees at Mount Usher that were raised in the 1920s from the original Kilmacurragh tree (Bean 1989, 419).

We reached the summit of the mountain by 2pm. There, gazing onto soaring snow-clad peaks, we had a celebratory picnic: it was my birthday, and I can think of no better place to throw a party. One of our travelling companions, Kristin Jameson, from the Irish distilling family, brought a bottle of Jameson whiskey to the summit for the purpose, and after this brief surprise we made our descent along a west-facing spur that took us across the border into Nepal. An hour or so later, we had our passports stamped in a tiny border outpost and returned to India.

Good garden plants again appeared on the scene. *Primula capitata* carried a few late flowers and sheltered in thickets of the very charming *Gaultheria hookeri*, a low-growing, evergreen, domed-shaped shrub, by then absolutely laden with masses of tiny cobalt-blue fruits. The best part of the day was yet to come, however, when descending a ridge, we entered a forest almost entirely composed of *Magnolia campbellii*, perhaps Joseph Hooker's finest discovery, and with an undercanopy of *Daphne bholua* in thousands.

Across this mountain range, trees are mainly the very large white-flowered form (*Magnolia campbellii* Alba Group), not the pink form, which is the common form in cultivation. Here in their wild Himalayan home, just a stone's throw from Nepal, trees were absolutely laden with pendulous clusters of orange-red seeds. I was pleased to see the look of disbelief, awe and sheer pleasure on the face of another of my travelling companions, Thomas Pakenham. In his best-selling *Meeting with remarkable trees*, Thomas writes 'Try planting a Himalayan magnolia tree and then wait 30 years for it to flower. The excitement is terrific.' Thomas did just that at Tullynally, and his tree bloomed after just 18 years from seed — not the fabulous white-flowered form but, as he relates, pink, the colour of old-fashioned ladies' underwear!

Fig. 3 Magnolia campbellii*, here seen on Mount Tonglu, where trees were draped in fruiting clusters, 2012*

Magnolia campbellii, (Fig.3), is without doubt, the aristocrat of this noble genus of flowering trees and shrubs, and I can only imagine the glorious sight that this entire forest must make when covered in enormous white blossoms in early spring, or the glorious scent that must pervade the woods during the same season, when the many thousands of *Daphne bholua* are in bloom.

As I write February, 2013, several plants of *Daphne bholua*, in the guise of that superb cultivar 'Jacqueline Postill', are in bloom here at Kilmacurragh, near our venerable old tree of *Magnolia campbellii*, reminding me of the wild woods on Tonglu. The Magnolia is swelling its buds in anticipation of another marvellous show, and it bore its first blossoms here in 1907, after a 31-year wait. The Kilmacurragh tree was planted in 1876, dating it to the third introduction of live plants by Sir George King (1840–1909), Superintendent of the Calcutta Botanic Gardens. It is likely that it started life in the mountains surrounding Darjeeling, where pink-flowered forms also occur.

Magnolia campbellii bore its first blooms in cultivation in 1885, in William Crawford's garden, in Blackrock, Cork city, and it was from this tree that it was figured by Hooker in *Curtis's Botanical Magazine* in the same year. Crawford's tree dates back to the original introduction of live plants from Calcutta Botanic Gardens in 1865; several attempts had been made to send seeds, but it was found that the embryos had always decayed by the time of the arrival in Europe (Andrews 2006).

Back on Tonglu, we dallied a little too long in the magnolia woods, and the sun was setting by the time that we began our descent. Darjeeling District had been wonderful, but it was time to press on with our travels to Sikkim.

To Gangtok and Tumlong

When I began planning an expedition to Sikkim, I initially contacted the American explorer and plantsman Daniel J. Hinkey to suggest a contact there, knowing that he had visited the state several years previously. He suggested the Gangtok-based naturalist and nurseryman Sailesh Pradhan. Like his father Keshab, Sailesh is a former student of St Paul's in Darjeeling. The Pradhan family must have chlorophyll in their veins. Keshab Pradhan is an expert on both the rhododendrons and orchids of Sikkim; before retirement, he was Head Forester to the last King of Sikkim and was involved in the establishment of Khangchendzonga National Park. Sailesh had initially met us in Darjeeling and also travelled with us to the Lloyd Botanic Garden (Calcutta Botanic Gardens' temperate outstation), giving us a good introduction to plants from the Darjeeling District.

From Darjeeling we headed north-east towards the state capital, Gangtok, through low-lying tropical valleys of screw pines, *Pandanus furcatus*, sal trees, *Shorea robusta*, and teak plantations, past the junction of the Teesta and Great Rangit rivers. We reached Gangtok at dusk but with just enough light to be taken on a tour by Keshab Pradhan of the family's nursery, the largest in the Himalaya and with specialist collections of tender rhododendron, citrus and orchids, all grown in tens of thousands.

Tumlong lies north-west of Gangtok, and at the time of Campbell and Hooker's confinement there in October 1849, it was the kingdom's capital, centred around the Rajah's palace. A month earlier, Joseph Hooker and his travelling companion, Archibald Campbell (1805–74), Superintendent of Darjeeling and Political Agent to Sikkim, had crossed the border into Tibet, against the wishes of the Rajah and his Dewan (Prime Minister). Campbell (for whom *Magnolia campbellii* was later named by Hooker) was seized, beaten and imprisoned in a hut beneath the Rajah's residence, an act for which British authorities later seized the lower half of the Rajah's kingdom and annexed it to British-controlled India.

Tumlong was an important part of our itinerary, and it was here, perhaps more than other locations we travelled though in Sikkim, that we felt we were indeed travelling 'in the footsteps of Joseph Hooker'. After a few enquiries, we found the site of the Royal Palace and were led there by two young Buddhist monks from a nearby monastery.

Tumlong was abandoned shortly after this famous hostage crisis and now lies in ruins, although elements of the buildings from Hooker's sketch in *Himalayan Journals* (1854) remain, including the Rajah's crumbling palace and several Buddhist stupas. We descended to the stupas along the same path that led to the hut in which Campbell was imprisoned 163 years before our visit. Our route was lined by fine trees of Hooker's fig, *Ficus hookeriana*, an appropriate species for such a historic place. From the crumbling ancient stupa that Hooker sketched in November 1849, I recovered a piece of gneiss (the local rock type), and this is now placed in the archives at Kilmacurragh as a record of our visit to Tumlong.

The most abundant plant at Tumlong was *Edgeworthia gardneri*, a bushy shrub that grows to about 2m (7ft) tall, named for the Irish botanist Michael Pakenham Edgeworth (1812–81), from Edgeworthstown, Co. Longford. Curiously, Edgeworth was closely related to the ancestors of one of our travelling companions, Thomas Pakenham from Tullynally Castle, Co. Westmeath. Michael Pakenham Edgeworth made many notable discoveries during his career in India and was an accomplished botanist, writing up and describing several groups of plants in Hooker's monumental seven-volume *Flora of British India* (1872–97), including Indian Caryophyllaceae.

The Lachung Valley and the Dongkya La

From Tumlong we headed due north towards the Lachung Valley, where in 1849 Hooker made many famous plant discoveries. To get there meant passing one of the most famous viewpoints in the Himalaya, Singhik (Singtam of Hooker), (Figs. 4 and 5), which he sketched in May 1849. This is perhaps the most iconic (and most published) of Hooker's Himalayan scenes, and descending a flight of steps beneath the viewpoint, through an avenue of Buddhist prayer flags, I was thrilled to stumble across the flat piece of ground on which Hooker pitched his tent over a century-and-a-half before.

Our journey to Lachung (Figs. 6 and 7), was a long one and so there was little time to linger at Singhik. Lachung is a small Himalayan village perched at high altitude and is home to the Lachungpas, a hybrid mix of the indigenous Lepcha people of Sikkim and immigrant Tibetans. The village lies on the bed of a wide valley, through which the Lachung Chu, a tributary of the Teesta, meanders. On the morning of 22 November we headed due north, into the high mountains above the settlement. Just outside the village, I was delighted to come across one of my favourite garden shrubs, *Prinsepia utilis*, a thorny member of the rose family that bears masses of showy white flowers in winter and early spring. It is unaccountably rare in gardens, although there are fine old specimens at Glasnevin and in the garden of another of my travelling companions, Robert Wilson-Wright, from Coolcarrigan, Co. Kildare.

The gorgeous *Rosa macrophylla* is common in this part of the eastern Himalaya and carried a fine crop of large, pendulous, flask-like fruits. *Abies spectabilis*, one of the most beautiful of all the firs, was common here, reminding me of the giant old specimen in the Deer Park at Kilmacurragh. *Berberis hookeri*, growing in thousands, formed a low-growing spiny ground cover beneath. Near it, under a canopy of the Himalayan hemlock, *Tsuga dumosa*, grew *Dryopteris wallichiana*, a few scattered plants giving a wonderful shuttlecock-like effect.

Fig. 4 Singhik (Singtam of Hooker) in 1849 This is the most widely published of all Hooker's Himalayan mountain sketches.

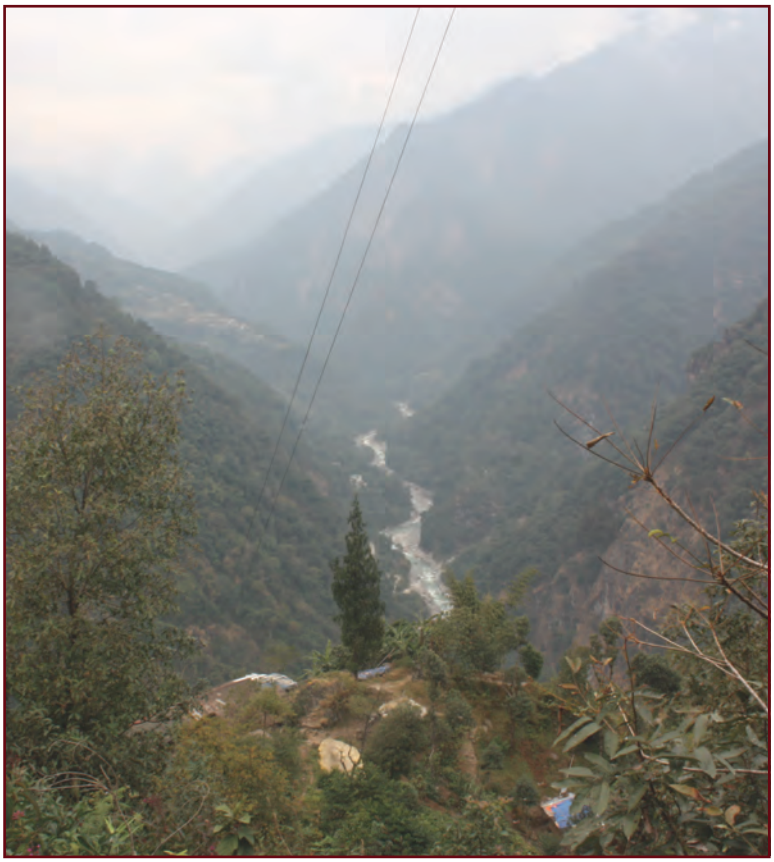


Fig. 5 View of Singhik 2012

Fig. 6 Lachung (Lachoong of Hooker) 1849

Fig. 7 Lachung 2012 – Lachung has little changed since Hooker's visit in 1849

Rhododendrons, to our great delight, abounded. On the edge of a forest almost entirely composed of *Abies spectabilis, Tsuga dumosa* (draped with 1m (3.3ft)-long strands of the pendulous lichen *Usnea longissima*) and *Picea spinulosa*, grew several species, including the widespread *Rhododendron lepidotum* (forming dwarf shrubs), *R. virgatum* (a Hooker discovery whose flowers vary from white to pink to purple), the rather rarer red-purple-flowered *R. baileyi*, and *R. glaucophyllum*, a small aromatic shrub bearing lilac bell-shaped flowers in late spring. We were very pleased to encounter the high-altitude epiphytic *R. pendulum*, springing from the trunks of *Betula utilis* and *Tsuga dumosa* and also from nearby rock faces. Its epiphytic nature means that it is difficult to cultivate, and it has remained rare in British and Irish gardens.

Our interest lay with the larger, tree-like *Rhododendron* species, however, and with increasing altitude *Abies spectabilis* was replaced by the shorter-needled *Abies densa*, interspersed with *Acer sikkimensis, Betula utilis, Enkianthus deflexus, Juniperus recurva* and Griffith's larch, *Larix griffithii*. The last is named for William Griffith (1810–45), the British botanist, plant collector and former Superintendent of the Calcutta Botanic Gardens. Another of his namesakes, *Euphorbia griffithii*, a fine spurge that is justifiably popular in cultivation, also grew in this valley.

At the edge of these woods grew one of my very favourite plants, *Rhododendron thomsonii*, named for another of Hooker's Himalayan companions, Thomas Thomson (1817–78). This species is justly popular in Irish gardens (where it forms small trees) on account of the loose trusses of waxy, bell-shaped, blood-red flowers that smother plants in April and May and its wonderful smooth plum- and cinnamon-coloured bark. Growing with *R. thomsonii,* and like it, forming impenetrable thickets, was the 'big-leaved' *R. hodgsonii*. As we had been to visit Brian Hodgson's house just a few days previously, it was exciting to meet this species in its native homeland. It is one of the most beautiful Himalayan plants and was one of Hooker's finest discoveries. Its huge leaves are very often over 30cm (1ft) long and beautifully smothered by a fawn tomentum beneath. One of the most intriguing plants in this area is a relatively recent discovery, *Rhododendron sikkimense*, a bush growing to about 2m (6.5ft) tall. Known only from this region of Sikkim, its current taxonomic status is somewhat in question; it may be a natural hybrid involving *R. thomsonii* and *R. arboreum* var. *cinnamomeum*, both common plants in the Lachen Valley area.

Beyond Yakchey, in the Upper Lachung Valley at 3,148m (10,338ft), in the Singbah Rhododendron Sanctuary, we met one of the rarest of the Himalayan species and one of the finest, *Rhododendron niveum*. There, it formed small colonies and grew interspersed with low-growing mounds of *R. ciliatum* at the edge of a wood with *Acer caesium, Betula utilis, Magnolia globosa* and *Pieris formosa* in several forms. *Clematis montana* draped its way through the surrounding trees by then covered in silky, silvery seed heads, and by the edge of thickets the wonderfully architectural *Cirsium eriophoroides* and *Meconopsis paniculata* (syn. *M. nepaulensis*) appeared from time to time.

That evening we witnessed one of the great Himalayan scenes for which this part of north-east Sikkim is famous. All about us were soaring jagged peaks, glaciers, frozen waterfalls and enormous landslides. Suddenly, as dusk descended, the valleys and dark fir-covered ridges beneath us were enveloped in a sea of mist, and finally, after a brief wait, the upper snow-clad peaks of the mighty mountains were swallowed in a dense cumulus. That night, we fell into a well-earned sleep in the little village of Lachung to the roar of the Lachung river, a great glacial green torrent lined by enormous water-worn boulders. (Fig. 8).

Fig. 8. Lachung Chu river, a tributary of the Teesta, 2012

The Yumthang Valley

A two-hour drive north of Lachen lies the Yumthang Valley (also visited by Hooker in 1849), and we began our ascent of the valley at 3,900m (12,795ft). From our route, we could see the Dongkya La, where Hooker and Campbell made their unauthorised excursion to Tibet in September 1849. The mountains there were entirely composed of *Abies densa*, and where landslides had cleared these dark forests, the yellow-flowered *Rhododendron campylocarpum* had recolonised and carpeted vast areas, alongside scattered plants of *R. cinnabarinum, R. campanulatum* and dwarf species such as *R. anthopogon. Sorbus microphylla* formed small bushy trees still bearing pinked-tinged clusters of pearl-like fruits and was one of the few deciduous trees in the valley.

It was interesting to study the attitudinal sequence of the surrounding vegetation. At 4,150m (13,615ft), trees disappeared, to be replaced by occasional dwarf plants of *Rhododendron nivale* and sheets of *Cassiope fastigiata*. At 4,627m (15,180ft) we encountered a truly alpine flora. Glaciers clung to the highest peak, and the Lachung river (in this area also called the Yumthang river), at this point a small stream, had pushed its way from the Tibetan Plateau, just 12km (7 miles) away.

Crossing the ice fields, past steaming thermal springs, we made our way towards the screes, passing the stout, fat, farinous overwintering buds of *Primula denticulata* on the way. *Primula sikkimensis* grew alongside the sedum-like *Rhodiola crenulata, Lilium nanum* and two of Hooker's finest alpine discoveries - the ink-blue poppy, *Meconopsis simplicifolia*, and that aristocrat of Himalayan alpines, *Rheum nobile*.

Late that evening, as we enjoyed an alfresco lunch, the sun dipped behind a glacial ridge, and within minutes the temperature dropped from a balmy 7°C (44.6°F) to –2°C (28.4°F). This was our signal to make a retreat, and having admired a red-billed chough (*Pyrrhocorax pyrrhocorax*), a high-altitude resident of this part of the Himalaya, we began our descent.

The next morning we departed Lachung, travelling south. By the roadside grew a medley of superb plants such as *Magnolia globosa, M. campbellii, Philadelphus tomentosus, Prunus mira* (a wild peach), huge tree-like plants of *Hydrangea heterophylla, Rhododendron arboreum, Alnus nepalensis* and *Prinsepia utilis*, at that time (24 November) laden in bloom. Within an hour we had dropped down to 2,175m (7,136ft), meaning warmer conditions. Near the village of Lemna, where the people of Lachung live during the winter months, these warm valleys were painted pink by the blossoms of the autumn-flowered Himalayan cherry, *Prunus cerasoides*, a glorious sight. *Himalacalamus falconeri*, Falconer's bamboo, was abundant and grew with other exotics such as *Brassaiopsis mitis, Woodwardia unigemmata, Pittosporum floribundum* and *Lindera neesiana*, a small tree by then smothered in sprays of golden-yellow blooms.

We stopped briefly at the village of Chungthang, where the Lachung and Lachen rivers join to form the Teesta. *Rhododendron maddenii* and the very similar *R. lindleyi* were abundant on roadside cliffs and grew with shrubby plants of the very charming *Aster sikkimensis*, at that time carrying sprays of lilac Michaelmas daisy-like flowers.

The Lachen Valley

Our route to the village of Lachen followed the course of the Lachen Chu, past the village of Menzithang at 1,840m (6,037ft) The flora at this level was warm–temperate, and we passed trees of *Acer sikkimensis* wreathed in epiphytic orchids such as *Coelogyne cristata*. Rising in altitude, the forests took on a more temperate aspect, and suddenly hardy trees appeared, such as *Acer campbellii, Betula cylindrostachys, B. alnoides* (with wonderfully scented bark), *Juglans regia* and *Tetracentron sinense*, a disjunct Himalayan population of this rare Chinese relict species.

We reached Lachen late on the evening of 24 November and stayed in a comfortable, though icy-cold, hotel near the Lachen Monastery. One of the most abundant plants around the village was the rhododendron-lookalike *Daphniphyllum himalayense*, and it was here that Hooker discovered it on 27 May 1849. Another common inhabitant on grassy slopes above the village was *Roscoea auriculata*. Hooker discovered it in nearby Chungthang in May 1849 but collected further material at Lachen on 1 June that year.

We climbed above the village to 2,850m (9,350ft), passing 10m (33ft)-tall trees of the Himalayan buckthorn, *Hippophae salicifolia*, at that time absolutely laden in bright orange fruits. Equally abundant was *Rubus biflorus*, whose ghostly silver stems became a familiar feature. The plant that stole the show, however, was a stunning barberry, whose purple-red stems would beat any of the red-stemmed dogwoods for winter effect. On my return to Kilmacurragh, I identified it as *Berberis virescens*. While in the rare-book room at Glasnevin, I was surprised to learn from Curtis's Botanical Magazine that Hooker described it, not from the Lachen Valley, where he discovered it in May 1849, but from a specimen cultivated by Thomas Acton at Kilmacurragh! Henry John Elwes, it seems, collected this species when he retraced Hooker's route in 1870; he presumably sent seeds to David Moore at Glasnevin, and these were forwarded to Thomas Acton, who later sent specimens to Hooker at Kew for identification. Thus, this species was described from cultivated material from Kilmacurragh, rather than Hooker's Sikkim specimens (Hooker 1890).

This region of the valley was home to a rich assemblage of interesting plants. *Primula capitata* was abundant by the roadside and still bore a few flowers. Near it, an *Elaeagnus* was almost in bloom, and cascading through it were the wiry stems of *Celastrus hookeri*, then carrying capsules of bright-red seeds. *Clematis montana* and *Jasminum humile* rambled through a shrubby fruiting tree of *Corylus ferox*, which carried masses of seeds surrounded by enormous spiny husks. It is always exciting to encounter the giant Himalayan lily, *Cardiocrinum giganteum*, in its wild Himalayan home, and the Lachen plants were no exception.

Our aim that day was to drive to the head of the Lachen Valley and continue our journey to the small village of Thangu. Our plans had to be abandoned, however, after a single night of extremely heavy snowfall. After an hour the drive became so dangerous that we were forced to turn back. Our disappointment we eased by the great trees that we encountered in the higher part of the valley. Pushing our way through the deep snows, we walked beneath enormous trees of *Picea spinulosa* and *Tsuga dumosa*, venerable giants up to 55m (180ft) high that must have been several centuries old. Expedition member Thomas Pakenham walked beneath them in awe. He had 'met with remarkable trees', we thought! Our route down the snowy mountainside brought us past enormous waterfalls that cascaded like silver threads into the turquoise waters of the Lachen river below us. In the trees and in the skies above, exotic birds such as the hill pigeon, *Columba rupestris*, yellow-billed blue magpies, *Urocissa flavirostris*, and majestic golden eagles, *Aquila chrysaetos*, appeared from time to time. Lachen had been wonderful, but it was time to push on.

Lachen to Gangtok and Pemiongchi

Our route to Gangtok took us due south, past Chungthang, where *Alnus nepalensis* lined the banks of the Lachen, draped in yellow catkins. In warm valleys at 1,605m (5,265ft), *Mahonia nepaulensis* was common and carried dense racemes of butter-yellow blooms above handsome pinnate leaves. Its bed fellows included *Anemone vitifolia, Hoya polyneura, Schefflera arboricola* and the beautifully scented *Luculia gratissima.*

Our route continued through the tropical valley of the Teesta river, past cardamom plantations cultivated beneath native forest trees. At 1,210m (3,970ft) we stopped to study a wild population of *Magnolia hodgsonii*, an evergreen species bearing enormous leaves and great, globular, cone-like seed capsules. At 805m (2,641ft) the forests became more jungle-like in appearance, with native screw pine, *Pandanus furcatus*, giant bamboo, *Dendrocalamus gigantea*, tree ferns such as *Cyathea spinulosa*, and trees of the camellia relative *Schima wallichii,* an important timber tree in the Himalaya. Along our route, blazing red Mexican poinsettias, *Euphorbia pulcherrima*, lined the roadsides, forming small trees growing to 4m (13ft), reminding us that, despite the welcome heat of this tropical area, Christmas in Ireland was just weeks away.

During our overnight stay in Gangtok, we reviewed several newspapers. After the lecture at St Paul's in Darjeeling, seven national newspapers, including *The Telegraph,* the *Times of India* and the *Hindustani Times*, covered the story of our expedition to India. Our last day in Sikkim involved a seven-hour drive to Pemiongchi, on the Nepalese border. Our route took us to the Temi tea plantation, the only tea-growing district in Sikkim. All of the plants growing there are descended from Robert Fortune's original introduction for the British East India Company.

Pemiongchi is Sikkim's oldest and most famous Buddhist monastery and was visited by Hooker in December 1848. It sits on a steep mountain ridge that falls thousands of feet into a broad valley below, while Khangchendzonga raises its snowy peaks 6,706m (22,000ft) above the level of the monastery itself. Pemiongchi was founded in 1705, and the famous monastery lies on the *via sacra*, a route lined by several other monastic establishments. We were able to locate several stupas from Hooker's 1848 sketch and found the very spot on which he pitched his tent beneath the main monastery complex. We stayed that night in the nearby town of Pelling, and the next morning, as we departed for the long drive to Bagdogra in West Bengal, Khangchendzonga appeared from behind the clouds as if to bid us farewell.

Our route to Bagdogra took us along the course of the tropical Rangit river, where troupes of monkeys lined the road-side. Tropical plants abounded: *Bombax ceiba* made enormous forest trees, and beneath them grew showy bauhinias, dwarf date palms such as *Phoenix acaulis*, and squat plants of *Cycas pectinata*. From Bagdogra we flew to India's former capital, Kolkata (Calcutta). Once in the sky, we had a stunning view of the Himalaya, a sweep of the greatest mountain range on earth from Kashmir in the west to as far as the kingdom of Bhutan. We flew over the very route taken by Hooker on the back of an elephant 160 years previously, crossing the holy Ganges river and following the route of the ancient Great Western Highway.

In Kolkata we visited the Calcutta Botanic Gardens and found the sadly neglected house that once was home to Hugh Falconer (1808–65) (for whom Hooker named *Rhododendron falconeri*), Superintendent of the Gardens when Hooker stayed in the house in March 1850. We also found time to visit the headquarters and council chambers of the British East India Company in the old colonial district of the city. This trading company, once the largest in the world, founded Calcutta's Botanic Gardens in 1786 and was responsible for, among other things, the introduction of tea to India from China. With our journey in India thus completed, we returned to Ireland. Back at Kilmacurragh, when I look on Joseph Hooker's veteran rhododendrons, it brings back great memories of Everest and the snowy peaks of Khangchendzonga. It had been a wonderful expedition.

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MARY FORREST

HOOKER RHODODENDRONS — IRISH INTEREST IN THE 1850's

Elsewhere in this volume, Seamus O'Brien has given a fascinating and detailed account of an expedition that he and other Irish people made to the Himalaya as they followed a journey taken by Joseph Hooker in the mid-nineteenth century. This note describes some Hooker associations with Ireland in the 1850s.

Joseph Hooker travelled to the eastern Himalaya in 1848–50. His volume *The rhododendrons of Sikkim-Himalaya* was published in London, by Reeve & Co., in 1849. The book was edited by his father, William Hooker, who was Director of the Royal (Botanic) Gardens, Kew, a post later held by Joseph. The lengthy subtitle - *being an account, botanical and geographical, of the rhododendrons recently discovered in the mountains of eastern Himalaya from drawings and descriptions made on the spot, during a government botanical mission to that country*, captures the interest and excitement generated by this genus at the time. The book contained 33 descriptions of rhododendrons by Joseph Hooker and 30 illustrations by the botanical artist Walter Hood Fitch. Two years later, a second fascicle was published, which contained a list of subscribers, including nurserymen, such as Messrs Henderson (London), Standish (Bagshot), and Veitch and Sons (Exeter), as well as garden owners in Britain and Ireland. Four subscribers, Prof. Harvey, Dr Mackey, Francis Whitla and D. Ferguson, had addresses in Ireland, and brief details of each are given.

'Prof. Harvey MRIA Dublin'

Although no initial is given, it is assumed that the person referred to is William Henry Harvey (1811–66), a native of Limerick. Having spent several years in South Africa (1835–42) collecting plants, he wrote a *Flora Capensis*. In 1853–6 he made an extended plant-collecting visit to Malta, Egypt, Australia, Tasmania, Tonga and Chile. He was appointed Professor of Botany at the Royal Dublin Society in 1848. In 1844 he became Keeper of the Herbarium in Trinity College, and in 1856 he was given the Chair of Botany. He contributed at least 100,000 herbarium specimens to the College. He was a lifelong friend of William Hooker, and in 1852 he visited Switzerland with him and J.D. Thompson.[1] Although the letters after his name indicate membership of the Royal Irish Academy, he is not listed by the Academy as member.

'Dr. I.T. Mackey ALS Dublin'

James Townsend Mackay (1775–1862) was born in Scotland and educated as a gardener there. He came to Dublin in 1802 and was Assistant Professor of Botany in Trinity College from 1804 to 1806. In 1806 Trinity College established a Botanic Garden on an eight-acre site at Ballsbridge, Dublin. From that year until his death in 1862, Mackay was Curator of the Gardens. As well as laying out the Gardens, he developed an important plant collection. He also travelled widely in Ireland, studying the native flora. In 1836 he published *Flora Hibernica,* with contributions from Dr Thomas Taylor and William Henry Harvey. He was awarded an honorary doctorate by the University of Dublin in 1850.[2] As the initials indicate, he was an associate of the Linnaean Society, London. Mackay is remembered in *Mackaya bella*, a climbing indoor South African plant named by William Harvey, and in *Erica mackaiana*, a rare native heather.[3]

'Francis Whitla Esq. Belfast'

Whitla (1783–1855) was elected a life member of the Royal Dublin Society (RDS) in 1839, at which time he was a solicitor in Dublin. In 1840 he was resident in Belfast, and his address in RDS records was given as Ben Edan, Co. Antrim. In the years 1841–55 he was a member of the RDS Botany Committee, Natural History and Museum Committee and Executive Council. He was also a council member of the Royal Horticultural Society of Ireland.[4] He was a friend of W.H. Harvey and contributed to J.T. Mackay's *Flora Hibernica* (1836) and George Dickie's *Flora of Ulster* (1864). Whitla was also a member of the Botanical Society of London.[5]

'D. Ferguson Esq., Belfast'

Daniel Ferguson was Curator of the Belfast Botanic Garden from 1836 until his death in 1864. In 1851 he wrote *A popular guide to the Royal Botanic Garden of Belfast.*[6]

Given Harvey's lifelong friendship with William Hooker and the botanical collaboration among Harvey, Mackay and Whitla, it is not surprising that they contributed to the publication of *The Rhododendrons of Sikkim-Himalaya*. Being a curator of a Botanic Garden, Ferguson would likely have known Harvey and Mackay, as well as his fellow

Belfast-resident Whitla. Of the four contributors, Ferguson was the only one to receive *Rhododendron* plants from Kew, whereas *Victoria regia* (Victorian water lily) and *Saracenia purpurea* (pitcher plant) were sent to Mackay.

In the preface to the second volume, Hooker wrote:

> Seeds, too, of a large proportion of these, have been sent to the Royal Gardens of Kew, and have arrived in so good a state, that we have been so eminently successful in rearing them.[7]

They were also generous in distributing both seed and plants to gardens. The accession book for the period records that on 22 April 1850 the Botanic Gardens, Glasnevin, received '18 papers of seeds of Sikkim Himalaya' from Royal Gardens, Kew.

A ledger in the archives in Royal Botanic Gardens, Kew, entitled 'Plants Outwards from 1848–1859 inclusive' records the names and numbers of plants and the addressee or recipient. The latter included nurseries, gardens and botanic gardens in Britain and elsewhere across the world. With regard to Sikkim rhododendrons, 789 plants were sent to 21 individuals, 8 botanic gardens, 19 gardens and 11 nurseries in Britain and Ireland, and to 22 individuals and gardens around the world.[8]

The following plants were sent from Kew to Ireland:

26 December 1851, Mr Ferguson, Belfast *Rhododendron argenteum [R. grande], R. ciliatum, R. dalhousiae, R. thomsonii, R. roylei, [R. cinnabarinum roylei], R. glaucum, R. hodginsii, R. maddenii* and an unidentified rhododendron No. 33.

18 July 1856, *Rhododendron ciliatum*, Curator, Belfast Botanic Garden

11 September 1855, Mr Moore, Glasnevin received *Rhododendron maddenii*
The corresponding entry in the Record Book in the National Botanic Gardens, Glasnevin reads 'received from the Royal Gardens, Kew 36 kinds of plants 1855/Sept 11'.

Although the emphasis here is on donations to Ireland, mention should be made of the following donation to Moore's brother Charles:

13 November 1854, Mr Moore, Sydney, *Rhododendron lancifolium [R. barbatum], R. ciliatum*

With several variations of the spelling of his surname, the greatest number of plants was sent to Mr Counihan, at the Vice Regal Lodge in the Phoenix Park:

22 August 1848, Mr Counihan, Phoenix Park, 58 species
25 October 1849, Counighan, Phoenix Park, 40 indoor plants
1 April 1851, Phoenix Park, Dublin, 21 greenhouse species including orchids
22 May 1852, Mr Counichan, Phoenix Park, Dublin, 16 plants
6 October 1852, Mr Counighan, Phoenix Park, *Rhododendron wallichii, R. ciliatum, R. cinnabarinum, R. glaucum, R. camplyocarpum, R. thomsonii, R. fulgens, R. edgeworthii, R. dalhousiae*. Among 21 other plants, these were a representative collection of Sikkim rhododendrons.

In April 1854 a collection of 88 stove, glasshouse and outdoor plants was sent to Viscountess Doneraile at Doneraile Court, Co. Cork. They included the following rhododendrons, *R. edgeworthii, R. fulvum, R. wallichii, R. ciliatum* and *R. niveum*, and one species not included in Hooker's book, *R. formosum*. Later donations were as follows:

21 October 1855, Viscountess Doneraile, 2 plants
29 October 1856, Viscountess Doneraile, 64 plants
1 November 1858, Viscount Doneraile, indoor and herbaceous plants

Viscountess Doneraile (1836–1907) 'made the gardens [at Doneraile, Co. Cork] amongst the most beautiful in Ireland'. A volume of *Curtis's Botanical Magazine* was dedicated to her.[9] None of these rhododendrons were in cultivation in Doneraile in the 1990s.

Acknowledgements

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CARMEL DUIGNAN

ARISTOCRATIC IVIES: SOME NOBLE COUSINS OF THE HUMBLE IVY

There is a large old house in my neighbourhood, and the wall that surrounds it is slowly crumbling. It has been colonised by ivy that has now reached the arborescent stage, and in many places it resembles a high hedge rather than a wall, with its dark green leaves and clusters of black berries. Ivy is a much maligned plant. We blame it for strangling trees, for making them top-heavy and vulnerable to high winds and storms. If we grow it near to our houses, we fear that it will insinuate its way into cracks in our walls and under our roofs and undermine our very homes. And yet, this is a very useful plant that, when carefully grown and tended, is decorative and can provide cover for nesting birds and food for them in the winter months. I was reminded of this aspect of ivy when, on a morning walk in early winter, I saw a male blackbird who was so busy gorging on the black fruits that he totally ignored my presence. This plant is *Hedera helix*, a vigorous, evergreen self-clinging member of the large *Araliaceae* family and one that we usually refer to as 'common ivy'. But this commoner has many aristocratic relatives and, for the amateur, it is difficult to see the family resemblance until they come into flower and fruit, when the distinctive small black berries reveal their identity.

Fig 1. Schefflera taiwaniana *in Shankill garden*

Scheffleras are probably not unknown to many of us. Some years ago, when large potted plants were *de rigeur* in the foyers of public buildings and in some of our homes, *Schefflera arbicola* was grown in indoor collections alongside rubber plants, cheese plants and various dieffenbachias. These plants are all tender and had to be given shelter from the cold, but now some hardy members of the *Schefflera* tribe have become available. One of the most beautiful and exotic of these is *Schefflera taiwaniana*. (Fig.1). This elegant, small, evergreen tree was introduced to these islands by Sue and Bledwn Wynn Jones of Crûg Farm Nursery in north Wales. As the name implies, it comes from Taiwan. The climate there is mainly sub-tropical, but the seed was collected in the cooler reaches of the high mountains, and this has resulted in relatively hardy plants. My plant survived, with no damage, temperatures of –9°C in the winter of 20/10/11, but I know of another place where it succumbed at –15°C. It grows to 3–4m on a single stem, and the foliage has seven to twelve narrow green leaflets on a compound leaf that resembles a downward-facing outstretched hand. The young growth is particularly striking, with emergent silvery green foliage folded in on itself on long purple stalks that look like shuttlecocks wavering on the tops of sticks. My tree is probably fifteen years old and flowered for the first time in 2011, producing small, unremarkable flowers followed by black berries.

I grow some other scheffleras. *Schefflera rhododendrifolia* was purchased in Cornwall some years ago as *S. impressa* and grows well in shade in my garden. This plant shows the same characteristics when young as do some members of the *Pseudopanax* genus, especially P. crassifolius and *P. ferox*, in that the juvenile foliage is so different from the adult state that it is difficult to recognise them as being the same plant. The leaflets of the young *S. rhododendrifolia* (Fig.2) are dark green and heavily serrated, whereas in the adult plant the leaves are smooth and straight and the colour is a paler green.

Fig. 2 Schefflera rhododendrifolia *in Shankill garden*

More exotic and a little more tender is *Schefflera macrophylla*. This beautiful plant comes from north Vietnam and looks much too tropical to be hardy in any of our gardens. The huge leaf is made up of three to five paddle-shaped leaflets that join together to produce a leaf that can be 1m long. The new growth is especially remarkable. The entire growth, leaves and stalks, is covered in a heavy ginger-coloured indumentum that makes the small new leaves look as if they are covered in an attractive rust. In the mature state, the rust is still there on the underside of the leaf. This plant also survived –9°C in my garden, but it had a warm covering of fleece that was not needed by any of the other scheffleras.

Schefflera delayi (Fig. 3) is quite different again. The compound foliage is large and palmate, with each of the five to seven leaflets growing to almost 30cm. It is native to south-west China and north Vietnam. The leaves are oak-leaf shaped when young and become entire as they grow. Unlike some others in the genus, it flowers when young and produces racemes of whitish flowers in late summer.

Fig. 3 Schefflera delavayi *in garden in Shankill*

Tetrapanax paprifer (Fig. 4) comes from Taiwan and south-east China and is the only known species in the genus. The tree grows to about 4.5m tall, and it is the enormous leaves that give this plant its tropical, exotic effect. The variety called 'Rex' has leaves that are deeply lobed and can grow to almost 1m in width. It has proved to be remarkably hardy in our temperate areas. In mid-winter, brown woolly flower buds appear in the centre of the plant, but the inflorescences never make it to maturity — the cold weather discourages flowering. *Tetrapanax paprifer* is known as the 'rice paper plant' because the pith of the bark is made into paper that is used to make artificial flowers in China. The huge leaves are very dramatic in a garden, creating a spectacular foliage effect and contrasting with smaller leaves and plants. However, this plant should come with a warning. The hairs on the felted leaves and stems can cause irritation, especially in those with respiratory problems. Also, it suckers freely, and although I grow it in a raised bed in a patio area, it has managed to cross 2m of paving to emerge in another bed. However, it never sets seed in our climate, so it is not in the Japanese knotweed category, but must be managed properly. There is one variety called 'Steroidal Giant' that seems not to sucker like the type, but this plant is not generally available in these islands. It was found and named in the United States — hence the strange moniker.

Fig.4 Tetrapanax *'Rex' in Shankill garden*

We are all familiar with *Fatsia japonica*. It is completely hardy, and its large, glossy, evergreen leaves give structure and presence in the garden. Another plant of the *Araliaceae* has arrived on the market in recent times, and it is well worth some attention. *Fatsia polycarpa* is similar to *F. japonica* except that the bigger leaves are a matt dark green — not glossy as in *japonica* — and they are more deeply incised. It grows to about 3.5m and bears creamy white flowers in a spike above the foliage. It seems to be completely hardy.

All of these plants are easy to grow and seem not to be fussy about soil types. In my garden of heavy alkaline clay, most of them grow in open, sunny positions, except for *Schefflera rhododendrifolia*, which is doing very well in a shady part of the garden that rarely sees the sun, and *S. macrophylla*, which is given a particularly sheltered spot. Propagation is usually from seed. Given patience and some skill, cuttings of young shoots can root, but I haven't managed it yet. They are all handsome, beautiful plants and should be tried in our more temperate areas.

We may be dismissive of the humble ivy because of its ubiquity and its thuggish tendencies, but some of its cousins are very desirable. They bring beauty and character into the garden. And they are easy to grow, characteristics that should be irresistible to the adventurous gardener.

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NOELEEN SMYTH

GLOBAL AND NATIONAL STRATEGIES FOR PLANT CONSERVATION AND THEIR IMPLICATIONS FOR PUBLIC, PRIVATE AND BOTANIC GARDENS

Introduction

Growing plants from around the world in our gardens and pulling out weeds are part and parcel of gardening and horticulture, and we especially like to grow new and exotic species. Garden plants growing in Ireland come from a wide variety of countries, including the Mediterranean, the Himalayas, China, Australia, New Zealand and, in more recent times, South Africa. With the advent of the World Wide Web and the free movement of plants within European borders, the world's flora is even more accessible to Irish gardeners. Does all of this open access to the world's flora come with ethics, rules and regulations, or is it the responsibility of each garden owner and gardener to ensure that his or her plants and gardening practices are ethical and conservation-worthy?

On a very positive note, horticultural collections in all parts of the world house many rare species that may have become threatened or extinct in the wild. These collections are providing material that can be used to research those species and to help repopulate them in the wild (Frachon *et al*. 2005; PlantNetwork 2009; Smyth *et al.* 2010).

The idea for a global plant conservation initiative came about at the XVI International Botanical Congress (held in St Louis, Missouri, USA, in 1999), from where a group of botanists (the Gran Canaria Group) went on to develop the first Global Strategy for Plant Conservation (GSPC), with the overarching aspiration that 'without plants, there is no life. The functioning of the planet, and our survival, depends on plants. The strategy seeks to halt the continuing loss of plant diversity' (Wyse Jackson and Kennedy 2009).

Global and National Plant Conservation Strategies: objectives and targets that relate to horticulture and garden owners

The GSPC targets are wide-ranging and expansive, and they have recently been updated for the period 2011–20 (Plants 2020 & Sharcock 2012). The five main objectives of the strategy are:

Objective I: Plant diversity is well understood, documented and recognised.
Objective II: Plant diversity is urgently and effectively conserved.
Objective III: Plant diversity is used in a sustainable and equitable manner.
Objective IV: Education and awareness about plant diversity, its role in sustainable livelihoods and importance to all life on Earth is promoted.
Objective V: The capacities and public engagement necessary to implement the Strategy have been developed.

Under these five objectives are 16 targets for more specific implementation; see Table 1 for a full list of these targets.

The National Botanic Gardens in conjunction with the National Parks and Wildlife Service developed the National Strategy for Plant Conservation (NSPC) based on the GSPC targets in 2006, which aimed to address the continuing loss of plant diversity in Ireland. The NSPC is also divided into the five main objectives under sixteen specific targets, directly related to the GSPC.

Some of these objectives and targets will be of great benefit and interest to horticulturists, garden owners and collection managers. One initiative to fulfil the targets under **Objective I** will see the development by 2020 of an online flora of the world (Kew 2012). This is a very ambitious undertaking by four of the world's leading botanic gardens — Edinburgh Botanic Gardens, Kew Botanic Gardens, Missouri Botanic Gardens and New York Botanic Gardens — which will join forces to produce this first online flora. This means that we will be able to log on to the online flora and download plant lists of countries and regions of interest to us: information on over 400,000 plants will be at our fingertips. **Objective 1: Target 2** will see the addition of conservation status to this global flora list. This will allow us to see the conservation status of plants from their countries of origin, to determine if any of the species that we manage or house can fulfil a broader conservation remit or merit more special cultivation attention in our collections.

Closer to home, under our National Plant Conservation Strategy, based on the GSPC **Objective I**, online census lists of Irish seed plants, fungi, algae, bryophytes and lichens, of both the native and alien flora, with synonymy sheets, are available, where you can enter and check the correct botanical names for vascular and non-vascular Irish species (NBG 2013). The conservation status of the Irish vascular plants, however, has not been assessed since 1988 (Curtis and McGough 1988) and this book is no longer in print. The proposed species for inclusion in the Irish Red Data Book is available from the National Botanic Gardens website (NBG 2005) and a checklist of Irish protected species is available from the National Parks and Wildlife Service (Kingston 2012).

Under **Objective II**, on conserving plant diversity the targets of interest to horticulturists, plant collection managers and garden owners are **Target 7** (75% of known threatened plant species conserved *in situ*), **Target 8** (75% of threatened plant species in *ex situ* collections preferably in country of origin) and **Target 10** (Management plans in place to prevent new biological invasions and to manage important areas for plant diversity that are invaded).

Objective II: Target 7 aims to conserve 75% of threatened plant species of a country in *in situ* collections. Under this target, horticulturists and plant collection managers have a remit to grow and propagate many rare and threatened plant species and to use the knowledge and skills so gained to aid attempts to restore them to their wild habitats. Interestingly, the number of botanical collections and gardens around the world has more than doubled in recent years, and their combined collections contain one-third of all known plant species, including many threatened species. Many botanic gardens and other gardens are now actively involved in the implementation of this target. Examples of gardens, individuals and collections contributing to the targets of the GSPC can be found in a special issue of *BGjournal* (2010).

The PlantNetwork Group (The Plant Collections Network of Britain & Ireland) initiated a project on **Objective II: Target 8** — at least 75% of threatened plant species to be conserved in *ex situ* collections, preferably in the country of origin, and at least 20% made available for recovery and restoration programmes (Frachon et al. 2005). The aim of the PlantNetwork Target 8 project is to develop ways in which horticulture could support conservation of the native flora of Britain and Ireland. PlantNetwork's member gardens would cultivate one or more threatened species from the flora of Britain and Ireland, and in so doing develop scientific and horticultural expertise in *ex situ* conservation in order to assist and support *in situ* conservation work. The aim is that developing knowledge for cultivating threatened plants will assist those involved at the frontline of *in situ* conservation (PlantNetwork 2009).

At the National Botanic Gardens, Glasnevin, we have many collections of rare and endangered plants from all around the world. These are databased with full information and a stock record, and other information on health and propagation success rates are also recorded.

The work of the Gardens' staff on one particular rare, Pacific Ocean island species, *Abutilon pitcairnense*, in developing propagation methods and managing the collection, which encompasses both its species and genetic diversity, has received national and international acclaim in recent years (Smyth *et al.* 2010).

The National Botanic Gardens, Glasnevin, has also developed the first 'Native Irish Garden', which features Irish species and habitats, providing visitors with information on Irish plants and habitats. Other Irish gardens are also developing native plant species collections. Kilmacurragh Botanic Gardens has developed native-species-rich meadows and demonstrated the positive effects of management and maintenance on grasslands to encourage native species. Blarney Castle Gardens is also growing many rare native species and landscaping areas to encourage the growth of native species. Uniquely, it has started to label many of the Irish 'lower plants' found at its site, and it has the first labelled Irish moss and liverwort plant trail. Another 'lower plant' collection of extremely rare and legally protected moss and liverwort species is grown at the National Botanic Gardens, in a private area accessible by appointment for student groups. All of these efforts go a long way in raising awareness of Irish and global plant diversity and contribute to both the GSPC and the NSPC.

The third target of interest under **Objective II — Target 10**, that effective management plans have to be in place to prevent new biological invasions and to manage important areas for plant diversity that are invaded — has relevance to horticulturists, gardeners and collections managers. Unfortunately, botanic gardens, garden estate collections and small gardens have contributed to the number of invasive alien species growing in the wild (Hulme 2011; Coghlan

2011). It has been reported by Hulme (2011) that more than half of the 100 worst invasive species are historical escapes from cultivation. Most of these escapes, such as Japanese knotweed (*Fallopia japonica*) and giant hogweed (*Heracleum mantegazzianum*), occurred between the 1800s and the early 1900s; however, more recent garden escapes, such as giant rhubarb (*Gunnera tinctoria*) and hottentot fig (*Carpobrotus edulis*), introduced to Ireland only in the 1930s and 1950s (Reynolds 2002), are now causing huge problems in the wild by creating dense stands and blankets of vegetation that suffocate native species. The National Botanic Gardens has been involved in researching effective control methods for both giant rhubarb (Armstrong and Cunningham 2009) and hottentot fig (Smyth *et al.* 2011).

The onus is on garden managers and owners to be aware of which plants are showing the potential to become invasive in the wild (a handy rule of thumb is if they spread to cover an area of over $3m^2$ in six years). At the National Botanic Gardens, we have removed two invasive plants from our collections, one a popular landscaping grass, *Stipa arundinacea* (syn. *Anemanthele lessoniana)* from New Zealand and the other a Chinese wild-collected medicinal plant, *Dipsacus asper.* Both had begun to spread rapidly in the Gardens. Botanic Gardens Conservation International states that, although there is always the potential for species to escape from gardens into the wild, the same gardens can become part of the solution, by developing early-warning systems for plants that are showing signs of becoming invasive and by dealing with them on the spot, before they become a nuisance in the wild (Coghlan 2011).

Objective III: Target 2 states that no species of wild flora should be endangered by international trade. All garden owners and collection managers should be aware of what plants are protected under the Convention on International Trade in Endangered Species (CITES) by checking its online species database (CITES 2013).

All orchid species, certain cacti and succulents, cycads, palms, insectivorous plants and bulbs are listed by CITES. Many of these CITES species are grown and displayed by gardens. The popularity of these groups has contributed to the decline in the wild of some of the most attractive species. As plant lovers, sadly by times, the rarer, better and more exotic or new a plant is, the more we seek it. Dr Matthew Jebb named some new *Nepenthes* (pitcher plants) from Papua New Guinea in 1997, and within a few years some of his newly named species were extinct in the wild owing to over-collecting for a thriving horticultural trade (Jebb and Cheek 1997).

Despite the fact that cultivars of garden, rather than wild, origin are available in the trade — e.g. most orchids in cultivation are of hybrid origin — there is still a large trade in unlicensed, wild-collected endangered plants. The horticultural and gardens community must support only legal cultivation. (Oldfield and McGough 2007).

Objectives IV and V of the GSPC are to promote education and awareness of plant diversity and sustainable harvest and livelihoods, and to increase public engagement in all of these topics. This message needs to be in all of our gardens. One example of where we can contribute to these objectives in Ireland is peat harvesting for fuel and garden composts. In recent times, many of the large companies that traditionally sold only peat-based products have begun to move towards peat-free composts (e.g. Bord na Móna, Westland Peat) — although some may be cynical and say that it is a little too late, as we have lost over 90% of our unique raised bogs in recent times. As the Irish Peatland Conservation Council (IPCC 2013) pointed out in its campaign: 'Peat may be dirt cheap, but it costs the earth'. Businesses extracting peat for commercial purposes in the past were not required to restore the peat-forming vegetation of the raised bog habitat after they removed the peat, and thus the production of peat is unsustainable in Ireland. Of the peat moss harvested in Ireland, it is estimated that 66% is used by gardeners. The demand for peat remains high, and some countries, such as the UK, which have used nearly all of their indigenous supply resort to importing peat from other countries. In this way the peat industry is a driver of habitat and biodiversity loss throughout the world. The plants that need peat in Ireland are the wild ones, which live in bogs, not those in our gardens (IPCC 2013).

Conclusions

Although global and national policies may sometimes seem a little convoluted, highbrow or overarching for the small-garden owner, the collection manager or even the large botanic gardens, the issues and objectives of the Global Strategy for Plant Conservation and the National Strategy for Plant Conservation are relevant to all. Hopefully, the examples given here of some initiatives and the links to websites will encourage all garden owners and gardeners to garden for conservation, biodiversity and a sustainable future. Anyone who feels that they are too small to make a difference has never been to bed with a mosquito!

Table 1. GSPC Targets 2011–2020

Objective I: Plant diversity is well understood, documented and recognised
Target 1: An online flora of all known plants.
Target 2: An assessment of the conservation status of all known plant species, as far as possible, to guide conservation action.
Target 3: Information, research and associated outputs, and methods necessary to implement the Strategy, developed and shared.

Objective II: Plant diversity is urgently and effectively conserved
Target 4: At least 15% of each ecological region or vegetation type secured through effective management and/or restoration.
Target 5: At least 75% of the most important areas for plant diversity of each ecological region protected, with effective management in place for conserving plants and their genetic diversity.
Target 6: At least 75% of production lands in each sector managed sustainably, consistent with the conservation of plant diversity.
Target 7: At least 75% of known threatened plant species conserved in situ.
Target 8: At least 75% of threatened plant species in ex situ collections, preferably in the country of origin, and at least 20% available for recovery and restoration programmes.
Target 9: 70% of the genetic diversity of crops, including their wild relatives and other socio-economically valuable plant species, conserved, while respecting, preserving and maintaining associated indigenous and local knowledge.
Target 10: Effective management plans in place to prevent new biological invasions and to manage important areas for plant diversity that are invaded.

Objective III: Plant diversity is used in a sustainable and equitable manner
Target 11: No species of wild flora endangered by international trade.
Target 12: All wild-harvested plant-based products sourced sustainably.
Target 13: Indigenous and local knowledge innovations and practices associated with plant resources maintained or increased, as appropriate, to support customary use, sustainable livelihoods, local food security and healthcare.

Objective IV: Education and awareness about plant diversity, its role in sustainable livelihoods and importance to all life on Earth is promoted
Target 14: The importance of plant diversity and the need for its conservation incorporated into communication, education and public awareness programmes.

Objective V: The capacities and public engagement necessary to implement the Strategy have been developed
Target 15: The number of trained people working with appropriate facilities sufficient, according to national needs, to achieve the targets of this Strategy.
Target 16: Institutions, networks and partnerships for plant conservation established or strengthened at national, regional and international levels to achieve the targets of this Strategy.

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AN OVERVIEW OF THE HISTORY OF GLENVEAGH CASTLE GARDENS

Introduction

A concise history of the development of the Garden at Glenveagh Castle is presented here. There have been three significant periods of development of the Garden, the first during the ownership of Mrs. Adair from 1885-1921, that of Henry McIlhenny from 1937- 1983 and, most recently, State ownership from 1983 to the present.

Ownership of the Glenveagh estate passed through six private owners - John George Adair 1857-85, his wife Cornelia (Mrs. Adair) was widowed from 1885 and sole owner of the Glenveagh Estate until 1921. The estate was held in trust for Mrs Adair's son Montgomery Ritchie from her previous marriage, until Glenveagh was sold to Arthur Kingsley Porter in 1929. In July 1933, A.K. Porter went missing presumed drowned off Inisbofin in North Donegal. His widow Lucy (Mrs. Porter) maintained Glenveagh until 1937 when she sold the Estate to Henry P. McIlhenny of Philadelphia. McIlhenny set about conserving and enhancing the Castle interior and renovating the gardens from 1947. McIlhenny donated the Castle and Gardens to the Irish Nation in 1983, having sold the Park to the Irish Government for the purpose of establishing a National Park in 1975. The Park which includes the Castle and Gardens is managed by the National Parks and Wildlife Service in the Department of Arts, Heritage and The Gaeltacht. The three significant periods of development in the Gardens are outlined below.

Origins of the Glenveagh Estate

The Glenveagh Estate was first conceived by John George Adair who, from 1857, began buying up separate tracts of land and uniting them. The Estate includes all of the water-shed lands that are associated with the Owenveagh River and other tributary rivers that feed into Lough Veagh and most of the highest peaks of the Derryveagh mountains. These are granite formations overlaid with blanket bog. The vegetation is that of heather clad moorland, suited to grazing by sheep or deer and represents the poorest of soil types in Ireland. In the shelter of the lower ground a thin granite based soil has formed in the shelter of 100 hectares of natural woodland of oak, birch, hazel, and holly.

Red deer as a native species were extinct in Donegal by the late 19th century – however, the Adairs' planned to develop the natural potential of Glenveagh as a Deer Forest. Adair was a man of ambition, Glenveagh was but one of his projects, his main business interests being in the United States of America where he was promoting his brokerage business. There he met his future wife Cornelia Wadsworth Ritchie in 1867 at a social occasion in New York City. They married two years later in Paris. Around the same time the first period of construction of Glenveagh Castle occurred from 1868-72 resulting in the completion of a five storey 'tower house' with stepped battlements and an adjoining two story wing. The original conception was that of a spacious hunting lodge, where the newly married couple could entertain guests with wilderness sports such as fishing and deer stalking. (Fig. 1)

Fig. 1 Glenveagh Castle in 1888

One of Adair's more significant business ventures was the development of the J. A Ranch in Texas, which expanded to almost 500,000 acres and was stocked with over 100,000 cattle. It was on one of his return visits to the JA Ranch in 1885 that John George died unexpectedly. The widowed Mrs. Adair found herself the sole owner of large estates in Ireland, England and the USA. She continued to oversee the management and development of these estates for the following 36 years.

In August and September 1902 - a distinguished group of visitors came to visit Mrs Adair at Glenveagh. They included Lord Kitchener, who proudly shot a great stag, and members of the British royal family – HRH The Duke of Connaught and HRH Princess Margaret (Queen Victoria's daughter) together with Lord and Lady Hamilton of Baron's Court. The great attraction of Glenveagh was the hunting.

Phase I - The Victorian Garden made for Mrs Adair

The Garden developed against a background of estate improvement from the mid 19th century. Around 1868 the lands around the Castle had been levelled in preparation for the Castle construction. Land was reclaimed by drainage and the import of large quantities of top soil from a neighbouring demesne at Rockhill. Shelter plantations of Scots Pine *Pinus sylvestris* and the Corsican Pine *Pinus nigra spp. maritima* were established, to protect the gardens from the strong and frequent winds and to create a long-term supply of high quality timber for the estate.

The cultural imprint left by Mrs. Adair at Glenveagh is most significant. Between 1885-8 the Castle was extended, doubling its size and its capacity to accommodate guests. In 1891 Mrs. Adair ordered the erection of a 1.8m-tall deer fence that extends for 45km. The estate was stocked with red deer from Britain and elsewhere in Ireland which included a gift of a stag from The Prince of Wales in 1891. The extensive woodland planting was beginning to thrive, notably the Scots Pine in the upper and lower parts of the Glenveagh valley and throughout the gardens.

The first evidence for the genesis of the garden comes from photographs in Mrs. Adair's visitors' book - one image from 1888 shows the land to the northeast of the Castle newly fenced with a 1.8m deer fence – thus enclosing what is now known as the Pleasure Ground. The deer fence around the Garden encloses 11 hectares defining the extent of the Gardens. Local oral tradition relates that the spoil from the clearance of the castle site was used to level and reclaim a bog that is now known as the pleasure ground lawn. It was indeed a courageous and ambitious decision for Mrs. Adair to take - to have extensive gardens laid out in such a remote and infertile environment at the centre of a deer park. By 1902 the Ordnance Survey map shows the extended Castle, planted gardens enclosed by the fence, containing the Pleasure Ground, Kitchen Garden and Gardener's House.

In his own account of Glenveagh published in the book '*In an Irish Garden*' Henry McIlhenny noted that the gardens were originally laid out by a "Kew trained gardener". His name was John Rainy and he came from Belfast c.1890. There appears to be an image of him in the *Visitors Book 1873-1919* showing an elderly bearded man standing beside an enormous lily in bloom, from the year 1917. He is wearing the unique tweed chosen by Mrs. Adair to be worn by her Glenveagh staff. It is worthwhile noting this early indication of the success of lilies at Glenveagh, as later in the 1960's Henry McIlhenny imported large amounts of lilies from the Oregon Bulb Farm, USA, with *Lilium auratum* varieties proving very well suited to Glenveagh, growing to 2-3m tall.

A number of photographs of the garden in the early 20th century show a very well- maintained kitchen garden and Pleasure Ground. A black and white photograph from 1902 of the Pleasure Ground shows a lady dressed in white assisted by two men laying out the hoops and markers for Croquet on the lawn. Another from 1908 shows hedges of sweet pea and lavender lined out in the kitchen garden plots and the glasshouse range and cold-frames are in view, indicating there would have been plenty of produce coming from the kitchen garden at that time of year to supply the dining-room table.

In the Pleasure Ground a one hectare lawn was made and surrounded by flower borders that were planted with summer (half-hardy) flowers in the typical Victorian fashion. A photograph from c.1910 of the borders shows *Cortaderia, Sasa, Phormium, Cordyline, Trachycarpus* and a wealth of herbaceous flowers in cultivation. Other woody plants that continue to thrive in the garden planted around this time are sycamore, *Giselinia, Crinodendron* and two Rhododendron species *R. arboretum* and *R. falconeri.*

There are a number of hard landscape features that date to 1900. Near the entrance to the Pleasure Ground a spring-fed stream feeds a pair of oval shaped ponds that are edged with granite boulders. A 'rock garden' features midway through the Pleasure Ground on rising ground with a stream running through it feeding small well-like pools. Three viewing points are found on the extremities of the garden. These consist of stone steps and winding paths leading to a vantage point where a bench is placed – locations known to the older Glenveagh gardeners as "Mrs. Adair's Seats". These original hard landscape features remain intact.

During World War One, Mrs. Adair made the Castle available to the British War Office, and it was used to accommodate a group of wounded Belgian soldiers. They arrived in late 1914 and left in late 1915. During their stay they helped the head gardener John Rainey by constructing a link path joining the kitchen garden to the lower Pleasure Grounds crossing a wooded rocky slope. This path is known as the Belgian Walk in their memory.

Throughout the First World War, Mrs Adair continued to make the perilous journey across the Atlantic usually planning to be at Glenveagh for the warmest months of the year from July to September. The visitors' book records her long stay to entertain guests every summer from 1914 to 1919. At one stage all of the Glenveagh staff were engaged with collecting "sphagnum moss which grows in all the bog ditches" to be used in wound dressings on the war front. Mrs. Adair's letters to her Ranch manager in Texas give accounts of the Rebellion in Dublin in 1916 and a raid by "the Irish rebels….on Glenveagh Castle looking for arms....injured four oil paintings of some value…and broke one looking glass which I hope will bring ill luck to them". Mrs. Adair made her last visit to her beloved Glenveagh in 1919. One photograph in the Visitors' Book shows an elderly lady enjoying playing with a small dog. On September 22, 1921 she passed away at her home in London at the age of 84.

After a short period of uncertainty in the 1920's (1921-28) the Gardens at Glenveagh Castle enjoyed a revival from 1929 under the new owners Arthur Kingsley and Lucy Porter. The Porters set about renovating the Castle and Gardens. Staff were hired including a new head gardener Robert Neely (from Gartan, Co. Donegal) who came to live in the gardener's cottage at the top of the Kitchen Garden. The Porters (both with fine art backgrounds) had a strong aesthetic sense and they set about restoring the Castle interiors and revitalising the gardens.

Around 1930 Mrs. Porter gave dahlia seed to Matt Armour to raise new flowers for the garden. From this seed Matt raised a single flowered red dahlia that has been grown at Glenveagh ever since. (Fig. 2)

(Fig. 2) Dahlia *'Matt Armour' in Glenveagh Garden*

According to May Armour (Matt's sister), Mrs Porter enjoyed using clay flower pots filled with mounds of moss as decoration in the Castle. Two moss-like plants that have naturalised in the garden are *Soleirolia soleirolii* and *Selaginella kraussiana*. The Porter contribution of the single red dahlia was significant as it has proved to be unique to Glenveagh. After the disappearance of her husband in July 1933 Mrs. Porter did open the Gardens for viewing in aid of charity. However she returned to Boston to live, and kept Glenveagh going until she found a buyer in one of her husband's students at Harvard.

Henry McIlhenny's Garden

Henry McIlhenny purchased Glenveagh from Mrs. Porter in 1937 having rented the Castle for a holiday with his mother the previous summer. (Fig. 3) For McIlhenny it was a return to his ancestral roots. His grandfather was a Donegal man. The Castle Gardens had seen their first 50 years of growth - leading to their transformation from exposed and windswept heath-land into a sheltered woodland environment where tender trees and shrubs could thrive in the sheltered conditions of native oak and extensively planted pine forests.

Fig. 3 Henry McIlhenny

The years during World War II interrupted any developments at Glenveagh. A small staff kept the affairs of the estate going; this included the deer herd, the castle, the gardens and a working farm. In the Garden ponies grazed on the Pleasure Ground lawn. However, the kitchen garden was kept ticking over. Prior to Mr. McIlhenny's return in 1947, Matt Armour and Jim Gamble hand-dug the one hectare Pleasure Grounds lawn, raked and levelled it by hand and reseeded it in preparation for their master's return.

It is clear McIlhenny wanted to make a garden at Glenveagh and fortunately his Harvard classmate Lanning Roper was planning to make his career in ornamental horticulture as a writer, advisor and garden maker. Roper made his first recorded visit to Glenveagh in 1947. His name appears as the first guest in the castle visitors' book and he returned in 1949 and almost every year thereafter until 1982. The late 1940's into the early 1950's the garden staff were busy with clearing the rampant *Rhododendron ponticum* from around the Pleasure Grounds and in the woods along the Belgian Walk to make space for fresh planting.

Lady Ann Leitrim of Mulroy, Carrigart, Co Donegal was an early gardening friend and advisor to Henry. Much of the early planting of new varieties of *Rhododendron* and *Camellia* came from the Mulroy nursery. An invoice for plants delivered to Glenveagh from Mulroy in 1948, lists 33 varieties of rhododendron and azalea, many of which remain as the best specimens in the current garden. They include *Rhododendron sinogrande* and *R. falconeri* transplanted as mature specimens 5m tall, *R. cinnabarinum, R. davidsonianum, R. maddenii, R. augustinii, R.* Loderi, *R.* 'Pink Diamond', *R. ciliatum, R. fragrantissimum* and *R.* 'Lady Alice Fitzwilliam'. Other trees supplied to Glenveagh then included *Embothrium* and *Eucryphia*.

James Russell made his first working visit to Glenveagh in 1953. He returned every year until 1959 and while at Glenveagh he was a busy man. He was remembered by the older garden staff as a man focused on his work. He would spend his time placing plants, with the gardeners following behind him with spades to put them in. Russell produced extensive landscape design planting schemes. The Glenveagh Garden Archive has hand-coloured plan drawings made by Russell in 1953, showing the garden accurately surveyed. These drawings are used as a basis for extensive planting schemes dated to 1954, 1955 and 1957. They include concept plans and elevations for an Italianate garden to replace the walled garden in 1955 and ambitious plans for a series of terraces and an Italianate Cascade above the Walled Garden in the native oak wood. None of these plans were agreed to by Mr. McIlhenny. However, his extensive planting plans were executed. Russell returned to Glenveagh in 1965 to carry out planting and to revise the landscape planting plans.

The planting style used by Russell is a woodland gardening style sometimes referred to as 'Robinsonian' – in Russell's case he had a genius for using species of rhododendron, planted for their foliage effect and masses of herbaceous plants from the east planted in large drifts for naturalistic effect. Much of the Pleasure Ground, Belgian Walk, View Garden, Wood's Path and Swiss Walk was planted by Russell in the mid 1950's. In Russell's own words McIlhenny "was really the nurseryman's greatest friend" quoting him on a visit to Sunningdale "Well, I'll have 20, I'll have 100, I'll have 40". The Sunningdale Nursery was a regular supplier to Glenveagh from 1956-1970. It would appear that the vast majority of planting made in the McIlhenny era was carried out under Russell's direction. All of the woodland planting in the upper part of the garden covering several hectares was carried out at this time. The exact number of plants is unavailable. However, it must have been thousands of specimens. Azaleas both deciduious and evergreen were planted in large blocks and drifts forming an understorey to Myrtus, Eucryphia and tree rhododendrons. The 1954 planting plan of the Pleasure Ground includes mass herbaceous planting of *Gunnera, Hosta, Iris, Rodgersia, Astrantia, Hemerocallis, Hedychium, Eryngium* and *Lysichiton*. Varieties of *Rhododendron* include *R. buraevii, R. ciliatum, R. johntoneanum, R. augustinii, R. racemosum, R. concatenans, R. yunnanense, R.* 'Loderi' and *R.* 'Tally Ho'. Other woody plants include *Senecio, Berberis, Guevana, Hypericum* '*Rowallane Hybrid', Carpenteria, Cotinus, Pittosporum, Magnolia* and *Clethra*. Azalea varieties feature throughout the Garden such as *R*. 'Atlanta', *R.* 'Berry Rose', *R*. 'Eddy', *R*. 'Gumpo', *R*. 'Indica', *R*. 'J A Van Nappert', *R*. 'Leo', *R*. 'Mac Bulstrode Form', *R. x mucronatum*, *R. occidentale* 'Superba', *R*. 'Palestrina', *R*. 'Pippa', *R*. 'Royal Lodge' and *R*. 'White Swan'.

Russell contributed significantly to defining the spaces in the Garden with his landscape plans. A formal framework was established, for example, creating a single axis path linking Belgian Walk, Walled Garden and View Garden. In 1957 plans were drawn up for the first formal element in the Garden in the Italianate style. Now known as the Tuscan Garden it comprises a rectangular lawn, edged with clipped *Griselinia littoralis*, and furnished with six Carrara Marble busts, a pair of reclining Sphinxes, stone benches and limestone statues of Bacchus and Cornucopia mounted on plinths. The layout of the Tuscan Garden and adjoining Swiss Walk are the combined design work of Jim Russell assisted by Walter Bruger – the Swiss based landscape architect.

The following year 1958, part of the lean-to glasshouse range was demolished in the Walled Garden to be replaced by a Gothic style Orangerie to the designs of the French architect Philippe Julian. Both Gothic and Italianate styles are key elements for preservation within the Garden. (Fig. 4)

Fig. 4 The castellated Gothic Orangery in the Walled Garden

Annual visits to the Chelsea Flower Show to source new plants for Glenveagh became a factor in the 1960's. Significantly the gardens were extended into the native oak woodland above the walled garden – here a half acre of wooded slope was enclosed with a deer fence with a stepped path leading to a wooded ravine known as the 'Mossy Valley'. Here Russell came up with ambitious plans to create three great terraces and an Italianate cascade. These plans were greatly modified and instead a great flight of steps known as the '67 Steps' leading to a viewing Belvedere was constructed. Significantly, this extension of the Garden is outside the fenced area of the Garden. It enters the oak woods above, although remaining very much part of the Garden experience. The garden a man-made environment and the native oak woodland wilderness merge as one harmonious experience.

Lanning Roper shared a lifelong friendship with Henry McIhenny with whom he had a common passion for gardening. In 1949-50 Roper became a volunteer gardener at the Royal Botanic Gardens, Kew and the Royal Botanic Gardens, Edinburgh. In 1951 he joined the staff of the Royal Horticultural Society developing a talent for writing articles for "Country Life". In 1957 he published "Successful Town Gardening", 1959 "The Gardens of the Royal Park at Windsor" and in 1960 "Hardy Herbaceous Plants". In 1962 he took on the mantle of Vita Sackville West as correspondent on gardening to the "Sunday Times".

The Castle Gardens at Glenveagh have been cited as Lanning Roper's masterpiece. He is attributed with perpetuating the best traditions of English Gardening into an unsympathetic air of the later 20th century. His garden commissions were extensive, 150 gardens in the UK, 7 in the Republic of Ireland and 8 in the United States of America. Glenveagh was his longest lasting and most significant. From 1959 onwards Roper was chief consultant on the Castle Gardens for McIlhenny. He was mostly concerned with the process of gardening, knowledge combined with experience and *Genius Loci* – assessing the genius of a place. Over a 35 year period he made annual or twice yearly visits to Glenveagh in spring and autumn, preferring to be left to his work of refining the planting schemes throughout. He worked hands on in the garden planting new arrivals and supervising trimmings and prunings. His visits would be followed up with copious notes made on refinements to each part of the garden. Plants not doing well were removed, specimens moved into new positions and the addition of copious amounts of new material such as spring bulbs planted in drifts and lilies planted throughout the Pleasure Ground borders in groups of seven.

Fig. 5 The Italian Terrace at Glenveagh

The design of the Italian Terrace furnished with classical statues and terracotta pots from the Impruneta pottery in Florence is attributed to Roper. (Fig. 5) as is the planting of the View Garden with glossy foliage plants to reflect light. The 1960's saw the expansion of the Gardens, with the construction of a second Walled Garden that functioned as a nursery to bring stocks of new plants for transplanting into the Garden proper. A heated outdoor swimming pool was constructed below the Castle on the lakeshore beside the boat house. A courtyard paved with marble to the south of the Castle known as the Flag Yard was constructed around the same time. Here, figs thrive and the sunny borders are planted with Echiums. Among the many horticultural suppliers of plants, bulbs and seeds to Glenveagh were the Hilliers Nurseries suppliers of woody and herbaceous plants from 1965 to 1984 and the Slieve Donard Nurseries from 1966-1974.

Roper's commission at Glenveagh Castle as Garden Advisor is listed by Jane Brown as a commission that spanned the years 1959 to 1982. His knowledge of plants and extensive experience as a garden advisor suited McIlhenny's purposes. McIlhenny preferred the decorative approach to planting - "for effect rather than to show off individual botanical specimens". Writing for "Country Life", in May 1973, Roper describes the Castle Gardens of the time. His description gives an overview of the fully realised horticultural potential of the location, the centre piece being the Walled Garden or Jardin Potager. (Fig. 6). This functioned as a cutting garden for the Castle. Armfuls of lilies, phlox, dahlia and many other flowers were sent into the Castle to adorn the rooms in 17 large vases that were changed at least twice a week. Roper knew the value of silvery foliage plants. He recommended using *Senecio greyii* throughout the Garden as a foil to set off the other plantings and found the subtle colouring achieved by planting it in large terracotta pots also very effective. In the Jardin Potager he employed the silvery rosettes of *Celmisia* and *Artemisia* to punctuate the border plantings.

Fig. 6 Jardin Potager *in early September 2013 at Glenveagh*

The 1970's saw the Garden staff expanded to include Matt Armour as head gardener assisted by seven full time gardeners. It was at this time that Roper advised McIlhenny "don't make your garden one inch bigger; just take care of what you've got!" Roper's understanding of what could be sustained was wise councel that McIlhenny took on board.

The Glenveagh Aesthetic

The dominant aesthetic dictated at Glenveagh is that of a rugged watery wilderness. By total contrast to the wilderness of the landscape the Castle and Gardens are the epitome of culture, style and comfort. The late 19th and most of the 20th century saw the reputation of Glenveagh elevated as a place where the arts are truly valued and the highest standards in craftsmanship and conservation management are expected.

Style and colour have a history of use at Glenveagh since its development as a hunting estate in the mid-19th century. For example there is the unique tweed plaid to be worn by staff which was introduced by Cornelia Adair that includes black, white, grey and light blue threads. The colour scheme in the drawing room that dates to Mrs. Adair's time has been conserved - using a buff pink and pale bottle green.

The colour scheme in the Castle library of pale blue and rustic orange was introduced in the period of the Porter ownership 1929 to 1937. These colours mirror those of the landscape particularly in October and November when the grasses on the mountain turn to a warm russet orange complemented by the pale blue sky reflected in the lake.The decorative shell work in the main entrance hall of the Castle was made for them by the young apprentice gardener Matt Armour.

In the McIlhenny period of ownership from 1937 to 1983 style and colour schemes were further developed. Earlier colour schemes were conserved and new elements added. For example the main entrance door to the Castle, the hall door was painted a deep holly green. The most characteristic colour utilized within and around the Castle and through the Garden and on all the Park's historic buildings is Park Estate Green.This is an aquamarine shade of green said to have been chosen from the glaze used in the deer-stag dinner service in the dining room of the Castle. The exterior wood work on the Bridge House, Gardener's Cottage, Boat House, Fishing Hut, Hunting Lodge and Gate Lodges is painted this colour as are the gates, doors and benches in the Garden. From 1975 when the OPW began developing Glenveagh as a National Park the use of Park Estate Green was extended to the new woodwork on renovated buildings.

The Orangery woodwork is painted 'battleship grey' – yet another unique colour choice for Glenveagh. This colour matches the many lead ornaments throughout the Walled Garden. This is further complemented with wrought iron Victorian benches placed throughout the garden. Another element of style is found in the roofing of Gazebo structures, on the old saw mill, sheds in the garden and at the Bridge House. These roofs are clad with scalloped wooden shingles made from Scots Pine grown here at Glenveagh.

The Castle Gardens as an Historic Flower Garden

From 1975 the Office of Public Works began the installation of a new infrastructure that would include all the necessary facilities for a visiting public. A new headquarters for the National Parks and Wildlife Service in the region was constructed and a Visitor Centre with accommodation for an auditorium and gallery space to interpret the history and natural features of the Park. Positioning these facilities 4km to the north of the Castle and Gardens has meant the impact on the tranquillity of the Gardens has been minimised. A sense of continuity was maintained at Glenveagh by the transfer of staff from the private estate managed under McIlhenny by Julian Burkett to the National Parks and Wildlife Service from 1975 to 1983. A new head gardener Mary Forrest was appointed and the important task of documenting the plant collection of the gardens was completed and published by her in the An Taisce publication *Trees and Shrubs Cultivated in Ireland*. An extensive renovation of the Castle was implemented by the OPW to make the Castle fit for the visiting public. Some minor alterations were carried out in the garden to make walkways suitable for large amounts of visitors. Most significantly, the role of the Glenveagh Estate had changed dramatically from that of a private retreat to a public resource and the Garden has been redefined as a public garden.

Native oak woodland is one of the rarest and most beautiful types of natural vegetation in Ireland. At Glenveagh it is now afforded the highest conservation priority for its long term protection. Since the formation of the National Park at Glenveagh in 1975 an ambitious programme to clear the invasive *Rhododendron ponticum* from the Park has been under way. It had been planted extensively throughout the Park, especially along the access roads and paths as an ornamental shrub and as game cover in the development phase of the Estate for Mrs. Adair. Glenveagh's cool climate and acid peaty soils provided perfect conditions for the spread and multiplication of *R. ponticum*. By 1975 it had spread to completely dominate the understorey of the native oak woodlands thus threatening the very existence of the woodlands and preventing their regeneration. The clearance of the R. ponticum has been by far the most significant conservation action at Glenveagh in recent times and its clearance within the garden was included in this programme.

Where cultivated plants thrive and set seed the potential exists for their spread. At Glenveagh we recognise that this has to be carefully managed. Potentially invasive species have to be watched closely and their numbers controlled where possible. A number of other garden plants that have exhibited potential for spread into the natural zone of the Park are being controlled. These include *Gunnera tinctoria, Alchemilla mollis, Hoheria populnea, Dicksonia antarctica* and *Cortaderia richardii.* In recent times *Acaena novae-zelandiae* has spread into the Park from neighbouring Dunlewy, sheep and hill walkers assisting its spread.

The plant collection at Glenveagh Castle contains about 2000 taxa. There is a predominance of ericaceous species that suit the acid soil especially *Rhododendron* of which there are about 200 varieties, but also *Pieris, Gaultheria, Erica* and *Pinus*. In the Pleasure Ground there are well grown specimens of *Magnolia tripetala, M. salicifolia, Cercidyphyllum japonicum, Trachycarpus, Rhododendron falconeri, R, sinogrande, R. cinnabarinum, R arboretum, Pseudopanax ferox, P. crassifolius, Eucryphia* 'Nymansay'*, Dicksonia antarctica* and a representative collection of the genus *Nothofagus – N. antarctica, N. x alpina, N. cunnighamii, N. solanderi var. cliffortioides, N. obliqua, N. dombeyi* and *N. fusca.*

Unique to Glenevagh is *Rhododendron* 'Mulroy Vanguard', raised at Mulroy House in the garden of Lady Anne Leitrim around 1960, and planted at Glenveagh. It was described, named and registered with the Royal Horticultural Society as a cultivar in 1985 by Mary Forrest. A further description and illustration was published in "An Irish Florilegium II" in 1988. (Fig.7)

(Fig. 7) Rhododendron *'Mulroy Vanguard'*

A survey of the planting records at Glenveagh from the 1950's to the 1980's shows that great quantities of woody and herbaceous plants were being acquired. This led to over planting and crowding of planting in some parts of the garden. The challenge now is to find a balance by selecting the more successfully growing flowering plants and at the same time replace short lived species and continue to build on strengths in the plant collection. In the McIlhenny era the timing of flowering in the garden focused on May to September. Today the gardens are open all year round - therefore spring and late autumn flowering has become a requirement.

The Castle Gardens remain dynamic as new planting continues. The inclusion of native Irish species in the garden such as *Euonymus europaea* or *Euphorbia hyberna* is an example. In recent years a collection of Irish origin garden plants has also been built up. Within the Walled Garden there has been a shift in emphasis away from vegetable growing and towards growing herbs and Irish cultivars of heritage value. A collection of Irish apple varieties are established as standards and espalier trained in the upper part of the Walled Garden. A substantial collection of 19th century *Narcissus* varieties (collected in old gardens in Co. Donegal) now grow in the borders, as well as 60 varieties of *Galanthus* (several of Irish origin) planted in front of the Gardener's Cottage.

A characteristic mix of herbaceous plants occupies the surrounding borders of the Walled Garden, notably *Geranium* species, *Campanula, Euphorbia, Eupatorium, Aconitum, Phlox, Hemerocallis* and *Aster*. New borders of tulips, alliums, lilies, poppies and red hot pokers have been established and box hedging extended to give structure and year round interest to all six of the garden plots.

The conservation of the Glenveagh raised *Dahlia* 'Matt Armour' is a major consideration for the garden staff. This unique clone was first raised from seed given to young under-gardener Matt Armour in 1930 by Lucy Porter. The variety has been in cultivation in the walled garden ever since. A stock of 100 plants is maintained; the tubers over-wintered in storage and planted out in the walled garden in May. The cultivar name Dahlia 'Matt Armour' was registered with the RHS in 1996 by Seán Ó Gaoithín (head gardener since 1995). The first published description of the cultivar appeared in The Irish Garden magazine in 1996. A botanical portrait by Wendy Walsh was commissioned by the OPW in 1996 and published in "A Lifetime of Painting", a book celebrating her life's work in 2007. Currently we are in the process of raising 500 clones of *Dahlia* 'Matt Armour' that are virus free material by micro-propagation with the aid of the Deptartment of Agriculture's Potato Research Station at Raphoe, Co. Donegal.

In the autumn of 1996 the head gardener joined a seed collecting expedition to Yunnan, China led by the nurseryman Alan Clark of Muncaster Castle. The expedition was facilitated by the Kunming Botanic Institute. The share of the seed collected came to several hundred packets for propagation at Glenveagh. Those propagated and planted out in the Gardens included 60 species of rhododendron, several *Primula, Rosa, Cornus capitata, Sorbus, Malus, Anemone Thalictrum, Hippophae, Meconopsis, Acer, Berberis, Iris, Camellia, Juniperus, Aralia* and *Pinus* – thus adding to the interest of the Glenveagh Plant Collection. The same year Glenveagh received a delivery of rare and endangered trees, shrubs and herbs from the International Conifer Conservation Programme (ICCP) at Royal Botanic Gardens Edinburgh. Some 45 species were planted throughout the gardens. Varieties that have grown well are *Eucryphia cordifolia, Cunninghamia konishii, Tepaulia stipularis, Podocarpus salignus, Buddleja globosa, Larix laricina, Sciadopitys verticillata* and *Picea smithiana*. These plants have been distributed to gardens for cultivation throughout Britain and Ireland for their long term conservation.

Most recently a statement of significance was prepared and presented for a one day conference hosted at the Castle in June 2009 on the subject of the Castle Gardens and their conservation. Four significances particular to Glenveagh were discussed and are summarised as follows :-
I - The sublime landscape setting of the Castle and surrounding gardens in pristine environment set the garden apart.
II - The garden structures and layout made for Mrs Adair in the late 19th century remain as the framework of the Garden.
III - World class garden makers James Russell and Lanning Roper assist Henry McIlhenny to realise the horticultural potential of Glenveagh with significant architectural elements added to the garden such as the Tuscan Terrace, Gothic Orangery, 67 Steps and Italian Terrace. The decades of the 1950's and 1960's saw the transformation of the gardens with intensive planting of trees, shrubs and herbs, especially rhododendrons and southern hemisphere species.
IV Henry McIlhenny hired the fulltime services of skilled craftsmen and women, demonstrating a commitment to the very highest standards of craftsmanship.

The Garden records system has been updated from a card index system to a computer based access spread sheet data base where all existing and new plant material is recorded. The records are updated regularly and published occasionally on the Glenveagh National Park website. www.glenveaghnationalpark.ie Gardeners make gardens. In its heyday, the Castle Gardens had eight full-time gardeners maintaining a private garden. Today there are four full-time gardeners struggling to maintain a garden open to the public all year round. The future conservation of the gardens will depend on sufficient staffing and resources being allocated to the Garden.

Conclusion

The lakeside setting of the Castle surrounded by woodland gardens created for Mrs Adair in the rugged highland landscape of Donegal continues to define the character, form and personality of Glenveagh. Over a 130 year period layers have been laid down shaping the personality of the garden. Arthur Kingsley and Lucy Porter in their short period at Glenveagh brought stability after an uncertain time in the 1920's. They reintroduced a strong sense of the aesthetic. Henry McIlhenny with his strong fine art background re-established a 'big house' culture at Glenveagh. McIlhenny had the continuous support of Lanning Roper (1947-82) in nurturing the Gardens at Glenveagh and influencing their year on year development. James Russell's major contributions took the form of copious planting in the 1950's and formal landscape plans introducing Italianate architectural forms and structures. The Gothic and Romanesque styles expressed in the Castle architecture are mirrored in the Gardens. Although the primary concern for McIlhenny was planting for decorative effect a considerable plant collection has been amassed. The gardens now act as an amenity to one hundred thousand visitors a year. Many of the plants in cultivation are of high conservation value.

The Garden has drawn international attention to Glenveagh and ranks among the most significant of historic flower gardens in Ireland. It is an excellent example of a beneficial relationship between human endeavour and natural biodiversity. Careful consideration is called for - to manage change in the Garden while ensuring its sustainability. The management of the Garden calls for an intense conservation effort while at the same time providing for public access to the Garden and the story of its formation.

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