# Learning from the Orchid and Tropical Collections in Belgium and the Netherlands

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Merlin N° 852
2nd – 9th June 2024

## Aims of the Project

This trip entails a focused exploration of several prominent botanical gardens across Belgium and the Netherlands. The primary objective is to gain insight into how they maintain, develop, and curate their tropical collections, with a particular emphasis on orchid collections.
Given the current British plant regulations, maintaining strong relationships with European botanical institutions is imperative. By learning from our European counterparts' experiences and sharing our own, we aim to streamline future exchanges and partnerships. Therefore, a secondary objective is to establish connections with the horticultural and curatorial teams from the botanical gardens in Belgium and the Netherlands, facilitating knowledge exchange and laying the groundwork for future collaborations.
Upon completion of the tour, we anticipate gaining insights into other horticultural and curatorial practices that may benefit current British practices. Additionally, we intend to document our experiences, share them with our colleagues and the professional community, and incorporate them into our workflows, thereby enhancing collective understanding and collaboration opportunities within the horticultural community.

## Introduction

My passion for orchids and their cultivation has been a lifelong pursuit, profoundly shaping my career in horticulture and steering my specialisation towards glasshouse cultivation. During my tenure of five years at Kew, I have looked after the orchid collection both in the tropical nurseries and in the display glasshouses, maturing a whole round understanding of the importance of this family's representation in botanical gardens. Visiting world renowned orchid collections and meeting the staff who looks after them is a unique opportunity to widen my knowledge on orchid cultivation and living collections management, while commencing relationships and collaborations with other botanic gardens.
Birmingham Botanical Gardens has a rich history intertwined with orchids, which have been an important part of its collections and once regarded as among the best in the UK. Regrettably, years of neglect have led to the depletion of this collection. However, one of our objectives is to revive it through the forthcoming restoration efforts.
In my role as Senior Glasshouse Horticulturist at Birmingham Botanical Gardens, I am poised to rejuvenate living collections lost or depleted over the past half-century, as part of a comprehensive restoration project encompassing our listed Victorian glasshouses and nurseries. In this context, visiting other tropical collections and exchanging experiences with colleagues abroad promises to provide not only a broader spectrum of methods and practices but also deeper insights into the opportunities and accomplishments achievable at BBG. I am optimistic that these travels will spark fruitful collaborations aimed at enhancing our glasshouse collections and their contribution to the broader landscape of plant conservation.

## Sites visited

Belgium:
Plantentuin Meise
Ghent University Botanic Garden

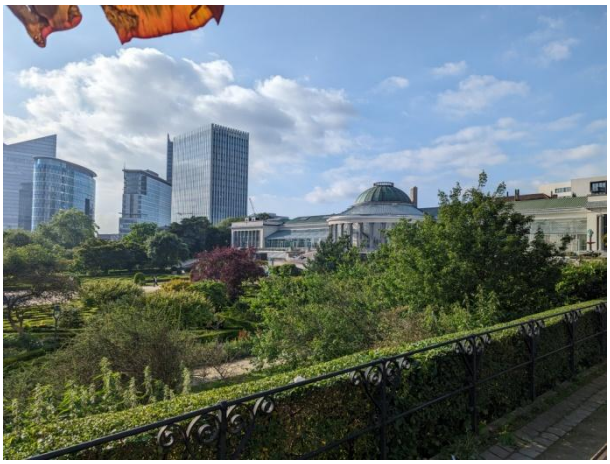
The Netherlands
Hortus Botanicus Amsterdam
Hortus Botanicus Leiden
Utrecht University Botanic Garden

## Acknowledgments

I would like to thank all the staff that, throughout the different institutions, was ever so welcoming and generous with their time, showing us around and talking about their gardens, collections and work with us. If this travel has been a success in especially thanks to them all. I would also like to thank the Merlin Trust for helping to make this project possible.
And a special thank you to Sal and Arnau for being such great companions for a plant filled trip.

**Plantentuin Meise**

The Meise Botanic Garden, previously known as the National Botanic Garden of Belgium, is located on the grounds of Bouchout Castle in Meise, just north of Brussels. Renowned as one of the world's largest botanical gardens, it boasts an extensive collection of living plants with more than 30,000 accessions representing approximately 18,800 taxa (about 6% of the known species of vascular plants) and a herbarium containing approximately 4 million items. The garden was relocated to its current location in 1958 from central Brussels, where its former site is now known as the Botanical Garden of Brussels: these gardens are now an open green space for the city with its layout still mostly intact and the monumental glasshouse range used as venue for events.



View over the Botanical Garden of Brussels

Plantentuin Meise has over 1.5 hectars of glasshouses, with tropical plants' collections as extensive and varied as they are impressive both in the nurseries as well as in the large conservatory with almost 10,000 plant species from all tropical, subtropical, and warm temperate regions of the world, 10% of which are not found in any other botanical garden.

The newly built nurseries, called the Green Arc, spans for 7 600 m² combining modern high technology and the best horticultural practices. 22 different zones of 4, 6 or 10 metres high make up the complex in which the energy consumption has been halved compared to the previous greenhouses.

A 10 meter tall zone dedicated to the a *Musa* trial

Built in a listed landscape that includes protected woodlands, the nursery was planned keeping in mind its soroundings and organising it accordingly: the woodland itself creates a gradient of shade that is reflected on the disposition of the collections inside with plants that need highest light in areas far away from the trees and collection that require more shade closer to the trees.

Nursery tech highlights: propagation tent, fans and netted vents

To avoid leaf litter entering the nurseries, all vents are closed by foldable nets with gaps small enough to stop debris from entering but large enough to allow free passage of some insects. This little shrewdness allows the genetic of the pests' population inside the glasshouses to be constantly mixed and refreshed, avoiding the growth of populations resistant to pesticides. These are seldom used to control pests in the collection while integrate pest control is preferred and native species of predators and parasites are allowed access through vents too. Plants are cultivated in the best location possible resulting in strong healthy specimens that, overall, become less subjected to pests.

Under the building a water tank able to collect 900m3 of rainwater that is caught from several buildings (not only the glasshouses). This water reservoir serves all the glasshouses (with potential use in the gardens as well) and is able to provide water up to a month of complete drought.

Examples of mixed flooring in the nurseries

In each zone, two layers of screens and shading allow optimal heat retention in winter with great effect on the energy consumption, as well as a perfect control of the light level. Fans are placed horizontally other than vertically to optimise the air movement and have uniform humidity throughout the space. In the more humid zone, a misting system with very fine nozzles controls the humidity in addition to a 'rain system that gets activated regularly to wash the leaves especially of taller specimen. Flooring is mixed, using both concrete and open floors under benches or pots as this had been demonstrated effective in buffering the changes of the environmental conditions when the vents or shading open. Propagation tents are fitted with grow lights and ultrasonic fogging creating the best environment for a successful propagation. The climate control of the glasshouses is controllable on site as well as on remotely via app, allowing immediate response over issues. Overall, the standard of these nurseries were highly impressive.

Pristine work environment

Collections inside each zone are organised based on ecological needs, grouping together plants that need same or similar growing condition rather than dividing purely on collection type (the orchid collection was hence spread throughout the zones). Each staff member is responsible for one or more collections in the nurseries and a display area, hence encouraging collaboration and team work rather than isolating individuals or teams.

Orchids in the nursery collections

The nurseries were built with an amazing area accessible by the public: this was wanted not only to show a little bit of behind the scenes areas, but also to engage the visitors on the mission of the botanical gardens, addressing the issues like plant conservation, plant diversity and species loss.

Visitors area in the nurseries

A large courtyard on two levels allow visitors to see into a few of the zones, looking at the extensive plant collections with small, focused displays with ad hoc interpretation including some about their large collections of the genus *Musa*, *Euphorbia* (50% of which threatened in the wild) and of the family Rubiaceae, Cactaceae and Madagascar flora.

Views inside the nursery from the area open to visitors

Visitors' window into the seed bank

Not far from the nursery, the building hosting the seed bank also has a window that allows visitor to see into the room, with a timed switch to turn on the lights and interpretation showing endangered native species.

The Plant Palace

The Plant Palace is a complex of several interconnected glasshouses each hosting a different biome, from the arid desert to Mediterranean and tropical rainforest all filled with remarkable specimens. In a wing of the tropical rainforest a remarkable treetop walkway bring the visitor up in the canopy to appreciate hundreds of epiphytic plants: orchids, bromeliads, Araceae, Cactaceae, *Peperomia*, Hoya, Acanthaceae, and Gesneriaceae, representing 15% of the collections under glass.

Views and highlights in the Plant Palace's displays

Views and highlights in the Plant Palace's displays

Unfortunately part of the complex was not accessible as they were installing insulated glass.

The grounds of the Plantentuin span for a staggering 92 hectares soroundings Bouchout Castle. With more than 7,000 different species of plants the Gardens includes extensive collections of conifers, oaks, wild roses and bamboo, beautiful horticultural collections of magnolias, rhododendrons, hydrangeas, peonies, and maples and various thematic collections. All of these collections are embedded in what was the estate of the castle, in a mosaic of curated gardens, large breathful meadows and preserved woodlands.

Outdoor views

Outdoor views

**Ghent University Botanical Garden**

Not far from the historic city centre, more than 10,000 plant species thrive on the 2.75 hectars site of Ghent Botanic Garden that include also an herbarium of over 300,000 specimens and a seed bank.
Each corner of the gardens is filled with taxa with a remarkable rock garden right at the entrance enticing you to explore it and an arboretum that covers most of the outdoor area on the side of an ample pond.

Rock Garden and Arboretum

The glasshouses open to the public comprise 4 main environment spanning overall over 4000m2: arid, tropical, subtropical and Victoria greenhouse.
The square Victoria pond spans for most of the glasshouse space, with a spectacular specimen of the Longwood hybrid (Victoria amazonica x Victoria cruziana) growing happily in the centre. Marginal or water loving taxa frame the pond all around it with a mixed tropical beds planted on the other side of the path with lush climbers, epiphytes and hanging baskets.

The Victoria house

This zone leads to the other tropical glasshouse, much taller than the neighbouring Victoria glasshouse, tall specimen of trees and palms find here the perfect space to grow. The visitor is welcomed by a view over the whole zone from a mezzanine that host part of the collection of Dracaena and majestic specimens of *Amorphophallus titanum*.
Under the mezzanine, the planting uses shade loving tropical with some extra artificial light provided. The wandering path brings you all around the zone, with so much for the eye to explore.

The tropical zone

The next glasshouse hosts the subtropical and temperate collection. Equally tall, mature specimens are allowed to grow to full capacity with several ones very old including a *Wollemia nobilis*, planted indoor and only later found to be hardier that it was thought.

View and highlights in the subtropical zone

Behind the scenes, several smaller glasshouses are dedicated to specific collections. Among a few hosting mixed tropical collections with some unusual tax, a couple dedicated to bromeliads and epiphytic cacti, a true highlight was the fern glasshouse ecstatically curated in a way that made it look like a proper display glasshouse. The humid environment, made possible by some on- point fogging system and a water feature, was perfect for all sorts of ferns and allies making it an overall brilliant glasshouse.

Fern and bromeliads zone

Several glasshouses were dedicated to the extensive orchid collection, from cool growing to warm tropical. Even in these spaces the humidity was very high and reflected on the health of the plants that had some of the most amazing root systems ever seen. The variety in the collection was remarkable with many plants in bloom and large, old specimens.

Orchids zones' views and highlights

**Hortus Botanicus Leiden**

The Botanic Garden of Leiden is the oldest botanic garden in the Netherlands and one of the oldest in the world, founded in 1590 as a Hortus Academicus of the university. Nestled in the heart of the historic centre of the city, it has been expanded throughout the years to reach today's 4 hectares; in 1736, the garden expanded beyond the moat that once bordered it, and nearly a decade later, a stone Orangery was constructed on this new land. This Orangery, completed in 1744, has served, and continues to serve, to shelter potted collections of plants that would not otherwise survive the harsh Dutch winters. Over time, the Hortus gradually extended its grounds towards and along the Witte Singel, the river the flow across the city. However, this expansion came with some sacrifices: in 1857, part of the garden was relinquished for the construction of a new observatory, which still stands in the same location today. The Hortus 'most recent expansion occurred in 2011, when the garden surrounding this old observatory was brought back under its management. Many of the trees growing in the gardens date back to the early 18$^{th}$ century with the oldest tree, a specimen of *Liriodendron tulipifera*, dating back to 1716.

1785 *Ginko biloba*

To accommodate tropical plants, greenhouses were constructed in the Hortus at an early stage. The earliest of these was established around 1680, and over the following centuries, many small greenhouses, both heated and unheated, were gradually added to the garden. By the 19th century, specialized greenhouses dedicated to orchids, ferns, palms, cacti, and bromeliads had

been built across the grounds. In 1870, the cast-iron Victoria greenhouse was erected, specifically designed for the *Victoria amazonica* which first bloomed there in 1872. Although this greenhouse was once a centerpiece of the garden, it no longer exists today. The construction of a new heated greenhouse complex began in 1937 in place of the older glasshouses.

The Winter Garden

Nowadays, the extensive collection of tender and sub-tender plants is still moved outside from spring to autumn, but sheltered during the winter months in the new Winter Garden, a tall glasshouse that in addition serves as welcome area for visitors. This structure has, other than the floor space to accommodate the many large planters, also a couple more explorable levels that host a couple of smaller collections (including carnivorous plants, cacti and succulents) used to address topics such as conservation and plant adaptation. This space, as well as the old Orangerie, are used to host events and hired as venues.

*Heteropteryx dilatata* and *Epipedobates anthonyi* in the tropical rainforest

The tropical glasshouse range was renovated in 2013. Most of the tropical collection is on display and accessible by visitors, even rare taxa are put on display as soon as a backup is ready in the back house glasshouses.
The largest of the glasshouses host the tropical rainforest: winding paths allow visitors to explore the dappled shade undergrowth created by tall trees, shrubs and vines whit the overall experience enhance by the free-roaming, rather vocal, tree frogs (*Epipedobates anthonyi*) that live there. In addition, a treetop walkway brings the visitor up among the canopy where with some luck they can spot the alien looking jungle nymphs (*Heteropteryx dilatata*). Both these two animals were introduced to control pests: the tree frogs as they eat them, the jungle nymphs as their feeding off the leaves trigger the natural defensive mode (production of chemicals) that results in higher resistance to pests. The horticultural approach to the display house is really organic: no pesticides or chemicals are used (as they would harm the animals that live there), and biocontrol is the only measure to contrast pests. Feeding is also highly reduced to avoid the exuberant growth that is common in tropical plants, aiming to create an environment that is as balanced as possible.

*The Victoria house*

The second large glasshouses host the tropical pond: here the giant waterlily, Victoria cruziana, surrounded by colorful tropical *Nymphaea* and other aquatic plants including a couple of large mangrove. These two spaces are connected by a planted corridor and a smaller glasshouse, were the collection of mixed tropicals is kept: here, hundreds pots and baskets of Araceae (including a notable collection of the genus *Amorphophallus*), Rubiaceae, Ericaceae, *Medinilla* and *Nepenthes* are both collection and an effective display. Baskets are suspended with cables and can be lowered with a clever system of manual winches, allowing easy access to the plants. Something remarkable and educational was a series of ant plant (genus Myrmecodia) cut open to show the inner system of galleries that can be colonized by ants. A humongous specimen of *Grammatophyllum speciosum*, the largest orchid in the family, is also displayed here, towering the whole zone.

Highlight of the mixed collections display

On both sides of the corridor are located glasshouses dedicated to the extensive collection of orchids, counting over 4.000 taxa mainly from Asia and south East Asia. Most of the collection, that includes many rare species and still unidentified or undescribed plants collected from the wild, is hosted in these glasshouses accessible by visitors. Theft, although it happens, is not considered a major problem as the important taxa are duplicated in off limits glasshouses and the staff often try to share surplus of rare plants so that they can become common in cultivation contrasting theft itself and the wider wild poaching.

The orchid zones and highlights

Behind the scene, the glasshouses accessible only by the staff continue to offer a seemingly never ending array of plant collections, from rare orchids to *Hoya*, *Nepenthes* and Gesneriaceae. Overall a really impressive tropical collection.

Highlights from behind the scene and Ophrys apifera in the outdoor meadow

Despite the confined space, the gardens offer a variety of thematic displays, from the classic systematic gardens to a woodland fern garden and a rose garden. Notable was the Japanese Garden built in honor of Philip von Siebold, a doctor that was the first one able to export and introduce plants from Japan in the 19th century, a time in which the far east country was still very much closed and secretive towards the western world. Some of the trees that it brought to the garden are still growing here. A large pond was recently modified to increase the amphibian wildlife: where before carps and other fish were not allowing frogs and newts to establish a population in the gardens, limiting their access to one side of the pond as resulted in a successful wildlife increase. Walking along the perimetral path leading to the old observatory, it was surprising to see wild population of *Nymphaea alba* growing in bordering river right in the center of the city. Around the observatory, section of the lawn was kept as a wild meadow to protect an autochthonous population of bee orchids, *Ophrys apifera*. Around the corner on a south facing bank of the river, the area had been recently redeveloped as a Mediterranean garden with drought tolerant plants with areas planted to replicate a wild maquis, juxtaposed to neatly lined 'fields' of lavender.

Fern Garden and Mediterranean Garden

**Hortus Botanicus Amsterdam**

Covering only 1.2 hectars, the Botanic Garden in Amsterdam was founded in 1638 as a Hortus Medicus to grow medicinal plant used by pharmacists and for the teaching in university medical courses. By the end of 1646, the Hortus hosted almost 800 species of plants already.
Nowadays the garden is an independent organisation mostly self funded with a little help from the municipality: when the university wanted to sell the grounds, the neighbours came together and bought it to save it from a possible ill fate and it still continue its mission of education with 7 horticulturists looking after the whole site. A dozen volunteers help the horticulture staff with basic and general tasks however a few with specialised knowledge assist with more specialised tasks.
Classic presence on historic botanic gardens, both a systematic collection and a medicine garden take a large portion of the outdoor area, surrounded by a small arboretum with rather old specimens including a Turkish hazel, *Corylus colurna*, that was planted in 1795.

Medicine Garden and Arboretum

The Hortus collections mainly concentrate on taxa from Africa and particularly South Africa and the Cape.
The Palm House was built in the 19$^{th}$ century and today houses a collection tender plants kept in large, wooden containers giving scope to the space to be used as a venue. Only a few trees are planted in floor beds. Remarkable is the collection of Cycads, some of them centuries old like a 300 years old *Encephalartos altensteinii*, with many specimens coming from costume seizures. This fascinating group of plant is used to flag the issues of plant poachers and conservation in and ex situ.

The Palm House

The large Conservatory was undergoing a full restoration in order to make it more energy efficient. The project had started early in the spring with the plants being removed and relocated to a rented glasshouse in Belgium where the plants were being looked after specialist nurserymen as well as being periodically checked by the Hortus staff. Plants had been root pruned 9 and then 3 months prior to be moved, done also by a contracted company.

The empty frame of the Conservatory under restoration

Only the bare, domed metal structure was standing with workers busy all over to deliver the project in time. The major change is substituting the panels of glass with a double layer of plastic for better insulation and connecting the heating system with the heat pump already present in the gardens and used for other buildings. The heat pump is connected to Amsterdam's Hermitage ATES (Aquifer Thermal Energy Storage), a method that allows to store energy underground as warm and/or cold water: the surplus of heat at the hermitage is exported to the botanic gardens with water arriving at 16-17°C that is then heated up to 55°C and used to heat the glasshouses in a more sustainable way. The cold water resulting from the heating is then returned to the hermitage for cooling the halls. This method also heats up one of the garden water feature allowing the giant waterlily, *Victoria cruziana*, to be grown outdoor during the summer months.

The outdoor Victoria pool

One section of the glasshouse though had not being emptied from the plants, and only stripped of its covers: the arid display that had been renovated not long ago, was being kept under a temporary scaffolding structure with grow light, temporary heating and dehumidifiers with success. The timing of the restoration had been planned carefully, aiming to have the new cover of the whole conservatory installed before November of this year, fully reopening in 2025.

The arid zone maintained and protected during the restoration

Two smaller glasshouses in the heart of the garden host a butterfly house and a linked service house. A mixed permanent planting combines plants used by humans (tropical fruits and spices such as Vanilla) and flowering plants for butterflies to feed on. 6 species of butterflies are kept all year round and grown from caterpillars using host plants (mainly *Passiflora* species) in the service glasshouse.

The butterfly house

The nursery building is located in an adjacent piece of land on the other side of a canal. Here the backup collection as well as anything of medium-small size that could be stored from the display house under renovation. The collections specialise in the flora of south Africa and cape provinces with a high diversity in bulbs, *Erica*, *Pelargonium* and Proteaceae. All the zones in the nursery were fitted with grow light for better growth during the winter months.

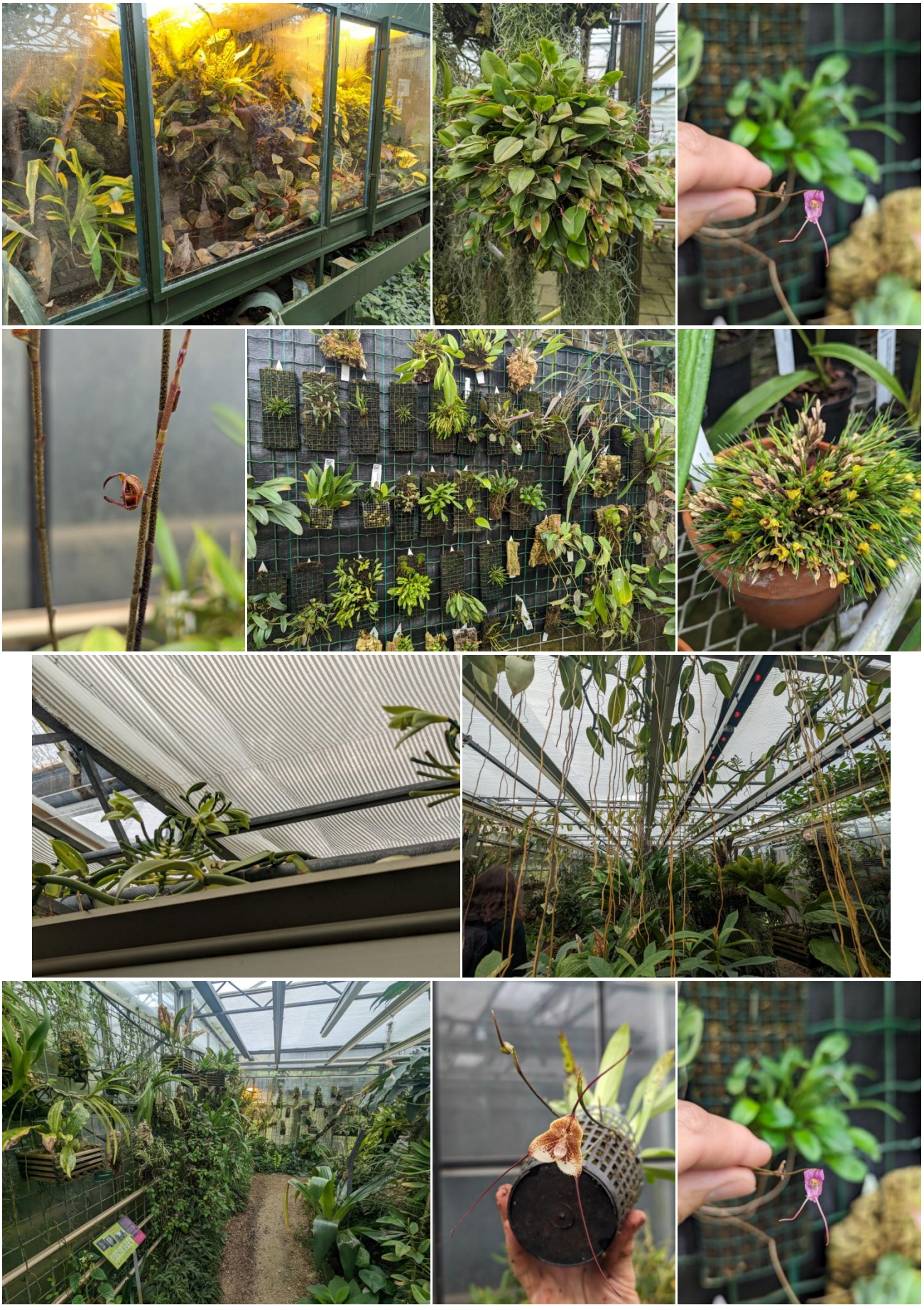
Highlight from the nurseries

**Utrecht University Botanic Garden**

The Utrecht University Botanic Garden is the largest academic botanic garden in the Netherlands, covering over 10 hectars around Fort Hoofddijk not far from the city with a sister garden nearby at Von Gimborn Arboretum.
The extensive glasshouse range hosts the tropical collections that mainly focus on plants from the northern part of the neotropics (South America). The display areas open to visitors were retrofitted as best as possible from an original nursery plan, but there are plans for a glasshouse renovation to create an optimal, energy efficient completely new structure. An unusual problem that affects the permanent display planting is the high ground water table in winter that causes taxa to suffer or even perish due to 'cold feet'. Many subtropical plants are kept in containers spending the summer outdoor and moving inside the glasshouses during the winter months.

Views of the tropical and subtropical displays

Different areas cover a range of climate from tropical rainforest to subtropical/temperate a cool growing species from high elevation. The planting used the space well, with lush displays combining trees, shrubs and climbers with plenty of epiphytes. Araceae, Zingiberaceae and Bromeliaceae were well represented in their variety in the displays with smaller zones specifically dedicated to the display of orchids that were one of the main collections. With their focus on the neotropics, the orchid collection was teaming with Pleurotallidinae and *Maxillaria* with many specimens of remarkable size encompassing over 600 taxa and almost 1000 accessions. In one of these zones, an awesome *Vanilla planifolia* was growing close to the roof with dozens of blooms (probably the best specimen I have ever seen). A few terraria were used to display small and valuable species, easily subject of theft.



The orchid collection and highlights

Even here the use of IPM is used to control pests and further, they are trying to control a vector of movements of the pests itself: ants. Very smart and effective traps, consisting of small lab vials filled with a syrupy solution of borax, were position on plants known to host ant colonies in attempt to stop them to move pests around plants in the collection.

The bromeliads collection and highlights

Further collection glasshouses not open to visitors hosted a staggering diversity of Bromeliads, a second main collection of the gardens with over 1000 accession covering almost 500 taxa.

Other notable collections included one of epiphytic cacti with over 190 accessions and a national collection of the genus *Aeonium*.

Epiphytic cacti and *Aeonium* collections

The glasshouse range included also a butterfly house with a few species bred all year round.

Wildflower meadow and Discovery Gardens

The outdoor gardens are incredibly well kept and overall though and designed to engage and inform the visitor. The Discovery Garden comprehends a collection of small, thematic display on raised beds for accessibility, each with a dedicated interpretation. The themes spanned from plants used as dyes or in Italian food, medicinal plants organised by the part of the body they treat, sensory displays, and plants with the same type of inflorescence to reconstructed fragment of the native vegetations. Some of these displays are permanent while others change each year following the education plans.

Discovery Garden and Bamboo Garden

The newly designed and planted Evolution Garden, called The Green Time Machine, already accessible to visitors but officially open in June 2025. The innovative design of the winding paths is inspired by fractals—mathematical patterns that repeat infinitely, allowing endless zooming into the same structure. In the new Evolution Garden, these fractal-inspired pathways symbolize the continuous nature of evolution. As visitors stroll through the garden, they journey from the origins of plant evolution, starting with single-celled algae, to the rich diversity of flowering plants we see today. This garden takes the place of the previous systematic garden organised in family beds, to reflect the latest scientific insight on plant evolution.

The Green Time Machine

The outdoor highlight however must be the renowned Rock Garden. One of the largest rock garden of Europe, it was built in the 1960s over the bunkers of the fort with over 2,100 tonnes of rocks resulting in what looks fledged, scaled down, mountain peak. Paths and steps allow visitors to explore the rock garden in its entirety leading all the way to the top and meandering down through the rich planting not dissimilarly from a trek in the mountains.
At the bottom, a native Atlantic bog and a woodland garden seamlessly merge with the rock garden, creating one single landscape.

Views of the Rock Garden

Atlantic Bog and Woodland Garden

Crevice gardens are cleverly used as retaining walls around the tufa house, repurposing old paving or concrete slabs. This small glasshouse offer shelter for taxa that require extra protection from excess rain. Some other crevice displays were placed near the cafe, not far from the rock garden: here this technique of growing alpines meets art: round spheres and tall beds hosting large cushion-forming specimens and small conifers show the true potential of this technique.

Crevice Gardens

## Conclusions

This trip to the Netherlands and Belgium has proven to be an invaluable experience.
I had never been to any of the gardens that I visited during this week of travels and the opportunity to see and explore their orchid collections, tropical displays, and the impressive glasshouses and nurseries (especially all the beyond the scene areas) has provided rich insights that will enhance our own practices at Birmingham Botanical Gardens. It was particularly comforting to see how we all face similar horticultural challenges and problems and, at the same time, witnessing excellence in the field that was inspiring and motivating to strive for higher standards in my workplace. It was interesting to see how the botanic gardens, especially in the Netherlands, were co-operating as one to safeguard an overall larger plant diversity, each with its specialised collections.
Gathering knowledge and insights on nursery, display and collection management standards, practices, and technology in use was a key highlight of the trip, providing valuable information to refine our processes and adopt more efficient methods. Additionally, the opportunity to learn from the restoration processes of other glasshouses was enlightening on the challenges and possibilities lying ahead with our own restoration at Birmingham.
The exchange of experiences and knowledge with our colleagues was immensely beneficial, introducing us to new and sometimes innovative approaches and techniques. Networking was especially fruitful, laying the groundwork for future collaborations that will be hopefully mutually beneficial. These connections, combined with the knowledge gained, have equipped me with new perspectives and strategies that will greatly benefit my ongoing and future projects.

## Breakdown of costs

Transport £384.68
- Eurostar £270
- Public transp. £114.68

Accommodation £339.97
- Brussels £47.95
- Ghent £49.57
- Leiden £55.51
- Amsterdam £56.78
- Utrecht £46.82
- Arnhem £83.34

Food £270
Travel insurance £30

TOTAL £1024.65