

## A week in the most biodiverse corner of Earth.

### 17th - 21st June 2024 Kew Nursery

As an Elisabeth Hess Scholar at Tresco Abbey Gardens we are encouraged to undertake a placement at another garden or nursery. I have long wanted to experience working behind the scenes at the giant of the industry Royal Botanical Gardens Kew. Tresco estate kindly funds our travel as students however accommodation is not funded so I am immensely grateful to the Merlin Trust for funding my accommodation and making the week possible.



Prior to a placement at Kew, if asked where the most biodiverse place on the planet was, I would have hazarded a guess at South Africa's Klein Karoo or the rainforests of Brazil. I would not have said London.

Kew's Nursery contains 10,000 plants contained in 21 climate zones ranging from arid to tropical moist. The following is a diary of all I saw and learned during a week spent working in the Nurseries with the myriad of plant genera and species.

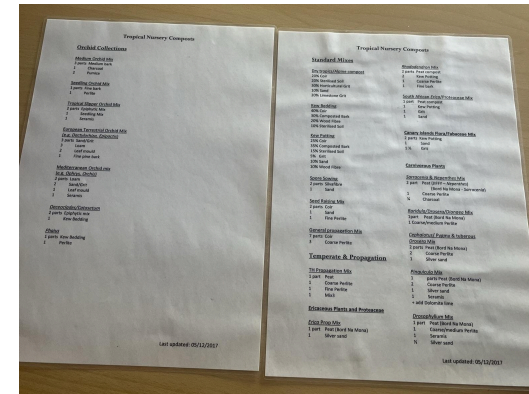
### Day One - Arid Zone 16



Day one began with a brief tour of the Nurseries 21 zones, the stark contrast

between the sweltering arid zones and humidity of the tropical moist and orchid zones was stark. The computer systems in place to keep these zones were complex, constantly monitoring the temperature, opening and closing vents to maintain the correct level of humidity, alerts are sent to members of staff if temperatures exceed or fall below the desired range.

I enquired regarding the compost mixes used to care for such a diverse range of plants from equally diverse habitats, the following is a list of the various nursery mixes.



Following the tour I shadowed a diploma student Anya applying bio control. Glasshouse environments are particularly susceptible to pest issues so regular application of bio control is essential to the preservation of the collection. Also essential to the health of plants within a glasshouse setting is shading, Kews nursery glasshouses have been

undergoing renovation of their shading system and grow lights over recent years. It was the turn of the Arid Zone 16 on my first day which required myself and Silke to move an entire bench of Opuntia to allow the technicians access to the shading. Opuntia are particularly tricky to handle due to having both spines and small prickles called glochids which very readily attach to you.



My fleece didn't survive the day and had to be thrown but apart from a few glochids which I think still live in the lining of my boots we made it through the moving without incident.

## Day Two - Arid Zone 16 & 14



Day two I had the great fortune to work with Neil who was so generous with his time and gave me an incredibly informative tour of the arid zones particularly those in Zone 14 which largely consists of Euphorbiaceae.

The three subfamilies in Euphorbiaceae combined include over 200 genera and 6,000 species. The largest of the three subfamilies Euphorbia is housed in zone 14. The collection ranges from succulent Euphorbia species from Africa, Arabia and Nepal and cacti species from America. Neil explained how cacti and euphorbia are

examples of convergent evolution. When plants evolve under similar environmental pressures even if they are from two separate families they can develop similar adaptations.

It was fascinating to see the flower structure on many of the Euphorbias within the collection which had a cyathium, similar to that of Asteraceae. The female flower is in the centre and smaller male flowers around it are surrounded by colourful bracts.

I was also particularly intrigued to see the parasitic plant *viscum crassulae* which parasitises members of the Euphorbia family.





The afternoon in arid was spent repotting Pelargoniums, a particular plant passion of mine. It was interesting to see species such as a Pelargonium gibbosum in summer dormancy having often seen it included in pelargonium displays in the summer months. In a similar way to seeing plants in the wild, seeing plants at Kew being was informative in understanding their natural growth cycles which is extremely helpful when deciding when to propagate. For example I noted whilst at Beth Chatto that there was far more cutting material on gibbosum in the Autumn when we were

taking root cuttings and after my time at Kew I know the reason for this.



The above image shows a Pelargonium in dormancy, the old inflorescence stems forming a cage like structure around the succulent stem to deter browsing animals from attempting to access the moist interior stem. Neil explained that historically these stems have been dead headed by volunteers but that in recent years it has been understood that this a key part of the succulent pelargoniums growth habits in the wild and so are being left this way in a glasshouse setting to show their natural growth habit.



The team in the arid also propagates plants on request for the display glasshouses. I was lucky enough that there was a stock of Pelargoniums waiting to be taken to the Princess of Wales Conservatory which allowed me to get a closer look at them while watering. It was a fantastic opportunity to see and learn more species that I had previously not heard of and can potentially grow in a glasshouse setting in my role as a gardener. A particular favourite was Pelargonium cordifolium as the name suggests it has beautifully delicate cordate leaves.



(*Pelargonium cordifolium rubrocinctum*)

### Day Three - Orchid Unit

Wednesday brought a day in the Orchid zones with the both incredibly knowledgeable and incredibly lovely Bala. In the first couple of hours I was tasked with misting the orchids, they had had a full watering the previous day but it was still necessary to mist them to maintain the right level of humidity in the zone.



After the misting was finished Bala gave me a tour of the two zones. 600 of the accessions in the orchid unit are on the IUCN Red List of Threatened Species. It was incredible to see the critically endangered *Epidendrum montserratense* growing, an epiphytic orchid from the volcanic island of Montserrat and a vast array of orchids from Madagascar including *Angraecum sesquipedale* commonly known as Darwin's Orchid due to his prediction that a at the time not yet undiscovered hawkmoth must pollinate the orchid, this was confirmed 45 years later.



(*Epidendrum montserratense*)



(*Angraecum sesquipedale*)

Following the tour Bala showed me the correct way to repot an orchid, how to make sure the orchid was secure using small stakes and making sure there was adequate contact of the roots with the compost mix. Bala recommended holding the pot by the stakes and if held fast the repotting had been properly done. The orchids I was repotting were part of the Cattleya collection.

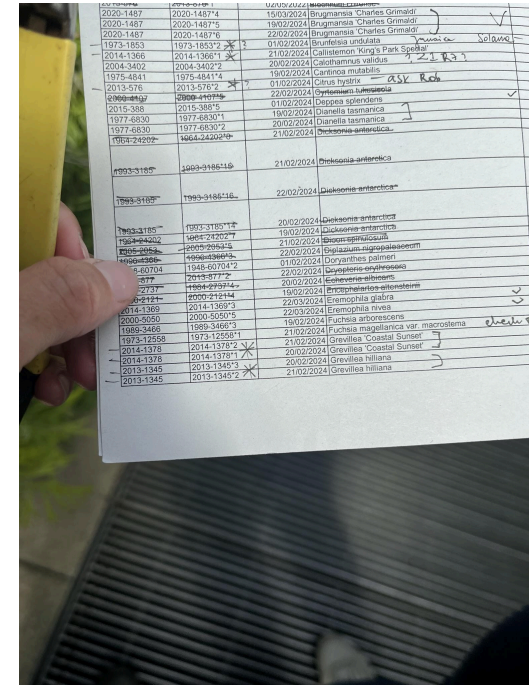
After lunch I worked with Richard who showed me how to remount Bulbophyllum orchids onto pieces of Quercus suber. Using sphagnum moss and cut up pieces of elastic, the best kind is pieces of cut up nylon stockings. The Bulbophyllum is carefully placed against the mount so that it has room to grow in the correct direction, moss is gently placed covering the roots and around the base of the leaves and the elastics would round the cork to hold it all in place. It was lovely work with a distinct feeling of creativity to it.



(Remounted Bulbophyllum tricorne)

### Day Four - Temperate Zone

Day four brought another stark change in climate zone, this time into the temperate zone. This zone included many plants I was familiar with from Tresco including Proteaceae. Our main task of the day was to collect cuttings from the Princess of Wales Conservatory. It was an experience taking cutting amongst the thousands of visitors passing through Kew's glasshouses every day.



(Propagation list for collecting cuttings in POW)

Once collected we headed back to the temperate zones propagation zone to pot them up.

Once the potting was complete I was given a tour of the rest of the temperate zones and carnivorous. Below are a few of the incredible Nepenthes in the carnivorous collection varying from predated on insects to small mammals to having a symbiotic relationship with bats.



### Day Five (Half Day) - Temperate Zone

My final morning consisted of some of some of the smallest pricking out I've done in four years of nursery work, *Jamesbrittenia grandiflora* and *Lobelia boninensis*.



I observed Gosha pricking out seedlings of *Aristida adscensionis* that had been germinated in the Kew laboratories.



Alex kindly allowed me to spend my final hour having a look round the collections myself which was a wonderful chance to immerse myself in the vastness of the collection moving from one glasshouse to another transporting you from continent to continent.

## Reflections -

Firstly I would like to say a massive thank you to the Merlin Trust for funding the accommodation which allowed me to do my placement at Kew, it would otherwise have been impossible. It is such a privilege to be funded and I am time and time again impressed by the funding available for horticulturists.

My week working in Kew Nurseries was an invaluable experience, I am coming to the end of three years of training in Horticulture and working in a Botanical garden was something I had not yet experienced and a week in Kew provided me with a great insight into how different a botanical nursery is from a commercial one, how plants are classified and the importance of preserving different accessions of the same species due to differences in the same species but from different locations. It was both educational and inspiring to see the range of new to me species often within a genus I am familiar with such as Pelargonium.

A big thank you also goes to the team at Kew who were incredibly welcoming and were so generous with their time and their passion for the zones they worked in was so evident. It was a real pleasure to spend a week there.

