

the TROPICAL GARDEN

WINTER 2015



PUBLISHED BY FAIRCHILD TROPICAL BOTANIC GARDEN

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Photo by Rey Longchamp/FTBG

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Seventy five years ago, a vessel called *Cheng Ho* sailed out of Manila Harbor and threaded its way among the islands of the Philippines and Dutch East Indies. The expedition was led by Dr. David Fairchild, then 70 years old, as part of his search for tropical plant seeds for the brand-new Fairchild Tropical Garden.

Dr. Fairchild's magnificent book, "Garden Islands of the Great East," recounts the nine-month voyage of the *Cheng Ho* in rich detail. The book's final chapter describes the thrill of bringing more than 500 new plant species to South Florida. That chapter, titled "The Plants Come On the Stage," predicted that some of the new plants would be great performers.

Several of the *Cheng Ho* plants have indeed become stars. Those include the lovely *Clerodendrum minahassae* shrubs in the Arboretum, stately *Saribus rotundifolia* palms in the Lowlands, and the *Freycinetia cumingiana* shrub with bright orange bracts, now just about to bloom in our Tropical Plant Conservatory. Over the years, those original *Cheng Ho* plants have been joined by thousands of other great new performers, brought in as seeds from other parts of the tropics.



Cheng Ho

This season in particular, the Garden is a grand stage. We are presenting a spectacular performance of all-star plants, joined by blockbuster cultural events. Chihuly at Fairchild, the GardenMusic Festival and the International Chocolate Festival add dimension and expand our audience.

Fairchild was designed as a public garden, a place for people to meet the vibrant world of tropical botany. It has always been a stage, as Dr. Fairchild understood, and we are constantly enriching the performance with new plants and new activities. As we inspire and entertain our visitors, we are building support for ever-expanding programs in science, conservation and education.

We had a fantastic year in 2014, opening the new Adam R. Rose and Peter R. McQuillan Arts Building, launching a new botany magnet high school program and reintroducing the first native orchid plants as part of our Million Orchid Project. As our programs build momentum, it's important to remember that it all started with seeds collected many years ago, halfway around the world.

Look closely within the Garden, and you will see the latest generation of newly-introduced plants just coming on stage. We collected them as seeds during the past few years, on islands of the Caribbean, Southeast Asia and the Pacific. Although they are just small saplings and young palms now, we think many of the new plants are destined to become superstars. We hope you will join us in applauding them when they do.

Best regards,

A handwritten signature in dark ink, appearing to read "Carl Lewis". The signature is fluid and cursive.

Carl Lewis, Ph.D.
Director



Ten years ago, Fairchild experienced a kind of renaissance. The Garden, known for its rich botanical heritage since its inauguration in 1938, was preparing to welcome Dale Chihuly for what would be the first of three transformational art exhibitions.

During the span of his 40-year career, Chihuly has become the most prolific and important glass artist in the world. His exhibitions have traversed the world over, and he has works in major museums around the globe. Twelve years ago, he began his *Gardens and Glass* series, which has taken him to major botanical gardens on nearly every continent. This year, we are hosting the largest and most comprehensive exhibition of Dale's work in an unprecedented third exhibition. When recently asked about his favorite of the gardens he's exhibited in, Dale quickly said, "Fairchild! That's the reason I keep coming back. It's the most beautiful of all of the gardens I've exhibited."

Ten years ago, culture in our beloved South Florida community experienced a delightful flood of rich art. And as we celebrate that milestone, we reflect on the impact that art has within the context of nature; not simply as a visual catalyst or through the idea of nature as backdrop or canvas, per se—but rather as a universal language unbounded by geography and as a reflection of cultural and human history.

I was speaking with a friend recently, a well-known artist in his own right. We were talking about art and its importance to culture—the timelessness of its significance. Since humans have been able to memorialize thoughts or conversations, art has cataloged those moments: on walls, caves, sands, fields, canvases, stones, fabrics, metals, glass, woods, plastics, skin, film, digital media, through music and now in the multi-media digital age. Art offers a timeline of human history.

Throughout that history, the art of nature has most notably captured the imagination of the human spirit, because art fastens the eye to nature and grants permission to see flowers, trees and the botany of our own nature reflected in it. In a way, we learn to see again—or perhaps we see for the first time. This is what art does. And that's what we do here at Fairchild: connect the human spirit, mind and capacity for admiration and learning to the very thing that has served as muse since time itself: nature.

Come see for yourself how *Chihuly at Fairchild* embodies the blurred lines between the natural world and the artist-created world in a way that harmonizes all of us. And be part of our collective human history in our botanical garden of glass.

Warmest regards,

A handwritten signature in black ink, appearing to read "N. Zapata". The signature is fluid and cursive, with the first letter being a large, stylized 'N'.

Nannette M. Zapata
Chief Operating Officer and Editor in Chief

CONTRIBUTORS



GEORGIA TASKER was the garden writer for *The Miami Herald* for more than 30 years, and now writes and blogs for Fairchild. She has received the Garden's highest honor, the Barbour Medal, and a lifetime achievement award from the Tropical Audubon Society. She is also an avid photographer, gardener and traveler. She graduated cum laude from Hanover College in Hanover, Indiana.



KENNETH SETZER joined Fairchild as a writer and editor with the marketing team in 2013. He contributes to print and digital media. Setzer enjoys writing about natural and human history and is an enthusiastic photographer, with a particular fascination with fungi. His educational background is in linguistics, with a BA from Queens College, City University of New York, and an MA from Florida International University.



MARICEL E. PRESILLA, PH.D. is a culinary historian and chef/co-owner of Cucharamama, Zafrá and Ultramarinos in Hoboken, N.J. She is also the president of Gran Cacao Company. Her latest books are "The New Taste of Chocolate: A Cultural and Natural History of Chocolate with Recipes" (Ten Speed Press, 2009) and "Gran Cocina Latina: The Food of Latin America" (W.W. Norton, 2012), winner of the James Beard Foundation Cookbook of the Year award in 2013.



RON MCHATTON, PH.D. is the American Orchid Society's director of education and chief operating officer. He is an accredited American Orchid Society judge and has been growing orchids since the age of eight. McHatton is responsible for the editorial content and layout of *Orchids* magazine.

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schedules, please visit
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FAIRCHILD TROPICAL BOTANIC GARDEN

ON THE COVER

Dale Chihuly
Sapphire Star, 2010
Blown glass and steel

Exhibited in the Bailey Palm Glade
Photo by Chihuly Studios



the TROPICAL GARDEN

The official publication of
Fairchild Tropical Botanic Garden

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SCHEDULE OF EVENTS



Concerts

SUNDAY SOUNDS AT FAIRCHILD

Presented by the
University of Miami Frost
School of Music
February 1, 1:00 p.m.
March 1, 1:00 p.m.
April 5, 1:00 p.m.

VALENTINE'S DAY CONCERT

Saturday, February 14
7:00 p.m.
With Grammy Award-
winning artist Arturo
Sandoval

Lectures

7:00 p.m. Tickets are
included with admission.
Free for Fairchild Members

Long Ago in the Great East

Carl Lewis, Ph.D.,
Fairchild Director
Wednesday, February 4

The Serpent and the Rainbow: An Exploration of Haitian Voodoo, Secret Societies and Zombies

Wade Davis, Author
Wednesday, February 18

Can We Eat Cake and Have It, Too? Conservation of Heavily Exploited Edible and Medicinal Orchids in China

Hong Liu, Ph.D., Fairchild
Research Ecologist and
Associate Professor,
Florida International
University
Wednesday, March 11

Attracting Birds to South Florida Gardens and Book Signing Event

James A. Kushlan, Ph.D.
and Kirsten Hines, Authors
Wednesday, March 25

Connect to Protect: How Fairchild's Conservation Efforts are Restoring Urban Areas

Devon Powell, Fairchild
Field Botanist
Wednesday, April 8

Fairchild Reliefs of Artist Naomi Fisher

Naomi Fisher, Artist
Wednesday, April 22

The Passionate Traveler II: Exploring Cold Ecosystems from the Arctic to Patagonia

Georgia Tasker,
Fairchild Writer
Wednesday, May 6

Teas

For information or
reservations, please call
Marnie Valent at
305.663.8059.

MOMMY AND ME TEA

Sunday, January 18
3:00 p.m.

FIRST LADIES TEA

Sunday, February 15
3:00 p.m.

THE ORCHID TEA ROOM

Friday through Sunday
March 13, 14 and 15
11:00 a.m.

SPRING GARDEN TEA

Saturday and Sunday
April 11 and 12
3:00 p.m.

Festivals

13TH ANNUAL INTERNATIONAL ORCHID FESTIVAL

Friday through Sunday
March 13, 14 and 15
9:30 a.m. – 4:30 p.m.

SPRING GARDEN FESTIVAL FEATURING THE SPRING PLANT SALE

Saturday and Sunday
April 11 and 12
9:30 a.m. – 4:30 p.m.

23RD ANNUAL INTERNATIONAL MANGO FESTIVAL

Saturday and Sunday
July 11 and 12
9:30 a.m. – 4:30 p.m.



*This schedule of events is
subject to change. For up-to-
the-minute information, please
call 305.667.1651 or visit www.fairchildgarden.org/events*



Membership AT FAIRCHILD

Membership Categories

We have expanded and added membership categories to better fit your needs:

Individual Admits one adult	\$90
Dual Admits two adults	\$110
Family Admits two adults and children of members (17 and under)	\$135
Grandparents Admits two adults and grandchildren of members (17 and under)	\$125
Family and Friends Admits four adults and children of members (17 and under)	\$170
Sustaining Admits four adults and children of members (17 and under). Receives six gift admission passes (\$150 value)	\$250
Signature Admits four adults and children of members (17 and under). Receives eight gift admission passes (\$200 value)	\$500

Your Benefits...

- **Free** daily admission throughout the year
- **Free** admission to all daytime events and art exhibitions
- **Free** admission to the Wings of the Tropics Exhibit
- **Free** parking
- **Free** admission to all Members-only events, including Members' Lectures, Moonlight Tours, the Members' Day Plant Sale and select Members-only evening events
- **Quick Admit** at all admission points
- **Subscription** to the award-winning magazine *The Tropical Garden*
- **Discounts** on all ticketed day or evening events
- **Discounts** at The Shop at Fairchild
- **Discounts and priority registration** for adult education classes and seminars
- **Discounts** to kids' summer camps
- **Discounts** on a wide variety of products and services from participating Branch Out partners
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For more information, please call the membership department at 305.667.1651, ext. 3362 or visit www.fairchildgarden.org/Membership



FAIRCHILD TROPICAL BOTANIC GARDEN

Photo by Gaby Orihuela/FTBG

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GET IN ON THE CONSERVATION



A child waters the Connect to Protect Network installation during City Trekker summer camp activities at the Coral Gables Museum.

Photo by Devon Powell/FTBG

Fairchild Promotes Pine Rockland Conservation in Coral Gables

Fairchild partnered with the Coral Gables Museum in early August to display the plant diversity found in the globally endangered pine rockland ecosystem. As part of the Garden's Connect to Protect Network (CTPN), a program designed to engage Miami-Dade citizens in the conservation of this incredibly rare forest, three raised beds were temporarily installed on the museum's Giralda Plaza. The pine rockland display coincided with the City Trekker summer camp, and helped campers learn about pine rocklands and their importance in Miami-Dade's natural heritage.

In a follow up, Devon Powell, Fairchild's CTPN outreach coordinator, brought the pine rockland display to Coral Gables' Merrick House Museum on November 23 for *Sundays on the porch with George*, a public event.

To learn more about the Connect to Protect Network, visit www.fairchildgarden.org/Science-Conservation/Connect-To-Protect-Network



International Group Examines Alfalfa, One of United States' Top Crops

A Fairchild researcher is among a group that recently published new research on the genetic basis of salinity tolerance in wild alfalfa from Tunisia. Eric von Wettberg, a Fairchild/Florida International University assistant professor, collaborated with colleagues from the Centre for Biotechnology at Borg Cedria in Tunisia, University of Southern California, Michigan State University and University of California at Davis. Alfalfa is the fourth most widely grown crop in the U.S., and is susceptible to rising soil salinity due to widespread irrigation. The researchers paired whole genome resequencing with field and greenhouse studies to identify candidate genes for salt tolerance in a near relative of alfalfa—the plant *Medicago truncatula*. This international collaboration is a step towards improving crop tolerance to degraded agricultural conditions and a changing planet. Their paper was published in December in the journal *BMC Genomics*.



Exploring mountain ecosystems: Fairchild at 12,000 feet

Dr. Paulo Olivas, a National Science Foundation postdoctoral fellow based at Fairchild, is exploring ecosystems in the tropical Andes Mountains of South America. His research centers on the effect of changing temperatures on the dominant species of grasses found at high elevations in those mountains. Olivas is collaborating with Dr. Kenneth Feeley, a Fairchild/Florida International University assistant professor of plant conservation biology, in several locations. All are between 10,000 and 13,000 feet of elevation (3,000 to 4,000 meters) in Manu National Park near Cusco in the south of Peru. The mountain “puna” grasslands are of great interest because these ecosystems contain high levels of plant diversity and play an important role in the livelihoods of many local residents.

Olivas’s research has revealed that many of these grasses actually perform better under warmer temperatures. This is good news for the grasses as temperatures rise due to global warming. However, it is potentially bad news for tropical forest species, since many models predict that the forests will be pushed towards higher elevations, including areas now occupied by the grasses. With grass species tolerating and even preferring warmer temperatures, it will be difficult for trees and other forest species to colonize these high elevation areas. This could potentially result in the local disappearance of some forest plant and animal species.



Fairchild’s Joyce Maschinski and volunteer Steve Forman reintroduce an extirpated grid scale maiden fern to the Deering Estate in May 2014. Photo by J. Possley/FTBG

Fairchild Conservation Team Receives Award

The Deering Estate Foundation chose Fairchild’s own Conservation Team as the recipient of its 2014 “Conservation Partner of the Year” award. The foundation honored the team—which includes Dr. Joyce Maschinski, Jennifer Possley, Devon Powell, Jimmy Lange and volunteers—for its work in the natural areas surrounding the Deering Estate along the edge of Biscayne Bay. During 2014, that work included reintroducing 211 individuals of the grid-scale maiden fern, which had been extirpated from the area; rediscovering the “lost” federally endangered plant species Carter’s sand flax; and continuing a decades-long tradition of rare-plant monitoring.



(L-R) Dr. Kenneth Feeley and Dr. Alvaro Duque

Colombian Academics Doing Research at Fairchild

Fairchild welcomed two professors from the National University of Colombia in Medellin to the Garden. Dr. Alvaro Duque and his wife, Dr. Tatiana Lobo, spent the fall academic semester in South Florida as part of a Fulbright Fellowship awarded to Duque. They worked with Dr. Kenneth Feeley, a scientist at Fairchild’s Center for Tropical Plant Conservation and an assistant professor in Florida International University’s biological sciences department. Duque is a tropical botanist and ecologist who focuses on Andean-Amazonian forests, studying forest carbon stocks and patterns of plant species composition and diversity. Duque and Feeley collaborated on studies of the effects of climate change on tropical forests. Lobo, a phytochemist, studied the use of plant extracts that can act as inhibitors to the chemicals in snake venom, as well as their use in the biological control of leaf cutter ants and their symbiotic fungi.

Canistel in the Kitchen

By Noris Ledesma

The Mayans knew the value of the canistel back in 800 B.C. They would gather the maturing fruit from the dense evergreen trees that shaded their thatch homes and place them in the cooled ashes of the fire. Here they would ripen to a golden yellow to be used as a nourishing staple for everyday life.

Today this ancient fruit (*Pouteria campechiana*) continues to prove its worth. It is in the sapote family and is well-adapted to South Florida. Many varieties will bloom and fruit throughout the year, and it makes a perfect landscape tree for the home garden. It is easy to grow, wind-resistant and tolerant of sandy or limestone soils. And, oh yes, it will provide bushels of fruit for the kitchen.

Canistel is delicious when mixed with milk products, making it perfect for milkshakes, ice creams and natural smoothies. The fruit can, of course, be eaten fresh, but you must wait for it to fully ripen to a soft texture and peel away the thin yellow skin. Immature fruit have sticky latex that is harmless, alas sticky and annoying. Flavorings such as lime juice and honey may be added to taste.

The skin and the flesh of the canistel are bright yellow and stable over time. Neither heating nor freezing will darken the bright yellow of the flesh. Its texture

makes it perfect for pies, puddings and breads. No preservatives are needed; your canistel pie or ice cream will stay bright yellow for as long as you need.

Producing your own fruit in the home garden is easy. Look for grafted trees and not seedlings. Seedling trees will grow well, but they will take many years to fruit and will be of unknown and most likely inferior quality. Grafted trees can be purchased from local tropical fruit nurseries and specialty sales throughout South Florida. 'Bruce,' 'Fairchild,' 'Trompo' and 'Ross' are good varieties.

Harvest: The fruit of canistel do not mature at the same time. They are yellow to orange when they are mature—and that is the time for harvesting. The fruit can be stored at room temperature for three to 10 days for further ripening. As they soften, the skin texture changes from glossy to dull. The ripe fruit or the pulp can be preserved and stored by freezing it for up to six months. 



Canistel Smoothie

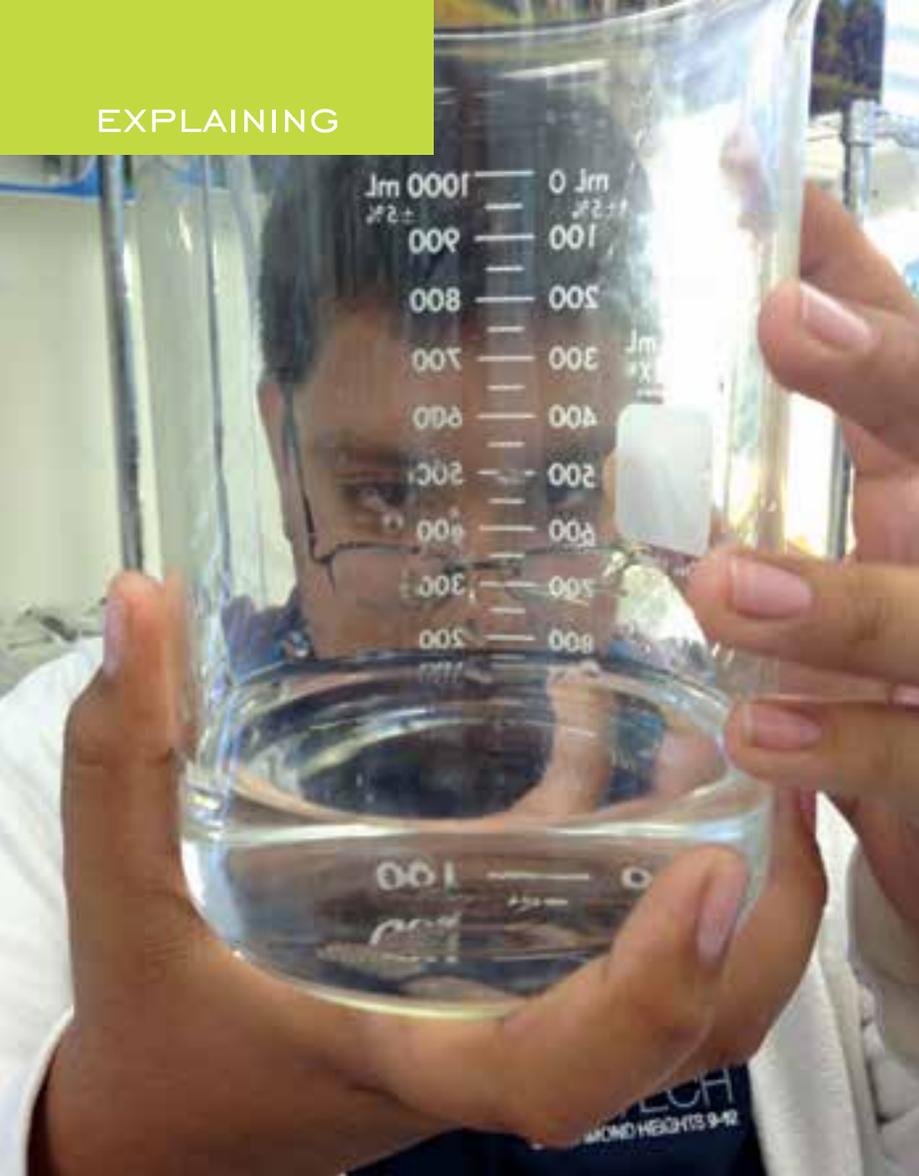
Ingredients

1 1/2 cups low-fat plain yogurt
2 1/2 cups canistel pulp (3 fruits)
1 tablespoon honey
Juice from half a lime

Combine all ingredients in a blender, pulse until smooth and serve immediately.

Serves two in about 10 minutes.





BioTECH: Growing A Solution

Students at a new conservation biology magnet school are studying botany and zoology while helping conserve the region's fragile native orchids.

By Thaddeus Foote
Photos by Education Staff

I am an orchid. I am a South Florida native—and my beauty, mystique and fragility represent and parallel that of the neotropical land that I call home. We (the southern tip of our peninsula) and I lure those around us and those from afar. This is our gift. It's also our curse.

Since the last Florida East Coast Railway spikes were driven into the Miami Rock Ridge limestone in 1896—completing the new southern route and forever opening South Florida to mass tourism and modern development—our “land of flowers” has borne the brunt of non-stop “progress,” natural extraction and exponential growth. In 1896, Florida was the country's latest undiscovered treasure, and the nation took it upon itself to cash the check. South Florida's settlers created the “Great Land Boom,” diverted water, poached orchids, hunted birds, fragmented habitats, filled swamp land, cleared coastlines, dredged channels and paved highways. As a result of the abuse, South Florida now faces a host of conservation challenges reaching from Biscayne Bay to Fakahatchee and beyond. With such challenges, however, come just as many opportunities for improvement, ingenuity and change.

BioTECH @ Richmond Heights 9-12 is Fairchild's newest education program, and Miami-Dade County's first botany magnet school. Last year, Miami-Dade County Public Schools, Fairchild Tropical Botanic Garden and Zoo Miami collectively received a \$10.7 million Magnet Schools Assistance Program grant from the United States Department of Education to start a new conservation biology magnet high school. In August 2014, 144 ninth graders embarked on a four-year biological journey, parallel to none, as BioTECH's first class. Those students will grow with the school, eventually choosing either the zoology track, via Zoo Miami, or the botany track, via Fairchild. They will become its first graduating class in 2018. Whichever track they choose, conservation biology dictates the curriculum and research projects are already under way.

BioTECH students are integrally involved in Fairchild’s Million Orchid Project, an effort to propagate, grow and reintroduce 1 million rare and native orchids to the greater Miami area.



PREVIOUS PAGE
Measuring distilled water to make orchid seed-sowing media.

ABOVE
Transplanting juvenile orchids in the laminar flow hood.

RIGHT
Harvesting *Encyclia tampensis* seed pods.

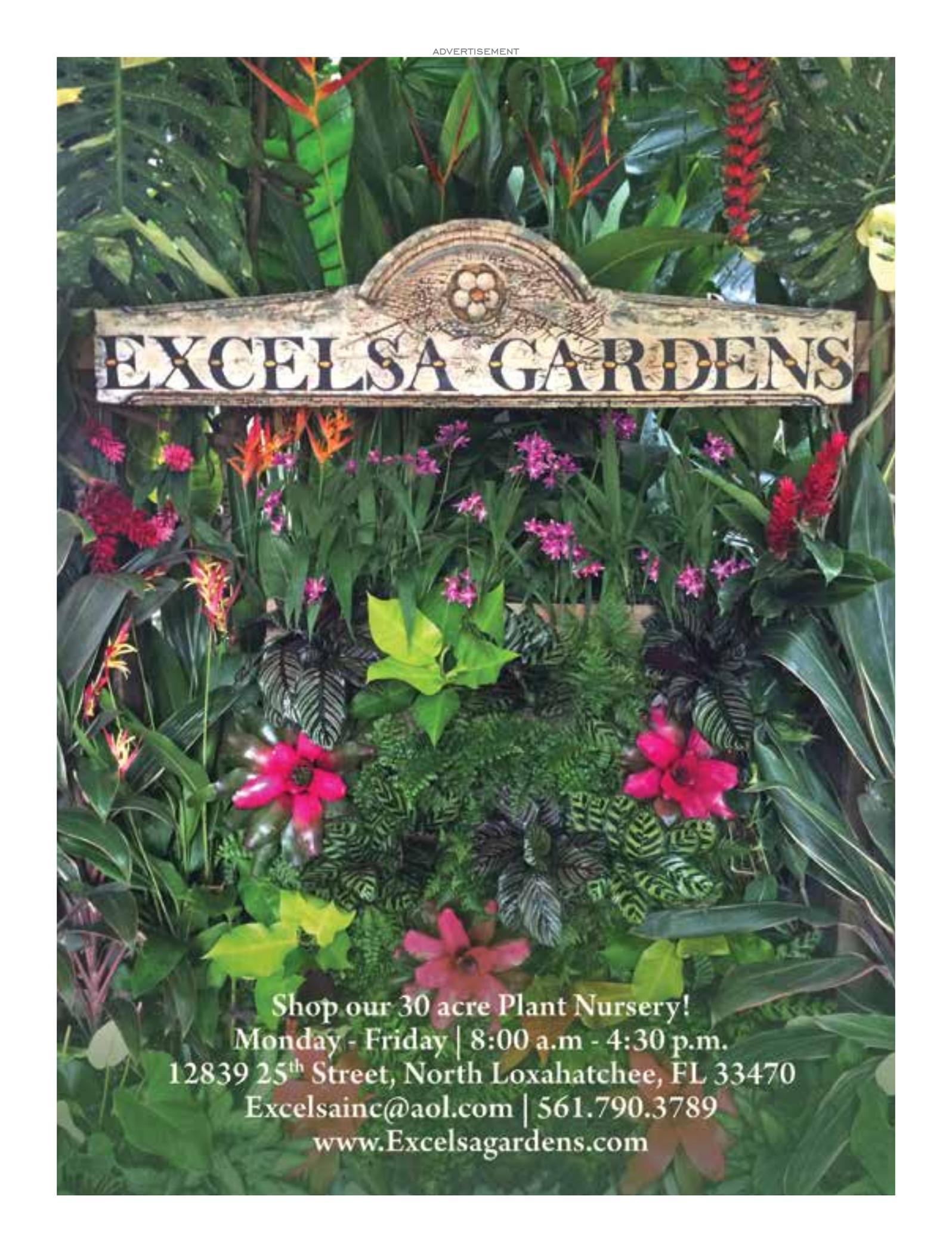


BioTECH students are integrally involved in Fairchild’s Million Orchid Project, an effort to propagate, grow and reintroduce 1 million rare and native orchids to the greater Miami area. The project targets such orchids as *Encyclia tampensis* (butterfly orchid), *Cyrtopodium punctatum* (cowhorn orchid) and *Bletia purpurea* (pine pink orchid). As they help restore the area’s native orchids, students ask scientific questions, manipulate variables, collect data and apply their learning and curiosity to an authentic and relevant conservation project. To facilitate success, we duplicated the Fairchild orchid lab at the BioTECH campus (located on SW 152nd Street), complete with laminar flow hoods, hundreds of bottles, growing media (affectionately dubbed “liquid dirt” by some BioTECH students) and lots of curious minds—everything a wayward orchid seed needs to thrive.

As junior researchers, BioTECH students will visit the Garden on a regular basis to learn from and work alongside Fairchild researchers, graduate students, staff and volunteers. They will use Fairchild as an endless resource, asking questions about our plant collections and gathering data to help make sense of the natural world. Garden resources will help them answer questions such as: “At what temperature will this type of leaf shut down and stop photosynthesizing?” “How does the application of mycorrhizal fungi affect orchid seedlings of different ages?” “How does what we learn about plants in tended areas affect plants in the wild?”

As BioTECH students develop their skills and interests, they will create independent research projects, thus adding to Fairchild’s collective body of knowledge and progressing plant conservation locally and internationally.

For centuries, South Florida’s mysterious intrigue has lured and captivated the curious. Like the native orchids that live here, however, our home is delicate and in urgent need of a resiliency plan—a plan for planet and people that is holistic and encompasses multiple facets, including education, conservation and collaboration. We created the need for such a plan, and now we are growing a solution. 



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Fairchild's Wonderful Weekend Educators

An emerging volunteer program staffs areas of special interest to the Garden's weekend visitors.

By Kenneth Setzer, Arlene Ferris and Niki Saylor. Photos by Fairchild Staff.

Fairchild's weekend educators are unique and passionate volunteers. Whether they are guiding visitors on bird walks, explaining rainforest ecosystems, teaching about South Florida edible gardening or simply answering questions about tropical plants, weekend educators provide an invaluable service by offering informal, interactive learning experiences to Fairchild's visitors and members. Originally, weekend educators provided educational information about orchids, chocolate or gardening at Fairchild's festivals, but during the past two years they have expanded the program to include early morning Bird Walks, Discovery Carts and informal tours with the goal of enhancing the weekend visitor's experience at Fairchild.

Naturally, weekends are busy times in the Garden, and stepping for the first time into 83 acres of glorious green, dotted with labs, classrooms and conservatories, can be overwhelming: What to do? What to see? What am I looking at?

We have created numerous weekend activities to help visitors make the most of their experience and reveal the stories the Garden and its plants have to tell. Activities include several guided walking tours. "Winged Wonders and the Plants they Love" is an immersive experience exploring butterflies and the plants that nourish and support them. "Early-Bird Walks" explore the many bird species that visit the Garden. "Exploring the Rainforest" guides visitors through the only open-air rainforest exhibit in North America. "South Florida Ethnobotany" explains the plants that influence our lives every day. And "Sway this Way, The Palms of Fairchild" is an excursion into one of the world's largest palm collections. These tours, along with our Discovery Carts, require a dedicated group of



You can find volunteer George Andrykovitch presenting on our rare plant collection at the Tropical Plant Conservatory the first and third weekends of the month.

volunteers to learn about each topic in detail and then present the information to different audiences in an interesting and meaningful way.

"I love my work as a weekend educator! I love learning about the different topics and sharing my knowledge with others," says volunteer Kathleen Konicek-Moran.

Frank Macaluso, a longtime volunteer and familiar face at Fairchild, says that after visitors explore the Edible



Join volunteer Sylvia Baltin on her walks through the Montgomery Palmetum and learn about Fairchild's extensive palm collection including many rare and endangered species.

Garden, they are surprised to learn about the unusual tropical vegetables that can be grown here. For instance, children often think that loofahs come from the ocean, and are surprised to learn they come from plants.

What's the best part of being a weekend educator? "The nicest part is not just the education of the visitors. It's the visitors themselves. I have met so many wonderful people in the past few years," volunteer Glenn Huberman says. "Teaching people how and what to grow in their own yards to attract the varied wildlife in South Florida makes my volunteering that much more enjoyable. If I can grow it in my yard, then so can the visitors who are interested in doing the same."

Volunteer George Andrykovitch, a retired microbiology professor, is a confirmed tropical plant enthusiast. He knew after retirement he wanted to move to South Florida, where he could "learn more by gardening all year," he says. On the weekends, you can find Andrykovitch volunteering in our Tropical Plant Conservatory, answering visitors' questions and

teaching them about the unique anatomy of anthuriums, bromeliads, ferns and gingers. With our knowledge of plants always growing, Andrykovitch says he is constantly studying to keep up. "But, sharing is the reward!" he adds. Working as a weekend volunteer allows Andrykovitch to do what he knows and loves best: teach.

Fairchild's Early-Bird Walks are very popular with birdwatchers of all levels, who discover what a hotspot the Garden can be. Successful birding is usually best accomplished soon after sunrise. Ironically, Early-Bird Walks volunteer Adair Reeve admits that, as a rule, she is not an early riser. "Needing to begin the walks at 7:30 a.m. was a great motivator to see the Garden in a different light, literally," she says. "My groups have been a mix of local residents and visitors to Miami. Most were beginning birders, but some were more expert and some were serious photographers. Since our walks are scheduled around the time of bird migrations, most questions focus on that topic. A couple of visitors were inspired to become volunteers themselves, including one who has now become a bird guide!"

The passion our 28 weekend educators share for learning and teaching about our collections—from edible or tropical plants and ornamentals to botany and birds—is contagious. Explore with them and learn more about the wondrous natural world on display at Fairchild. Or contact the volunteer department to learn about becoming a weekend educator yourself. Keep up the good work and thank you, weekend educators! 



Take a walk through the Richard H. Simons Rainforest and learn about the diversity of tropical plant families and their cultural value.

Any visit to one of Miami-Dade County's pine rockland preserves is full of unforgettable treats, from the sight of lopsided Indian grass flower spikes nodding slowly in a September breeze, to the trills of Eastern towhees calling to one another across the palmettos. Unfortunately, almost 99% of Miami's pine rocklands have been lost to development, which continues today in this globally critically imperiled plant community.

Priceless Pieces

Even disturbed pine rockland fragments are valuable pieces of one of the world's most unique ecosystems.

Text and photos by Jennifer Possley

The near-total destruction of Miami's pine rocklands during the past century has happened with relative ease, thanks in part to a persistent myth that "disturbed" pine rocklands are biologically worthless. Neglected tracts are seen as eyesores, slums or simply "empty." But most of the plants and animals that call pine rocklands home—including nine federally listed species—can still live out their lives in these imperfect urban forests. With pine rockland habitat becoming increasingly rare, disturbed pieces are now more valuable than ever.

How do we save these pieces? The first step is to recognize them. The textbook definition of a pine rockland includes a pine tree canopy, a palmetto mid-story, a rich mix of grasses and herbs in the understory and limestone outcroppings. But Miami-Dade has an abundance of disturbed pinelands that are not so by-the-book and are thus harder to recognize.

The foreground of this scraped pine rockland in the Richmond area is covered by a six-inch-tall forest of gopher apple.

Today, with frequently burned pinelands so rare, these long-ago scraped pinelands can be important refuges for flora and fauna that require sunny, open habitat.



TOP
Native pine rockland species can persist for decades in disturbed pine rocklands. At least four native species are pictured here in this scraped area underneath power lines: butterfly pea, mouse pineapple, blue paspalum and three-seeded mercury.
Photo by Steve Woodmansee.

ABOVE
This fire-suppressed pine rockland is gaining shrubby hardwoods at the expense of understory grasses and herbs.

There are two major types of disturbed pine rocklands. First are **scraped** areas, where heavy equipment was used decades ago to scrape away vegetation and jagged limestone. These often look like old fields and can be found under power lines, alongside railroad tracks or canals and in vacant lots. Many of these scraped areas likely will never again support saw palmetto, pine rockland's most common shrub species. However, because pine rocklands hold most of their plant diversity in the understory—more than 300 species—the loss of one species is not catastrophic. In fact, most of the diverse plants that make pine rocklands special are still present in scraped pinelands. This includes some of the rarest plants, such as deltoid spurge and Carter's sand flax. Today, with frequently

burned pinelands so rare, these long-ago scraped pinelands can be important refuges for flora and fauna that require sunny, open habitat.

The second type of disturbed pine rocklands are those that are **fire-suppressed**, meaning that fires have not been allowed to burn in the area for years. Pine rocklands are dependent on, and thrive with, fire—so without fire every three to seven years, a parcel can begin to transition to a hardwood-dominated forest or to a stand of exotic plants such as Burma reed or Brazilian pepper. But fire-suppressed parcels are far from doomed. Like scraped pinelands, they also provide critical habitat for native plants and animals. Some understory plant species can persist for decades without fire (though they will rarely reproduce). Even dense weeds can be conquered, and the combination of chainsaws and fire can release the soil seed bank and diverse herbaceous layer from the smothering pressure of overgrown hardwoods. When partners like Miami-Dade County's Natural Areas Management Division, the Florida Forest Service or The Institute for Regional Conservation work together to remove exotic vegetation and reintroduce fire to a preserve, a pine rockland can be reborn, seemingly overnight, through a process known as ecological restoration. In short, fire-suppressed pine rocklands can almost always make a complete recovery.



ABOVE

For both adults and kids, visiting pine rocklands means learning about the natural world around us, gaining a greater understanding of what makes Miami unique and fostering a desire to protect what is left.

RIGHT

Portions of Larry and Penny Thompson Park was once choked with dense Burma reed, but you would never know it visiting these beautifully restored areas today.

It should be noted that, even without restoration, both types of disturbed pine rocklands have high intrinsic value. Native “weeds” such as Spanish needle are vital nectar sources for pollinators, and dense forest growth provides cover and sustenance for animals such as foxes, marsh rabbits, gopher tortoises, birds and beneficial insects. Disturbed pine rocklands can and do provide habitat for federally endangered species like the Florida bonneted bat and Bartram’s hairstreak butterfly.

It is not just wildlife that can reap the benefits of disturbed pine rocklands; humans need these areas, too. Even a disturbed forest will do a fine job of absorbing carbon dioxide, producing oxygen and replenishing our aquifer. On a less-tangible level, wild areas within our cities remind us that there is a natural world out there and we are part of it. Increasingly, research suggests that exposure to nature is important for our physical and mental well-being, perhaps especially for children.

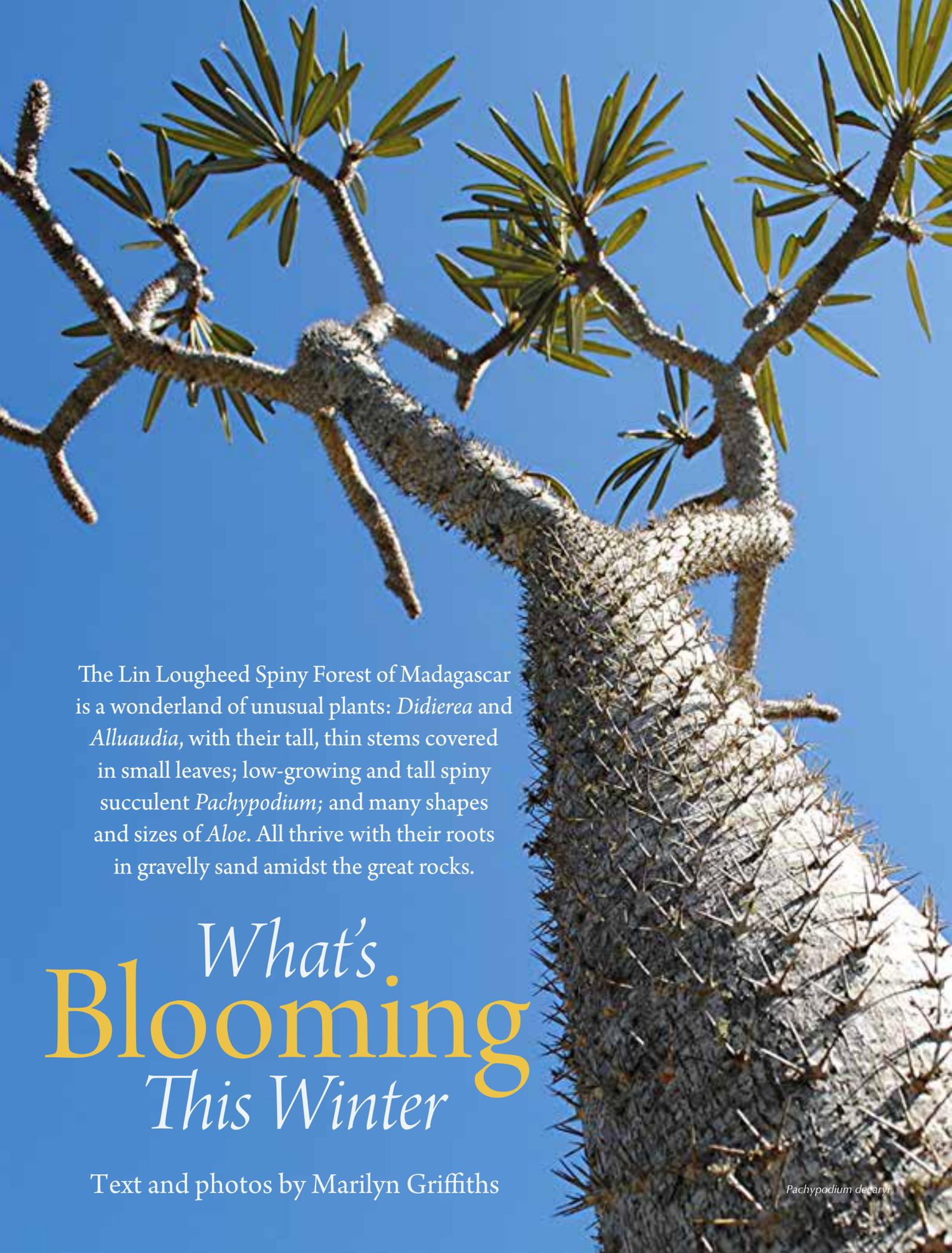
With so few pieces of pine rockland left in Miami-Dade, it is not always clear how to see them for yourself or how to help preserve them. Step one is to simply become aware of remaining wild lands near your home and work. On the next level, you may wish to volunteer with Miami-Dade’s Environmentally Endangered Lands Program or The Institute for Regional Conservation, or plant a Connect to Protect Network garden. By building awareness



and debunking myths about pine rockland fragments, we can encourage Miami-Dade residents, legislators and developers to save what remains. After all, in an area with so little nature left, every piece is priceless. 

Thank you to Steve Woodmansee for helpful suggestions in this article, and to Bruce Greer for suggesting the topic. Learn more about the Connect to Protect Network at www.fairchildgarden.org/Science-Conservation/Connect-To-Protect-Network. To learn more about programs mentioned in the last paragraph, contact lnieratka@regionalconservation.org for IRC, eel@miamidade.gov for county volunteer workdays or dpowell@fairchildgarden.org for the Connect to Protect Network.

...wild areas within our cities remind us that there is a natural world out there and we are part of it.



The Lin Lougheed Spiny Forest of Madagascar is a wonderland of unusual plants: *Didierea* and *Alluaudia*, with their tall, thin stems covered in small leaves; low-growing and tall spiny succulent *Pachypodium*; and many shapes and sizes of *Aloe*. All thrive with their roots in gravelly sand amidst the great rocks.

What's Blooming This Winter

Text and photos by Marilyn Griffiths

Pachypodium decaryi



Euphorbia milii



Euphorbia capuronii



Pachypodium decaryi



Aloe betsileensis



Uncarina grandidieri

A generous donation by Board of Trustees member Lin Lougheed in 2006 enabled Fairchild to source and plant more than 100 species native to the spiny forests of Madagascar in this area. Visit Plot 31 in the Arboretum for a visual feast of the flora of Madagascar, one of the most biodiverse and threatened places in the world.

A plant known to many as crown of thorns, ***Euphorbia milii*** and its related varieties produce small complex inflorescences, called cyathia. Look closely at the flowering structure to see a complex of male and female flowers and nectar glands. In Madagascar, it grows in the xerophytic (surviving with very little water) bush on limestone plateaus.

Euphorbia capuronii, with a habit similar to *E. milii*, is characterized by small pointed flower bracts. Pale green and cup-like, they frame a reproductive structure of small yellow glands. It is native to the southern area of the island; Perrier de la Bâthie described it there on the Mahafaly Plateau in the mid 1950s.

Pachypodium decaryi is native to the floodplain of the Antsiranana River in northern Madagascar, as well as to the mountains nearby. The plant develops a bottle-shaped trunk as it matures. Its delicate white flowers are the largest in the genus. *Pachypodium* is a member of the Apocynaceae, the family that includes *Plumeria* and *Adenium*.

Aloe betsileensis is native to the south central highlands of Madagascar, an area called Betsileo. It grows on barren rocks and produces tall

inflorescences with cylindrical clusters of orange to yellow flowers. Reddish brown spines grow at regular intervals along the leaves.

One of the most unusual plants in this collection is the ***Uncarina grandidieri***, with the common name of mouse trap tree. Our oldest specimen, planted in 1998, has grown quite large with a succulent, swollen trunk. Another species, *Uncarina stellulifera*, produces capsules with long spines tipped with two recurved barbs which attach to the fur of passing animals. Eventually the pod decays and the seed is deposited far from the mother plant. Our sample of the pod is confined to a plastic container in the horticulture office after having attached to several members of the staff. The family, Pedaliaceae, also contains the sesame plant. *U. grandidieri* has brilliant yellow flowers all year, while the flowers of *U. stellulifera* are lavender with stripes that aid the pollinator beetle in reaching the anther. 

Visitors to Fairchild can obtain a plot map of the Garden upon arrival at any entry point or information kiosk. Volunteers at the Visitor Center desk also have a complete list of Fairchild's plants. Visit our website for invaluable information, including lists of plants with their locations, organized by both common and scientific names; a downloadable map of the Garden with plot numbers; and What's Blooming information for each month of the year.



Visit www.fairchildgarden.org to find the current year's list of flowering plants for each month.



Satyendra Pakhale, *Fish Chair*, 2014
Photo by Benjamin F. Thacker

THIS WINTER AT FAIRCHILD

By Natalie White-Bernal

Come to Fairchild on Thursday and Sunday nights through May 31, 2015, to experience the dreamy wonderland of Chihuly at night. The Garden comes alive and glistens with the magic of Dale Chihuly's beautiful sculptures under a moonlit sky.

Where can you find a more romantic spot than the Garden on Valentine's Day? Grammy-award winning artist Arturo Sandoval returns to Fairchild for an evening of spectacular music under the twinkling nighttime sky. Bring a blanket and a picnic or reserve a table for dinner and champagne and enjoy the sounds and the ambiance of the Garden after dark.

The 13th Annual International Orchid Festival blooms again in March. Celebrating all things orchid, the festival offers thousands of orchid varieties for sale,

workshops on growing orchids at home or the opportunity to stroll through the breathtaking Orchid Show.

Spice up spring at the Spring Garden Festival featuring the Annual Plant Sale. This year's Spring Garden Festival will feature curries and spices in addition to gardening favorites. Step into a gardening demonstration or learn from local chefs about how to include curry and spice in your spring cuisine. And, don't forget to pick up some of the many Fairchild-grown plants at the Annual Plant Sale.

On select Sundays, enjoy world-class music presented by the Frost School of Music in the Glasshouse Café. Student ensembles scheduled to perform include jazz, classical, bluegrass and more. 

EXPLORING FOR PLANTS in the Canary Islands

Following the steps of
Dr. David Fairchild on the
Spanish archipelago that has
“absorbed the fancies of philosophers
and scientists for generations.”

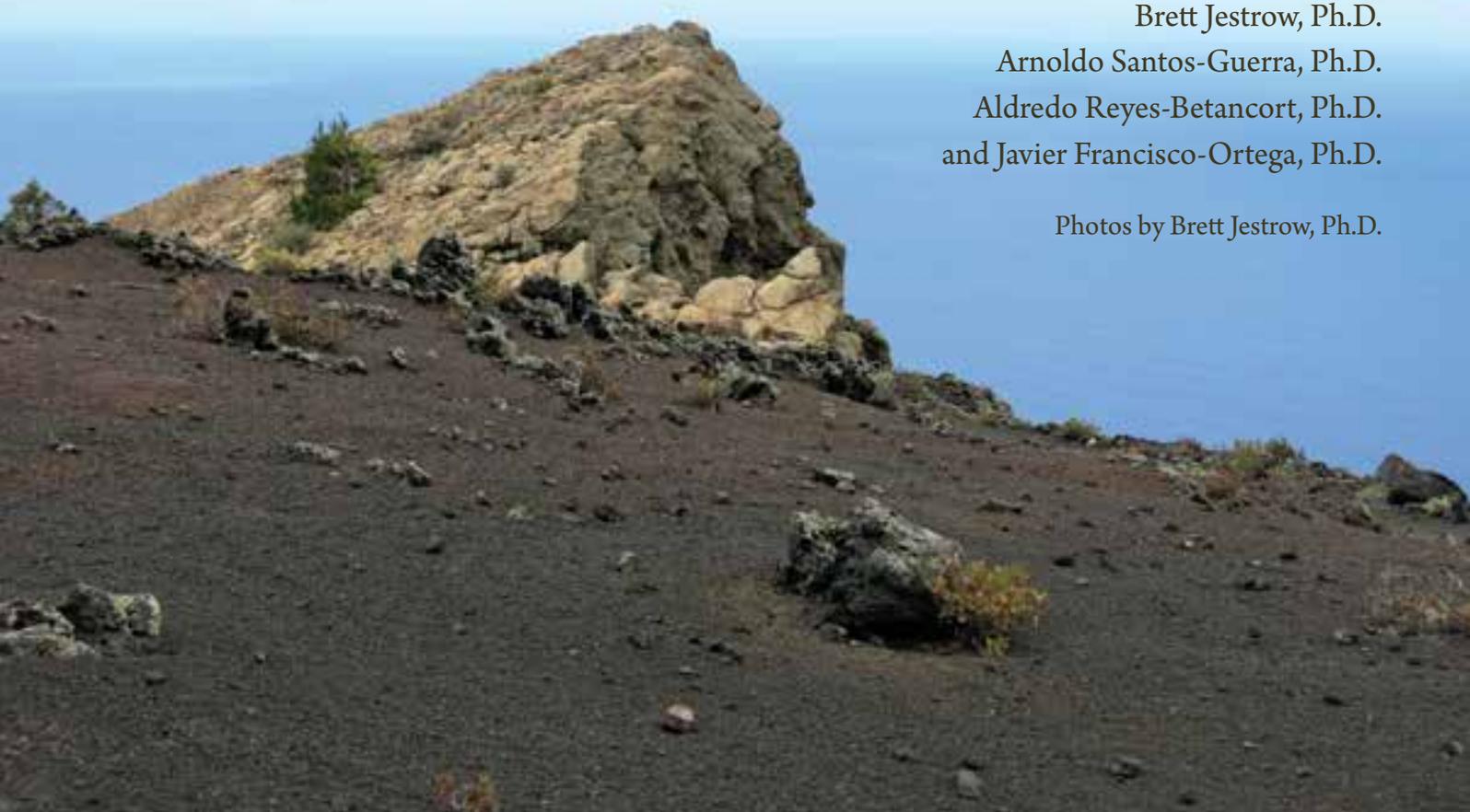
Brett Jestrow, Ph.D.

Arnoldo Santos-Guerra, Ph.D.

Aldredo Reyes-Betancort, Ph.D.

and Javier Francisco-Ortega, Ph.D.

Photos by Brett Jestrow, Ph.D.



From the 17th century on, these Spanish volcanic islands were visited by botanical legends such as Alexander von Humboldt (1799) and Joseph Dalton Hooker (1839), who praised them for their unique subtropical flora with a high number of endemic plants.

In 1903 and between 1925 and 1927, Dr. David Fairchild made four visits to the Canaries, collecting plant material for the U.S. Department of Agriculture (89 accessions, 73 species) from the islands of Gran Canaria, La Palma and Tenerife.

In July of 2014, two of us (Jestrow and Francisco-Ortega) followed the steps of Dr. Fairchild, visiting several of the collecting sites that he found during his expeditions to these islands. Our trip aimed to collect plant material for the Garden's living collections and herbarium, while developing links with one of Spain's most venerable botanic gardens: The *Jardín de Aclimatación de La Orotava* on Tenerife.

The first part of our trip was devoted to Tenerife, where an official Memorandum of Understanding was signed between Fairchild and The *Jardín de Aclimatación de La Orotava*. This botanical institution is currently expanding its grounds and developing collaborations to increase its living collections, while exploring new educational and research directions. Dr. Fairchild visited this garden during the 1920s, and today many of the same vistas and plants can be found, including a mature example of the African cycad *Encephalartos laurentianus*, which continues to thrive. Founded in 1788, the Orotava garden is one of the oldest tropical botanic gardens within the European Union and the second-oldest continuously operating botanical garden in Spain. Many plants of the New World were first introduced to Europe through this garden, which is situated at a similar latitude to Miami. A large Florida-native bald cypress, *Taxodium distichum*, is displayed prominently at the main entrance, along with a *Ceiba pentandra* (Malvaceae)—an iconic tree in the Caribbean—not far behind it.



PREVIOUS PAGE

The single outcrop, or inselberg, where *Cheirolophus junonianus* occurs. The rock is composed of a light-colored phonolite, surrounded by, and in stark contrast to, the recent black lava flows from the volcano of San Antonio (La Palma).

ABOVE (T-B)

The steps up to La Orotava garden with a nice example of the Everglades palm (*Acoelorrhaphes wrightii*), showing the importance of Floridian Neotropical plants in the collection.

The rare *Cheirolophus junonianus*, shown in full flower, is endemic to a single locality on the island of La Palma.



The island of Tenerife has a diverse ecology, with five major life zones ranging from coastal scrubs to high altitude desert on the highest mountain in Spain (Pico Teide, elevation 12,198 feet). We gathered material from all of these ecological zones. Among the several botanical jewels that we found, the “dragon tree” (*Dracaena draco* (Asparagaceae)) tops our list. This species and its East African relatives (primarily *D. cinnabari*) produce a sap that is the source of “Dragon’s Blood,” an ancient medicine that was used in everything from wound healing and curing diarrhea to lowering fevers and treating eczema. We visited the famous “millenary” dragon tree of Icod, a site that was one of the main focuses of Dr. Fairchild’s trips. In addition, we could see some of the few remnant individuals of this species in inaccessible spots of the Anaga and Adeje massifs (compact groups of mountains on the northeastern and southern tips of Tenerife); these are the oldest geological areas of the islands (some 11 million years old). While very rare in the wild, the “dragon tree” is quite popular in cultivation, with specimens— some even a few hundred years old—growing in towns, settlements and plantations.

In Tenerife we also visited the new Palmetum garden in the island’s capital, Santa Cruz de Tenerife (*Palmetum de Santa Cruz de Tenerife*).

This municipal garden opened recently to the public and was created over the city’s main trash hill on the coastal area. The garden is considered an environmental engineering icon and provides an example of creative ways to restore highly degraded areas within an urban setting. It has an extraordinary palm collection with significant examples of Caribbean palm genera such as *Coccothrinax*, *Copernicia*, and *Hemithrinax*.

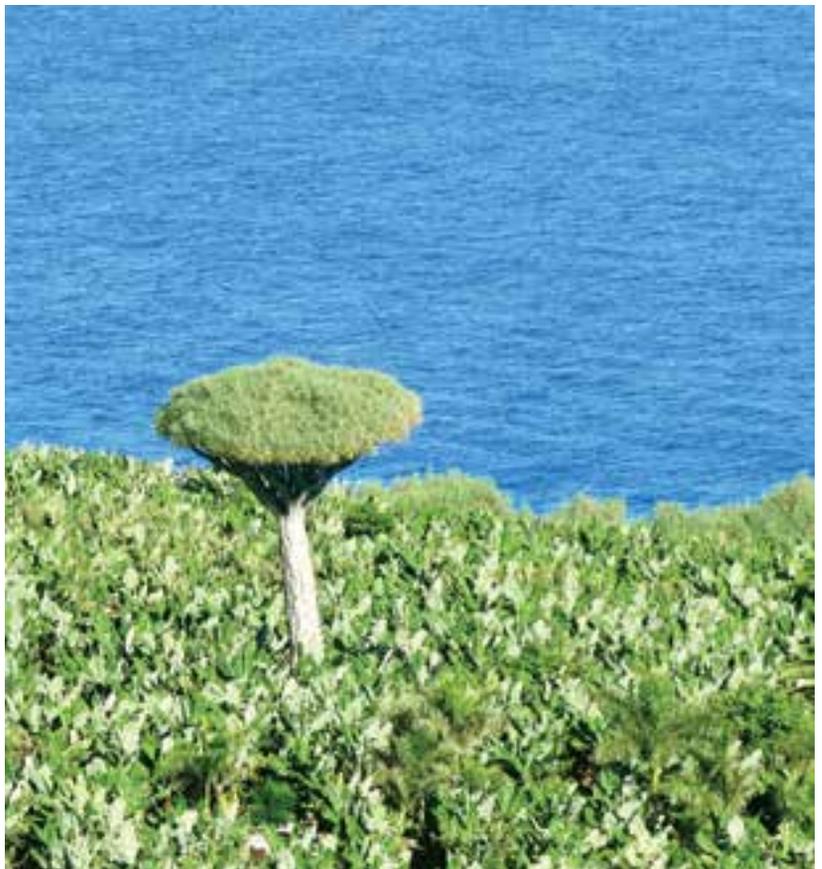
La Palma was the next island that we visited. Currently, it is the most volcanically active island of the archipelago. Indeed, the last terrestrial volcanic eruption in the Canaries took place on this island in 1971, from the Teneguía volcano. The Critically Endangered *Cheirolophus junonianus*, a thistle whose leaves do not have sharp prickles on the margin, grows in a single rock outcrop near this volcano. Not far from this area, we visited one of the few populations of the endemic chickpea *Cicer canariense*, a species whose closest relatives occur in East Africa.



T-B
 Dr. M. Caballero, Dr. J. Francisco-Ortega, Mr. L.C. Medina, Dr. B. Jestrow, Dr. A. Reyes-Betancort and Dr. A. Santos-Guerra standing close to an individual of *Encephalartos laurentianus* at La Orotava garden. On the bottom, an image of the same cycad tree as it was photographed by David Fairchild in July 1925.

Our plant-hunting expedition ended on La Gomera. This is a relatively ancient island whose last volcanic eruption took place around 3 million years ago. Approximately half of the island is a national park devoted to the protection of the Canary Island cloud forest (known throughout the archipelago as *monte-verde* or *laurisilva*). This forest type once thrived on the northern slopes of the high-elevation islands, but has virtually vanished from the island of Gran Canaria and has declined greatly on the other islands. In fact, it once occurred across southern Europe and North Africa, before it died out at the end of the Oligocene Epoch. Trees of the laurel family represent an important component of the *monte-verde*. Among them, there is the Canarian-Madeiran endemic *Persea indica*, one of the closest relatives of the cultivated avocado. This species represents one of the clearest biogeographical connections between the Canary Islands and the New World tropics.

We returned from our trip with 138 wild-collected herbarium specimens, including multiple duplicates and 40 different bags of seed and cuttings from the different islands and gardens. We brought to the Canaries seeds of Caribbean plants from Fairchild including, among others, species of *Portlandia* (Rubiaceae), *Cubanola* (Rubiaceae), *Goetzea* (Solanaceae) and *Euphorbia* (Euphorbiaceae) that have now germinated at Orotava's nursery. This is the start of a great collaboration. During our visit, we received the hospitality and help of several botanical colleagues and plant enthusiasts, and we would like to express our gratitude for their time and expertise: Manuel Caballero, Ana Calero, Alvaro Fajardo, Daniel Fernández-Galván, Javier Francisco Pérez, María Flores González, Carlo Morici, Giuseppe Orlando and Lázaro Sánchez-Pinto. The Cabildos Insulares and the Parques Nacionales issued the needed plant collecting permits. 



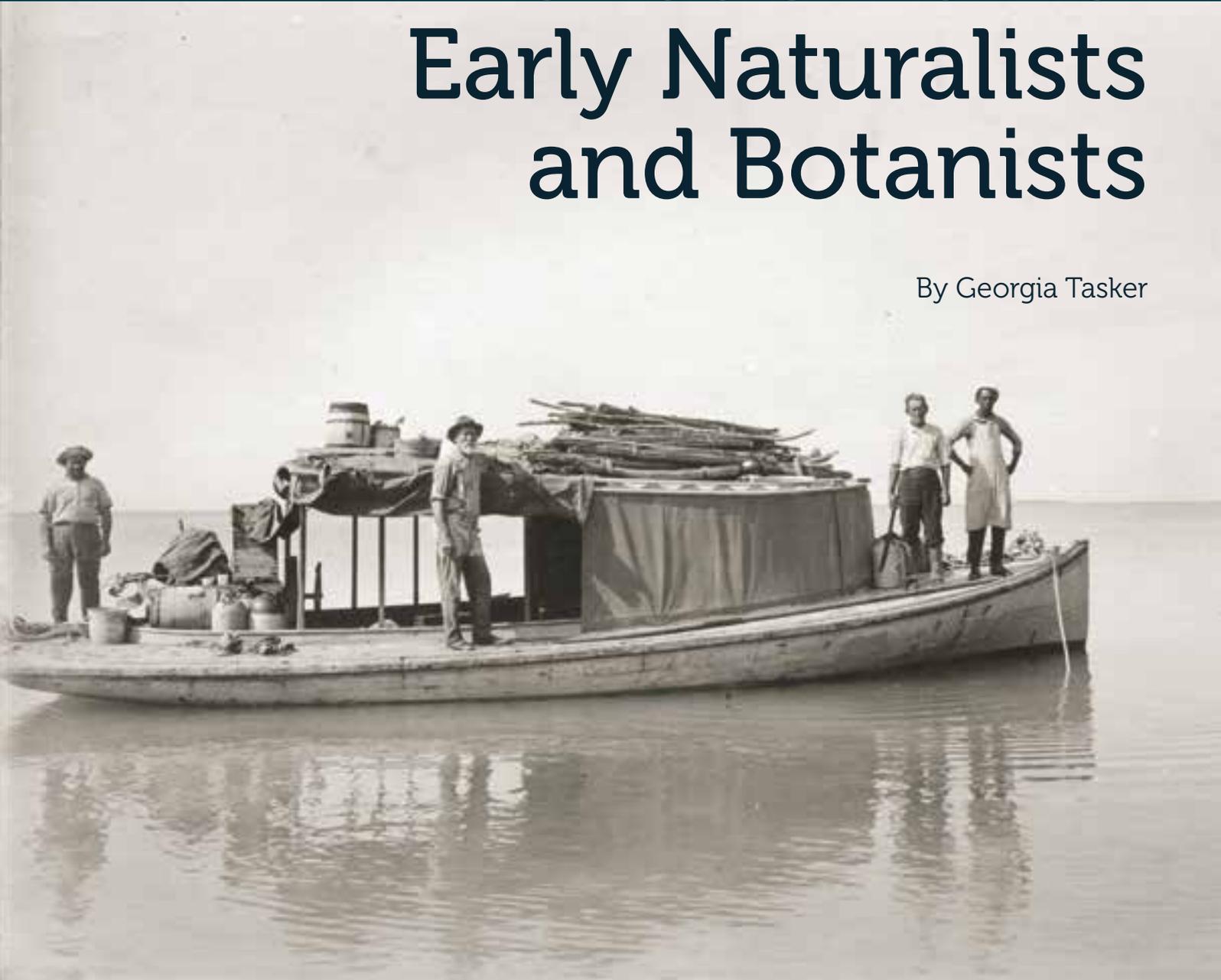
T-B
 Cardonal, a dry coastal habitat of the Canary Islands, exemplified by the endemic succulent species *Euphorbia canariensis* as a predominant species.
 A mature dragon tree, *Dracaena draco*, growing in the midst of a Banana plantation in Tenerife.

"It is very easy for one to think of making a complete Botanical exploration of Florida but it [is] not easy to put in practice. To do this, you must make up your mind to wade, swim & crawl, exposed to a heat of from 120 to 140 degrees excepting a few days in the winter, your hand well gloved & your face covered with gauze to prevent being devoured by Mosketoes. ... "

—John Loomis Blodgett, plant collector in Key West, in a letter from 1845

Discovering South Florida's Plants: Early Naturalists and Botanists

By Georgia Tasker





“Plants are a small but important part of the archaeological record in southeastern Florida,” wrote archeologist Robert S. Carr in his 2012 book “Digging Miami.” He went on to write of two important South Florida Native American archeological sites: “Six fruits are prominent in the botanical materials recorded from the Honey Hill site ... located in the eastern Everglades and the Granada site at the mouth of the Miami River. Seeds of mastic (*Mastichondendron foetidissium*) cocoplum (*Chrysobalanus icaco*),

PREVIOUS PAGE
In Bay of Florida near Lower Matecumbe Key, December 1916, The Barbee with a load of cactus plants.
Photo by J.K. Small. Archives/FTBG

ABOVE
Indian camp, West of Kendall, November, 1916. Part of family of Cypress-Tiger.
Photo by J.K. Small. Archives/FTBG

cabbage palm (*Sabal palmetto*), saw palmetto (*Serenoa repens*), sea grape (*Coccolobada* sp.) and hog plum (*Ximenia americana*) were recovered.”

The identification of South Florida’s plants and their stories came gradually. Some 200 years after Harvard University was founded, the interior of southern Florida—with its vast, flat, watery wilderness—remained unexplored. The mosquitoes, the knife-sharp sawgrass and the deep mud made the place seem impenetrable to everyone but Native Americans.

Plant exploration by non-Native Americans didn’t begin until the 1830s. In 1830, the United States Congress decreed that all Indians should be moved west of the Mississippi River, but the Seminoles in Florida resisted. This led to three Seminole Wars, during which physicians and military men first seriously collected plants in southern Florida.

Some of these military collectors did not live to tell the tale. For instance, Edward Leitner, who discovered the yellow flowering water lily depicted in John James Audubon’s painting of the “Whistling Swan,” was scalped in 1838. Henry Perrine, the American consul to Mexico who waited on Indian Key for the Seminole wars to be over, was killed there by Indians in 1840—before he could develop useful economic plants on his grant of land bordering Biscayne Bay. In 1834, Perrine had written to the U.S. secretary of state that Florida “enjoys extraordinary climate by which it becomes at once both healthy and productive in even its rudest natural state,” concluding that it is “extremely worthy of immediate surveying, drainage and sale, planting and population.”



Herbarium specimen of *Paspalum blodgettii* collected by John Loomis Blodgett.
 Photo courtesy of © The Board of Trustees of the Royal Botanic Gardens, Kew.

The region’s natural wonders captured military imaginations. George Henry Preble, a Naval officer who led a search for Seminoles around Lake Okeechobee, wrote in his diary of “immense flocks of cranes, pink spoonbills, curlew and wild turkeys in plenty. Our camping-ground the prettiest by far that we have had. Two veteran cypress stretched their scraggy arms over the camp, draped in moss to the very ground. The day was rendered harmonious by the warblings of multitudes of feathered choristers, and the night hideous with the splash of alligators, hooting of owls and screamings of a variety of unquiet night birds.”

John Loomis Blodgett

In southern Florida and the Florida Keys, John Loomis Blodgett, a Massachusetts-born physician, became the most important early plant collector. Blodgett, who moved to Ohio and then Mississippi, had worked for the Mississippi State Colonization Society as physician and surgeon. That group took liberated slaves to the African country of Liberia, and Blodgett spent two years in that nation from 1837 to 1839. He left Africa for Key West.

In his sometimes wide-ranging Florida collecting, Blodgett traveled from Cape Sable, the southernmost point of the U.S. mainland in the southwest Everglades, to the south shore of Lake Okeechobee and back through Big Cypress. *Vernonia blodgettii*, *Chamaesyce blodgettii*, and *Paspalum blodgettii* are among the plants named for him. South Florida Botanist R. Bruce Ledin wrote a biography of Blodgett in *Tequesta*, the journal of the Historical Society of South Florida. His name also appears in the 2002 publication “Rare Plants of Florida” by the Institute of Regional Conservation’s George Gann, Keith Bradley and Steve Woodmansee. The writers credit to Blodgett plants including lovegrass, bunch cutgrass, Florida amaranth and prickly hornwort.

From Key West, Blodgett sent plants to Thomas Nuttall, a British botanist in Philadelphia. Some 40 trees from southern Florida appeared in Nuttall’s “North American Sylva”

(1842-49); those trees were known only from Blodgett’s collections. Blodgett also collected for John Torrey and Asa Gray, who wrote the “Flora of North America,” which included in the second edition many of Blodgett’s Key West plants. (Torrey set foot in Florida only once, and that was to visit *Torreya taxifolia* in north Florida, a conifer named for him that today teeters on the brink of extinction.)

A.W. Chapman, who wrote “Flora of the Southern United States” in 1860, also “relied heavily on Blodgett’s knowledge of southern Florida plants...” according to the 20th century “Flora of Tropical Florida.” Today, four of Blodgett’s herbarium sheets are housed at the Royal Botanic Gardens, Kew in the United Kingdom.



Northern end of Royal Palm Hammock, from the Everglades on the eastern side. February, 1916.

Photo by J.K. Small. Archives/FTBG

Surveyors and Explorers

James Ingraham led an exploratory expedition from Florida's West Coast across the Everglades in 1892, looking for a railroad passage or drainage possibilities. Crossing was wet and treacherous. "Both legs, up to the waist, frequently become imbedded in the same hole in the mud and to extricate one's self with from 30 to 50 pounds weight on the back requires strength and time. The boats are very necessary to enable one to pull himself out of the mud, and even then the labor is most exhaustive," recorded the expedition secretary. Ingraham's report would capture the interest of Henry Flagler, who then brought his Florida East Coast Railway to Miami. Ingraham would become a vice president of Flagler's railroad; Ingraham Highway is named for him.

William Krome, for whom Krome Avenue is named, surveyed a more southern route across the Everglades just after the turn of the century, to see if Flagler's rails could be built to Cape Sable. Passage over the Florida Keys was deemed possible. Krome's first map of the area was lost, yet plant and tree snail collectors had no problem finding their way to known tree islands, and plume hunters had long been slaughtering thousands of wading birds, sending feathers to milliners for the hat industry.

Early Conservationists

Those wading birds ultimately helped inspire some of the earliest organized efforts to conserve southern Florida's ecosystems. While they provided the fauna inspiration, it was royal palm that provided the floral inspiration.

Perhaps no plant captured the attention of early South Floridians more ardently than the royal palm. "The royal palm is one of the finest trees in the vegetable kingdom and surely Florida can boast nothing more uniquely grand or singular," wrote Seminole War veteran and South Florida settler Andrew Canova in his memoir, "Life and Adventure

in South Florida." During the late 1800s, the royal palms impressed the pioneers of Coconut Grove, too, including Mary Barr Munroe, who eventually became president of the Coconut Grove Audubon Society.

Mary Barr Munroe and her husband Kirk moved to Coconut Grove from New York in 1883. Mary would become secretary of the Housekeepers Club (dues were 40 cents a year), which was organized in 1891 by Flora McFarlane, the county's first schoolteacher. By 1901, the pioneering Housekeepers had joined the Florida Federation of Women's Clubs. In 1905, when the Federation met in Miami, Munroe and Edith Gifford presented a motion to make a Federal Forest Reservation of Paradise Key, where those majestic royal palms grew. The motion was adopted, but it required repeated lobbying by May Mann Jennings, wife of Gov. William Sherman Jennings, before the state deeded to the

Lower Matecumbe Key,
December 1916. Cactus
(*Cephalocereus keyensis*)
growing in hammock.
Photo by J.K. Small. Archives/FTBG





Eastern shore of Lake Okeechobee, May 1917. In the hammock-swamp back of the sand-ridge various kinds of ferns grow in large piles of humus.
Photo by J.K. Small. Archives/FTBG

Federation 960 acres of Paradise Key. It asked for an equal amount in endowment. Mrs. Henry Flagler gave it. Together, the parcels were maintained from 1915 to 1947 as Royal Palm Hammock State Park, which became the nucleus of Everglades National Park. The women raised \$2,575 for maintenance of the state park and to provide a warden, Charles Mosier, who initially lived there with his family in a tent.

Meanwhile, Mary Barr Munroe continued to work for conservation of southern Florida flora and fauna. By 1915, she was president of the newly formed Coconut Grove Audubon Society, and later formed the Miami Audubon Society (which was entirely composed of women). Known to chastise women wearing feathered hats, Munroe spoke of baby herons crying for their mothers and starving to death.

In the 1915 issue of *Tropic Magazine*, she wrote “It seems incredible that today there should be in the United States any person able to read who is not aware of the fact that the ‘aigrette’ is the nuptial plume worn by the egret and snowy heron at the nesting time of the year, by both parents, and that to procure them it is necessary to shoot the birds, which means that the young are left to slowly die of starvation. ... And it is not so much the killing of the old birds as the misery left behind in the nest; starving, crying, shivering baby birds, while the parents lie dead beneath the home tree with bleeding, torn backs.”

Facing Mounting Threats

As civilization moved into South Florida, its natural environment faced threats even more daunting than bird hunters who wanted plumes for ladies’ hats. Drainage of the Everglades became the Holy Grail. Hamilton Disston bought 4 million acres of “swamp” from the state and began dredging the Kissimmee River to dry the floodplain. Railroad construction, which stretched across the Keys and ended in Key West in 1912, closed many channels with concrete bridges, while Tamiami Trail shut off water to the lower Everglades beginning in 1916 and finishing in 1928.

Residents and groups like the Audubon Societies were concerned about what was being destroyed, and the work of botanists and naturalists increased that concern to alarm. Much of the alarm over destruction of the area was raised by John Kunkel Small, a botanist from New York Botanical Garden who made his first trip to South Florida in 1901.

Learn more about John Kunkel Small in the next issue of *The Tropical Garden*. Small was a botanist who made Florida his passion, and Charles Deering supported his work in Florida. Small’s photographs of Florida have become legendary—priceless images of a land before its destruction, and in 1929, Small was moved to write “From Eden to Sahara: Florida’s Tragedy.” 



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Mary Collins

Fairchild's Senior Horticulturist Retires

By Georgia Tasker



By her selection, propagation and careful horticulture, Mary Collins furnished the plants for gardens throughout South Florida during the course of her 41-year career with Fairchild.

She carried on David Fairchild's mission for more than 100 plant sale events. When she retired in November, she said the Garden had been her life for 41 years. She no longer must set the alarm clock that roused her to work every weekday by 5:30 a.m.

A graduate of Purdue University, Collins came to work at Fairchild right after she finished college in 1973, even skipping her graduation to arrive on time. She personally took inventory of each plant in the Garden as part of her early job of plant recorder, making all the labeling and mapping. By 1978, she was named horticulturist. She ran the seed exchange program at the Garden for many years, filling requests from around the world. She got the Garden's intern program up and running. Recently, apart from her job as horticulturist, Collins was a content manager for Fairchild's website and proofread and edited *The Tropical Garden*—including this issue.

Over time, Collins oversaw the production of more than 200,000 plants for member and Garden plant sales. She carefully archived all the plant descriptions she created for each. She has left a living legacy befitting that of David Fairchild. 





This winter brings two new major art exhibitions to the Garden, including the return of

Chihuly

By Brooke LeMaire

Colorful. Radiant. Stately. These words describe the plant life at Fairchild as well as the Garden's newest additions: the monumental art and design exhibitions of *Art at Fairchild*. From December 2014 to May 2015, visitors can experience the harmony between art and nature as they walk through the Garden and take in new and wondrous works woven throughout 83 acres of tropical plants.

Dale Chihuly
Polyvitro Chandelier, 2006 (front)
Sol del Citron, 2014 (back)
Photo by Chihuly Studios



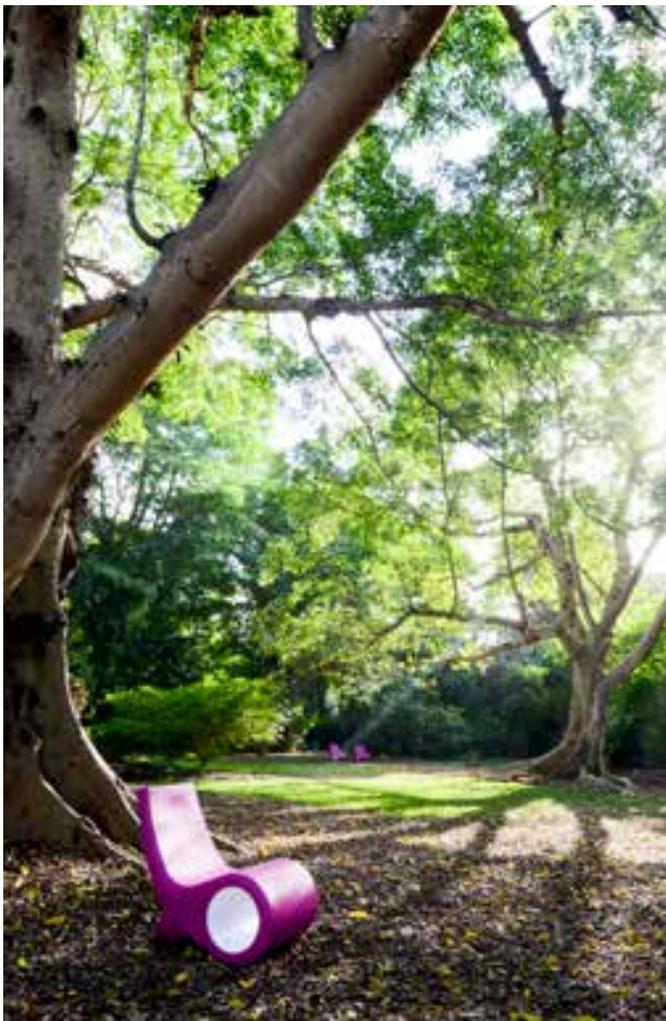
World-renowned American glass artist Dale Chihuly has returned to Fairchild to present his highly anticipated and most comprehensive garden exhibition, including new art that has never been on view anywhere before. The new “Sol del Citron” spreads its spiraling glass elements like rays of sunlight atop the Overlook vista as it shines above Pandanus Lake. The glittering blue spheres of “Garden Glass” cascade like a waterfall into the pond of the Tropical Plant Conservatory. “Scarlet and Yellow Icicle Tower” stands tall and regal just like the palms surrounding it in the Montgomery Palmetum. “Float Boat” drifts gracefully, its blue and green glass matching Glade Lake and the tropical trees reflected in it. These are only a few of the 24 installation sites where visitors can soak up Chihuly’s shining glass art. It shines with sunlight during the daytime, and will be illuminated under the South Florida sky at night during Tropical Chihuly Nights.

Art at Fairchild also shines at the new Adam R. Rose and Peter R. McQuillan Arts Center. This beautifully landscaped facility serves as a permanent space for celebrating arts and culture at Fairchild. On the frames of each of its doors and windows are

LEFT
Dale Chihuly
Scarlet and Yellow Icicle Tower, 2013
Photo by Chihuly Studios

BELOW
Dale Chihuly
Palazzo Ducale Tower, 1996
Photo by Benjamin F. Thacker





botanical friezes by Miami-based artist Naomi Fisher. During this art season, it will house the Chihuly Garden and Glass Gallery, where visitors can view collection pieces and purchase glass art, limited-edition prints, books and other Chihuly merchandise.

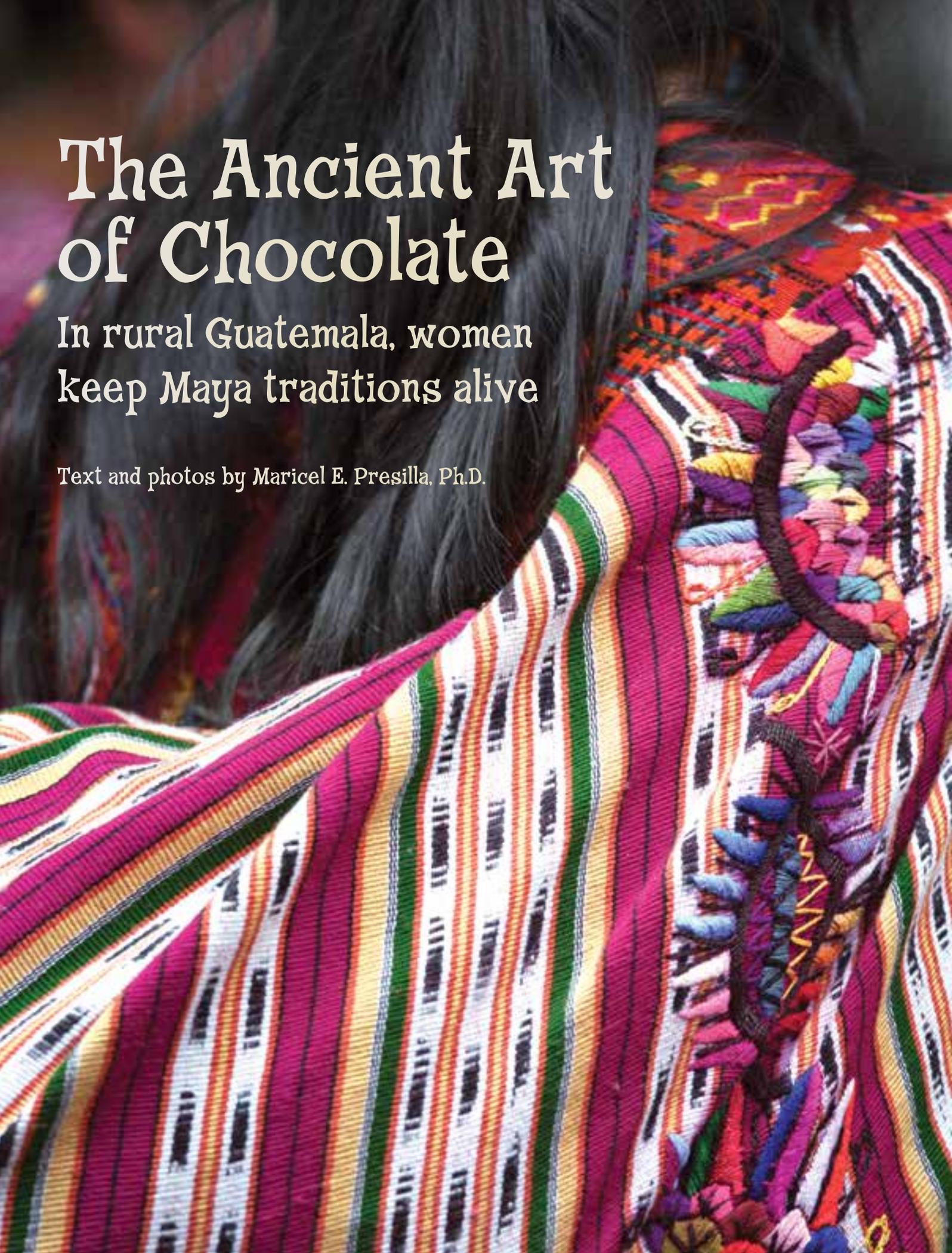
Elsewhere in the Garden, designers from all over the world combined their talents to create the *Fish Chair* exhibition in the eight-acre Arboretum. Designer Satyendra Pakhalé was born in India, is currently based in the Netherlands, and is represented by the ammann//gallery in Cologne, Germany. He partnered with designer Giulio Cappellini of Italy's Cappellini design firm to produce 40 "Fish Chairs" in a special "viola" color to complement the tropical greenery. Cristina Grajales of the Cristina Grajales Gallery in New York, who previously curated the *Sitting Naturally* and *Hugo França at Fairchild* design exhibitions, returned to curate *Fish Chairs*. Visitors can relax on the whimsical designs and look up into the 700 tropical flowering trees that surround the exhibition—a perfect respite after a walk around the Garden. 

TOP
Dale Chihuly
Fiori Boat, 2014.
Photo by Chihuly Studios

LEFT
Satyendra Pakhalé
Fish Chair, 2014
Photo by Benjamin F. Thacker

RIGHT
Dale Chihuly
Fire Orange Basket, 2013
Photo by Chihuly Studios





The Ancient Art of Chocolate

In rural Guatemala, women
keep Maya traditions alive

Text and photos by Maricel E. Presilla, Ph.D.

Cacao was already being used as drink in South America 56 centuries ago, at least 1,670 years before the Egyptians built their first step pyramid, by a people known to archaeologists as the Mayo Chinchipe.

Atol de sùchil
(Samayac, Guatemala).



In a scene on a delicate Maya vase from Guatemala depicting the court of God L, the underworld deity of merchants, a woman pours a chocolate drink from one vessel to another, holding it high to create a head of foam, the most prized part of the beverage.

The vase, now in the collection of the Princeton Art Museum, is the first painted representation of a Maya ritual passed down to the Aztecs and then to Spanish colonists. It is also the first to show the crucial role of Maya women in the making of chocolate.

Cacao was already being used as drink in South America 56 centuries ago, at least 1,670 years before the Egyptians built their first step pyramid, by a people known to archaeologists as the Mayo Chinchipe. They lived in the eastern slopes of the Andes Mountains in the Upper Amazon region of today's Ecuador, not far from the Peruvian border. But it was probably the women of Mesoamerica who perfected the process of making chocolate: drying, roasting and grinding the cacao beans on a three-legged volcanic stone. They also expanded its flavor and texture spectrum, combining it with ingredients such as corn, pataxte (*Theobroma bicolor*, a cousin of cacao), vanilla, achiote seeds, ear flowers (orejuelas), allspice and chiles and making nourishing drinks endowed with ritual significance.

The contemporary Maya women of Guatemala keep these traditions alive, crafting artisanal chocolate in ways that have not changed much since the "Princeton Vase" was created around 750 A.D. Their reliance on time-tested techniques and ingredients is all the more admirable because they work in a difficult environment where cacao is threatened by easier crops such as sugar cane and by the cumulative effect of centuries of neglect.

Cacao is native to the humid forests of the Upper Amazon in South America, but the prized and complexly flavored variety known as *criollo* (the rarest and finest cacao) seems to have been established in Mesoamerica by the second millennium B.C. The rich, well-irrigated volcanic lands stretching along the Pacific Ocean from Soconusco in today's Chiapas state in Mexico through Guatemala to Izalco in El Salvador were once the source of a most-coveted *criollo* cacao. The Aztecs fought the Maya for access to this valuable resource, and the Spaniards who conquered them both made fortunes with this singular cacao during the early colonial period.

Cycles of boom and decline shaped cacao's geographic distribution throughout the centuries of Spanish rule, with the Suchitupéquez department in Guatemala coming into its own as a source of cacao during the late 16th century. Disease,



The Princeton vase, A.D. 670–730. Ceramic with orange and brown-black slip, with traces of post-fire Maya Blue pigment. Princeton University Art Museum. Photo by Bruce M. White.



Grinding cacao and other ingredients for *pozunke* (San Bernardino, Guatemala).

competition and a lack of labor, however, conspired against cacao in this region and all over Guatemala. Today, the country does not produce enough cacao to satisfy domestic demand, and much work is needed to save the nation's remaining heirloom cacao and encourage exports.

Though *criollo* cacao has practically disappeared from Guatemala, replaced by sturdier hybrids, Suchitepéquez remains home to a vibrant artisanal chocolate culture kept alive by women.

How the Women of Suchitepéquez Turn Cacao Into Chocolate

Years ago, I was invited by the Grupo Gestor San Antonio, a non-profit intent on revitalizing cacao in the region, to attend Guatemala's Second National Fair of Cacao (II Feria Nacional del Cacao) in San Antonio Suchitepéquez. There I met farmers and chocolate makers from towns throughout the region, and was able to spend time with Maya women, following them in their daily chocolate-making activities. I also returned for further research. Though many women still use the classic grinding stone (*piedra de moler*) to make small chocolate batches for home use, most rely on mechanized mills to grind large batches for market. The mills are rudimentary, and it requires a lot of

strength to lift heavy bags of cacao, pataxte, toasted corn, sugar and other ingredients to grind them, separately and together, until the right texture is achieved.

Before they are milled, the cacao beans, corn and spices are roasted at home on comales (a smooth, flat griddle) or earthenware pots over a wood fire. For large batches, this procedure can take several hours. Plain chocolate, simply flavored with sugar and sometimes cinnamon, is made everywhere. Once the women toast and peel the cacao, they bring it to the mill and grind it with plenty of sugar.

María Erlinda Ramos Tunay, a young widow and mother of five from Samayac, an old and thoroughly Maya town, is a typical Guatemalan artisanal chocolate maker. Once her batch of cacao has been ground with sugar, she carries home a 50-pound bag of cacao and sugar paste on a motorized bike taxi. With the help of her two older daughters, she molds the still-warm mass into large blocks and pats them hard to make them compact. Once the blocks are unmolded, she cuts them into long, narrow strips and rolls them into cylinders. Then she cuts each into disks, and her daughters cup them up with the palms of their hands and roll them on the smooth surface of the worktable to round the edges and give the chocolate some shine.

Pouring *pozunke* (San Bernardino, Guatemala).



Grinding *panecito* mix at a local mill (San Antonio Suchitepéquez, Guatemala).



A handful of women still grind the cacao mixture with the traditional grinding stone, and then stir it by hand while adding warm and cold liquid and even adding ice packs to the mix to produce a thick, lumpy foam, the crowning glory of the *atol*.

Throughout Suchitepéquez department, cacao is consumed in various forms. The town of San Bernardino is famous for its *pozunke*—an unsweetened corn masa and rice gruel (*atol*) that is drunk hot or cold and flavored with a doughy mixture of raw and toasted cacao, *pataxte* and soaked and broken corn tortillas made with dried corn processed (nixtamalized) with ashes. A handful of women still grind the cacao mixture with the traditional grinding stone, and then stir it by hand while adding warm and cold liquid and even adding ice packs to produce a thick, lumpy foam, the crowning glory of the *atol*. This is the drink of choice for the long vigils of Easter Friday and for community gatherings on the Days of the Dead.

For daily consumption, the people of Suchitepéquez enjoy refreshing cold drinks made with dried cacao, *pataxte*, toasted corn and a variety of seasonings dissolved in water. The name—*tixte*, *panecito*, *pinol*—and composition of the mix varies from town to town and from cook to cook. Iris Mariela Gómez, a resourceful chocolate

entrepreneur from the town of Samayac, learned the craft from her mother as a 10-year old. She grinds cacao, *pataxte*, achiote and rice to make *tixte*, which she dissolves in water and drinks cold with ice. She also makes a more complex creation, a mysterious mixture known as *súchil*: a thick, dark paste that blends toasted cacao, corn, cumin, mamey sapote seeds and peppery *orejuela* (ear flowers). The paste is the flavor base for an unsweetened gruel of corn masa and rice called *atol de súchil*—the drink Iris’s husband takes to the field early in the morning to sustain him.

These chocolate and cacao drinks carry the essence of the Maya and are a living link to the rich past that defines the Guatemalan national identity. They also pose a moral imperative for Guatemala’s government, private institutions and farmers.

Abandoning cacao is not an option in a country where the livelihood of thousands of women and their families depend on it. 

Maricel E. Presilla, Ph.D. is a culinary historian and chef/co-owner of Cucharamama, Zafrá and Ultramarinos in Hoboken, N.J. She is also the president of Gran Cacao Company. Her latest books are “The New Taste of Chocolate: A Cultural and Natural History of Chocolate with Recipes” (Ten Speed Press, 2009) and “Gran Cocina Latina: The Food of Latin America” (W.W. Norton, 2012), winner of the James Beard Foundation Cookbook of the Year award in 2013.

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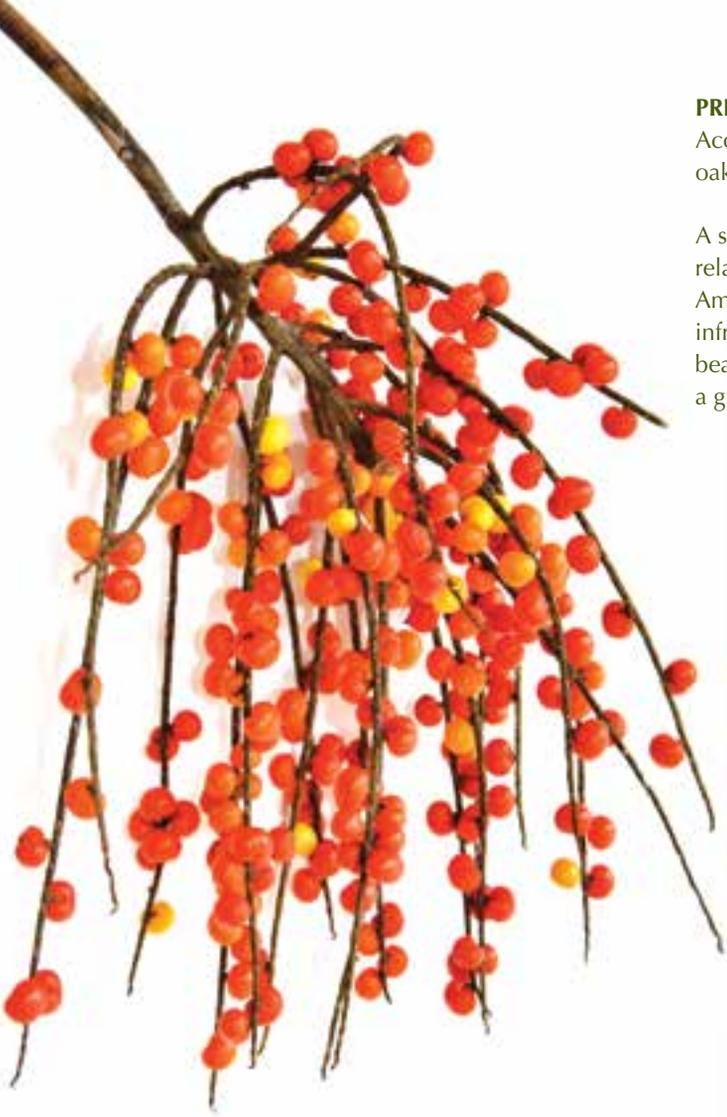
*seeds
in a package*

text and photos by georgia tasker

PREVIOUS PAGE

Acorns are seed packages of our live oak, *Quercus virginiana*.

A solitary palm, this *Gaussia* palm has relatives throughout Mexico, Central America and the Greater Antilles. The infructescence (an ensemble of seed-bearing stalks) holds lovely red berries in a graceful spray.



Seed



Dade County pine, *Pinus elliottii* var. *densa*, has small female cones that contain samaras or winged seeds. For such a strong, upright conifer, the seeds are surprisingly tiny. Like lotus pods, these cones are wonderful windowsill ornaments.

Guaiacum sanctum is the lignum vitae or tree of life, and its seedpods are capsules, remarkably geometric, splitting open to reveal five chambers. Charles Sprague Sargent, in 1891's "Silva of North America," describes lignum vitae as a "low, gnarled, round-headed tree" with seeds that have a "thick fleshy scarlet aril-like outer coating."



Portea petropolitana is a bromeliad endemic to Brazil that flowers in the spring and produces seedpods that increase in size and color through the summer. By November, they are at their deepest lavender and will begin to shrivel, but they have provided a long-running show.





Sophora tomentosa var. *truncata* is the South Florida native necklace pod. Yellow flowers grow in terminal clusters, and seedpods develop so quickly the inflorescence may be flowering at one end and forming seeds at the other. A West Indian form has quite hairy leaves, according to the Institute for Regional Conservation.

Erythrochiton brasiliense is a peculiar shrub from Brazil and Peru that has leaves at the top of its stems, with white flowers emerging from red bracts (erythro means red). Seed pods retain the red covering before turning to maroon and then brown, when they release their seeds. Chiton is from the Greek for "coat of mail."



Chamaedorea palms are understory plants, growing in the shade of the rainforests of Central America and Mexico. Their seed stalks are orange and the fruit are black. These small structures look like little trees, should you stand them on end. But who would do that?

Golden rain tree, *Koelreuteria elegans*, is an exotic and, many think, reprehensible tree (read invasive). But the yellow flowers quickly turn to inflated red seed capsules that resemble Chinese lanterns and are more decorative than the flowers, giving an autumnal touch to the canopy.



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Scented Soaps and Crafted Candles

By Erin Fitts. Photos by Rey Longchamp



Soy Delicious Candles

These hand-poured, eco-friendly soy candles are made locally in Miami by two former teachers who wanted to spend more time with their children. Available in tropical scents such as Dulce de Leche, Tahitian Orchid and Havana, the candles also make a moisturizing body butter as the wax melts. \$7.50-\$35.



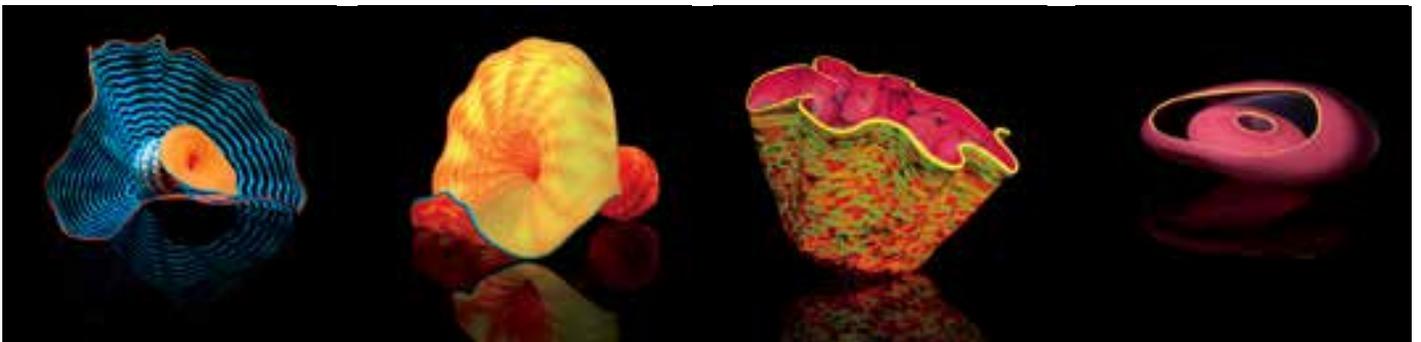
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FAIRCHILD TROPICAL BOTANIC GARDEN

A GREATER APPRECIATION FOR

FUNGI

TEXT AND PHOTOS BY
KENNETH SETZER

USUALLY OVERLOOKED, OFTEN MALIGNED, THE HUMBLE FUNGUS NEVERTHELESS CONTINUES MAKING LIFE ON EARTH POSSIBLE.

Have I gone too far in my assessment of fungi? I don't believe so, and I hope I can convince you of the same. Fungal phylogeny—their evolutionary history—shows that they are actually more closely related to animals than to plants. While the cell walls of plants are made of cellulose, the cell walls of fungi are composed of chitin, the same substance that makes up insect exoskeletons. Odd indeed, but the roles fungi play in nature are more than just unusual, they are intrinsic to life and its renewal.

While some fungi are pathogenic to plants and animals, many play a supporting, if largely unseen, role. This is evident in a mycorrhiza (myco="mushroom;" rhizo="root"). This is a symbiotic relationship between a plant and a fungus, or very possibly many plants, trees and fungi. Just imagine the woods with transparent soil, revealing a network of connections among the plants and fungi. Basically, a fungus will associate with the roots of a plant, in some cases infiltrating its very cells. They exchange nutrients, with the fungus gaining carbohydrates manufactured by the plant, and the plant receiving minerals, nutrients and higher rates of water absorption. Studies have shown plants grown in sterile soils lacking mycorrhizal fungi will suffer, wither and often die prematurely.

Another unappreciated fungal role is that of decomposition. We'd be knee-deep in waste were it not for saprotrophic fungi—those that feed on dead or decaying matter, recycling its nutrients back into the soil.

This is why so many mushrooms are found on mulch. This brings us to an important fact: the mushrooms you see are actually the reproductive structures of the fungus—the fruit. The body of the fungus is often completely underground, or entwined within a piece of rotten wood. The body of the fungus is called the mycelium, and is composed of masses of string-like filaments called hyphae. When conditions are right, the fungus will produce a mushroom; its purpose is to spread the fungal spores involved in reproduction. Let's take a closer look at some fungi you may encounter.



Clathrus crispus, two individuals of the latticed stinkhorn mushroom.

STINKHORN MUSHROOMS

These fungi (mostly within the Phallaceae family) live up to their common name by emitting a smell similar to decaying meat. The strategy is to attract flies, which then spread the fungal spores, thus playing a role like seed dispersers do for plants. Most stinkhorns are saprotrophic on wood, and are usually found on mulch. I think you'll agree, their forms are fantastic!



Pseudocolus schellenbergiae, the stinky squid—yes, this is a mushroom.



Mutinus species.



Candlesnuff fungus (*Xylaria hypoxylon*). At slightly taller than one inch, these look like little Halloween zombie hands.



Dead man's fingers fungus (*Xylaria polymorpha*). Nearly black, these are tough to spot, but they mature to grayish white. They contribute to spalting in wood—a discoloration prized by woodworkers.

DEAD MAN'S FINGERS

You need to get close to the ground to find these *Xylaria* species, but once you do, they are easily noticed. These creepy-looking fungi are also saprotrophs.



Cyathus striatus, sometimes called splash cups, are common throughout North America.

BIRD'S NEST FUNGI

These very tiny gregarious fungi are abundant on mulch. They start out looking like tiny, scaly white elongated spheres, but open to form a cup that holds the “eggs,” called peridioles, which themselves contain spores. Raindrops displace the peridioles, ejecting the eggs from the nest and spreading the spores. Depending on species, the peridioles can range from silver to black.



Pisolithus arhizus (formerly *Pisolithus tinctorius*) eventually dries and crumbles, thus spreading its rusty brown spores.

DYE MAKER'S FALSE PUFFBALL

The common name reveals that *Pisolithus* species have been used as a source of fabric dye. While not particularly beautiful (reflected in their less polite common names) they form vital mycorrhizal relationships with many plants, including pine, spruce and oaks. I found this one on my lawn at the base of a live oak; I hope they've joined forces underground.



Leucocoprinus birnbaumii, the beautiful, but poisonous, flowerpot mushroom.

FLOWERPOT PARASOL MUSHROOM

This intensely sulfur-colored mushroom with a scaly cap feeds off very decayed matter like humus and compost, explaining its distribution in nurseries—and flowerpots—throughout the world. However, here in the sub-tropics, it can also be found outdoors in gardens. As the cap (called the “pileus” from Greek and Latin words for cap) flattens, the intense yellow fades.



Tremella fuciformis, aka the snow fungus.

SNOW JELLY FUNGUS

The closest we'll get to snow in South Florida, this gelatinous fungus (*Tremella fuciformis*) produces frond-like, nearly transparent mushrooms on hardwood after lots of rain. A humble fungus, it is nevertheless an important part of Asian cuisine, and is used extensively in traditional Chinese medicine.

Tremella species are mycoparasites, and are known to parasitize *Hypoxylon* fungi, though there may be some mutual benefits involved in this mysterious relationship.



Orange jelly on pine (*Dacrymyces palmatus*)—probably.

I wanted to include the common fungus witches' butter here (*Tremella mesenterica*), since it's a congener to snow jelly. However, as is so often the case in nature, what I thought was witches' butter is more likely orange jelly (*Dacrymyces palmatus*). But this is a good lesson learned: Fungi are often nearly impossible to accurately identify! I *think* this pretty orange fungus is orange jelly, purely because orange jelly prefers conifers and this example is growing on pine. To know for certain would require microscopic analysis of the spores.



The poisonous false parasol (*Chlorophyllum molybdites*).

FALSE PARASOL

These rather large mushrooms (my outstretched hand barely spanned the cap at top right) could be mistaken for the parasol mushroom (*Lepiota procera*), a choice edible. However, as these specimens matured, they developed a sordid greenish tinge to their gills, where the spores are located. This is characteristic of the false parasol (*Chlorophyllum molybdites*), possibly the cause of most mushroom poisoning cases in North America. My field guide notes that it causes "days of violent purging." Both species are pretty similar to the destroying angel mushroom (*Amanita virosa*), which can be found throughout North America on grass or in woods. And indeed, without intensive medical treatment, the destroying angel mushroom is deadly. The point: do not eat wild mushrooms unless you are an expert mushroom hunter/mycologist.

Poisonous or edible, ordinary or outstanding, the mysterious, fascinating fungi provide services we have yet to discover, as well as food, medicine, the kick-start to orchid germination and, lest we forget, the yeast for our bread, beer and wine.

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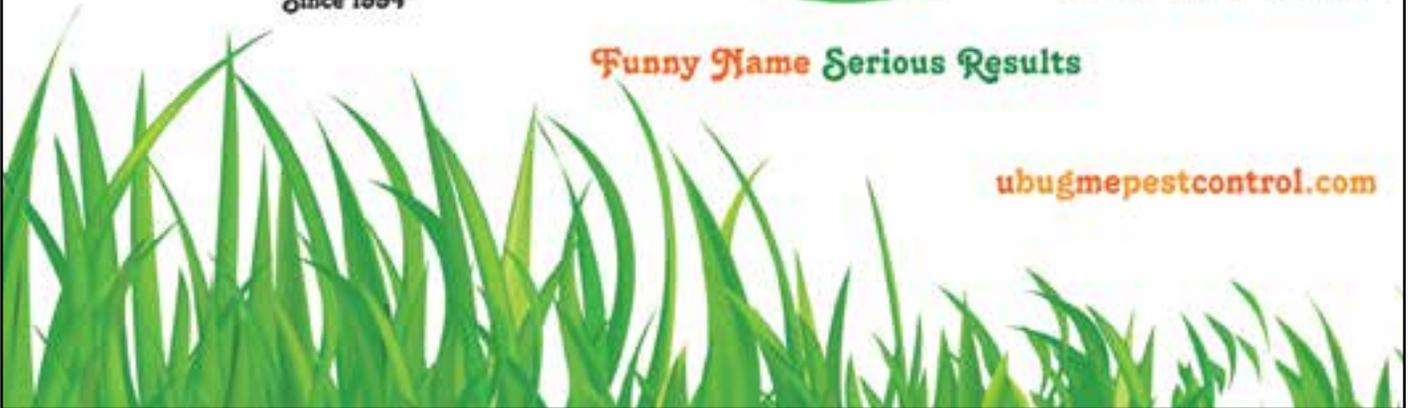
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The Emerald Ash Borer A South Florida Threat?

A beautiful but horrendously destructive beetle species is decimating ash trees by the millions across North America. Are Florida trees at risk?

By Kenneth Setzer



The emerald ash borer is a highly destructive and invasive beetle.

Another invasive critter runs amok—the emerald ash borer beetle (EAB) has been big news for years now, first reported in 2002 in southeast Michigan. It is believed to have been introduced in ash wood used in shipping crates or pallets. By 2003, some 5 million to 7 million ash trees were dead or dying in a six-county area of southeastern Michigan, according to an article in *Annual Review of Entomology*, volume 59.

Since that time, EAB has spread out in all directions, north to the Canadian provinces of Ontario and Quebec, west to Colorado, and by 2013 as far south as Georgia. By now, EAB has killed tens of millions of trees.

The EAB beetle falls within the buprestid family, sometimes called the jewel beetles. Many of the jewel beetle species live up to their name with spectacular

metallic colorations. While there are jewel beetles native to the United States, their populations are kept in check by natural predators. The EAB beetle, however, hails from northeast Asia; its natural predators are absent in its new home here in North America. EAB adult beetles are indeed a dark, metallic emerald green. They're quite small compared to some other jewel beetles, at about one-half-inch long, and are shaped like a backwards-facing bullet, with a blunt head and tapering towards the rear of the body. While many buprestid beetles—including some natives—only attack stressed trees, the EAB utilizes healthy trees, both wild and in cultivation or landscapes.

While adult EAB beetles may consume some ash tree foliage, the damage is minimal. The catastrophic destruction results from the beetle's lifecycle: Adults lay eggs on the bark of ash trees, the larvae hatch and burrow under the bark and into the tree's phloem and cambium, where they feed and create labyrinthine tunnels known as galleries. It may be hard to believe such tiny creatures can kill a mature ash tree, but they do; by consuming the phloem layer of the tree, the larvae eventually starve the tree to death. The phloem layer is responsible for moving nutrients derived from photosynthesis throughout the tree, so by disrupting the phloem, the tree is starved, similar to when a tree is girdled.

The tiny EAB adult beetles can fly only about one-half mile from their tree, so most likely they've spread so widely through transportation of infected nursery trees, infected ash lumber and, especially, in firewood. The movement of ash is now regulated in affected states. The mantra for firewood use has become "buy local, burn local."

Is Florida at risk? The EAB survives in very warm areas of Taiwan, so it seems that it could survive even South Florida's subtropical weather. Florida isn't yet included on lists of affected states, but our northern neighbor Georgia is. Our ash species include white ash (*Fraxinus americana*) and pumpkin ash (*F. pennsylvanica*), as well as the only ash found in South Florida—Carolina or swamp ash (*F. caroliniana*), an inhabitant of wetlands. Its preference for wetlands unfortunately makes Carolina ash harder to monitor.

It gets worse: A professor at Wright State University (in Dayton, Ohio) has discovered EAB beetles utilizing a new host, white fringetree (*Chionanthus virginicus*) which is in the same family as ash (Oleaceae).

It turns out to be quite difficult to eradicate a wood-boring pest. Systemic insecticides, which must be applied individually to each tree and travel throughout the tree's circulatory system to be effective, have been used successfully against EAB. Unfortunately, this doesn't seem practical for treatment of innumerable wild ash trees over thousands of acres. At least three parasitic wasp species are being tested as a biocontrol, but even if effective, they would be a long-term solution.

In the meantime, if you live near ash trees, keep an eye out for canopy dieback, unusual sprouting from the roots or trunk and the characteristic "D"-shaped exit holes left by the EAB. Report signs of EAB or infected ash trees to the USDA at www.hungrypests.com or to the Florida Division of Plant Industry Helpline at 1.888.397.1517. 



EDIBLE GARDENING

Edible Gardening in a Winter Wonderland

By Richard J. Campbell, Ph.D.

We, as good edible gardeners, must understand our climate. Winter begins when the Caribbean trade winds are overpowered by continental fronts that come down from the north. Humidity drops, temperatures moderate, water loss from the soil and leaves lessens and light levels decrease. The sun moves to our south and we have shorter days, cooler temperatures and a more subtropical climate—it is time to plant.

Timing is everything

To ignore the cycles of nature is folly and will bring only frustration and ruin. The seasonal change comes somewhere between Thanksgiving and Christmas, and this is when direct seeding of your lettuce, beans and such should occur. Nighttime average lows will be at 65 degrees Fahrenheit or below, allowing for proper germination and emergence of the seedlings. When timed properly, direct seeding will proceed smooth as silk, and prior to the weather change seedlings should be sprouted in containers in a more controlled environment such as a small greenhouse or grow box.

Waste becomes energy

Everything should be used as an energy source for your edible garden. If you have animals such as chickens, rabbits, or goats, use their manure to feed the compost pile, and thus the edible garden. Kitchen refuse can be cycled through the animals on the way to the compost pile and eventually to the garden. If you have no animals, place plant clippings, twigs, leaves and refuse into the compost. A little practice will begin to teach you about nitrogen cycling and composting for success, but do not fret over the failures along the way. It takes a bit of practice to be “green,” but the results save money and produce better flavor and quality for your table, as well as contentment in doing what is natural.

Choose what works

Grow plants that are well adapted to our climate. There is room for experimentation, especially in the name of education for children, but choosing the proper crops can considerably reduce frustration. Choosing improper crops is both expensive and disheartening to the edible gardener. Use local options where possible, which means that special attention should be paid to one’s neighbors, to festivals and to writings about local growing. Be wary of national norms in terms of edible gardening, as we here in South Florida are unique.

Go organic

Chemical usage is easy, but costly in the end. When chemicals are used, the edible gardener enters into a treadmill that enslaves for life. Choose a path of tolerance and insight that works within the natural cycles of the edible garden and close your ears to the siren song of modern chemistry. A living organic soil and diverse edible garden is good start. Add in resistance and tolerance for a winning combination.

Observe and learn

Sit and observe all aspects of the edible garden. Take it all in and understand your place. Actions should come from your observations, and only after you understand the subtle and intricate balance of life in the garden. For insects, the first question is always, “What is it?” The second is, “What does it do?” Only then should you consider options for dealing with it. Ignorance is no excuse for a bold and provocative hand in gardening. The thoughtful and tolerant gardener sows the seeds of success within the edible garden.

Garden on! 



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Blooming this Winter

With an eye toward what might be blooming this winter, here are some plant names that will further illuminate the subjects' identity.

By Georgia Tasker

Photos by Mary Collins, Susan Ford-Collins and Fairchild Staff



1. *Bourreria cassinifolia*

A Florida native called little strongbark, this plant takes its genus name from Johann Ambrosius Beurer, a German pharmacist from Nuremberg; *cassinifolia* means the leaves resemble those of *Ilex cassine*, or dahoon holly.

2. *Buddleja lindleyana*

Butterfly bush takes its genus name from Rev. Adam Buddle, an English botanist whose 1708 English flora was never published; *lindleyana* is for John Lindley, an orchid specialist and the first professor of botany at London University.



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3. *Holmskioldia sanguinea*

Chinese hat-plant remembers Theodore Holmskiold, a Danish physician and professor. Stearn's Dictionary of Plant Names for Gardeners says the genus should be pronounced "holm-shol-dia." The epithet means blood-red.

4. *Eranthemum pulchellum*

Stearn's Dictionary says only "an old name transferred to this genus," a rather cloudy explanation. *Pulchellum* means pretty. Sometimes called blue sage, this is one of the shrubs that Marjory Stoneman Douglas and Mabel Dorn recommended in their 1928 garden book, "The Book of Twelve for South Florida Gardens."

5. *Pavonia bahamensis*

Pavonia is named for Jose Antonio Pavon, a Spanish botanist who worked in Peru and Chile in the late 18th and early 19th centuries; *bahamensis* ends in "ensis," which indicates a country or place. This large shrub is attractive to hummingbirds.

6. *Pyrostegia venusta*

Flame vine's genus name is from the Greek, *pyr*, for fire and *stegia* comes from *stege* or roof. The brilliant orange flowers that appear on the vine pergola seem to set the roof aflame; *venusta* is charming.

7. *Rondeletia odorata*

Panama rose was named by Linnaeus for a 16th century French chancellor of the University of Montpellier in southern France, Guillaume Rondelet; *odorata* means fragrant.

8. *Osmoxylon lineare*

On her blog, Susan Ford Collins writes that the genus name comes from the Greek for scented wood. We've run into *lineare* before; it means narrow. *Osmoxylon* is pronounced oz-mah-ZY-lon and is in the aralia family.

9. *Uncarina grandidieri*

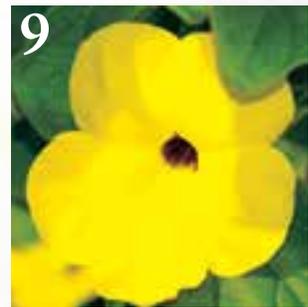
The genus name may refer to the Uncarina tribe in Madagascar, this plant's home. Alfred Grandidier was a wealthy French explorer who spent years in Madagascar and collaborated with others to compile the "Physical, Natural and Political History of Madagascar," which filled 40 volumes.



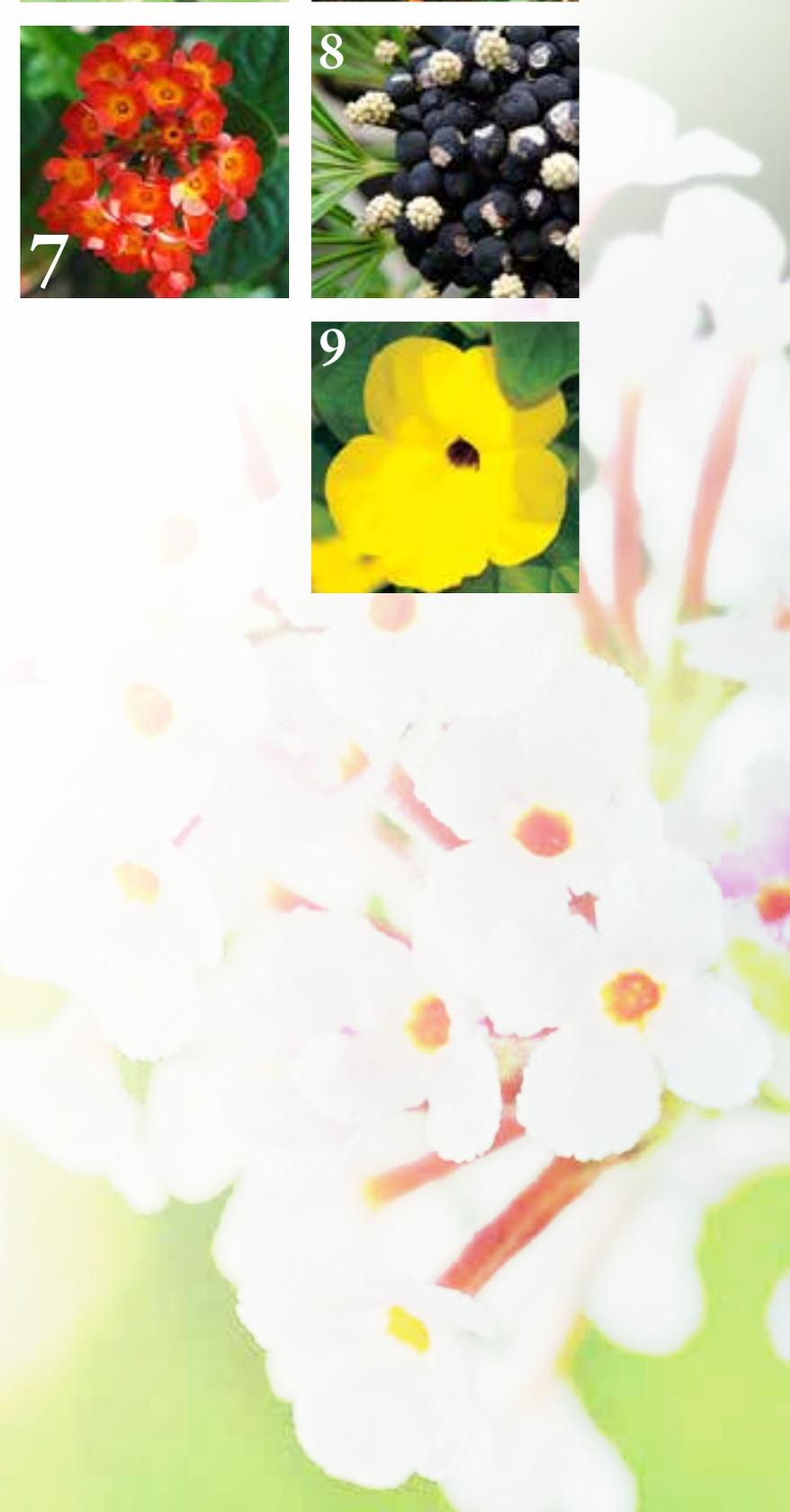
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BROMELIAD SOCIETY of South Florida

By Leonard Goldstein

The Bromeliad Society of South Florida started life small. Founded in Miami in 1959, it conducted meetings at Simpson Park for many years before relocating to Fairchild. The BSSF was among the first plant societies to present a sale at the Garden, beginning in 1978. During the Society's 50-plus years, its dedicated volunteers have built an organization that runs an annual show and sale and an annual auction, both breathtaking in breadth and quality.

Bromeliads are not only strikingly colorful, but they are also among the most versatile of ornamental plants in the landscape. In the horizontal plane, terrestrial species can be massed for stunning displays of the plants' upper

leaf surfaces, as well as of their often-otherworldly inflorescences. In the vertical plane, epiphytic species can be arrayed to emphasize height and to highlight banding and striping on lower leaf surfaces. Plus, most bromeliads are remarkably easy to grow; some are right at home on a chain-link fence!

While bromeliads' allure has always been based on their amazing natural range of colors, patterns and textures, intensive hybridization has added new combinations to the family.

See for yourself what all the fuss is about. The Bromeliad Society's 34th Show and Sale will be held April 18–19 on Garden grounds. In addition to plant sales and an extraordinary specimen

plant competition, the event will feature a bromeliad art show, with works in multimedia by student artists.

On September 26, the Society will play host to the Bromeliad Extravaganza of the Florida Council of Bromeliad Societies. This year's theme is "Bromeliads in the Magic City." The Society's dazzling annual auction—open to the public—is set for October 20.

BSSF meetings, held the third Tuesday of every month, are always open to the public. For more information, please go to www.bssf-miami.org.



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FAIRCHILD TROPICAL BOTANIC GARDEN

The Garden's Native Collections

South Florida native plants can be found throughout the Garden. But five specific habitats are entirely devoted to natives, re-creating some of South Florida's endangered natural areas.

Text and photos by Marilyn Griffiths

The native plants of South Florida are represented at Fairchild in five different habitats in the Garden. In each distinct environment, appropriate species have been planted to re-create the natural areas of South Florida, which have become rare and endangered due to development.

The Pine Rockland Exhibit in the Lowlands (Plots 176 and 97b) was developed in 2002. The first species planted in the area were slash pines, *Pinus elliottii*. Other pineland plants were then added, including three palms: *Serenoa repens* (saw palmetto), *Sabal palmetto* (cabbage palm) and *Coccothrinax argentata* (silver palm). Shrubs such as *Callicarpa americana* (beautyberry), *Bouyeria cassinifolia* (pineland strongbark) and *Forestiera segregata* (Florida privet) contributed to the understory. Food, nectar and host locations for native wildlife come from *Zamia integrifolia* (coontie), *Crossopetalum ilicifolium* (quail berry), *Croton linearis* (pineland croton) and *Lantana depressa* var. *depressa* (rockland shrub verben).

Over the years, additional species have been planted, including grasses and wildflowers. In nature, pinelands are



Callicarpa americana
Photo by Benjamin F. Thacker

naturally burned when lightning strikes and fire breaks out; their plants are adapted to fire and easily regenerate. Here at Fairchild, fire is prohibited, so staff and volunteers must mimic the effects of fire by hard pruning the understory. It is amazing to see the new growth appear almost immediately after pruning.

In the far southeast corner of the Garden, visitors will find the Keys Coastal Habitat. Initially, this was designated as the Everglades area and contained many

native trees and shrubs. In the mid 1990s, more native trees were planted and paths were laid out to create the feeling of a Keys hammock. Since then, the area has become filled with ensuing generations of the original plants, and nature has added wildflowers over the years. *Flaveria linearis* (yellowtop), *Eustoma exaltatum* (seaside gentian) and *Heliotropium polyphyllum* (pineland heliotrope) come and go with the seasons. As groundcovers, you'll see *Passiflora suberosa* (corky-stem passionflower) with its many leaf shapes



Flaveria linearis



Psychotria nervosa



Serenoa repens

and *Oplismenus hirtellus* (basketgrass). More than 80 species grow in this section, including *Swietenia mahagoni* (West Indies mahogany), *Erithalis fruticosa* (black torch) and *Rhizophora mangle* (red mangrove). A walk through the Keys Coastal Habitat will transport you into the quiet world of a native hammock.

In Plot 64 near Hammock Lake is an original hammock area that was left essentially untouched when the Garden was developed. *Swietenia mahagoni* (mahogany), *Quercus virginiana* (live oak) and *Bursera simaruba* (gumbo limbo) dominate the rocky copse, while *Taxodium distichum* (bald cypress) graces the lake edge. Understory plants include *Serenoa repens* (saw palmetto), *Chrysobalanus icaco* (cocoplum) and *Psychotria nervosa* (wild coffee). Recently, native ferns were planted throughout the plot, taking advantage of the limestone rocks and, for climbing ferns, the massive oak trunks.

Another small patch of natives is next to the oldest building in the garden, the Gatehouse. The highlight here is the magnificent oak, which predates the Garden. Its massive branches are home to more than 30 species of native epiphytes (plants taking moisture and nutrients from the air and surrounding debris while being supported by another plant).

Orchids, bromeliads and ferns attach themselves in the crevices of the oak bark, where they may seed in or spread by rhizomes (horizontal stems). Look closely among the resurrection fern (another native, *Pleopeltis polypodioides*) to see *Encyclia*, *Tillandsia* and *Peperomia* species. Circle around on the path on the side of the oak to see a delicate climbing fern, *Microgramma heterophylla*.

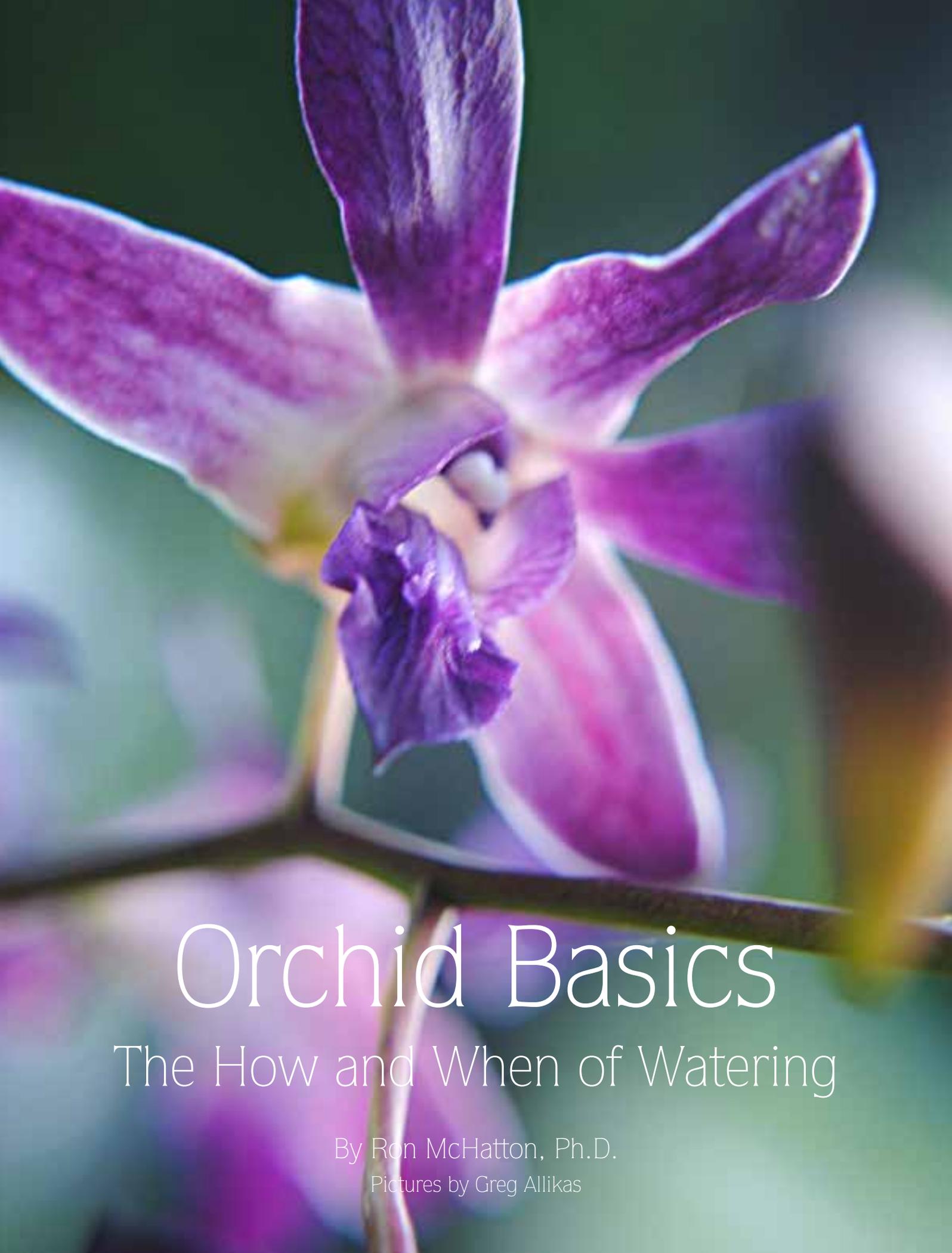
In the Lowlands, Plot 161 contains the 11 palms native to Florida: *Roystonea regia*, *Pseudophoenix sargentii*, *Serenoa*

repens, *Sabal etonia*, *Sabal palmetto*, *Sabal minor*, *Acoelorrhapha wrightii*, *Coccothrinax argentata*, *Leucothrinax morrisii*, *Rhapidophyllum hystrix* and *Thrinax radiata*.

The few areas described here are entirely devoted to native plants. But they are not the only areas in the Garden that contain natives. Throughout the Garden, we have planted many natives where they are appropriate to the landscape plan and fill the needs of the area. The Lisa D. Anness South Florida Butterfly Garden, the Arboretum and the Montgomery Palmetum all have representatives of Florida's native plants.

I hope you enjoy visiting these special areas of the Garden and will be inspired to dedicate part of your garden to our native plants.





Orchid Basics

The How and When of Watering

By Ron McHatton, Ph.D.

Pictures by Greg Allikas



A bamboo skewer has been inserted in this *Oncidium* Intergeneric hybrid's potting mix. Note all the fine material and the obvious moisture wetting the last couple inches of the skewer. It is too soon to water this and the grower should test again in a couple of days.

More orchids are killed by incorrect watering than by any other means. There are two separate components to proper watering: **when and how**.

The vast majority of orchids grown by hobby growers are epiphytes, growing on trees above the ground where the light is more plentiful. These plants are adapted to having their roots exposed to light and air—so in addition to water, orchid roots need air. The central core of an epiphytic orchid root is covered with a spongy material called *velamen* designed to store water. When this spongy material remains wet for too long, the central core suffocates and begins to rot.

Once the roots begin to rot, the plant can no longer take up water properly and a whole host of problems begin. At worst, root rot will eventually spread, causing the death of the plant. In other cases, the loss of roots prevents the plant from absorbing sufficient water to maintain itself in good condition and the leaves will take on a wrinkled appearance. Unfortunately, the symptoms of over-watering and under-watering are superficially similar, and the tendency is to increase watering rather than inspect the roots. Over-watered roots will be brown and mushy, while those on under-watered plants will be white or gray and obviously dry.

Getting the when and how of orchid watering requires a bit of work. Let's look first at when to water.

When do I water?

Orchids should be watered just as they dry out. This rule applies to all orchids, with slight variations depending on whether your plant has pseudobulbs (thickened stems that are designed to store water). Orchids such as cattleyas and oncidiums, which have pseudobulbs, should be allowed to just dry completely between waterings.

Orchids such as phalaenopsis and vandas, which have no water storage organs, should be watered just before dryness occurs.

For vandas, this may mean daily watering during the warm summer months. Vandas and ascocendas that are properly watered will have actively growing root tips at all times. If the root tips on your plants dry up and seal over, you are not watering often enough.

There's unfortunately no magic formula for how often to water an orchid. This is because your growing area is different from anyone else's. Humidity, air movement, potting medium (type and age) and light levels all play a role. There are several ways to determine when a potted orchid is almost dry:

1. Dry pots will feel lighter when lifted.
2. Clay pots feel dry.
3. A wooden stake or skewer inserted into the potting mix will come out almost dry.

The effects of over- and under-watering appear superficially similar above the potting medium. The plant shown on the left has been severely dehydrated by underwatering.

The cattleya hybrid on the right has been severely desiccated by loss of its roots from overwatering. The foliage of the two plants appears to be very similar, but the root system of the dehydrated plant, while dormant, is still intact and will respond rapidly to increased watering frequency. The entire root system of the plant on the right has rotted away.



If in doubt, a finger inserted into the potting mix is perhaps the best tool to determine the moisture content of the mix. It will cause no harm to the plant. And remember, fresh potting mix will always dry out faster than old medium.

How do I water?

How to water is just as important to proper culture as when to water. When orchids are watered, they should be watered copiously. Place the plant in the sink and allow the water to run freely from the drainage holes. Do not use salt-softened water. At a minimum, try to thoroughly water your plants in this fashion at least once a month.

This is your opportunity to examine how the potting mix behaves. If you cannot pour water rapidly through the pot, the potting mix is too dense and you run the risk of starving the roots for air. If you see finely divided material that looks like coffee grounds in the water coming from the drainage holes, your potting mix is breaking down. Both of these are signs it's time to repot into fresh medium.

Finally, a couple of notes about mounted plants and those like vandas that are grown in baskets without additional potting medium. First, avoid dunking plants grown in this fashion in buckets of water. This practice very easily spreads diseases. If one plant has a disease, all those dunked in the same bucket of water will have been exposed as well. Also, two short waterings a few minutes apart are much more effective than one long watering. Once water runs off the plant, the roots will have absorbed essentially all they can at that time and excess water simply runs off to the ground.

The proper technique is to water your plants, and then a few minutes later water them again, always beginning with the first plant you watered. This allows time for the roots of the last plant to finish absorbing water before you wet them again. Roots that are completely saturated will be a solid color, while those that are not will appear mottled.

BELOW
Proper watering technique involves copious but infrequent watering.



Ron McHatton, Ph.D. is the American Orchid Society's director of education and chief operating officer. He is an accredited American Orchid Society judge and has been growing orchids since the age of eight. McHatton is responsible for the editorial content and layout of *Orchids* magazine.



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Mr. and Mrs. Lewis Eastlick
Mrs. Nettie Belle Robinson
Ms. Josefina A. Yespica
Mr. and Mrs. Miguel G. Farra
Ms. Jenny C. Carson and
Mr. Brian Carson
Dr. James A. Vaughn and
Mr. James P. Vaughn
Mr. and Mrs. Quentin Scott

TRIBUTE PROGRAM

Commemorative Gifts
In Memory of Karin Ritter
Mr. Ray Curran
In Memory of Klara Farkas
Mr. and Mrs. Everett E. Landen
In Memory of Beth Magill
Ms. Fay P. Aronson
In Memory of William B. Field
Ms. Jan Warren
In Honor of Linda Evans
Ms. Kathy C. Malone
In Honor of Bruce and
Martha Clinton
Mr. Bruce W. Greer and
Ms. Evelyn Langlieb Greer

Tribute Bricks

In Honor of Alissa
Swearingen Alexiou
Dr. Jon Alexiou
In Honor of Maureen and
Larry Gragg
Mrs. Jane Dolkart
In Honor of Barbara and
Howard Katzen
Dr. and Mrs.
Robert F. Feltman
In Honor of Edena Franklin
and Ella Hudson
Ms. Edena Franklin
In Memory of Robert Cleaver
and Lily Rita Ione Bridge
Ms. Valerie Rae
In Memory of Edward William
and Mavis Violet Turner
Ms. Elizabeth I. Turner

In Memory of Bill Shanks
Mr. William Walker
In Memory of Terrie Newman
Mrs. Sharon L. Asbel
Mrs. Penny Thurer
Ms. Susan L. Thomas
Mrs. Zenaida Wilk
Mrs. Sue Breitner
Ms. Pauline A. Goldsmith
Mrs. Susan Randall
Mrs. Myrna Nisonson
Mr. Daniel Bondroff
Ms. Linda Taylor

Tribute Benches

In Memory of Alan Moylan
Mr. and Mrs. George Yoss
In Memory of Lynn Cromer
Mr. Tom Cromer
In Memory of
Riley Hannah Sandler
Mrs. Anne M. Roberts
Mr. and Mrs.
David M. Lipman
Mr. and Mrs. Mark Poses
Mrs. Nancy Solomon
Mr. and Mrs. Seth Stopek
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Glenn Firestone
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Ms. Ashleigh Lindenaer
Mr. and Mrs. Bill C. Sussman
Mr. and Mrs. Adam J. Gerson
Mr. Daniel Mann
Mr. and Mrs. Mark Pinchasik
Mr. and Mrs. Adam J. Siegel
Mr. Henry Bleier

Art Basel Brunch

Photos by Benjamin F. Thacker

On a sunny December 7, Fairchild hosted its annual Art Basel Brunch. More than 250 guests attended to welcome the new Art at Fairchild season. Brunch was served in the Lin Lougheed Palm Grove overlooking

the lovely Royal Palm Lake. Art tours through the 83-acre Garden introduced visitors to Dale Chihuly's spectacular works of art amid the tropical plant life, the colors of which complemented each other beautifully.



1. Lin Lougheed, Bruce Greer, Evelyn Langlieb Greer, Jason Haim and Nannette Zapata.
2. Frank Safarik, Sasha Nikitin, VIP Relations Manager Art Basel, Stephanie Reed, VIP Manager U.S. and Lin Lougheed.
3. Artist Michael Loveland and his family.
4. Dale Chihuly, *Scarlet and Yellow Icicle Tower*, 2013. Photo by Chihuly Studio.





5



6



7



5. Natalie White-Bernal, Leslie Bowe, Carl Lewis and Nannette Zapata.

6. Dale Chihuly, *Float Boat*, 2014. Photo by Morgan Brooks/FTBG.

7. Dale Chihuly, *Palazzo Ducale Tower*, 1996.

8. Dale Chihuly, *Macchia*, 1999–2013. Photo by Morgan Brooks/FTBG.



8



Fun at Fairchild

Photos by Morgan Brooks



Live music flourished at the Glasshouse Café on Sundays as part of Sunday Sounds, which began in December. Musicians from the University of Miami Frost School of Music explored diverse styles of music as they performed for delighted visitors.



Vintage Vehicles rolled into Fairchild in October, displaying dozens of antique and classic cars in the Garden's unique tropical setting. Held in partnership with the Sunshine Corvette Club and Antique Automobile Club of America, the event took visitors back in time as they walked through the Garden encountering vintage Corvettes, Volkswagens and more.



A perfect prelude to Halloween, Friendly Creatures of the Night invited guests to learn about fascinating nocturnal creatures like owls, bats and bugs, while taking twilight strolls through the Garden. Many visitors dressed up as their favorite night creatures and sported very creative costumes.



On October 31, at the Howl-O-Ween celebration, Fairchild opened its gates to its canine friends. Many dogs and humans enjoyed strolling through the Garden in their best costumes. A special doggy tram tour had pups wagging their tails as they toured the lush surroundings.



In November, The Fall Garden Festival Featuring the 74th Annual Ramble offered delicious food and activities for the whole family. The beloved garden party spanned the Garden's 83 acres. Antiques, collectibles and rare books were abundant, along with a range of plants at the plant sale. South Florida-based guilds presented their handcrafted and eco-friendly work, including ceramics, jewelry and furniture. Nell's Tea Garden, the Fall Beer Garden and gourmet food trucks and vendors served delicious fall fare.

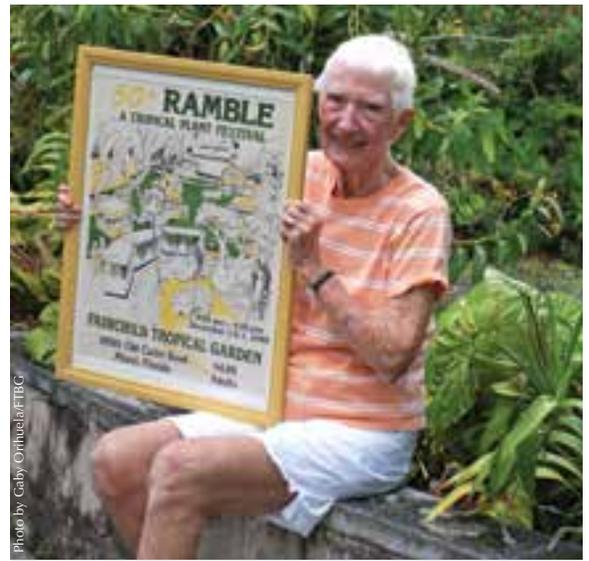


Photo by Gaby O'Huachu/FHBC

Remembering Nettie Belle Robinson

All of us at Fairchild are sad to say farewell to Nettie Belle Robinson, who passed away in November 2014. A Pinecrest resident, prolific artist, avid gardener and Fairchild member for more than 50 years, Nettie Belle was an integral part of the South Florida community. She was a Fairchild fixture, and could recall attending the Garden's dedication ceremony as a child, where she met Dr. David Fairchild. Her love of art and gardening is evident in her paintings and involvement with the Homestead Art Club. She knew plants not just from a horticulturist's point of view, but also from an artist's perspective. Nettie Belle painted the image used for The 50th Annual Ramble poster.

Nettie Belle fondly recalled riding her bike to the Garden each year to deliver the homemade jams and jellies her mother, Mrs. Elmer Hjort, prepared for sale at The Ramble. Another standout memory she cherished was "Marjory Stoneman Douglas signing books and greeting people, and even though she was almost blind, she recognized me by my voice."

Nettie Belle's life was filled with art, whimsy and optimism. It perfectly reflected the insightful, humor-loving, optimistic, forward-thinking person she was. Thrilled at every step forward Fairchild made in pursuit of its mission, she exemplified a generation of people who supported the Garden from its earliest years and who, each in his or her own way, embodied the vision of greatness for Fairchild that was held by Col. Robert Montgomery, David Fairchild and the others to whom we owe our existence.



On September 3, Fairchild honored Barbara Katzen for her 35 years of dedicated service as a Garden volunteer. Katzen began at the Garden in 1979 as a volunteer guide with the new Student Day program, Fairchild's first formal education program for school children. Her service to that program, which was later renamed the Explorer Program, touched the lives of thousands of students, opening their minds, their eyes and all their senses to a world of plants. We are deeply grateful for the dedicated and devoted service she provided to the Garden and to the students of South Florida.



Allison V. Armour

Generous Patron of American Science

By Janet Mosely

“Armour was the willing servant of the scientific community, focusing significant personal skills and unbounded zeal melded to nearly unlimited monies.” From “Four Mysterious Citizens of the United States That Served on the International Olympic Committee During the Period 1900-1917,” John A. Lucas, 2000.

David Fairchild took this photo of Allison Armour beside a *Pseudophoenix saonae* from which they collected seed to send to Washington. Fairchild noted in his scrapbook that Armour was “...not cutting it down, just pointing it out!” Saona Island, Haiti, January 20, 1932. Archives/FTBG

Dr. David Fairchild’s tremendous contributions to American science and botany were fostered by not one, but two generous patrons. Barbour Lathrop, who discovered Fairchild on a storm-tossed steamer in the Atlantic, was the first. Allison Vincent Armour, man of the world, skilled yachtsman, knowledgeable epicure, close friend to Kaiser Wilhelm and Theodore Roosevelt, was the second.

Allison Armour was born in Chicago in 1863 to a wealthy and prominent family. His father, George Armour, emigrated from Scotland and established the first banking institution in Chicago. Allison attended the Harvard School of Chicago and graduated from Yale in 1884. He spent a short time working in banking, but left to manage the family estates. He later studied international navigation and qualified as a master mariner. Armour’s yachting prowess was

renowned, and he won many races—including the German Emperor’s Cup and the King Edward VII Coronation Cup. Thomas Barbour, the great Harvard zoologist who sailed with Armour on several expeditions in the early 1930s, described him in “Allison Armour and the *Utowana*” as “over six feet tall and with wavy brown hair of which he took the best care. He was over 200 pounds in weight, and although he was formal, almost stiff, at the first impression, and he moved and met people with a stately, rather old-fashioned dignity, his dancing blue eyes at once bespoke his sense of humor.”

In 1885, Allison married Anne Louise Kelly of Chicago. They were very happy and travelled extensively together. Unfortunately, in 1890, Anne passed away suddenly while they were in Nice, France. As Dr. Fairchild recalled in a letter to Barbour, “Once as we drove through Nice, he remarked to me, pointing up at one of the

fashionable hotels on the cliffs, 'There is where the light of my life went out.'" Armour never remarried, instead devoting his life to travel and scientific expeditions.

Fairchild first met Allison Armour at one of Alexander Graham Bell's "Wednesday Evenings" in Washington, D.C. Armour was there with botanist Charles F. Millspaugh and anthropologist William Henry Holmes. They enthralled Fairchild with accounts of the 1895 Allison V. Armour Expedition to Yucatan aboard Armour's yacht *Ituna* for the then-newly established Chicago Field Museum of Natural History. This was to be the first of many scientific expeditions sponsored by Armour in the fields of botany, anthropology, archaeology and zoology.

The next expedition Armour sponsored was also for the Field Museum. From December 1898 to March 1899, Armour toured on the schooner *Utowana*, *Ituna's* successor, with Millspaugh and his good friend Jordan L. Mott Jr. They visited and collected at Bermuda and in the West Indies.

After that, Armour moved to New York City, much to the disappointment of the Field Museum. He became an honorary fellow of the New York Academy of Sciences. His yachting adventures, travel and expedition planning continued. He made annual winter visits to Berlin and dined with the Kaiser. He travelled in Southeast Asia, India, Ceylon and the Aegean Sea. Besides botany and zoology, he loved archaeology and sponsored expeditions for Harvard and Oxford to the Aegean—which resulted in discoveries including the Venus of Cyrene marble sculpture.

Fairchild met Armour for the second time in 1924 in Miami. Armour travelled this time in a houseboat named *Utowana*, which he moored at Brickell Pier. It was during this meeting that Armour proposed to Fairchild a plant-collecting expedition. That was the beginning of their very productive relationship searching the world for plants to bring back to the United States. The two men became close friends as well. They sailed on eight different expeditions aboard the third *Utowana*, a freight steamer converted into a state-of-the-art research vessel. At various times from 1925 through 1933, they travelled throughout the Mediterranean, North and West Africa, the Canary and Balearic islands, Ceylon, Java, Sumatra, Mexico, the Gulf of California, Central and South America and the West Indies. In 1931, Armour was awarded the Frank N. Meyer Medal for Plant Introduction (today known as the Frank N. Meyer Medal for Plant Genetic Resources) for his contributions to American agriculture. Fairchild wrote of that time: "these were some of Allison's happiest days, for he felt he was helping 'the Scientific Johnnies' get seeds and specimens which would have a bearing on the future of his country."

Armour died in New York City on March 7, 1941. He never had children, but his passing was mourned by many, especially David and Marian Fairchild, who remembered his kind hospitality and thoughtful friendship, his cool head in a crisis and his attention to detail, which made their voyages together so successful. And Armour left a legacy of scientific exploration and patronage that few of his time could equal. 



Allison Armour inspecting native corn on Grand Canary Island. "A variety with little to recommend it." July, 1926. Archives/FTBG



On the left is Thomas Barbour, famed Harvard zoologist, with Allison Armour under a *Ficus waringiana* at Summit Garden in Panama, March 24, 1933. Armour sponsored Barbour on four zoological collecting expeditions in the West Indies. This photo was taken during the third such voyage. This ficus was grown from seed collected by David Fairchild and Armour while in Java in 1926. Archives/FTBG

CONNECT WITH FAIRCHILD

Dale Chihuly, *Blue Fiori Sun*, 2013
Exhibited in the Galde Lake
Photo by Chihuly Studio

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Dale Chihuly
Scarlet and Yellow Iced Tower, 2013
Photo by Chihuly Studios.



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