
Wild Ideas

A Report from the 9th International Congress on Education in Botanic Gardens

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FOR A BETTER WORLD
Wild Ideas Worth Sharing

St. Louis, MO • April 26–May 1, 2015
BGCI's 9th International Congress on Education in Botanic Gardens

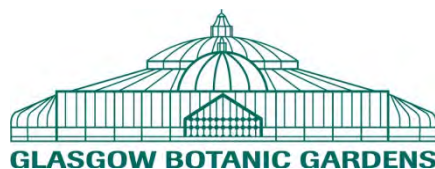


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Figure 1. The roof of the Climatron ®, a geodesic glasshouse hosting tropical collections at Missouri Botanic Garden

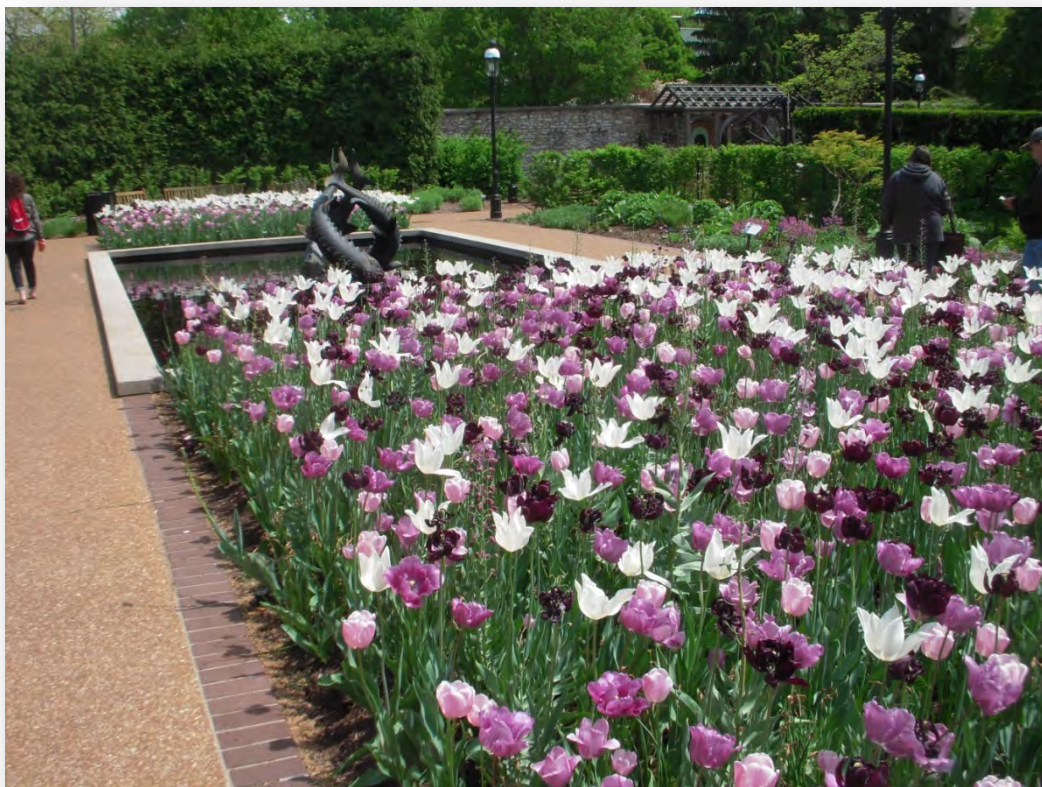


Figure 2. Tulips featured at the entrance to Missouri Botanic Garden

Introduction

Glasgow is a city with a new found confidence, a modern city which is building, developing and constantly evolving next to historic architecture and landmarks. Glasgow Botanic Gardens (GBG) must too be prepared to build upon its rich history to provide for and engage with a new generation, who will be the stewards of our city and environment in years to come. A new educational strategy for GBG will be developed in the coming months and a review of appropriate methods and programmes is currently underway. It is important that any new strategy recognises the roles and skills of each department within the Gardens and facilitates an integrated approach to education. I, as curator, realised that I needed to be better informed as to current theories and technique employed by other educators in botanical gardens and environmental education. I therefore made it a priority to attend the Botanic Garden Conservation International's 9th Education Congress in St Louis, and I was able to do so thanks to the support of the Merlin Trust, the Friends of Glasgow Botanic Gardens and Glasgow City Council.

I arrived in St Louis in the early hours of Sunday, 26 April 2015, and was registered to attend all six days of the conference. While I spent most of my first morning exploring the city, I was looking forward to the evening reception and meeting the other delegates. The conference was attended by 350 people from 44 countries and nearly everyone was in attendance at the opening reception. It was inspiring to meet with so many people from different regions and scenarios, and yet we all shared common challenges and goals. During the course of the week I was to meet many more people who had great insights and knowledge to share.

The week consisted of a range of activities including plenary sessions, presentations, tours and workshops. I selected to attend presentations that were applicable to developing stronger

links between education and horticulture, incorporating education in to garden management and training opportunities for staff and students. A summary of each presentation is detailed below:

Conserving, Preserving, and Training the Next Generation of Botanic Garden Horticulturalists

Recruiting, training and developing horticulturalists with the skills and expertise to manage botanical gardens is fundamental to the progression of the Gardens. The majority of staff currently employed has built upon apprenticeships and vocational courses in amenity horticulture to develop an understanding of the needs and challenges of maintaining documented collections for conservation, education and research, in addition to display. There is however a knowledge and skills gap that should be addressed to help the future workforce become more efficient, knowledgeable and skilled. I hope to learn more about the different strategies for training 'botanical garden horticulturalists' and the finances, resources and training involved.

The panel consisted of education and management professionals from leading botanical gardens in North America and the United Kingdom (see appendix 2). The convener, Brian Trader of Longwood Gardens, led by addressing the decline in horticulture and botany programmes worldwide and discussed the figures in detail. The panel referred to a number of studies conducted in response to the decline in horticultural and botany courses such as *Horticulture Matters* (RHS, 2014) and *Promoting Horticulture in the United States* (ASHS, 2014). In contrast to global trends, each of the horticulture training programmes detailed by the panel members at their respective institutions are oversubscribed. Each course utilised the brand name of their respective gardens and the experience and skills of their staff members to supplement teaching to attract students. I was impressed that all of the programmes were

financial viable (not making significant losses per year) and made positive contributions to their institutions such as adding students to the workforce, providing new staff members or continuing professional development opportunities. Andrew Wyatt's - Vice President of Horticulture and Living Collections at the Missouri Botanic Garden - presentation was particularly intriguing as he was at the beginning of the process of developing a school of horticulture. Andrew's feasibility study outlined the running costs and many of the considerations required to set up such a programme. I was encouraged by his findings, there was sufficient demand in a metropolitan region similar in size and demographics to Glasgow, and furthermore there was clear means of generating income which would aid the sustainability of the programme in the long term. The greatest measurement of success for each of the programmes discussed wasn't illustrated on any of the PowerPoint slides nor during the presentations, the success of each programme was the number of graduates who were in attendance at the congress, holding senior positions in botanical gardens.

A potential option for GBG and Glasgow City Council for the development of careers in the Gardens is to create an apprenticeship specific to 'botanical garden horticulture' which would be based in the Gardens. Each of the programmes discussed provided examples of successful administration, development and resource management of such courses and could be used as models for new training opportunities.

Pecha Kucha Session – Conversations between Education and Horticulture: Planting Ideas for the Future

At GBG we are in a fortunate position that our management team is small and dialogue between our Education Officer, Louise Bustard, and those concerned with horticulture in the Gardens is common. Any new education strategy will focus heavily on the incorporation of educational elements into existing design features and providing new spaces and resources for learning. I was keen to hear examples of collaboration between education and horticulture in addition to ways to make horticulturalists think holistically when developing the collections - not only about the ornamental value of a display, but about conservation, research and education too.

The Pecha Kucha session was led by Dr Peter Wyse Jackson, President of Missouri Botanic Garden, who allowed each of the five speakers twenty slides and twenty seconds per slide to present regarding collaborations between education and horticulture in their respective gardens. Ximin Wang, Xishuangbanna Tropical Botanic Garden, discussed how during an Orchid Festival, educators developed a number of educational exhibits to compliment the displays by making links between the species utilised or investigated aspects of their biology. Romi Ige, Brooklyn Botanic Garden, didn't want to just compliment displays but have her own, and did so to celebrate the centenary of the Children's Garden. Romi and members of the horticultural team developed ornamental displays - which utilised vegetables and fruits which are commonly cultivated in the Children's Garden - and developed interpretation panels which documented the history of the Garden. Other panellists discussed how horticulture and education can combine their expertise for outreach programmes such as the Royal Botanic Garden Kew's Grow Wild initiative, develop social media, interactive trails and develop scientific projects which utilises data collected by visitors. Each example

benefited from education and horticulture working together and a mutual understanding of each other's goals.

GBG can utilise examples illustrated by each of the speakers to develop the collections to the benefit of conservation, display, education and research. I feel the key to achieving this is to engage each of the stake holders, including education and horticulture, in each new project at GBG. The Gardens would also benefit from a systematic review of the each area at the Gardens to investigate whether modification can be made which would maximise its value for education.

Botanical Gardens, Technology, and Innovative Ways to Connect People and Nature

GBG predominantly utilises traditional interpretation methods, including laminated signs and interpretation panels. The Glasgow Botanic Gardens Tree Trail, which was established in 2014, was the first project to incorporate digital technology with the use of QR codes featured on the plant labels. This linked users to further information featured on the Friends of Glasgow Botanic Gardens' website. I would like to learn more about interpretation methods which are effective and of value in the Gardens. I think we at GBG need to be more aware of the potential of traditional and modern interpretation methods and use an appropriate combination of both.

The convenor and panellists (appendix 2) represented a selection of Gardens who had recently implemented new interpretation strategies. The panel and audience had a spectrum of views regarding how to interpret a collection with examples from museums, zoos and, of course, botanical gardens. An important point which was made by Dr Hussein Keshani, University of British Columbia, was that neither traditional or modern methods were 'wrong' but there is good and bad examples of both. Hussein continued to discuss how he had utilised

his experiences in art galleries to help in the development of a 'Digital Interpretation Programme' at the University of Alberta's Devonian Botanic Garden. His strategy focused on avoiding 'digital distraction' with a blend of low mediated spaces with simple tactile or physical features with high mediated spaces, which elicited intellectual, social or visceral experiences through modern technologies. As the session continued the discussion with the audience returned to traditional versus modern methods of interpretation discussion. Dr Dene Grigar, Washington State University Vancouver, interjected by saying that those who aren't open to new technologies are often the people who ask why there is no young people at their gardens. Dene continued to say "new audiences bring new expectations" and she illustrated her point by stating "that there are more mobile phones in the world than toothbrushes". In Dene's recent study at Fort Vancouver National Historic Site she found that 78% of visitors used digital media to acquire information and people would use apps for 23 minutes, as opposed to nine minutes looking at a brochure and six minutes reading interpretation panels.

GBG needs to be better at communicating its role as a botanical garden, importance and the many stories which a better understanding of the value the collections. GBG would therefore benefit from developing an interpretation master plan which details priority sites and appropriate technologies to communicate with our visitors. The use of ineffective digital technologies can be distracting and expensive, but conversely, effective digital technologies can be an appropriate and cost effective means of orientating and communicating with visitors. Most importantly, interpretation could be our opportunity to modernise our story and engage with a new audience via a combination of traditional and modern technologies.

Training for Employment in Botanic Gardens

As previously stated, the majority of individuals in the horticultural team at GBG completed an apprenticeship or another vocational qualification in amenity horticulture, but the level of experience and knowledge can differ significantly from individual to individual. We provide a number of training opportunities such as courses, staff exchanges and visits to other gardens to those who want to improve as horticulturalists and we monitor their progress via Personal Development Plans. What I would like to ascertain is whether we are offering the appropriate training and opportunities to equip our staff with appropriate skills and experience to perform to the best of their abilities. Furthermore, is the training we provide adequate for members of our staff to progress their careers, either with GBG or at other botanical gardens?

The panel and convener represented a diverse group of botanical garden professionals from curators to students with a diverse range of training from PhD level academia to predominantly practical college courses. There were however commonalities between each member of the panel, each panellist spoke fondly of spending time at other gardens or institutions in addition to finding great value in international travel. Tracy Jessen, Halifax Public Garden, and Jessica Farmer, University of Washington Botanic Garden, spoke about the value of gaining a greater understanding of the theory and science of horticultural tasks and how it helped them to think critically and become better horticulturalists. It was Neville Evans, Royal Botanic Gardens Kew, who best demonstrated a characteristic that they all shared which benefited all of them in their training, a desire to learn and improve. Neville spoke fondly about his career path, the opportunities and challenges which he has experienced and how that has made him a better horticulturalist.

GBG can best utilise its time and resources by providing opportunities for all to develop their careers, but investing further in those who demonstrate a commitment to the profession and a

desire to develop as horticulturalists. By employing and developing horticulturalists, such as those who featured in the panel, which are committed and passionate about horticulture, we can ensure high standards of plantsmanship, job satisfaction and contribute to a talented and successful workforce.

Staff and Student Exchanges for Professional Development and Learning

Those staff members at GBG which completed apprenticeships with Glasgow City Council benefited from training opportunities in a variety of gardens, nurseries and parks throughout the city of Glasgow. Few have experienced horticulture in other botanical gardens however, and have limited experience of methods and practices used in the botanical community. I wanted to assess whether staff and student exchange programmes at other botanical gardens benefitted participants and if it helped to develop a broader understanding of the role of botanical gardens and the importance of their positions.

The panel was led by Dr Douglas Needham, Longwood Gardens, who discussed the range of exchange programmes available to his students and staff. Longwood Gardens have developed their programmes to ensure that opportunities are available to all by establishing endowments and sponsorship, providing administrative support for international students and selecting partner organisations who share common goals. Douglas continues to detail the technical aspects of hosting students and recommend the use of Memorandums of Understanding with partner organisations to ensure that the role of each party is understood and agreed upon. Dr Ed Schneider, Minnesota Landscape Arboretum, and Dr Yuri Naumtsev, Botanical Garden of Tver State University, continued the discussion by describing the partnership between their two gardens. The partnership was developed to aid the development of the Garden in Tver but there were benefits for both parties. Employees from both institutions would visit each

other to exchange knowledge and resources about cultivating a botanical collection in the temperate continental climate which they share. Both Ed and Yuri summarised their partnership by explaining that the link has been a positive experience for both of their careers and the careers of staff members involved.

The presentation reminded me about the importance of new experiences not just for young professionals, but throughout people's careers. Staff exchanges help to develop members of staff by providing them with connections with fellow professionals, new learning opportunities and inspiration. GBG would benefit from conducting an assessment of potential partner organisations and staff members who would benefit from an exchange programme to help develop the experience and knowledge within the Gardens.

Training the Next Generation of Garden Leaders

There are few programmes worldwide which focus on training and preparing individuals for leadership within botanical gardens. I wanted to hear more about the courses that are available to be better able to advise our own apprentices, staff and visiting students who want to pursue a career in botanical garden management. I also wanted to hear more details about the courses so that beneficial components could be incorporated into the apprenticeship and continuing professional development programmes at GBG.

Representatives and alumni from the Public Garden Leadership and Public Horticulture programmes from Cornell University/Cornell Plantations and the University of Delaware/Longwood Gardens respectively were selected for the panel. An overview of both programmes identified many similarities including the focus on administration, management and organisational skills specific to the field of public horticulture. Most importantly, both courses emphasised the importance of experiential learning by requiring students to complete

a series of interships, problem solving tasks and projects. Former alumni Amy Mawby, Tyler Arboretum, and Melanie Sifton, Brooklyn Botanic Gardens, talked about their current roles in senior management and related learning outcomes from both of the courses to skills which they utilise in their vocations. The session concluded with an open discussion about alternatives routes and training to senior positions within botanical gardens and the experiences of professionals in the audience.

It is important to think about the future at GBG and identify individuals who will become managers and leaders at the Gardens. Developing management skills and utilising projects and tasks to further their experience at an early stage will build their confidence and prepare individuals for promotions or new roles at the gardens.

Conclusions

Throughout the week, the sessions detailed above and the plenaries, tours and workshops were highly informative and left me with a deeper understanding of the current challenges and opportunities that exist within botanical gardens. I was pleased to have met many new colleagues who could be potential partners for GBG or have inspired me. The experience was an enriching one and I would like to thank the Merlin Trust, the Friends of Glasgow Botanic Gardens and Glasgow City Council for making attending the congress possible.

Appendix One - Financial Summary

Accommodation

7 nights at the Hilton St Louis at the Ballpark	£994.75
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Flights

Glasgow - St Louis return flights	£671.35
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Other Costs

Airport Transfers	£32.00
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Electronic System for Travel Authorisation	£14.00
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Meals	£112.32
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Total	£1,824.42
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Allowances

Glasgow City Council	Five days of working time
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Grants

The Merlin Trust	£1,400.00
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The Friends of Glasgow Botanic Gardens	£400.00
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Total	£1,800.00
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Appendix Two – Session Details

Conserving, Preserving, and Training the Next Generation of Botanical Garden

Horticulturalists

Time: 11.00 am, 27 April 2015

Venue: Shoenberg Theatre

Convener: Brain Trader, Longwood Gardens

Panellists: Maggie Killan, Royal Botanic Garden Edinburgh; Charles Hunter, Niagara Parks Botanical Garden; Charles Yurgalevitch, New York Botanical Garden; Tim Highes, Royal Botanic Garden Kew and Andrew Wyatt, Missouri Botanical Garden

Pecha Kucha – Conservations between Education and Horticulture: Planting Ideas for the Future

Time: 4.30 pm, 27 April 2015

Venue: Shoenberg Theatre

Convener: Peter Wyse Jackson, Missouri Botanical Garden

Panellists: Ximin Wang, Zishuangbanna Tropical Botanical Garden; Romi Inge, Brooklyn Botanic Garden, Phil Petitt, Royal Botanic Garden Sydney; María Bellet Serrano, Royal Botanic Garden of Madrid; Julia Willison, Royal Botanic Garden Kew and Pertti Pehkionen, Finnish Museum of Natural History/Kaisaniemi Botanic Garden

Botanical Gardens, Technology, and Innovative Ways to Connect People with Nature

Time: 11.00 am, 28 April 2015

Venue: Missouri Room

Convener: Lee Foote, Devonian Botanic Garden

Panellists: Hussin Keshani, University of British Columbia; Dene Grigar, Washington State University Vancouver and Daniel Stern, American Public Garden Association

Training for Employment in Botanical Gardens

Time: 5.00 pm, 28 April 2015

Venue: Botanical Room

Convener: Christopher Dunn, Cornell Plantations

Panellists: Jessica Farmer, University of Washington Botanic Gardens; Tracy Jessen, Halifax Public Gardens; Anne-Cathrine Scheen, Stavanger Botanic Garden & Neville Evans, Royal Botanic Garden Kew

Staff and Student Exchanges for Professional Development and Learning

Time: 11.00 am, 29 April 2015

Venue: Shoenberg Theatre

Convener: Douglas Needham, Longwood Gardens

Panellists: Douglas Needham, Longwood Gardens; Ed Scheider, Minnesota Landscape Arboretum and Yuri Naumtsev, Botanical Garden of Tver State University

Training the Next Generation of Leaders in Botanical Gardens

Time: 1:45 pm, 30 April 2015

Venue: Botanical Room

Convener: Brian Traders, Longwood Garden

Panellists: Brian Traders, Longwood Garden; Amy Mawby, Tyler Arboretum; Sonja Skelly, Cornell Plantations and Melonie Sifton, Brooklyn Botanic Garden

Appendix Three –Extract from *The Drumlin* Newsletter

The following article is from the *The Drumlin*, the triannual newsletter of GBG. The article focuses on the plant collections at Missouri Botanic Garden which were enjoyed during the congress.

Something to Write Home About – the Missouri Botanic Garden

As I sit here watching the night fall upon the city of St Louis, the Mississippi River and Illinois beyond from my hotel's roof terrace, I am gathering my notes from the week so far. The 6th International Congress on Education in Botanical Gardens is being hosted by Botanic Garden Conservation International in association with the Missouri Botanical Garden. As I intend to write a report and prepare a presentation regarding the congress, I thought I would focus my article on the Garden.

Our hosts are well thought of, with their conservation, horticulture and scientific research programmes held in the highest regard by the international botanical community. The Garden hosts cutting edge facilities and comprehensive herbaria and botanical libraries, which are utilised by leading horticulturalists and researchers. And their contribution is commendable; on one afternoon I met with scientists who were submitting a manuscript for the 135th new species discovered in 2014 and bioinformaticians working on the flora of the entire world – which is hoped to be online and accessible to all by 2020.

The scale and exploits of the contemporary Garden may have been unfathomable to its founder, Henry Shaw, a native of Sheffield, England. Shaw emigrated to St Louis in 1819, aged 18, and made a fortune selling steel implements to those travelling west. By 1840, aged 39, he was able to retire with his prosperity and he travelled the continent and Europe. When

Shaw returned to St Louis in 1851, he began to develop his country estate to give the people of St Louis a garden which was to be 'like the great gardens and estates of Europe'. As the garden developed over the next decade, Shaw's infatuation with horticulture grew as he regularly met with likeminded people to discuss the latest topics in horticulture and exchange plants. Interest and knowledge of Shaw's project continued to grow too. In 1857 German botanist Dr George Engelmann, a pioneering botanical surveyor in the Midwest region of the United States, made contact with Shaw and proposed that the estate should be 'more than a public park, that it become involved with scientific work like the 'great botanical institutions of Europe'. And so it was to be, with the help of Dr Engelmann and other notable figures, including our own Sir William Jackson Hooker, Shaw's estate was to become a botanical garden and it open to the public in 1859.

Despite being the second oldest botanical garden in North America, the visitor centre and entrance way is modern, light and inviting. Sometimes it's the smallest of touches which make the biggest impression and the zebra crossings to and from the Garden caught everyone's attention. The 'cross walk' featured a series of leaves rather than the conventional black and white strips and it had young and old talking about plants before they had even reached the Garden. When you eventually enter the Garden (after inspecting all of the 'cross walks' from a safe position on the pavement), you are instantly aware of the European influence, with formal walkways dividing the space and directing your attention to favourable sight lines. Overlaying the Garden that Shaw and Engelmann knew is a modern visitor attraction with interpretation, highly ornate and colourful displays and an army over 2,000 volunteers including docents, gardeners and teachers. This contrast was ever present, the Linnaean House, which was erected in 1882 under the direction of Shaw, was built with red brick and is home to Camellias, palms and cacti displayed in the Victorian fashion featuring

large clay pots, in a style and format which hasn't changed much since it was built. And only a short distance away is the Climatron®, a geodesic dome featuring naturalistic plantings of tropical plants with QR codes, interactive displays and all the other modern technology we have come to enjoy (...or oppose).

Throughout the grounds, the horticultural standards were impressive and a compliment should be paid to the horticultural staff and volunteers. There were many themed gardens, from an English woodland, Bavarian glade to a Japanese karesansui. One garden I was particularly impressed with was maybe not even a garden at all. The William T. Kemper Center for Home Gardening was the busiest place to be all week, and it wasn't just tourists, you could see many people from communities throughout St Louis enjoyed visiting the facilities too. The mission is simple, to educate the public about how they can develop their garden at home. The centre featured classrooms, practical teaching facilities and 23 demonstration gardens. You could compare varieties of lawn grasses, take part in workshops on how to grow vegetables in small spaces, or visit the plant doctor who was able to diagnose the ills of your household plants. I had two particularly inspiring experiences while I was there, I was able to watch a beekeeping demonstration with Agnes, who was 83 and was building a hive in her own garden in Wyoming. The second inspiring experience was dropping in to a 'home gardening class' and watching trained horticultural staff advise the public as to how best to manage their 'yard' or gardens.

A botanical garden is never 'just' a garden and the research centre on site was awe inspiring too. Situated under one roof was a library featuring every single book, document and manuscript which has ever published a plant name and one of the largest herbaria in the world. Tomorrow we will be visiting the Shaw Nature Reserve, an affiliate site of the Garden, which features plants which are native to Missouri and is used extensively for conservation

and educational purposes. And by the end of the week I hope to have many more experiences and story to share.

Good night from St Louis!

Will



Figure 3. A view towards the Japanese Garden at Missouri Botanical Garden

Appendix Four – Figures & Referenced Documents

Figures

Figure 1. The roof of the Climatron ®, a geodesic glasshouse hosting tropical collections at Missouri Botanic Garden

Figure 2. Tulips featured at the entrance to Missouri Botanic Garden

Figure 3. A view towards the Japanese Garden at Missouri Botanical Garden

Referenced Documents

ASHS (2014) Promoting Horticulture in the United States. White Paper. American Society for Horticultural Science. Alexandria, Virginia, USA.

RHS (2014) Horticulture Matters. Royal Horticultural Society. Wisley, Surrey, England.