

# An Expedition of the Western Cape South Africa

*By Lewis Barrett*

Royal Botanic Gardens  
**Kew**

 **HPS**  
HARDY PLANT SOCIETY  
Gardening with hardy perennials

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## Aims/Objectives

- Observe endemic endangered plant species of the Western Cape in their natural habitat and improve understanding of the conservation threats they face.
- Visit endangered biodiversity hotspots in the region with a knowledgeable guide to review the current threats to individual species within the Renosterveld vegetation types.
- Develop an understanding of why the landscape is so unstable and what steps are being taken to help improve the situation within the Overberg.
- Gain an understanding of the importance of botanic gardens and their collections when helping conservation efforts of endangered species in South Africa and across the world.
- Visit the West Coast National Park to observe the Postberg Flower Reserve in its season of interest.

30/08/2022



Figure 1 *Nymphaea thermarum* at SUBG

At 09:00, I met with Dr Donovan Kirkwood, the curator at Stellenbosch University Botanic Gardens (SUBG) for a tour of the gardens and the collections. Don showed us how he was redeveloping the collections since his takeover in 2018 and is renovating the gardens with intentions to make it become more functional for the university. Many new beds had already been installed into the original layout of the gardens, but which now provided space for a more taxonomic system for plant families to be presented in a more educational way. *Aloe* and *Protea* beds provided strong displays presenting the range of species within the genera. Trial beds had also been created by Don's team for growing 'useful' plants, which have significant economic and medicinal importance.

Three 1940's glasshouses are central to the gardens which house a range of plants from different climates. Arid, succulent and tropical. Don was especially pleased with his small collection of the rare *Nymphaea thermarum* (the world's smallest waterlily) which he had successfully propagated in response to the publicity of Kew's success. Saying 'See! It's not as hard as you lot make it out to be!'

Don showed me his 'behind the scenes' collections which he has been busy curating. A huge collection of *Oxalis* spp. (containing more *Oxalis* than I knew existed). Behind the garden shop and offices, lies the Heritage Collection, made up of benches containing small pots of endemic geophytes which are critically endangered or even extinct in the wild all together. These included *Ixia versicolor*, *Moraea elegans* & *M. tulbaghensis*. Don has been collecting seed and propagating these endemic species, with the intention of reintroducing them to the wild. His passion for conservation on his native species was admirable.

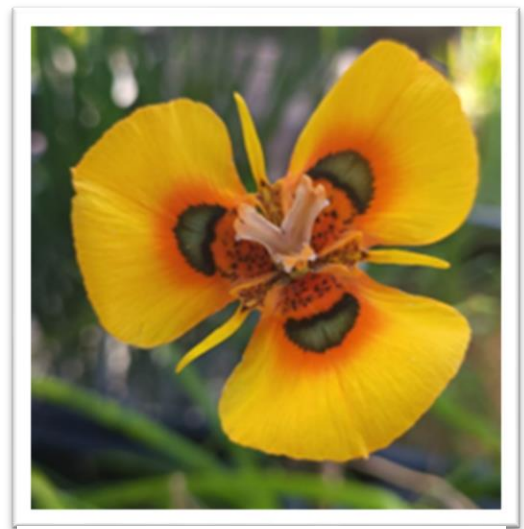


Figure 2 *Moraea tulbaghensis*



*Figure 3 Arid House at SUBG. Dr Donovan Kirkwood causing injury to his hand whilst returning an Opuntia*



*Figure 4 Rare Oxalis species in the private collection at SUBG*

## Jan Marais Nature reserve

31/08/2022

I visited a 23-hectare nature reserve on the outskirts of Stellenbosch funded by Jan Marais in 1915. Surrounded by agriculturally dominated land this is a haven for wildlife and endemic plant species.

I roamed the reserve on foot and was blown away by the diversity of plants it contained. A shrubby area of land was covered with many King Protea (*Protea cynaroides*), *Erica versicolor*, *Leucadendron* and *Leucospermum* species. I walked further north into the reserve and discovered an area of very old *Quercus suber* with many different bulb species scattered beneath. Beyond that the landscape opened and it appeared dark and charred. Here I rested for my lunch, sitting on a low corky branch, in the dappled shade of the Oaks.

Glancing across the landscape It appeared to be a Fynbos vegetation type which had been victim to fire (naturally) in the previous year or so. The black charred shrubbery had exposed the ground and on closer inspection had invigorated the soil, provoking a burst of small bulbous flower species which I identified with my Fynbos field guide. Those of special personal interest included... *Moraea tripetala*, *Wurmbea recurva*, and *Albuca* spp.



Figure 5 *Leucospermum cordifolium* at Jan Marais Nature Reserve



Figure 7 *Erica versicolor* at Jan Marais Nature Reserve

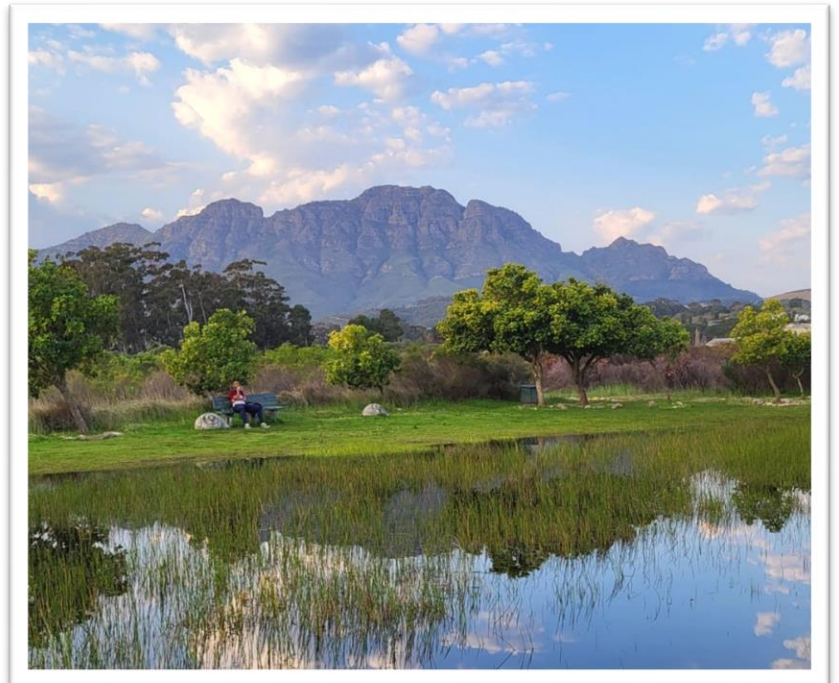


Figure 6 Jan Marais Nature Reserve

## Babylonstoren Estate

01/09/2022

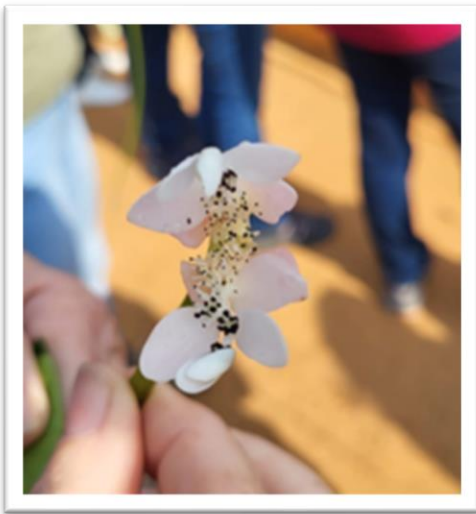


Figure 9 *Aponogeton distachyos* or waterblommetjie

I visited Babylonstoren Hotel and Wine estate where I met Ernst van Jaarsveld the head gardener and previous curator of Kirstenbosch National Botanic Gardens. I arrived at 10am intime for our garden tour. We were welcomed by a very vibrant and energetic Afrikaans lady and member of the gardens team named Constance. At the entrance to the garden there were four large *Citrus grandis* trees with huge pomelo fruits hanging from the branches. Here we began the tour, which led up to the formal garden ponds which were dug to varied depths and contained tropical fish and aquatic plants. Notably *Aponogeton distachyos*, the water asparagus or waterblommetjie as it is known in Afrikaans. This is a well-known local delicacy. The flower stems and buds are cooked with onions and lamb dishes, which they serve in the 5-star hotel on site. The kitchen garden was sub divided into quarters using both large

espalier and smaller step over fruit trees (apple and pear). Within these quarters, seasonal winter vegetable crops were being grown in organic shapes rather than the traditional straight lines. Avenues of trees cut through the kitchen garden, planted with *Olea capensis* (Cape olive) and *Ceratonia siliqua* (Carob tree) with its cheesy smelling seed pods. We continued through a large metal tunnel arch way with a huge decorative mosaic snake with incredible detail under foot. We winded through the structure into the *Clivia* collection. A dense underplanting of various *Clivia* species and cultivars with many rarer specimens displayed in a secure barn nearby, as a valuable collection kept and locked away at nighttime. We met Ernst in the next barn where I was surrounded by thousands of succulents in handmade pots. Ernst showed us around his vast collection of *Haworthia*, geophytic pelargoniums, *Aloe*, *Cacti*, *Euphorbia*, *Sedum*, *Crassula* and many many more. He showed me the endangered and threatened species and explained the issues in the region with land cultivation and lack of conservation understanding. My personal favourite being a little nobly succulent, *Haworthia truncata* or 'Horse Teeth', adapted to have short stubby succulent stems which helps it avoid grazing animals.

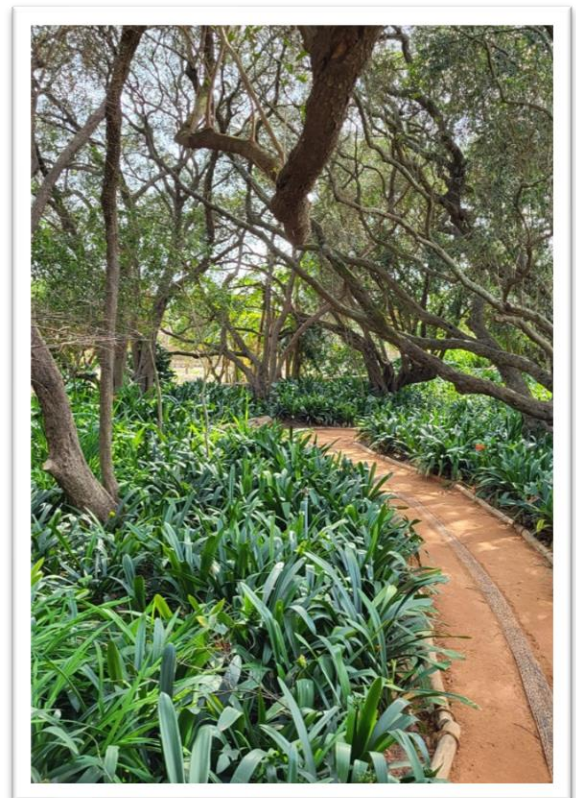
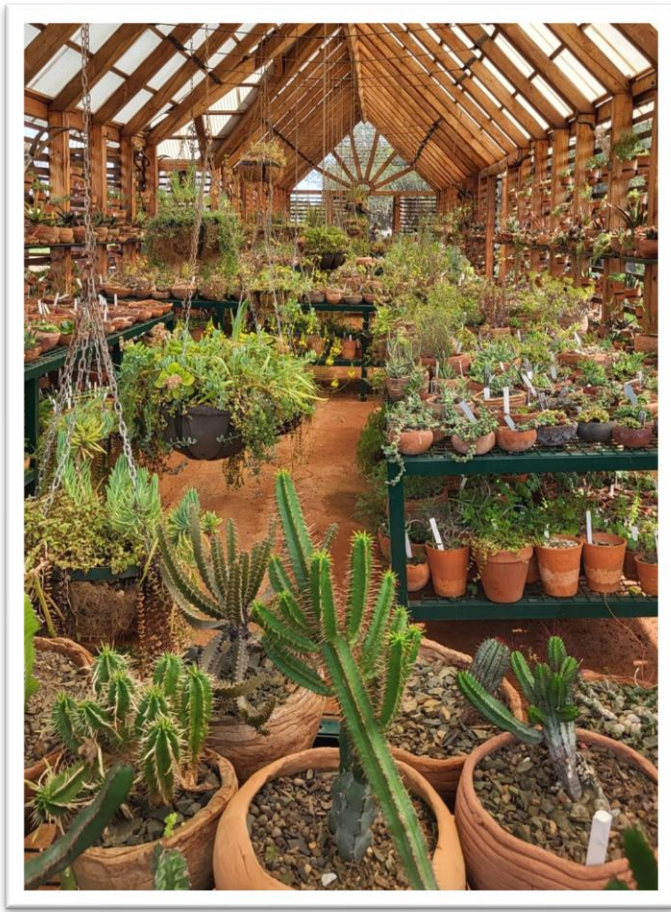


Figure 8 Babylonstoren's planted *Clivia* Collection





*Figure 10 Haworthia truncata or 'Horse Teeth'. held by Ernst van Jaarsveld*

*Figure 11 Ernst van Jaarsveld's significant and beautiful succulent collection at Babylonstoren*



*Figure 12 Babylonstoren's new Cycad collection, displaying two encephalartus woodii with steel frame supports*

## Kirstenbosch National Botanic Garden

02/09/2022

I visited Kirstenbosch Botanic Garden and observed the large collections they held. I had a tour of the gardens with a guide named Moira who had a fantastic knowledge of the gardens and was excited that I was joining her from Kew. We began in the large conservatory near the entrance and observed the vulnerable collections which were separated into the various vegetation types of the Cape floristic region such as succulent karoo, Renosterveld, Fynbos and Strandveld. Central to the conservatory was a striking *Adansonia digitata* (baobab tree).

I was led further into the gardens where there was a large plantation of *Strelitzia* spp. including, *S. reginae* 'Mandela gold', the huge *S. alba* and *S. nicolai*. There were also many other collections of interesting endemic plants such as those of Proteaceae, Ericaceae and many fragrant 'buchu' such as *Agathosma betulina* and *Acmadenia mundiana*, one of South Africa's most important medicinal plants in the Rutaceae family.



Figure 14 *Acmadenia mundiana*, a 'Buchu' species

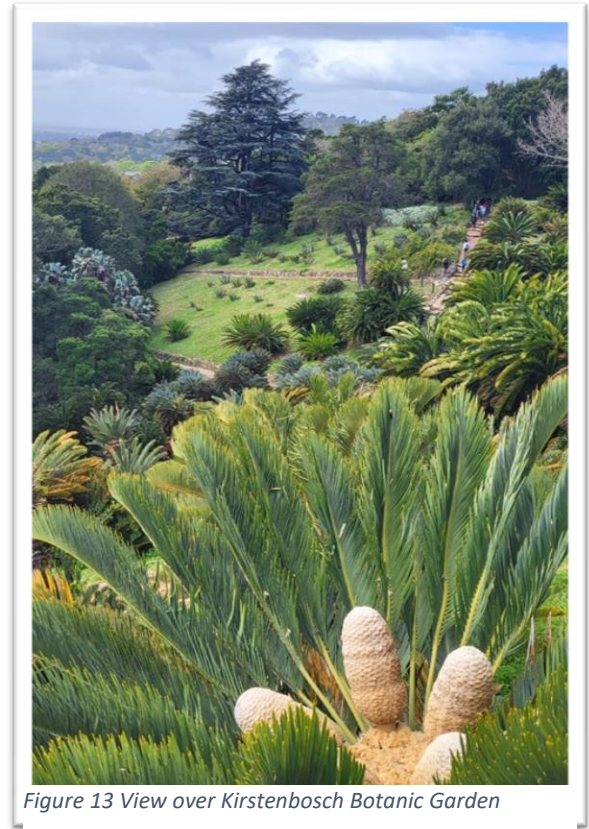


Figure 13 View over Kirstenbosch Botanic Garden

Kirstenbosch has a tree top walkway which provides a bird's eye view of the gardens and gave me a chance to get into the canopy of the tree collections. Huge *Aloidendron* spp. (tree Aloe) and *Brabejum stellatifolium* (wild almond) made up the tree cover. The collection of Cycads at Kirstenbosch is vast and laid out with a Jurassic feel. The vulnerability from poaching was explained by Moira, as issues with thefts from criminals feeding the illegal plant trade is increasingly problematic for the staff there. Nevertheless, the display is phenomenal with a huge range of species including the *Encephalartos woodii* (loneliest plant in the world) which is unfortunately extinct in the wild.

## Karoo Desert National Botanic Garden

03/09/22

Seeking refuge from the heavy rain in Cape town I travelled an hour and a half northwest with my tour guide to the Karoo Desert Botanic Garden near the town of Worcester. Here a collection of arid and semi-arid plants, including many succulents, which are cultivated in a 154 hectare garden with small foot hill hiking trails. This was a good chance to explore this different vegetation type which is made up of lots of plants in the Aizoaceae, (*Lampranthus*, *Mesembryanthemum* and *Drosanthemum*), Aloaceae, Ericaceae, Amaryllidaceae, Restionaceae and Asteraceae. The weather was erratic, with strong winds and regular showers. It gave me an insight into how the weather in Western Cape can change so rapidly and how the plants have adapted their morphology to be able to withstand such variability extreme weather.



Figure 15 *Drosanthemum* species

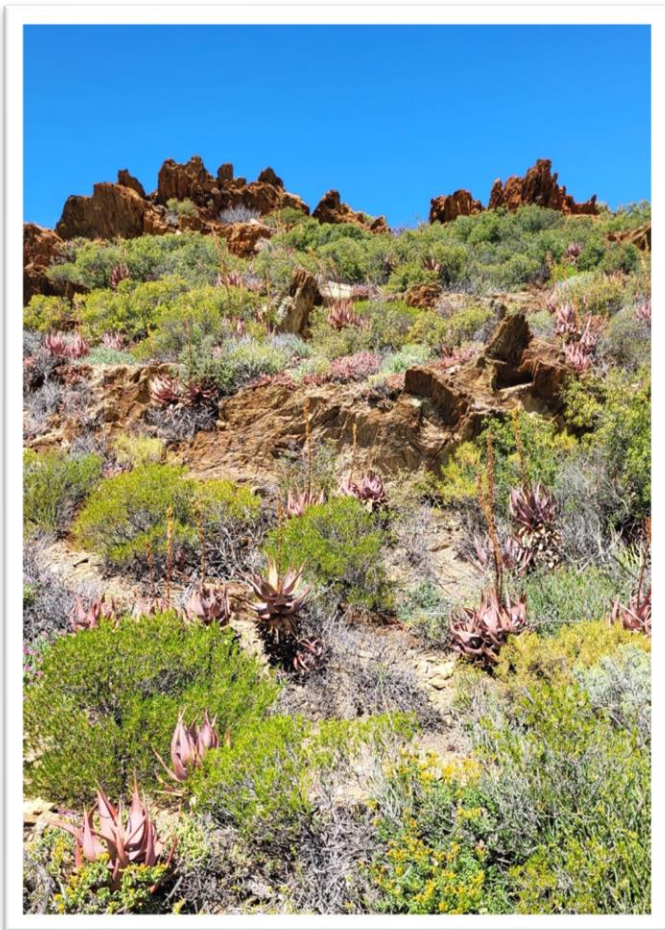


Figure 17 Arid hillside with succulent Karoo vegetation including many *Aloe* spp.

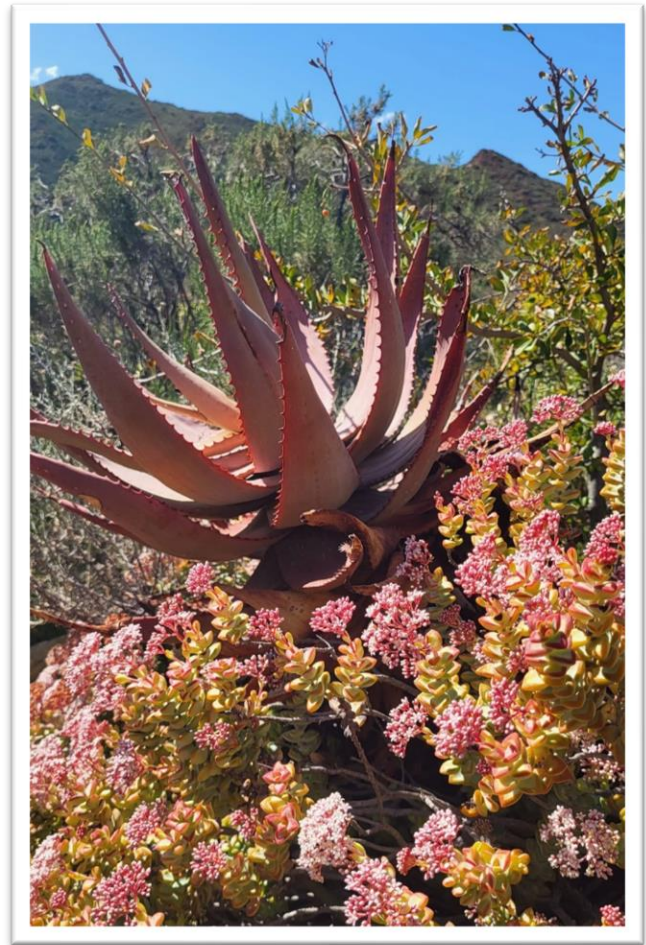


Figure 16 *Aloe* and *Crassula* sp. at Karoo Desert Botanic Garden

## West Coast National Park – Postberg Flower Reserve

05/09/22

I travelled to the West Coast National Park where we ventured through to the Postberg Flower Reserve. Here I observed the vast expanses of spring wildflowers which covered the coastal landscape. Open only during the months of September and August I purposely chose to visit this place to identify the species of wildflowers that made up the hugely diverse displays. I documented, *Moraea sisyrinchium*, *Dimorphotheca* spp., *Lampranthus spectabilis*, *Lachenalia* spp., *Nemesia barbata*, *Pterygodium orobanchoides*, *Babiana stricta*, *Senecio elegans* and many west coast daisies.



Figure 18 Postberg flower reserve at the West Coast National Park

## Overberg Renosterveld Conservation Trust

06/09/11-11/09/11



*Figure 19 Haarwegskloof Research Centre and Headquarters of the Overberg Renosterveld Conservation Trust*

I travelled out east from Cape town with my hire vehicle towards the Haarwegskloof Research centre. I drove the coastal road via Betty's Bay to Bredasdorp, exploring the coastline vegetation along the way with my field guide. My reason for travelling here was to shadow the work of the Overberg Renosterveld Conservation Trust (ORCT). I had arranged to meet the founder, Dr Odette Curtis Scott, conservationist Grant Forbes and Intern, Nande on arrival. The ORCT carry out extremely important work throughout the Western Cape, protecting and conserving the pockets of 5% remaining Renosterveld vegetation and it's wildlife. Renosterveld is one of the richest ecosystems in the world, mostly due to its extraordinary bulb diversity. However, the Renosterveld I saw on this day is very different from what it was 300 years ago, before the advent of large-scale commercial agriculture in the Western Cape. The landscape is dominated by agriculture and the ORCT work extremely hard to protect the remnants of this important habitat.

I was taken to many easement sites which have been signed over by landowners and farmers to be protected by the ORCT. As this is Springtime in the Western Cape, it is when the team carry out vegetation surveys. We walked the sites and noted all species of interest, including some very rare and endangered species. On one site near to the agricultural town of Caledon is a field on the side of a main road which is being pushed for developed of a shopping mall. This site burns every year (suspectedly due to human activity) and is one of the richest in plant diversity that the team know of. Plants included... huge range of *Hermannia* spp., *Watsonia elatroides*, *Gladiolus tristis*, and *Aristea biflora* (of which this is the only site in the world this species has been discovered).

Another site, 45 minutes from the Harwegskloof research centre, has been newly signed over to the ORCT and had been placed under their protection. We visited with the team to carry out some recording of the existing plant species. This was the first time the team had visited in spring, so they were excited about what they might find. An abundance of native and endemic geophytic species were found. In a small undulation in the landscape, we discovered an unrecorded healthy population of *Brunsvigia josephinae*, with their huge bulbous storage systems and large star like seed head persisting out of the ground. It was undoubtedly a highlight of the trip, to see these magnificent plants in the wild.



Figure 20 Critically endangered *Aristea biflora*



Figure 21 *Watsonia elatroides*

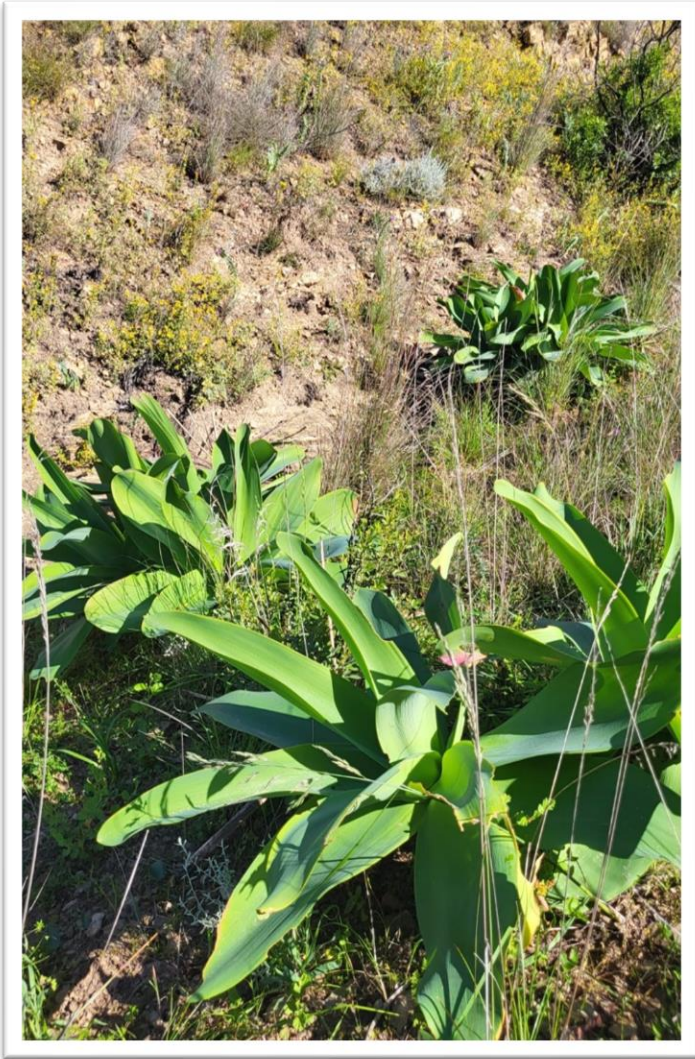


Figure 23 A newly discovered population of *Brunsvigia josephinae*



Figure 22 Lewis (myself) showing the huge bulbs of *B. josephinae*



Figure 24 Nande, Dr. Odette Curtis-Scott, Lewis Barrett, Charlie Cundle, Grant Forbes

## Outcome/Conclusions

From my time in South Africa, I have gained some real-world experience into how endangered species can be conserved in situ. During my time with Dr Odette Curtis Scott and her team at the Overberg, they have shown me why the management of Renosterveld easement sites are important to protect the critically endangered plant and insect species that are essential to the habitat. I have learnt how valuable charities such as these are, and I would like to do more to support them in the future. The importance of the unique habits of the Western Cape has been clearly presented during my trip.

I have learnt that the attitude of the agricultural industry towards endangered habitats needs further work. There is a need for education and awareness of the detrimental effects of damaging the vulnerable remaining landscapes.

I better understand how ex situ conservation is carried out in botanic gardens. Exploring the botanic gardens that I have visited and the collections they hold has shown me the vast effort that organisations are going to for endangered species in their country. The efforts of Ernst van Jaarsveld and Dr. Donovan Kirkwood have inspired me to explore what more RBG Kew could do to help.

I have created some incredible contacts and friends during my trip to South Africa and believe that this will be a valuable resource going forward in my horticultural career.

I have discovered the unfortunate huge problems in South Africa regarding the illegal plants trade. To the extent that one of my meetings was cancelled at Kirstenbosch BG because an emergency occurrence with plant thefts. Plants are being pushed to extinction in South Africa as illegal removal of rare plant species (such as Cycads and critically endangered succulents) from the wild is increasing. This is likely encouraged due to the poverty levels in the country and is an increasing issue which is difficult to solve.

I have become more interested in herbaceous and geophytic South African plants because of this trip, especially the genus *Moraea*. I look forward to further exploring this genus and family (Iridaceae) during my studies at Kew.

I have gained a better understanding of how plant populations in the wild can vary greatly based on aspect and underlying soil conditions. My ability to survey areas and make detailed notes of plant species in the wild is something I am going to take forward and use with UK flora.

This trip was the opportunity of a lifetime, the likes of which I may never experience or be able to afford again. I met some incredible people who share a common goal, to explore, protect and conserve the natural world. I would encourage anybody with an interest in conservation, botany or horticulture to explore the Western Cape.

Lewis Barrett



## Financial breakdown

### Trip Funding (Grants)

Hardy Plant Society, Kenneth Black Bursary Scheme - £500

Bentham Moxon Trust - £500

Kew Guild - £1000

Funding Total - £2000

Description of cost	Total Estimated Cost (£)	Source
Flight Travel Direct return flights	848.20	British Airways
Vehicle Hire Incl. Insurance 6 days hire (4x4)	262.50	First Car Rental Cape Town Airport
Fuel cost	75.00	
Tour guide Incl. Cape Town accommodation & transfers	415	Elizabeth Dankwerts Tour guide
Accommodation Stellenbosch & Haarwegskloof	204.48	ORCT Booking.com
14 Days supplies/food	450	
<b>Total Spent</b>		<b>£2,180.18</b>
Expenditure from personal finances		£180.18 (overspend)

## Acknowledgements

Huge thanks go to all who made this travel scholarship possible.

Thanks to The Hardy Plant Society, Kew Guild and The Bentham-Moxon Trust for their financial contributions to this trip.

Also, many thanks go to the generous individuals who contributed to the success of this experience.

Paul Rees

The Overberg Renosterveld Conservation Trust –

Dr Odette Curtis-Scott

Grant Forbes

Charlie Cundle

Dr. Donovan Kirkwood

Dr. Ernst van Jaarsveld

Elizabeth Dankwerts