



## An Irish Welcome: 4<sup>th</sup> BGCI Congress with Irish Gardens and Landscape

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# Introduction

The author was kindly supported by the Merlin Trust and the Kew Guild to attend the Fourth Botanic Garden Conservation International Congress in Dublin, attached to this week was a week to see the impressive landscapes and gardens of the South West of Ireland, to experience the habitat diversity, garden history and benefits the microclimate gives to the plants.

The author is currently studying a Diploma of Horticulture at the Royal Botanic Gardens (RBG), Kew. Having previously travelled to Tasmania and Belize to see different habitats, study their flora and work in the botanic gardens; this project was born out of a desire to learn about other botanic gardens and experience some of the habitats and gardens more locally to the United Kingdom in Ireland.

This document summarises the events of the two weeks, and reflects on the benefits of these positive experiences.

# Fourth Botanic Garden Conservation International Congress

The Botanic Garden Conservation International (BGCI) mission is to ensure the world-wide conservation of threatened plants, the continued existence of which [it believes] are intrinsically linked to global issues including poverty, human well-being and climate change. BGCI support the development and implementation of global policy specifically the Global Strategy for Plant Conservation (GSPC).

The congress enables botanic gardens to share experiences and information in plant conservation. Previous congress hosts were Wuhan, China in 2007 where the aim was to review the contributions of botanic gardens to the GSPC; in 2004 Barcelona, Spain hosted it themed on the role of botanic gardens and conservation and the first congress in 2000, North Carolina in the United States of America, looking at partnerships within and beyond the garden. This year's congress was hosted by the National Botanic Gardens of Ireland and was titled 'Addressing Global Change: a new agenda for botanic gardens.'

The congress was a very stimulating week with over a hundred lectures on 8 themes and 70 countries represented; it was difficult to choose what to attend. The author chose a cross section of the broad range of themes including education, sustainability, innovations and restoration ecology. The author attended 45 lectures in 4 days and these are listed below in Table 1

Table 1: List of Lectures attended with comments on content.

Date	Speaker	Organisation	Title	Comments
13.06.11	Julia Wilson, Gail Bromely	Royal Botanic Gardens, Kew	Pre Conference Workshop: Education for sustainable development a step-by-step processor botanic garden educators	Education of Sustainability, How to move to sustainable society with Case studies from Brazil, Fairchild, Chicago, Melbourne
14.06.10	Sara Oldfield	Secretary General, BGCI	Modern Day Arks: botanic gardens	
	Ahmed Djoghla	Executive Secretary, Convention on Biological Diversity		
	Jeri Deneen	Deneen Powell Atelier, USA	Water Conservation and sustainable education gardens	Private practice creating water gardens in America with high level of interpretation
	Dawn Saunders	Gardens for Learning, UK.	Building sustainable botanic gardens: beyond Architecture	
	Philippe Richard	Jardin Botanique de Bordeaux, France	A big change for botanic gardens in Europe: going from the 19th to the 21st century	
	Annette Patzelt	Oman Botanic Garden	The Oman Botanic Garden - Design, construction and living collection development of unique desert habitats	
	Paula Villagra- Islas,	Universidad San Sebastian, Chile	Re-growth of vegetation, colour and landscape Complexity: the role of design in the interpretation of natural systems in botanical gardens	
	Sara Oldfield,	Secretary General, BGCI	BGCI. Plant conservation, botanic gardens and the International Agenda	
	Bruce M. Pavlik	Royal Botanic Gardens, Kew.	Globalising restoration – A role for botanic gardens	
	Kingsley Dixon,	Kings Park and Botanic Garden, Australia:	The role of botanic gardens in global restoration	
	Carly Cowell	South African National Biodiversity Institute	Kirstenbosch National Botanical Garden-At the forefront of South Africa's ecological restoration efforts	
	Ken Ewing,	University of Washington Botanic Gardens, USA	Academic and community-based restoration based in botanic gardens	use of small scale restoration to make linked wider corridor of connection, and community support for conservation
	Sophie Williams	Bangor University, UK	Botanic gardens and their contribution to the GSPC	

	Edwin Mole,	Bristol Zoo Gardens, UK	Zoos and the GSPC after 2010	
15.06.10				
	Duncan Stewart		Building sustainable botanic gardens	
	Huang Hongwen	Director, South China Botanic Garden	Conserving Plant Diversity in China: A key role of Chinese BGs in implementing China's Strategy for Plant Conservation	Diversity of Chinese flora with associated spread of botanical gardens and project to support the conservation.
	Sarah Reichard	University of Washington Botanic Gardens, USA	Preventing the spread of invasive species: botanic gardens have the tools	
	Colin Clubbe	Royal Botanic Gardens, Kew, UK	Role of native species nurseries in mitigating threats from invasive species - case studies from UK Overseas territories	Practical horticulture applied to conservation objectives, helping threatened floras and communities, need for appreciation of native flora
	Suzanne Kapelari	University of Innsbruck, Austria	Alien invaders - how teenagers learn about invasive plants while working with scientists	
	Kristina Bjureke	Natural History Museum, Norway	We have introduced some of them.... Do we take the responsibility to eradicate them?	
	Cristina Armstrong	The National Botanic Gardens of Ireland	The National Botanic Gardens of Ireland involvement with invasive species, through education and implementing control projects	
	Chad Husby,	Montgomery Botanical Center, USA	Weed risk assessment for botanic garden decision making	Risk assessment tool for any plant
	Gerard Donnelly,	President and CEO, The Morton Arboretum, Lisle, USA.	Climate change implications for trees, arboreta and botanical gardens	
	Stella Simiyu,	BGC/SCBD Global Strategy for Plant Conservation officer.	Botanic Gardens and the Millennium Development Goals: Have we risen to the challenge?	Call to address hunger and plight of underdeveloped countries through work of botanic gardens.
	Jan Rammeloo,	National Botanic Garden of Belgium:	The GSPC and the opportunities to develop plant related research and conservation activities in and for Africa south of the Sahara	
	David Nkwanga,	Nature Palace Botanic Garden, Uganda:	The role of African botanical gardens in assisting local communities cope with climate change	

	Mark Nicholson,	Plants for Life at Brackenhurst, Kenya:	Towards a self-sustaining botanic garden in Kenya	
	Godfrey Ruyonga,	Tooro Botanic Garden, Uganda:	Addressing climate change through botanic gardens - the case of Tooro Botanical Gardens-Uganda	
	Stella Simiyu,	BGCI/SCBD, Kenya:	Botanic Gardens in Africa beyond 2010 – surviving or sustainable?	
16.06.10	Seamus O'Brien	Kilmacough Botanic Gardens	Study tour	Historical Collection Well documented from great collectors, Lobe, Wilson, with new additions and dynamic change. 70% less mown sward, introduced <i>Rhinanthus</i> and species rich meadow created.
17.06.10	Scot Medbury,	President, Brooklyn Botanic Garden, New York, USA.	Effective environmental education	
	Peter Wyse Jackson,	Director, National Botanic Gardens, Ireland.	New roles for old gardens: managing and developing an effective botanic garden in modern times	
	Sarah Miller,	Ballymun Regeneration Ltd, Ireland:	Incorporating environmental concerns into urban regeneration projects: a case study from Dublin	Local Application of CBD to invigorate run down area of Dublin, through education and interaction with nature
	Mark Fountain,	Royal Tasmanian Botanical Gardens,	Australia: A Basis for Change – a novel way to evaluate and re-align living collections to meet the changing focus of a botanic garden in the modern world	Assessment criteria applicable to all historic botanic gardens collections, useful for prioritising and efficiency savings, reduce duplication and provide strong guidelines and collection policy.
	Edwin van Spronsen,	ETI Bioinformatics, Netherlands:	Species information systems: customizable and dynamically generated identification keys for use in websites and mobile devices.	Advanced technological keys, with serious gaming applications, and augmented reality bringing science of identification to new audience.
	Frank Bisby,	University of Reading, UK:	The Catalogue of Life – new electronic services in 4D4Life	
	Marcella Corcoran,	Royal Botanic Gardens Kew, UK.	Developing horticultural protocols for threatened plants from the UK Overseas Territories	Application of horticulture to conservation
	Sharilyn J. Ingram,	Professor, Centre for Studies in Arts and Culture, Canada.	Art in botanic gardens: meeting the needs of a diverse audience of visitors	Benefits of art in garden to make visitors appreciate nature and plants in alternative ways.

	HRH Princess Basma bint Ali,	Royal Botanic gardens, Jordan.	New models, new gardens - meeting national needs: the development of the Royal Botanic Gardens of Jordan	Call for support of mega botanic gardens in dessert.
	Christopher Dunn,	Harold L. Lyon Arboretum, University of Hawai'i, USA:	Considering biological and cultural diversity in the context of botanic garden conservation strategies	
	Sandra Austin,	Eden Project, UK:	Bantaba – a gathering place at the heart of Eden's Rainforest Biome	Excellent presentation of benefits of role play and interactions with visitors to engage and educate on value and heritage locked up in plant collections
	Fabio Ippolito,	University of Salento, Italy:	Flower Fairies™ by Cicely Mary Barker: a significant experience in education for plant biodiversity	
	Natalia Hotait:		MED-O-MED Cultural Landscapes of the Mediterranean and the Middle East	incredible flora, in remote Europe, in need of saving
18.06.10	Peter Raven,	President, Missouri Botanical Garden, St Louis, USA.	Reflections on 40 years of Plant Conservation	fabulous lecture summarising weeks worth of lectures, with clarity. A call to conserve.
	Stephen Blackmore,	Regius Keeper, Royal Botanic Garden Edinburgh, UK.	A new agenda for botanic gardens	
	Sara Oldfield, Stella Simiyu,	BGCI/SCBD	Conclusion and Closure	

Highlights were the lecture by Kingsley Dixon of Kings Park Australia, talking about the role of botanic gardens in restoration ecology; Stella Simiyu, who represents BGCI in the Secretariat of the Convention on Biological Diversity, who talked of the need for botanic gardens to address poverty through their work and to hear Peter Raven of Missouri Botanic Gardens, who wrote the invaluable Biology text book was inspirational, he did an amazing job of summing up the event and the goals humanity should strive for.

Kingsley Dixon from Perth, Australia, described the need for maintenance before restoration with increased costs and time for recovery of natural assets if restoration is the only solution; ten times the cost of repair over maintenance of natural resources. Ken Ewing of University Washington described the benefits for small scale restoration projects led by botanic gardens; how they engendered communities into stewards of their environment. These parcels of land could connect to form much larger corridors of habitats allowing populations of species to migrate and interbreed.

The new developments in digital identification keys was a revolutionary talk. Edwind Van Sporensen of ETI Bioinformatics described how linked to mobile technology, the floral key for a country could be simplified and made more accessible with digital images of diagnostic characteristics. This paired with global positioning systems allow them to be updated and site specific. On one hand held device fungal, bryophyte, pteridophyte and angiosperm keys could

be contained. This technology was also being adapted as an educational tool making 'serious games' for school children, with great success in the Netherlands where it is being trialled.

In the middle of the week there was a garden visit to Kilmacurragh Gardens which was perfect to whet the appetite for the range of gardens on offer in Ireland. Seamus O'Brien the head gardener and his staff did an excellent job of guiding the delegates through the wonders of this well documented collection, names as important as James Vietch, William Lobbe and Ernest Henry Wilson contributed to the wealth of the collections. Plants that stood out included a great specimen of *Athrotaxis selaginoides* D. Don., from Tasmania which the author has seen in the wild. There was a huge and beautifully fragrant *Laureliopsis philippiana* (Looser) Schodde, in Monimiaceae from Chile which the author has never seen or smelt before.

The open park land areas are studded with flowers and blend with the vistas of the surrounding pastures beautifully. Long grass meadow has been prioritised over close cut sward in the gardens, and the parasitic *Rhinanthus minor* has been introduced. This weakened grass sward is now species rich with *Dactylorhiza* sp., *Ranunculus* sp. and *Trifolium* sp. (See Fig 6)

Seamus and his team have been developing the gardens with new additions from around the world planted alongside the greats of Hookerianum, see Fig. 3. This aspect of respecting and cherishing the historic but nurturing and developing new areas was very inspiring for my horticultural career.



Figure. 1- Great Glasshouse Dublin

There was also time to investigate the National Botanic Gardens of Ireland which had been prepared beautifully see Fig 2. The glasshouses presented tropical flora of New Guinea, Australia and South Africa. I could appreciate the amount of work it will have taken to maintain it to this standard and spotting the Australian *Banksia* species that maybe *B. ornata*, see Fig 4, and finding new plants including the *Rhododendron anagalliflorum* (see Fig 5). There were also demonstration vegetable gardens that were weed free and heavily producing everything from sweet corn to brassicas and many varieties of potatoes.

The proceedings from the congress can be found on the BGCI website. <http://www.bgci.org/resources/FourthGlobalBotanicGardensCongress/>



Figure 2- *Fuchsia boliviana* in the great glasshouse



Figure. 3- *Crinodendron hookerianum* at Kilmacurragh



Figure 4- *Banksia ornata*



Figure 5- *Rhododendron anagalliflorum*



Figure 6- *Rhinanthus* and *Ranunculus* in species rich sward.

# Irish Landscapes and Gardens

Seamus O' Brien played a key role in the itinerary of the second week of my trip and this also did not disappoint. The fact that it was one of the driest summers since the 60's made it a more comfortable experience and the gardens still looked stunning and landscapes were incredible.

From Dublin the first stop in the South West of Ireland was the Burren National Park. Burren means rocky place in Irish; the national park is made up of a limestone pavement. This limestone covers 1% the land area of Ireland, approximately 250 square kilometres. It is protected as a 'Special Area of Conservation' in line with the European Union Habitats Directive. The national park is approximately 1500 hectares and contains approximately 75% of the plant species found in Ireland with 23 of the 27 species of Orchid.

May or June would be ideal to see this remarkable flora but there was still plenty of interest. The deeply fissured limestone created the perfect microclimates for calcicole plants including fern species such as *Asplenium ceterach* L. the rusty back fern, *Asplenium scolopendrium* L. the Harts tongue fern that grew amongst *Geranium sanguineum* L., the Bloody Cranes Bill and *Thymus praecox* Opiz. all wrapped up with *Hedera helix*. An exciting find was *Dryas octopetala* L. characteristically prostrate, wind pruned to a low figure hugging form across the limestone. Thanks to helpful guidance from Dr. Mike Fay (RBG, Kew) who also attended the conference, a field rich in Orchidaceae including *Ophrys insectifera* L. (See Fig. 9), *Dactylorhiza* sp was also part of the itinerary

In the wider landscape the Burren has supported human habitation since the Neolithic period 9'500 BC, with 75 wedge tombs of Neolithic origin being found in the region, from an estimated national total of just over 500. (See Fig. 8) These people were farmers, grazing sheep, goats and cattle and this continues to the present day with cattle and sheep still being grazed in the fertile hollows, with walls made of limestone, (See Fig. 7). There are many coppiced hazel woods and walls making the landscape richly textured and interesting.

Kilarny was the next stop on the journey to see a pure stand of Yew wood, called Rennadinna one of only three pure *Taxus baccata* (See Fig 10) stands in Europe. The 25 hectares rooted into limestone fissures were still lush and green even with the dry summer. Alongside this there was a relic species from before the ice-age- *Arbutus unedo* (see Fig 14). On the surrounding hills naturalised *Pinguicula vulgaris*, *Drosera rotundiflora* and *Nymphaea alba* were beautiful to see in their native habitat. (See Fig 11, 12 and 13)

The last two days of the trip were spent looking at gardens including Innacullen on Garinish Island, Kells Bay and Fota Botanic gardens. The highlights were Kells Bay which has a forest of *Dicksonia antarctica* from ships ballast in the 18<sup>th</sup> century (See Fig 15). It is now being planted up with new accessions of *Cyathea australis* and other tree ferns. Fota Botanic gardens near Cobh was immense, with *Cryptomeria japonica* looking as impressive as *Sequoiadendron giganteum* with labelling that recorded their heights at specified dates. It would be interesting to see how both of these gardens develop over time.



Figure 8- Poulnabroune Portal Tomb 5800BC



Figure 7- Limestone Walls, Burren National Park



Figure 10- Lush Yew Wood, Kilarney



Figure 9- *Ophris insectifera* in Burren National Park



Figure 12-*Pinguicula vulgaris* Kilarney



Figure 11-*Drosera rotundifolia*, Kilarney



Figure 14-*Arbutus unedo*, Kilarney

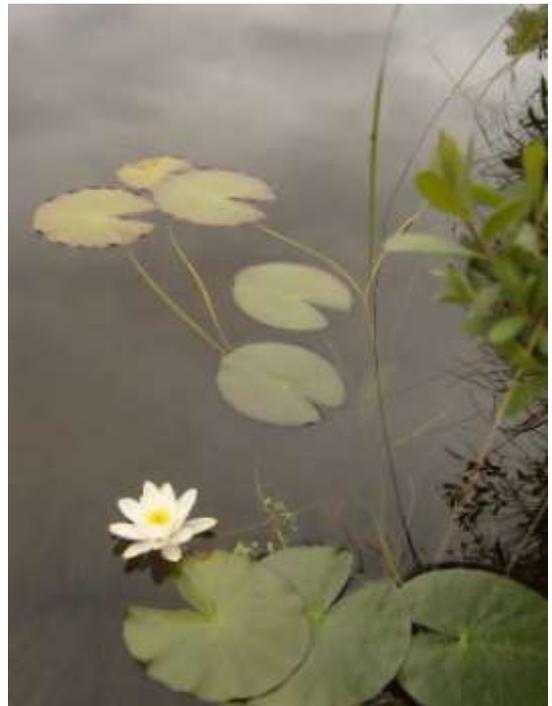


Figure 13-*Nymphaea alba*



Figure 15- Kells Bay Garden

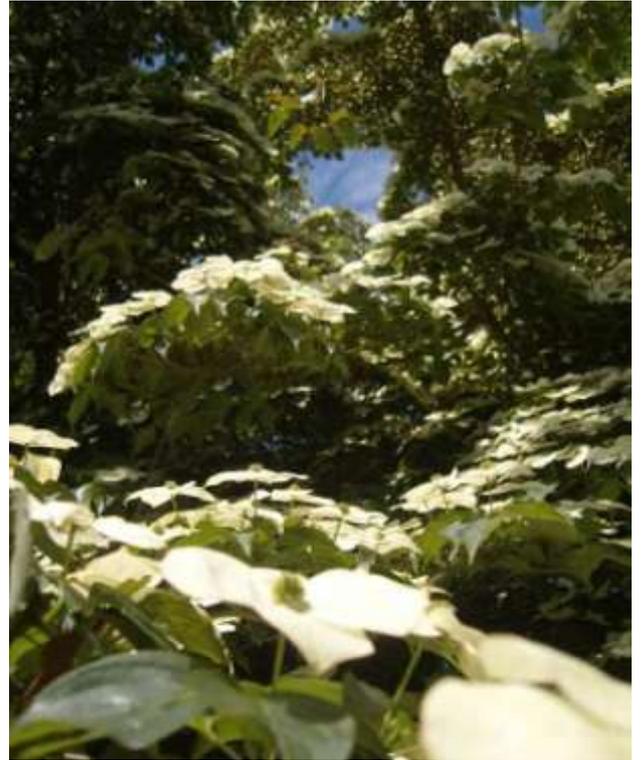


Figure 16- Detail of *Cornus kousa*, Fota Botanic Gardens



Figure 17- *Cornus kousa* Fota Botanic Gardens

# Conclusions

This was an incredible trip with many different facets. There were many rich experiences of both the global botanic garden community and the local landscape; the global conventions and restoration projects alongside the Burren National Park and lush Kilarney woodland where these conventions are put into practice.

There were beautiful surprises such as Kilmacourgh Botanic gardens and wild populations of *Pinguicula vulgaris* and *Ophris insectifera*. It was inspiring to see the new developing gardens of Kells Bay alongside the historic Fota botanic gardens and see what can be achieved with the warm wet climate. All of these are helping the author develop a better understanding of plants, habitats, landscape and gardens, and how to work with them as a career.

# Acknowledgements

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