



# Friends of WCBG

WELLESLEY COLLEGE BOTANIC GARDENS

Fall Newsletter, 2019

## WELLESLEY COLLEGE

### Road Trip!

The road trip has been a staple of Hollywood movies for decades, often matching two battling characters on a common mission with comedic results. Kristina's and my road trip "movie" to the Southeast USA would only appeal to botanists and gardeners as it was non-contentious (though we did have some laughs) and focused strictly around plants. We flew to Miami with a packed schedule and over the next nine days visited four outstanding botanic gardens and seven specialty nurseries,



Rob Nicholson with Chad Husby ready to leave the Fairchild with a half-full truck.

packing a Penske truck with botanical treasures for the long drive back to their new home, the Global Flora conservatory.

With a theme of plant form for Global Flora, it was obvious we were

in the right area as the landscapes of Florida are strikingly diverse. We were greeted by an amazing variety of palms and other trees, bromeliads used as groundcovers, and flowering shrubs new to veteran botanists. We started at specialty nurseries that had been recommended by Dr. Chad Husby, the Chief Explorer at the Fairchild Tropical Botanical Garden of Miami.

Charles Alford is a legendary fern grower in Vero Beach and has supplied botanic gardens for decades with rarities. Here we obtained ant ferns (*Lecanopteris*) staghorn ferns (*latycerium*) and firmosses (*Huperzia*) which now grace the north wall of Global Flora. Marie Nock's Ree Gardens in Miami was a jungle oasis of rarities and



Kristina Jones shares the bench with Marjorie Stoneman Douglas at the Fairchild.

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**Road Trip!** *from p 1*

The beautiful tiered blossoms of *Medinilla crassata* are now on display in Global Flora.

here we obtained 30 plants including the spectacularly flowered *Dillenia philippinensis* which neither of us had ever seen before. Marie is an expert in the flowering shrub *Medinilla* and we obtained the luscious *Medinilla crassata*, now blooming.

The generosity of botanic gardens toward the Global Flora project has been phenomenal and Chad Husby at Fairchild was a wonderful host, touring us around the grounds and then opening up the conservatory and nursery for us to take cuttings and duplicates. One highlight was an encounter with a statue of Marjory Stoneman Douglas, Wellesley College class of 1912, whose efforts helped preserve the Everglades.

Chip Jones of Jones Landscaping was recommended to us by Marc Hachidourian at NYBG and this was a crucial lead. Chip is a specialist in palms and the primitive gymnosperm cycads. He is an intrepid botanical explorer, securing permits to collect seed in the wild of many of his

extremely rare cycads. The palms we acquired here will form the main canopy of the wet biome in decades to come, and several diverse cycads now accompany the Giant Dioon that remains from Margaret Ferguson's initial greenhouse collection. A visit with Vickie Murphy of the Montgomery Botanical Center forged new alliances and we left with more rare palms and cycads.

We left the Miami area in our big yellow truck and motored across the Everglades, that sea of grass that Marjory Douglas worked to protect. We started the next morning in Sarasota at the Selby Botanic Garden, hosted by Shawn McCourt, Angel Lara and Bruce Holst. We could have easily spent days here acquiring divisions and cuttings as it is one of the most diverse and interesting collections of tropical plants we have ever seen. We have recently been able to reciprocate some of their generosity by sending a collection of cuttings of a dozen different *Rhopsalis* cacti, harvested from the nascent Global Flora



The spectacular flower of *Dillenia philippinensis*

collection. Our final stop in Florida was ARC Ferns, a large commercial grower of tropical ferns. We purchased hundreds of tiny ferns in plug trays, destined for the

understory of the wet biome.

Leaving Florida we began a series of grueling pushes to get our treasures back to Wellesley as soon as possible. This was complicated by the translucent roof of the cargo area of the truck which allowed heat to build up inside (The Moving Greenhouse Effect), such that we had to stop every 90 minutes or so to open up the truck to vent. Pots were stacked upon each other, sometimes three high, so watering this load amounted to "spray and pray" when we could find hose bibs.

There was one last big stop at Atlanta Botanic Garden, which was truly inspirational: superb plants and plantings, a production area chock full of rarities and a warm, funny, generous host in Ron Determann. We spent the day collecting cuttings, securing plants and making mental notes about how to do things right. We had plans to stop at the United States Botanic Garden in Washington, DC for additional plants but after loading in Atlanta, it was clear there was no more room. Ron had the joke of the trip when he said in his Georgia/Dutch accent, "well just get going 90 miles an hour on the highway, then slam on the brakes. You'll make room." When the truck pulled safely on to campus it was amazing to see all we had acquired and wonder how it all fit.

When we look out at the planted and growing Global Flora, we see not only a collection of marvelous plants but memories of the people and places that helped to build the collection. The generosity of our sister botanic gardens was an inspiring piece to our collections building. But we now have a collection worthy of distributing to others, a process we have already begun.

by Rob Nicholson  
Botanical Collections Manager



## Where the Weird Plants Are: Global Flora's "Ancient Corner"

The space under the ramp in Global Flora's Wet Biome is planted with examples of some of the world's oldest extant plant families. On the family tree of plant life, these species are found near the trunk. Land plants evolved from green algae to non-vascular plants like mosses and liverworts, to spore-producing vascular plants such as ferns, then to gymnosperms like cycads, ginkgos, and other coniferous trees. The seed-producing plants or angiosperms were the next evolutionary step, and it was a successful one, with 300,000 known species in 13,000 genera. The "Ancient Corner" of Global Flora contains examples of these major evolutionary branches. It is anchored by the 380 million year old fossil tree stump from Gilboa, NY that was given to Margaret Ferguson by the principal researcher of the Gilboa fossils, Winifred Goldring (Wellesley College class of 1909).

Several species of ferns and fern allies are planted in this shady corner. One is peacock selaginella (*Selaginella willdenowii*). Though not a true fern, it is fernlike in appearance and reproduces by spores. The most striking



The metallic blue color of *Mapania caudata*'s leaves is due to silica.

characteristic of this plant is the blue iridescence of its fronds, produced by a layer of cells in the upper cuticle of the leaf. This iridescence only develops in specimens that grow in extreme shade.

Iridescence occurs in several unrelated plant species and obviously has an adaptive benefit, but it's unclear exactly what that might be – perhaps for protection from sunlight, or a defense against herbivores who might not recognize a blue leaf as tasty. *Mapania caudata*, a member of the sedge family native to the Malaysian peninsula, also has iridescent blue-green leaves. In this case, light scattering off of silica nanoparticles in the leaves creates the metallic blue color.

The Wollemi pine (*Wollemia nobilis*), a plant from the original Ferguson Greenhouses, has taken its rightful place in the Ancient Corner. Despite its common name, it is not a pine but a member of the Araucariaceae family, an ancient family of coniferous trees. The Wollemi pine was known only in the fossil record until a small stand of these trees was discovered in Australia's Wollemia National Park in 1924.

In order to protect the population, the exact location has never been revealed. However, specimens have been made available to botanic gardens through nursery propagation.

Aroids are an ancient family of flowering plants and the titan arum (*Amorphophallus titanum*) is a spectacular example. If ours manages to flower, it could be 6-9 ft. high, as the titan arum



Unprepossessing but amazing, amborella has changed.



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as survived millions of years of climatic

produces the largest unbranched inflorescence in the world. The flower consists of a tall spadix containing the male and female flowers with a large, petal-like burgundy spathe wrapped around it, and it has the scent of rotten meat. Its other common name is the corpse flower.

A woody vine with leathery leaves, *Austrobaileya scandens* is a basal angiosperm, found near the base of the family tree of flowering plants. Its large, pale green flowers smell like rotting fish to attract flies, its preferred pollinator. But the most basal of living angiosperms, *Amborella trichopoda*, is the quiet star of the Ancient Corner. Many of the plants here, like the Wollemi pine, are members of a monotypic genus, the single surviving member of their genus. *Austrobaileya* is the single member of both its genus and family, while *Amborella* is the single member of its genus, family and order. The sole survivor of millions of years of climatic and geological change, it has no near relatives.

*Amborella* is endemic to New Caledonia, an island that is part of the mostly submerged continent of Zealand which separated from Australia 65 million years ago. Plant life on New Caledonia developed in

near isolation and the island contains many unique genera and species. *Amborella* is a tropical understory shrub or small tree with evergreen leaves. Its vascular system contains primitive features not found in other angiosperms. The plant is dioecious, a trait more common among gymnosperms, meaning that the small, creamy white male and female flowers grow on separate plants. But *amborella* plants can switch genders, producing male flowers one time and female flowers the next.



Peacock salaginella's fern-like fronds have a characteristic blue iridescence.

The *Amborella* Genome Project provides key data in understanding the evolution of flowering plants. It was made possible because Ron Determann at the Atlanta Botanical Garden is an expert at cultivating these difficult to grow shrubs. Our *amborellas*, an example of Ron's generosity to the Wellesley College Botanic Gardens, may be unprepossessing to look at, but they make a botanist's head whirl.

by Gail Kahn,  
Assistant Director, WCBG