



the TROPICAL GARDEN

SUMMER 2016

Summer's bounty in the tropics



PUBLISHED BY FAIRCHILD TROPICAL BOTANIC GARDEN

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THE WORK OF CONSERVATION **18**



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EXPLORING THE WINDSWEEP **30**
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 @CarlLewis

Summer at Fairchild is a time when we think about the future, a time for setting plans into motion for the years ahead. It's when we add new plants to our landscape, launch research projects and develop training programs for our new recruits in botany. Summertime is when our best ideas begin to take shape.

Summertime is also when we keep an extra-vigilant eye on the warm Atlantic tropical waters. During hurricane season, we are constantly aware that everything we do, all of our dreams and hard work, are at risk of being knocked out whenever a storm spins toward South Florida.

In 1992, years before I ever even visited Fairchild, I read about the Garden's near-complete destruction during Hurricane Andrew. A *New Yorker* article painted a pessimistic picture, describing 13,000 toppled or badly damaged specimens—more than 70% of the plant collection in ruins.

It took years, tremendous financial support and a massive volunteer effort to reset the Garden and its landscapes. We are now on much firmer financial footing than before the storm, and with good reason. Andrew provided an important lesson in resilience, teaching us what it takes to survive and grow.

By the time I first visited Fairchild, five years after Andrew, I found a recovering Garden with well-rehearsed procedures for ensuring its safety. By then, through the generosity of Fairchild supporters, there was enough money in the bank to rebuild the Garden if it ever became necessary again.

Fairchild has grown a lot since then, and today far more people depend on us. As the major botanical institution in a rapidly growing metropolitan area, we now serve more than 6 million people. We are well aware of the critical importance of botany in general, and our programs in particular, for the future of our community and life on Earth. There will be storms and rising sea levels in our future. To continue to thrive through the challenges ahead, the Garden's endowment must keep pace with our growth, our expanding audience and our aspirations.

This summer, we are thinking about ways to grow Fairchild's endowment beyond the current level of \$20 million. Soon, we will be calling on you, our members, to help. We can work together to endow our current and future programs at a greater level, ensuring sustainability and growth in the years ahead.

When you visit us this summer, I think you will be impressed with everything we are doing for our community. I'm sure you will be reminded of the uniqueness of what we have, and the need to keep it growing for future generations.

Best regards,

A handwritten signature in black ink that reads "Carl E Lewis". The signature is written in a cursive, slightly slanted style.

Carl Lewis, Ph.D.
Director



[@ZapataNannette](#)

The last few months have been exciting here at Fairchild! We have been notified of many new and wonderful awards and accolades, and I'd like to share just a few of the highlights with you.

The most exciting announcement came to us from NASA who notified us that we have been awarded a \$1.24 million grant for our innovative work in The Fairchild Challenge's Growing Beyond Earth initiative. We are working with NASA's VEGGIE program scientists (Vegetable Production System) to find edible plants suitable for future missions to Mars. NASA's four-year funding grant is a vote of confidence that our science outreach, in collaboration with Miami-Dade County Public Schools, is precisely the kind of innovative, practical science that yields measurable results and allows us to engage young students in real research; research that will ultimately contribute to humankind's ability to explore our solar system.

On June 1, Charity Navigator awarded Fairchild a 4-Star rating (its highest) and ranked us the highest-rated botanical garden in the U.S. This means that Charity Navigator has found that Fairchild "exceeds industry standards and outperforms most charities in its cause." We also received a perfect score in the area of accountability and transparency. The 4-Star rating confirms that we are a model organization in our commitment to our members, donors and supporters.

And just as we were finishing this issue, we learned that *The Tropical Garden* received awards from the Florida Magazine Association in the categories in which it was nominated: Writing Excellence—Best Feature; Best Overall Writing; and Best Department Design.

As we celebrate these remarkable accomplishments, I would like to point out two staff members who have been particularly responsible for so much of our success.



Gaby Orihuela dedicated the past 18 years of her professional life to Fairchild. During that time, she connected visitors with our multitude of interactive activities, trained hundreds of volunteers, advocated the importance of being a Fairchild member and helped produce this spectacular, award-winning publication. It is for this reason that I have always referred to her as our 'MVP'. Gaby, originally from Peru, has decided to return there to be with her family.



The incomparable Arlene Ferris, our volunteer director, retired on August 5. Arlene, I contend, ran the most successful and abundant volunteer program in the country. During her 30 years of service, her diligence and compulsive attention to every detail ensured that each year, our volunteers gave us more than 80,000 of service hours. Her commitment to each volunteer's training, experience and support is well documented, since she quite literally wrote part of the book on volunteer management, contributing chapter 8 of "Public Garden Management: A Complete Guide to the Planning and Administration of Botanical Gardens and Arboreta, Edition 2." Her retirement party was called "Arelenpalozza," and let's just say that it was so well attended that it tied up traffic on Old Cutler Road!

What Fairchild is today flows from their dedication and focus, and we are all the better for their passion and love of this Garden. They leave behind a legacy that we all hope to honor in their absence.

I dedicate this issue to these remarkable women.

Nannette M. Zapata, M.S./MBA
Chief Operating Officer



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 B.A. from Queens College, City University of New York, and an M.A. from Florida International University.



Thaddeus Foote finds excitement in igniting a curiosity and connection between Miami's youth and their natural systems and surroundings. As a kid, he created his own connection while growing up on the shores of Biscayne Bay. Foote formalized his understanding in college and graduate school in New England. He joined Fairchild's education team in 2010 and currently coordinates the BioTECH @ Richmond Heights 9-12 program.



Sara Edelman is Fairchild's palm and cycad manager, and is pursuing a Ph.D. in biology at Florida International University. Edelman's appreciation of palms began when she was a young girl visiting the Garden with her family. Her interest grew into an obsession when she started working at the Garden almost five years ago. She loves educating South Floridians about proper palm care and horticulture, and enjoys writing about her palm adventures.



the TROPICAL GARDEN

The official publication of Fairchild Tropical Botanic Garden

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Art at Fairchild

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NATURE, BY ARTIST
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September

PLANT ID WORKSHOP
Friday, September 2
1:00 p.m.

**ORCHID SOCIETY OF
CORAL GABLES MEETING**
Tuesday, September 6
7:30 p.m.

**INTERNATIONAL AROID
SOCIETY ANNUAL SHOW
AND SALE**
Saturday and Sunday
September 17 and 18
9:30 a.m. – 4:30 p.m.

October

**7TH ANNUAL BIRD
FESTIVAL IN
CONJUNCTION WITH
THE 78TH ANNUAL
MEMBERS PLANT SALE**
Saturday and Sunday
October 1 and 2
9:30 a.m. – 4:30 p.m.

PLANT ID WORKSHOP
Friday, October 7
1:00 p.m.

CARS IN THE GARDEN
Sunday, October 30
9:30 a.m. – 4:30 p.m.

November

PLANT ID WORKSHOP
Friday, November 4
1:00 p.m.



**FALL GARDEN FESTIVAL,
FEATURING THE
ANNUAL RAMBLE**
Friday, Saturday and Sunday
November 11, 12 and 13
9:30 a.m. – 4:30 p.m.

December

**22ND ANNUAL HOLIDAY
CONCERT AT FAIRCHILD**
Sunday, December 11
6:00 p.m. For tickets and
more information, please
contact Susannah Shubin
at 305.663.8009 or e-mail
sshubin@fairchildgarden.org

January

**SPLENDOR IN
THE GARDEN**
Wednesday, January 11
10:30 a.m. For tickets and
more information, please
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at 305.663.8009 or e-mail
sshubin@fairchildgarden.org

Teas

NELL'S TEA GARDEN
Saturday and Sunday
November 12 and 13
*During the Fall
Garden Festival*
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For information and
reservations, please
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305.663.8059 or e-mail
mvalent@fairchildgarden.org

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the Garden**

**TRAM TOURS OF
THE GARDEN
WEEKDAYS (M-F)**
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10:00 a.m. - 3:00 p.m.

WEEKENDS
Every hour on the hour
10:00 a.m. – 4:00 p.m.

SPANISH TRAM TOURS
Saturdays and Sundays,
1:30, 2:30 and
3:30 p.m.

**DAILY WALKING
TOURS**
10:15 a.m., 11:15 a.m.,
12:15 p.m., 1:15 p.m.
and 2:15 p.m.

**BUTTERFLIES: WINGED
WONDERS AND THE
PLANTS THEY LOVE**
Saturdays and Sundays,
10:15 – 11:00 a.m.

EARLY-BIRD WALKS
Saturdays and Sundays,
Through May 1
7:30 – 9:30 a.m.

Tours added daily.
Check the information
desk upon arrival.



ON THE COVER
Aechmea chantinii
Photo by Gaby Orihuea/FTBG

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Daily 9:30 a.m. – 4:30 p.m. (except December 25)

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Eco-Discount: Walk, bike or ride public transportation to Fairchild. Non-members receive \$5 off an adult admission and \$2 off children's admission. Fairchild members receive a loyalty card to earn a gift admission after five visits.

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GET IN ON THE CONSERVATION



Fairchild Receives Two Significant Grants to Support Innovative STEM Education Programs

July was a stellar month for the Garden's education programs. Wells Fargo, in collaboration with the National Fish and Wildlife Foundation, awarded \$100,000 to support the Garden's newest and most innovative endeavor, The Million Orchid Project STEMLab. With this funding, we will begin visiting Miami-Dade County public middle schools to give students an opportunity to contribute to a local conservation program by propagating endangered orchids in our sterile mobile micropropagation lab (formerly a decommissioned yellow school bus).

In addition, NASA awarded a \$1.24 million grant to Fairchild to support the Fairchild Challenge Growing Beyond Earth Program. This four-year grant will help us offer our botanical expertise to support NASA's current research and empower our local network of STEM-minded middle and high school students to contribute to plant science research that has universal implications. Fairchild and NASA aim to identify edible plants that might be suitable for growth aboard NASA's International Space Station, given the physical limitations of growing plants in space.

A New Citizen Science Initiative for South Florida Students

Fairchild has partnered with the Nature Conservancy of South Florida for the 2016-17 Fairchild Challenge. We will have elementary students collect important data on the impact of tree canopy on the urban heat island effect. The heat island effect describes how built-up areas are hotter than nearby rural areas due to human activities. Currently, Miami is the No. 2 urban heat island in the country, according to a University of Georgia study. Beginning in September, students will be taking measurements (including temperature, humidity and tree canopy size) and reporting their findings to Nature Conservancy scientists. The scientists hope to use this information to better understand heat islands and tree canopies, and to encourage local communities to increase canopy cover by planting more trees.



Urban Meadows: Research at BioTECH

The entire sophomore class of *BioTech @ Richmond Heights 9-12* completed a comprehensive eight-week-long ecosystem study of the grasses that dominate urban meadows habitats. The study, which took place this spring, was part of the sophomore botany curriculum. It encompassed six study sites (more than 2,000 square meters), from which more than 45 square-meter quadrants were randomly chosen using a grid coordinate system.

The goal of this study was to gain some understanding of how changes in the management practices of urban meadows' dominant grass might impact the small flowering forb species that attract bees and other pollinators with their nectar and pollen. Forbs are herbaceous flowering plants that are not grasses, sedges or rushes.

Each class period conducted a separate study that tied back to the overall goal of the large study. These studies included pollinator choice, the effects of adding herbicide and fertilizer, chemicals found in the topsoil, moving impact and succession. The students conducted species surveys and chemical analysis, and also measured percent cover, biodiversity, number of inflorescences and growth. A team of students is currently writing up a collaborative paper to report their findings.



The Endangered Key tree-cactus

The number of Key tree-cacti (*Pilosocereus robinii*) in the wilds of the Florida Keys has fallen dramatically—leading to its listing as endangered in the U.S. Members of the *Pilosocereus* genus are primarily bat-pollinated, and *P. robinii*'s large, pale flowers open at night and emit a strong garlic odor. Florida, however, lacks flower-visiting bats, highly limiting the potential for wild cross-pollination, especially between populations. In an effort to counteract the threat of extinction for the Key tree-cactus, Sarah Pinter, a Fairchild Conservation Team intern and resident batgirl, has begun hand-pollinating flowering individuals in the Garden's nursery collection. We hope to be able to collect seeds from them to use in preservation efforts.

The Garden's Key tree-cactus collection is unique because each individual has an identifier tying it to a maternal plant in the wild. This allows us to create known genetic crosses, even crossing individuals from different islands in order to create unique stock and maximize the genetic diversity within both our collection and future reintroductions. We are also using this as an opportunity to examine differences in fruit set between pollination scenarios (self-pollinated, crossed within populations and crossed among populations). All of the seeds that we harvest will be labeled to identify both parents and put into long-term storage.



Summer Interns Help Further Fairchild Research

High school students from Fairchild Challenge schools and the *BioTech @ Richmond Heights 9-12* magnet school participated in a six-week summer internship at Fairchild. The 18 interns' work supported Fairchild's The Million Orchid Project, as well as the Growing Beyond Earth project that is part of the Garden's partnership with NASA. They developed protocols for Fairchild's new mobile STEMlab, conducted DNA research for The Million Orchid Project and, with NASA's support, conducted further tests on potential crops for spaceflight.

“Plants Are Boring” ... Or So the Students Thought

Text and pictures by Thaddeus Foote

“Plants are boring,” thought the botanically uninspired incoming ninth grader at BioTECH High School two years ago. “They don’t do anything and they’re all just green.”

This perception was common two years ago among many incoming ninth graders at Fairchild’s new partner school, which is the country’s first botany magnet school, BioTECH @ Richmond Heights 9-12. Although plants hold the keys to endless and fascinating journeys of discovery and research, unlocking mysteries and potentials of life itself, their initial pertinence to the life of a ninth grader is frequently, and understandably, overlooked by today’s teens. That said, when faced with the recent decision to choose either a botany or zoology track for their junior and senior years at BioTECH, a majority of students from that same class, two years later, chose botany. When asked, “Why did you choose botany over zoology?” one student emphatically responded, “Plants are so cool ... I’m hooked!”

How have plants, in the minds of BioTECH’s inaugural class, evolved from being “boring” to “so cool”? In an age of immeasurable digital distractions, what keeps a 15-year-old wanting more botany? One answer is 2 million years old, and evolved with our own species.

We humans are unique in many ways. We are social animals who strive to belong ... to something. We have brains that can ponder abstract thoughts, analyze



BioTECH student botanists harvesting wild *Encyclia tampensis* (Florida butterfly orchid) seed pods to then sow in the lab and research as part of The Million Orchid Project.



“Plants affect every person on the planet. Whether one eats, wears, worships, heals with, smells or simply breathes the oxygen they produce, we all share an innate connection with plants.”

BioTECH student botanists collecting *Psychotria nervosa* (wild coffee) to compare the levels of its secondary compound, caffeine, from different individuals and from different plots.


observations and reason. We feel, we create and we communicate. For millennia, we humans have created the structure that gives way to meaning and belonging for ourselves, in cultures around the globe. Tribes, clans, villages and cities supply the community we desire and the sense of belonging we innately need. Throughout our evolution, we have created these social structures to supply our needs. Yet, while the rate of human evolution probably remains consistent (time will tell), modern society, technology and social structures are changing exponentially. Biologically, young people today are still as young people were millennia ago: They require community and a sense of belonging. The world they navigate, however, is inconceivably different. They still need the emotional and community connection to something, and might find it in a sports team, a church, an after-school club, a gang, a job, the military, social media—or maybe at BioTECH and Fairchild.

Fairchild’s mission is to “save tropical plant diversity by exploring, explaining and conserving the world of tropical plants.” During the past 78 years, countless researchers, explorers, botanists, teachers, staff and students have created a rich community, passionate about everything regarding tropical plants. Science dictates our data and the arts help give the data a soul. Passion for the world’s primary producers is contagious at Fairchild, no matter your age or interests.

Plants affect every person on the planet. Whether one eats, wears, worships, heals with, smells or simply sits in the shade of them, we all share an innate connection with

plants. Part of our approach with the BioTECH program is to simply give students experiences with plants. Those experiences then offer a reference point from which students, hopefully, develop a fascination for the subject and a sense of stewardship of their natural surroundings—as well as a connection to the Fairchild community and our mission.

Each of our students comes to the Garden with unique interests, skills and history. The wider we cast our net and offer a student different exposures to data collection and analysis, professionals in the field, the arts, volunteer opportunities, casual conversation and just fun, the more chance there is for that student to open her mind, study and succeed. Students participate in many of Fairchild’s research projects, such as The Million Orchid Project, Growing Beyond Earth (in partnership with NASA) or Heat Islands. Some even develop their own independent research. These students hone “hard” skills needed in the lab and field and advance their academic mastery.

Students we connect with will understand that our work, their work, is vital to the greater community and that their role in the research is valued. They will be part of a solution and find connection to something great and bigger than any one person. They will develop identities and, as young people have for millennia, find their communities. Eventually, those “boring” plants will hand over the keys to endless and fascinating journeys of discovery and research, and one thing will be crystal clear: “Plants are so cool!” 

Become a **Fairchild Volunteer**
and let a **few hours of your
time** blossom into a world of
new experiences!

Volunteer



Fairchild volunteers serve the Garden, the South Florida community and the world through their hands-on, interactive participation in Fairchild's programs and activities, while meeting others who share their interest in plants, people and gardens. Current volunteer opportunities include hosting, assisting in the Wings of the Tropics exhibit and working as a gardening assistant.

To learn more about becoming a Fairchild volunteer and how you can help the Garden grow, come to one of the upcoming Volunteer Information Days.

Tuesday, August 23: 10:00 a.m. – 1:00 p.m.

Thursday, August 25: 1:00 – 4:00 p.m.

Saturday, August 27: 10:00 a.m. – 1:00 p.m.

To attend a Volunteer Information Day or to learn more about becoming a Fairchild volunteer, please visit us at

www.fairchildgarden.org/volinfo

or call 305.667.1651, ext. 3360.

 @VolunteerFTBG



Fairchild's Volunteer Appreciation Brunch

By Niki Saylor. Photos by Arielle Simon

Despite a torrential downpour courtesy of Mother Nature, more than 350 staff and volunteers gathered in the Lakeside Marquee Tent for Fairchild's Annual Volunteer Brunch to celebrate the service volunteers generously give to benefit the Garden and the entire South Florida community.



L-R
Garden Director
Dr. Carl Lewis and
2016 Volunteers of the
Year Ken Strang, Mimi
Schwar and Norma
Craig with Volunteer
Director Arlene Ferris.

Last year, volunteers gave more than 81,000 service hours to Fairchild, and to honor their generous contributions, the staff provided an array of delicious fare at the Volunteer Appreciation Brunch, with tables beautifully decorated by the horticulture and conservation staff. "We look forward to this very special program of accolades and scrumptious food and camaraderie every spring," said longtime volunteer Nancy Fehr. Some of the volunteers' favorite homemade dishes this year included Persian Shirazi Salad, Papas a la Huacaina, and nutty chocolate bananas.

Volunteer Director Arlene Ferris lauded the volunteers and welcomed them to the brunch held in their honor. "We recognize and thank you for your countless contributions, which support our work and the Garden's vital mission," she said. "Because of you, Fairchild is not just a beautiful garden, it is also a community of people working together to achieve a goal which none of us could achieve alone, and this sense of community is one of Fairchild's greatest strengths."

Echoing Ferris, Garden Director Dr. Carl Lewis noted that Fairchild's volunteer program is successful because of the volunteers' steadfast dedication to the Garden's mission. They show this dedication by their willingness to gladly take on additional duties and by their flexibility to adapt when fulfilling unique volunteer roles. Board President Bruce Greer expressed his thanks to the volunteers, reiterating that the Garden simply could not function without their support, which they give on so many levels. He noted that volunteers have played an important role in the Garden's past and present, and are absolutely essential to its future.

Ferris then announced the 2016 Volunteers of the Year, who were chosen based on their unique and meaningful contributions to the Garden's programs and activities, and whose work is ensuring Fairchild's successful future. This year's honorees Norma Craig, Mimi Schwar and Ken Strang have given a combined 7,500 total lifetime hours.



The Garden Groomers was named 2016 Volunteer Team of the Year for their outstanding horticultural work in maintaining the Garden's plant collections. (L-R) Director of Horticulture Dr. Richard Campbell, with Garden Groomers Judy Stewart, Freda Tschumy, Susan Heckerling, Karen Alexander, Louise Bennett, Malotte Read, Robin Fox and Horticulturist Mike Freedman. Not shown: Amparo Brunner, Miguel Caridad, Torsten Funnen, Jimmy James, Lesbia Lopez.



2016 Award Recipients

2016 Volunteers of the Year

Norma Craig
Mimi Schwar
Ken Strang

2016 Volunteer Team of the Year

Garden Groomers

Karen Alexander
Louise Bennett
Amparo Brunner
Miguel Caridad
Robin Fox
Torsten Funnen
Susan Heckerling
Jimmy James
Lesbia Lopez
Malotte Read
Judy Stewart
Freda Tschumy

Service Pins

30 years

Betty Eber
Liesel McClelland
Chris Migliaccio

25 years

Mary Anne Poor

20 years

Jeanne Aragon
Marion Beveridge
Caryl Chassman
Torsten Funnen
Paula Hamelik
Barbara Hobbs
Glen Ivie
Wes Jurgens
Susan Kurzban
Eleanor Lahn
Roger Rosenberger

15 years

Don Brisk
Pat Cervi
Ellin Chassman
Marie Cupo

Martha Curtis
Stuart Debenham
Gloria Golightly
Adrian Hunsberger
Ulla Kasprzyk
Coky Michel
Carole Pivnik
Hank Poor
Bill Quesenberry
Sanjay Roy
Magella Sauve
Juan Valls
Ricki Weyhe

10 years

Tom Abell
Frank Baron
Sally Baron
Nancy Batchelor
Michael Blaine
Maggie Blake
Shirley Brizz
Adriana Cantillo
Miriam Cardwell
Sam Carico
Gary Diamond
Margie Fickes
Karen Friend
Sondra Galperin
George Gates
Al Greenspoon
Judy Greenspoon
Jean Hawa
Jan Horton
Kat Hurley-Bolinder
Ronnie Jacobson
Nanci Jones
Jeff Kaplan †
Natalie Liebman
Susi Lindau †
Sandy Mannis
Sandy Marietta
Jackie Moser
Doretta Palazzi
Carol Pharmed
Rosa Maria Reeves
Dorothy Rodriguez
Ken Strang

Egon Tegtmeyer
Joan Vigil
Carol Vilberg

5 years

Suri Alexander
George Andrykovitch
Frances Aronovitz
Marie France Beitz
Lourdes Bravo
Suzy Burrows
Bruce Clinton
Martha Clinton
Susan Ford Collins
Casey DeLaurier
Joe Dietrick
Robin Fox
Nazy Given
Gloria Greene
Maxine Hermida
Rick Hitchner
Sandy Horwitz
Glenn Huberman
James A. Kushlan
Joe La Duca
Sharyn Ladner
Rheid Lentz-English
Peter R. McQuillan
Pamela Mirowitz
Ana Mooney
David Moore
Thalia Orfas
Marie Pappas
Sira Ramesh
Jane Reilly
Phil Rinaldi
Regina Rinaldi
W. J. Roberson II
Gayle Rosenthal
Veronica Silva
Jeannette Stargala
Boysie Stewart
Mary Teas
Alejandra Villamil
Jon Weiner
Roderick Whittle
Marie Wilson
Ann Ziff

† Deceased

Craig, a volunteer for 13 years, was recognized for her exemplary service as an Explorer guide, festival educator, Wings of the Tropics host, tram guide, walking tour guide and shuttle driver. Her versatility makes her an asset in all areas of the Garden. Originally from Michigan, Craig spent her professional career with Miami-Dade County Public Schools (MDCPS). A lifelong teacher and lifelong learner, she recently took the lead in developing a Native Plant Walking Tour in the Garden.

Another retired MDCPS teacher, Schwar has been a volunteer for eight years, in areas including Field Studies, Wings of the Tropics and The Million Orchid lab. In each of her volunteer jobs, she exhibits leadership and problem-solving, always with a positive attitude. In her thank-you speech, Schwar acknowledged, "Fairchild is a wonderful place to volunteer...not just because of the beauty of nature, but due to the beautiful hearts that surround us. Fairchild is truly unique."

Strang, in addition to being recognized for 10 years of service, was credited with broadening Fairchild's reach to the community by developing and promoting Weekend Spanish Tram Tours, and by training and mentoring many new volunteer tram guides. He is quick to respond when his help is needed, and he assists during festivals with shuttle driving. "As a volunteer, you want to come to the Garden, and enjoy being at the Garden because the staff makes everyone feel welcome," Strang said while accepting his award. "You feel like you are at home."

The Garden Groomers, the 2016 Volunteer Team of the Year, received commendation for maintaining various plant collections at Fairchild over the years, especially the Pine Rockland, which, according to Fairchild's Conservation Biologist Jenn Possley, "Looks better than it ever has, thanks to their work." This horticultural team is a reliable, hardworking and friendly crew that enjoys not only volunteering together, but also socializing in a group, usually with a potluck of delicious snacks and drinks, after their duties are done for the morning.

After the Volunteer of the Year and Volunteer Team of the Year awards were presented, more than 100 volunteers received service pins recognizing their anniversaries, extending from five to 35 years. "The Brunch was amazing!" said Jeri Mitchell, a volunteer newcomer. "I had such fun, despite the wet weather, and I am looking forward to many more good times with all of my new friends."

Besides saying "thanks" for their work throughout the year, the brunch is a way for staff to express to volunteers how much we appreciate them and to honor their dedicated service. For us, the volunteers are friends who are fun to be with, as well as valued co-workers. We are grateful to them for helping the Garden grow, and for their help in building and strengthening the South Florida community of plant and nature lovers.





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Photography at Fairchild

Text and photos by Carlos V. Causo



How fortunate I was as a kid, to be able to jump into new adventures outfitted with a small camera to photograph the world. Whether I was documenting or simply goofing off, the camera was a tool (like my compass) that I could rely on, cherish and embrace. The camera fundamentally allowed me to capture moments in time and record them for as long as I needed. Photography and nature fused perfectly for me, and I later pursued a degree in environmental studies—a natural career path.

If you feel the same way, or just want to explore nature in a new way, grab a camera and start snapping! Your choice of equipment depends on your needs. If you are a casual photographer who travels frequently and would rather not carry bulky equipment, a point-and-shoot camera may suffice. On the other hand, if you want to have quality optics, speed and manual control, then an interchangeable lens camera (preferably full-frame sensor)—whether DSLR (digital single lens reflex camera) or mirrorless—should be your camera of choice.

For the best photos, I recommend that you get the best quality lens possible. Generally, most DSLR or mirrorless camera buyers will start with a 24 to 70mm zoom lens. For your next lens, if you have a full-frame camera, get

a full-frame lens with a constant aperture value of $f/2.8$ instead of the $f/3.5$ - $f/5.6$ cropped sensor lens. Keep in mind that lenses of a specific brand are only compatible with cameras of the same brand, but there are also excellent third-party lenses made for most camera brands. Understand that a full-frame sensor camera will either default to an auto-cropped mode when a cropped sensor lens is attached to it, or will not work at all.

Learn at Fairchild!

The photography workshops at Fairchild cover a broad range of topics, including how to use and master your DSLR, macro photography, digital black-and-white techniques and tips, photographing the Garden at sunset and sunrise, as well as lessons in photographing orchids and butterflies. Classes even visit Shark Valley to photograph wildlife. In other classes, you can learn how to make photo editing and sharing through your iPad an essential part of the photography workflow.

Fairchild's workshops are specifically tailored for nature photos, with hands-on instruction to inspire students to take great pictures. This is achieved, first and foremost, by understanding the basic principles of photography for exposure control and by becoming familiar with your camera features: resolution, file type, white balance, autofocus, metering and various photography modes (such as auto, priority and programmed).

Carlos V. Causo teaches digital imaging and photography at Fairchild and at Florida International University. He holds a master's degree in fine arts, photography, video and related media from the School of Visual Arts in New York. His experience includes nature and commercial photography with a focus in digital photography and video.



The glory of the biological world is its diversity. Yet, when a butterfly or a cactus, a palm or an orchid population has been pushed to the edge of extinction, how do we pull it back? If you are a conservation biologist, you take some remaining samples from the wild, grow them under safe artificial conditions and try to reintroduce them back to the wild.

That has been the work of botanical gardens for decades now. Yet, enormous challenges still abound. Are the plants sufficiently genetically diverse so that inbreeding will not transfigure and transform them? Will the historic range still support them? Are their pollinators still viable? Will rising seas and storm surges lap salt into their wounds? What is the cost? What kind of time is involved to get a species fit enough to complete its life cycle without human intervention?

The Florida Key tree-cactus (*Pilosocereus robinii*) is being

The work of CON SER VA TION

BY GEORGIA TASKER
PHOTOS BY JUAN FERNANDEZ,
JENNIFER POSSLEY, SAM WRIGHT
AND BENJAMIN F. THACKER

grown at the nursery at Fairchild and reintroduced into suitable Keys habitats, yet rising seas and changing climate still threaten it from the shadows. Development continues to erode the fern diversity of South Florida, but over one dozen of these species are being nurtured at the Garden. Sargent's cherry palm (*Pseudophoenix sargentii*) was collected from the wild when near extinction, but reintroductions began in 1991 and monitoring continues. The state is reintroducing South Florida orchids to the wild Fakahatchee Strand Preserve State Park. Fairchild's The Million Orchid Project is placing still other native orchids into urban areas.

The alternative to such reintroduction efforts is impoverishment, depletion, loss. There are now in the United States and Canada 1,000 plant species either federally listed as endangered or eligible for listing. But suitable habitats for reintroducing plants to the wild have been reduced



4



6



7



5



8

1. *Rhipsalis baccifera*
2. *Pilosocereus robinii*
3. *Linum carteri*
4. *Jacquemontia reclinata*
5. *Okenia hypogaea*
6. *Pseudophoenix sargentii*
7. *Cyrtopodium punctatum*
8. *Campyloneureum phyllitidis*

to such an extent that the urgency of the task quickens the heart. “Global climate change, limit its extent as we may, makes the prospects for species survival and successful reintroduction bleaker than we have thought,” wrote Peter Raven in the forward to “Plant Reintroduction in a Changing Climate,” edited by Dr. Joyce Maschinski and Dr. Kristin Haskins.

The Center for Plant Conservation (CPC), begun in 1984, has 40 institutional members, including Fairchild. It has worked on nearly 200 plant reintroductions within the U.S. during the last 20 years. Its headquarters are at the San Diego Zoo Global, in the zoo’s Safari Park. Maschinski, formerly head of conservation at Fairchild, now is senior plant scientist at the Safari Park and director of science for the CPC.

While at Fairchild, Maschinski and her conservation team worked to reintroduce more than two dozen endangered plants, including the beach clustervine (*Jacquemontia*

reclinata), Sargent’s cherry palm (*Pseudophoenix sargentii*), six species of endangered South Florida ferns and the Key tree-cactus (*Pilosocereus robinii*). The costs of such reintroductions vary from \$15,000 to \$115,000, according to Maschinski, with money coming primarily from state or federal grants.

“Costs include labor, travel and supplies associated with collections of plant seeds or cuttings, record keeping, propagation, growing, site selection, preparation, analysis and then implementation and monitoring,” Maschinski wrote in an email. “The high estimate incorporates careful evaluations of a species’ biology and habitat preference prior to implementation of the reintroduction.” Part of the cost—and often overlooked—is the labor required to monitor reintroduced plants over many years. The *Pseudophoenix* palms were 1 to 4 years old when they were reintroduced in 1991; a 12-person crew puts in two full days every four years to

monitor them. The palm reintroduction will be considered successful when adults produce offspring, but they have not yet reached maturity.

Jennifer Possley, a Fairchild conservation field biologist, works to reintroduce endangered ferns such as the climbing vine fern, fragrant maidenhair fern and the broad Halberd fern. The grid-scale maidenhair fern (*Thelypteris patens*), took two years to propagate. Once the ferns were ready for reintroduction into the natural habitat, Possley worked with 15 people from Miami-Dade County government, from China and Fairchild volunteers to plant them. Overall, she has led 11 planting events to reintroduce 696 individual ferns. The most meticulous kind of monitoring is involved: measuring stem length, finding seedlings, determining whether exotic plants will overcome the reintroduced plants, tracing their destinies after fire and hurricane. Record keeping



9. *Polygala smallii*
10. *Dalea carthagensis* var. *floridana*
11. *Pavonia paludicola*
12. *Consolea corallicola*
13. *Thelypteris patens*


is staggering. Fieldwork often is miserable. Dedication is a given. Yet, even as reintroduction continues, seas are rising, salt is intruding and the ark is creaking. In a 2011 paper titled “Sinking Ships: Conservation Options for Endemic Taxa Threatened by Sea Level Rise,” Maschinski and colleagues wrote that “Evidence of endangered species’ population declines and shifts in vegetation communities already are underway in the Florida Keys.” It’s not always possible to relocate populations, either, especially animal populations. For instance, endangered Lower Keys marsh rabbits, particularly the females, are homebodies. They don’t travel far from where they were born. Key deer have small ranges, and they, too, have “strong homesite fidelity,” Maschinski wrote in the paper. Their habitats, meanwhile, are shrinking in size. The deer are already at carrying capacity, and both the deer and the marsh rabbits have few places to seek refuge, especially in the dry season when fresh water is so very limited.

Plants also have homesite fidelity, but given time they may gradually inch out of the way as that homesite changes. They may climb higher up a mountain or farther back from a shore. But time is not on their side. “It is generally believed that some species will not move fast enough to track the rapidly changing climate of the future,” Maschinski wrote, “especially if there is rapid sea level rise. Successful colonization requires rapid reproduction and next generation establishment, which may take decades.”

That’s the hope on which Fairchild’s The Million Orchid Project rests. Over-collecting, or just plain theft, of orchids from South Florida’s natural areas has been ongoing for generations. Susan Orlean made that fact famous in “The Orchid Thief.” With so few left, Fairchild Director Dr. Carl Lewis took inspiration from Singapore Botanic Garden and hatched The Million Orchid Project. It aims to reproduce hundreds of thousands of endangered orchids in

labs and return them to urban areas, where people can care for and admire them. Thievery of reintroduced orchids already has occurred, but when propagation is being done on such a large scale, some of the plants surely may set up permanent homes.

This orchid project may be considered “managed relocation”—putting endangered species in habitats they have not previously occupied. It is the next step in saving species, and one that many conservation biologists view with angst: What if the relocated plant turns out to be a Brazilian pepper or a *Melaleuca*, disrupting or destroying the habitat into which it has been moved? And wouldn’t it be wise to wait and see if the plants can adapt to a changed environment? What if we wait too long?

As conservation issues multiply and endangerment spreads like a fog over the planet, it is more urgent than ever that we bring answers to these questions into focus. 



THE MEANING BEHIND THE NAME

Here are the meanings of the general of endangered South Florida plants being reintroduced by the Garden's conservation biologists.

By Georgia Tasker

Photos by James Lange, Jennifer Possley,
Benjamin F. Thacker and Sam Wright

Adiantum—This comes from the Greek *adiantos*, meaning dry, unwetted. Stearn's "Dictionary of Plant Names for Gardeners" says the leaflets repel water "in a remarkable way—if plunged into water, the fronds remain dry." Other sources say the leaves are water-repellant.

Amorpha—From the Greek, meaning shapeless or without definite form. The corolla (collective name for the petals) lacks wings and keel (two petals fused together).

Campyloneurum—*Campylos* is from the Greek for curves; *neurum* is nerve and refers to veination.

Consolea—Named for Michelangelo Console, a 19th-century Italian botanist who worked at the Botanical Garden of Palermo.

Cyrtopodium—Oddly, the meaning of *cyрто* is arched, while *podium* is foot, and it refers to the orchid's lip.

Dalea—Named for Dr. Samuel Dale, an English botanist (1659-1739) and apothecary.

1. *Lantana depressa*
2. *Dalea carnea*
3. *Amorpha herbacea* var. *crenulata*
4. *Adiantum melanoleucum*
5. *Opuntia humifusa*



Lantana—An ancient Latin name for the genus of shrubs called *Viburnum*.

Linum—Latin for flax or linen.

Jacquemontia—Stearn says the name honors Victor Jacquemont, a 19th-century French botanist, naturalist and traveler to the West Indies and India. He died of cholera at age 31 in India.

Microgramma—*Micro* means small and *gramma* refers to line. This is a dwarf fern that climbs.

Okenia—This name recalls the 19th-century German naturalist Lorenz Oken, who was born as Lorenz Okenfuss. The Encyclopedia Britannica tells us that Okenfuss “elaborated Wolfgang von Goethe’s theory that the vertebrate skull formed gradually from the fusion of vertebrae. Although the theory was later disproved, it helped prepare a receptive atmosphere for Charles Darwin’s theory of evolution.”

Opuntia—Opus is an area or town in Greece where other cactus-like plants grew. Originally, the name was given to a different plant. Some sources say plants that could be propagated from plant parts were the original reference.



Passiflora—passion flower. Spanish missionaries in 15th-century and 16th-century South America thought they saw signs of Christ’s crucifixion in the parts of this plant’s flowers. The corona was the crown of thorns, the five anthers (the parts of the stamen that contain pollen) were the five wounds and the three styles (long, slender stalks) were three nails.

Pavonia—Jose Antonio Pavon Jimenez was a Spanish botanist who wrote an incomplete *Flora Peruviana*. He did research in Peru and Chile in 1777-1778.

Pilosocereus—*Pilosus* comes from the Latin for long, soft hairs; *cereus* means cactus. It’s hard to see the spines as long and soft when looking at our Key tree-cactus, *Pilosocereus robinii*.

Polygala, the milkworts—While “poly” means many, *Polygala* is an exception. It is Latin, taken from the Greek, meaning “much.” *Gala* means milk. Milkworts “were reputed to aid the secretion of milk,” writes Stearn. The reference is apparently to cattle grazing in the field, not humans.

Pseudophoenix—A false date palm.


Remirea—The name was first published in 1775 in a description of the flora of French Guiana, but there are no references to the etymology. *Remiro* means to look again.

Rhipsalis—This refers to the interlacing of the many twigs of mistletoe cactus. It means wicker-works.

Tectaria—*Tectum* is Latin for “roof,” and the online Botany tells us it refers to roof-like covering.

Tephrosia—Ash-colored, for the gray down on the leaves.

Thelypteris—This genus name means female fern.

Zanthoxylum—*Xanthos* is Greek for yellow and *xylon* means wood. Refers to the yellow heartwood. 

6. *Passiflora pallens*

7. *Tectaria heracleifolia*

8. *Zanthoxylum coriaceum*



Fairchild is a Four Star Charity Navigator Organization and the highest-ranked botanic garden in the U.S.

Charity Navigator’s four star rating means that an organization is deemed exceptional and that it exceeds industry standards, outperforming most charities in its group. Specifically, Charity Navigator’s rating system examines two broad areas of a charity’s performance: financial health and accountability as well as transparency. Charity Navigator’s ratings show givers how efficiently it believes a charity will use donors’ support today, how well it has sustained its programs and services over time and its level of commitment to good governance, best practices and openness with information. Charity Navigator provides these ratings so that charitable givers/social investors can make intelligent giving decisions.

You’ve always known that Fairchild is well-managed and a model organization in its commitment to our members, donors and supporters. And now Charity Navigator’s four star rating is a confirmation. Thank you for your confidence and support.




(Source: Charity Navigator www.charitynavigator.org).

VINE PERGOLA RESTORATION PROJECT

By Susannah Shubin

Fairchild’s Vine Pergola is beloved and cherished by many of our friends and visitors. Its variety of year-round blooms add an abundance of color, fragrance and exotica to our existing greenscape. It is one of the oldest structures in the Garden (built during the Garden’s first 15 years,) and because it can be seen from Old Cutler Road, it is also one of the most visible, enjoyed by thousands of people who bike, walk and drive by it each day. Its health and sustainability are integral to the overall beauty of Fairchild.

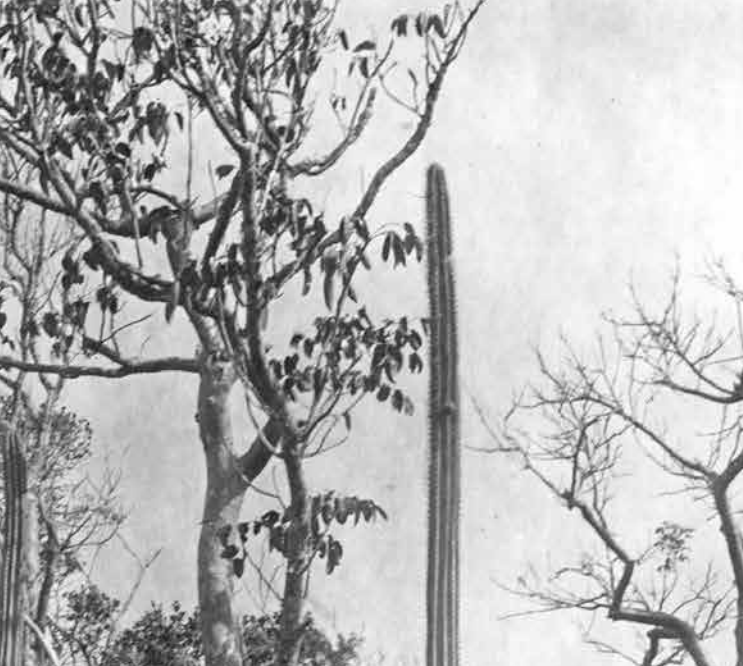
In order to keep the Vine Pergola thriving, our staff and volunteers must dedicate constant attention to its growth. They spend countless hours delicately maintaining, weeding, watering, trimming and nourishing the plants on this 700-foot-long historic stone and wood arbor. Unfortunately, its horticultural requirements alone far exceed what our budget can cover. As such, we have undertaken an aggressive plan to facilitate its needs and have initiated the Vine Pergola Restoration Project. We estimate the project will cost \$100,000, and in order to reach our goal, we are asking our Fairchild Fellows, members of the Garden’s philanthropic society, to donate \$500 each toward this very specific need. An honorary plaque will be placed in the Pergola as an acknowledgment of the group’s generous gift.

We encourage all of you to be part of this very special effort to help us maintain one of our oldest and most beautiful assets by giving to the Vine Pergola Restoration Project today. 



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This tall, proud species (they can reach 30 feet), which once grew in robust colonies throughout the Keys, has seen its population decline by 84%.

SAVING THE FLORIDA KEY TREE-CACTUS

By Georgia Tasker

They once stood thick and tall among the fragile forests of the Florida Keys: cactuses that rose with the same intentions as buttonwood and mastic trees. Storms might knock them over, but they would root and rise again. They were so determined that they became known as tree cactuses—specifically, Key tree-cactus.

Botanist John Kunkel Small, who extensively explored South Florida and the Florida Keys early in the 20th century, identified two species of the Key tree-cactus in his 1933 “Manual of the Southeastern Flora.” He called them *Cephalocereus deeringii* and *Cephalocereus keyensis*. (Small named many things for his friend and sponsor Charles Deering.) Later botanists called them *Pilosocereus robinii* and *Pilosocereus polygonus*. Still others lump them into a single species as *Pilosocereus robinii*. In all, the cactus has undergone six name changes, and the discussion isn’t over yet. Recent genetic work shows that all Key tree-cactuses throughout the Florida Keys are the same species, no matter the name.

There is one fact that no one disputes: the Key tree-cactus is in the botanical emergency room, on life support. Trying to get a handle on the number of plants left is tough.

Through the years, some people have counted standing individuals as well as fallen branches around them. Others have counted only erect stems. Fallen branches may root, but they really are genetically the same plant as the one left upright. Nonetheless, in 1994, two populations on Big Pine Key totaled 2,201 stems. Today, there are 15—or 41 if you count fallen branches that have rooted.



The Florida Key tree-cactus was plentiful at the turn of the century when John Kunkel Small visited with his camera.

Photo: Florida Memory State Archives



THROUGHOUT THE FLORIDA KEYS, THE OVERALL RATE OF DECLINE IN THE KNOWN POPULATIONS IS 84%, WITH THE RATE NEARLY MAXING OUT AT 98% IN THE LOWER KEYS.

It was believed that three *Pilosocereus* populations had increased, but Fairchild Field Botanist Jimmy Lange says that's because fallen branches were counted in more recent surveys, but not in earlier ones. Meanwhile, the plant still clings to the federal list of endangered species, where it has been listed since 1984. One large population has been found growing at a low elevation surrounded by mangroves in Key Largo. The site was so thick with cactus that it was nearly impossible for botanists to move into it for accurate counting. This year, that population, which seems to be the origin of all populations in the Keys, numbers only 29.

The species is part of a larger *Pilosocereus* complex in the Caribbean, and two populations of *P. robinii* exist in Cuba. Small's 1916 photos of the Keys include some of the then-robust colonies, as well as one image of collectors packing obviously heavy stems out of a clearing and another showing them hoisted atop a small boat. Still another Small image shows a virtual forest of tall transplants on Charles Deering's estate at Cutler.

There are many reasons for the disappearance of this columnar cactus, which may reach a height of 30 feet or so: habitat loss, early over-collecting, hurricanes and storm surge, too much shade when a forest canopy closes, sea level rise and increasing soil salinity. In a Lower Keys protected area, poaching and herbivory (the eating of plants—in this case, ironically, by Key deer, which is also an endangered species) compound the plant's increasingly dire predicament.

Since the 1950s, botanists have attempted to reintroduce scarce plants to areas that will ensure their survival, almost always in their historical range. Doing so requires collecting samples and figuring out how to grow them in a nursery, then examining in exquisite detail the best areas for reintroducing them. This often takes many years.

Fairchild's conservation botanists have been working to save several endangered species, including the Key tree-cactus, for many years. The United States Fish and Wildlife Service is responsible for managing the surviving members of any endangered species, so beginning in 2007, FWS and Fairchild teamed up to reintroduce the plant to the wild. Botanists collected cuttings from the wild that year (and during subsequent years) and began growing them in the Garden's nursery. In 2012, the first reintroduction was made on Windley Key in two areas:



TOP

A colony of cactuses.

Photo: Florida Memory State Archives

ABOVE

A new planting to restore the cactus.

Photo by Georgia Tasker/FTBG




a “cactus habitat” near mangroves and another area of slightly higher elevation. A second reintroduction on Windley Key was made at even higher elevation—3 meters above sea level (nearly 10 feet). This second planting, however, was in a hammock. “These plants are protected against sea level rise for the short term, but they are in a mature hammock. So it remains to be seen if the ecological conditions will be suitable,” Lange says.

After finding that soil around dead cactus was saltier than soil around living plants on Big Pine Key, Dr. Joyce Maschinski, formerly of Fairchild, and her conservation team set up a study of salinity levels on stem cuttings grown in the nursery. The conservation team used seedlings from two maternal lines and found that one population was more salt-tolerant than the other. In a 2012 paper, they noted that unraveling the genetic differences between salt-tolerant and salt-sensitive plants in the Florida Keys will require further genetic tests. That information will help clarify conservation choices to be made.

Meanwhile, Lange and the conservation team continue to experiment with salt tolerance. In August of 2015, they found another site for reintroduction—in an area that had been scraped, but not bulldozed, around a quarry. Soil salinity was presumed to be low, judging from the salt-sensitive plants growing there. By monitoring cactuses planted at slightly different elevations and in varying shade conditions, Lange hopes to get a clearer picture of these particular influences on survival rates.

Indeed, Lange returns to monitor reintroductions every three months during their first year, then every six months and then annually. The highest mortality occurs after the initial planting. Stems of the cactus range in size from 1 foot to 5 feet, and larger plants are more easily established. He takes growth measurements once a year.

“We try to get the most [genetic] diversity out there that we can. Every plant in our [nursery] has a known wild parent, so we also are planting to avoid depleting lines in our ex-situ collection,” he says, calling the effort “a balancing act.” The newest group of 49 young stems came from plants on five different islands. So far, one has died and Lange recently removed a dead stem top with a sterile knife. A couple of reintroductions have small areas of rot on the stems, but Lange says he wants to see if they can heal themselves.

None of the populations of these plants seem to set fruit often. The Fairchild team collected three fruits in 2008 and another six in 2010. But there are babies growing from seed in the Garden’s nursery. For plants that once were considered villainous in their natural habitat, these babies, so fragile and rare, inspire optimism. They also are truly cute. 



TOP
Jimmy Lange checks on his recently planted cactus.
Photo by Georgia Tasker/FTBG

BELOW
Seedlings growing in the Garden’s nursery.
Photo by Georgia Tasker/FTBG



WHAT'S BLOOMING

SUMMER BLOOMS

BY MARILYN GRIFFITHS

PHOTOS BY MARILYN GRIFFITHS AND KENNETH SETZER

A stroll through the shady Arboretum provides a refreshing respite from the heat of the summer. As you wander through this lovely area, you'll see the original terraced plots lined with limestone rock. This was one of the first areas of the Garden to be designed by William Lyman Phillips, the Garden's landscape designer. Each plot contains representatives of a different plant family. Many of the trees are the original plantings from the 1930s and the 1940s. Let's take a look at what's flowering during the summer.



Catalpa longissima



Catesbaea spinosa



Rondeletia odorata



Stemmadenia litoralis



Erythrochiton brasiliensis

Catalpa longissima (yoke-wood) is a large tree in Plot 29, the Bignoniaceae plot. It is native to Cuba and the Bahamas. Although it flowers most of the year, summer is the season of peak bloom. The fragrance of these lovely pink flowers can be experienced throughout this area. The Garden received our magnificent specimen in 1939.

Two specimens of ***Bulnesia arborea*** (verawood) in Plots 34 and 37 are covered with warm yellow flowers during the summer. Dr. David Fairchild introduced the tree, native to Colombia and Venezuela, in the late 1940s. It has since become a popular landscape tree. *Guaiacum sanctum* and *Guaiacum officinale* (lignum vitae) are in the same family (Zygophyllaceae), and the two genera can be compared in Plot 34.

Catesbaea spinosa (lily-thorn) is a member of the Rubiaceae family (like coffee). This small tree is native to Cuba and the Bahamas and lives up to its common name—spines are interspersed between the small, deep-green leaves. But its pendulous flowers more than make up for the spines. Small, creamy white, lily-shaped blooms cover the tree, which was planted in Plot 24 in 1941.

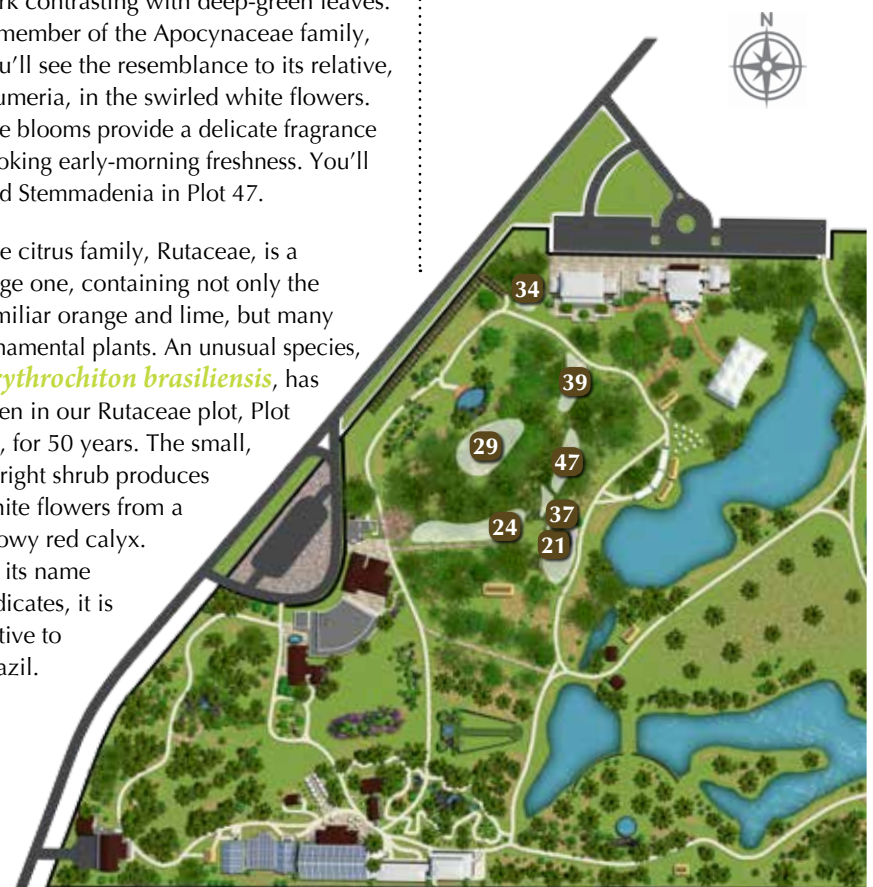
Panama-rose is a deceptive common name: It is not a rose and it is not native to Panama. ***Rondeletia odorata*** is also in the Rubiaceae family and is native to

Cuba. Its flowers are also not fragrant! Our specimens are just south of the overlook in Plot 21. Although the large shrubs have flowers most of the year, they bloom heavily in the heat of the summer. Vivid red and orange clusters stand out among the deep-green foliage.

Stemmadenia litoralis (milky way tree) has a well-proportioned shape and pale bark contrasting with deep-green leaves. A member of the Apocynaceae family, you'll see the resemblance to its relative, *Plumeria*, in the swirled white flowers. The blooms provide a delicate fragrance evoking early-morning freshness. You'll find *Stemmadenia* in Plot 47.

The citrus family, Rutaceae, is a large one, containing not only the familiar orange and lime, but many ornamental plants. An unusual species, ***Erythrochiton brasiliensis***, has been in our Rutaceae plot, Plot 39, for 50 years. The small, upright shrub produces white flowers from a showy red calyx. As its name indicates, it is native to Brazil.

The Garden's Plot Map and What's Blooming List are available at the information desk at the Shehan Visitor Center and at the South Entrance welcome booth. A list of the Garden's complete plant collection is also available at the Visitor Center information desk. Be sure to pick up both when you visit.





EXPLORING THE WINDSWEPT ISLAND OF *GREAT INAGUA*

The Southern Bahamas' largest island gave us seed from its namesake palm, endemic agave and orchids, a surreal walk through the Pygmy Forest and more.

By Brett Jestrow, Ph.D.; R. "Casper" Burrows; Ethan Freid, Ph.D.; and Jason F. Lopez

Photos by Brett Jestrow and Jason F. Lopez



In February of this year, a collaboration between the Bahamas National Trust (BNT) (Casper Burrows and Dr. Ethan Fried) and Fairchild Tropical Botanic Garden (Dr. Brett Jestrow and Jason F. Lopez) led to an expedition to the largest island of the southern Bahamas, Great Inagua. With generous support from the International Palm society, our primary goal was to find and collect seed and scientific samples of the Bahamian endemic palm, *Coccothrinax inaguensis*. With between 40 and 50 species, *Coccothrinax* is the largest genus of Caribbean palms. Of those species, only *C. inaguensis* is restricted to the Bahamas. As it was first described from Great Inagua, that was the natural island for us to explore.

Great Inagua, at nearly 60 miles long and 20 miles wide, is large, but only reaches just over 100 feet in elevation. Inagua is quite remote, home to fewer than a thousand inhabitants, all living in the single settlement of Matthew Town. Closer to Haiti and Cuba than to Florida, the island has many endemic species not found in the northern Bahamas. These other species were of particular interest to Freid, as he is developing an extensive living collection of Bahamian endemics for the Bahamas National Trust at the Leon Levy Native Plant Preserve on the island of Eleuthera.

TOP

The Lighthouse of Matthew Town has stood for the last 150 years, and continues to serve as an important beacon for sailors during rough seas.

ABOVE

The ruins of a limestone hut built in the early 18th century, with Salt Pond Hill in the distance looking much the same as in Dr. David Fairchild's day.



RIGHT
Agave nashii in full fruit, quite content with the strong salty winds of the eastern coast.

BOTTOM
 A splash of color, *Ipomoea microdactyla* flowers well in the dry landscape.

Even before our plane landed, we could easily see the massive evaporative salt ponds that span across the island’s interior. They are the domain of the first Bahamian corporation, continued today by the Morton Salt Factory. From its beginning in the 1840s through today, the company has produced massive amounts of salt for North America. These salt ponds are also home to the largest colony of West Indian flamingos in the Caribbean; with a population estimated at 60,000 strong, the flamingos and salt production seem to get along quite well.

IN SEARCH OF *C. INAGUENSIS*

Before we begin to describe our quest, a little history is in order, as this species of palm has a curious connection with Dr. David Fairchild. He first arrived at Great Inagua on January 14, 1932, while exploring the Caribbean aboard the research vessel *Utowana*. The next morning, traveling east from Matthew Town, en route to Salt Pond Hill, he collected seed of an unidentified *Coccothrinax*. These seeds found their way back to the U.S. Department of Agriculture Plant Introduction Station (Chapman Field) in South Florida, where they grew in relative obscurity for decades. Then in 1966, Dr. Robert Read, a researcher at Fairchild, realized these unidentified palms at the USDA were a new species to science, leading to his publication of *C. inaguensis*. The seeds collected by Dr. Fairchild had grown to mature palms, and he based the original species description on those trees. We believe *C. inaguensis* to be the only species of palm that Dr. Fairchild first discovered and brought into horticulture.

We were careful to plan our trip within a few weeks of when Dr. Fairchild collected his *C. inaguensis* seed, because many palms—especially *Coccothrinax*—are essentially impossible to propagate without viable seed, which is found only in perfectly ripe fruits. We hoped that, by timing our trip just right, we would find viable seed. When we arrived on Inagua, our first priority was to find “en route to Salt Pond Hill,” the type locality for the palm. Luckily, the Bahamas National Trust’s Burrows is the warden of Inagua National Park. Raised on Inagua, he has an intimate knowledge of the island, and certainly knew Salt Pond Hill. During our first day in the field, we found *C. inaguensis* by the thousands, right where they should be, and in full fruit. Our efforts in timing had paid off! After breathing a sigh of relief, we collected seed for the Bahamas National Trust and Fairchild, as well as for ex-situ germplasm collections to be maintained at the Montgomery Botanical Center.

AGAVE AND ORCHIDS

We then spent time exploring the western side of the island north of Matthew Town, finding and collecting from more populations of *Coccothrinax*. We took the sole road heading north until its abrupt end at the northwest corner of the island, where the recent hurricane Joaquin had washed the road into the sea. Along this road, in the dry limestone flats, we found a Bahamian endemic agave. The genus *Agave* has more species endemic to the Bahamian archipelago than any other, and these eight species have long been enigmatic and confused. We believe this particular agave to be *Agave acklinicola*, and while known from other southern Islands, this was the first time it was identified on Inagua. In the same area, we also found large patches of the endemic orchid, *Encyclia correllii*. It is named in honor of Dr. Donovan Correll, author of the “Flora of the Bahama Archipelago” and former Fairchild Herbarium curator. *E. correllii* is unusual because it grows on





ABOVE
A healthy stand of *Coccothrinax inaguensis* on the way to Salt Pond Hill, the type locality for the species.

bare limestone rock, rather than epiphytically in the trees. While the orchids were not in flower, they were in full fruit, presenting a great opportunity to collect a sample of their miniscule seeds for propagation in Fairchild's orchid laboratory.


TRAVERSING THE LONG ROAD

Next, we set our sights on the eastern side of the island. A long way from Matthew Town, only one road leads the 60 or so miles to one of the most remote coastlines in the Caribbean. While Inagua lacks mountains, the road is still slow, as it is unpaved, sandy and surprisingly prone to flooding. While Inagua is a very dry island, one of the hottest and driest of the Bahamas, we were there during the most significant rains of the year (keeping us cool and relatively mosquito-free). During these rains, Burrows drove the four-wheel-drive vehicle slowly, even pausing to check that we were still on the road.

The trip was well worth the time. The lonely road brought us through one of the more dramatic areas of the Bahamas, a truly unique habitat in the Caribbean known as the "Pygmy Forest." Sculpted by the sun and wind, the Bahamian endemic *Bursera inaguensis*, a relative of our gumbo-limbo, dominates the landscape while not even reaching 2 feet in height. Walking through the Pygmy Forest, one feels like a giant strolling among miniature baobabs. Truly a bonsai-lovers paradise, the Pygmy Forest also contains other dwarfed endemic species clearly adapted to the dry Caribbean lowlands. Continuing farther, we arrived at the southeast corner of the island, known as Sandy Point, next to a low

limestone ridge overlooking the sea. *Agave nashii*, though quite common in the Pygmy Forest, was here at its most striking—growing on an open expanse surrounded by the sparsest of vegetation. Along this very ridge was where George Nash first collected the species in 1904. A beautiful, small species with a grayish-purple cast to its leaves, the *A. nashii* lends itself to horticulture. Another species on the ridge, which immediately caught our eyes, was the cactus *Melocactus intortus*, resembling large watermelons completely out of place, balanced on limestone hillsides.

After days of traversing the long road, we finally committed to the long haul all the way to the end, near the island's northeast corner. Here, the road stops at the abandoned tractor that carved it, but just couldn't push any further. Rusted and battered by the salty sea breeze, this tractor marked the end of the line, and here we found our most distant population of *Coccothrinax*. This population was important to find, as the palms had features of *C. inaguensis* as well as *C. argentata*, a widespread species that also occurs in South Florida. We collected DNA samples that will be quite informative as to the relationships between the palms, and will aid in the identification between these two taxa.

By the end of our Great Inagua trip, we had collected extensively, with dozens of new accessions for the living collections and nearly 100 herbarium specimens documenting the island's flora, as well as scientific samples. We expect it all will keep us busy for some time. And, of course, we hope to see these species growing in the Bahamian collection at the Garden before long. 

Searching for the Elusive SPANISH TOP

By Sara Edelman

Winter 1977

Andros Island, Bahamas

Dr. George R. Proctor was finishing his palm survey of the island. He had worked closely with Rose, the director of Forfar Field Station. Together, they drove up and down the main timber road and offshoots in search of native palms. The road had previously been used for pine logging, but poor planning and planting made the pines grow too thin for timber. Logging had been abandoned and the road was mostly used for the Owens airport. For a Bahamian road, though, it was very well maintained, and plant collecting was much easier than on the other, less-accessible outer Bahamian islands.

Proctor and Rose found most of the palms he was searching for: cabbage (*Sabal palmetto*), silver top (*Coccothrinax argentea*), thatch palm (*Leucothrinax morrisii*), even buccaneer (also known as Sargent's cherry palm, *Pseudophoenix sargentii*). But they could not find the elusive Spanish top (*Acoelorrhaphe wrightii*). Proctor did not think finding Spanish top would be so difficult. He had come across it effortlessly in previous expeditions through its native range (Central America to South Florida, where it is known as paurotis palm). The large, clumping palm was easy to spot. Many clumps often grew near each other, forming monotypic stands in flooded grasslands. However, the flooded grasslands of Andros were completely devoid of Spanish top.

Out of options and out of time, Rose and Proctor headed to the northwest coast of Andros, to Red Bays village—a mixed community of descendants of Seminoles and escaped slaves. The pair was looking for Amelia Marshall, the last full Seminole, who was known across the Caribbean for her great plant knowledge and specialty in bush medicine. Marshall had never seen the palm, but directed Proctor and Rose to a schoolboy, Clarence, whose love of hog hunting sent him deep into the bush. He alone knew where to find the Spanish top palm.

The following day, Clarence, Proctor and Rose spent hours hiking through marsh until they finally found one individual palm. Clarence assured him that this was the only Spanish top on the island. It was nothing like the monotypic stands Proctor had observed before. Proctor had never encountered only one clump; there were usually at least three or four clumps growing nearby. Knowing that he was quickly losing daylight, Proctor frantically searched for more clumps but came up empty-handed. Exhausted and frustrated, Proctor hastily described the individual in a brief herbarium sheet.

Winter 2015

Andros Island, Bahamas

Andros Island looks slightly different 40 years later. The Owens airport was torn down during the war on drugs and the timber road was abandoned for a new highway built along the island's eastern coast.





Clarence Holbrook and Sara Edelman standing proudly in front of one of the last spanish top palms on Andros.

Like Proctor and Rose, I was searching for the Spanish top and had spent two days hiking around the new main road, searching for the “coppice and marsh transition zone” that Proctor described on his herbarium sheet. It was the only clue as to where to find the elusive palm. This was the last stage of my dissertation research, and I was quickly running out of time. I had two days left on Andros and was no closer to finding the palm than I had been while in Miami looking over Proctor’s limited herbarium note.

As a last resort, I made the one-hour drive north from Central Andros to Red Bays with my field assistant, Dale from Forfar Field Station. We were in search of Agnes Marshall, who had inherited great plant knowledge from her mother, Amelia Marshall. “I have never seen this palm,” Agnes told us. “Are you sure it grows here?” Frustrated and confused, we started our trek back. Pulling at straws, we stopped by the side of the road and showed a group of men the picture we had of the Spanish top. A Mr. Colbrook knew where to find it. It was deep in the bush, he said, far south on the old timber road. It was a three-hour journey on unkempt and abandoned roads. It was too late to go that day, but he offered to take us the next day.

The next day came, but we had no vehicle that could handle the bad roads and terrain. Brian Hew, a family friend, found us a truck. But, by the time it arrived and we were ready to go it was, once more, too late to head that deep into the bush. We drove back north to talk to Holbrook to confirm plans for the following day.


The following day, we started out before sunrise. For the first time during this trip, everything went as planned. We left Central Andros early, retrieved Colbrook from the north, and were headed south towards the elusive palm by sunrise.

And we made it! Two hours off-roading, a short hike off the old timber road and there it was: the only clumping palm in Andros, and

to our knowledge, the last one. I excitedly took measurements and pictures. Once I calmed down and looked around, I realized we were in a flooded pineland. Sighing, I said aloud, “This isn’t coppice. This isn’t what Proctor described.” “Proctor? The Jamaican botanist?” Colbrook replied. My eyes lit up in anticipation. “I took him to see an individual of this type 40 years ago, long before I knew this specific individual existed,” he said. Colbrook had been Proctor’s guide in Andros as well. Forty years later, he still didn’t understand why a palm botanist would journey all the way into the bush for a palm no one else cared about.

After a little probing, I discovered that the specific Spanish top Proctor saw in the coppice-to-marsh transition has not been seen since his last visit. Like the timber road, it has been abandoned. The road is now completely destroyed and the only way to reach the palm is to hike for miles through marsh, cross a lake and hike through more marsh. It is basically inaccessible. Colbrook was delighted when he found this individual in a more accessible area and happily shows it to interested botanists.

These two individuals—Proctor’s Spanish top and the one in the pineland—are possibly the only two Spanish top palms left on Andros, and are of huge genetic importance. The palm I visited is stunted and has never produced flowers. The palm Proctor visited, however, was 15 feet tall, with multiple stems producing seed. To preserve the Androsian genotype, the seeds should be collected and distributed throughout the island.

While I found the Spanish top and have since completed my dissertation research, my interest has been piqued. One big question lingers: If the Spanish top is truly native to Andros, then why are the individuals so isolated and why are they growing in conditions so different from the rest of their native range? The only way to answer this question is to return, and with Clarence as my guide, finish what Proctor started so many years ago. 

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THE



OF FAIRCHILD

TEXT AND PHOTOS BY CHAD HUSBY, PH.D.

“I happened to be alone for a moment on the trail when, looking up, I saw before me a gray cliff over which was festooned the loveliest evergreen climbing fig imaginable, with a hundred or more brilliant scarlet fruits set off by the glossy green of the foliage. As I stood looking at it and wondering if the fruits were good to eat, and how we could get some of them, and how lovely a plant it would be on the wall of a house in South Florida, I was conscious of experiencing in a measure the delight of those early explorers who first set eyes on the *Victoria regia* or the *Rafflesia* or the *Jacaranda*, let us say.”

“Exploring for Plants,”
By Dr. David Fairchild (1930)

When can a single tree also be a forest? An individual fig tree can cover multiple acres with trunk-like prop-roots supporting branches that keep growing indefinitely. There are around 750 species of fig in the world, mostly in the tropics but with some extending into warm temperate areas. Every type of habit that a woody plant can have is represented in the genus, from trees and shrubs to vines, stranglers and epiphytes. The fruits of figs are important food sources for many tropical animals, which also disperse their seeds. Though most fig fruits are not very palatable for humans, some make excellent foods.

When the word “fig” comes up in conversation, most people think of the tasty fruits of *Ficus carica*, the Mediterranean fig tree that has been cultivated and eaten for millennia. However, this fig is actually atypical of the genus, because it occurs in temperate (rather than tropical) areas, is deciduous and has some peculiar fruiting characteristics related to its domestication.



Ficus deltoidea comes in a wide variety of leaf shapes and sizes, such as large fan-shaped leaves and large figs, as on the left, or small leaves and small figs, as on the right.

WHAT IS A FIG?

Fig trees have several unique characteristics. Generally, botanists look for milky white latex as one key characteristic of the genus, in addition to the prominent sheathing leaves (stipules) that enclose the buds. However, the most distinctive characteristic remains the peculiar arrangement of the tiny flowers in a strange globular type of inflorescence, with many female flowers and a few male flowers in each. These structures are technically called “syconia,” or more commonly, “figs.” Though these structures are technically not “fruits” in the botanical sense, but rather infructescences, they are functionally fruits in an ecological sense. The flowers of fig trees are pollinated by tiny wasps that enter the figs, pollinate many flowers, lay their eggs in many of the ovaries and then carry pollen to other trees. These wasps depend on the figs and the figs depend on them. With very rare exceptions, a single species of wasp is associated with a single species of fig. Thus, when figs are introduced into a new area through cultivation, but their pollinator is not (as is typically the case), they cannot reproduce by seed. This is why, although well over 100 fig species have been introduced into South Florida over the years, only a handful reproduce by seed.

A life form that is unique to the genus *Ficus* is the banyan. A banyan is a fig that produces aerial roots that become trunk-like pillars supporting its huge branches



as they grow outward. Thus, a single tree can cover several acres and include many trunks. There are enormous specimens of *Ficus benghalensis* in India and Sri Lanka with more than 3,000 trunks—creating single-tree forests. There are several sizable banyans in South Florida; the most famous is the one at the Edison and Ford Winter Estates in Fort Myers.

DAVID FAIRCHILD AND FIGUS

Fairchild was fascinated with figs. References to trees he observed and introductions he made are scattered through his books and correspondence. Several species were of particular interest to him, including the **giant fig of the Himalayas (*Ficus auriculata*)**. Fairchild was keenly interested for many years in this species, also known as the “Roxburgh fig” or “Elephant ear fig.” It is from Southeast Asia and has a low spreading habit, with large leaves and large figs. The figs, when ripe, are edible—with some selections tasting quite good indeed. Fairchild was intrigued by reports of this fig’s potentially good flavor. He spent years trying to get fruits to ripen effectively in South Florida (using the specimen he planted at his home, the Kampong), apparently with little success.

Fairchild showed his keen enthusiasm for the Roxburgh fig in his writing, such as in this passage from “Exploring for Plants” (1930): “The thrill of the Jardin de Aclimatacion [Tenerife, Canary Islands] to me, however, was to see for the first time a full-grown tree of the Himalayan giant fig (*Ficus Roxburghii*) [*F. auriculata* was formerly named *Ficus Roxburghii*] about which I had read, and a young specimen of which I had once seen in Mr. Coppinger’s garden in Miami, Florida. It was an amazing sight; the great trunk was literally covered with the most astonishing masses of giant figs that seemed to come out anywhere, even from the buttresses at the base.”

In “Are we not going to do anything about the giant fig of the Himalayas?” (1944), Fairchild reported a conversation with the great plant explorer Joseph Rock: “As he

followed me down to my study his eye caught sight of my large *Ficus Roxburghii* with its clusters of fruits on roots and trunk. 'Are the fruits good here?' he asked. 'I have eaten many of them, great big things four inches across and as sweet as Smyrna figs. They are born on special branches which form a mass several feet high all around the trunk. It's a great fruit tree.'"

As with many wild figs, *F. auriculata* fruit does not tend to ripen well without the presence of its pollinator wasps. The original tree at the Kampong was destroyed in Hurricane Andrew in 1992. However, Larry Shockman, the Kampong's director, went on an expedition to Indonesia two years later and returned with a replacement specimen from the same general area in Bogor (on Java Island) where Dr. Fairchild collected the original one. Remarkably, the flavorful fruits of this specimen tend to ripen spontaneously without the presence of the wasp. I have propagated cuttings of this tree and one has grown very well at the Montgomery Botanical Center. A specimen will soon be planted at the Garden, restoring one of Dr. Fairchild's favorite trees to the collection. Furthermore, there are reliable reports that an even better-tasting selection of the Roxburgh fig is found in Hawaii, with fruits tasting like "grape jelly." We hope to obtain cuttings of this during our next plant collecting trip to those islands.

Dr. Fairchild also was interested in a species he initially called the Karang Pandan fig, now known as **David Fairchild's fig (*Ficus subcordata*)**. In "The Karang Pandan Ficus of the Kampong," he wrote: "I have always claimed that the planting of trees from other lands has a romance about it that nothing else has, and it seems to me that the planting of *Ficus fairchildii* Backer provides an outstanding example of this."

Dr. Fairchild had gathered seeds from a tree in Java, Indonesia, for cultivation in South Florida and now there are several beautiful specimens here, with remarkable buttress roots. The specimen Fairchild planted at his home, the Kampong, survives to this day and is famous for the dozens of weddings that have been held under its shade. Similar

specimens thrive in the Arboretum at the Garden, at the Montgomery Botanical Center and at the Subtropical Horticulture Research Station of the USDA (in Miami-Dade). This tree was eventually named in honor of Dr. Fairchild as *Ficus fairchildii*, which made him very excited. However, later research revealed that, unfortunately, it did not represent a new species, but rather the previously described *F. subcordata*.

THE FIG COLLECTION AT FAIRCHILD

The *Ficus* collection at Fairchild has always been an important part of the Garden. Currently there are about 30 species in the ground, plus several varieties and cultivars. A similar number of new species are in the nursery and will provide steady enrichment of the collection.

Two fig trees originally collected by Dr. Fairchild persist in the Garden to this day. These were both collected during the 1939-1949 *Cheng Ho* expedition. One of these is *F. subcordata*—this one from Luzon in the Philippines, rather than from Java, where the Kampong specimen originated. The other original tree is a specimen of *Ficus tinctoria* that Dr. Fairchild collected in the Indonesian island of Sulawesi.



Ficus auriculata, a form collected in Bogor, Indonesia, with tasty figs that ripen without pollination.



Ficus cyathistipula with figs.



Ficus squamosa, a groundcover fig that produces runners, newly introduced from Thailand.

NEW FIGS FOR THE GARDEN

With our recent trips to Asia, and through exchanges with other botanical institutions, the *Ficus* collection at Fairchild is undergoing a renaissance. A few highlights of the new introductions will be finding their way into the Garden and plant sales:


One of the most ornamental fig species is the “dinner plate fig,” *Ficus dammaropsis*, of New Guinea. This fig has a low spreading habit, with huge leaves and huge figs. Two forms, which are probably actually different species, are in cultivation—one from the nation’s highlands and one from the lowlands. There is a small specimen of the highland form in the Garden already. We recently obtained a specimen of the lowland form, which has even larger leaves. It will soon find a prominent place in the Garden. Another exciting new fig already growing well in the Garden is a fascinating groundcover, *Ficus squamosa*. This Thailand native was kindly shared with us by Nong Nooch Tropical Botanic Garden.

Ever since I first encountered some of the astonishing diversity of leaf shapes and fig sizes in *Ficus deltoidea* in Singapore gardens, I have become fascinated with this remarkable small, epiphytic fig. So far, the Garden nursery has about 20 forms, spanning much of its natural diversity of shapes, sizes and habits. This fig makes a wonderful container plant and has distinctive gold dots on the upper sides of its leaves, as well as unusual vein patterns. Many forms develop beautiful yellow and

orange leaf undersides under certain growing conditions. The fruits range from yellow to reddish in color. We are propagating several forms to offer in upcoming plant sales.

In “Exploring for Plants,” Dr. Fairchild admired the impressive banyan fig at the botanical garden in Palermo, Italy, writing: “A splendid giant of a ficus tree which Prof. Borzi, with whom I once studied in Palermo, has named *F. magnolioides*, covers the terrace with its banyan-like aerial roots.” Though this fig was long thought to be a distinct species, it has since been found to be a specimen of *Ficus macrophylla* forma *columnaris*, which is native to Lord Howe Island off Australia. *Ficus macrophylla* forma *macrophylla*, from mainland Australia, has been in cultivation in South Florida for many years, with several recently planted specimens in the fig collection at the Garden. This mainland form has a single trunk and does not become a banyan. The Lord Howe Island form, meanwhile, has been introduced to cultivation in recent years and will soon find its own place in the Garden.

Dr. Fairchild was always on the lookout for new edible figs. He was intrigued by the sycamore fig, which was an important fruit in ancient Egypt and the ancient Middle East. Because the pollinator wasp of this fig did not move with it when it was introduced to the Mediterranean basin, its fruit would not ripen without intervention. However, the ancient peoples discovered that if the figs were wounded at an early stage of development, they would swell and ripen without pollination, producing quite tasty fruit. Last year, we obtained cuttings of what is purported to be the “Shikma Balami” selection of *Ficus sycomorus*, which has fruits that ripen spontaneously without pollination. We now have a number of healthy propagations and will soon give this fig a trial in the Garden—a promising new fruit.

We look forward to expanding the fig collection at Fairchild so that visitors can appreciate more of the extraordinary diversity of this genus. It is especially gratifying that, many decades later, we are making important progress towards Dr. Fairchild’s goal of introducing new edible tropical figs to cultivation. We can at last answer his impassioned plea from 1944, “Are we not going to do anything about the giant fig of the Himalayas?” We are doing something! 

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By Erin Fitts [@ShopatFairchild](#)



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The Tropical Fern and Exotic Plant Society


By Georgia Tasker

There are very few gardeners who grow just one type of plant. We may be devoted to ferns, but hey, look at those lovely episcias. We may collect orchid species, but aren't those bromeliads gorgeous?

The Tropical Fern and Exotic Plant Society (TFEPS) is all-inclusive in its passion: ferns, aroids, aquatic plants, palms, crotons ... you name it. It is the most all-embracing of societies, with sympathies for tropical and subtropical things green and growing.

Begun in 2000 by Reggie Whitehead and a small group of colleagues, the society was a spinoff of the old South Florida Fern Society. "The society was formed to bring many plant groups together so that plant growers [in Miami] would be able to attend one plant society meeting as opposed to several in a month's time," Whitehead explained via email. "And it was 12-year-old Paul Marcellini who suggested that we include the other plants along with ferns."

Today, Paul Marcellini's photograph of Everglades National Park's pineland has become a forever stamp, and the TFEPS continues with monthly speakers covering topics such as plant exploration in Brazil, gardening in South Florida for migratory birds, and growing and propagating aroids. The society's annual show and sale, held in April, awarded prizes to glorious staghorn ferns, bromeliads, crotons and orchids.

TFEPS meets on the fourth Monday of the month at 7:30 p.m. in the Corbin Education Center at the Garden. There are no meetings during July or August. An auction is held every November. 







Young cypress showing some green in early spring. A sleepy alligator finds the perfect swamp resting spot.

TWISTING THE CORKSCREW

A WALK THROUGH AUDUBON'S CORKSCREW SWAMP SANCTUARY

TEXT AND PHOTOS BY KENNETH SETZER

Just a couple hours' drive from the Garden stand some of the nation's only old-growth cypress trees to have escaped logging, in the Audubon Society's Corkscrew Swamp Sanctuary. As an Audubon sanctuary, Corkscrew naturally focuses on birds, but it also harbors diverse South Florida flora and some incredible and charismatic fauna, including exceedingly rare species like the Florida panther.

Though Corkscrew is just a few miles from Florida's west coast, near Naples and Fort Myers, you can access it by car from the east by driving along the Tamiami Trail. There are quicker routes, but Tamiami Trail brings you through the Everglades, Big Cypress National Preserve, Kirby Storter Roadside Park and Fakahatchee Strand Preserve State Park. Each is worth a visit, as is the Skunk Ape Research Center—also along the way.

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One of the massive old-growth bald cypress trees (*Taxodium distichum*) at Corkscrew Swamp Sanctuary.

I realized Corkscrew would be biologically rich when I spotted a red shouldered hawk consuming its prey not 20 feet before me—and this was still outside the sanctuary. Inside the sanctuary’s visitor center, before entering the boardwalk, I stopped by the café to appreciate the gorgeous wood wall map of North America. Finally, I entered the sanctuary’s 2.25-mile boardwalk, which took me through pine flatwood, wet prairie, marsh and the largest old-growth bald cypresses left in this country, some nearing 130 feet tall. Inside the swamp proper, things instantly felt different: quiet, still, and full of promise.


I began to walk slowly, thoughtfully and with purpose.

The late afternoon sun provided fantastic, raking, golden light to highlight and contrast strap ferns growing atop cypress knee “islands.” It’s easy to get caught up in very small details, like old man’s beard lichen and Christmas wreath lichen (*Cryptothecia rubrocincta*) making red and white shapes you can interpret like clouds. Then you look up, and the bald cypress trunks keep on going. They support the usual Spanish moss and other *Tillandsia* epiphytes; the latter were flowering with showy flame-red and orange spikes that really stood out from the sea of gray-green.

Cypress trees are deciduous conifers, and drop their needle-like leaves in winter. These ancient-looking

towers indeed resembled trees jutting from miasmic, dinosaur-filled swamps depicted in prehistoric illustrations. Along with the pines and ferns, cypresses add to Corkscrew’s primitive feel. Twelve of the oldest and largest cypress trees are named. One is “Rhett Green,” named for an Audubon warden who risked his life protecting birds from poachers.

In addition to old-growth cypress, Corkscrew is home to the largest-known ghost orchid. The sanctuary’s signage and website indicate when it’s in bloom. It was not during my visit; I searched the towering cypress it calls home for a sign of at least the roots of this infamous epiphyte, but had no luck.

I admit to being slightly disappointed that visitors may not leave the boardwalk at the sanctuary, but even after a few hours, there was much left to see (I recommend at least a two-and-a-half-hour visit). More importantly, keeping visitors to the boardwalk ensures the sanctuary remains just that—a redoubt hosting the largest nesting colony of wood storks in the country, earthen mounds of the Calusa people, ancient trees and giant reptiles. A week after my visit, a video of an adult Florida panther running along the sanctuary’s boardwalk—right past amazed visitors—made the rounds of the internet. What a special place. Corkscrew Swamp Sanctuary preserves the South Florida of centuries past. 



A young strap fern finds a home on a cypress knee.



Red shouldered hawk and its lunch.

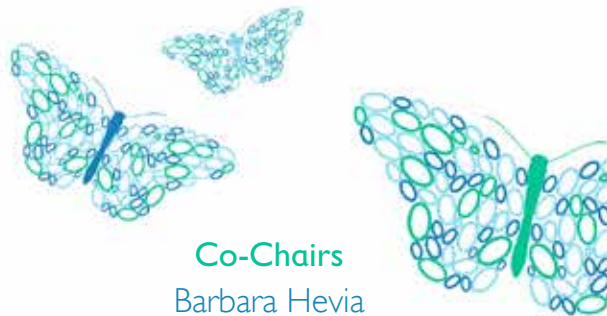


Blue flag iris in bloom.

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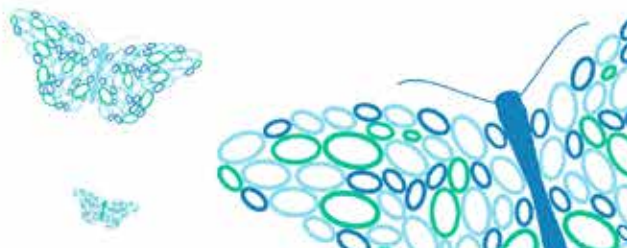
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The Rebirth of the Mango

By Richard J. Campbell, Ph.D., and Noris Ledesma, Ph.D.

We, as residents of South Florida, lay claim to the mango. Regardless of its Asian origin and pan-tropical distribution, the mango belongs to us.

Each year we care for our trees and await the harvest. Each year there are challenges, with nature seemingly pitted against the crop, but summer eventually arrives and so, too, the mango. Yes, the mango comes through for us. We shaped the fruit into our Western ways, poked and prodded until it was exactly what we wanted and was something we could exploit for income. It is ours.

Dr. David Fairchild was the mastermind behind the transformation of the mango from a traditional Asian fruit to a marvel of modern fruit growing. His innovative vision for the mango more than a century ago paved the way for the introduction of hundreds of cultivated varieties from around the globe into South Florida. He and a handful of mango pioneers assured the fruit's propagation and care, and facilitated its cross breeding and the selection of superior progeny. The result of this long road of vision and science has led us to the point we are at today. All around us, we have mangos big and small, red and yellow, sweet and sour and truly amazing. All of this mango diversity and delicious economic potential came from a thorough shuffling of the genetic deck, a keen eye and an undying tenacity.

We are now more than a century removed from Dr. Fairchild's innovative work, and the mango is in need of another makeover. A host of old and

new pests and diseases nip at the mango's heels, and the climate, ever-changing, beckons with challenges. We are nervous, even desperate to intervene, but surely we should not submit to the chem-agro mindset of mango growing to be successful. What of our green future and that of our children? No, we must be strong in our convictions and in our science. We must take a step back—in the genetic sense—to move the mango forward into the next millennium.


So, onward we go—into the forests of Borneo and Southeast Asia, to learn about the wild mangos that grow there. These 70 or so edible species offer adaptability to the most inhospitable of mango climates. Each is genetically distinct from the cultivated mango that we all know. They have their own names among the tribal people who rely upon them. They range from huge to tiny in fruit size, and offer us a dizzying array of colors, shapes and flavors. They grow in swamps and at higher altitudes throughout Southeast Asia and have formed a staple for man and beast alike.

Yet, these wild relatives of the cultivated mango remain largely a mystery, with little understanding of their cultivation, propagation or even genetic identity. Confusion surrounds the wild mangos around the globe, with many more questions than answers, but the potential is there; it lays dormant within them. Now is the time to unlock this potential.

At The Fairchild Farm, we grow more than 40 accessions of wild mango in the living collections, constituting 25 species or more. Prior to these introductions, wild mangos were represented in South Florida by three or four recognized species. This handful of species was made up of multiple duplicate trees of a single

introduction made many years ago by Dr. Fairchild. Other introductions of wild mangos were attempted in the past, but they were unsuccessful, leading mango pundits, including Fairchild, to conclude that the vast majority of wild mangos would not adapt to South Florida. We have spent the last 25 years attempting to disprove this commonly held belief. We have had some success and much failure. Forty trees may not seem like much of a track record for 25 years of collecting, but there is no script available to go by. Identification, location, collection, propagation and care in the field have been done without a template, and yet here these wild mangos grow, bloom and fruit, swaying in the ocean breezes.

So, how does this winding story relate to our backyards and commercial orchards in South Florida and the Americas? As we pen this article, we have new crossbreeds hanging from our caged trees at Fairchild. These crosses will be among the first between the wild mangos and some of our high-yielding, most modern mango cultivars. The seeds within these fruit hold the future—a future without concern about untimely rains, without the application of costly fungicides and with novel new fruit.

We will plant these seeds and nurture the saplings until they bear their sweet fruit. We will select new superior specimens that have disease tolerance, production and adaptation to our ever-changing climate. The road is a long one and is by no means easy or guaranteed, but each journey begins with a single step. Our journey started back in 1889 with David Fairchild, and there is much road left to travel. His legacy depends on us, and so, too, the very future of the mango. 

Embracing the Wabi Sabi Garden

Text and photos by Kenneth Setzer



It's time we let go of the search for neatness and perfection in our gardens. Tend your garden, but also embrace imperfection, chaos, simplicity and unlikeliness.

An obsession with neatness and perfection has been placing a burden on our psyches, bodies, wallets and environment for decades. No more! It's time to embrace the concept of wabi sabi in our gardens.

How can wabi sabi enrich our gardening lives? From Japanese, a language that

is in many ways the mirror image of English, it is difficult to simply translate the term "wabi sabi." I've gathered it means—at least superficially—embracing the transience of being, finding beauty in the simple, seeing age, imperfection, breaks, bumps and bruises as desirable signs of a life well lived. Patina, rust, verdigris, wear and tear are all a badge of courage. These are signs of age we

sometimes try to imitate, but it's never the same as what we get from authentic ageing. More often, though, we try desperately to hide such character.

We can appreciate age and imperfection—the latter up to a point—in antiquities. Why not in gardens and landscaping? Let us cast aside the ubiquitous American lawn,


trimmed hedgerows and similar high-maintenance plantings. The lawn obsession of the past century has resulted in great sales of lawn mowers, fertilizers, pesticides and herbicides. But it's not been healthy. Fertilizers end up in our water and lead to eutrophication—hyper-fecundity caused by excessive nutrients in water, which leads to algal blooms and other sickly conditions. Pesticides and herbicides are beyond over-used in our culture,

experts tell us to leave them. Barring disease or nutritional problems, palm fronds naturally age, and as they do, the tree translocates remaining nutrients from that ageing frond back to new, emerging fronds in the crownshaft. If you cut off a yellowing frond, you cut off this source of nutrition. Wait until it's completely brown, or falls off. Less work for you, more nutrition for the palm. It's a beautiful process.

worldview that values permanence, grandeur, symmetry, and perfection."

This doesn't mean letting things go untended. Rather, it means accepting that, as the quote goes, "the cup is already broken," so appreciate the here and now, and accept that not everything can or should be bent to our will. Nature is already perfect in its imperfection.

It may not be immediately apparent how to apply these concepts to landscapes. But, if you consider the nature of things, you'll remember everything is transient and ephemeral—absolutely nothing lasts forever. This isn't a fact to lament, but rather an excellent reason to appreciate beauty in all its forms, while it is present. Impermanence, growth and death are the essence of nature, whether in botanic gardens or wild tropics.

So don't go to extremes to create what we've been told is a "perfect" garden. Perfection is boring. Use leaf litter as mulch. Leave twigs and fallen flowers where they fall. Everyone's garden gets weeds. Grass turns brown. Nobody has a lawn that ends naturally in a perfect, razor-sharp line. Let it all just be, if only for a bit. You will be helping the environment while impressing your friends with your Zen, wabi-sabi outlook. 



All stages of life can be lovely to behold and contemplate.

analogous to the overuse of antibiotics in medicine. I don't want to get into that tangled and politicized problem. But, if you spot a couple blades of green growing from a crack in the pavement, pull them out by hand, or marvel at their ability to germinate in a barren, hot, sunbaked, sometimes inundated, miniscule crack of soil. This is part of wabi sabi—appreciating this moment in all its imperfection, chaos, simplicity and unlikelyness.

Yellowing palm fronds provide a classic example of our reaction to signs of age. We cut them off, because, for some reason, we think palms need to meet our idea of perfection—and that does not include yellow or brown fronds. But

"Wabi" has been translated as a state of lacking, or impoverishment. But it is more of a divestment of materialism. I'm reminded of a bonsai, single and asymmetric, with great visual impact. Less is more.

"Sabi" can be considered the appreciation of that which is old, weathered, worn in, but not worn out. In "Wabi-sabi: the Japanese Art of Impermanence," Andrew Juniper offers this insight: "Wabi-sabi suggests such qualities as impermanence, humility, asymmetry, and imperfection. These underlying principles are diametrically opposed to those of their Western counterparts, whose values are rooted in the Hellenic



The leaf skeleton is as beautiful as the living leaf.

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Revisiting the Garden Roach

Text and photo by Kenneth Setzer

When I lived in New York, I was plagued by what we called “waterbugs.” They are what Floridians call “palmetto bugs.” Nearly universally despised, roaches do play a necessary garden role as recyclers. Why do we hate them so?

How can I begin to wax sentimental about roaches, those loathed inhabitants of the dirty, filthy, disease-ridden corners of our world? What purpose could they have besides tormenting us? I began to think about this: mosquitoes are far, far more harmful to us than roaches. Malaria, transmitted by *Anopheles* mosquitoes, killed over half a million people in 2013, most of them children, according to the World Health Organization (WHO). If I were a roach, I'd be yelling “SEE? SEE!? Mosquitoes did that, not us!”

The animals we call roaches fall within the order Blattodea (along with termites). Those that hang around houses are called peridomestic. Most cities host palmetto bugs, aka the American roach (*Periplaneta americana*) and the smaller German roach (*Blattella germanica*).

Here in South Florida, we may encounter many different species of roach in the garden and the home. There's the smallish cricket-like oriental cockroach (*Blatta orientalis*), and I am told the huge Madagascar hissing roach (*Gromphadorhina portentosa*) has been spotted in the Keys, but I've never seen one outside a zoo display. The latter is a common insect pet, and I dare say, cute. Unlike many other roaches, hissers cannot fly and plod along slowly without

the typical roach “scurry” that makes our skin crawl. Flying roaches do so haphazardly; it feels as though they may inadvertently fly into one's face. However, the attractive Cuban cockroach (*Panchlora nivea*), when disturbed, seems to flutter away unobtrusively like a moth. Like most roaches, it is nocturnal and not an indoor pest. Unlike most roaches, it resembles a pale green pumpkin seed.

Back to katsaridaphobia, or cockroach phobia. Roaches just look dirty. Don't they know waking me up by crawling across my lips is really rude (an unfortunately true story)? Truth is, I've found very little evidence that they spread much disease. It's certainly possible, but doesn't seem to be the rule. Worsening asthma and allergy symptoms have been linked to roach exposure, especially in children. Roaches do like to excrete a lot though, rude little buggers, and that may cause a reaction. Though, I am more inclined to blame industrial pollution.

Most roaches are omnivorous but prefer rotting wood and decaying organic material—detritus of the forest floor. This is where they help us in breaking down and recycling dead plants into, eventually, rich soil. My compost bin is chock full of roaches of at least a couple species, including very big and well-fed palmetto bugs. They speed the breakdown of my yard waste into compost, though admittedly, opening the compost lid at night, flashlight in hand, is not for the squeamish. We have come to a hopeful understanding: They'll stay in the compost bin and I'll keep dumping in food for them.

Replacing rotten wood in your home's structure will reduce its attractiveness to roaches. Sealing areas where pipes enter and exit the bathroom and kitchen helps. Dripping pipes are a water source, and help to decay nearby wood, so fix them. I keep leaf litter in my yard, but not abutting the house. A good exterminator can use a minimal amount of poison strategically to help. Avoid storing corrugated cardboard, especially in a warm, humid garage. Roaches adore cardboard, particularly in the form of a box filled with paper and glue to eat. I know the horrors that can foster.

The Florida woods cockroach, *Eurycotis floridana*, is a native also originally called the palmetto bug. A bit shorter and rounder than the others, it usually stays outdoors under leaf litter and other debris. When threatened, it can emit a foul-smelling discharge. The smokybrown roach (*Periplaneta fuliginosa*) is another you are likely to encounter around the yard. It is uniformly dark brown, without the lighter thorax of the closely related American roach. *Blaberus craniifer*, the death's head roach, is also a non-flyer, and is so called because its dark body with beige wings and patterned pronotum contribute to the appearance of a skull.

Roaches are everywhere—I've even encountered palmetto bugs in Death Valley National Park, though only in the hotel bathroom where they could access water brought in through plumbing. We can reduce them in our homes, but they will always be near. I fully admit, bug lover though I am, researching this roach info even made me a bit jumpy. Try and remember, while they look gross, they really aren't all that bad.





Gesneriads

Related to better-known cousins African violets, these tropical and subtropical herbs are often rainforest dwellers, and can be found on rocks, tree limbs, the sides of paths and more.

Text and photos by Georgia Tasker



Streptocarpus hybrid

You may know them as African violets (there are more than 40,000 registered cultivars), gloxinias, flame violets, goldfish plants, lipstick plants, *Saintpaulia*, *Sinningia*, *Episcia*, *Columnnea* and *Aeschynanthus* and at least 160 more genera.

They are gesneriads—tropical and subtropical herbs that often are rainforest dwellers, growing on rocks or tree limbs, or from the sides of a path. Old World and New World species number about 3,400, a goodly number, though they probably originated outside of the tropics. Pronounce “gesneriad”: gez-NEER-ee-ad.

Harold “Hal” Emery Moore Jr., the late Cornell University palm botanist who began what is today the encyclopedia of palms, called “Genera Palmarum,” knew gesneriads well enough to write a book about them in 1957. His title: “African Violets, Gloxinias and Their Relatives.” Moore received the Founders Medal from Fairchild in 1984.

Marion Ruff Sheehan, who was famous for orchid paintings, illustrated Moore’s book. Sheehan and her botanist husband Tom Sheehan, a University of Florida professor, wrote “Orchid Genera Illustrated.” She painted an iconic image of the ghost orchid in the Fakahatchee Strand for the proceedings of the 11th World Orchid Conference, which was held in Miami in 1984.

There’s another South Florida connection: Moore’s gesneriad book was begun because Miamian Bob Wilson (who owned a Miami nursery called Fantastic Gardens and moved to Costa Rica to start the Wilson Botanic Gardens in 1962) collected the plants and needed help with identification.

More than half of the South American gesneriad species are hummingbird pollinated, and they are most frequently found in Colombia and Ecuador—where, not coincidentally, hummingbirds are frequently found. But bats, euglossine bees and other bees also pollinate them. Hummingbird flowers are brightly colored, usually with long tubes or an inflated pouch. Bee flowers usually have wide mouths (sometimes called gullet flowers) and are light in color. The leaves, stems and flowers of gesneriads ordinarily are hairy. Corollas, composed of fused petals, are tubular, emerging from a calyx (fused sepals), often with four stigmas and paired anthers. Anthers sometimes face each other, and when I first learned about gesneriads, I was told they were called “kissing anthers.”



Primulina hybrid

PREVIOUS PAGE

Columnnea ‘Hot Lips’ clearly shows the family’s tubular corolla and hairy leaves and flowers.

In South Florida,
we can grow
gesneriads outside
or in containers or
hanging baskets—as
long as we provide
protection from cold.



Saintpaulia hybrid

In South Florida, we can grow gesneriads outside or in containers or hanging baskets—as long as we provide protection from cold. *Chrysothemis*, a genus of gesneriad, is growing in Fairchild’s Rare Plant House. Another genus, *Episcia cupreata*, is covered with red flowers in the upper level of the Plant Conservatory. But they aren’t alone. *Columnnea*, *Crinita*, *Aeschynanthus*, *Nautilocalyx*, *Gesneria*, *Drymonia*, *Seemannia* and *Corytoplectus* are the genera of gesneriads found throughout the Rare Plant House.

Episcia hybrids and species are sometimes called flame violets or peacock plants because of their patterned foliage. *Columnneas* are the goldfish plants or flying fish. *Aeschynanthus* is the genus of the lipstick plant. *Achimenes* can be used as bedding plants in shade.

Gesneriads often are grouped according to their root systems. Most of the commonly grown species have fibrous roots. These include *Episcia*, *Aeschynanthus*, *Columnnea*, *Streptocarpus*, *Chritia*, *Primulina*, *Gesneria* and *Nematanthus*. African violet, *Saintpaulia*, also is fibrous rooted.

Gesneriads with fibrous roots don’t go dormant. But those with tubers and rhizomes like a period of dormancy. *Chrysothemis*, *Nautilocalyx* and *Sinningia* are genera that have tubers. *Sinningia* is the actual genus of what are called “florists’ gloxinias.” *Kohleria* and *Achimenes* have rhizomes, or underground stems. The gloxinia group has “scaly rhizomes” that form from the main shoot. Each of the scales is actually a modified leaf, from which, theoretically, new plants can be propagated. Still other gesneriads have stolons—creeping horizontal stems—and some are vining epiphytes—growing on other plants. The rhizomes and tubers allow food storage during dry spells, while stolons, which form new plantlets and adventitious (growing directly from the stolon) roots, allow plants to spread into new territory.

Most gesneriads, according to Moore, need well-drained soil that can retain a sufficient amount of moisture. “They will rot in poorly drained conditions,” he wrote. Evenly moist soils are the goal, so water these plants when the top of the soil is dry—perhaps only once or twice a week if growing indoors.

Gesneriads also like high humidity, and for that reason, growing them in an old aquarium or terrarium covered with glass will keep them happy in an environment



Chrysothemis pucella



Episcia 'Pink Panther'




Siningia hybrid

that is, Moore wrote, “more or less constant.” Remove the cover for a short time each day to allow for air circulation, he advised. Our South Florida humidity is usually high, and gesneriads may be grown outside in beds or hanging baskets.

Allan Mink of Fort Lauderdale, a member of the Caribbean Basin African Violet & Gesneriad Society, recommends a porous soil, but not a potting soil that comes pre-packaged with fertilizer. To potting mix, add 1/4 to 1/2 as much Perlite, and half as much coarse vermiculite (a mineral) as Perlite. Very small pieces of eggshell for calcium and a handful of coffee grounds may be added. If you choose a packaged African violet mix as a base, add Perlite to lighten it. Sponge rock (large Perlite) should line the bottom of the container, or, if the container is larger, line it with river rock.

Fertilizing methods abound. Mink uses a hydroponic fertilizer with molasses derived from sugar cane: BioThrive 4-3-3. The molasses feeds soil microbes. Slow-release fertilizer will provide nutrients when gesneriads are growing well, from spring through fall. Or, use water at 1/4 recommended strength when using liquid 20-20-20 fertilizer with every watering; then, once a month, use plain water to flush accumulated salts.

Erna Maxwell, past president of the Caribbean group, uses DynaGro 3-12-6 with micronutrients to push for flower production. Her indoor plants are grown with the wicking method: a container with the plant is set on a reservoir of water and a low dose of fertilizer, with a rope wick leading from the reservoir to the bottom of the plant container for constant moisture and feeding. For outdoor baskets, Maxwell applies a spray of fertilizer.

One of the wonders of these plants is that they can be propagated from individual leaves. Slice the petiole (the stalk between the leaf and the stem) with a razor blade to about an inch in length and insert the petiole into a small container with a 50-50 moist mix of Perlite and fine Vermiculite. Then place the container in a plastic bag and keep in low light until roots and tiny new leaves form. Gradually expose the plantlet to air, and then bring into brighter light. 

One of the wonders of these plants is that they can be propagated from individual leaves.

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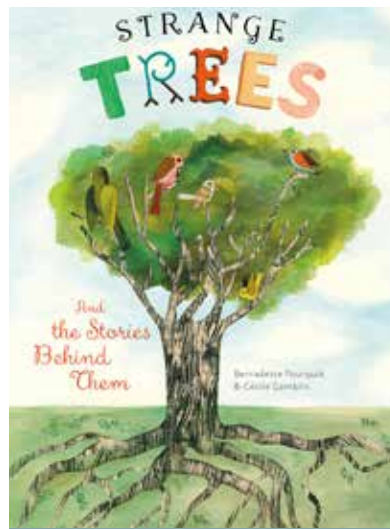


Remember rifling through bins of books in the kids' section of the library? I sure do. I will never forget the smell of the books and the promise of discovering something new. Books make a great impression on kids and adults, and despite what you may hear, are not going away any time soon.

"Strange Trees," now there's a title I would stop at, both as a kid and now. The author presents sixteen weird trees and what's so odd about them, mixing in a little ecology, economic botany and ethnobotany in the process. It's all presented from the point of view of the tree itself, in its own voice, which I think helps instill empathy in kids towards other living things.

Consider the "Bullhorn Tree" (*Acacia cornigera*). After a little description of the tree, from the tree's point of view, we learn that its thorns are not its only defense from would-be herbivores. "Colonies of orange ants with large eyes . . . stand guard on my trunk day and night and fight off my assailants." In exchange, the bullhorn tree provides "them with a home and a cafeteria by letting them feed on my nectar!" Readers just learned about the concept of mutualism—two very different species aiding and benefitting each other.

I was pleased that so many of the trees grow at and nearby Fairchild, like the sausage tree, strangler fig and chocolate tree. One that we sadly cannot grow here is *Ginkgo biloba*; it's just too hot and wet. The author calls it the "forty-coin tree," because of its gorgeous golden fall foliage. I appreciate how the text sparks the imagination, particularly with the vomit-scented female tree ovules (kids love stuff like this). "I appeared 240 million years ago and am the only species of the Ginkgoaceae family that survives to this day." If that doesn't get their attention, the



STRANGE TREES AND THE STORIES BEHIND THEM

Bernadette Pourquié
and Cécile Gambini
Princeton Architectural
Press, 2016


By Kenneth Setzer

accompanying illustration of a dinosaur browsing a ginkgo tree with tea-drinking human observers will drive home just how ancient this tree's lineage is.

The book provides the best kind of learning—the kind that happens without the learner realizing it, the kind that gives the reader a thrill of discovering something novel. Besides, what kid wouldn't love to find out that chocolate comes from a tree, and that bubble gum also originally oozed from trees? They'll also learn about the importance of mangroves, the sheer beauty of the rainbow eucalyptus, how trees spread their seeds, and how others must store their own water.

Artist Cécile Gambini's illustrations alone make this book a worthwhile purchase. They are perfect: charming and colorful with accuracy and a little bit of mystery that keeps you looking, hoping for more to be revealed.

Another favorite is the entry on the dwarf willow. *Salix arctica* is the northernmost woody plant found, and it rarely reaches over 6 inches tall. Thanks to "Strange Trees," I know arctic hares nibble its foliage.

The book is intended for kids 6 and older, but the text is probably well beyond most 6-year-olds. But at a short page of text for each tree, you won't tax their attention span. And hey, it's good to stretch one's vocabulary and reading comprehension. And imagination. This beautiful book will do just that. 

HIDDEN TREASURE THE SCULPTURE OF RALPH HUMES

By Marianne Swan

Photos by Gaby Orihuela/FTBG

Since 2005, Fairchild Tropical Botanic Garden has provided a setting for the work of a number of remarkable contemporary sculptors—Dale Chihuly, Fernando Botero and Mark di Suvero, to name a few. But in a secluded corner of the Garden, two sculptures by an artist from the past provide proof that art has been an important part of the Garden from its earliest days.

Tucked behind the Montgomery Library building, in the quiet repose of the Hambley/Manz Patio Garden, visitors will discover a whimsical bronze sculpture titled “Performing Goat” and a cast stone bas relief, “Bird Panel Fountain,” both by Ralph Humes.

The 1953 Annual Report of Fairchild Tropical Garden confirms the origin of the Humes sculptures. In his report of general improvements to the Garden, Landscape Architect William

Lyman Phillips wrote the following: “The patio ... has been developed by a Keystone paving and the incorporation of distinguished sculptural pieces by Mr. Ralph Humes. The sculptures and improvements were a gift from Col. Robert Montgomery and his wife Nell Montgomery in memory of their friend Elizabeth Hambley.” In 1987, Nell Montgomery rededicated the patio garden after the death of Hambley’s daughter, Sarah Hambley Manz, saying, “May this charming Mother-Daughter Patio Garden flourish and be a joy for all who come here.”



“Bird Panel Fountain”





"Performing Goat"

"The Fairchild Tropical Garden announces for the first time a Fine Arts Exhibit of special interest ... Edward Clarence Dean and Ralph Hamilton Humes have been invited to show their work."

Fairchild Topical Garden *Bulletin*, 1950


So who was Ralph Humes and why were his pieces chosen for the Garden? Some archival research provided not only the answers to these questions but also an interesting backstory. Ralph Hamilton Humes (1902-1981) was born in Philadelphia and as a young man enlisted in the U.S. Army during World War I.

While he was assigned to an aerial photography unit, an accidental bomb explosion left him blind in one eye and with a number of fingers badly damaged. During his recuperation at what was then called Walter Reed General Hospital, he took up sculpting as a form of therapy. His talent was soon recognized, and he went on to study sculpture formally at the Pennsylvania Academy of Fine Arts. Working mainly in bronze, he became well known for his animal figures. He exhibited all over the United States and won numerous awards for his work, including the Speyer Memorial Prize in 1932 and 1935. One of his early exhibits was also in a botanic garden, Brookgreen Gardens in South Carolina, where four of his pieces remain on exhibit today.

In 1934, Humes and his wife, sculptor Janet "Happy" Humes, moved to Coconut Grove, where his studio adjoined their residence on Del Monde Street. Although this street no longer exists, early maps of the

area place it near the present-day Mayfair complex. Humes became acquainted with the Fairchilds and the Montgomerys, and the latter were especially taken with his work. The Montgomerys purchased at least two of Hume's works for their private collection—hence Nell's choice of Humes' art to honor her friend. In addition to the two works at Fairchild, "Fountain of the Sea," a large four-sided stone column with relief carvings, can be seen locally today at the entrance to the Coral Gables Woman's Club. Records provided by the Montgomery Botanical Center Archive indicate that during the 1940s and 1950s, private collectors in the Miami area purchased a number of Humes' works.

An article found in the January 1950 edition of the Fairchild Tropical Garden *Bulletin* (precursor to *The Tropical Garden*) confirms that art in the Garden is not a new phenomenon.

"The Fairchild Tropical Garden announces for the first time a Fine Arts Exhibit of special interest ... Edward Clarence Dean and Ralph Hamilton Humes have been invited to show their work." How fitting to find that more than 66 years ago, the exhibition of art was considered an important part of the mission of the Garden. 



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MIRA LEHR

SECOND NATURE

AT FAIRCHILD


NOW OPEN THROUGH 10.3.16

BY BROOKE LEMAIRE



TOP (L-R)
Mira Lehr at her studio with "Approaching the Singularity," a piece she created specifically for the "Second Nature" exhibition at Fairchild.
Mira Lehr speaks about her artistic process to guests of her "Second Nature" opening reception at the Arts Center.

ABOVE
"Pattern Integrity," 2016.
Resin, ink, ignited fuses on panel. 48" x 60".

On July 23, Miami-based artist Mira Lehr opened her "Second Nature" art exhibition in Fairchild's Adam R. Rose and Peter R. McQuillan Arts Center. The more than 40 pieces on view explore the fragile and ephemeral qualities of nature and feature blooming organic forms with sinewy roots created from unconventional materials such as ignited fuses, resin, Japanese paper and dyes. Lehr spoke to visitors about her unique art process and how she is inspired by the relationships we have with nature. A truly prolific artist, Lehr's career spans more than four decades, and she has shown work in more than 300 installations. "Second Nature" will be on view until October 3 and is included in Garden admission. 

Spring Garden Festival Featuring The 37th Annual Spring Plant Sale

Beautiful weather greeted guests at the Spring Garden Festival & 37th Annual Spring Plant Sale in April. The Montgomery Palmetum was lush with plants grown by Fairchild horticulturists and local vendors, while the Montgomery Garden House lawn flourished with live music, food and garden vendors. As part of The Fairchild Challenge’s Green Cuisine event, middle and high school students presented vegetarian dishes using plants that can grow in outer space. NASA scientists judged the dishes based on nutritional value and taste. At the same time, several schools participating in the Growing Beyond Earth plant growth challenge presented to NASA data they had collected and their choices, based on the data, for plants most suitable for growing in space.



National Public Gardens Day

Fairchild observed National Public Gardens Day, a day created by the American Public Gardens Association, with reduced admission in May. The day invites communities across America to explore the beauty of their local green spaces while raising awareness of the role public gardens play in promoting conservation.

Pokémon Go is a Go at Fairchild

Pokémon Trainers of all ages flocked to Fairchild in hopes of catching creatures on the wildly popular mobile app Pokémon GO. The augmented reality game displays Pokémon on players’ mobile devices as they roam all around the Garden—swimming in Royal Palm Lake, cooling off in the Richard H. Simons Rainforest and enjoying some sunshine on the Montgomery Garden House Lawn. The numerous PokéStops and Gyms equipped visitors with everything they needed to train and battle others on the path to becoming a Pokémon Master. To aid visitors in their quest to “catch ‘em all,” Fairchild offered a \$5 discount to those who showed the Pokémon GO app upon arrival.





Fairchild Artists in Bloom

More than 50 artists exhibited work at the 10th Annual Fairchild Artists in Bloom Exhibition and Sale in April. The Montgomery Garden House was transformed into an art gallery celebrating works in watercolors, oils, acrylics, pastels and more—all of which had been created in art courses as part of Classes at Fairchild, a continuing education program with classes in art, botany, cuisine and photography.

Early-Bird Walks

Early-Bird Walks invited visitors to experience Fairchild at dawn, when birds chirp to signal the start of the day. Specialized volunteers led the groups and taught them the best ways to spot and identify the many birds that call Fairchild home.



Family Fun at Fairchild

This past season, children and their families enjoyed our new Family Fun weekend program at the Lisa D. Anness South Florida Butterfly Garden. Our discovery station offered kids and their families tips on how to attract butterflies to their own backyards. They walked through the exhibit with magnifying glasses, discovered caterpillars munching on leaves and learned how to identify those caterpillars before they become fluttering creatures. Kids also played interactive games, and became familiar with nectar and host plants crucial for their butterfly gardens.

This program, together with L.E.A.F. Let's Explore at Fairchild, will be back on a regular basis from September through May.



wish list

Fairchild has a wish list of items that will enhance our programs, but we need Wish Makers. We hope you see an item that you can help fulfill.

FOR OUR HORTICULTURE OPERATION

- 2 Tablet Notebooks, \$1,500
- 12 Golf Cart Batteries, \$1,200
- Walk-Behind Aerator, \$1,500
- Hardware for Accession Tag Embossing Machine, \$2,000
- Plant Transport Van, \$20,000

FOR CONSERVATION, RESEARCH AND THE HERBARIUM

- Extra-Tall Tripod, \$150
- Laptop Computer, \$2,000
- GPS Unit (GeoXT 6000), \$8,000

FOR THE RESEARCH LIBRARY

- World Checklists for: Araliaceae, Conifers and Fagales, \$300

FOR THE FAIRCHILD FARM

- Golf Cart, \$7,000

FOR MEMBER AND DONOR SERVICES

- Laptop Computer/LCD Projector, \$2,000
- Digital SLR Camera, \$1,000

FOR OUR STUDENTS

- Solar Conversion Kits for Education Golf Carts, \$4,000
- iPads for Explorer Field Studies Program, \$2,500
- Dark Field Microscope, \$600
- Canon Double-Sided Feed Scanner, \$3,000

FOR OUR VISITORS

- Golf Cart, \$7,000

FOR THE LIFELONG LEARNING PROGRAM

- Laptop and LCD, \$1,200

To fully fund a wish, donate a portion of the cost or donate the actual item, please contact Leslie Bowe at 305.667.1651, ext. 3338, lbowe@fairchildgarden.org or please visit www.fairchildgarden.org/Donate



24th Annual International Mango Festival featuring the Mangos of Cuba & Grower's Summit

The hot July weather didn't deter people from attending the ever-popular International Mango Festival, which celebrated the mangos of Cuba this year with the incredible Mangos of the World Display, the world's only mango auction, mango sampling and the opportunity for visitors to vote for their favorite cultivars. The Grower's Summit welcomed mango organizations from around the world to talk about the state of their fruit industry, with a focus on local growers.



Fairchild Junior Naturalist Summer Camp 2016

Children enjoyed two different summer camps this year. The Junior Naturalist Summer Camp invited kids to participate in fun, hands-on environmental education activities. Drawn to Nature Art Camp was taught by award-winning artist Hillary Parker, who helped students develop skills to create botanical artwork inspired by nature.



BIRD FESTIVAL

In conjunction with the 78th Annual

Members' Day Plant Sale at Fairchild

Saturday and Sunday, October 1–2
9:30 a.m.–4:30 p.m.

Birders, join us Thursday and Friday, September 29 and 30, as we kick off our 8th Annual Bird Festival weekend with two days of off-site bird walks through South Florida's bird habitats.

Tight Rope Walker
Photo by Yvette Shapiro

Follow the Fun @FairchildGarden



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MIRA LEHR AT FAIRCHILD



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