

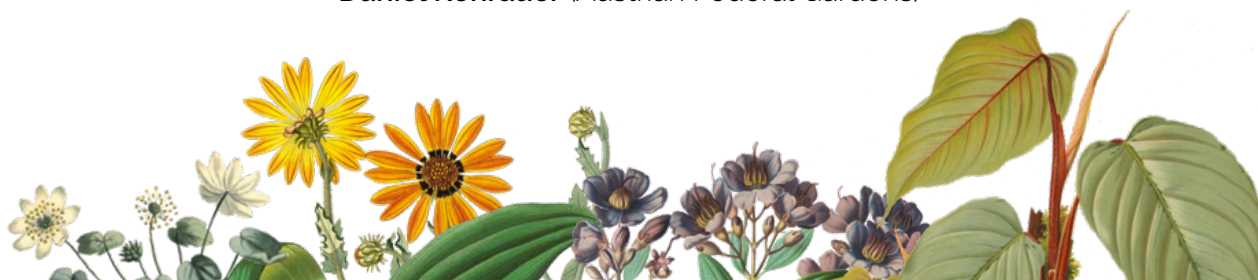


# 2nd International Congress of Historical Botanical Gardens

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## Abstracts

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# Table of Contents

|   |           |
|---|-----------|
| <b>ABSTRACTS (not peer-reviewed).....</b>   | <b>3</b>  |
| <i>Botany, History and Biodiversity: New Horizons for the Jardin des Plantes de Paris .....</i>   | <i>3</i>  |
| <i>A Phoenix from the Ashes The Transition of the k. k. Court Gardens to the Austrian Federal Gardens.....</i>  | <i>4</i>  |
| <i>Paleis Het Loo: From royal Showcase towards a decolonized Botanical Garden .....</i>   | <i>5</i>  |
| <i>The Role of Curation in Botanic Gardens: Platforms for environmental and social Transition.....</i>  | <i>6</i>  |
| <i>Art and Art-Projects at the historic Botanical Garden of the University of Vienna.....</i>   | <i>7</i>  |
| <i>Restoration Saga of the only Croatian public Greenhouse .....</i>  | <i>8</i>  |
| <i>The Impact of Climate Change on the living Collections of the Botanic Garden of the University of Pisa .....</i>   | <i>9</i>  |
| <i>The Botanical Garden in Halle (Saale) through the Ages .....</i>   | <i>10</i> |
| <i>Decolonizing the Dutch Botanical Gardens .....</i>   | <i>11</i> |
| <i>A Healing Place: The Modern Botanic Garden as a Reimagined Physic Garden .....</i>   | <i>12</i> |
| <i>Rescue of unique Collections in the Botanical Gardens of Ukraine during the War .....</i>  | <i>13</i> |
| <i>History hidden in annual Rings .....</i>   | <i>14</i> |
| <i>Contemplating Climate in the late Eighteenth-Century Conservatory.....</i>   | <i>15</i> |
| <i>New Concept for the historic Glasshouse in the Botanical Garden Graz.....</i>  | <i>16</i> |
| <i>Horticulture in a changing World: the Role of climate Change and Plant Invasions.....</i>  | <i>17</i> |
| <i>The Transfer towards working with the Environment in a historical Garden.....</i>  | <i>18</i> |
| <i>Theory and Practice of recreating exotic Plant Collections in European historic Gardens .....</i>  | <i>19</i> |
| <i>Charm and Harm of the Indian Lotus (Nelumbo nucifera) in a historic Landscape Garden .....</i>   | <i>20</i> |
| <i>Tulips – Propagation of historic Tulip Varieties.....</i>  | <i>21</i> |
| <i>Zagreb University Botanical Garden: 135 years of botanic History, high Hopes and financial Struggle.....</i>   | <i>22</i> |
| <i>Heritage Skills in historic Gardens: Conserving for the Future.....</i>  | <i>23</i> |
| <i>Herbaria: Essays for a Material and Postnaturalist Memory of Botany and Film .....</i>   | <i>24</i> |
| <i>Cultivation of sensitive Plants in the Belvedere Garden.....</i>   | <i>25</i> |
| <i>The Hungarian Plant Names in Carolus Clusius's Works in the Context of his botanical Program .....</i>   | <i>26</i> |
| <i>The Profession of a Botanical Gardener – Sharing horticultural and aesthetic Knowledge at German Renaissance Courts .....</i>  | <i>27</i> |
| <i>A Living Heritage of Garden Work Historic Tools and Garden Machines used in the Austrian Federal Gardens.....</i>  | <i>28</i> |
| <i>The Bolestraszyce Arboretum pomological Collection – a Field Gene Bank of recovered Varieties of Apple Trees, Pear Trees and Cornelian Cherry Ecotypes. Protection and Dissemination of the historical Orchardings Achievements in the 19th Century and the early 20th Century in the south-east Region of Poland.....</i> | <i>29</i> |
| <i>Gentian, Edelweiss and Primrose [...] quiet Wonders in the Gardens of Carolus Clusius.....</i>   | <i>30</i> |
| <i>The Making of a Historical Botanical Garden .....</i>  | <i>31</i> |
| <i>The Puccini Garden in Tuscany: a celebratory landscape park and its 19th-century botanical cultivations .....</i>  | <i>32</i> |
| <i>Arboretum Trsteno of the Croatian Academy of Sciences and Arts The Garden with the historically longest Continuity on the Territory of the Republic of Croatia.....</i>  | <i>33</i> |

|  |           |
|--|-----------|
| <i>How botanical Gardens helped to shape international Trade Law.....</i>  | <i>34</i> |
| <i>Luca Ghini and the Origin of modern Botany: an Italian History of academic Botanic Gardens.....</i>                                     | <i>35</i> |
| <i>Methods of visually experiencing lost historical Botanical Gardens.....</i>   | <i>36</i> |
| <i>The historical botanical Gardens in Algiers, Kiev &amp; Tunis and their cooperation Projects with the Republic of Austria .....</i>     | <i>37</i> |
| <i>Building the Botanical Garden for Roma Capitale: History, Architecture, Characters .....</i>  | <i>38</i> |
| <i>The Botanic Garden and Museum of the University of Pisa: Five Centuries of botanical Research, from Simples to new Frontiers ..</i>     | <i>39</i> |
| <i>Ars topiaria in the Painted Garden in a Roman Augustan Villa .....</i>  | <i>40</i> |
| <i>The arboretum of Lourizán (Galicia, Spain) The singular Origin of a Botanical Garden in a nineteenth-century Summer Residence .....</i> | <i>41</i> |
| <i>Greetings from Vácrtót! – The History of the Hungarian National Botanic Garden on Postcards.....</i>                                    | <i>42</i> |
| <i>The “Vienna School of Botanical Illustration” .....</i>   | <i>43</i> |
| <i>Enhancing the historical Botanical Gardens experience through Digitalization and Technology: the Case of Portugal .....</i>             | <i>44</i> |
| <i>The Association des Passionés D’Illustration Botanique and the Florilegium Project with Herbar LY.....</i>                              | <i>45</i> |
| <i>INDEX OF CONTRIBUTORS .....</i>   | <i>46</i> |

## CONGRESS COMMITTEES

SCIENTIFIC COMMITTEE

ORGANIZING COMMITTEE

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## **Botany, History and Biodiversity: New Horizons for the Jardin des Plantes de Paris**

Isabelle Glais<sup>1</sup>

The Jardin des Plantes in Paris, originally established as the “Royal Garden for Medicinal Plants” by Louis XIII over 400 years ago, has transformed into a public botanical garden of great significance. Among the many facets of this garden, one lies at the heart of its identity: botany. At the crossroad of science and traditional knowledge, the site is also a key centre for horticulture and ecology. The vastness of its collections illustrates the extraordinary and abundant diversity of the plant kingdom. However, facing the challenges of aging infrastructure, environmental crisis and evolving conservation needs, the garden has to undergo a transition to meet the demands of the 21st century while preserving its historical heritage.

To address these challenges, a comprehensive approach has been adopted. The preservation of the garden's historical monuments is paramount, with a master plan implemented by professional teams including landscape and historical architects specially trained to preserve French heritage. Simultaneously, strategies are being devised to manage and enhance the living botanical collections, involving collaboration among all relevant teams and scientists. Sustainability is also a key focus, with efforts towards achieving Ecojardin certification to promote environmentally friendly practices.

Initial achievements include a ten-year restoration project focused on preserving biodiversity, respecting history, and improving visitor experiences. To this end, collections management has begun to prioritize the long-term viability of living botanical collections faced with climate change. Communication efforts have been intensified to raise awareness of the work of gardeners and the management plan in this process. Additionally, there's a push for providing updated information to visitors to deepen their understanding of the garden's historical significance and the role in a climate aware future.

The transition process has provided valuable insights into the garden's heritage and significance, fostering collaboration between gardeners, scientists, and other stakeholders. This collaborative approach has facilitated mutual learning and informed decision-making. With the wealth of information gathered, there is now an improved capacity to engage and educate the public about the garden's heritage and ongoing conservation efforts.

The Jardin des Plantes will undergo a profound transformation towards ecological sustainability while preserving its rich historical legacy. Through strategic planning, collaborative efforts, and a focus on sustainability, the garden will be poised to thrive in the 21st century as a beacon of botanical and cultural heritage in the heart of Paris.

<sup>1</sup> Botanical Gardens at the Muséum national d'Histoire naturelle, France

## **A Phoenix from the Ashes**

### **The Transition of the k. k. Court Gardens to the Austrian Federal Gardens**

Claudia Gröschel<sup>1</sup>

After the end of World War I, new uses and an administrative structure had to be found for the imperial court gardens and their plant collections in the newly founded First Republic of Austria. In an open process involving a wide range of experts and institutions from the end of 1918, different possible uses for the former imperial palaces and gardens were discussed. The experts quickly agreed that Schönbrunn was a national historical monument that had to be preserved and used as a museum. With the so-called Habsburg Law of April 3, 1919, the “Hofärar”, including the imperial court gardens, finally became the property of the Austrian state. From 1921, the former imperial palaces and gardens were subordinated as a unit to the Ministry of Trade and Transport. In 1933, this unit was disbanded. The castle buildings remained under the Ministry of Trade and Transport, while the gardens were transferred to the Ministry of Agriculture and Forestry.

It can be demonstrated how the decision to preserve a large part of the former court gardens with their extensive plant collections as gardens of the Republic of Austria was successfully implemented. Particularly striking is the fact, that the new beginning was primarily characterized by continuity. Federal Gardens Director Friedrich Rottenberger played an important role. With great commitment, he continued traditional tasks and established new ones. Through large-scale publicity activities, numerous exhibitions and international contacts, he also succeeded in creating awareness of the high value of the gardens and plant collections and to arouse interest in these facilities among the population.

<sup>1</sup> *Austrian Federal Gardens*



## **Paleis Het Loo: From royal Showcase towards a decolonized Botanical Garden**

Renske Ek<sup>1</sup>

Palace Het Loo, located in the center of the Netherlands, dates from the last quarter of the 17th century. It was built by King Stadholder William III and his English wife Mary Stuart II. In 1984, after years of major renovations, this former royal residence was opened to the public as an independent State Museum. The interior of the palace offers visitors a glimpse of what life at court was like for three centuries. The gardens, on the other hand, reflect their 17th-century origins. The gardens were part of the “ensemble” and served as an outdoor exhibition space for a collection of precious and newly introduced plants.

The collection, cultivation and display of flowers and plants was made possible by the international and global networks and lucrative trade that supported the wealth of the Dutch Republic. These networks brought Asian, South-African, South American and Caribbean plants to European soil and facilitated the international movement of plants (and people) through the infrastructure of the Dutch East India Company (VOC) and West India Company (WIC). William and Mary's wealth and plant collection was directly related to colonialism, slavery and the imposed monopoly of the VOC and WIC. Later additions to the collections, primarily in the 19<sup>th</sup> century, also largely originate from the former Dutch colonies Indonesia and Suriname.

<sup>1</sup> *Paleis Het Loo, Netherlands*

## **The Role of Curation in Botanic Gardens: Platforms for environmental and social Transition.**

Kevin Frediani<sup>1</sup>

Botanic gardens collect, care for, distribute and display, plant specimens, and their derived artifacts. As cultural collections, they help further research, conservation, and education, while their living collections provide tangible and intangible amenity. Curation is an integral consideration of this melee, informing content and conferring value, through framing the visitor experience and progressing the host organizations mission. This paper reviews the evolution of western botanic gardens as institutions of power, inferred by knowledge. Exploring the key externalities that have informed their collection acquisitions since their renaissance origins, while exploring the epistemic function of the curators role. Looking to provide insight into how these collections transition to the prescient externalities that result from an imbalance of the human social and wider ecological system. The Sustainable Development framework is reviewed as the dominant sustainability narrative and top down transformative solution pathway. While Nature-based Solutions are identified as potential tools to help mitigate and adapt to emerging challenges from anthropogenic climate change and biodiversity loss. Finally, the concept of a Just Transition is identified as a means to inform policy and direct practice that seeks to ensure equality for all stakeholders independent of their economic means or collection interests. An approach that could bring benefit for species conservation while providing a new lens for curatorial praxis. Finally, the case for botanic gardens to be considered as centres of knowledge or *hortus apertus* is made to acknowledge the continual evolution of these institutions, and revaluation of their role in a time of global change.

<sup>1</sup> *Botanic Garden and Grounds*  
*University of Dundee, Scotland*

## Art and Art-Projects at the historic Botanical Garden of the University of Vienna

Barbara Knickmann<sup>1</sup>, Frank Schumacher<sup>1</sup>, Michael Kiehn<sup>1,2</sup>

Botanic gardens are particularly responsible for their historic heritage – albeit not declared a historic monument. This relates to both plant-collections and garden areas, and is even more relevant if these gardens conduct research or conservation of species or are dedicated to teaching or garden design.

How to deal with contemporary art-projects in such gardens? Examples implemented at the Botanical Garden of the University of Vienna showcase its approach.

No explicit “art-projects” are documented for the garden in previous times. From 2001–2015, several projects were realized in cooperation with the University of Applied Arts Vienna, planned as short-lived installations or as part of future infrastructure. In all these projects, functions of the garden, site specifics or historic components should be reflected and dealt with. Breaking with traditions and provocative interactions were explicitly not excluded, whereas ignoring or wiping out historic components was forbidden.

Now the garden gets frequent requests by artists wanting to use the site as a screen or space for their works. Such requests are only accepted if there is an obvious reference to plants, botany or botanic gardens and if the historic dimension is not damaged by the proposed artwork.

We think that art projects are meaningful for historic botanic gardens, as long as the genius loci is well considered. Interventions with a limited time frame enable a higher number of projects and offer the opportunity to take higher risks. Gardens are opened up for new perspectives and views. The perception of the very same site is strengthened and gets an additional value, and thus opens up for new types of visitors.

<sup>1</sup> *Botanical Garden*

*University of Vienna, Austria*

<sup>2</sup> *International Association of Botanical Gardens (IABG)*



## Restoration Saga of the only Croatian public Greenhouse

Vanja Stamenkovic<sup>1</sup>

The Botanical Garden of the University of Zagreb (Faculty of Science) is the oldest botanical garden in Croatia. It was established in 1889 as the Botanical Garden of the Royal University of Zagreb. The Garden was built south of the newly planned districts after the great earthquake of 1880. The initial area of only 3 hectares was equipped in 1892 with a modern glasshouse, designed according to similar European greenhouses of the time. Both the garden and the greenhouse proved to be too small to host fast-growing plant collections, and since 1900 the city “engulfed” the garden completely, permanently restricting any potential expanse and growth. Troubles of the WW1 and WW2, modest restoration of the Garden in socialist times and statutory protection set hindrances in much-needed restoration of infrastructure, especially its greenhouse. After the War of independence (1991-95), Croatia started its transition to a modern European society, a process that culminated in 2013 by achieving EU membership. During the last 25 years, numerous attempts were made to start the full restoration of the only public greenhouse in Zagreb and Croatia. The last application for EU funding for the greenhouse as a Visitors’ centre with the first Croatian flora seed bank resulted in top evaluation score, but landed in the waiting list due to lack of funds. Initial steps were stopped by change in local government, financial crises after the epidemic and the earthquake in 2020.

<sup>1</sup> *Botanical Garden of the Faculty of Science  
University of Zagreb, Croatia*

## The Impact of Climate Change on the living Collections of the Botanic Garden of the University of Pisa

Marco D'Antraccoli<sup>1</sup>, Nóra Weiger<sup>1</sup>, Lorenzo Peruzzi<sup>1,2</sup>

Climate crisis is globally threatening ecosystems and biodiversity. Accordingly, climate changes also affect botanic gardens. A full understanding of impacts can help to better prepare and secure plant collections over time.

Concerning the Botanic Garden of the University of Pisa, located in a Mediterranean climate, we can consider three main climate-related issues: (1) species suitability to future climate, (2) spread of pests, (3) availability and quality of water.

A recent study showed that 60% of the cultivated tree species should fall completely outside, or at the boundaries, of their climatic niche by 2090. Determining the risk level for each species allows to adequately design a species turnover plan.

Concerning alien pests, in 2018 a palm (*Jubaea chilensis*) planted in 1890 by Giovanni Arcangeli was irreversibly damaged by *Rhynchophorus ferrugineus*. A more recent attack by *Paysandisia archon* was firstly recorded in 2022, while *Toumeyella parvicornis* has been reported in a neighboring area, about 10 km from the garden.

A historical criticism involves water, both for its high salinity and for its availability, due to inadequate rain storage systems and dilapidated facilities and pipes. These problems affect, especially during summer periods, horticulture routine and the health of plant collections.

<sup>1</sup> *Pisa Botanic Garden and Museum  
University of Pisa, Italy*

<sup>2</sup> *Department of Biology  
University of Pisa, Italy*

## The Botanical Garden in Halle (Saale) through the Ages

Heike Tenzer<sup>1</sup>

1698 is the founding year of Prussia's first botanical garden, which emerged from a *hortus medicus*. Elector Frederick III (1657-1713) donated part of the electoral herb garden to the University of Halle, which was founded in 1694, for the cultivation of medicinal plants. These, including the associated “demonstrations”, were an important part of medical studies.

In the middle of the 18th century, a profound structural change took place. The almost exclusive cultivation of officinal plants gave way to an increasing variety of plants from different parts of the world. The structures of the original *hortus medicus* could not be preserved.

In 1787, the chancellor of the university, Carl Christoph von Hoffmann, succeeded in expanding the botanical garden, then located on the outskirts of Halle, to its current size. Contemporary illustrations show that he drew on the design principles of the landscape garden, probably also on his experiences in Dieskau. Mention should be made of the avenue of Italian pyramid poplars (*Populus nigra* 'Italica'), which led from the entrance directly to the observatory built by Carl Gotthard Langhans (1732-1808).

There was a harmony between the needs of science, especially botany, and the aesthetic beautification of the garden. The publicising activities of the directors Kurt Sprengel (1766-1833) and Diederich Franz Leonhard von Schlechtendal (1794-1866) led to the garden's worldwide importance, which was also reflected in the constantly growing plant population: around 1800, 3000 different plant species were already being cultivated here.

Today, the botanical garden is one of the 50 selected sites in the “Garden Dreams - Historic Parks in Saxony-Anhalt” heritage conservation and tourism network. The state of Saxony-Anhalt initiated this unique project in 2000: The most beautiful and significant parks were selected as representatives of the approximately 1,000 garden monuments in the state.

<sup>1</sup> State Office for Heritage Management and Archaeology, Germany

## Decolonizing the Dutch Botanical Gardens

Renske Ek<sup>1</sup>, Sarina Veldman<sup>2</sup>, Roderick Bouman<sup>3</sup>, Martin Smit<sup>4</sup>

The Dutch Association of Botanical Gardens (NVBT) has 26 members, ranging from (former) university gardens, arboreta, former country estates, to botanical departments of zoos. The four oldest gardens were established before the end of the 17th century and their histories are partly interwoven with the colonial eras of the Netherlands.

Hortus botanicus Leiden is the oldest (1590), followed by the Hortus Botanicus Amsterdam (1638), Utrecht University Botanic Gardens (1639) and the garden of Paleis het Loo (1684).

During the 17th century, the import of exotic plant species to the Dutch Republic was enhanced by the establishment of the Dutch trading posts and subsequent colonies in amongst others Indonesia (1600), at the Cape of Good Hope, South Africa (1652), Suriname (1667), and by the establishment of the Dutch administration in Ceylon (1658). The colonial ties with Indonesia, South-Africa and Suriname extended far into the 20th century.

All four gardens are currently decolonizing their gardens. Research is being conducted on the colonial history of the various institutions, their interconnections with the Dutch East and West India Companies and shared botanical, social and financial networks. Steps are being taken such as adding more original vernacular names to plant tags, digitizing large archives of *indices seminum*, garden catalogues and correspondence going back to early 17th century to see how plants were exchanged and the different ties to colonial practices, such as the production of various crop plants. This presentation will further explore the various Dutch projects in which decolonization has an important role.

<sup>1</sup> *Paleis Het Loo, Netherlands*

<sup>2</sup> *Hortus Botanicus Amsterdam, Netherlands*

<sup>3</sup> *Hortus Botanicus Leiden, Netherlands*

<sup>4</sup> *Utrecht Botanic Gardens, Netherlands*

## A Healing Place: The Modern Botanic Garden as a Reimagined Physic Garden

Tim Entwisle<sup>1</sup>

In my decade as Director of Royal Botanic Gardens Victoria, I promoted botanic gardens as a potent mix of nature, culture and science. However, while writing a memoir about my time in botanic gardens (*Evergreen: The Botanical Life of a Plant Punk*; Thames & Hudson, 2022) it became clear I had missed one vital element. Perhaps triggered by the COVID-19 pandemic and the community's changing relationship with outdoor spaces, I saw botanic gardens as physic gardens again. Not so much an historic collection of medicinal plants, but as a healing place. The value of nature, of gardens, and particularly of botanic gardens for keeping us in “good health” is, if not self-evident, then progressively confirmed by social research. Viewing the modern botanic garden as a physic garden supports the creation and further development of botanic gardens (including historical botanic gardens) in places where there are more people than “natural” plant diversity; encourages a medical approach to addressing complex problems like climate change – target the root causes first, cure if possible, or if not, relieve symptoms and build resistance; favours a triaging approach to conservation so we don't “waste” resources on lost causes; and presents plant rescue and restoration as the equivalent of a human Intensive Care Unit (ICU). Our landscapes and collections are, and always have been, for many people their first contact with a complex plant environment – nature. And that, researchers say, is also good for our health.

<sup>1</sup> *International Association of Botanic Gardens (IABG)*

*The University of Melbourne*

*Royal Botanic Gardens Victoria, Australia*

## Rescue of unique Collections in the Botanical Gardens of Ukraine during the War

Lyudmyla Buyun<sup>1</sup>, Andriy Prokopiv<sup>2</sup>

Russian unprovoked aggression against Ukraine has affected all aspects of life of the country, including the functioning of Botanical Gardens. Special attention should be focused on the collections of tropical and subtropical plants collected in two Botanical Gardens of Ukraine, which are extremely difficult to preserve due to constant rocket bombardments and power outages. These collections, having the status of National Heritage Collections of Ukraine, are objects of critical infrastructure, which determines their social, ecological and economic significance to ensure vital national interests.

The loss of plants during hostilities, especially in the first months of the Russian war, in particular in Kyiv, occurred due to the lack of proper heating of greenhouses. Therefore, the temperature in the greenhouses was much lower than the temperature optimum for every specific ecological groups to be provided. Due to non-compliance with the temperature regime, plants from typical tropical families were the first to die. Besides, some of the employees who took care of the plants were forced to go to safe places. Subsequently, fewer employees could not provide proper care for collection samples. The alternative heating system (convection ovens) could not fully support the appropriate temperature regime, in particular at night during the curfew. Purchased and donated electricity generators made it possible to slightly stabilize the heating mode during emergency shutdowns.

It is worth noting the role of BGCI, Partnerships for Nature, local volunteer communities, charitable foundations in preserving the collections of the Botanical Gardens of Ukraine and supporting their staff.

<sup>1</sup> *M.M. Gryshko National Botanic Garden  
National Academy of Science of Ukraine*

<sup>2</sup> *Botanic Garden  
Ivan Franko National University of Lviv, Ukraine*



## History hidden in annual Rings

Erzsébet Fráter<sup>1</sup>, Tímea Földi<sup>1</sup>

The National Botanic Garden in Vácrátót is a landscape garden founded in the 19th century. The history of the Garden is full of trouble and deeply marked by painful periods of the Hungarian history in the XXth century.

In 1944 Vácrátót was occupied without fight by the Soviet 409th Rifle Division. Hundreds of soldiers of the Red Army were stationed in the garden until the summer of 1945. In 1956 revolutionary National Guardsmen took up arms to keep the order, and in the spring of 1957, in retaliation to the Communists, arrests were made in Vácrátót. The war left behind many garden “memories”.

In the grove by the Sződrákosi stream stands an old ash tree, which still bears a “tattoo” on its skin. The soldiers carved the year 1945 into the bark of a tree with their knife or axe as a “memorial”.

On 25 October 2022, near the tattooed ash tree, gardeners were chopping a decayed chestnut. To their dismay, a Luger P08 (Parabellum) pistol was turned out of the trunk of the tree! Based on the study by dendrochronologist expert, the annual rings indicate that the tree was planted in the 1850s, and the hole in its trunk could have been formed when the tree was around 80 years old. It is now impossible to determine whether the pistol was hidden there in 1945 by a fleeing soldier or in 1957 by a national guard fearing reprisals. Since January 2024, the gun has been on display in the visitor centre as a war memorial.

<sup>1</sup> *National Botanic Garden Vácrátót*

*HUN-REN Centre for Ecological Research, Hungary*

## Contemplating Climate in the late Eighteenth-Century Conservatory

Tamara Caulkins<sup>1</sup>

During the Enlightenment, greenhouses served as sites for botanical research on foreign plants, sources of winter foods and flowers, and as spaces for pleasurable sociability and solitary contemplation. Conservatories, and the plants housed in them, were also very instrumental in shaping ideas about climate, particularly as northern Europeans wondered what climate was ideal for humans. The French naturalist, George Leclerc de Buffon (1707-1788), claimed the climate of North America had a deleterious effect on the health and vigor of people of European ancestry. Thomas Jefferson (1743-1826), eventually third president of the United States, wrote an entire book, *Notes on the State of Virginia*, to refute Buffon's claim. Jefferson did some of his thinking for the book in the greenhouse which he had built just outside his study. In England, Dr. Joseph Adams (1756-1818) suggested the climate of the island of Madeira was ideal for Europeans. Adams replicated this climate in glass-covered atriums built for the well-to-do. Conservatories were ideal places for developing ideas about controlling climates. By the early nineteenth century, grand plans for royal greenhouses drawn up by naturalists such as Michel Adanson (1737-1806), the conservatory complex of Joséphine Bonaparte, and the vast greenhouses built by Joseph Paxton for the Duke of Devonshire in England demonstrated the importance of greenhouses as displays of wealth and influence through the plants they were able to grow from other climates. They also offered a physical space in which to contemplate a more intimate sense of global colonial power and connection.

<sup>1</sup> *Sustainability Council Member*  
*Central Washington University, USA*

## New Concept for the historic Glasshouse in the Botanical Garden Graz

Jonathan Wilfling<sup>1</sup>, Christian Berg<sup>1</sup>

The historic glasshouse in the Botanical Garden Graz is one of the outstanding monuments of iron skeleton construction from the second half of the 19th century. It was built between 1888 and 1889 by the iron construction manufacture Ignaz Gridl, Vienna.

After more than 100 years of use as the Botanic Garden's research glasshouse from 1889 to 1995, the building fell into disrepair and was later restored in the years 2020 and 2021.

The building consists of five compartments. The centre cube is used as a public event room. The larger south wing is used for research and teaching plants, the smaller south wing serves as succulent nursery. The first section to the north is now used as a botany school, known in Graz as the “open-air laboratory”. Every year, numerous groups of schoolchildren and adults are introduced to topics relating to biology and nature conservation here. The adjoining section to the north was designed by the Botanical Garden as the South Africa House. This is the first time that part of the house has been made accessible to the public.

The complete redesign of the outdoor facilities is also noteworthy. In contrast to the historical layout of the glasshouse, emphasis was placed on a modern, asymmetrical garden design. The house is framed by flowerbeds showing the North American steppe. In front we can find a rectangular water basin and further flowerbeds to the south: Four beds showing the modification of flower, fruit, leaf and shoot, two beds with plants whose species epithet refers either to “Austria” or “Styria”, and two beds with plants of the European steppe.

The historic glasshouse in Graz is thus not only preserved in the long term, but also optimally integrated into the modern needs of the Graz Botanical Garden.

<sup>1</sup> *Botanical Garden*

*Karl-Franzens-University Graz, Austria*

## Horticulture in a changing World: the Role of climate Change and Plant Invasions

Franz Essl<sup>1</sup>

Humans are changing the biophysical world with increasing velocity and severity. This has manifold consequences on biota in the wild, but also for horticulture. In my talk, I will provide a synthesis on two major challenges – i.e. plant invasions and climate change – and their impacts on horticulture now – and in the future.

In this talk, I will present major scientific breakthroughs of the recent years in understanding the status and trends of plant invasions and of the implications of climate change on horticulture. Vice versa, I will explore the role of horticulture in facilitating plant invasions. Further, I will highlight likely future consequences of biological invasions and climate change on horticulture. Finally, I will provide a perspective on priority questions for horticultural practice and research in the Anthropocene.

### References

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## The Transfer towards working with the Environment in a historical Garden

Willem Zieleman<sup>1</sup>

Since 2014, Paleis Het Loo has begun to eliminate the use of chemicals in the garden and started a transition to biological garden management, promoting biodiversity and working with strengthening environmental factors and plant resilience.

Displaying exotic species in a historical garden also entails a lot of “crop protection”, as the plants are not growing in their natural habitat. Until recent, common practice in “crop protection” rested heavily on the use of agents that primarily eliminated a particular pest. An impressive range of agents was developed for this purpose, especially after World War II. Under the premise of eliminating the pest, side effects were initially of secondary importance. Some old agents had a cumulative effect because they remained within the ecosystem. The toxicity to the users (our gardeners), the environment or to our visitors as such were not considered.

This presentation deals with the trials, errors and successes encountered with the transfer from chemical to biological pest control and a maintenance scheme that enhances natural resilience of the plants and a greater climate resilience. Practical examples will be shown, with images of different pests and their biological assailants, and new maintenance practices.

<sup>1</sup> *Paleis Het Loo, Netherlands*

## Theory and Practice of recreating exotic Plant Collections in European historic Gardens

Jacek Kuśmierski<sup>1</sup>, Katarzyna Hodor<sup>2</sup>

Recreation of exotic plants collections is one of the most challenging tasks in the conservation of historic gardens and requires extensive knowledge and familiarity with traditional crafts. The projects that have been carried out across Europe in recent decades provide an immense source of good practices. The aim of this presentation is to examine the results of the first cross-sectional research on the experience and needs of European professionals in this field.

Data were collected using a questionnaire available in 8 language versions and containing 13 questions. In 2023, an online survey was conducted among establishments with collections of exotic plants grown in containers and stored over winter in orangeries or greenhouses. The questionnaire was completed by representatives of 47 institutions from 13 countries.

The results of research provided an insight into the general characteristics of plant collections and made it possible to identify the most commonly used methods of recreating. The first group of questions concerned: the estimated size of the collection, the number of plant species and their most common types. In addition, the researchers checked the represented style or historical era and the types of containers. The second group of questions sought to establish the sources of knowledge about component parts of collections, which include treatises and pattern books, but also the experience of nurserymen and craftsmen. It was found that standardization was especially required with respect to: selection of species, plant growth and care practices, types of containers and recommended materials, theory and management.

The research results showed the significance of traditional horticultural craftsmanship and the most important areas of traditional knowledge and skills that are needed when recreating collections of exotic plants. They will serve as a starting point for formulating recommendations and standards to support professionals in the conservation process.

<sup>1</sup> *Museum of King Jan III's Palace at Wilanów, Poland*

<sup>2</sup> *Cracow University of Technology, Poland*



## Charm and Harm of the Indian Lotus (*Nelumbo nucifera*) in a historic Landscape Garden

Erzsébet Fráter<sup>1</sup>, Krisztián Halász<sup>1</sup>, Gergely Lunk<sup>1</sup>, Vince Zsigmond<sup>1</sup>

The Indian lotus (*Nelumbo nucifera*) is a charming aquatic plant with huge leaves and several large pink flowers. Its attractivity draws many visitors in summer.

Lotus is immensely popular in its native area in East Asia. It is a symbol of honest, pure-minded people in Chinese flower symbolism and a sacred plant in Hinduism and Buddhism. It is an important food and medicinal plant. The pattern of hydrophobic wax crystals on the surface of the leaves is the basis for its self-cleaning high-tech texture.

The National Botanical Garden in Vácrátót is a 150 years old historic garden. Water is a principal element in landscape gardens that mimic nature, so a pond system was created, fed by a natural stream. The Great Pond has a depth of 100 cm, a nutrient-rich silt bed, and a diverse flora and fauna.

We had trials in planting lotus plants for years without success before June 2020, when we planted rhizomes again in the Great Pond. Thanks to the mild winters, our toughness has since brought success: a sea of lotus covers the surface of the lake from mid-summer until autumn.

The consequences of its naturalization raises several questions. How much does the mass of lotus covered by the water surface affect the image of a European historic landscape garden? Will the existing lotus colony and its mechanical cutting back in autumn irreversibly change the aquatic and coastal fauna and flora? Is there a risk of colony growth and the unwanted spread of the species? The answers to these questions are based on long-term observations.

<sup>1</sup> National Botanic Garden Vácrátót

HUN-REN Centre for Ecological Research, Hungary

## **Tulips – Propagation of historic Tulip Varieties**

Andreas Fellner<sup>1</sup>

In this project, historical/valuable tulip varieties are to be bred and propagated. These tulips are bred and/or propagated based on old records and data from the archives of the Federal Gardens, as far as possible based on the original historical model. Among other tulips, the vineyard tulip (*Tulipa sylvestris*) is one of the tulips that are given special attention in this project.

<sup>1</sup> *College of Horticulture, Austria*

## Zagreb University Botanical Garden: 135 years of botanic History, high Hopes and financial Struggle

Sanja Kovačić<sup>1</sup>

The overall climate for botanical science in Croatia was never very favorable: botanic gardens were more of an oddity than necessity. The widespread gardening was always, as still is, focused on producing food.

In 135 years of its existence, Zagreb University Botanical Garden went from Habsburg Monarchy to modern-day Republic of Croatia through as many as eight states and three economic concepts. Through each struggling with similar worries: impossibility of expansion, lack of personnel and financial problems being the constant ones.

The Garden was founded in 1889 at 4.5 hectares, on the edge of a provincial town of 45,000 residents: today, more than 120,000 visitors enter its gates yearly, half of which are foreign tourists. Conceived as combination of two back-then popular designs, most of the Garden consists of arboretum in English style: woody species were planted according to Engler's taxonomic system of the time, which has been kept to this day. Smaller part was designed in French style with a central parterre, above which an exhibition glasshouse was erected. Designed in Vienna in 1891, it is unique in Croatia, yet inaccessible to the public since WWI. Never thoroughly reconstructed, the glasshouse deteriorated slowly, and today is gaping empty.

First inventory of the Garden plants was published in 1895, counting ca 1500 species: today we grow ca 6500, divided to many collections. In 1927, the first collection of native plants was founded, followed by several smaller “rockeries” dedicated to cultivation of regional flora. These collections still are the pools for scientific research, including a Program of ex-situ conservation of Croatian strictly protected species.

In 1935, the Garden was exchanging plant material via *Index Seminum* publications with 155 institutions from 20 countries: until joining the IPEN in 2011, seed-exchanging contacts were established with more than 400 institutions around the world.

Throughout its existence, the Garden operated within the University: at first, as a part of the Faculty of Philosophy, while since 1946 it belongs to the Faculty of Science. It always had an important role in teaching, scientific research and professional work in the field of botany, as well as educating the general public. Various thematic Garden tours, lectures and workshops are organized regularly: concerts, exhibitions, gatherings and performances occasionally.

For its educational, cultural and touristic values, as well as overall historic significance, the Botanical Garden has been statutorily protected since 1971 as a National Monument of Culture and Park architecture. At the same 4.5 hectares, with the same struggles, nowadays in the heart of a million-strong metropolis.

<sup>1</sup> Botanical Garden

Department of Biology

University of Zagreb, Croatia

## Heritage Skills in historic Gardens: Conserving for the Future

Kate Nicoll<sup>1</sup>, Christian Grüßen<sup>2</sup>

The Craft Skills for Garden Conservation project emerged from the 2020 pandemic, during which it became clear that outdoor spaces played a huge part in allowing people to escape the confines of their homes during lockdown. Heritage gardens in particular offered the solace and tranquility that we all needed. Such parks and gardens require expert gardeners to maintain them and there has been a recognition over the past few years that their skills are increasingly scarce. A group of seven partners from five European countries got together to define those skills and map where they were best preserved. They then decided on the most effective and sustainable methods of transmitting that knowledge. The strictures of Covid meant that both partners and participants have become confident in a range of virtual learning techniques, and the Erasmus funding we received allowed us to record and transmit the hands-on training that ensued once the pandemic was over. The results of our endeavors are visible on our website: <https://gardenconservation.eu/> and Kate Nicoll, Workshop Co-ordinator for the project will summarize the key lessons we learned.

Several project partners manage national or international networks for experts working in gardens. Christian Grüßen, project manager for the European Garden Heritage Network EGHN, <https://www.eghn.org/en/european-garden-heritage-network-eghn/> will talk about the benefits of networking for promoting the project, inviting experts as speakers for webinars and workshops, for finding best locations for the workshops and dissemination activities. He will also highlight options for future projects that the EGHN is working on.

<sup>1</sup> *Garden Conservation, Norway*

<sup>2</sup> *European Garden Heritage Network EGHN, Germany*

## Herbaria: Essays for a Material and Postnaturalist Memory of Botany and Film

Paula Bertúa<sup>1</sup>

In his documentary film *Herbaria* (Argentina, 2022), Leandro Listorti traces an original and relational audiovisual itinerary between two forms of record and conservation not evidently related: botanical museums and the film's archives. Through a transdisciplinary and transcontinental dialogue extended from the XIX century up to the present, Listorti crosses diverse stories, experiences and interviews carried out in some archives in Argentina (Museo de Ciencias Naturales Bernardino Rivadavia, Museo del Cine, Buenos Aires) and Germany (Botanischer Garten und Botanisches Museum, Deutsche Kinemathek, Berlin), revealing the colonialist logics implied in its constitutions. Moreover, this documentary film compares the vegetal raw material with film through its process of preservation and construction of alternative cultural memories; undertakings which manifest the certainty of the current extinction of both material universes, in times of planetary catastrophes (Stengers, 2017). "More than 500 plant species have disappeared from Earth in recent history. Never will we know them. More than half of sound films made on film material have been lost and more than 90 % of silent films cinema too": from this comparative diagnosis, the documentary film explores -in an insightful and creative way- the politics of preservation of natural and artistic heritage. For all that has been said, this presentation invites us to think critically about the role played by the modern classificatory enterprise and its criteria of knowledge and collecting, in the fields of science and art, from a materialist and postnaturalist perspective (Descola, 2005; Viveiros de Castro, 2010).

<sup>1</sup> *Research fellow (2024–2025) at Leuphana University, Germany*

## Cultivation of sensitive Plants in the Belvedere Garden

Michael Knaack<sup>1</sup>

The collection of non-hardy South African *Ericas* – as the collection was mentioned about 30 years ago – was founded more than 200 years ago. Therefore, there exists a lot of experience on how to keep this genus in a healthy condition for a long period. It is necessary to adapt horticultural crafts and knowledge slowly and carefully to modern requirements. However, it is essential to keep and transmit traditional and proven methods to young gardeners. One of the best methods to keep traditional skills in use is in our opinion to allow older and younger employees to work side by side on the same procedures and not to separate them, even if they are not at the same level of craftsmanship.

In some (rare) cases it may also happen that traditional procedures turn out to be quite innovative and well adapted to new conditions. In the Alpengarten in the Belvedere Garden small clay pots are used to cultivate alpine and mountainous plants. The holes are pre-punched and for cultivation the pots are sunk into a bed of moist sand up to the edge of the pot. In this way the roots of the plants are well cooled during summer by the evaporation of water from the surrounding sand and they are nevertheless well drained through the sides of the clay pots and the hole in the sand below. In combination with light shading this enables cultivation of sensitive plants from cooler regions even in Vienna.

<sup>1</sup> *Austrian Federal Gardens*



## The Hungarian Plant Names in Carolus Clusius's Works in the Context of his botanical Program

Áron Orbán<sup>1</sup>

Carolus Clusius (Charles de L'Écluse, 1526–1609) was one of the most famous botanists in sixteenth-century Europe. Botanical gardens played a central role in his activity: he was *praefectus* of the imperial botanical garden in Vienna, later that of the University of Leiden; he himself had private garden(s), too, and had a number of correspondents all throughout Europe with whom he discussed and circulated botanical naturalia. Thanks to the support of Hungarian magnate Boldizsár Batthyány (whom Clusius also helped in developing a botanical garden) Clusius could issue more than one work which included plants from Hungary, with vernacular plant names: the *Stirpium nomenclator* [...], 1583, 1584 and the *Rariorum aliquot stirpium per Pannoniam* [...], 1583; the contents of the latter were later included in the *Rariorum plantarum historia*, 1601. In my talk I investigate how these Hungarian plant names fit in the wider context of Clusius's botanical oeuvre, of which vernacular plant names were a highly important constituent. According to printed and archival sources, Clusius was keen on knowing the Hungarian names, tried to establish contact with several plant lovers and garden owners in Hungary, and the additional Hungarian-language material in the *Rariorum plantarum historia* (as compared with the material of the 1583 edition) demonstrates that he did not lose these interests in the Leiden years.

<sup>1</sup> Tokaj University, Hungary

## **The Profession of a Botanical Gardener – Sharing horticultural and aesthetic Knowledge at German Renaissance Courts**

Sophie-Luise Mävers-Persch<sup>1</sup>

Transporting *Citrus* plants, arranging flowers architecturally, documenting them in herbaria – this contribution discusses the multifaceted fields of activity of botanical gardeners at German courts during the Renaissance as well as their (inter-)national networks. This view on gardeners is initiated by the finding of a travelogue written by the gardener Joachim Gille (active from 1560–1580), who was sent on an educational trip to Italy by William IV of Hesse-Kassel and corresponded with scientists such as Joachim Camerarius (1534–1598). In addition, a report by the gardener Georg Steglin (c. 1548–1598) provides an insight into the necessary drawing skills. He travelled to several German courts to collect information about the configuration of gardens by documenting them visually. By analyzing the written and pictorial sources, a discourse on the multifaceted profession of the gardener is opened up, demonstrating that knowledge went far beyond horticulture.

This paper demonstrates that gardeners had to undertake educational trips on a national and international level to familiarize themselves with iconographic fountain programs and to learn how to sketch the arrangement of plants. Through a programmatic combination of art and social historical methods, a network of garden scholars can be reconstructed. The aim is to demonstrate that a gardener had to acquire aesthetic knowledge in the early modern period. In this way it is possible to emphasize the process of sharing aesthetic knowledge, thus locating botanical gardens between pleasure, utility and science.

<sup>1</sup> *History of Art*

*University of Cologne, Germany*

## **A Living Heritage of Garden Work**

### **Historic Tools and Garden Machines used in the Austrian Federal Gardens**

Manfred Edlinger<sup>1</sup>

The Austrian Federal Gardens are looking back to a vast tradition of garden culture. Their array of botanical collections and gardens from different periods and garden styles demands special tools to help the gardeners to preserve these green monuments.

In some cases these necessary tools and machines date back to the k. k. Court Gardens and are still in use in the gardens which are now administrated by the Austrian Federal Gardens. These tried and tested helpers are an essential part of the garden tradition in these gardens. Generations of gardeners have used these tools and machines. Additionally, they gave their inputs to improve them for the better. Designed and built in their own workshops these machines were perfected over time and are still state of the art to keep the gardens in shape.

Wooden mobile hedge frameworks in different sizes and shapes, the largest 5 stories tall, are still in use to cut over 100 km hedges every year. A lifting machine to pot big trees like *Citrus* has been reconstructed from technical drawings and photographs stored in Schönbrunn's archives. Different kinds of plant transportation vehicles are being used for big potted plants like *Citrus* and huge palms.

To keep this tradition is not an easy task. Different modern safety regulations demand adaptations of the machines and the natural materials which they are built of are causing some problems. However, there is no question that these traditional tools and machines will be part of the Austrian Federal Gardens future simply because they are, in some cases, the best way to get things done.

<sup>1</sup> *Austrian Federal Gardens*

**The Bolestraszyce Arboretum pomological Collection – a Field Gene Bank of recovered Varieties of Apple Trees, Pear Trees and Cornelian Cherry Ecotypes. Protection and Dissemination of the historical Orchardng Achievements in the 19th Century and the early 20th Century in the south-east Region of Poland.**

Elżbieta Żygala<sup>1</sup>, Narcyz Piórecki<sup>1,2</sup>, Alicja Z. Kucharska<sup>3</sup>

Although founded in 1975, the Bolestraszyce Arboretum is embedded in south-eastern Poland's history. References to a fortalicium here reach the 15th century. The Arboretum's base is a conserved 19th century manor, and the old park survived, giving rise to dendrological collections. The arboretum attempts to preserve precious and old varieties of fruit trees, as the region was dominated in the late 19th and the early 20th century by orchards in gardens and parks with diverse varieties. Well-prospering orchard nurseries offered extensive nursery material and, despite a rocky history, precious and diverse fruit tree varieties and ecotypes persist here, forming the pomological collection's foundation. Across over 10 hectares, the current collection comprises 4731 objects: species, varieties and ecotypes of apple, pear and cornelian cherry trees.

Based on the collection, information has been gathered on identifying old varieties, growth, development and cultivation conditions, tree care and producing nursery material.

Multiple endeavors aim to disseminate old fruit tree species' cultivation: nursery materials sales, workshops, training sessions, conference participation, exhibitions, tasting sessions, festivals.

Cooperation with the Wrocław University of Environmental and Life Sciences Department of Fruit, Vegetable and Plant Nutraceutical Technology and the Wrocław Medical University involves research on the qualitative identification of fruits' basic and bioactive components.

There is ongoing research on using fruit to produce food based on old and modern recipes. For the first time, loganic acid was identified in cornelian cherries. It is confirmed to have anti-inflammatory and antioxidant effects, showing positive results in treating and preventing osteoporosis and glaucoma.

<sup>1</sup> *Arboretum and Department of Physiography in Bolestraszyce, Poland*

<sup>2</sup> *Medical College  
Institute of Physical Culture Sciences  
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<sup>3</sup> *Department of Fruit, Vegetable and Plant Nutraceutical Technology  
Wrocław University of Environmental and Life Sciences, Poland*

## ***Gentian, Edelweiss and Primrose [...]* quiet Wonders in the Gardens of Carolus Clusius**

Maria Petz-Grabenbauer<sup>1</sup>

Who does not know Gentian, Edelweiss and Primrose? For Charles de L'É(s)cluse, known as Clusius (1526–1609), they were “the quiet wonders in his world” when he saw them for the first time, not being aware of the fact that they will symbolize the value of the Alps, and even appear on European currency in the future.

Even before the convinced Protestant reached Vienna, where he was employed by Maximilian II (1527–1576), he gave scientific names for the first time to many Alpine plants that are now threatened with extinction. The doctor from Arras successfully created botanical gardens for his emperor in Vienna and was constantly searching for unusual plants to fill them. While he roamed the impassable parts of the Alps, he also observed plants in changing climatic conditions and described this for the first time in the scientific language of Latin.

But he was not listened to, like current climate researchers, who warn that species, be they plants, animals or humans, are dying at an unforeseeably rapid rate.

150 years ago, Anton Kerner von Marilaun (1831–1898) affectionately described Clusius as the “master of botany” not only for his achievements in relation to the transfer of the tulip, the chestnut or the potato to Europe, but mainly because of his remarkable observations on the climatic conditions during the Little Ice Age.

All of this seems too valuable to be forgotten in the archives and led to the decision to remember this pioneer of Alpine and plant research in the form of a publication: Maria Petz-Grabenbauer/Franz Tod/Helmuth E. Grössing: *Botschafter des Atems – Enzian, Edelweiß und Primel [...]*.

The poster illustrates some of the many messages from our *Mysteries in the Alps*, which had always been couched in language, but had been lost over the centuries.

<sup>1</sup> *Botanical Garden*

*University of Vienna, Austria*

## The Making of a Historical Botanical Garden

Santiago Madriñán<sup>1</sup>

This presentation explores the historical development and significance of the Schönbrunn Botanical Garden, premier example of horticultural artistry. Established in the 18th century as part of the Schönbrunn Palace complex, this institution reflects the confluence of imperial ambition, scientific curiosity, and aesthetic ideals of the Enlightenment era. We emphasize the paramount importance of living collections over architectural design in the context of botanical gardens. While architectural design provides an aesthetically pleasing and functional framework, it is the living collections that constitute the core of a botanical garden's mission. These collections, comprising a diverse array of plant species from around the globe, are critical for conservation, scientific research, and educational outreach. We focus on the Habsburg expedition to America (1754–1758) commissioned by Francis I to Nikolaus Joseph Jacquin in order to bring plants and animals for the newly created botanical garden and menagerie at Schönbrunn. We highlight the role of botanical exploration and horticultural science needed to create and maintain a botanical living collection. This presentation will argue that the primary focus of botanical gardens, historical or recently created, should be the development and maintenance of robust living collections, as they directly contribute to the garden's role as a center for plant conservation, research, and education.

<sup>1</sup> *Département of Biology*

*University of the Andes*

*Cartagena Botanical Garden "Guillermo Piñeres", Colombia*



## **The Puccini Garden in Tuscany: a celebratory landscape park and its 19th-century botanical cultivations**

Costantino Ceccanti<sup>1</sup>

In the second half of the 17th century, the Puccini family of Pistoia, Tuscany, rose from substantial anonymity to a role of great importance. One of its members, Tommaso, was the director of the Uffizi Gallery from 1793 to 1811; in 1800, in view of the return of the French to Tuscany, he organized the transfer of the museum's most important works to Sicily to prevent their removal to Paris. The Puccinis owned a villa near Pistoia that had an adjoining Italian-style garden that was profoundly modified and embellished in the early 19th century. Beginning in the third decade of the century, work began on a vast English-style garden filled with revivalist buildings. In 1824, Niccolò Puccini, the sole owner of the complex after the death of his ancestors, began giving the garden a celebratory character of Italian greatness by erecting monuments to its greatest exponents, resulting in the garden's unique character.

To the initial planting of native plant species, he added exotic ones; started a rich collection of camellias and other acidophilic plants, roses, and other ornamental and fruit plants; and dedicated the complex to Carl Linnaeus with the erection of a statue. Before Niccolò's death in 1852, the sale of cultivated botanical species had begun, as a catalogue printed in 1855 attests. Having destined his estate for charitable purposes, the villa and the garden were sold and the latter dismembered, giving rise to the fragmentation and substantial loss of the character Niccolò Puccini desired.

<sup>1</sup> *Bargello Museums, Italy*

## **Arboretum Trsteno of the Croatian Academy of Sciences and Arts The Garden with the historically longest Continuity on the Territory of the Republic of Croatia**

Ivan Šimić<sup>1</sup>, Mara Marić<sup>2</sup>

The Trsteno Arboretum of the Croatian Academy of Sciences and Art is a historical land estate with gardens previously belonged to the noble family Gučetić-Gozze on the territory of the former Dubrovnik Republic. The history of this land estate can be traced back to the year 1494, and is among the first early Renaissance country estates in the area of Dubrovnik, i.e. Croatia.

It was a place where economic profit was realized from agricultural activities, as well as a place where philosophy, art and beauty were reflected in the garden surroundings. The interventions in the gardens that took place there over the centuries did not negate each other. That is why today in the area of the historical gardens of Trsteno Arboretum we can follow five historical layers: the Renaissance layer (15th–16th ct.), the Baroque layer (17th – 18th ct.), the Romantic-historicist layer (19th ct.), the Late Romantic layer (early 20th ct.) and late Modern (second half of 20th ct.).

The Arboretum, established in 1948 due to the introduction of numerous woody species in the historic gardens, covers the initially designated 25.61 hectares of the historical land estate with its gardens. Since then, it has been managed by the Croatian Academy of Sciences and Arts.

In 1962, the Trsteno Arboretum became a natural site protected as a natural monument of landscape architecture – an arboretum. Since 1967 it has had the status of a cultural monument, and since 2017 the entire historic land estate of the Gučetić-Gozze family and the Trsteno Arboretum have the status of a cultural asset.

The aim of this paper is to show the historical layers of the Arboretum's gardens and the challenges facing their management in order to preserve them for future generations.

<sup>1</sup> *Trsteno Arboretum*  
*Croatian Academy of Sciences and Arts*

<sup>2</sup> *Department for Mediterranean Plants*  
*University of Dubrovnik, Croatia*

## How botanical Gardens helped to shape international Trade Law

Elena Falletti<sup>1</sup>

Botanical gardens are considered the heirs of medieval arboretum (useful for learning about the curative properties of medicinal herbs, but subject to the control of religious monasteries). As well as they show a new approach that was distinctly related to Renaissance. Indeed, in 1500s Italy, knowledge of the use of plants and their products (flowers, fruits, seeds) moved from monasteries to the cultural and scientific vibrancy of universities. Examples of this are the two main states of Renaissance Italy: Tuscany and the Republic of Venice. Indeed, botanical gardens were established in Pisa and Padua to bring back the control of medicinal plants to public institutions, in a sort of public health protection. In particular, it was important to bring under control the production and trade of poisonous and deadly plants, considered silent weapons.

However, as colonialism expanded, the role of the botanical garden changed. The model was adopted by the new colonial powers, first by the Dutch, later by the British. The point was no longer to have control over poisons and medicinal effects but to study and understand how to produce marketable goods such as exotic spices and plants as efficiently as possible.

The purpose of this abstract is to understand how, through these laboratories of knowledge, it was possible to find the basis for the rules of international trade in exotic goods. On the other hand, it could be investigated how this approach still influences legal debate today, particularly concerning the protection of cultural heritage and biodiversity.

<sup>1</sup> *Carlo Cattaneo University, Italy*

## Luca Ghini and the Origin of modern Botany: an Italian History of academic Botanic Gardens

Marco D'Antraccoli<sup>1</sup>, Roberta Vangelisti<sup>1</sup>, Lorenzo Peruzzi<sup>1,2</sup>

The establishment of the first academic botanic gardens dates back to the Italian Renaissance and led to the origin of modern Botany as a scientific field independent of Medicine. Luca Ghini was a crucial figure in the development of botanic gardens as centres of academic education and research. He founded the Botanic Garden of Pisa in 1543 and deeply influenced the creation of the Botanic Garden of Padua (July 1545) and the Botanic Garden of Florence (December 1545).

Luca Ghini was born in 1490 in the province of Bologna and in 1532 he became professor in Medicine at the University of Bologna. There, he started the chair of “simples”, and then he became aware of the need to show living plants for teaching purposes. One of his pupils in that period was Luigi Squaermo (also known as Anguillara), who later became the first *praeffectus* of the Botanic Garden of Padua. Luca Ghini was not able to establish a garden in Bologna, so that in 1543 he accepted the invitation by the Grand Duke of Tuscany Cosimo I de' Medici to teach Botany at the University of Pisa, since he obtained to create a garden there. He also introduced the use of herbarium specimens as an irreplaceable scientific documentation in Botany.

<sup>1</sup> *Pisa Botanic Garden and Museum*  
*University of Pisa, Italy*

<sup>2</sup> *Department of Biology*  
*University of Pisa, Italy*

## Methods of visually experiencing lost historical Botanical Gardens

Dominik Lengyel<sup>1</sup>, Catherine Toulouse<sup>2</sup>

Historic botanical gardens consist not only of their collections, but also of their landscape setting, which forms the framework. This setting could have a not inconsiderable influence on the garden and the collection of species, not least because of the landscape exposure. Especially in the case of lost gardens, it can be assumed that knowledge about them is characterised by uncertainty. This uncertainty in knowledge is always inherent in the sciences, and dealing with it is a central component of scientific thought and work. However, translating this uncertainty from a verbal description into an image is not yet common practice. The visibility of scientific content always allows for an extended realization that is not apparent from a purely verbal description. Such a procedure has become established in archaeology, even if there are still no common standards and the significance of visibility is the subject of controversial debate. In addition to informational graphics, which claim to contain information and meta-information similar to a database, a supplementary method of representation has developed that focuses on the subtlety of visual expression. Many World Heritage sites, such as the construction phases of Cologne Cathedral or Bern Minster, are mediated in this way. In the case of the ancient metropolis of Pergamon, the model and visualization have also been active research tools for fifteen years. The potential of transferring this approach to botanical gardens shall be demonstrated using the example of the lost garden of the Medina Azahara near Cordoba from the 9th century CE.

<sup>1</sup> *BTU Brandenburg University of Technology Cottbus-Senftenberg, Germany*

<sup>2</sup> *Independent Researcher*

## **The historical botanical Gardens in Algiers, Kiev & Tunis and their cooperation Projects with the Republic of Austria**

Brigitte Mang<sup>1</sup>

Austria's international cooperations, represented by the Austrian Federal Gardens, the University College for Agricultural and Environmental Education in Vienna and the Austrian embassies in Algeria, Ukraine and Tunisia, with the botanical gardens in the capitals of the three countries, combine the historical botanical gardens with today's botanical and horticultural exchange in the design of contemporary Austrian Gardens. In the Jardin d'Essai in Algiers and the Botanical Garden in Kiev, the Austrian Gardens enrich the assortment of woody plants. The alpine plants from the assortment of the Alpine Garden in Vienna's Belvedere Garden through its international seed exchange enlarge the greenhouse cultures. In the Botanical Garden in Tunis the woody plants will contribute to the current development of the garden. The institutional Tunisian seed database is involved in the exchange of alpine plants and the development of a new collection of *Citrus* plants in Tunis together with the Austrian partners. In collaboration with the Jardin d'Essai in Algiers, the historical specifics of this garden as a former colonial “experimental garden” are of interest. In the current project with Tunis, the issues of dealing with the effects of climate change and questions of biodiversity as well as sustainability are expanding the collaboration. Regarding the botanical garden in Kiev, Austria faces the challenge of supporting reconstruction after the end of the war. All projects are linked to an exchange on garden art that goes beyond cooperation in the botanical and horticultural fields, such as professional training and further education, especially for young scientists and gardeners.

<sup>1</sup> *University College for Agricultural and Environmental Education (HAUP), Austria*

## Building the Botanical Garden for Roma Capitale: History, Architecture, Characters

Giulia Ceriani Sebregondi<sup>1</sup>

The proposal focuses on the history of a relevant place of Rome (Italy), in the heart of the Rione Trastevere, at the foot of the Janiculum Hill, even though never systematically studied: the creation of the Botanical Garden of Sapienza University of Rome in the 18th-century Villa Corsini from 1883.

Among the first and more important urban public works in the city to become the capital of the new Italian State is the acquisition of the historical 12-ha park to build an updated botanical garden comparable with those of other European capitals. Protagonists of this ambitious operation were politicians such as Quintino Sella (1827–1884), the botanist Pietro Romualdo Pirota (1853–1936), in collaboration with the architect Giulio Podesti (1842–1909).

Based on an accurate and vast archival research in the Central Archive of the State and in the Historical Municipal Archive, the paper will illustrate this fascinating history as part of a complex program of a profound renewal of the city that has become the capital of Italy. The paper will highlight at the same time the special interweaving of nature, history, architecture, science of this place, result of a complex stratification, which makes this historical botanical garden entirely a cultural heritage.

<sup>1</sup> *University of Campania “Luigi Vanvitelli”, Italy*

## The Botanic Garden and Museum of the University of Pisa: Five Centuries of botanical Research, from Simple to new Frontiers

Marco D'Antraccoli<sup>1</sup>, Francesco Roma-Marzio<sup>1</sup>, Giovanni Astuti<sup>1</sup>, Roberta Vangelisti<sup>1</sup>, Lorenzo Peruzzi<sup>1,2</sup>

The Botanic Garden and Museum of the University of Pisa was established in 1543 by Luca Ghini with the primary aim of conducting academic teaching and research on plants with medicinal properties. Since then, a plethora of *praecepti* developed several lines of research, until the current days in which scientific research plays a central role in the mission of the institution.

The staff pursues research in the following main fields: (1) Systematics, Taxonomy, and Nomenclature, (2) Biodiversity and Floristics, (3) Phytochemistry, (4) Conservation and Global Climate Change, and (5) History of Botany.

Living collections provide opportunities to directly carry out studies in the field of botany or to support investigations conducted by other institutions. This is possible thanks to the access to documented plant material and to the availability of cultivation space and horticultural expertise. All the accessions can be consulted online through international databases such as PlantSearch, *Index Seminum* platforms provided by BGCI or by querying our plant documentation system U-Plant DISCOVER (<https://uplantdiscover.sma.unipi.it/>).

Similarly, the Herbarium, hosting about 350,000 specimens, is of primary importance in supporting and stimulating a wide range of botanical research. To date, about 15% of herbarium specimens are digitized and freely accessible, both globally in the international database Jacq-Virtual Herbarium (<https://www.jacq.org/>) and locally, in our website (<https://erbario.unipi.it/>). The availability of data from different collections is also periodically implemented, like the catalogue of the bryological collections:

(<https://www.ortomuseobot.sma.unipi.it/wp-content/uploads/2020/05/PI-Catalogo-Collezioni-Briologiche.pdf>)

and the list of titles of the oldest miscellanies, which are currently publicly available despite not digitized yet:

(<https://docs.google.com/spreadsheets/d/1O3OBJQtgVlxUQZxWCRdy0SF7ZC2r3BB7Lk4Ca2efCLE/edit#gid=933941886>)

<sup>1</sup>*Pisa Botanic Garden and Museum  
University of Pisa, Italy*

<sup>2</sup>*Department of Biology  
University of Pisa, Italy*



## ***Ars topiaria* in the Painted Garden in a Roman Augustan Villa**

Adriana de Miranda<sup>1</sup>, Roberto Marrone<sup>1</sup>

The *ars topiaria* originated in the Roman gardens and becomes significant in the 15th century. In the Renaissance, paintings of gardens are numerous. They contextualize religious and mythological scenes and are inspired by the paintings of gardens of the Roman *domus*.

This paper discusses the representation of the Augustan-era frescoes of the flowered garden in the ancient Roman Villa of Livia Drusilla. The frescoes represent a manner of a detailed “botanical inventory” because of a variety of plants that grow in different seasons.

The accurate illustration of plants provides evidence of the use of some plants that were cultivated in ancient Rome. Because of the accuracy of the paintings, it is possible to identify 23 species of plants with certainty. Here the *ars topiaria* is combined with the painting, creating a landscape similar to the typical Roman *locus amoenus*. The image of a luxuriant garden contains in itself the meaning of wealth and joy, which were typical of the Augustan propaganda, in order to combine the public values of the Empire, such as the peace that reigns in ancient Rome, with an intimate domestic place.

<sup>1</sup>*Ca' Foscari University of Venice, Italy*

## **The arboretum of Lourizán (Galicia, Spain) The singular Origin of a Botanical Garden in a nineteenth-century Summer Residence**

Sabela Valcárcel Lago<sup>1</sup>

Eugenio Montero Ríos, a Spanish lawyer and politician, bought the estate of Lourizán (Galicia) in 1879 to install his summer residence there. The garden became the place of recreation for the family, in which they incorporated common elements to nineteenth-century gardens such as fountains, grottoes, estuaries, sculptures and a greenhouse made in 1892 with unique characteristics in this territory. Manuel Fernández Soler, provincial engineer, drew up a general plan of the estate in 1892 and he indicated on it the different natives and exotics tree species that are preserved there, including the areas they occupy.

In 1949 the estate, which covers an area of 52 hectares, was acquired by the Pontevedra Provincial Council. In the same year, it was granted the status of Botanical Garden in the category of arboretum. Currently, the Lourizán Forestry Research Centre is located on the estate, which since 1945 has housed the majority part of the Merino herbarium (1845–1917), which is essential to know the native forest species of Galicia.

The uniqueness of this estate is determined by the small number of this type of gardens of nineteenth-century origins in Galicia and by its forest variety, more than 700 native and exotic tree species. The Montero-Ríos family conserved the Galician specimens of trees and shrubs as birches, oaks, and chestnuts. In addition, they planted exotic species including cedars of Lebanon and Japan, Norfolk Pines, Lawson's cypresses, Asian chestnut trees, and Pacific species and a 33.30 m tall *Metasequoia*. All these species are included in the *Catalogue of Singular Trees of Galicia*.

<sup>1</sup> *University of Santiago de Compostela, Spain*

## Greetings from Vácrátót! – The History of the Hungarian National Botanic Garden on Postcards

Éva Szakács<sup>1</sup>

The National Botanic Garden, founded over 70 years ago, is located in a former castle garden. During the 50-year ownership of Count Sándor Vigyázó, extensive transformation and development took place in the nearly 200-year-old garden in the late 19th century. As a result, the romantic landscape garden enriched in sentimental elements, became internationally known and gained well-deserved recognition in the professional spheres as a dendrological collection garden. Edition of Hungarian postcards began in 1896, and private enterprises also started producing images alongside postal services in the same year. By 1899, 2500 different postcards from rural settlements were known. Among them was Vácrátót, as the earliest known postcard illustrates the Castle Garden in 1899.

The poster represents an image history of the Botanic Garden and the former castle garden. Postcards from the turn of the century are among the earliest visual documents of the garden, providing indispensable information about the garden and insights into the daily life of past times. This becomes even more significant when we light on a postcard with a contemporary message relevant to us. From the diverse imagery of more recent postcards, we mainly obtain information about the plants in the collection, changes in the garden over ages or, on the contrary, the stationarity during decades. Therefore, postcards function as time capsules, essential documentary evidence about the history of the garden.

<sup>1</sup> *National Botanic Garden*

*HUN-REN Centre for Ecological Research, Hungary*

## The “Vienna School of Botanical Illustration”

Monika Kiehn<sup>1</sup>, Friederike Kirchner<sup>1</sup>, Sabine Koch<sup>1</sup>, Manuel Millautz<sup>1</sup>, Marion Pass<sup>1</sup>, Margareta Pertl<sup>1,2</sup>, Michael Kiehn<sup>2,3</sup>

Founded in 2017, the Vienna School of Botanical Illustration takes up a long tradition of scientific plant illustrations on highest artistic standards, going back to the 18th century and connected, e.g., with Nikolaus Joseph von Jacquin or with Franz and Ferdinand Bauer.

Its general aim is to encourage synergies of art and botanical sciences.

Linked with the Botanical Garden of the University of Vienna, the organization meanwhile has more than 150 members from Austria and from other countries like Germany, Switzerland, Ireland, Romania, the Netherlands, or the USA.

The Vienna School of Botanical Illustration is networking with likeminded organizations worldwide, and offers a number of activities like

- regular plant illustration training courses in cooperation with the Zoological-Botanical Society of Austria (ZOOBOT) and the Botanical Garden of the University of Vienna
- meetings or get-togethers of artists, often with portfolio showcases and instructions on different techniques
- participation in and organizing of botanical art exhibitions (e.g., at the EUROGARD 7 Conference in Budapest, May 2022, or at the 16th biennial “The Art of Botanical Illustration” (TABI) exhibition in Melbourne 2022)
- publication of exhibition catalogues
- work on scientific projects, some of them directly linked to the history of the Botanical Garden of the University of Vienna or its collections (e.g., illustrations of plant species described by or named after N.J. von Jacquin).

The poster exhibits examples of the work of the Vienna School of Botanical Illustration.

<sup>1</sup> *Vienna School of Botanical Illustration, Austria*

<sup>2</sup> *Botanical Garden  
University of Vienna, Austria*

<sup>3</sup> *International Association of Botanical Gardens (IABG)*

## Enhancing the historical Botanical Gardens experience through Digitalization and Technology: the Case of Portugal

Susana Silva<sup>1</sup>, Paulo Carvalho<sup>1</sup>

In recent years, botanical gardens have evolved into more than simple collections of plants. More than sites promoting education, conservation, and research, these spaces have become recreational destinations seeking to offer memorable experiences to visitors. In this context, the integration of digitization and smart technologies to enhance and enrich the visitor experience – considering its three traditional main phases (before, during and after) – emerges as a relevant possibility to communicate and interpret the broad heritage value of historical botanical gardens. This will enable more positive results to be achieved in terms of heritage dissemination and valorization, as well as visitor engagement. This study sets out to evaluate digital activity and the use of technologies in Portuguese botanical gardens. The results show that online presence is mainly through the website (either their own or hosted by the institution to which they belong), which presents different levels of information, dynamics, and attractiveness. Social networks also play a part, with emphasis on Facebook and Instagram. Virtual visits are an option offered by some botanical gardens, with only a few offering applications with and without augmented reality. These tools allow off-site and on-site experiences, especially at the educational and entertainment levels. It is concluded that there is still a long way to go in this field, although it is demonstrated that innovation and diversity are crucial drivers to defining more resilient, sustainable, and interesting gardens, where the bridge between nature/culture and technology could open new horizons.

<sup>1</sup>CEGOT – *Centre of Studies in Geography and Spatial Planning*  
*University of Coimbra, Portugal*

## **The Association des Passionnés D'Illustration Botanique and the Florilegium Project with Herbarium LY**

Dominique Delattre<sup>1</sup>, Blandine Bärtschi<sup>2</sup>, Marie Malissen<sup>1</sup>, Anne Fiquet-Servy<sup>1</sup>, Catherine Watters<sup>1</sup>, Michel Descours<sup>1</sup>, Mélanie Thiébaud<sup>1</sup>, Margareta Pertl<sup>3,4</sup>

The Association des Passionnés d'Illustration Botanique, AsPIB, created in December 2018 (Lyon, France), is open to members of all levels in botanical illustration. AsPIB's main objectives are to promote and provide support to the public interested in botanical art and natural science illustration.

AsPIB has 65 members from various countries.

Activities include collaborating with the Herbarium LY of Lyon 1 (Claude Bernard University Lyon 1) through knowledge sharing initiatives with public organizations, universities and schools, as well as participating in exhibitions or conferences.

The Herbarium LY is one of the greatest in the world. Together with AsPIB they created a new collaboration in 2023 to develop a Florilegium: "Florilège de Saint-Cloud sur les traces du Jardin disparu du prince Roland Bonaparte". Grandnephew of Napoléon, Roland Bonaparte left a magnificent and large herbarium collection currently kept at the Herbarium of Lyon. His collection contains superb specimens (herbarium sheets) collected in his garden in Saint Cloud which has now disappeared.

Our project aims to bring this garden back to life both through botanical illustrations created in the 21st century by botanical illustrators and photographs of the specimens collected more than 100 years ago. We expect this joint project to result in a book and an exhibition.

<sup>1</sup> *AsPIB – Association des Passionnés d'Illustration Botanique, France*

<sup>2</sup> *Herbier LY, Claude Bernard University Lyon 1, France*

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University of Vienna, Austria*

## INDEX OF CONTRIBUTORS

- Astuti, Giovanni 39  
 Bärtschi, Blandine 45  
 Berg, Christian 16  
 Bertúa, Paula 24  
 Bouman, Roderick 11  
 Buyun, Lyudmyla 13  
 Carvalho, Paulo 44  
 Caulkins, Tamara 15  
 Ceccanti, Costantino 32  
 D'Antraccoli, Marco 9, 35, 39  
 De Miranda, Adriana 40  
 Delattre, Dominique 45  
 Descours, Michel 45  
 Edlinger, Manfred 28  
 Ek, Renske 5, 11  
 Entwisle, Tim 12  
 Essl, Franz 17  
 Falletti, Elena 34  
 Fellner, Andreas 21  
 Fiquet-Servy, Anne 45  
 Földi, Tímea 14  
 Fráter, Erzsébet 14, 20  
 Frediani, Kevin 6  
 Glais, Isabelle 3  
 Gröschel, Claudia 4  
 Grüßen, Christian 23  
 Halász, Krisztián 20  
 Hodor, Katarzyna 19  
 Kiehn, Michael 7, 43  
 Kiehn, Monika 43  
 Kirchner, Friederike 43  
 Knaack, Michael 25  
 Knickmann, Barbara 7  
 Koch, Sabine 43  
 Kovačić, Sanja 22  
 Kucharska, Alicja Z. 29  
 Kuśmierski, Jacek 19  
 Lengyel, Dominik 36  
 Lunk, Gergely 20  
 Madriñán, Santiago 31  
 Malissen, Marie 45  
 Mang, Brigitte 37  
 Marić, Mara 33  
 Marrone, Roberto 40  
 Mävers-Persch, Sophie-Luise 27  
 Millautz, Manuel 43  
 Nicoll, Kate 23  
 Orbán, Áron 26  
 Pass, Marion 43  
 Pertl, Margareta 43, 45  
 Peruzzi, Lorenzo 9, 35, 39  
 Petz-Grabenbauer, Maria 30  
 Piórecki, Narcyz 29  
 Prokopiv, Andriy 13  
 Roma-Marzio, Francesco 39  
 Schumacher, Frank 7  
 Sebregondi, Giulia Ceriani 38  
 Silva, Susana 44  
 Šimić, Ivan 33  
 Smit, Martin 11  
 Stamenkovic, Vanja 8  
 Szakács, Éva 42  
 Tenzer, Heike 10  
 Thiébaud, Mélanie 45  
 Toulouse, Catherine 36  
 Valcárcel Lago, Sabela 41  
 Vangelisti, Roberta 35, 39  
 Veldman, Sarina 11  
 Watters, Catherine 45  
 Weiger, Nóra 9  
 Wilfling, Jonathan 16  
 Zieleman, Willem 18  
 Zsigmond, Vince 20  
 Żygala, Elżbieta 29

## CONGRESS COMMITTEES

### SCIENTIFIC COMMITTEE

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**Andreas Berger**, Natural History Museum Vienna, Austria

**Martin Krenn**, Natural History Museum Vienna, Austria

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### ORGANIZING COMMITTEE

Head: **Daniel Rohrauer**, Austrian Federal Gardens and **Petra Scherzer-Zwinz**, Austrian Federal Ministry of Agriculture, Forestry, Regions and Water Management

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**Tim Entwisle**, Royal Botanic Gardens Sydney, Australia

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**Claudia Gröschel**, Austrian Federal Gardens, Austria

## TECHNICAL ORGANIZATION

**Petra Scherzer-Zwinz** in collaboration with **Daniel Rohrauer** and **Claudia Gröschel**



## Monday 2024-07-29

- 09:00 – 10:00 Welcome addresses  
**Norbert Totschnig**, Austrian Federal Minister of Agriculture, Forestry, Regions and Water Management  
**Dalila Espírito Santo**, Portugal, Head of Organization of the 1st ICHBG 2021, University Lisbon  
**Tim Entwisle**, Australia, International Association of Botanic Gardens (IABG)  
**Gerd Koch**, Austria, College of Horticulture and Austrian Federal Gardens  
**Katrin Vohland**, Austria, Natural History Museum, Vienna  
**Michael Kiehn**, Austria, Botanical Garden, University of Vienna
- 10:00 – 10:30 **Keynote: Isabelle Glais**, Botany, history and biodiversity:  
New horizons for the Jardin des Plantes de Paris (*Jardin des Plantes, France*)
- 10:30 – 10:50 Coffee break

### Session I: The transition of historical botanical collections

- 10:50 – 11:10 A phoenix from the ashes – the transition of the Court Gardens to the Austrian Federal Gardens  
*Claudia Gröschel (Austrian Federal Gardens, Austria)*
- 11:10 – 11:30 Paleis Het Loo: From royal showcase towards a decolonized botanical garden  
*Renske Ek (Palais Het Loo, Netherlands)*
- 11:30 – 11:50 The role of curation in Botanic Gardens: platforms for environmental and social transition  
*Kevin Frediani (Botanic Garden, University of Dundee, Scotland)*
- 11:50 – 12:10 Art and art-projects at the historic Botanical Garden of the University of Vienna  
*Barbara Knickmann (Botanical Garden, University of Vienna, Austria)*
- 12:10 – 13:45 Lunch
- 13:45 – 13:50 Restoration saga of the only Croatian public greenhouse  
*Vanja Stamenkovic (Botanical Garden, University of Zagreb, Croatia)*
- 13:50 – 13:55 The impact of climate change on the living collections of the Botanic Garden of the University of Pisa  
*Marco D'Antraccoli (Botanic Garden, University of Pisa, Italy)*



- 13:55 – 14:00      The Botanical Garden in Halle (Saale) through the ages  
*Heike Tenzer (State Office for Heritage Management and Archaeology Saxony Anhalt, Germany)*
- 14:00 – 14:20      Decolonizing the Dutch Botanical Gardens  
*Sarina Veldman (Hortus Botanicus Amsterdam, Netherlands)*
- 14:20 – 14:40      A Healing Place: The modern Botanic Garden as a reimagined Physic Garden  
*Tim Entwisle (International Association of Botanic Gardens, Australia)*
- 16:00 – 18:00      Natural History Museum: visit of archive and collection of botanical illustrations, herbarium and rooftop
- 18:00 – 19:30      Natural History Museum: Poster session and cocktail reception

## Tuesday 2024-07-30

- 09:00 – 09:30      **Keynote: Franz Essl**, Horticulture in the age of globalization, biological invasions, and climate change (*University of Vienna, Austria*)

## Session II: Horticulture – Challenges in daily horticulture practice

- 09:30 – 09:50      The transfer towards working with the environment in a historical garden  
*Willem Zieleman (Palais Het Loo, Netherlands)*
- 09:50 – 10:00      Theory and practice of recreating exotic plant collections in European historic gardens  
*Jacek Kuśmierski (Museum of King Jan III's Palace at Wilanów, Poland) and Katarzyna Hodor (Cracow University of Technology, Poland)*
- 10:00 – 10:20      Charm and harm of the Indian lotus (*Nelumbo nucifera*) in a historic landscape garden  
*Vince Zsigmond (National Botanic Garden Vácrtót, Hungary)*
- 10:20 – 10:40      Coffee break



10:40 – 11:10      **Keynote: Sanja Kovačić**, Zagreb University Botanical Garden: 135 years of sharing botanical knowledge, high hopes and practical challenges (*University of Zagreb, Croatia*)

### Session III: Science – Sharing of knowledge

11:10 – 11:30      Heritage skills in historic gardens: Conserving for the future  
*Kate Nicoll (gardenconservation.eu, Norway) and Christian Grüßen (European Garden Heritage Network, Germany)*

11:30 – 11:50      Herbaria: Essays for a material and postnaturalist memory of botany and film  
*Paula Bertúa (Leuphana University, Germany)*

11:50 – 13:00      Lunch

13:00 – 13:20      Cultivation of sensitive plants at Belvedere Garden  
*Michael Knaack (Austrian Federal Gardens, Austria)*

13:20 – 13:40      The Hungarian plant names in Carolus Clusius's works in the context of his botanical program  
*Áron Orbán (Tokaj University, Hungary)*

13:40 – 14:00      Coffee break

14:45 – 16:00      Back-up collection at Schönbrunn Palace Garden

16:00 – 18:00      Palmhouse Schönbrunn

19:30      Conference dinner, Palmhouse Burggarten



## Wednesday 2024-07-31

09:00 – 09:30      **Keynote: Santiago Madriñán**, The making of a historical botanical garden  
(*University of Bogotá and Botanic Garden Cartagena, Colombia*)

### Session IV: Historical botanical gardens

09:30 – 09:50      The Puccini Garden in Tuscany: a celebratory landscape park and  
its 19th-century botanical cultivations  
*Costantino Ceccanti (Musei del Bargello, Florence, Italy)*

09:50 – 10:10      Arboretum Trsteno of the Croatian Academy of Sciences and Arts, the garden  
with the historically longest continuity on the territory of the Republic of Croatia  
*Ivan Šimić (Croatian Academy of Sciences and Arts) and Mara Marić (University  
of Dubrovnik, Croatia)*

10:10 – 10:30      How Botanical Gardens helped to shape international trade law  
*Elena Falletti (Carlo Cattaneo University, Castellanza, Italy)*

10:30 – 10:50      **Coffee break**

10:50 – 11:00      Luca Ghini and the origin of modern Botany: an Italian history of  
academic botanic gardens  
*Marco D'Antraccoli (Botanic Garden, University of Pisa, Italy)*

11:00 – 11:20      Methods of visually experiencing lost historical Botanical Gardens  
*Dominik Lengyel (Brandenburg University of Technology Cottbus-Senftenberg,  
Germany)*

11:20 – 11:40      The historical Botanical Gardens in Algiers, Kiev and Tunis and their cooperation  
projects with the Republic of Austria  
*Brigitte Mang (University College for Agricultural and Environmental Education,  
Vienna, Austria)*

11:40 – 12:00      Building the Botanical Garden for Roma Capitale: history, architecture, characters  
*Giulia Ceriani Sebreghondi (University of Campania "Luigi Vanvitelli", Italy)*

12:00 – 13:00      **Lunch**

13:00 – 13:20      The Botanic Garden and Museum of the University of Pisa: five centuries  
of botanical research, from simples to new frontiers  
*Marco D'Antraccoli (Botanic Garden, University of Pisa, Italy)*

13:20 – 13:50      **Conclusion: Michael Kiehn**

13:50 – 14:10      **Coffee break**

15:15 – 16:45      Botanical Garden University of Vienna

16:45 – 18:00      Back-up collection Belvedere Garden

18:00      **Farewell**

