

the TROPICAL GARDEN

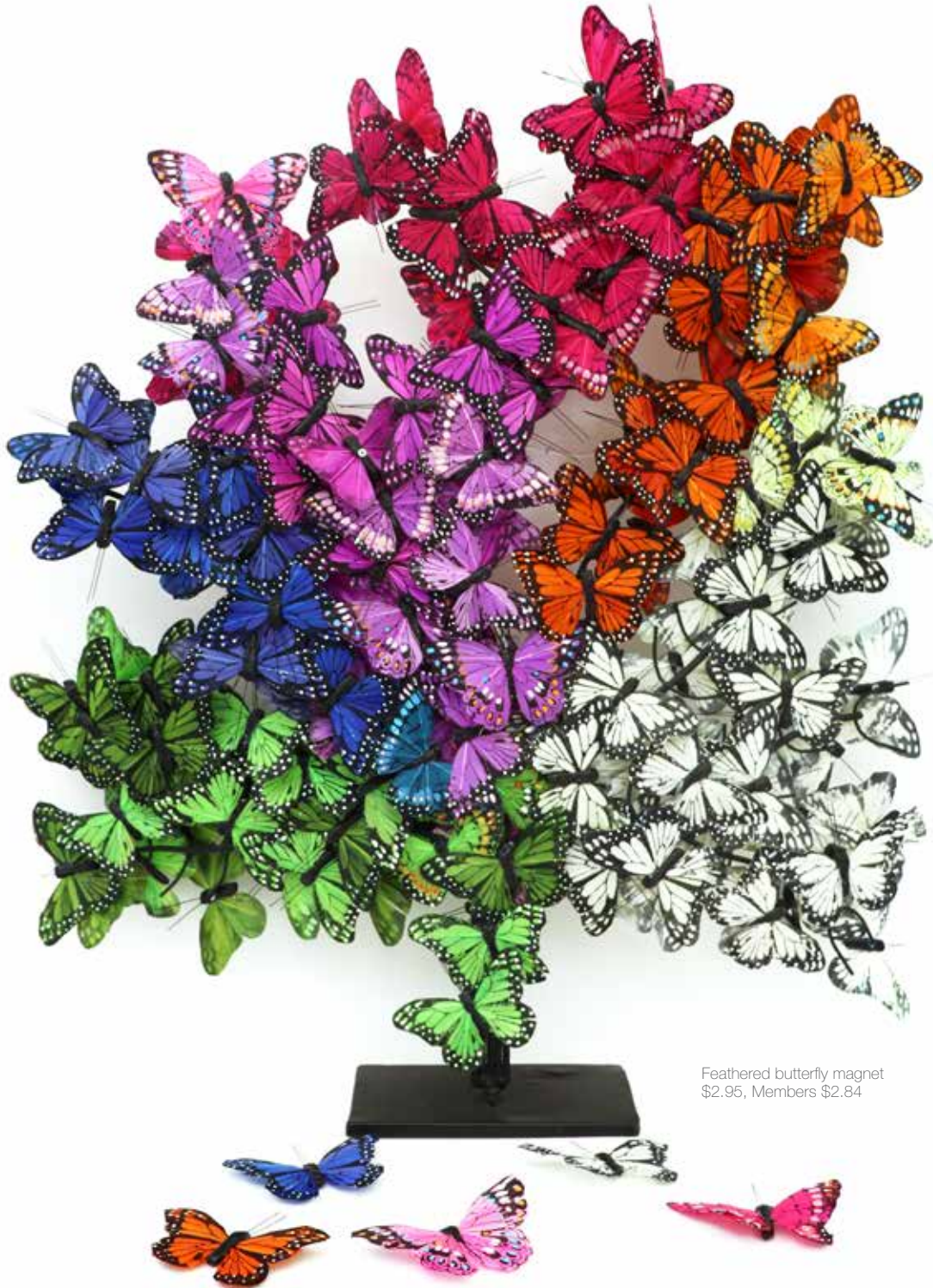
New Plants Continue
Vine Pergola, Restored
David Fairchild—on Film!
Landscapes We Love: Palms
Ten Palms for South Florida

► **Classes at Fairchild Inside**



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Annual Report to the Fairchild Membership

By Nannette M. Zapata, M.S./M.B.A.
Chief Operating Officer



 @ZapataNannette

As members of Fairchild, you should be proud to know that this year, following last September's Hurricane Irma, we planted more than 1,500 new specimens in the Garden. This represents the largest single-year planting in our history. Of special note is the increase in species diversity in the Tropical Plant Conservatory and Rare Plant House, which have received such major plant introduction facelifts that the name "Rare Plant House" is now more accurate than ever. In fact, the plant diversity in the Conservatory has improved by a factor of 400%.

On any given day, you can see staff and volunteers planting first-of-their-kind specimens and celebrating this rich diversity with you, our members, in person or via our #PlantingMondays stories on Instagram.

Science Education Continues to Break Ground

Our science education program continues to thrive with exciting, innovative, and groundbreaking initiatives. The Fairchild Challenge, the umbrella program for our education initiatives, is the single largest botanical education program in the country. Your membership support helps ensure that nearly 300,000 students connect with botany in a serious and meaningful way: through our partnership with NASA to deliver "Growing Beyond Earth;" in the only botany magnet high school in the world, BioTECH @ Richmond Heights; in our mobile laboratory STEMLab, which visits schools in Miami-Dade County throughout the school year; or at our

new botany magnet elementary school, Pine Lake Elementary: Botany & Zoology Magnet Program.

This year, we received our second NASA grant, through a highly competitive award process. The new funding will help us create the Growing Beyond Earth Innovation Studio, a workspace dedicated to the technology of growing food. It is set to open in 2019.

Education at Fairchild is a serious undertaking, underpinning everything we do. Every tool and all materials given to students are free, including all equipment for Growing Beyond Earth and The Million Orchid Project, together represented in more than 200 schools, as well as all training and support from our staff. And that's because of you, our supporters and members.

Conservation and Plant History

Our native plant conservation program continues to "Connect to Protect" by encouraging local citizens to grow native plants in their gardens and track each plant's progress. This citizen science program is free to all participating Connect to Protect Network members.

Our flagship native plant program, The Million Orchid Project, continues to thrive. Thus far, we've planted more than 150,000 orchids in Miami-Dade County—well on the way to our goal of 1 million—while participating with nearly two dozen local municipalities and neighborhoods and 100 schools in Miami-Dade County.



Student scientists participate in Growing Beyond Earth, our partnership program with NASA.

I've already mentioned the enormous undertaking in our horticulture with respect to the numbers of species planted this year. In addition, we are undertaking an overhaul of our plant database system so that we can bring you, our members, our plant history via our website and app.

New Exhibits and Features for 2019

Next year, you can expect to walk in a cloud forest when you visit Fairchild. Launching in June 2019 will be our new mist feature in the Rainforest, Sunken Garden and conservatories. The cooling effect of the dewy fog will create the ideal climate for our plants and for you, our members—and will allow us to grow plants from the entire tropical world, from those found at sea level to those found on montane summits. You can expect to see pitcher plants, *Cymbidium* orchids, rare aroids, and other plants so rare they've not been seen here before.

One of our most exciting new exhibits, set to officially open during our Orchid Festival in March 2019, is the National Orchid Garden. This incredible new Garden feature, already under development, will showcase hundreds of thousands of flamboyant and dramatic orchids in the Richard H. Simons Rainforest. These orchids will continue to bloom throughout the year—allowing you, our members and visitors, to experience the largest orchid and rainforest exhibit in the continental U.S. In addition,

we will plant 1 million native orchids in the Garden during the coming two years.

When you visit Fairchild, you will not only be in one of the world's most beautiful and species-diverse botanical gardens, you will also be in the home of the National Orchid Garden!

Gardens and healthy eating have a naturally symbiotic relationship in that both are crucial for our wellbeing. Come June 2019, we will have completed a new Culinary Garden. This new exhibit will honor Dr. David Fairchild's legacy of exploring the world for edible plants that are useful in the United States.

The Culinary Garden will be an outdoor exhibit, making it an ideal source of DIY ideas for many of our local members to take back to their own home gardens. Our goal is to encourage as many of you as possible to convert your backyards into productive food forests. It's an innovative twist on the concept of "community gardening"—our large, diverse member community will create edible gardens where they live. We will introduce new edible plants from some of the most remote reaches of the world for your home gardens. Stay tuned.

Infrastructure Improvements

Lastly, we have spent this past year focused on improving our infrastructure. For example, the 80-year-old Vine Pergola, destroyed after Hurricane Irma, has been fully repaired. Our volunteers have been hard at work planting new vines (many of them species new to our collections). Our lighting infrastructure has also been completely renovated, which means that when you visit the Garden at night, you'll enjoy its beautiful silhouettes and alluring ambers even more. Soon, we'll upgrade our visitor pathway.

Our Volunteers—A Community of Botanists and Gardeners

We speak so often of Dr. David Fairchild here at the Garden, in our meetings and in our strategy discussions, that he seems to be seated at the table. And it pleases me immensely to think that his and Col. Robert Montgomery's legacies continue to guide this institution. They do so particularly because they were volunteers who gave their

time generously and continuously for decades. It was their consistent guidance, along with that of other luminaries like Marjory Stoneman Douglas, that's ensured the Garden's stable and steady growth over these 80 years. And it's this legacy of volunteerism that is most critical to the ongoing operations of the Garden.

Each year, our volunteers donate tens of thousands of hours to the Garden, with this year's total hours hovering at nearly 65,000. We have almost 1,300 volunteers, of which nearly 850 donate more than 30 hours per year; and of those, nearly 600 contribute at least four hours each week. Even more finely, many of those volunteers contribute more than 300 hours each year!

What does this mean for our organization? It means that when you visit, you'll connect with our volunteers, who will share their passion and knowledge with you—and that many of the critical pivot points in our programs are managed and executed by volunteers. It also means that the total hours donated to Fairchild by our volunteers represent the equivalent of 32 full-time employees. And, lastly, it means that the volunteer-to-staff ratio is 15:1!

I can think of no greater way to honor our founders' principles of creating a community of botanists and gardeners than by pointing to the contributions of our volunteers.

Financially Solid

All great organizations require fiscal and management excellence. Fairchild's solid financial position is due in large measure to the organization's management practices and the prudent oversight of our board of trustees—who are also volunteers.

The Garden's most recent audited financial statements show assets of \$46 million, with approximately \$22 million in stocks and bonds. Most importantly, Fairchild carries no debt, and we draw approximately \$800,000 from our endowment for annual operations. The independent arbiter of not-for-profit organizations, Charity Navigator, has awarded Fairchild its highest rating of Four Stars for the past several years, as well as a perfect score in financial transparency. These exemplary results are based on our enduring pillars: a dedicated staff, committed volunteers, visionary trustees, and generous members and supporters.

We depend on your support to deliver all of these leading-edge education, horticulture, conservation, and community outreach programs that connect you with the Garden. Our strong financial position simply means that we're excellent stewards of your gifts and generosity; that your dollars go directly to support our programs.

But we need your support to continue to operate these programs successfully. The ongoing improvements, new programs and future exhibits I've mentioned here represent a necessary investment in our Garden of well over \$6 million.

This has been a remarkable year of transformation for Fairchild, and it will all culminate during our new event, The NightGarden: an enchanted, illuminated experience full of fantasy and wonderment that will take members and visitors through a lighted, walking journey of the Garden's mission, using some of the most innovative technology in the world of illumination. By creating a visual storytelling of our programmatic initiatives at night, we will share our mission and Dr. Fairchild's legacy with you, our members, and with the South Florida community.

As we look back on the last 80 years, we are so proud of the Garden's achievements; achievements that are only possible because of you, our members. And as we look forward to the next octogenarian milestone, we're confident that the seeds planted thus far will yield an even larger crop of gardeners, botanists, members, and volunteers who love nature. That's why we are so passionately committed to the future of plants and to connecting you with the Garden.

We are your garden; the place for you to bring your children and your friends. We are the place for you and your family to learn science and botany, and to enjoy the beauty of nature.

We are committed to you. Thank you for your support.

Warm regards,



Nannette M. Zapata, M.S./M.B.A.
Chief Operating Officer



@TropGardenMag
@KennethSetzer

As has been the case for quite a while, the Garden is renewing itself. Well, not by itself of course. Departments, staff, and volunteers throughout the Garden are helping that renewal along.

We've got the education department reaching out to ensure the greening of younger minds in our first elementary magnet school. The opportunities these students have to explore and change the world make me wish I had been part of such a cool school.

New plants are streaming into various parts of the Garden, mostly from Southeast Asia, thanks to our horticultural explorers. Several were even offered at October's Members' Day Plant Sale. Other new plants are coming from the Neotropics, with Butterfly Exhibit Manager Martin Feather returning from Costa Rica with wild-collected plants to help keep our exotic Lepidoptera well-fed while also providing beautiful ornamentals of note.

The Garden's iconic Vine Pergola went through a thorough restoration recently. And, the Garden's landscaping lights were—to state it mildly—completely re-worked, with old fixtures replaced by unobtrusive, modern, efficient lights. Now, areas of the Garden never before illuminated have lights to guide us, as well as to complement the landscape and plants.

Palms seem to be woven throughout this issue, with Georgia Tasker's profile of Jeff Searle's palm-inspired landscape, "What's in a Name" with a palm focus, top palms for South Florida, and a closer look at overlooked palm flowers.

Ron McHatton, chief education and science officer of the American Orchid Society, kindly contributed an excellent article to this issue, and we look forward to reading more from him in the future.

Oh, and do not miss "From the Archives," which tells us the story of Dr. David Fairchild on film! There's so much more, but I don't need to tell you. You can read it for yourself right here.

I also want to extend a big "thank you" to everyone who mailed in the surveys included in the last issue, and to those who emailed me directly. The surveys and your comments and suggestions contain valuable information and help us steer our future course.

One final note: I would like to invite you to email me favorite images you have taken of Fairchild. Artistic photography, family visits, old images—as long as they are taken within Fairchild. We would like to include a section in future issues to highlight some of these. We can call it "My Dear Fairchild."

Please email them to me at ksetzer@fairchildgarden.org.

Thank you,

Kenneth Setzer, M.A.
Writer and Editor

CONNECT

VISIT US

10901 Old Cutler Road, Coral Gables, FL 33156
T: 305.667.1651 F: 305.661.8953
Daily 9:30 a.m. – 4:30 p.m. (except December 25)

Admission: Free for Fairchild members and children 5 and under.
Non-members: \$25 for adults, \$18 for seniors 65 and up, \$12 for students (with ID) and \$12 for children 6-17.

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.

Military Discount: We offer active military personnel and veterans free admission. Please present military IDs.

FAIRCHILD BLOG

Follow the Fairchild Blog at www.fairchildgarden.org/blog

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the TROPICAL GARDEN

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Chief Operating Officer

January through April 2019

View our full calendar of events at www.fairchildgarden.org/events



13TH ANNUAL INTERNATIONAL CHOCOLATE FESTIVAL

Friday, Saturday and Sunday
January 25, 26, and 27



17TH ANNUAL INTERNATIONAL ORCHID FESTIVAL

Friday, Saturday, and Sunday
March 8, 9, and 10



SPRING GARDEN FESTIVAL AND 40TH ANNUAL SPRING PLANT SALE

Saturday and Sunday
April 13 and 14



MOONLIGHT TOUR

Thursday, March 21



EGGSPLORE, AN EASTER EGG HUNT

Sunday, April 21

TICKETED EVENTS

Additional fees apply.
Learn more at
www.fairchildgarden.org/events



THE NIGHTGARDEN

Now through January 6
Tickets at www.TheNightGarden.com



BRUNCH AT FAIRCHILD

Select Sundays such as Easter, Mother's Day, and Father's Day

GALA IN THE GARDEN

Saturday, January 26

SPLendor IN THE GARDEN

Thursday, January 31

VALENTINE'S DAY CONCERT

Thursday, February 14



WORKSHOPS

Plant ID Workshop

First Friday of each month.
January 4, February 1, March 1, April 5
1:00 – 3:00 p.m.
Bring an unknown plant or plants to Fairchild's Herbarium for identification by our botanists. The workshops are free of charge. See full calendar of events for registration details:
www.fairchildgarden.org/events



SALES AT THE SHOP AT FAIRCHILD

Members receive an additional 10% off.

January Specials

>20% off sale on all regularly priced merchandise from January 19 to 21.

February Specials

>Choose anything pink or red, or any piece of jewelry, and receive an extra 10% off for Valentine's Day from February 9 to 14.

>20% off Shop sale from February 15 through March 3.

March Specials

>Celebrate Green Friday with our Spring Sale. Receive 20% off all green items from March 16 – 20.

April Specials

>Store savings coupons hidden in selected eggs in the Easter Eggsplore egg hunt on April 21. Also, all month enjoy savings on mugs.

TOURS OF THE GARDEN

TRAM TOURS OF THE GARDEN WEEKDAYS (M-F)

Every hour on the hour
10:00 a.m. – 3:00 p.m.

WEEKENDS

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

TOURS EN ESPAÑOL

Sábados y Domingos
1:30, 2:30 y 3:30 p.m.

DAILY WALKING TOURS

Through June 2019
(Upon volunteer availability)

Discovering the Tropics
10:15 a.m., 11:15 a.m.,
1:15 p.m., and 2:15 p.m.

Exploring the Rainforest
Fridays
12:15 p.m.

Palmetum: Walk & Talk
Saturdays
11:15 a.m. and 1:15 p.m.


Fairchild History: Walk & Talk
Saturdays and Sundays
1:15 – 2:00 p.m.

ONGOING TOURS (YEAR-ROUND)

Plants that will bring Butterflies and Birds to your Yard
Saturdays
10:15 – 11:00 a.m.

Butterflies: Winged Wonders and the Plants they Love
Sundays
10:15 – 11:00 a.m.

Tropical and Rare Plants: Walk & Talk
Every other weekend
11:30 a.m. – 2:30 p.m.

 Tours added daily.
Check the information at the Visitor Center desk upon arrival.

Javier Francisco-Ortega, Ph.D.,

is a faculty member at Florida International University (Department of Biological Sciences) with a research appointment at the Garden. He joined FIU and Fairchild in 1999 and has a broad interest in plant taxonomy, conservation genetics, molecular phylogenetics, and botanical history.



Chad Husby, Ph.D.,

is a botanical horticulturist. His work focuses on introducing new plants to the Garden as well as evaluating new introductions for horticulture and making the most promising ones available to the public.



Brett Jestrow, Ph.D.,

is director of collections. He specializes in the flora of the Caribbean region, and is passionate about growing the world's tropical plants. Currently, he is researching the genetics of Caribbean palms as well as bringing taxonomic diversity to the living collections of the Garden.



Carl Lewis, Ph.D.,

is a botanist, explorer and educator. He joined the Fairchild science staff in 2001, and has served as director for the past eight years. With a passionate belief in the importance of plants to society, he is developing our Garden into a place where everyone can learn about botany.



Ron McHatton, Ph.D.,

has been growing orchids for more than 50 years and his private collection has numbered in excess of 2,500 plants. A Ph.D. chemist by training, McHatton is currently the American Orchid Society's chief education and science officer, responsible for editorial content and layout of the society's monthly magazine, *Orchids*.



ON THE COVER



Phlegmariurus sp., one of the hundreds of new plants recently added to Fairchild's collection. Photo by K. Setzer/FTBG



Mary Neustein has been Fairchild's manager of continuing adult education programs for over 24 years. She has created many classes that connect talented Fairchild staff, local horticulturists, artists, chefs and photographers to our members and the local community.



Amy Padolf is director of education, where she oversees national and international multidisciplinary environmental science education programs for pre-kindergarten through post graduate studies, as well as teacher professional development and adult education.



Jennifer Possley is Conservation Team leader and field biologist, and has been a member of Fairchild's native plant Conservation Team for over 17 years, during which she has developed an affinity for ferns and a passion for pine rocklands.



Kenneth Setzer is the Garden's editor and writer, focusing on increasing awareness of Fairchild's important work in preserving biodiversity and increasing appreciation for the natural world, particularly tropical botany and horticulture.



James T. Stroud, Ph.D., is Fairchild's lizard biologist, having conducted research in the garden for the past 7 years. His research focuses on the ecology and evolution of Caribbean anole lizards, of which the Garden hosts a rich and diverse community. Stroud also leads collaboration with the Fairchild Challenge.



Marianne Swan is an Archives volunteer, and for almost 14 years has worked to preserve the photographic and written legacy of Dr. David Fairchild. She has provided assistance to Fairchild staff as well as researchers and authors seeking archival information.



Georgia Tasker is a Garden writer, gardens ferociously, and is particularly enamored with big-leafed tropical plants. Travel has been her late-life passion, which challenges her other long-term passion, photography. She was recently awarded an honorary doctorate from Florida International University.

The Garden Welcomes FIU Haitian Summer Institute Students

In July, Fairchild hosted a Florida International University (FIU) Kimberly Green Latin American and Caribbean Center (LACC) Haitian Summer Institute session. The Haitian Summer Institute at FIU is a Creole-learning intensive program co-led by LACC Associate Director Liesl Picard and Modern Languages Creole Coordinator Nicolas Andre. Students at the Institute are mostly graduate students from various U.S.-based universities, and sometimes from universities in other countries.

FIU-Fairchild graduate student Jonathan Flickinger led the students on a guided tour of the Garden that highlighted Haitian plants grown in our living collections. From the many comments the students wrote about this tour, it was a memorable experience that made them see Haiti through its flora. Following the tour, the Haitian Summer Institute students attended a talk delivered by Haitian agronomist and mango expert Philippe Matthieu in the DiMare Science Village Classroom.



Fairchild Expert Attends International Meeting on Atlantic Island Floras

Dr. Javier Francisco-Ortega, Florida International University-Fairchild faculty member, participated in the FloraMac 2018 symposium (September 12-15). This international research meeting focused on plants from the Azores, Cabo Verde, Canaries, and Madeira, and it was organized by the Grupo de Botanica da Madeira at the University of Madeira in Portugal. The event took place in the university's historical 16th-century building of the Jesuits College. Francisco-Ortega delivered a talk entitled "Captain Cook and Macaronesian Botany" and met with several long-time colleagues and partners with whom he has active research projects, focusing primarily on the botanical history of the Cabo Verde Islands. These included Dr. Maria Romeiras (University of Lisbon), Dr. Mark Carine (Natural History Museum of London), and Dr. Arnaldo Santos-Guerra (retired professor at the Canary Islands Institute of Agricultural Research). The symposium organizing committee, led by Dr. Miguel Sequeira (University of Madeira), kindly sponsored Dr. Francisco-Ortega's participation in this meeting.



The Tropical Garden Wins Eight Magazine Awards

We are proud to say *The Tropical Garden* won eight awards at the Florida Magazine Association's annual Charlie Awards, held on August 10. The awards recognize members' accomplishments in writing, design, art, photography, and general aspects of publishing. *The Tropical Garden* won four Charlie Awards (the top honor), three silver awards, and one bronze.

Best Writing: Public Service Coverage
Charlie Award

"Post-Hurricane Irma Blog" By Nannette Zapata

Best Writing: Service Feature
Silver Award

"Making Water Better" By Georgia Tasker

Best Writing: Department
Charlie Award

"Tropical Cuisine" By Mary Neustein

Best Writing:
Editorial/Commentary/Opinion
Charlie Award

"In Memoriam: Larry Shockman" By Georgia Tasker

Best Design: Department
Bronze Award

"Ancient Names" By Lorena Alban

Best Overall: Design
Silver Award

The Tropical Garden By Lorena Alban

Best Overall: Writing
Charlie Award
The Tropical Garden

Best Writing: Feature
Silver Award

"Summer in the Arctic" By Kenneth Setzer

Congratulations to our talented staff!



Fairchild Helps Stock The Spheres

On the grounds of the corporate headquarters of Amazon in Seattle, Washington, stand three enormous globe structures opened early in 2018. Called The Spheres, they serve as inspirational space for Amazon staff, with guided public access provided. They feature massive indoor gardens and living, “green” walls. The Spheres website states: “The Spheres are a place where employees can think and work differently surrounded by plants.”

A home to over 40,000 plants doesn’t happen without collaboration, and Amazon began consulting plant experts around the country for advice and assistance. Since 2014, Fairchild Botanical Horticulturist Dr. Chad Husby has been collaborating with horticulturists at The Spheres. Husby shared expertise and many plants from Fairchild, including a *Selaginella picta* that currently graces The Spheres’ collection. The Spheres staff has also shared many special plants with Fairchild, and in 2016 Amazon supported Husby so he could join an expedition studying plants and horticulture in Indonesia and Singapore.



Delegation from Hainan University Makes Academic Visit to the Garden

More than 20 administrators and faculty from Hainan University in China visited the Garden on September 3. The group was led by Dean Xiqiang Song from the Institute of Tropical Agriculture and Forestry of Hainan University, and Florida International University (FIU)-Fairchild faculty member Dr. Hong Liu organized the visit. Several Fairchild staff were actively involved in the group’s activities, including Garden Director Dr. Carl Lewis, Fairchild Orchid Biologist Dr. Jason Downing, and FIU-Fairchild faculty member Dr. Javier Francisco-Ortega. They shared with the Chinese delegation details pertinent to Fairchild’s educational project with NASA and initiatives in the labs related to micropropagation, anatomy, and DNA studies.

Liu and Downing gave an overview of current programs on conservation ecology of orchids, both in the Caribbean and in China. Fairchild Visiting Scholar Dr. Yan Chen (currently being hosted by Liu) was actively engaged during this visit and provided relevant support.

The Garden's new plant introductions continue. Here are profiles of some of the unusual recent additions.

Introducing More New Plants at Fairchild

Text and photos by Brett Jestrow, Ph.D. and Chad Husby, Ph.D.



Ephedra fragilis

This unusual plant is a new genus for the Garden. Not a flowering plant, not a conifer, not a cycad, *Ephedra* belongs to the curious group of seed plants called the gnetophytes. Well-known in the southwest as "Mormon tea," as well as for being the original source of ephedrine (a medication used to treat asthma and hay fever), most species are native to areas with much drier climates than any found in Florida. However, our *E. fragilis* plants were grown from wild-collected seed, in collaboration with Acclimatisation Gardens of La Orotava, located in Spain's Canary Islands, off of the west coast of Africa. After growing in our nursery for some years, specimens have been planted in the Arid and Succulent Garden.



Euphorbia greenwayi

This succulent has really caught our attention. Though perhaps a bit spiny for some tastes, this species is unusual among stem succulents for two reasons. First, the stems are glaucous—they have a waxy coating—giving them a blue hue. Second, the stems exhibit natural variegation from a contrasting pattern. Hailing from Kenya in east Africa, the species is well suited to our summer growing season. Provided with good drainage and some sun, it thrives in a pot or rock garden here in South Florida.



Oxera sulfurea

A member of the mint family, the *Oxera* genus is most known by *Oxera pulchella*, a popular flowering vine in tropical gardens. The other 20 species are practically unknown in horticulture, in part because most are endemic to the small island of New Caledonia. *Oxera sulfurea*, a new introduction to South Florida via our friends at Nong Nooch Tropical Botanical Garden in Thailand, is a woody scrambler with striking leaves. Though growing well near the Jean DuPont Shehan Visitor Center, the plant has yet to flower. We look forward to seeing its large yellow blooms before long.



Hymenocallis latifolia

Native to South Florida and across the Caribbean Islands, this species was first brought into the Garden by former Director Dr. John Popenoe. A member of the Amaryllis family, the species does very well near water, preferring moist conditions. Though it grows from a bulb, the species maintains its leaves all year and flowers in the summer months. We have a large number of bulbs growing well in the nursery and this species will be available at future Fairchild plant sales.



Manfreda petskinii

Recently described from the Yucatán of Mexico, this species came to the Garden by way of Gemini Botanical Garden, a private collection in Palm Beach. Many plants from the region do quite well here in Miami, and as this is a new species for the Garden, we are curious to see how it performs. A close relative of the agaves, these plants have charming spots on their leaves. Preferring well-drained soil, they are now growing off the Garden House Lawn in the Arid and Succulent Garden.



Chamaecrista lineata var. *keyensis*

Endemic to Miami-Dade County and the Florida Keys, this variety is truly unique to South Florida. Though a state-listed endangered taxon, the plant seems to adapt well to garden life. It flowers through our warmer months, and a couple of specimens are now growing near the Visitor Center. A short-lived perennial legume, it helps to refresh plants every few years from seed. For the discriminating native plant collector, we are now propagating this species for distribution.



Aloidendron tongaense

Large, branching tree aloes are a prized feature in botanical gardens around the world. In cold regions, they are grown under glass, and in warmer, more arid regions they thrive outside. While we have the warmth, our summer rains keep us from growing most species native to the western cape of South Africa. *Aloidendron tongaense* from Mozambique, however, experiences humid summers. Not surprisingly, it has done well in the nursery, even flowering each spring. We are propagating *A. tongaense* by cuttings, and plants will be available for sale soon. Our largest plant in the Garden is growing in the Arid and Succulent Garden near the Garden House lawn.



Ficus deltoidea 'Dark Heart'

This incredible species, often called "mistletoe fig," is beginning to develop a following as a houseplant in the United States and Europe. While considered just a single species, it is actually remarkably variable—through new introductions, we are now growing more than 20 different varieties, each with its own character. This particular form has the largest and darkest green heart-shaped leaves we have seen. The species doesn't set seed in South Florida, but is propagated easily by cuttings. Often found growing as an epiphyte in the wilds of Malesia—a region that includes the Malay Peninsula and the islands of Southeast Asia—this species thrives as a potted plant in shady spots in South Florida. We recently planted this form in a few rock crevices behind the Sibley Victoria Amazonica Pool.



Ensete superbum

Bananas are an important part of any tropical garden, and the genus *Musa* is certainly well-represented here at Fairchild. Unlike the more familiar *Musa*, *Ensete*, another genus in the banana family, typically have shorter, wider bases and don't form clumps. While most *Ensete* species grow at higher elevations and prefer cooler temperatures, this particular species has continued to grow and thrive through our summers. Propagated by seed, these plants had been growing in the nursery for nearly 10 years, and are now growing quickly behind the Garden Club of America Amphitheater.

See upcoming Fairchild plant sales at www.fairchildgarden.org/events.

See our latest new plants with #PlantingMondays stories on Instagram.



December 2018 through April 2019

What's in Bloom presents a tiny sample of the multitude of plants blooming (or fruiting) around the Garden by month, with botanic name, common name (when known) and where you can see each one at Fairchild. Of course, this is a variable, general guide, as plants may flower earlier, later, and across more months than listed.

For a more comprehensive list with locations, please visit: www.fairchildgarden.org/blooming

ABOVE
Montanoa atriplicifolia,
Yucatan daisy

DECEMBER



Euphorbia punicea
Flame of Jamaica
Plots 8, 41, 50



Uncarina grandidieri
Mouse trap tree
Plot 31



Clusia lanceolata
Porcelain flower
Plot 4



Cordia lutea
Yellow geiger
Plot 52

JANUARY



Cananga odorata
Ylang ylang
Plots 17, 131



Montanoa atriplicifolia
Yucatan daisy
Plot 148



Thespesia grandiflora
Flor de maga
Plots 92, 96



Pachira aquatica
Guiana chestnut
Plots 18, 58

FEBRUARY



Guaiacum sanctum
Lignum vitae
Plots 41, 54



Bletia purpurea
Pine-pink orchid
Plot 176



Grewia occidentalis
Lavender starflower
Plot 21



Hibiscus genevii
Plot 101d

MARCH



Hibiscus fragilis
Mandrinette
Plot 33



Amherstia nobilis
Pride of Burma
Tropical Plant Conservatory



Anastrophia ilicifolia
Plot 19b



Lantana involucrata
Wild sage
Plots 19a, 19b, 176

APRIL



Napoleonaea beninensis
Napoleon's hat
Plot 45



Pereskia grandifolia
Wax rose
Plot 6



Etilingera corneri
Siam rose ginger
Tropical Plant Conservatory



Tacca chantrieri
Bat flower
Tropical Plant Conservatory



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Cranberry Carambola Relish

A Star Fruit Recipe is Born


By Mary Neustein

We all know there are four seasons to our year, but living in South Florida means we seem to have only two—warm and hot. As we slowly come out of the heat of the summer, our taste palate is changing and we look to more comforting foods that coincide with the upcoming family holidays and the possibility of our temperatures dipping into the cooler 70s.

So, let's have some fun and entice our visiting "snowbird" holiday guests to become acquainted with our South Florida bounty of delicious tropical fruits. The fusion of tropical fruits with traditional recipes will have your guests asking you for not just more food, but also your recipes.

Common throughout Southeast Asia and the South Pacific, Florida favorite star fruit (*Averrhoa carambola*, also

known as carambola) is thin-skinned, sweet, and tart. It's low in calories and packed with a nice dose of vitamin C, potassium, fiber, and antioxidants. The entire decorative fruit can be consumed when it has just ripened to the right consistency. It's best used when it is a bright yellow devoid of any squishy, brown spots. Use your imagination and substitute or add carambola in your fruit cobblers—or better yet, in a bread pudding. It would be delicious in a spinach salad, where the tartness can meet up with bacon.

I always enjoy revisiting my handwritten holiday recipes, and many years ago the idea of using star fruit came to mind when I was given a basketful of them. I didn't want them to go to waste, and a "star" recipe was born when I added some to a cranberry relish. So, if you want your dinner guests to see stars, add *A. carambola* to your recipe. 

5 carambolas (star fruit), seeded and chopped
1 12 oz. bag of fresh or frozen cranberries
1 cup brown sugar
1 cup water
½ cup of liquid from a drained can of unsweetened crushed pineapple
½ tsp of cinnamon
¾ cup of chopped walnuts or pecans

Combine brown sugar, cinnamon, and water in a medium saucepan and bring to boil.

Add cranberries and return to boil, stirring gently until the cranberries have "popped."

Reduce heat to low; add carambolas and cook for 8-10 minutes, stirring occasionally.

Remove from heat and stir in chopped nuts.

If the mixture is too thick, gradually add in reserved liquid from the drained can of unsweetened crushed pineapple until the mixture is a nice, chunky consistency.

Cover and cool at least 2 hours before serving. When ready to serve, transfer relish into a clear bowl and slice additional star fruit to decorate the dish.

Marianne Swan, Archives Volunteer

Preserving and sharing the history
of plants and plant explorers

By Julieta Jacob, Fairchild Volunteer

Fairchild's Archives contain important historic records of the role of plants and plant explorers in the U.S. and around the world. Its core is Dr. David Fairchild's extensive collection of papers and photographs, but it contains a total of 14 collections from prominent botanists and horticulturists. All told, the Archives include an estimated 150,000 documents (letters, manuscripts, architectural drawings, and more), audio and videotapes, and more than 30,000 images. Housed 1 mile south of the Garden on Old Cutler Road, the Archives are available, by appointment, to researchers and scholars.

This impressive collection is organized, indexed, preserved, tended, and maintained through the generous work of Fairchild volunteers like Marianne Swan. Swan, who has worked in the Archives since January 2005, shared her experience with volunteer Julieta Jacob.

Tell me how you first got involved with the Archives and what your responsibilities are.

[I got involved] quite by accident. When I first started at Fairchild, I requested to work with the orchid



collection, but no openings were available. A position in the Archives was open, and—not really knowing what to expect—I accepted. It turned out to be a good fit for me. This is my 14th year of volunteering in the Archives. I have mainly worked on scanning and indexing the photographs in the collection, but [I] also assist with research projects and have written a few "From the Archives" articles for *The Tropical Garden* magazine.

What do you find the most fascinating about your work?

To me, the most amazing thing about the Archives is the fact that thousands and thousands of photographs, negatives, correspondence, handwritten notes, scrapbooks, manuscripts, notebooks, etc., from the 1890s to the 1950s were kept and maintained by the Fairchilds and others. Considering the many times these items must have been subjected to moves and adverse storage conditions (no air-conditioning!) it is remarkable that, for the most part, they are in good condition. Our challenge is to preserve, identify, and document each item, researching to find as much information as possible and ensuring that the information is accurate.

I understand you are a retired police investigator. Do you use some of the skills you learned in the police department in your work?

Yes, my work experience as a police investigator is helpful. Now, instead of searching for criminal evidence, I am searching for botanical and historical facts. Volunteering in the Archives has

provided me with a free education in botany, geography, history, and more.

Dr. Fairchild's historical documents include many small notebooks filled with his handwritten notes from his voyages of discovery around the world. Can you share information about them?

Dr. Fairchild was a meticulous note keeper and kept a small "pocket notebook" with him at all times. The Archives contain four large boxes of these notebooks, [which] begin in 1892 and run continuously until 1953, the year before he died. I use these extensively in my work, as they contain a notation system ... documenting the photographs he took. They contain many other notes, names and addresses of people he met, even a few recipes, and are an invaluable source of information for researchers. My only wish is that his handwriting was a little better.

Dr. Fairchild's photographs are in the process of being digitized. Can you describe this project and its challenges?

To date, approximately 13,000 individual negatives and prints, and 22 large scrapbooks filled with photos, have been scanned and indexed by Archives volunteers. While this constitutes a large portion of the photographic collection, there is much more work to be done. The challenge here is to preserve the images, especially the fragile negatives, before they deteriorate further. But the ultimate goal is to make the collection accessible to researchers online.

Who else works on the Archives?

Since the retirement of librarian/archivist Nancy Korber two years ago, Dr. Javier Francisco-Ortega and Dr.

Brett Jestrow have spent many hours of their time keeping the Archives moving forward. They often use the Archives for research, and have authored and published a number of important scholarly articles based on archival material. We are very grateful for their interest and help. Currently, volunteers Carol and Joe Dietrick and Louise Bennett are transcribing David Fairchild's trip books—a daunting task, as they are written on onionskin in ink that is quite faded.

You and volunteer Mary Jo Robertson were mentioned in Daniel Stone's recent book *The Food Explorer* as "the unsung heroes who archived Fairchild's thirteen-thousand-and-counting photographs and guided me through them." Can you tell me about your role in helping with this book?

I would highly recommend that all Fairchild volunteers read Dan Stone's book. The book paints a vivid picture of David Fairchild's life and work, but what Dan truly captures is Fairchild's vision. Dan was a pleasure to work with. He is a consummate researcher and spent many hours in the Archives with Nancy, Mary Jo, and me. We guided Dan to the photographs, letters, notebooks, scrapbooks, etc., that he used in telling David Fairchild's story.

Have Archives volunteers helped with the research for other books?

Over the years there have been a number of scientists, historians, and authors who have used the Archives for their research. Nancy Korber always asked each author who cited the Archives to provide a copy of the book when published. Currently there are a dozen such books accessioned into the Archives. I'm sure there are other

books, as well as many scholarly articles, that are not yet in our collection. While most of the research and publications naturally have centered on botanical topics (I just finished research on bamboo for a documentary filmmaker), that is not always the case.

What's one of the least-known stories the Archives have revealed to you?

It is important to know that David and Marian Fairchild were humanitarians. There are many photographs of the different peoples they encountered in their travels and much evidence of their concern for others. An interesting non-botanical project I worked on chronicled Marian Fairchild's efforts to better the lives of a group of women in Canada during the depression of the 1930s by organizing a rug weaving cottage industry. The Archives holds a number of photographs of these women working on the rugs. Several years ago, a Canadian college professor conducting research on these women contacted us. He had discovered the link to Marian Fairchild and asked for our help. We were able to provide him with information and never-before-seen photographs of the women. He was extremely grateful for our help and has since cited the Archives in scholarly articles published on the subject, and he is working on a book. So, you can see that the Fairchild Archives holds a number of treasures, many yet to be brought to light. 

Discover how you can join the army of Fairchild Volunteers and make a huge contribution in any number of areas at www.fairchildgarden.org/volunteer.



(L-R) Jim Dorsett and his father Palemon H. Dorsett with the movie camera in Java.
Photo: Courtesy FTBG Archives and Library.

Dr. David Fairchild: The Motion Pictures

By Javier Francisco-Ortega, Ph.D.; Marianne Swan;
Diane Wunsch; Carl Lewis, Ph.D.; and Brett Jestrow, Ph.D.

New Historical Discoveries

Our recent historical research projects on Dr. David Fairchild's botanical contributions have led us to perform studies outside the unique collections of the Garden's Archives.

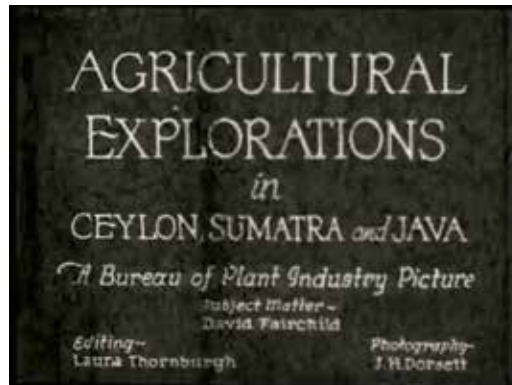
They have resulted in three new discoveries. The first is the earliest color photos of Dr. Fairchild,

located in the University of Montreal and made by Brother Marie-Victorin, a member of La Salle Catholic Congregation who founded the Botanic Garden of Montreal. The second is a previously unknown set of superb photos of the research yacht *Utowana*, which is housed at the Special Collections of the USDA's National Agricultural Library (NAL). The third is a two-volume, 902-page, fully illustrated travelogue of Dr. Fairchild's 1931-1932 expedition to the West Indies and Guianas. The travelogue was prepared by USDA botanist and plant collector Palemon H. Dorsett, and is located at the U.S. National Archives and Records Administration (NARA).

These three historic findings have already been presented in *The Tropical Garden* or in the research journal of the Hunt Institute for Botanical Documentation, *Huntia* (Vol. 17: 5-35, 2018). The late Larry Schokman, one-time director of the Kampong National Tropical Botanical Garden and advocate for South Florida green spaces, was instrumental in developing several components of this previous research, and this article pays homage to his great legacy and influence on tropical botany and horticulture, particularly in our community.

Dr. Fairchild and the USDA Plant Explorers in Movies

Our findings provide novel perspectives on Dr. Fairchild's plant-hunting expeditions. Research at NARA, NAL, and the Garden's Archives has revealed that motion picture films were made during at least



Title shot of the motion picture made during plant exploration activities in SE Asia.
Photo: Courtesy U.S. National Archives and Record Administration.

three plant-hunting endeavors led by Dr. Fairchild or his colleagues from the USDA's Office of Foreign Seed and Plant Introduction.

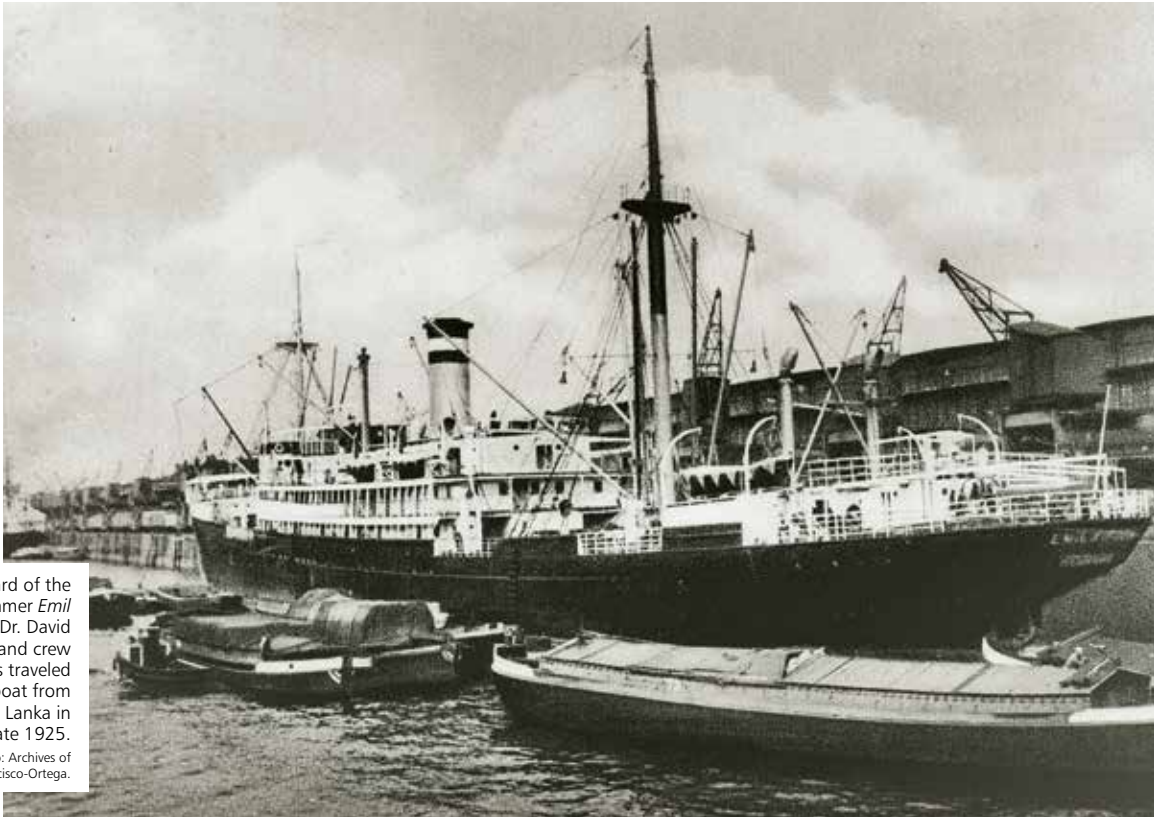
Documents found in the Garden's Archives support that one of these movies was made during the first official plant exploration enterprise sponsored by our Garden: the *Cheng*

Ho Expedition, which targeted Indonesia and the Philippines in 1939 and 1940. Unfortunately, this film has not been located and it is uncertain if it still exists.

The illustrated travelogue of the 1931-1932 USDA trip to the West Indies and Guianas provides a record of a movie made during another one of Dr. Fairchild's expeditions. During this voyage "1,200 feet of motion pictures" were filmed in 12 spools, it notes. They included images of daily life on *Utowana*, and also of gardens, plants, and landscapes of Dominica, Martinique, Guyana, and Surinam. The travelogue reports that the last of these 12 reels documented the "unloading of plants from the yacht *Utowana* while she was tied to the wharf [sic] in the harbor of the Navy Yard." (The Navy Yard is located in Washington, D.C.) The whereabouts of these 12 films are unknown; clearly, finding them will be a major contribution to the history of plant exploration in the Caribbean and to our knowledge of how Dr. Fairchild and his colleagues performed fieldwork for the USDA. This movie, according to the travelogue, also shows images of Dr. Fairchild and of Allison V. Armour.

The U.S. National Archives and Records

The U.S. National Archives and Records Administration and the Special Collections of the National Agricultural Library have the only known motion pictures of Dr. Fairchild's trips as a plant collector. Indeed, we are not aware of any other cinematographic evidence of him. One silent film,



Postcard of the steamer *Emil Kirdorf*. Dr. David Fairchild and crew members traveled on this boat from Italy to Sri Lanka in late 1925.
 Photo: Archives of Dr. Javier Francisco-Ortega.

copies of which are housed in these two archives, presents details of his December 1925 to June 1926 visit to East Asia (Java, Sri Lanka, and Sumatra) during the 1925–1927 Allison V. Armour Expeditions for the USDA. These expeditions were largely performed on *Utowana* and targeted Asia, West Africa, the Canaries, Portugal, and the Mediterranean Basin. Armour was a wealthy businessperson who owned *Utowana* and sponsored several of Dr. Fairchild’s expeditions. However, the trip to East Asia did not take place on *Utowana*, but on the German vessel *Emil Kirdorf*, because Armour’s research yacht was out of service during this time. Interestingly, details about this historical movie were included in the travelogue for the 1931-1932 expedition to the Caribbean and Guianas. The film was shot by Jim Dorsett, son of the travelogue’s author, Palemon H. Dorsett.

The final movie was entitled *Agricultural Exploration in Ceylon, Sumatra, and Java* (Sri Lanka was then called Ceylon), and was released by the Office of Motion Pictures of USDA in 1932; Laura Thornburgh of that office edited it. Dr. Fairchild clearly appears in five scenes of the movie, in Sri Lanka. One of these scenes shows him surveying “little-known fruits and vegetables” in “village markets.” He is also spotted examining “King Coconuts,” a cultivar that is regarded to be the “best milk-producing coconut on

the island.” In another shot he is eating a grapefruit relative: *Aegle marmelos* (common name bael). The last two scenes have him tasting “the famed edible husk coconut,” also known as “Nawasa coconut,” and learning about the “801 uses” of “The Palmyra palm” (also known as the wine palm, *Borassus flabellifer*) in Tamil villages off northern Sri Lanka. A short note published in *The Miami Herald* (April 26, 1932), reported that Dr. Fairchild himself showed this movie during a “free illustrated lecture” delivered in the “Grove Theater” on April 27, 1932.

The National Agricultural Library recently conserved and digitized its copy of this unique movie, and has made it available online. An introductory article about this historical finding was written by Kim Kaplan for the ARS-USDA digital publication *Tellus* (December 2018). The Garden’s Archives have two photos from Java that are complementary to the actual film. One of these photos shows Jim Dorsett and his father with the camera; the second is of Jim Dorsett filming a dance known as “the Wiang of Hobby Horse Knights.” The actual footage that he captured of this dance appears in the motion picture. Labels on two of the pages of Dr. Fairchild’s photo album provide additional reference for this movie. This first reads: “The Sultan of Solo’s Wiang Orang. Performing in the Zoological Garden at Soerakartja before a moving picture machine.” The second reads: “Performance of



Jim Dorsett
filming the Wiang
of Hobby Horse
Knights in Java.
Photo: Courtesy FTBG
Archives and Library.


the Sultan of Solo's Wiang Orang before Tusillo Adams movie camera in the Sultan's zoo in Soerakarta."

Research undertaken in the Garden Archives turned up additional details on "Tusillo Adams movie camera" – it appears that the name of the owner of this camera was misspelled in the photo album. It should read "Tassilo Adam," a German ethnologist who spent many years in Indonesia documenting its people and culture through photography, including motion pictures. It seems that Dr. Fairchild and crew met him during this expedition and used his camera to make at least part of the movie. There are a few references to Adam in Dr. Fairchild's *Utowana* address book, including one in which there is a note to order some of Adam's photos.

The Garden Archives also has a copy of a report sent to W.A. Taylor (chief of the USDA Bureau of Plant Industry) by Palemon Dorsett from China in 1926, in which there are details of the Sri Lanka–Sumatra–Java expedition. This report has two photos of the Dorsetts with a film camera. Its last page includes the following statement: "We have quite a lot of motion picture film and hope

to be able when we get back [sic] that a motion picture is not only an important but also an essential part of the equipment of a foreign agricultural explorer."

Coming Historical Research Activities

Subsequent research in the U.S. National Archives and Records Administration turned up three additional relevant movies. One of them, called *Bamboos—The Giant Grasses of the Orient*, was directed by Dr. Fairchild and focuses on the versatility and economy of bamboo as a building and manufacturing material. The second film, *Persimmon Harvesting and Storage in China*, came from the 1924-1926 plant exploration enterprises of the Dorsetts in China; however, Dr. Fairchild did not join this expedition. The last of these three films, *Naturalized Plant Immigrants*, provides an overview on the plant introduction program of the USDA. Our next historical research steps will involve digitizing, posting online, and interpreting these three additional movies. 

View Dr. Fairchild on film at www.fairchildgarden.org/url/Fairchild-on-Film.

Acknowledgements: Susan Fugate (head of Special Collections at the National Agricultural Library) led the effort to have NAL's copy of the motion picture from the East Indies expedition conserved and digitized. The Florida International University International Center for Tropical Botany and the FIU Kimberly Green Latin American and Caribbean Center sponsored a portion of the trips made by Dr. Javier Francisco-Ortega to visit the Special Collections of the National Agricultural Library and the U.S. National Archives and Records Administration in Maryland.

Staff Picks for the Holidays

@TheShopatFairchild



8.



9.



10.



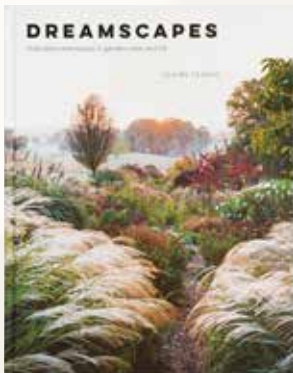
11.



12.



13.



14.



- 1. Dionis Hand Cream \$3.99 | Member \$3.59
- 2. Tea Light Candle Holder \$14.99 | Member \$13.49
- 3. Palm Dinner Plate \$19.99 | Member \$17.99
- Tropical Leaf Cloth Placemat \$7.50 | Member \$6.75
- 4. Butterflies Chinese Plates Notecards \$15.99 | Member \$14.39
- 5. (L) Ivy Vine Cuff \$14.99 | Member \$13.49
- (R) Devika Cuff \$16 | Member \$14.40
- 6. Silver Bird \$8 | Member \$7.20
- 7. Tree Lantern (Large) \$30 | Member \$27
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It's Never too Early to Study Plant Science

By Amy Padolf



Fairchild, in partnership with Miami-Dade County Public Schools and ZooMiami, has developed a new conservation biology elementary school. Pine Lake Elementary STEM: Botany & Zoology Magnet Program, which opened this fall, hosts the nation's first elementary school botany magnet program.

Pine Lake is the newest addition to Fairchild's education pipeline, and is a follow-up to our partnership with Miami-Dade County Public Schools (MDCPS) to host the country's first botany magnet program at BioTECH

@ Richmond Heights 9-12. Now in its fifth year, BioTECH has allowed Fairchild to delve deeply into the formal education realm by designing and implementing a rich botany curriculum that includes strong field and lab components. The program utilizes the Garden's unique collection and state-of-the-art laboratories to help more than 400 students prepare for careers in botany, biology, agriculture, and medicine.

With support from the U.S. Department of Education Magnet Schools of America, MDCPS's School of Choice initiative received funding

to support this conservation biology elementary school. Hosted at Pine Lake Elementary in the southern Miami-Dade neighborhood of Perrine, this former neighborhood school will be home to more than 400 eager kindergarten through fifth grade students studying botany, zoology, and environmental science.

Fairchild, led by Education Department Program Coordinator Sara Zajic, has developed a rich curriculum that integrates regular visits to the Garden with programming on the school grounds. Students in kindergarten, second,

Fairchild has developed the nation's first botany elementary school program




and fourth grades will be immersed in the Garden twice a month to conduct field explorations, propagate orchids, and engage with Fairchild's expert staff and researchers.

Pine Lake campus will be home to the Fairchild Botany Lab, a 1,800-square-foot indoor space and adjacent outdoor garden where students integrate the Garden's conservation and research initiatives into their daily curriculum. A shade house designed by the University of Miami School of Architecture Design/Build program, led by Jim Adamson and Rocco Ceo, will be installed

on the school campus to house thousands of rare native orchids as part of Fairchild's The Million Orchid Project. Students will care for the orchids and plant them around the school campus.

The Garden's Growing Beyond Earth program in partnership with NASA will have a place in the lab at Pine Lake as well. As the first elementary school to participate in the Growing Beyond Earth program, students will help NASA researchers determine which edible plants will be best suited for growing in space and feeding astronauts. The lab will host a bank of

growth chambers analogous to those on the International Space Station, where these elementary students will run experiments on factors that influence plant growth, flavor, and nutrition. The Pine Lake students will collect data and share their results with NASA scientists.

With the addition of Pine Lake to the education portfolio at Fairchild, we see a clear way forward in building the next generation of botanists. 

If you would like to learn more about Pine Lake Elementary, visit www.fairchildgarden.org/education.

SOUTH FLORIDA'S NATURAL ROCK
WAS THE STARTING POINT FOR
THE GARDEN'S DESIGN

STONE

IN THE GARDEN

TEXT AND PHOTOS BY GEORGIA TASKER



The historic Phillips-Atwater Gatehouse stands across from the Allée.



Coral seen in keystone



Rusticated limestone

Our natural rock, oolitic limestone, heaves itself up into an escarpment at the Garden and was considered by landscape architect William Lyman Phillips as the starting point from which he envisioned the Garden’s design. Originally the escarpment was a marine terrace. The rock walls surrounding the Garden, the walkways, and many of the water features were made of limestone and constructed by workers in the Civilian Conservation Corps during the Great Depression, under Phillips’ direction.

Oolitic limestone is composed of ooids, or spherical grains of calcium carbonate that consolidated when the seas lowered and exposed them to sun and air. In *The Everglades, River of Grass*, Marjory Stoneman Douglas wrote, “In spite of what the early scientists believed, and people still repeat incorrectly to this day, this lower Florida is not an old coral reef. It is oolitic limestone, with broken bits of staghorn coral or shapes of brain coral embedded in it.” By the way, key stone is a fossilized coral reef and clearly shows the once-living coral. It is the foundation rock of the upper Keys, while limestone surfaces again in the lower Keys.

Limestone that is cut with rough surfaces is called rusticated. Some of the pillars in front of the Jean DuPont Shehan Visitor Center clearly show this, yet the seams are cut smooth for stacking. Keystone has been smooth cut, with fossilized reef creatures clearly visible; that is the building’s facing.

The Phillips-Atwater Gatehouse, with its rock exterior and large porch, is the seminal piece of architecture in the Garden. Phillips and architect Montgomery Atwater designed it as a caretaker’s residence. Stone for it may have come from a wire-saw quarry near Snapper

Creek. Stone for the Garden’s Vine Pergola came from what now is Merrie Christmas Park on LeJeune Road, according to Bertram Zuckerman’s *The Dream Lives On, A History of Fairchild Tropical Garden, 1939-1988*.


The Visitor Center, which opened in 2002, is designed to “showcase every way that William Lyman Phillips used stone in the Garden,” says University of Miami School of Architecture Professor Joanna Lombard, an authority on Phillips and his designs.



Josh Billig of Rockers Stone

Josh Billig, a stone mason and designer for the locally famous stone installation and masonry company Rockers, has worked on the Garden’s stone. His handiwork is seen in the Visitor Center’s pillars and facing, walls and walkways. Limestone, he says, is the best material for masons to work with because

it is lightweight, soft and in good condition. The Phillips Gate, the original entryway to the Garden at what is now the south entrance, is composed of small pieces of oolitic limestone, as is the Vine Pergola, and there is a replica of the gate at the Visitor Center.

Billig finds the limestone he needs at cemeteries and construction sites or at sites when a canal is dug. Windley Key in the Florida Keys is the best-known quarry for keystone, and some quarries still are around, but the best limestone comes from the rock ridge that runs through Miami, so construction in midtown is rich in usable rock, he says. 

Learn more about Fairchild’s landscape design at www.fairchildgarden.org/design.



Fairchild Restores a Garden and Gables Icon: The Vine Pergola

By Kenneth Setzer

The Civilian Conservation Corps constructing the Vine Pergola after the Garden's 1938 dedication.
Photo: Archives/FTBG

Part of the original William Lyman Phillips plan for the Garden, the Vine Pergola has withstood 80 years of storms and decay, plus the weight of dozens of flowering vines. This icon of the Garden has been recently restored, and it's not the first time.

From the very beginning, the Garden's founders had a desire to display tropical

flowering vines and lianas, and a pergola made the most sense. A pergola would support these sometimes-aggressive vines in a way that would give staff access to train them, while also allowing the Garden to grow the greatest variety of vines with far less land than if the vines were allowed to spread at ground level. Plus, a pergola would also provide a shaded path along which visitors could enjoy the vines from all sides.



Taking it all apart—wood is assessed and removed.
Photo by Kenneth Setzer/FTBG

Phillips designed the Pergola himself, making it 560 feet long with vertical “masts” of square columns made of flat pieces of the native stone oolite. The oolite was quarried 2 1/2 miles north of the Garden in what is now Merrie Christmas Park. Like the Garden’s many stone walls, paths, lakes, and even the Phillips Gatehouse building, the Pergola was constructed by members of the Civilian Conservation Corps. The Corps was President Franklin Roosevelt’s idea to employ victims of the Great Depression in projects designed to conserve and enhance natural resources.

In Bertram Zuckerman’s *The Dream Lives On: A History of Fairchild Tropical Botanic Garden, 1938-1988* he indicates the Pergola was completed within the first year after the Garden’s dedication (1938). With that labor complete, the Pergola needed plants. Mrs. J. Semple, an early Garden supporter, established a committee to furnish a vine collection.

Since its completion, the Pergola has been repaired many times, and most recently fully restored in 1994. Even treated wood, however, does not last a very long time in South Florida: intense sun, nearly daily deluges in summer, insects, and the weight of some very large vines that also inhibit airflow all place strains on wood. Oh, and hurricanes, let’s not forget those.

During the Pergola’s most recent restoration, stone needed major repair on six of the oolite columns, and an estimated 900-plus feet of wood posts, beams, and purlins (horizontal beams along the length of the roof) were replaced and fastened using brown galvanized steel brackets designed to be nearly invisible, yet increase the Pergola’s resilience against high winds.

Joshua Billig of Rockers Stone is an expert on construction with native Miami oolite and Florida keystone. His artistry can be seen in the Jean DuPont Shehan Visitor




With the Pergola nearly complete as of this photo, vines were already twining their way to the top.
Photo by Staff/FTBG



Center and elsewhere at Fairchild, so he was a natural choice to repair the Pergola.

One day between summer downpours, Billig and I had a great conversation under the Pergola about our common interests in fossils, old bottles, and Florida history. And, of course, we talked about our shared love of Fairchild, its history, and its future. He explained that “about 34 of the columns needed at least some repair,” Billig indicated of the restoration, “and a few needed major restoration.” Miami oolite and Florida keystone are both unlike other types of stone used in construction. Both are friable, extremely porous, and require specific know-how to install. Billig added that even seemingly small points matter, like placing

“rough edges outwards, not smooth-cut edges, or they won’t age to match the older stone.” I asked him about the old columns, and how they were constructed back in 1938. “I finally got to look inside one of them,” he said. “They used rebar and built the visible exterior pieces around that, and filled it with concrete as they got higher.”

The Pergola structure is now restored; Billig finessed into place small pieces of stone that were chipped or missing, so we’ll barely notice the repairs at all. The plants also have to do their part, scrambling up and over to re-establish the green tunnel and refuge from the sun that’s been “along the old Cutler wall” for 80 years. 

 If you would like to contribute to the restoration of Fairchild’s iconic Vine Pergola, please visit: www.fairchildgarden.org/give.

An Iconic Structure’s Beloved Vines

The Pergola has supported vines large and small over the decades, and also provided shade for plants requiring it. Some of its treasured plants include the jade vine (*Strongylodon macrobotrys*), Bengal creeper (*Thunbergia grandiflora*), golden chalice vines (*Solandra maxima* and *S. grandiflora*), flame vine (*Pyrostegia venusta*) and *Odontocline hollickii*, the last a rare vine and the only one of its kind growing outside of its native Jamaica. These were pruned and worked around as much as possible. Since many of these vines are, fortunately, vigorous growers, it won’t be long until the Pergola is again covered in foliage and flowers.

ABOVE
A *Clerodendrum* vine blankets the northern end of the Pergola before restoration.
Photo by Kenneth Setzer/FTBG



LANDSCAPES WE LOVE

A Garden Created with a Passion for Palms

Text and photos by Georgia Tasker



Here's what one palm collector's garden looks like: A tropical maze of palms, crotons, aroids, gingers, orchids, bamboo, and bromeliads, interwoven with meandering mulched pathways, a swimming pool with waterfall, and one rare palm specimen around this turn, another around that. There are a few groupings of like-minded specimens, but enthusiasm is the driving force.

Jeff Searle, who co-owns Searle Brothers Nursery in Southwest Ranches with Randy and Larry Searle, is infected with what is commonly known as the palm bug. He oversees the palms in the nursery's "Rainforest Collection," has been a regular vendor at Fairchild's annual Ramble and plant sales, and has donated dozens of palm species to the Garden. His searches for palms have included trips to Southeast Asia and Madagascar, and he hosted visits from experts during the International Palm Society biennial when it was held in Miami in 2014.

LEFT

Oncidium 'Sharry Baby'
blooms in Searle's garden.

ABOVE (Inset)

Jeff Searle with the husky oil palm.



Jeff and Andrea Searle's own 2-acre garden, also in Southwest Ranches, is Jeff Searle's passion made visible. Early in the morning, with shafts of gentle light piercing the fronds and striking brilliantly colored crotons, such as *Codiaeum* Van Houtti, then light gradually bringing up the details of *Pelagodoxa henryana*, *Licuala peltata*, and *Copernicia gigas*, this garden is a living work of art.



During a visit, we walk past a clump of ptychosperma palms, *Ptychosperma waitianum* specifically, with trunks so skinny they could be anorexic, and he says seeing this species growing at Fairchild is what hooked him on palms years ago. He and his brothers started their nursery in 1981. Their father had a backyard croton nursery in Hallandale, where the Searle kids grew up, although "Pops" worked for Southern Bell. In his second career, Pops worked in his sons' nursery for more than 30 years. He died in May at 92.

In addition to the palms in Jeff and Andrea Searle's garden, there are untold numbers of crotons. "Dad was thrilled when I took crotons to a new level," he says. "I remember when we were kids, after Sunday school we had to make air layers on his crotons." Just this year, Jeff Searle has made 800 air layers in this garden for sales at the nursery. Croton lovers, in fact, ask for tours of his garden as often as palm fanatics ask.

In this luxuriant garden, the Searles have planted palms that once were rare, but are not so any longer; palms that failed for this reason or that; palms that have become spectacular specimens. Among the statuesque are three towering blue-gray *Bismarckia nobilis*; an American oil palm, *Attalea cohune*; and a huddle of hunky copernicias, including *Copernicia gigas*, *Copernicia sueroana*, and *Copernicia rigida*, that look as if they don't play well with others. Many dwarf species, such as *Licuala sallehana* and a dwarf form of *Areca catechu*, vie with the big guys for attention.

"We started with big trees with the idea that we would develop a canopy for shade" Searle says. Now, he guesses that perhaps 200 different palm species are currently growing in his garden, but probably 250 to 300 individual palms round out the group that has been built during the 19 years he and Andrea have owned the house.

Among the rarest of the palms is *Tahina spectabilis*, a giant fan palm from northwest Madagascar. It was discovered in 2007 and comes from only one area of the island, Analalava, which is in the

TOP
Codiaeum Claude Lorraine

ABOVE
Tahina spectabilis



northwest. The mammoth plant can grow to 59 feet and carry leaves up to 16 feet across. Searle’s largest specimen is still a tot.


Another palm, *Licuala alleghana*, is from the Malay peninsula. Its pleated, paddle-shaped leaves are unique among licualas, which often are thought of as having circular leaves, such as those on *Licuala grandis*.

Attalea cohune, the oil palm, may have the stoutest trunk in Searle’s garden, while the *Ptychosperma waitianum* is the slenderest, with trunks a mere inch in diameter. *Kerriodoxa elegans* has glorious round fronds and black petioles.

Hydriastele dransfieldii is beautiful, with just a few splits in its wedge-shaped leaves. *Hydriastele cylindrocarpa*, a palm that is rare in cultivation, boasts arching pinnate leaves that are whole when the palm is young.

McArthur palms, fishtails, various chamaedoreas, veitchias, and ptychospermas make up many of the garden’s supporting cast. Framing the swimming pool—which is an enticing vision from the home’s front door—are twin clusters of cabadas, *Dypsis cabadae*, with distinctive bamboo-like rings from leaf scars. Tucked next to one of these is the dwarf betel nut palm, *Areca catechu*, which bears bright orange fruit.

Jeff and Andrea Searle share maintenance responsibilities as well as enthusiasm for their charges. Andrea, a nurse, has chosen *Sabal mauritiiformis* as her favorite palm. *Encyclopedia of Cultivated Palms* notes that, “Few palms are more beautiful,” and *Mauritia flexuosa*, after which it is named, is the most beautiful palmate species in the Americas.

The last 25 to 30 years have been the peak of new palm introductions and discoveries, Jeff Searle, 60, says. And this garden, he adds, has served as a learning experience, where he planted as many palms as he could test. 



TOP LEFT
Licuala alleghana with paddle-shaped leaves

LEFT
Pelagodoxa henryana

.....
Fairchild hosts one of the world’s most extensive palm collections, and many of those mentioned in this story can be seen in the Garden’s Montgomery Palmetum: www.fairchildgarden.org/Horticulture/Collections-Exhibits

TOP 10 PALMS FOR SOUTH FLORIDA

Here is a list of 10 palms that Jeff Searle, co-owner of Searle Brothers Nursery in Southwest Ranches, likes for South Florida. Read more about him in “Landscapes We Love, on page 35.

Photos by Kenneth Setzer/FTBG
(except where noted)



1. *Carpoxylon macrospermum*

Relatively new to gardens in South Florida in the last 10 years, this palm can reach 25 feet, with a medium-size trunk. It has a beautiful, clean crown shaft and arching fronds. It is self-cleaning (sheds its fronds naturally) and eventually produces bright red seeds. It needs full sun and successfully endures heavy winds.

2. *Licuala grandis*

A long-time favorite for many years here, *Licuala grandis* has round, pleated leaves. It prefers a sheltered spot with ample shade and moisture. Protect it from windy areas. Also, this species makes a great container-grown palm for a shaded patio.



3. *Satakentia liukuensis*

This palm often has a maroon or purple crown shaft. It does extremely well through high winds and grows in full sun to partial shade.

Photo by Scott Zona

4. *Copernicia baileyana*

A large palm from Cuba, the Bailey palm thrives in full sun and most soil conditions, and holds up very well through hurricane-force winds. This palm needs space and makes an impact in any garden.

5. *Areca catechu*

This is a tall-growing palm from Southeast Asia, commonly called the betel nut palm. It does well in full sun to partial shade. It has a clean, dark-green crown shaft and looks great grown as a triple.





6. *Licuala peltata* var. *sumawongii*

This species produces an entire leaf that is circular, and when full grown can be six feet across. It grows best in filtered light, although it can tolerate a few hours of direct sun. This palm must be protected from wind.

Photo by Scott Zona

7. *Pelagodoxa henryana*

An endangered palm from an island in the Marquesas Islands of French Polynesia, it grows to approximately 15 to 20 feet in height. If protected from wind, its large, broad leaves will stay nearly entire in an upright fashion.

8. *Cyrtostachys renda*

This clustering palm from Malaysia has slender trunks that can reach up to 25 feet or more in tropical areas. The crown shaft is brilliant red—hence it is called the lipstick palm or sealing wax palm. Most areas in South Florida get too cold on occasion for this tender tropical, so grow it in a container and keep it on a patio or pool deck where it can be moved inside on chilly nights.

Photo by Jeff Searle

9. *Neoveitchia storckii*

From Fiji, this species grows best in full sun to partial shade. A medium-size palm, it can reach 25 feet. The leaf bases appear to form the crown shaft, and they are black.

Photo by Scott Zona

10. *Hydriastele dransfieldii*

A slender-trunked palm, this species stays under 15 feet high and is self-cleaning. It usually holds four to six leaves that have very broad segments. It's good for partial shade.

Photo by Paul Craft





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PALM
Flowers
DESERVE A CLOSER LOOK

BY KENNETH SETZER

PHOTOS BY KENNETH SETZER AND JACK HAHN





Palms and flowers—not a pairing that immediately comes to mind. But, of course, palms are flowering plants, and if you can get up close to them, their flowers are stunning, highly ornamental, and ecologically supportive of a variety of wildlife. It’s time we stop overlooking palm flowers.

While you may not be sending bouquets of palm flowers any time soon, palms often produce colorful and tremendous inflorescences, which are stems that support hundreds or sometimes thousands of small flowers along branches. Like other monocots, the individual flowers grow in parts of three.

Palm inflorescences are accompanied by, and sometimes enclosed by, woody bracts called spathes. These sometimes look like the mitt (called a cesta) used in jai alai games, and I wonder if the bracts were an inspiration to jai alai’s ancient inventors. A bract is formed from a modified

leaf, and can be seen in many different forms and in unrelated plants—for example, in aroids and euphorbias. Some types of bracts aid in pollination by attracting pollinators with color, as in poinsettias. In many palms, bracts serve to protect the developing flowers, with some opening to reveal the flowers within only when they are ready for pollination. Palm bracts may also further serve as breeding sites, pollination chambers, or in the aerodynamics of pollen capture.

In *Genera Palmarum*, the palm bible, it’s revealing to read that the inflorescences of palms pollinated by bees, flies, and wasps are often elongated, with examples given of *Sabal* and *Licuala*, while palms that rely on beetles for pollination usually produce “condensed” inflorescences. Of the images you see here, consider the warree cohune palm, *Astrocaryum mexicanum*; its spiked inflorescence is pretty compressed compared to the others, and it is listed as being pollinated mostly by nitidulid beetles—this palm’s “effective” pollinators. While insects often play a huge role in palm pollination, some palms are pollinated by wind, or even insects and wind together.

There are also monocarpic palm species—those that flower once and then die—that bide their time, putting all their energy into a single explosive



PREVIOUS PAGE

Individual flower of *Bentinckia nicobarica* at 12x magnification.

Photo by Jack Hahn

ABOVE

Corypha utan or talipot palm flowers explosively, but only once. It produces the largest inflorescence of any plant, but at the expense of its life.

Photo by Kenneth Setzer/FTBG

RIGHT


Astrocaryum mexicanum, the warree cohune palm, has “condensed” inflorescences and is pollinated mostly by beetles.

Photo by Kenneth Setzer/FTBG



male (staminate) flowers on lateral spikes and female (pistillate) flowers at the terminal head of the inflorescence. The seeds develop while on the plant and therefore nipa palms are viviparous, unlike other palms, but much like other unrelated mangroves.


Schippia concolor, the silver pimento palm, is native only to parts of Belize and Guatemala and is monotypic, meaning it is the only member of its genus. Many palms sport cream or yellow inflorescences, but *Schippia*'s look like they're made of porcelain—outstanding amongst the foliage.

For the brief time before fruiting, stop to appreciate the thousands of flowers to be found on a palm inflorescence and the lengths to which palms go to fulfill nature's most-urgent directive: to reproduce. 

display of flowering. One such palm is the *Corypha utan*. Native to tropical Asia, the *C. utan* at the Garden flowered for the first and only time in 2015, when it was over 50 years old (this particular plant was grown from seed sent to the Garden from Royal Botanic Gardens, Peradeniya, of Sri Lanka, an important garden which Dr. David Fairchild visited many years before). It produced thousands upon thousands of individual flowers in a suprafoliar spray, after which the plant began to die. Our staff was careful to collect seed from this rare event and the seedlings are now growing in the nursery.

The nipa palm, *Nypa fruticans*, is a native denizen of muddy, swampy shores of mangroves of India east across Asia and into the South Pacific. Not many plants survive in mud, but the nipa palm thrives in this difficult niche. Once much more widespread than today, it had a worldwide distribution in the Eocene Epoch and is well known in the fossil record, with fossils having even been found in England. Uniquely, the nipa palm produces

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 Jack Hahn is a Fairchild volunteer who works in our Imaging Lab where, in addition to other tasks, he microscopically photographs plant parts at high resolution, (see the palm flower image opening this article) often using an image "stacking" technique to deliver astonishing detail and depth of field so the images can be used in teaching and reference. We hope to show you more of Hahn's beautiful and invaluable work in future issues.

 *Genera Palmarum* is available in the Shop at Fairchild; our director, Dr. Carl Lewis, is a co-author. \$170, member \$153.

ABOVE
 Nipa palms are important stabilizers of muddy mangrove banks.
 Photo by Kenneth Setzer/FTBG

RIGHT
 Inflorescence of the rare silver pimento palm, *Schippia concolor*.
 Photo by Kenneth Setzer/FTBG



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GROWING MOTH ORCHIDS IN SOUTH FLORIDA

BY RON MCHATTON



PHALAENOPSIS (FAIL-EH-NOP-SISS), THE MOTH ORCHID, IS PERHAPS THE BEST ORCHID FOR GROWING IN THE HOME, AND IS ALSO A FAVORITE WITH GREENHOUSE GROWERS.

Well-grown plants can flower often, sometimes with a few flowers throughout the year, though the main season is late winter into spring. Average inside home temperatures and conditions are usually sufficient. Flower stems on certain hybrids can be forced to re-bloom by cutting the tip off after the initial flowering, although only healthy plants should be induced to flower repeatedly. Culture for *Doritis*,

a related genus thought by some to be synonymous with *Phalaenopsis*, and *Doritaenopsis*, a hybrid between the two genera, is the same as for pure *Phalaenopsis*.

**Here's what you need to grow
Phalaenopsis, *Doritis*, or *Doritaenopsis*:**

LIGHT is easy to provide for *Phalaenopsis*. They grow easily in a bright window, with little or no direct sun.

An east window is ideal in the home; shaded south or west windows are acceptable in southern climates. In overcast, northern winter climates, a full south exposure may be needed. Artificial lighting can easily be provided. Four fluorescent tubes in one fixture, supplemented by incandescent bulbs, should be placed 6 to 12 inches above the leaves. If you want to use modern LED fixtures, a bit of experimentation will be required to determine appropriate light levels. Turn the lights on for 12 to 16 hours a day, following natural day length. In a greenhouse, *Phalaenopsis* need shade: 70% to 85%, or between 1,000 and 1,500 foot-candles, is recommended. No shadow should be seen if you hold your hand one foot above a plant's leaves.


TEMPERATURES for *Phalaenopsis* should usually be above 60 degrees F at night, and range between 75 F and 85 F or more during the day. Although higher temperatures force faster vegetative growth, higher humidity and air movement must accompany higher temperatures. The recommended maximum temperature is 90 F to 95 F. Night temperatures as low as 55 F are desirable for several weeks in the autumn to initiate flower spikes. Fluctuating temperatures can cause bud drop on plants with buds ready to open.

WATER is especially critical for *Phalaenopsis*. Because they have no major water-storage organs other than their leaves, they must never completely dry out. Plants should be thoroughly watered and not watered again until nearly dry. In the heat of summer in a dry climate, this may be every other day; in the winter in a cool northern greenhouse, it may be every 10 days. To prevent rot, water only in the morning, so that the leaves dry by nightfall.

HUMIDITY is important to *Phalaenopsis*—it's recommended to keep humidity between 50% and 80%. In humid climates, such as greenhouses, it is imperative

that the humid air is moving. Leaves should be dry as soon as possible, and always dry by nightfall. In the home, set the plants on trays of gravel, partially filled with water, so that the pots never sit in water.

FERTILIZE on a regular schedule, especially if the weather is warm, when the plants are most often growing. Where bark-based media are used, twice-a-month applications of high-nitrogen fertilizer (such as 30-10-10) are appropriate. Otherwise, a balanced fertilizer is best. When flowering is desired, a high-phosphorus fertilizer (such as 10-30-20) can be applied to promote blooming. Some growers apply fertilizer at one-quarter strength with every watering; this is best for warm, humid conditions. When it's cooler, or conditions are overcast, fertilizer should be applied twice per month at weak strength.

POTTING is best done in the spring, immediately after flowering. *Phalaenopsis* plants must be potted in a porous mix. Potting is usually done every one to three years. Mature plants can grow in the same container until the potting medium starts to decompose, usually after two years. Root rot occurs if plants are left in a soggy medium. Seedlings usually grow fast enough to need repotting yearly, and should be repotted in a fine-grade medium. Mature plants are potted in a medium-grade mix. To repot, remove all the old medium from the roots; trim soft, rotted roots; and spread the remaining roots over a handful of medium in the bottom of a new pot. Fill the rest of the pot with medium, working it among the roots, so that the junction of the roots and the stem is at the top of the medium. 

Ron McHatton, Ph.D., is chief education and science officer for the American Orchid Society (AOS), which is headquartered at Fairchild. Learn more about the AOS at www.aos.org.



Repotting is an excellent time to examine orchids for dead roots to remove.



The Florida Reef Gecko

The state's only native gecko is at home in the Garden.


By James T. Stroud and Kenneth Setzer

The Garden is absolutely teeming with wildlife of all sorts, from bugs to birds, from hawks nesting in tall oak trees to animals more comfortable just under the leaf litter, natives and non-natives. We always say that there's something for everyone to enjoy here, and it seems the wildlife agrees. The Garden's variety of habitats attracts creatures of all types.

The Florida reef gecko, *Sphaerodactylus notatus*, is the state's only native gecko. It's unclear how large its population is because the reef gecko is difficult to observe. Unlike the geckos you see gathering around porch lights hunting moths on steamy nights, the reef gecko is a leaf-litter specialist, living on the forest floor and scuttling among the fallen leaves.

This secretive behavior is in part why it's not easily seen; it's very shy and seems to disappear a split second after being spotted. One way to find a reef gecko is to sit in a shady place under trees with lots of damp, decaying leaves and branches, then gently run your hand over the damp leaves. This might scare up a reef gecko. Or, if you find a well-rotted log, gently rolling it partly over might reveal a reef gecko as it hides during the day. The reef geckos might also be found outside of their hiding spots as they forage during dawn and dusk.

These geckos are notably smaller than most other lizards in Florida, attaining a maximum size of only about 2 ½ inches. Their olive-brown to tan coloring provides an almost-perfect camouflage against the forest floor, further aiding reef geckos' ability to blend in seamlessly with their environment. They also sport dark stripes from their eyes, fading back towards their bodies, and occasionally have a pair of white spots behind the head.

The Florida reef gecko is found throughout South Florida, Cuba, and the Bahamas, and has recently been joined in the Lower Keys by the non-native Cuban reef gecko (*Sphaerodactylus elegans*), also known as the ashy gecko. 

ABOVE: A Florida reef gecko just about to flee into the leaf litter.
Photo by Kenneth Setzer/FTBG



Native Yards Photo Contest

The winners of Fairchild's Connect to Protect Network Photo Contest show how they're helping rebuild Miami's lost pine rocklands, one yard at a time.

By Jennifer Possley

This year marked Fairchild's first Connect to Protect Network Photo Contest. The goal of this contest was to promote the beauty of native pine rockland plants in urban yards as part of Fairchild's Connect to Protect Network.

Fairchild's Conservation Team rolled out the Connect to Protect Network program in 2007, in response to the ecologically devastating loss of Miami-Dade's once-dominant native plant community—the pine rockland. Our belief is that if we can engage enough Miami-Dade residents, students, and landowners to plant pine rockland species in their yards, then we can restore some of the functionality of Miami's natural landscape by connecting the remaining natural fragments. We would like to see our community transformed into a space where native plants, insects, birds, and other wildlife can better coexist with people.

An important part of the Connect to Protect Network is to promote the use of pine rockland species in landscaping. So, this year, as we welcomed our 500th member to the Network, we asked members to share photos of their pine rockland-themed yards. Entries ranged from formal front yards to habitat restoration projects. We have chosen our favorite as the winner, and we selected two other entries to feature because they encapsulate the beauty and variation of pine rockland plants in Network gardens.

FIRST PLACE

Congratulations to Juan Lopez and Mario Lozada, whose Belle Meade yard won first place in our competition! While this home garden does not exclusively feature pine rockland species, most of its plants are native, and approximately half are




found in pine rocklands, including: muhly grass (*Muhlenbergia capillaris*), pineland sage (*Lantana involucrata*), blue porterweed (*Stachytarpheta jamaicensis*), Chapman's goldenrod (*Solidago odora* var. *chapmanii*), and corkystem passionflower (*Passiflora suberosa*). Other native species shown here include: firebush (*Hamelia patens*), lignum vitae (*Guaicum sanctum*), scorpion's tail (*Heliotropium angiosperm*), Walter's viburnum (*Viburnum obovatum*), joewood (*Jacquinia keyensis*), sea lavender (*Argusia gnaphalodes*), and climbing aster (*Symphotrichum carolinianum*). Native oolitic limestone is also featured prominently in this garden—a nice touch!

SECOND PLACE

We love this side yard at the home of Mary and Joe Rose in Cutler Bay, especially as an alternative to high-maintenance lawns that require frequent mowing, fertilizing, and pesticide application. Mary confessed that she was inspired to create this unique and beautiful meadow garden "when we couldn't get the mower around to the side of our house." The planting is dominated by Elliott's love grass (*Eragrostis elliottii*), and also contains muhly grass (*Muhlenbergia capillaris*), Florida gamagrass (*Tripsacum floridanum*), lopsided Indian grass (*Sorghastrum secundum*), and wire bluestem (*Schizachyrium gracile*). Several small herbs are found among the grasses, too. Tropical sage (*Salvia coccinea*) is visible in the foreground (red flowers) and the endangered pine rockland herb Havana skullcap (*Scutellaria havanensis*) is scattered throughout the planting. Together with green thatch palm (*Thrinax morrisii*) and saw palmetto (*Serenoa repens*) in the background, this side yard is an absolute pollinator paradise.

THIRD PLACE

The true pine rockland enthusiast can take a lesson from Miami botanist (and frequent Conservation Team collaborator) Steve Woodmansee, who transformed the front yard of his Kendall home into a diverse and very natural-looking pine rockland. Just as in nature, Dade County pine (*Pinus elliottii* var. *densa*) and palms (*Coccothrinax argentata*, *Serenoa repens*) form the backbone of Woodmansee's planting. Tucked in between these major structural elements are a diverse assembly of native grasses, herbs, and shrubs. Since it was installed in 2004, Woodmansee's pine rockland planting has seen visits from an amazing variety of wildlife, including great egrets (pictured), white crowned pigeons, loggerhead shrikes, downy woodpeckers, corn snakes, everglades racers, and countless invertebrates.

The Connect to Protect Network would like to see native plantings like these in every Miami-Dade neighborhood. But we need more members! There is no cost to join for any Miami-Dade or Monroe County resident or school. We provide free plants to members, and in return we ask for seeds, data, photos, and advertisement in the form of a small yard sign. We are primarily grant-funded, and we accept donations. 

PREVIOUS PAGE

First place: The Belle Meade home of Juan Lopez and Mario Lozada.

Photo by Juan Lopez

TOP

Second place: In Cutler Bay, native grasses provide a wonderful alternative to turf.

Photo by Mary Rose

ABOVE

Third place: A great egret admires the restored pine rockland in the front yard of this Kendall home.

Photo by Steve Woodmansee

For more information about the Connect to Protect Network and how you can join Fairchild's important restoration efforts, visit: www.fairchildgarden.org/CTP
Or email ConnectToProtect@fairchildgarden.org.

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A Palm By Any Other Name

By Georgia Tasker



Licuala — Sometimes names are taken from the indigenous language where the plants are found, as in this case: *Licuala* is from the Moluccan name *leko wala*.

Pelagodoxa — According to the *Encyclopedia of Cultivated Palms*, this name comes from two Greek words: *pelago* for water and *doxa* for glory. *Genera Palmarum*, the bible of describing the evolution and classification of palms, suggests that *doxa* may refer to the remote oceanic island habitat, which seems to overlook the beauty of the fronds.

Copernicia — This honors Nicolaus Koppernigk, or Copernicus. Why this Polish astronomer and physician's name should be attached to this palm is a mystery.

Attalea — This is from the Latin word *attalus*, or magnificent.


Tahina — *Palmpedia* says this is a Malagasy word meaning blessed; the source also says the palm was discovered by Xavier Metz. Metz's daughter's name is Anne-Tahina. The palm, of which only 30 mature adults remain in the wild according to the IUCN (International Union for Conservation of Nature and Natural Resources) Red List, was described by Dr. John Dransfield and M. Rakotoarinivo. Once it flowers, the palm dies.

Dypsis — The meaning is considered "obscure."

Sabal — *Stearn's Dictionary of Plant Names for Gardeners* says the word possibly comes from a South American name for these palms. Which South American name, it does not say. Even Liberty Hyde Bailey just guessed at some South American origins.

Hydriastele — A combination of two Greek words—*hydor* or *hydrias*, which means water or water nymph, and *stele*, which is a column. These palms usually grow near water.

Areca — Yet another word that is a Latin form of a possible Southern Indian name. *Areca catechu* is naturalized in India, Southeast Asia, and other places, but its origin is unknown.

Bismarckia — Named for Otto E. L. von Bismarck-Schönhausen, or Prince Otto von Bismarck, a chancellor of the German Empire responsible for the unification of the German state. Described by Johann Maria Hilderbrandt & Wendl, the palm is from Madagascar, where the German-born Hildebrandt died. 



Winter and early spring are the best times to garden in South Florida, with cooler temps for the gardener and drier conditions for plants that require it. Now is especially the time to plant many edible fruits and vegetables.

Winter Gardening

By Kenneth Setzer

DECEMBER, JANUARY, FEBRUARY

>There's still time to **make raised beds for edibles**. (Do not use pressure-treated or insect-resistant wood.)

>**Watch for Christmas palms** (*Adonidia*) to flower and fruit. Allow the fruit to mature, but remove it if nearby pavement or pools are affected.

>However unlikely, **prepare for frost**. If there's a frost warning, water plants, move potted plants to shelter, cover sensitive in-ground plants, and mulch them.

>**Water plants** that need extra irrigation in the dry season.

>**Fertilize leafy greens** like lettuce, kale, arugula, collard greens, etc. with fertilizer higher in nitrogen (the first number of three on the package).

>**Epsom salts** (magnesium sulfate) can be applied to magnesium-hungry plants like potatoes, tomatoes, citrus trees, carrots, and peppers.

>**Plant flowers** like nasturtiums and amaryllis bulbs.

>Enjoy bird migration by setting up **bird feeders**.



>**Try plants offering birds food and cover:** barbados cherry, cocoplum, *Muntingia*, *Ardisia*.

>**Attract hummingbirds** with red-flowered plants like firebush, firespike, and Chinese hat plant.

Edible Plants to Try

>**Start tomatoes from seed**, but watch for rain and damp off. Try seedlings developed as heat-tolerant varieties. Ensure minimum 6 hours of sun exposure. Our manager of continuing adult education programs and South Florida gardener Mary Neustein recommends the Juliet (hybrid), revealing it's her "all-time favorite, growing it for eight years +." She also grows Sweet Million Cherry Tomato, and Garden Gem (Hybrid).

>**Rosemary** (*Rosmarinus officinalis*) sends up 2 to 3 foot-high-stems with short, narrow leaves resembling juniper. Grows best from cuttings. Plant in full sun. Likes slightly moist, but very well-draining soil with some added sand—good in containers. Alternatively, build up a berm of soil to create a well-draining area, which can also serve as home to other plants needing very well-draining soil, like many succulents.

>**Start sage** (*Salvia officinalis*) from cuttings or transplants in a very well-draining clay pot with sandy, loamy soil, with lots of sun. Let drain well between watering to avoid mildew.

>**Ginger** (*Zingiber officinale*) grows from a tuberous rhizome. Pick one at the supermarket that is nice and firm and plant a couple inches deep right in the garden or in a deep pot with rich soil. Filtered sunlight and lots of humidity, plus compost mixed with sandy potting soil, works well. Starts intense growth in spring, but harvest the rhizome and separate its "fingers" just about any time.

>**Turmeric** (*Curcuma longa*) is in the ginger family, and prefers similar growing conditions to ordinary ginger.

>**Basil** (*Ocimum basilicum*) is a short-lived annual, and prefers direct morning sun tempered with afternoon shade. Ensure excellent drainage! Try large clay pots using potting soil mixed with lots of perlite and sand. If leaves yellow, the soil may be too wet; repot the plant to save it. Pinch flowers to encourage more leaf production.

>**Lemon balm** (*Melissa officinalis*) is in the mint family and thrives in South Florida. Lemon-scented leaves are

fragrant and flowers are attractive to bees. Grow it from seeds, cuttings, or transplants. Full sun to part shade.

>**Cilantro/coriander** (*Coriandrum sativum*) requires excellent drainage; be wary of overwatering. Grow it in pots to ensure loose soil. Prefers cool, bright shade.

>A completely different species is **culantro** (*Eryngium foetidum*), which tastes like strong cilantro, and is adapted to the Caribbean. If you can find culantro, it should fare well in our climate. Cilantro is susceptible to mildew.

>**Oregano** (*Origanum vulgare*) can be grown from seed or cuttings. Oregano likes it warm and dry with lots of sun but some protection from the harshest late-day light. Make sure that soil drains well and only water oregano when the soil feels dry. Look for the many cultivars available.

>**Parsley** (*Petroselinum crispum*) likes it cool, so wait until January or February to plant seeds in pots. Give it morning sun exposure. Allow soil to drain thoroughly but not dry out between watering. Avoid crowding parsley, which inhibits air circulation. Watch out for root rot.

>**Try other edibles** like kale, beans, collard greens, parsley, Swiss chard, onions, arugula, and sweet potatoes.


MARCH, APRIL

Many of the plants from previous cool months can still be grown, [depending on the weather,] like beans, arugula, cabbage, onions, radishes, chard, and mint. But now is the time to plan for the heat and rain of spring and summer.

>**Start peppers**, which do well throughout summer. Peppers like full sun and well-draining, nutrient-rich soil and can serve as edibles and ornamentals with brightly colored fruit.

>**Bok choy, pole** and **bush beans, lima beans** (lima are more heat tolerant), okra, black-eyed peas, lemongrass, calabazza squash, and Seminole pumpkin can be started. Pigeon peas are a great, heat-tolerant option.

>**Start planning spring pruning** of fruit trees and ornamentals.

Anticipate the rainy season and **install a rain barrel.** 

See more home gardening tips and tricks at www.fairchildgarden.org/home-gardening.



FOR BUTTERFLIES’ SAKE: FAIRCHILD PLANT COLLECTING IN COSTA RICA

BY MARTIN FEATHER AND KENNETH SETZER. PHOTOS BY MARTIN FEATHER

It takes effort and exploration to keep Fairchild’s butterflies happy and well fed. Here’s one way Fairchild’s Wings of the Tropics Butterfly Exhibit Manager Martin Feather keeps the Lepidoptera happy and healthy—through wild plant collecting.

Thanks to a grant from the Stanley Smith Horticultural Trust, Feather has been fortunate to undertake multiple plant-collecting trips for Fairchild to Costa Rica during 2018. His collecting permits—three for the Costa Rican government and three

for the USDA, plus a plant follow-up report—allow him to collect plants in the region of Guanacaste Conservation Area (a conglomeration of national parks and conservation areas in far northwestern Costa Rica) with the intent of introducing the plants to the Wings of the Tropics (WOT) butterfly exhibit to supply nectar and pollen to the adult butterflies while also providing some unusual tropical plants for the human visitors to enjoy.

Rio Celeste waterfall in Costa Rica’s Tenorio Volcano National Park; the water is colored by aluminum silicates.

The WOT exhibit features butterflies from both the New and Old World tropics of Central and South America, Southeast Asia, and Africa. These exotic butterflies arrive at the Garden as pupae, are raised to adulthood in the Vollmer Metamorphosis Lab (which can be viewed from inside the exhibit) and released into the 10,000-square-foot exhibit space within the Clinton Family Conservatory. But as non-natives, they cannot be allowed to successfully reproduce, even within the confines of the enclosure. So host plants—those that serve to feed caterpillars—are excluded from the exhibit, while plants that provide food to adults in the form of nectar or pollen are what Feather seeks on his collecting expeditions.


He travels to areas where many of the WOT butterflies originate. Along the low- and mid-elevation volcanic slopes of Costa Rica, Feather seeks plants of wild origin to feed our butterflies while also providing plants of ornamental merit.

After observing butterflies feeding from healthy plants, Feather collects seeds or takes fresh cuttings to be placed in agar, labelled, packaged, and transported back for inspection by the USDA in Miami. After their release, Feather will raise the seeds and the surviving cuttings at Fairchild’s nursery to ensure a continuous supply of butterfly plants and interesting ornamentals, some of which have also found their way into Fairchild’s Tropical Plant Conservatory.

He’s collected many plants from the coffee family (Rubiaceae); they offer consistent flowering and therefore a reliable nectar/pollen source, are fairly hardy, and stay compact enough for the exhibit. Plus some of their flowers, like those of *Psychotria poeppigiana*, are strikingly odd looking.

BUTTERFLY FARMING, A WIN-WIN RELATIONSHIP

Outside Guanacaste Conservation Area sits El Bosque Nuevo Butterfly Farm, the WOT’s major source of Neotropical butterfly pupae for the exhibit. The farm employs local people to raise pupae, conducts research, and purchases land for conservation. In this way, your visit to Fairchild’s Wings of the Tropics benefits conservation in Costa Rica by helping the El Bosque Nuevo farm and nature reserve.

In addition to several *Psychotria* species, Feather has returned with vines like *Gurania coccinea*, a good pollen source for heliconid butterflies. *Gurania* are sometimes called “jungle cucumber” for the fruit they produce, and are indeed in the Cucurbitaceae family. Their bright orange flowers are nearly neon. You can observe these plants for yourself—no passport or collecting permit needed—along the meandering pathways of the Wings of the Tropics exhibit where tropical butterflies will undoubtedly be feeding from their blooms. 



Feather takes cuttings from a wild plant for later propagation.



The sometimes tedious but essential steps of labelling and packaging wild-collected plant material for export.



An example of *Psychotria poeppigiana* growing at Fairchild.



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Maria Sibylla Merian: Artist, Scientist, Adventurer

By Sarah B. Pomeroy and Jeyaraney Kathirithamby

Review by Georgia Tasker

During the late 17th and early 18th centuries, Maria Sibylla Merian showed Europeans what a banana and banana flowers look like; how a tarantula can consume a hummingbird; how army ants form bridges by linking themselves together. She depicted the metamorphosis of butterflies, the plants on which they feed and their many predators. She was a self-taught entomologist, artist, and, as Sarah Pomeroy's new book calls her, an adventurer.

Pomeroy, distinguished professor of classics and history (emerita), at Hunter College and the Graduate Center of the City University of New York, wrote this book for her grandchildren, and the target reader age is 10 and up. But it is sufficiently sophisticated to satisfy adults of any age with an interest in one of the great woman artists.

Jeyaraney Kathirithamby, Pomeroy's co-author, is an entomologist at the Department of Zoology and St. Hugh's College, University of Oxford. She verified the correct identification of the book's insect paintings.

"Maria Sibylla Merian was one of the earliest entomologists ... and also one of the world's first ecologists," Pomeroy writes. Merian also was such a renowned artist that her paintings, drawings and hand-colored books "can be found in museum and art collections all over the world," Pomeroy adds. Peter the Great collected her artwork for his palace in St. Petersburg, Russia. The great botanist Carl Linnaeus used her works to describe 56 animals and 39 plants. Fifteen plants and animals are named in her honor.

Born in Frankfurt, Germany, Merian grew up among painters and printmakers. Her stepfather Jacob Marrel, a painter of flowers, encouraged her art. In his studio, she learned to make paints from minerals, plants, insects, and shellfish. She collected bugs, caterpillars, moths and butterflies to study their transformation from egg to pupa to adult. Her passion was illustrating caterpillars as they became butterflies and moths.


Merian married one of her stepfather's apprentices, and three years after their marriage and the birth of a daughter, Johanna, they moved to Nuremberg, Germany. There, Merian gardened and brought pupae into the house to study. In addition to helping run her husband's art studio, she gave embroidery lessons, and produced a book of flowers for her students to draw or embroider. After painting flowers on vellum, she engraved them on copper plates and, finally, hand colored each print. *The New Book of Flowers* was produced between 1675 and 1680.

A second daughter, Dorothea, was born in 1678. The next year, Merian published *The Caterpillar Book*, followed by a second volume in 1683. Each stage of a butterfly's life was shown life-sized. The drawings often included parasitoids (organisms whose parasitic larvae eventually kill their hosts) and the plants preferred by the caterpillars.

Eventually, Merian left Nuremberg to move to Amsterdam with her daughters, later divorcing her husband. Her daughters sometimes finished paintings that Merian drew.

"Maria Sibylla's interest in nature drew her into a circle of collectors who traded in exotic animal specimens, most of which were gathered by Dutch merchants and seamen during their travels," Pomeroy writes. The more Merian saw of these specimens, the more she wanted to study them in person. In 1699, at the age of 52, she travelled to Surinam, then a Dutch colony in South America (today Suriname), accompanied by Dorothea. There, she lived in Paramaribo, the colony's capital, and explored the tropical flora and their insects. After two years, Merian contracted malaria and was forced to return to Amsterdam.

In 1705, the first edition of *Metamorphosis of the Insects of Surinam* appeared but was not commercially successful. The second edition, published in 1719, met with critical and commercial success, and became the basis for much entomological research. Maria Sibylla Merian did not live to see it—she died in 1717.

Pomeroy's telling of Merian's tale includes sidebars that allow older readers to gain more in-depth knowledge, and she includes online sources, primary and secondary source references, and a glossary. 

With Robert Ziebro

Fairchild Gardener



As part of our continuing series, we take a look at our remarkable staff members: what they do to keep the Garden green, what inspires them, and some of their personal interests. This issue features Rob Ziebro, a gardener and horticulturist who can often be found waist-deep in one of Fairchild's many water features. In addition to garden work, he is also a gifted poet and writer. We're happy to present two of his poems here.

Ahh-h-h-h...The Beauty of Nature A Garden Party Called Life

By Robert Ziebro

I stand fixated amid
the trees & plants that
have grown together
out of a companionship
a fellowship of nature that
we sometimes call
a forest
a park
a grand garden
or maybe it's just an attempt
at proving the saying that
the leaf
the branch
the seed doesn't fall
far from the tree
desiring to absorb
the beauty
the entirety of nature
I close my eyes
hoping to be immersed
in the fullness
the wonder within &

without that we
so often don't see
or just don't bother
to take the time
to see
to actually look at
not just look over
look back at or
look down on
because of our need
to accomplish
to achieve
to live what we call life
closing my eyes while
opening the senses within
I feel unbounded
unlimited
standing within the confines
of the forest
I can feel the freedom
surrounding me
for whatever reasons

we choose
we don't all ways
see or feel the completeness
the complexity of nature
we see the flowers
when they bloom but
we don't see or realize
the beauty
the knowledge
the consciousness
it took to bring
those flowers forth
we linger in
the shade of a staunch tree
unaware of the patience
the potential
the power that be
within that tree to
bring forth that shade
with my eyes closed
I can see the beauty
of nature unfolding &

enfolded within &
without
for the beauty of nature
is not just a physical thing
it's an unseen composition
it's the feeling of beauty
that resides in its makeup
in its essence
so often we
bemoan & groan
the push & pull
the thrust of nature
that gives life here
its varying qualities
its exuberance
so often...too often
we tend to
think of ourselves
as above & beyond
outside of nature
we rule & nature obeys
maybe it's time for us

to change our thinking &
start a new trend
one which expounds the fact
that we are an integral part
of nature &
that nature is an integral
part of us
we need to accept
understand &
appreciate
the flow of nature
the responsibility to &
of life
we need to change
our ways of thinking
of living
we need to realize
we aren't all ways acquainted
with the best way &
that we aren't
just along for the ride

Notes from Nature

By Robert Ziebro

Feeling out of sorts
staring at the walls
surrounding me
knowing not what I expect
or hope to see
listening to the out-word
expression
of my inner voice
I gather my self & my wits
about me
making a most needed exit
out the door
taking a deep breath
I feel the air swirling around me
pushing the clouds of
uncertainty & the lack
of faith & trust that
had begun to amass
away from me
seeing no walls to hold me back
or divert me from my progress
knowing what I need to do
I begin to walk through
the garden
coming upon a puddle
I see a note addressed from

the puddle to the rain
it reads:

*Thank you — without you I
would not be*

continuing on
I find another note
this one's from a leaf
to a branch:

*Thank you for all the
support you've given me —
instead of leaving me
hanging out on a limb
you nestled me
making me a part of the
family nourishing me
allowing me to stay for as
long as I can I've risen to*

new heights because of you
walking a little further I find
a note from a weed to a
garden:

*Thank you for not believing
in what they say about me
or what they call me —
thank you for giving me the
chance to grow & be me*

laying down the note
I find another note next to it
this one reads from a garden
to the soil:

*Looks can often be
deceiving — I know from
experience that soil at times
can be a dirty word but not
all ways — thank you for
supplying me with what we
need to grow & for giving us
a home*

next to that one is another
note from a flower to a
garden:

*It's not all ways easy just
being here feeling & looking
pretty but unable to move
around & visit with my
relatives & friends — thank
you for giving me my space
& what I need to grow & for
holding up my end —*

*without you I don't think I
would have
seen the light of day — I
love you bunches*

beneath that note is another
note
this one is from a stem to a
pedal:

*I know it's not all ways easy
but thank you for sticking
around & being my bud-dy
nearing the end of the garden
I approach a lily pool
floating on its surface is a
rather soggy note
from a water plant to a pond
it reads:*

*Thank you for the constant
reassurance that I can
breathe underwater & not
have to hold my breath
thank you also for teaching
me how to float*

with a smile on my face
I turn around & head back
as I approach the forest
I find a note from a branch to
a tree
scrawled on a piece of bark
it reads:

*Thank you for all your
support I woodn't be what
& where I am if knot for you*
filled with a sense of
admiration &
astonishment
a consensus of wonder &
respect

attempting to absorb &
understand
the caring & sharing
the consideration &
cooperation
the compassion & love
in & of nature
I knew from that moment on
I would no longer waste my
time or
misuse my energy staring at
the walls
from this point on I would
open the windows &
invite the out of doors in
maybe I'll even write a note
from a person to nature:

*Thank you for being such
an important
intriguing & invaluable
part of me & my life
without you I don't believe
I would or could become
the person I desire to be*



Greetings, Fairchild students!

Let's start the New Year out with good intentions to get out and enjoy this wonderful time of year in sunny South Florida. Your garden can be your space of quiet time spent tending to your orchids, bromeliads or watching bees, butterflies and hummingbirds pollinate your flowering trees and plants. Our horticulture classes can get you acquainted with the diverse plants that can grow here.

Have you always wanted to learn how to paint or draw? Fairchild's art class offerings range for the beginner to the novice student in a variety of mediums for you to start your journey. We are delighted to offer a YUPO class with visiting international artist Mr. Boris Lyubner who teaches for San Francisco Academy of Art University (SFAAU), as well as St. John's University and CUNY in New York City.

Improve your photos, using traditional digital cameras (photography) and also iPhones (iPhoneography), by taking a daytime, evening or moonlight class from our many offerings.

Our cuisine classes reflect usage of all the beautiful, fresh and healthy produce that South Florida offers us. Our chefs can't wait to share their favorite recipes and techniques with you.

Fairchild is excited about our newest offering, Innovation Studio classes with

our partner, Moonlighter Makerspace (moonlighter.co). You can be one of the first students to learn new skills with hands-on technology in five creative activities offered.

There is something for every interest in our schedule. Thank you for your continued support and we look forward to seeing you in our classes soon!

Online registration is now open!

View a full description of classes and register at www.fairchildgarden.org/classes. For assistance, call 305.663.8094.

Please have your membership number and credit card ready. Advance registration is required and payment is due with registration. Please plan ahead, as walk-ins are not accepted. Fees cannot be transferred or prorated.

Not a member? Become a member online at www.fairchildgarden.org/membership

For more information, call 305.667.1651, ext. 3373.

Refunds (less a 20% service fee) will be made for cancellations received seven days prior to classes and workshops. No refunds will be given for missed classes. Classes are not interchangeable. Classes may be canceled if minimum enrollment is not reached.

*Garden of Eden #3. Palette Knife
oil on canvas by MaiYap*

January
through
April 2019





Growing Beyond Earth Innovation Studio coming 2019

Get a head start by learning design thinking, 3D printing and basic circuitry taught by Innovation Studio partner Moonlighter Makerspace (moonlighter.co)

Thanks to generous support from NASA, the Institute for Museum and Library Services and the Kendel H. Kennedy Foundation, Fairchild will be home to the first makerspace in a botanic garden, where visitors will have the opportunity to design, create and experiment using the latest technology to help solve issues relating to the technology of food production.



BUILD YOUR OWN PLANT GROWING POD – MAKER PROJECT

Ages 9+

This introduction to the Growing Beyond Earth Design Challenge will have you build your own home version of Fairchild’s LED plant-growing chamber. Then take it home and watch it grow!

1:00 to 4:00 p.m.

Section A: Sunday, January 6 (one session)

Section B: Sunday, March 3 (one session)

Fee per section: Member, \$65; Non-Member, \$75



3D PRINTING BASICS – SKILL BUILDER

Ages 13+

Create three-dimensional designs optimized for 3D printing. This workshop is for beginners with little to no experience.

2:00 to 4:00 p.m.

Section A: Sunday, January 20 (one session)

Section B: Sunday, April 14 (one session)

Fee per section: Member, \$35; Non-Member, \$45



DESIGN THINKING FOR KIDS – SKILL BUILDER

Ages 9+

This 5-step process helps you create designs that solve real-world problems. Choose a character client to design for,

and follow the methodology to quickly sketch and prototype ideas.

1:00 to 4:00 p.m.

Section A: Sunday, January 27 (one session)

Section B: Sunday, March 10 (one session)

Fee per section: Member, \$55; Non-Member, \$65



CIRCUITS IN SECONDS WITH littleBits –TINKER SESSION

Ages 7+

Learn how to make something light up, make a sound, move, or sense something using modular circuit blocks that easily snap together with magnets.

2:00 to 4:00 p.m.

Section A: Sunday, February 3 (one session)

Section B: Sunday, April 28 (one session)

Fee per section: Member, \$35; Non-Member, \$45



LEARN TO SOLDER – SKILL BUILDER

Ages 9+

Beginner electronics workshop teaches you how to solder your own LED light onto various circuit boards and perf boards, an essential skill for any budding hardware hacker or enthusiast.

2:00 to 4:00 p.m.

Section A: Sunday, February 17 (one session)

Section B: Sunday, March 24 (one session)

Fee per section: Member, \$35; Non-Member, \$45

ART



YUPO – EXCITING POSSIBILITIES **NEW!**

Boris Lyubner

Unlike paper, YUPO allows paint removal after drying—unwanted images are gone with a swipe. Expand your horizons and watercolor paint in a whole new manner.

10:30 a.m. to 2:30 p.m.
Wednesday/Thursday/Friday,
January 9 – 11 (three sessions)
Fee: Member, \$195;
Non-Member, \$245



BOTANICAL ART FOR EVERYONE – ALL LEVELS WELCOME!

Donna Torres

This class for the beginner and advanced student focuses on the representation of tropical plants in watercolor and graphite.

1:00 to 3:30 p.m.
Wednesdays, January 9 –
February 6 (five sessions)
Fee: Member, \$160;
Non-member, \$195



THE ART OF PAINTING USING PALETTE KNIVES

MaiYap

Creating an image with a palette knife is like sculpting with paints. In this class, you will be mesmerized by the texture, movement, and flow that can only be achieved using a palette knife.

10:00 a.m. to 2:00 p.m.
Section A: Thursdays, January
10 – February 28 (eight sessions)
Fee: Member, \$330;
Non-Member, \$385
Section B: Thursdays, March
14 – May 2* (seven sessions)
*No class March 28
Fee per section: Member, \$290;
Non-Member, \$340



THE POWER BEHIND THE PAINT BRUSH WITH OILS AND ACRYLICS

Marcelle Zanetti

This is your opportunity to put power behind your oil or acrylics brushes and create a small and simple masterpiece from start to finish.

10:00 a.m. to 2:00 p.m.
Fridays, January 11 – March 1*
(seven sessions)
*No class January 25
Fee: Member, \$280;
Non-member, \$350



ALL IN THE FAMILY: **NEW!** PORTRAITS IN CHARCOAL AND CHALK

Carlos Gallostra

Team up with your child (ages 12 to 16) and join us for a three-day intensive portrait workshop designed for those aiming to capture an immediate likeness of each other through the use of charcoal and chalk on paper.

10:00 a.m. to 1:00 p.m.
Saturdays, January 12 – 26
(three sessions)
Fee: Member and 1 child, \$95;
Non-member and 1 child, \$125
Each additional child, \$25



THE BASICS OF DRAWING: BARGUE STUDIES

Carlos Gallostra

Join us in this popular beginner class using in-depth studies of Barge plates.

10:00 a.m. to 12:00 p.m.
Section A: Mondays, January
14 – February 18 (six sessions)
Section B: Mondays, February
25 – April 1 (six sessions)
Section C: Mondays,
April 8 – May 20* (six sessions)
*No class April 22
Fee per section: Member, \$150;
Non-member, \$205



INTERMEDIATE DRAWING: GRAPHITE, CHARCOAL & CONTE

Carlos Gallostra

Take your skill sets in drawing to brand new heights.

1:00 to 3:00 p.m.
Section A: Mondays, January
14 – February 18 (six sessions)
Section B: Mondays, February
25 – April 1 (six sessions)
Section C: Mondays,
April 8 – May 20* (six sessions)
*No class April 22
Fee per section: Member, \$150;
Non-member, \$205



ABCs OF DRAWING AND WATERCOLORS

Hillary Parker

A great opportunity to learn the basics of how to draw and paint with watercolors.

10:00 a.m. to 1:00 p.m.
Tuesdays, January 15 –
February 12 (five sessions)
Fee: Member, \$270;
Non-member, \$330



SOFT PASTELS IN THE GARDEN

Dan Bondroff

Discover how to paint in soft pastel, considered by many the purest of painting media.

1:00 to 4:00 p.m.
Section A: Tuesdays,
January 15 – February 26
(seven sessions)
Fee: Member, \$215;
Non-member, \$270
Section B: Tuesdays,
March 5 – April 16* (six sessions)
*No class March 26
Fee per section: Member, \$185;
Non member, \$230



PAINTING THE PORTRAIT IN OIL

Carlos Gallostra

For those who aim to take their skill sets in painting further, this class introduces the student to a step-by-step process that facilitates capturing the portrait from the initial contour to the fully rendered form in oil paint.

10:00 a.m. to 12:30 p.m.
Section A: Thursdays, January
17 – March 21 (10 sessions)
Fee: Member, \$250;
Non-member, \$325
Section B: Thursdays, March
28 – May 23* (eight sessions)
*No class April 25
Fee per section: Member, \$200;
Non-member, \$275



**FROM THE GROUND UP:
PAINTING THE STILL LIFE IN OIL**

Carlos Gallostra

This class is designed to give you a leg up on crafting an oil painting from the ground up.

1:00 to 4:00 p.m.

Section A: Thursdays, January 17 – March 21 (10 sessions)

Fee: Member, \$285;

Non-member, \$360

Section B: Thursdays, March 28 – May 23*

(eight sessions) *No class April 25

Fee per section: Member, \$230;

Non-member, \$290



WATERCOLORS—THE BASICS

Beginner

Ricardo Aberle

Fairchild’s artist and grounds supervisor, will teach you to explore the many facets of watercolor.

10:00 a.m. to 1:00 p.m.

Fridays, January 18 – March 1* (six sessions) *No class January 25

Section B: Fridays, March 15 – April 26* (six sessions)

*No class April 19

Fee per section: Member, \$170;

Non-Member, \$210



**UNDERSTANDING
WATERCOLOR SUPPLIES**

Hillary Parker

This informative one-day class helps demystify the often confusing and seemingly endless selection of watercolor supplies!

10:00 a.m. to 1:00 p.m.

Monday, January 21

(one session)

Fee: Member, \$60;

Non-member, \$85



**DRAWING THE PORTRAIT
IN GRAPHITE**

Carlos Gallostra

For those who aim to take their skill sets in drawing farther, this class introduces the student to a step-by-step process.

9:30 a.m. to 12:30 p.m.

Section A: Tuesdays, January 22 – March 26 (10 sessions)

Fee: Member, \$270;

Non-member, \$325

Section B: Tuesdays, April 2 – May 21

(seven sessions) *No class April 23

Fee: Member, \$190;

Non-member, \$230



**CAPTURING THE BUTTERFLY
IN COLOR PENCIL**

Carlos Gallostra

One of nature’s wonders, the butterfly will serve as the muse for this workshop in color studies using colored pencils.

1:30 to 3:30 p.m.

Section A: Tuesdays, January 22 – February 19 (five sessions)

Section B: Tuesdays, February 26 – March 26 (five sessions)

Section C: Tuesdays, April 2 – May 7* (five sessions)

*No class April 23

Fee per section: Member, \$180;

Non-member, \$255



**PUT YOUR PASSION ON
PAPER WITH WATERCOLORS**

Intermediate/Advanced

Diane Lary

Discover the beauty and power of using color, value, and light to describe your subject.

10:00 a.m. to 1:00 p.m.

Section A: Wednesdays, January 23 – March 20*

(eight sessions)

*No class on February 20

Fee: Member, \$260;

Non-member, \$300

Section B: Wednesdays, April 3 – May 8 (six sessions)

Fee: Member, \$195;

Non-member, \$225



**FAMILY ART FUN *NEW!*
AT FAIRCHILD**

Hillary Parker

Join the family fun to explore the nooks and crannies of the Garden and create a family art portfolio filled with drawings, paintings, and collages of the beautiful plants and fascinating animal life that’s discovered along the way!

10:00 a.m. to 1:00 p.m.

Saturday, February 9

(one session)

Fee: Member and 1 child, \$45;

Non-member and 1 child, \$65

Each additional child, \$25



**ARTISTIC EXPRESSION
THROUGH COMPOSITION**

Hillary Parker

This four-week drawing class focuses on creating compositions in preparation for watercolors.

10:00 a.m. to 1:00 p.m.

Tuesdays, February 19 – March 12 (four sessions)

Fee: Member, \$220;

Non-member, \$270



**INTRODUCTION TO PHOTO
ENCAUSTIC HOT WAX PAINTING**

Andrea Clement

This workshop will teach you how to take your photographs to a new creative level with the ancient art of encaustics, a mixed media technique.

10:00 a.m. to 2:00 p.m.

Thursday/Friday, February 28 and March 1 (two sessions)

Fee: Member, \$150;

Non-member, \$190



**ABSTRACT PAINTING
USING ACRYLICS**

Marcelle Zanetti

Learn how to compose an abstract painting that is focused around nature, enjoying the forgiving medium of acrylic paint.

10:00 a.m. to 2:00 p.m.

Fridays, March 15 – April 26* (five sessions)

*No class March 29 and April 19

Fee: Member, \$200;

Non-member, \$250

ART



PAINTING SPRINGTIME BLOOMS IN WATERCOLORS

Hillary Parker

For all students with previous watercolor experience looking for opportunities to master their watercolor skills. Students will create delicate studies of seasonal flowers.

10:00 a.m. to 1:00 p.m.

Tuesdays, March 19 – April 16
(five sessions)

Fee: Member, \$270;
Non-member, \$330



BRUSH UP ON BRUSHWORK

Hillary Parker

One-day class to bring new understanding about the optimum performance and techniques of a watercolor paintbrush, which makes all the difference when painting with watercolors.

10:00 a.m. to 1:00 p.m.

Monday, March 25
(one session)

Fee: Member, \$60;
Non-member, \$85



WATERCOLOR SHADES OF GRAY

Hillary Parker

Create just the right shades of gray to paint the delicate colors and textures of the beautiful dried seed pods, coconut shells, bird nests, dried leaves, and branches found throughout the Garden.

10:00 a.m. to 1:00 p.m.

Monday, April 22 (one session)

Fee: Member, \$60;
Non-member, \$85



PAINTING DELICIOUS TROPICAL FRUITS IN WATERCOLORS

Hillary Parker

This class is for everyone with watercolor experience looking for opportunities to develop, build, and apply their skills and techniques of painting with washes and dry brush.

10:00 a.m. to 1:00 p.m.

Tuesdays, April 23 – May 7
(three sessions)

Fee: Member, \$160;
Non-member, \$195

HORTICULTURE



GROWING HERBS IN SOUTH FLORIDA – LECTURE AND SALE

Carolyn Coppolo

Introduction to growing herbs in South Florida. Herb plants will be available FOR SALE after class.

11:30 a.m. to 1:30 p.m.

Wednesday, January 16
(one session)

Fee: Member, \$25;
Non-member, \$35



BECOME VANDA SAVVY

Dr. Martin Motes

Learn from this expert *Vanda* grower on basic care, watering, feeding, light and air requirements, all on a month-by-month schedule.

10:30 a.m. to 12:30 p.m.

Friday, February 1 (one session)

Field Trip: 9:30 to 11:00 a.m.
on Sunday, February 3

Fee: Member, \$40;
Non-member, \$60



ARRANGING FLOWERS AND FOLIAGE FROM YOUR FLORIDA LANDSCAPE

Terri Stephen

Bring your garden's lush landscape indoors as a beautiful centerpiece or display in this guided hands-on workshop.

11:00 a.m. to 1:30 p.m.

Tuesday, February 5
(one session)

Fee: Member, \$25;
Non-member, \$35



THE ART AND SCIENCE OF GROWING ORCHIDS IN SOUTH FLORIDA

Dr. Sandra Schultz

This experienced grower of orchids for over 30 years will discuss the orchid family with an introduction to genera and species and their culture. She will discuss the best locations for growing orchids, repotting, mounting, and orchids in the landscape.

10:30 a.m. to 12:30 p.m.

Wednesdays, February 13 – 27
(three sessions)

Fee: Member, \$70;
Non-member, \$95



BRING POLLINATORS TO YOUR GARDEN

Dr. Suzanne Koptur

Explore the form and function of flowers for a deeper understanding of their purpose and relationships with other organisms in the natural world.

10:00 a.m. to 1:00 p.m.

Wednesday, February 20
(one session)

Fee: Member, \$25;
Non-member, \$35



BROMELIADS: EASY TROPICALS FOR YOUR SOUTH FLORIDA GARDEN

Peter Kouchalacos

Our instructor/grower will take you through propagating

pups, choosing the optimum growing medium and containers, watering and misting, providing air circulation and lighting, fertilizing, and methods of combating pests.

10:00 a.m. to 12:00 p.m.
Saturdays, February 23 and March 2 (two sessions)
Fee: Member, \$40;
Non-member, \$50



GROWING ORCHIDS IN SOUTH FLORIDA

Dr. Sandra Schultz
Dr. Schultz, past president of South Florida Orchid Society and the Orchid Society of Coral Gables, will share her tips and techniques to successfully purchase, grow, and enjoy orchids.

6:30 to 8:30 p.m.
Wednesday, March 13
(one session)
Fee: Member, \$30;
Non-member, \$40



GRAFTING WORKSHOP (AT FAIRCHILD FARM)

Dr. Richard J. Campbell
Once you master grafting, you can multiply your favorite plants or choose from the incredible multitudes of cultivars and species not commonly available. Students will learn different techniques.

9:00 a.m. to 1:00 p.m.
Saturday, March 16
(one session)
Fee: Member, \$75;
Non-member, \$100



DISCOVERING THE NATIVE ORCHIDS OF SOUTH FLORIDA Lecture and Tour

Dr. Jason Downing and Jay Arce
Through lecture and a Garden tour, Jason and Jay will help you identify native orchids when you are enjoying Florida's great outdoors. Transplant an orchid in the Garden and take one home for your own yard.

9:30 to 11:30 a.m.
Sunday, March 17
(one session)
Fee: Member, \$30;
Non-member, \$40



THE BASICS OF CREATING A BUTTERFLY GARDEN

Terri Stephen
Learn what types of plants to buy and where to plant them, the life cycle of butterflies, and how to attract a variety of butterflies to your yard with both host and nectar plants.

10:30 a.m. to 12:30 p.m.
Wednesday, April 3
(one session)
Fee: Member, \$25;
Non-member, \$35

CUISINE



BIG FLAVOR KNOCKOUT BURGERS AND SLIDERS

Chris Bulgarin
Prepare a slider sesame ground pork burger Asian style, with Asian vegetables, tomato and sesame mayonnaise. Next is a slider popper burger with cream cheese and sautéed and diced jalapenos, adorning the patty. Your senses will be awakened. The "Big" finale, The Monster: a whopping 4-pound beef burger.

6:00 to 9:00 p.m.
Wednesday, January 30
(one session)
Fee: Member, \$55;
Non-member, \$70



CRUDO CREATIONS AND MORE

Maury Crespo
Create trendy crudos with precision knife skills as Chef Crespo prepares Szechuan salmon Carpaccio, beef Tartare with avocado cilantro crema endives with goat cheese, balsamic reduction, and onion compote.

6:00 to 9:00 p.m.
Thursday, February 7
(one session)
Fee: Member, \$55;
Non-member, \$70



SO MUCH SUSHI LOVE

Johnson Teh
Learn how to choose ingredients and prepare, roll, and cut sushi. This is a hands-on class; please bring an apron with you.

6:00 to 9:00 p.m.
Thursday, February 21
(one session)
Fee: Member, \$55;
Non-member, \$70



A LESSON IN LEBANESE CUISINE

Chris Bulgarin
Prepare stuffed grape leaves with Basmati rice and dried fruits and a refreshing, crunchy and full-of-flavor fattoush salad; plus the popular shawarma, freshly cut beef from a vertical rotisserie.

6:00 to 9:00 p.m.
Wednesday, March 13
(one session)
Fee: Member, \$55;
Non-member, \$70



JACKFRUIT – THE OTHER MEAT-FREE FOOD

Johnson Teh
The flesh of the jackfruit can be used in a variety of recipes to mimic meat. Chef's creations of jackfruit nachos, Asian BBQ jackfruit bowl, and jackfruit and banana spring rolls are totally meat-free.

6:00 to 9:00 p.m.
Thursday, April 18 (one session)
Fee: Member, \$55;
Non-member, \$70

PHOTOGRAPHY



SUNRISE/EARLY MORNING PHOTOGRAPHY AT FAIRCHILD

Carlos Causo

Students will photograph Fairchild's spectacular garden landscapes, flora, and fauna.

7:00 to 10:00 a.m.

Section A: Saturday, January 19 (one session)

Section B: Saturday, March 30 (one session)

Fee per section: Member, \$35; Non-member, \$55



ARTISTIC FLOWER MACRO PHOTOGRAPHY

Pedro Lastra

Review the best camera settings to create different flower images, shallow focus, hyper focal techniques, and lighting techniques.

2:00 to 5:00 p.m.

Section A: Wednesday, January 30

8:00 to 11:00 a.m.

Section B: Sunday, April 28

Fee per section: Member, \$35; Non-member, \$55

HOW TO USE AND MASTER YOUR DIGITAL INTERCHANGEABLE LENS DSLR (SINGLE LENS REFLEX) CAMERA

Pedro Lastra

Learn the features offered by DSLRs; different lenses; flash and lighting techniques. Please bring your camera and manual.

6:00 to 9:00 p.m.

Section A: Tuesdays, February 5 and 12 (two sessions)
10:00 a.m. to 1:00 p.m.

Section B: Saturdays, March 16 and 23 (two sessions)
Fee per section: Member \$65; Non-member, \$85



BUTTERFLY AND HUMMINGBIRD EARLY MORNING PHOTOGRAPHY

Pedro Lastra

Capture the beauties of the Garden and the Wings of the Tropics exhibit. Cover technical skills to master butterfly macro photography and review basic concepts of effective composition.

8:00 to 10:00 a.m.

Section A: Saturday, February 16 (one session)

Section B: Saturday, April 6 (one session)

Fee per section: Member, \$35; Non-member, \$55



PHOTOGRAPHING THE SUNSET AND MAGICAL HOUR AT FAIRCHILD

Pedro Lastra

Photograph Fairchild's vistas during the magic hour of sunset. A very sturdy tripod and cameras with interchangeable lenses or point-and-shoot cameras with close-up settings and user-adjustable functions are strongly recommended. Takes place rain or shine.

5:30 to 8:00 p.m.

Tuesday, February 19 (one session)

Fee: Members, \$35; Non-member, \$55



THROUGH THE EYE OF THE ARTIST

Andrea Clement

Get more artistic images. Create moods and special effects using lines, lighting, repetition, and texture in creative ways.

1:00 to 4:00 p.m.

Wednesday, March 6 (one session)

Fee: Member \$35; Non-member, \$55



ORCHID PHOTOGRAPHY: CAPTURING THE BEAUTIES OF FAIRCHILD'S 17TH ANNUAL INTERNATIONAL ORCHID FESTIVAL

Carlos Causo

Preview and photograph early in the morning, before the crowds arrive. This class will offer the opportunity to photograph these exquisite beauties at their best.

8:00 to 10:00 a.m.

Saturday, March 9 (one session)

Fee: Member, \$35; Non-member, \$55

ADVANCED DSLR TECHNIQUES: GETTING MORE OUT OF YOUR DSLR CAMERA

Pedro Lastra

Learn the advanced camera features of your DSLR: RAW format vs jpg, white balance options, auto focus options, external flashes, and much more.

10:00 a.m. to 1:00 p.m.

Wednesdays, April 3 and 10 (two sessions)

Fee: Member \$55; Non-member, \$75

IPHONEOGRAPHY

All classes taught by Shirley Drevich except where noted



IPHONEOGRAPHY DURING MOONRISE AT FAIRCHILD

Take stunning photos of the winter sunset leading into the Gibbous moonrise.

4:00 to 7:00 p.m.

Section A: Saturday, January 19 (one session)

Section B: Monday, March 18 (one session)

Fee per section: Member, \$30; Non-member, \$45

CREATIVE IPHONEOGRAPHY

Capture and process images with your iPhone, and create stunning results using a variety of apps.

1:30 to 4:30 p.m.

Section A: Saturdays, February 2 and 9 (two sessions)

Section B: Wednesdays, April 3 and 10 (two sessions)

Fee per section: Member, \$65; Non-member, \$85

FAIRCHILD IPHONE SAFARI

Shirley Drevich and Lynda LaRocca

A three-hour safari to explore Fairchild's special places and capture new photo opportunities.

10:00 a.m. to 1:00 p.m.

Section A: Saturday, February 23 (one session)

1:00 to 4:00 p.m.

Section B: Saturday, March 30 (one session) Fee per section: Member, \$35; Non-member, \$45

USING THE HIPSTAMATIC APP


Capture that photo like never before without post processing on your iPhone.

1:30 to 4:30 p.m.

Wednesday, February, 27 (one session)

Fee: Member, \$30; Non-member, \$45

REGISTER NOW!
www.fairchildgarden.org/classes



13TH ANNUAL INTERNATIONAL

Chocolate Festival

AT FAIRCHILD

**It's a Chocolate Lover's
Weekend at Fairchild!**

Friday, Saturday, and Sunday

January 25, 26, and 27

9:30 a.m. – 4:30 p.m.

Theobroma cacao

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Now through January 6

Tickets for Members and Non-Members at
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