

The Palmateer

Volume 29, Number 1

Central Florida Palm & Cycad Society

March 2009

Sarasota December Meeting



Rob Branch, white shirt, back to camera, gives The Tour on a slightly chilly Dec. 13th morning. This early, coffee mugs.
(Photo by Lek Wallace)

By John Kennedy

Who would have thought that manicured, sedate, conservative Sarasota could contain within the city limits the riotous jungle that Rob Branch has created? In nine years of continuing hard work, Rob has exterminated the lawn in favor of a huge collection of palms, cycads, bromeliads, orchids, ferns, (no *Plumeria*, but maybe I just missed it) and other tropic-als on a fenced acre and a half. Add a hotel, a swimming pool and you might have a resort in the Dominican Republic. But no swimming pool, no gloss that shows the attentions of a team of maintenance workers. Instead, a garden with a lovely pond, a garden to enjoy and to absorb.

To make matters even happier for visitors, almost everything has an attached label. Not the unusual giant tree fern next to the house, however (Rob! **Ninety people** attended, the largest number that anyone can ever recall at any meeting in living memory. How come? About 10 were local neighborhood people attracted by the brouhaha.

The house is modern, just a tad dramatic. Especially noteworthy was the black bathroom. All tiles,

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Return to Goat Creek April 25th

APRIL IN VALKARIA

“**Ron’s Palm Sanctuary**” in Valkaria will be the site of our spring meeting on Saturday, April 25th. We’ve been to Goat Creek a couple of years ago and will once again enjoy the hospitality of Ron Eward and Fiona Pearce. The 3-acre property slopes down from the house to Goat Creek, which flows into the Indian River. There is a small woods in which palms have been planted, as well as a small meadow. Previous visitors enjoyed the dock and the gazebo on the creek.

More to the point for palm and cycad lovers is the wide assortment planted there in a favorable microclimate, not often seen in Brevard County. “The number of different kinds of palms and cycads approaches 300,” says Ron. *Kinds* include different forms of the same species, such as the two forms of *Coccothrinax crinita*. Ron assures us that he has escaped the effects of the chilly unpleasantness of late January and early February. Bromeliads and flowering shrubs contribute to the beauty of the site.

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Palms within the woodland at Ron’s Palm Sanctuary, Valkaria. (Photo by Bob Johnson)

The Central Florida Palm & Cycad Society service area includes the following counties:

Alachua, Brevard, Citrus, DeSoto, Flagler, Hardee, Hernando, Highlands, Hillsborough, Indian River, Lake, Levy, Manatee, Marion, Okeechobee, Orange, Osceola, Pasco, Pinellas, Polk, Putnam, Sarasota, Seminole, St. Lucie, Sumter, Suwannee, and Volusia.

Please notify the Membership Chair (see directory on p. 23) of any changes in street address, phone number, area code, or e-mail address. The newsletter is sent to the address of record.



Florida Tech's Botanical Garden, as seen at the Festival of Palms. (Photo by Dave Reid)



Complaints, suggestions? See one of these guys at the April meeting. Bob Johnson, right, is CFPACS prez. Geezer (left) is John Kennedy, editor of The Palmateer. (Photo by Lek Wallace)

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The Palmateer

The Palmateer is published four times a year: March, June, September, and December by Central Florida Palm & Cycad Society, a chapter of the International Palm Society and of The Cycad Society. The views expressed are not the official positions of the society nor of its Board. No material may be reprinted or reproduced without permission.
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The closing date for submission of material for the next issue is the 1st of the month preceding publication.

The Palmateer

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Back copies may be purchased for \$5 each, plus postage.

DIRECTIONS

Ron Eward and Fiona Pearce

Ron's Palm Sanctuary
3625 Lynn Street
Valkaria, Florida 32950

1. Take I-95 to exit 173 (Malabar) and go east to US-1.
2. On US-1 go south 3+ miles to Valkaria Road.
3. Take Valkaria Road west over the rail road tracks.
4. Turn north on Tadlock.
5. First left up Anne Street
6. Left again on Williams.
7. Then right on Lynn Street. 3625 is on your left.

There is street parking on Lynn Street and around the corner into Duane Street.



April 25th Meeting, Valkaria

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CFPACS will provide deli chicken and beverages for attendees. Members are asked, however, to bring a side dish such as a salad, casserole, or dessert to share with others. Ice chests can hold any items requiring cooling.

Bring a chair: seating is not provided.

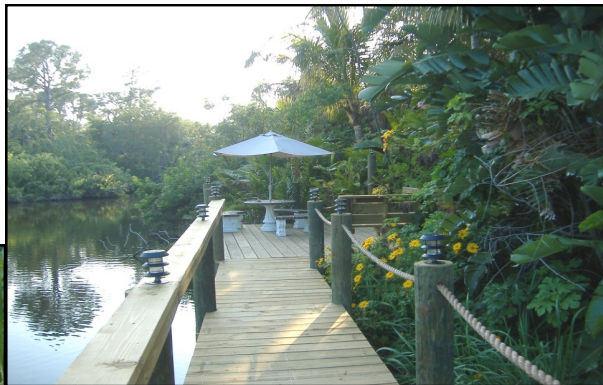
A regular feature of our meetings is a plant auction following the lunch break (time for digestion). Then the plant sale, member-vendors will be bringing their offerings. Anyone wishing to donate plants—not only palms and cycads—for the auction, or for the sale, is encouraged to do so.

“Ron’s Palm Sanctuary” is a delightful place. If you didn’t come last time, now’s your chance! The meeting starts at 10:30, though Early Birds may attend the board meeting at 9:45. See directions and schedule on this page.

---John Kennedy

SCHEDULE

- 9:45 am - Board Meeting
 - 10:30 am- 12:00 pm -
 - Garden open for touring
 - 12:00 - 1:00 pm - LUNCH
 - 1:00 pm - Auction
 - 1:30 pm - approximate
- (after Auction) - Vendor sale begins.



Some tantalizing glimpses of “Ron’s Palm Sanctuary” in Valkaria. (Photos by Ron Eward)



NEW MEMBERS!

(Nov. 15-Feb. 15)

Claudia Beck, Palm Harbor
 Kevin Lyman, Lakeside, CA
 Larry Dieterich, Loxahatchee
 Dennis Rehak, North Fort Myers
 Keith Hanks, Bradenton
 Tim O'Neil, Sarasota
 Carol Mitchell, Bradenton
 Jacob Speicher, Merritt Island
 Duff Swan, Maitland
 Juan Illa, Loxahatchee
 Mike Kunz, Tarpon Springs
 Ronald A. Kiefert & Rosita A. Stoick,
 Pinecrest
 Justin McSweeny, Vero Beach

Sorry if we've omitted your name by mistake. Do let us know.

2009 CFPACS HomeTown Grant Recipient

CFPACS is pleased to announce that Dave Floyd has been awarded the 2009 HomeTown Grant. The site of Dave's project is the DeLaura Middle School in Satellite Beach, home to over 700 students. The school has started a garden club to involve students with the landscape, and is committed to revitalizing and maintaining the new plantings. Work has already begun to clear and prepare areas for the new palms. One very interesting palm already resides on the campus - a two-headed *Sabal palmetto*. CFPACS is excited about this opportunity to show how palms can really beautify a landscape, especially in a setting that has so much exposure to the local community. Congratulations, Dave on a well thought out project! We look forward to seeing your vision come to fruition.

It is not too early to begin thinking about the 2010 CFPACS HomeTown Grant. We will begin taking applications for the 2010 grant over the summer - perhaps you should apply!

--Bob Johnson, CFPACS President

Joint Meeting with South Florida Palm Society Saturday, April 4th at Montgomery Botanical Center

After a long winter it's time to head south! Mark your calendars for Saturday, April 4th when CFPACS members will join with the South Florida Palm Society for a day at **Montgomery Botanical Center** and a visit to a 5-acre private garden nearby. Montgomery Botanical Center is the 120-acre former estate of **Robert and Nell Montgomery**, widely known as the founders of **Fairchild Tropical Garden**. During the Montgomery's lifetime, it was the largest and finest private collections of palms and cycads in the world. As a living tribute to her late husband, in 1959 Nell created The Montgomery Foundation, Inc.—later renamed the Montgomery Botanical Center (MBC)—as an independent, non-profit institution devoted to advancing the science of tropical botany. The mission of MBC is to advance science, education, conservation, and horticultural knowledge of tropical plants, emphasizing palms and cycads, and to exemplify excellent botanical garden design.

Montgomery Botanical Center provides an up close and personal view of an impressive collection of palms and cycads. The MBC collection contains over **356 palm taxa** (5230 specimens) and **222 cycad taxa** (2900 specimens). Since 1992 the scientific collections have been planted according to a landscape architecturally designed planting plan, lending a unique beauty to the research collection.

We hope that many of you will plan on taking this "road-trip" down to Montgomery Botanical Center and look forward to a wonderful meeting with the South Florida Palm Society.

* The meeting begins at 10:00 a.m.

* Cost of lunch is \$10 per person

* There will be no CFPACS plant sale or auction at this meeting

* Friendly reminder there is no collecting of seeds or plants at Montgomery Botanical Center!!!

Directions to MBC

Take I-95 south to Miami. Just beyond downtown, exit on U. S. #1 (South Dixie Hwy.) Go south to SW 42nd Ave. (LeJeune Rd.) Turn left on SW 42nd Ave.; drive to the roundabout. Take the second right off the roundabout to Old Cutler Road. Two miles down Old Cutler Road is Fairchild Tropical Garden; a mile beyond Fairchild is Montgomery, the entrance on the left. The address is 11901 Old Cutler Road.

--Bob Johnson



*Left, before all the fertilizing—March 1995.
Below, after—January 2009.
The six highest palm tops, from left to right, are Carpentaria, royal, coconut, Livistona drudei (straight gray trunk), royal and coconut. The house has just about disappeared on the 1/3 acre lot.*

Notes on Fertilizing a Florida Palm Garden

By Scott Ward

To a farm kid from Lancaster County, Pennsylvania who planted and grew stuff all his life, Florida is a gardener's dream.

I grew up on a dairy farm near Ephrata, PA. Our family's vegetable garden was huge, providing canned and root-cellar foodstuffs throughout the year. My grandmother grew dahlias that won county fair prizes, and her irises, peonies, hydrangeas, and hollyhocks were stunners.

When an early career move sent me to Maryland, I planted perennial beds that bloomed in successive waves of color from crocuses in February, to columbines in spring, to chrysanthemums in early winter.

But I wasn't prepared for the wonders – or the challenges – of Florida gardening when I moved to Indianapolis in February 1994.

I suppose I progressed in a typical way from palms initially, to adding cycads to the landscape, and then bromeliads, agaves, ferns, euphorbias, fruit trees, and finally orchids. My primary goal was to transform a shabby, flat Florida lawn into a canopy, *a big canopy*.

However, when some of my first palms started to yellow and frizzle a bit, I learned how quickly nutrients percolate through beachside sand. I needed to fertilize regularly so I bought some typical granular "landscape and ornamental" fertilizer at Walmart (8-2-12 with micronutrients). I mixed Ironite with the fertilizer at about a 10:1 fertilizer-to-Ironite ratio.



I sprinkled some granules, maybe a handful, around the base of each little palm at first, and they responded magically. I sprinkled more, and they grew even faster. Soon I was adding about a cup or more of fertilizer each month to each palm from March through October. I used shredded cypress mulch to control any runoff.

Occasionally a palm would recoil (I particularly remember a *Licuala grandis* that wilted a lot) so I cut back on fertilizing the sensitive ones. But the big palms – Bismarck, coconuts, African oil, *Livistonas*, royal's, date palms, foxtails, *Beccariophoenix madagascariensis*, *Copernicia baileyana* – seemed to suck up every molecule of nutrient and beg for more. And, wow, were they ever growing quickly!

Soon, the once-a-month ritual was wearing thin, so I visited a local Lesco outlet. They offered a microencapsulated 12-2-14 fertilizer with Mg, S, Fe, and Mn.

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Notes on Fertilizing a Florida Palm Garden

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To provide for time-release, 40% of the nitrogen granules and 30% of the potassium granules are coated with a polymer.

Using this formulation, I decreased my fertilizer applications to twice a year, March and September. The application rate on my 1/3-acre lot is approximately 650-700 pounds twice annually. The big palms get the biggest applications; for example, 15-20 pounds twice annually for the Bismarck, African oil, Bailey's palm, *Beccariophoenix*, and others.

I also spread Ironite liberally around any palm or plant that shows signs of yellowing. Some *Phoenix* and many *Syagrus* species seem very susceptible to micronutrient deficiencies.

Cycads are fertilized separately and more frequently, i.e. every other month, using liberal amounts of a fast-release, high-nitrogen fertilizer (like a typical lawn fertilizer) plus Ironite.

I do not fertilize my mangos except for a foliar nutrient spray in spring. Also, I no longer fertilize any solitary *Caryota* sp. palm. Fertilizer causes fishtails to mature too fast, and they start to flower at a small size (I learned the hard way).

I've also stopped fertilizing coconuts because, if these big boys are fed, their crops are nearly overwhelming and the nuts get huge, falling like cannonballs into bromeliad patches or other plantings underneath.

When I tell people about my fertilizer regimen, many are flabbergasted, but a 50-pound bag of fertilizer really doesn't go very far.

I'll tell you one thing – it works. I got my big canopy.



Above, *Copernicia baileyana* and, below, *Encephalartos trispinosus*, beneficiaries of the Ward Fertilization Scheme. (Photos by John Kennedy)



Perhaps the most unusual plant seen in Sarasota on Dec. 13 is pictured left. To some visitors it looks like a cycad—but somehow not quite right. In fact, this is Giant Fern or King Fern, *Angiopteris evecta*, the largest fern in the world. Leaves can be 20 feet long (Rob's has 8-foot leaves). Native to Madagascar and South Asia, it's a pest in Hawaii.

(Photo by Lek Wallace)

Festival of Palms a Big Hit!



Above, the plant sale. Right, a beautiful *Astrocaryum mexicanum*. (Photos by Dave Reid) Left, is this *Dypsis leptochelios*? (Photo by John Green)



Left, Christian Faulkner gives a cultural presentation to an attentive audience. (Photo by Bob Johnson)

The Festival of Palms on the Florida Tech campus in Melbourne was held on Saturday, November 15th, a little too late to be reported in the December issue of *The Palmateer*. It was a beautiful sunny day in the 70s, not the chill that had been predicted (which arrived the following day).

The event showcased CFPACS and the FIT Botanical Garden, as an example of how beautiful mature palms and cycads can be. No other organization was there to share the billing. The idea was President Bob Johnson's; FIT administrators were enthusiastic supporters.

During the four-hour time span (10-2), 300 people attended. The natural beauty of the site aside, the attraction was 9 member-vendors offering more than 88 varieties of palms and 18 varieties of cycads. "Variety" here encompassed more than species but also subspecies and different forms.

To make certain that no attendee went home empty-handed or palmless, over 150 seedling palms were given away. FREE! And some were not all that

commonplace, either: *Areca vestiaria*, *Archontophoenix cunninghamiana*, *Basselinia gracilis*, *Chambeyronia macrocarpa*, *Coccothrinax miraguama*, *Dypsis leptochelios*, *Hyophorbe lagenicaulis*, *Livistona decora*, *Ptychosperma burretianum*, *Sabal yapa*, and *Veitchia spiralis*.

Three talks were offered as demonstrations to visitors. Christian Faulkner presented two of these—"Making Your Landscape Palms Look Their Best" and "Seed Germination Techniques." John Kennedy gave one talk, "Suggested Palms for the Space Coast." Guided tours of the garden were also available.

We are most grateful to our kind hosts, the staff of Florida Tech.

Our society's goal is to become more publicly visible to potential members.

Keep alert! The 2nd Annual Palm Festival is to take place next fall, date as yet unscheduled. Hey! Can you have a "2nd Annual" event the same year you had the first one? Picky, picky.

--John Kennedy



*Visit this *Copernicia fallaensis* at Montgomery Botanical Center during the joint meeting with South Florida Palm Society on April 4th. Details on page 5.*

(Photo by Bob Johnson)

Sarasota December Meeting

(Continued from page 1)

shower, toilet, everything black. Since Rob uses the shower stall (info from female resident), the tub can be devoted to a collection of potted plants under the glass block 'window.' The flamboyance is the original owner's from whom Rob bought the place, which doesn't quite look like a standard Florida house.

Inside, tables held portable steam containers with hot dishes that had been cooked by our hosts and paid for by the society. Everyone was asked to bring a side dish and it looked as if everyone had done so. Heavy on the desserts but Hey! this is weight-gain season. And most were home-made. At end of the afternoon a few spoonfuls of the food-type items were left and some slight odds and ends of desserts. Good CFPACers eat it all gone, like Mommy said you should.

Our thanks to Rob and also to Susan Dow, who handled the hospitality end inside the house. (How many dishes did you wash, Susan?)

The USF Spring Plant Festival 2009

It's time again for the spring sale in Tampa. The University of South Florida, in Tampa is hosting the Spring Plant festival on Saturday, April 11th, and Sunday, April 12th. The hours will be 10 a.m. to 4 p.m. on Saturday, and 10 a.m. to 3 p.m. on Sunday. Members of the USF Botanical Garden get in early at 9:30 a.m.

We can really use your support in order for us to be able to continue making palms and cycads available at these sales.

Set up times for vendors are 8:00 a.m.-6:00 p.m. Friday. On Saturday morning it's from 7:00 till 9:00. You must be a member of the Central Florida Palm and Cycad society to be a vendor. You must also have a vendor number to be a vendor. You must get a vendor number from the treasurer. Also you must have a pass from U.S.F. to set up on Saturday that you get from secretary Chuck Grieneisen. The treasurer and secretary's contact info is at the last page of *The Palmateer*.

If there is someone new who does not know how to get to the garden, it is near the southwest corner of the USF campus, in Tampa. You can get to the campus on the Fowler exits from either I-275 from the west, or I-75 from the east. From the east, you will drive a few miles before you see the campus. Turn right into the main entrance, and go to the first light. Turn left, the road will end at the entrance to the garden. From the west, get onto Fowler and drive about a mile, and then turn left into the main entrance, and follow the other instructions. There will be people to show you where to park.

Most of the other societies are there as well, so if you enjoy growing plants such as bromeliads, orchids, ferns, or anything else unusual, you can find it at this sale.

If you need more information on the sale, or would like to be one of our vendors, please contact me, Chuck Grieneisen, at chuckfg@bellsouth.net or 407-359-6276.

Suggestions for Beginners with Palms & Cycads (Part 3)

FERTILIZING PALMS AND CYCADS

By Tom Broome

Even though most of the well known cycads have “palm” in their common name, such as “The King Sago Palm,” they are completely different plants. Even when you go to your local garden center, they will try to sell you a palm fertilizer for your cycads. In this article, I will try to explain the differences in these plants and why you should use different fertilizers.

I will give the new people enough information so that they can take care of their plants properly, but for those of you who are advanced growers, I will show you how you can manipulate your palms and cycads to make them grow better and to increase cone and flower production. I will have something for everyone in this article, no matter what level you are at now, and by the time you are finished, even the new people will have an advanced knowledge of fertilization that will help you in the future.

When choosing a fertilizer to use on one of my plants, no matter what it is, I try to look at the growth pattern of the plant in question and choose a fertilizer that has a release pattern that will match the growth pattern of that type of plant.

Palms have a continuous growth pattern. They will continue to throw new leaves, one at a time, throughout the year. For this reason, you want your palms to have nutrients being released at all times. People don't realize it, but if your fertilizer stops working for even a month during the peak of the growing season, after you fertilize it again, it can take 3 or 4 months for the palm to get back to growing at the same speed as it was before it ran out of fertilizer.

People always ask me how often should I fertilize my palms, but that depends on what fertilizer you are using. There are many products that can work well, but you need to look at each product to see how long it lasts and use it as often as it takes to have this continuous release of nutrients. Nurserymen's Sure-Gro has a nice palm special fertilizer, but you may need to use that product every other month.

My favorite fertilizer is Nutricote 360, 18-6-8 formula. When you first apply the fertilizer, it takes



Magnesium deficiency on the leaf of Livistona rotundifolia. (Photo by U. of Florida Ft. Lauderdale Research & Education Center)

about 2 months to reach its maximum rate of release and after that, it lasts the entire year. I use it in early spring, around the end of February, and then use it again, the same time the next year. This helps me because I only have to do it once a year and I have 30,000 plants I have to take care of, but most importantly, it has the constant release, which is the best for palms.

When looking for a palm fertilizer to start with, you should look for a fertilizer that doesn't release too much nitrogen too fast. Many palms that grow too fast can get a thin trunk over time, where palms that grow a bit slower will have thicker trunks that look much better as the palm gets larger.

Many people ask me if they should fertilize their palms during the winter. For me, I am using the 360 day Nutricote so my palms are getting fertilized all during the year, which includes winter. If someone is using a different product that lasts 2 or 3 months, then they have the ability to regulate what they use during this time of the year. Many people don't fertilize their palms at all during the winter, because they are afraid that the palms will produce soft new growth that can get burned during a freeze event.

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FERTILIZING PALMS AND CYCADS

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There are lots of opinions on this subject, but my opinion is that the palms can use the extra energy during this time of the year. If you look on the labels of most of the commercial fertilizers used for general landscape plants, you will see that they have a summer rate of application and a winter rate. The winter rates are usually half the summer rate. My suggestion is that people using this kind of fertilizer should use half the rate that they use during the summer so that the palms can have some sort of constant energy, but then, not enough to push a lot of soft new growth.

Minor elements are very important in general, but palms tend to get off color quickly when there is a lack of minor elements. There are many minor elements that are important, but the most important minors are Iron, Magnesium, and Manganese. There are others, like Boron, that help the looks of palms, but you would only want a very small amount of Boron in your palm fertilizer.

Without getting too complicated with my explanations, palms that have an Iron deficiency are pale looking and the use of Iron will help green up your plants. Palms with a Magnesium deficiency will also be off color and the use of a product that has Magnesium Sulfate (Epsom Salts) will help to green up your palms as well. Palms that have a Manganese deficiency will get something that is commonly called “frizzle top”. The new leaves will be somewhat mutated and frizzle out in different directions, as well as being off color and even browning out. Eventually, a palm with a Manganese deficiency can die if not treated properly.

As if all of this is not complicated enough, many minor elements must be balanced with each other or problems can occur. There is a direct relationship between Manganese and Iron. If you use a product that has a lot of Iron in it, your palms will show a Manganese deficiency. If you use a product high in Manganese, then an Iron deficiency can occur. A common example of this is the use of Milorganite for palms. Milorganite has been a product that people have used for years, which is a sludge product that has a higher Iron content. After a while people noticed that they were getting frizzle top on their palms and later found out it was because they used Milorganite. In this case, they would supplement with some Manganese Sulfate to counteract the effects of the Milorganite.



Above, manganese deficiency on the leaf of Phoenix roebelenii. Below, iron deficiency on the leaf of Caryota mitis. (Photos by U. of Florida Ft. Lauderdale Research & Education Center)



Most people who grow palms don't care that much about whether or not the palms flower, or how much they flower. Even though I am known for being a cycad grower, most people don't know that I used to grow more palms, and had 275 different species growing at one time.

My favorite palms were *Chamaedoreas*, and I had breeding colonies of 40 *Chamaedorea* species. *Chamaedoreas* are dioecious, having separate male and female plants, and I would collect the pollen and hand pollinate the females to produce seeds. I performed a detailed experiment with subject plants and

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Manganese deficiency on the leaves of the King Sago cycad, Cycas revoluta.. (Photo by Tom Broome)

FERTILIZING PALMS AND CYCADS

(Continued from page 10)

control plants using fully mature palms and palms that should have been a year away from flowering. Two months before, and one month before the palms would typically flower, I applied Triple Super Phosphate (0-46-0) to the subject palms. The mature palms produced 30% to 40% more flower spikes (spathes) than the control plants and most of the flower spikes produced more rachillae (little fingers of flowers) per spike. On the close to mature *Chamaedoreas* that were 2 ½ years old, 20% of those plants flowered where none of the control palms flowered at all. This may not be important to most people, but this may be invaluable to any of you breeders out there.

As I said before, cycads are completely different plants than palms. They are dioecious cone-bearing plants and predate any of the palms by at least 150 million years. The soils in most cycad habitats are very poor in nutrients, that is, if the cycads are growing in soil at all. Some cycads are growing on solid rock and the only Nitrogen they get comes from a special secondary root system unique to cycads called coralloid roots. These roots grow up to the surface, instead of down like regular root systems.

Cycads have a symbiotic relationship with a blue green algae that helps fix Nitrogen from the air, and this all happens in the coralloid roots. Cycads have what is called an episodic growth pattern, where new sets of leaves are produced in groups, or flushes, all at the same time. Cycads are very energy oriented. They need to build up enough energy in order to

produce new leaves and need even more energy to produce cones. For that matter, it takes a lot more energy for a cycad to produce a female cone than it takes to produce a male cone.

In habitat, many cycads may only produce a flush of new leaves every 5 to 8 years. In some habitats, fires can occur and after the grass growing around the cycads burns, the burnt material acts as a fertilizer and the cycads will produce new leaves. In other cases, understory cycads, like zamias, may wait until a tree falls down creating more sun for the cycads, and then they will produce leaves or cones for the first time in years.

Cycad seedlings will produce leaves one at a time for the first few years. Once the stem has increased in size, they will produce 2 leaves at a time, then 3 leaves at a time. The number of leaves per flush will continue to increase, as the size of the plant gets larger. As the number of leaves that are produced at a time increases, it takes that much more energy to initiate a new flush of leaves. Seedlings will easily produce leaves 3 or 4 times each year without any special treatment, but when the cycads start producing around 6 leaves at a time, they tend to only produce one set of leaves each year.

I usually use the 360 day Nutricote on my cycads up to this stage because I only have to use it once a year, which makes my job easier, but once the cycads start producing larger multi leaf flushes, I switch over to a high Nitrogen fertilizer that releases most of its Nitrogen in the first 3 or 4 weeks. This big push of Nitrogen forces the cycad to produce a full set of leaves within 4 to 5 weeks. I haven't found a good product that is on the store shelves, so I have had a wholesale fertilizer plant make my own fertilizer to my own specifications. I call it Cycad Special. It is a 24-7-8 with minors and it lasts 3 months with most of the Nitrogen being available to the plants during the first month.

With this fertilizer I have been able to get *Cycas revoluta* (king sago) to produce up to 4 flushes of leaves each year. Before I made it available to other people, I performed many experiments on my cycads and found that some cycads react very well to fertilizer applications and some do not. Some of the other species that reacted the best were *Ceratozamia hildae*, and *Encephalartos ferox* at 4 flushes per year, *Encephalartos arenarius* at 5 flushes per year, and *Cycas taitungensis* at 6 flushes per year.

Some species didn't react to the fertilizer at all. *Dioon mejiae* is one example. They seem to react to

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FERTILIZING PALMS AND CYCADS

(Continued from page 11)

heat and not to the available Nitrogen. Usually, *Dioon mejiae* will produce leaves in August, here in Florida, after it has been hot for at least a month. One year we had a bad heat wave as early as April and most of my *Dioon mejiae*s produced their leaves in May, so in the case of this species, there is no need to use any special fertilizer to try to force extra flushes of leaves.

Before I continue, I want to point out to everyone that just because a product may be high in Nitrogen, it does not mean it will work as well as the Cycad Special. You need to look at the label and see what the available Nitrogen is derived from. A time-release fertilizer that is high in Nitrogen will not work as well. You need a product that will release most of the Nitrogen in a few weeks, so something that is higher in Amoniacal Nitrogen or Ammonium Nitrate should work well, but if the main source of Nitrogen is insoluble Nitrogen or a Sulphur coated Nitrogen, these products will not work as well.

There are some cycads that I don't use Cycad Special on. Some cycads will get large splits in their stems if they grow too fast. Most of the zamias from Central America and South America are in this category. The most well known zamia in this group is *Zamia furfuracea*, which is commonly called "The Cardboard Plant." The only zamias I have found that don't seem to have this problem are the "pumila type" zamias. If you are not familiar with this term, let me explain. The "coontie," or *Zamia floridana* is the cycad that is native to Florida. It has dark green leaves and dark brown to reddish brown cones. There are several other "pumila types" that look much like the coontie, and all of them come from the Caribbean. *Zamia pumila* is the zamia that comes from the Dominican Republic and was the first zamia described, so all of the other Caribbean zamias are commonly called "pumila types". Another group of cycads that have a tendency to split their stems are the *Cycas* species from Asia that have leaflets that split, or are dichotomously divided. These species are known as the "micholitzii types" and include: *Cycas micholitzii*, *C. debaoensis*, *C. bifida*, and *C. multipinnata*. On all the cycads that have a tendency to split their stems, I am using the 360 day Nutricote.

For those of you who have king sagos with Asian scale, otherwise known as CAS, treatment to kill the scale is only part of the equation to bring your plants back to health. The scales will literally suck the life

right out of your cycads and using a good fertilizer will help give your plants energy and to help produce a new set of leaves, that hopefully, will flush out and be free of CAS. The starch mass in the stem of cycads is very important, and using a good fertilizer at the same time as your chemical treatment to kill the scales, will help bring the starch mass back up and your sagos will be able to fight off the scales much easier.

For those of you who don't know, ALL cycads are on the endangered species list. Many are on appendix 1 of CITES, which is the highest level of endangerment for plants and for animals. For this reason, it is important to many of us to try and produce seeds to help make these endangered plants more plentiful. The proper fertilizer can be an excellent tool to help increase cone and seed production.

People don't realize, but a female *Cycas revoluta* that produces seeds will have up to 60% of the starch mass used up while trying to give energy to the seeds. This is why a king sago that produces a full head of seeds will not produce another cone for at least another year. During the time that I was building my cycad colonies for seed production (my first 7 years) I would document every flush of leaves and every cone being produced on my entire collection. I noticed that all cycads have a particular time frame where leaves are being produced, when cones are produced, and when the cones become receptive for pollination.

Most of the time, leaves were being produced at the same time that cones were being produced. After some detailed and lengthy experimenting, I found that about 2 months before the expected emergence of cones, the cycads seem to "decide" whether they have enough energy to produce a cone that will hold seeds, and if they didn't have a high energy level at that time, they would produce a flush of leaves instead. I found that using a fast reacting, high Nitrogen fertilizer, like Cycad Special would increase my cone production. One of my test blocks was a group of 40 *Zamia vazquezii* plants. The year before the experiment, 4 of these plants produced cones. After applying the fertilizer 2 months before the expected emergence of cones, 36 of these plants produced cones. I also found that cycads that were properly fertilized would produce larger cones, thus producing more seeds.

Cycads normally don't have the same problems with minor element deficiencies that palms do.

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FERTILIZING PALMS AND CYCADS

(Continued from page 12)

Sometimes, if your soil is really bad, some very unusual deficiencies might show up, but the only common deficiency would be a Manganese deficiency. The only species I have seen this in are *Cycas revoluta*, and *Lepidozamia peroffskyana*. Properly identifying a Manganese deficiency takes a little bit of prior knowledge that most nursery people do not have.

For years, when I showed a deficient plant to a nursery owner, they would tell me it was a fungus problem. A Manganese deficiency produces a brown mottled look on the leaves. This same look can come from the aftereffects of a scale infestation. Cold and freeze damage can have a similar look, but it is slightly different. The key is, that when the new leaves are produced, they will already have the brown mottling, where if this is not a minor element deficiency, the leaves will come out looking healthy and green and then the leaves will turn brown looking after the fact.

Using a fertilizer with Manganese in it will rarely take care of this problem because most fertilizers that have Manganese in them only have very small amounts. A Manganese deficiency in sagos usually shows up when the soil has an alkaline pH and there is a lack of Manganese in the soil. You must use a product that contains at least 4% Manganese for it to counteract the deficiency. I suggest using Manganese Sulfate. This will not fix the damaged leaves, but the next set of leaves should look normal again. If you remember, earlier in the article I talked about the balance of minor elements. I suggest using some Iron Sulfate along with the Manganese Sulfate just so that when you do use it, your sagos won't get an Iron deficiency later on.

My regular regimen for sagos is to use the combination of these two products in early spring as well as using the Cycad Special, and just use Cycad Special for the rest of the year. Using this much fertilizer will not burn your plants because Nitrogen is what usually burns your plants and these two minor element products don't contain Nitrogen.

I hope this article has helped everyone understand how palms and cycads grow and how certain fertilizers will help you grow your plants better and faster. For those of you who are looking for more than just the basics, I think this article will give you some insights on how you can use fertilizer as a tool to manipulate your plants to make them do what you want them to do, and when you want them to do it.



Borassus flabellifer at Joe Alf's, West Melbourne. Seed came from India in 1982, Joe says it's finally matured. Part of the inflorescence is visible on the right (above). Estimate 20 ft of clear trunk, 30 or more overall. That's Joe below. (Photo by Mike Dahme)



The International Palm Society (IPS)
Anyone interested in joining the IPS and receiving the quarterly, illustrated journal, *Palms*, should send a check for \$45 to:

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A Sojourn in the Seychelles: 6 Endemic Palm Species

By René Coativy

The Seychelles are meaningful to honeymooners and palm freaks. The archipelago lies between 4 to 10° south latitude and between 46 and 56 longitude east, in the middle of the Indian Ocean. It's made up of 115 islands, 20 of them inhabited. The islands cover an area of 444 sq kms [171 sq miles] scattered over a maritime area of about 400,000 sq kms [150,000 sq miles].

The “near isles” are granite with tropical vegetation inland, growing like huge gardens out of the sea. They represent 45% of the surface territory, and include the larger islands of Mahé, Praslin, Silhouette, La Digue and Curieuse.

The “distant islands” are often either granite, eroded a few meters above sea level, or coral, often covered with *Cocos nuciferas*, at one time in copra and coconut oil production. They are of little interest to us except ...Coëtivy Island!

The Seychelles' underwater “plateau” was once, several hundred million years ago, part of Gondwanaland that encompassed present Africa, Madagascar and India. Millions of years of isolation have allowed the development of some original flora and fauna.

Some granite boulders in the Vallée de Mai are 650 million years old from the Precambrian era. Soils are in most cases decomposed granite and laterite and thus very poor in nutrients to almost sterile. Only the decaying of the organic materials enhanced by the constant high humidity (80% average), the high rainfall (2,5 meters a year av. but up to 5 meters in some high exposed spots of the Morne seychellois) allow the formation of deep compost pockets in which, among others, *Lodoicea maldivica* palms thrive. Deforestation and forest fires are major threats as much as sudden downpours which can wash the humus away and make the soil sterile.

Although near the equator, the Seychelles enjoy a pleasant tropical maritime climate. The temperatures only undergo slight differences between the relatively dry and cool July 28°C [82°F] and the hot humid winter 32°C [90°F], April being the hottest month at 34°C [93°F] and January the wettest, with 400mm [16 in] of rain. In the same way the sea temperature varies from 28°C [82°F] in July up to 32°C [90°F] in May.



Lodoicea maldivica (above) at the Victoria Botanical Garden, Mahé. Right, Tara holds the great seed. (Photos by grandpa René Coativy)



The influence of the Indian monsoon determines the Seychelles' climate and the islands' vegetation testifies to this. The south-east trade winds make the season between April and October cool and dry with relatively little rain, the so-called “Indian Winter.” The north-east trade winds blow between November and April with the climate being hot, humid, and wet. This is the “Indian Summer.”

Seychelles granite islands' vegetation is exuberant and lush, with more than the palms to look at. The most sought after endemic tree is *Calophyllum inophyllum* (takamata) much loved for the shade it provides when the sun is at the zenith. Also very present are *Dillenia ferruginea* (bwa rouz), *Secamone schimpenans*, *Drypetes riseleyi*, *Northea hornei*, and *Swietenia macrophylla*.

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Seychelles Sojourn

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There are six endemic palms in the Seychelles, of which five are present in the famed Vallée de Mai (45ha [111 acres]) a part of the much larger Praslin national park (700ha [1730 acres]) which lies at 4°20' south and 55°44' east between 0 and 367 meters above sea level in the southern half of the island.

Most of the hill slopes are covered with secondary mixed forest with a high portion of endemic palms dominated by the famed coco-de-mer or coco-fesse due to the suggestive shape of the female fruit of *Lodoicea maldivica*.

Officially discovered in 1768, in fact 6 years earlier but unnoticed by the French explorers, the valley was kept wild until 1930 when a new owner introduced exotic plants to make a botanical garden. In 1948 the whole area was purchased by the Government to secure the major water basin of the island. In 1966 it became a natural reserve and a UNESCO World Heritage site in 1983.

For the last 20 years exotic plants have been eradicated from the Vallée de Mai and the job is almost complete but remains to be done elsewhere in the national park, where exotics remain a threat. The Vallée de Mai today holds about 6000 specimens of *Lodoicea maldivica* or about the same number as when it was discovered, estimated then circa 7000. But 90% of the current total have been planted in the last 20 years from the annual 3000 seeds presently produced by the mature palms and will not be mature before another 15/20 years when the valley will be at its glory.

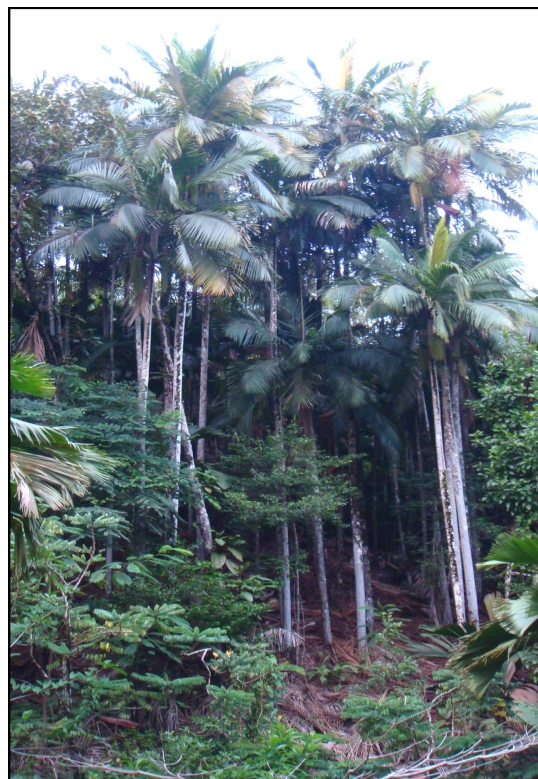
This low number of mature palms scattered through the forest is immediately visible when you enter the reserve. Also noticeable is the total absence of intermediate size palms. *Lodoicea maldivica* is a dioecious palm with male and female plants. The male bears a massive drooping inflorescence looking like a thick human arm or a long phallus covered with a mass of tiny yellow honey scented flowers. At the right time the usual roamer or green gecko (*Phelsuma* spp.), which is the pollinator, carries the pollen on to the female flowers.

After pollinisation, the seed grows for a year to its final variable size but will take another 5/6 years on the palm to mature and ripen. In fact, you can see as many as 5 levels of inflorescences along the female stem with seeds of various sizes. Although undoubt-

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Above, a fruiting Vershaffeltia splendida. Below, a group of Deckenia nobilis. (Photos by René Coativy)



Seychelles Sojourn

(Continued from page 15)

edly the largest seed in the plant kingdom, *Lodoicea* seeds are variable from 15 cms [about 6 in.] and 2 kgs [4.4 lbs] up to 60 cms [about 23 in.] and 20 kgs [44 lbs], without explanation so far for the variation.

Germination takes 3 years for the first leaf to emerge. Another 15 years will be necessary for the stem to emerge and another 15 years to become an adult and reproductive. Adding the 7 years to ripen a seed, 40 years will have passed before any female *Lodoicea* gives life! Male *Lodoiceas* can reach 30 metres [98 ft] and female 25 [82 ft]. The trunks are rather slender, about 35 cms [14 in.] although I've noticed a population of much slimmer plants 25cms [10 in.] in one area of the valley.

Although unknown, the lifespan of *Lodoicea* is guessed to be between 200 and 800 years!!

After all, *Lodoicea maldivica* is a rather fast growing palm compared to some "gasteropodic" *Oraniopsis appendiculata* and my guess is that they do not live that long, probably only two to three centuries.

The most amazing in the forest are the "teenager" *Lodoicea*, 15 years old or so, and their aptitude to change in shape with time and stature. Hidden in the shadow of the thick canopy, the young *Lodoiceas* stretch their petioles and leaves to amazing size to a point they look like *Corypha umbraculifera* in a desperate effort to reach their share of sunlight. Petioles are up to 10 meters long and leaves up to 5 which rank them in the top giants.

In time petioles and leaves will shrink dramatically down to 1,5 meter for the petiole and 2 meters for the leaf, giving the adult crown an entirely different look to the adult palm. This phenomenon is even more evident when the *Lodoiceas* are in the open in coastal seaspray and windy spots like Anse Lazio on Praslin.

Mature *Lodoiceas* can be seen scattered all throughout the Praslin island but their natural regeneration is jeopardized by illegal poaching of the seeds outside the national park and some protected areas like Fond Ferdinand, where an important *Lodoicea* population was wiped out in 1990 by a forest fire and is now undergoing replanting. Today the major threat is fires, and firewalls have been established all around the Vallée de Mai using primarily the exotic *Tabebea pallida* (calice du pape)

Lodoicea maldivica is also present in small numbers on northern Curieuse and it is unexplained why they

are absent on Mahé and Silhouette, which show the same geographical, geological, and climate patterns. As a matter of fact, *Lodoicea maldivica* grows very well at the Mahé botanical garden. That particular palm was planted in 1956 by Prince Charles and looks in great shape! Last, but not least, *Lodoicea maldivica* thrives around the worldwide equatorial belt, the best example being Nong Nooch gardens in Pattaya, Thailand.

Fertile and empty *Lodoicea* seeds can be purchased and exported with adequate governmental certificate. Prices vary according to the offer and demand. From 80€ in January 2008, prices soared to 200 the following November, although I was able to buy one of big size at 125€ in a small Praslin store. The palm story ends here for the ordinary tourist but it continues for us.

Less well known are the other 5 native Seychelles palms. Let's start with the most obvious species that is seen everywhere:

Phoenixophorium borsigianum

Endemic palm to 20 m high with a spiny stem when young. The spines are typically yellow.

Full leaves rather stiff to 1,5 meter long split at the apex only with bifid orange edged serrations. Both flowers together on a single stiff branched inflorescence followed with small ovoid orange red fruits 1,5 cm long. Very adaptable, *P. borsigianum* is the most widespread palm on the islands. Very striking and tall when growing in deep shade, it becomes almost a dwarf in the open of the hills of Zimbabwe, a high spot over Anse Lazio on Praslin. The contrast is stunning between two populations close together in the shade of Anse Boudin and the sunny Zimbabwe. *P. borsigianum* is the dominant palm of the Seychelles present on Praslin, on Mahé both in the open cliffs dominating Anse Lazare as well as in the cloud forest of the Morne Seychellois where, surprisingly and despite shade and high rainfall, they do not get very tall.

I have also seen a few small specimens in La Digue Reserve drier forest but not one on the track to the Nid Aigle (330 masl).

P. borsigianum must also be drought resistant as I remember the tall specimens in the public garden in central Townsville (Queensland, Australia)

Deckenia nobilis

Also called "palmiste" locally because it is edible. It is never good to be edible because here too mankind

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Seychelles Sojourn

(Continued from page 16)

has spent a lot of time to fell this palm for its heart, thus decimating the species to a large extent. It is found now in the Vallée de Mai and inaccessible spots on Praslin and on Mahé at Anse Soleil and on the Morne Seychellois.

It is an impressive endemic palm to 40 meters high with pinnate leaves to 5 meters long and a smooth grey crownshaft well below which are emerging the inflorescences, first a prickly spathe held at a right angle to the trunk and below long drooping yellow branches carrying both flowers followed by 1 cm long ovoid purplish black fruits.

From a distance, thickets of *D. nobilis* look like *Archontophoenix alexandrae* or *Prestoea acuminata*.

They are often interspread with *Nephrosperma vanhoutteanum*. Although present in the Vallée de Mai, albeit in clearings, they seem to prefer lighted edges where they can stretch their high stature.

D. nobilis populations are quite variable with some groups showing slender stems and stiffer and darker colored leaves. Could there be more than one species?

Nephrosperma vanhoutteanum

Endemic palm to 15 meters high but often shorter when growing in the open. The tallest we have spotted were in the Vallée de Mai desperately winding their stems to get some height through the *Lodoicea* canopy. Being shorter, it is almost an impossible task while their stems are getting dangerously slimmer and slimmer.

When planted in the open like at Anse Gaulette (Mahé) they become sturdier, albeit shorter.

The palm stem is spiny when young. The spines are white. The leaves are pinnate to 3 meters long with mealy leaf bases, stiff branched inflorescences and both male and female flowers together followed by flattened globose red fruits to 1cm wide.

N. vanhoutteanum is very seed prolific and despite this fact it is not abundant for unknown reasons.

One may be tough competition from other species, *N. vanhoutteanum* seeming the weakest of all.

Its presence is limited to Praslin and it can be found but scarcely on Mahé and Silhouette.

Almost unnoticeable is the triangular leaf base shape on adult palms in the way of *Dypsis decaryi*.

Versaffeltia splendida

Its name *splendida* speaks for itself. It is truly splendid. Endemic palm to 30 meters, with ringed stem

and stilt roots. The drooping leaf is pinnate at the apex and generally entire above with margins regularly toothed.

Bears both flowers together on drooping inflorescences followed with globose red fruits to 2 cms wide. *V. splendida* is limited to Praslin and rare on Mahé and Silhouette. *V. splendida* is an impressive palm on its sometimes huge stilt roots looking like some *Iriarteia*. Contrary to *N. vanhoutteanum*, *V. splendida* grows in secluded pockets away from the *Lodoicea* in the Vallée de Mai in which they grow straight above the *Lodoicea* canopy.

Even so, *V. splendida* is in low numbers except in the stream gulleys where water is more abundant.

Its rather big seed could also be a handicap as difficult for the local rather small birds to spread it around.

The giant bat (*Pteropus seychellensis*) is strong enough to spread those seeds around but does not seem motivated!!

We have covered the 5 species present in the Vallée de Mai. The sixth species does not grow there.

Roscheria melanochaetes

Although Lionnet records it on Praslin, I did not see it, but Mr Lionnet must be right.

I was more lucky along the track to the summit of le Morne Blanc (667m asl) where it is rather abundant above 500 meters. Endemic palm to 8 meters high, but I did not see any over 3 meters, with a slender stem to 6 cms, ringed with black spines and irregular fishtailed leaves somewhat like *Pinanga kublii*.

The palm's striking attribute is the spike with longitudinal red stripes turning into a new red leaf. The inflorescences are branched, carry both flowers followed with small black elliptical fruits to 5mm long.

R. melanochaetes thrives in the cloud forest of le Morne Seychellois amidst tree ferns which have been almost eradicated to make flower pots! and some strange palm looking thickets of *Curculigo seychellensis* (coco marron) at the summit. A shy plant, *R. melanochaetes* although not in great numbers, is present in all sizes which proves a good regeneration status in protected areas.

I do recommend anyone reading this article to pay a visit to the Seychelles. It is not next door, it is not cheap, it is just worthwhile.

A Brief Survey of the Winter's Unpleasantness: **Lake Placid, St. Pete, Oviedo, Vero Beach**

While we have experienced brief occasions of briefly freezing temperatures in winters past, especially in the inland areas of Central Florida, the winter just past—it is past, isn't it?—was the coldest since the Christmas freeze of 1989. At that time, the temperature dropped to 14 in Gainesville and to 18 in Vero Beach, 200 miles south. Last December was warm, early January slightly less so, but the cold of late January and early February came as a shock, particularly to those newcomers to Florida, (formerly) blissfully unaware of potential winter disasters that may last only a few nights/mornings, yet leave behind considerable damage.

It's important to realize that most, if not all, of the palms and cycads damaged to various degrees, will start to recover when hot weather returns. Some damaged palms will die, not from the effects of the freeze, but because their weakened condition attracts insects and fungi. Treatment with suitable insecticides and fungicides may avert some potential fatalities.

Page 20 has a long, detailed article on recovery from cold damage by Dave Witt, reprinted from six years ago.

—The Editor

Walt Darnall, Lake Placid:

The radiational freeze of January 22, 2009 was very severe here in Highlands County, depending on exact location. Morning low temperatures were all over the map.

Archbold Biological Station, 8 miles south of Lake Placid, recorded an official low of 15 degrees! Elsewhere, low ground temperatures averaged in the low to mid 20s (my place); high ground temperatures averaged in the low to mid 30s; lake front areas averaged in the mid 30s to low 40s. (Note: The afore temperatures are open yard temperatures. Under tree canopy temperatures were about 5 degrees warmer.)

At my place and most low ground locations, most all zone 10 plants, trees, shrubs, vines, and palms were 100% defoliated, and many shrubs have damaged wood. With respect to palms, *Adonidia merrillii*, *Dypsis lutescens*, *Dypsis decaryi*, *Roystonea regia*, *Wodyetia bifurcata*, *Caryota mitis*, *Phoenix roebelenii* et al were basically fried. I even had some light sporadic burn on *Phoenix reclinata*, *rupicola* and *sylvestris*.

Yet, on high ground (as in the town of Lake Placid, high up on the Lake Wales Ridge) and close-in on the

lakes there was virtually no damage. Also, frost was very light here, I believe to low dew points. I also believe the low dew points contributed to the low temperatures.

Phil Stager, St. Petersburg:

The good news over here in south Pinellas is that the temp never got below 37F. (My neighbor's *Cyrtostachys renda* do not look too healthy even if she had them well-covered. I thought they'd never live to see 2009.) So no apparent damage here in the yard or down at Kopsick.

Claudia Walworth, Oviedo (between Sanford and Orlando):

On January 21st we had a low of 26F.

Cycads browned out: *Zamia picta*, *Z. vazequezii* (about 50% – growing as an understory plant), a 15-foot *Cycas circinalis*, *Cycas wilailak* (the half not protected by a ligustrum tree), and *Z. furfuracea* (several large plants).

Surprise: three flats of cycad seedlings [*Z. amblyphyllidia*, *C. taitungensis* cross, *C. rumphii*] in 6-inch pots covered with one layer of thin frost cloth were not damaged.

Of the mature palms we have, a 20-foot Cuban royal palm was damaged; all leaves appear dead. And two enormous *Dypsis lutescens* were totaled, after surviving 12 years of “regular” winters.

These cycad species survived 26F (in Zone 9B) with no damage: *Bowenia serrulata*, *Ceratozamia hildae*, *Ceratozamia mexicana*, *Encephalartos chimanimanien-sis* and *E. senticosus*, *Dioone edule*, and of course *Zamia floridana*. I also have *Zamia pseudoparisitica* that survived several 30-degree winters hanging from a tree branch, but I moved it to the greenhouse for this weather event.

Our low overnight (Feb. 5) was 30F, 3 degrees warmer than forecast. No new palm/cycad damage was apparent today, but we have an abundance of other plant materials that are totally fried.

John Kennedy, Vero Beach:

This southern end of mainland coastal Central Florida, 6 miles from the ocean, 3 miles east of the Indian River lagoon, escaped much of the worst as described by Claudia.

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PLANT SALES

South Florida Palm Society, Palm & Cycad Show/ Sale

Montgomery Botanical Center, Miami
Saturday, March 14 & Sunday, March 15
9:30--4:30

Harry P. Leu Gardens, Orlando, Annual Plant Sale

Saturday, March 21 & Sunday, March 22
9:00-5:00 (Members only, March 21, 8:00-9:00)
www.leugardens.org
(407) 246-2620

Marie Selby Botanical Gardens, Sarasota, Annual Spring Sale

Saturday, March 21 & Sunday, March 22
10:00-5:00 (Members only, March 21, 9:00-10:00)
www.selby.org
(941) 366-5731

Kanapaha Botanical Gardens, Gainesville, 19th Annual Spring Garden Festival

Saturday, March 21 (9:00-6:00) & Sunday, March 22
(10:00-5:00)
www.kanapaha.org
(352) 372-4981

Heathcote Botanical Gardens, Fort Pierce, Bloomin' Art & Plant Sale

Saturday, April 4 & Sunday, April 5
9:00-5:00
www.heathcotebotanicalgardens.org
(772) 464-4672

Palm Beach Palm & Cycad Society, Spring Sale, Caloosa Park, Boynton Beach

Saturday, April 11 (9:00-5:00) & Sunday, April 12
9:00--4:00



Lantania lontaroides, 40 ft. tall, survivor of many freezes, including the most recent and brief. The female palm is known to have been in place in Vero Beach since 1936. Picture taken at the end of January; no damage is apparent. *Attalea* sp. at right, *Livistona chinensis* at left. The crown of this *Lantania* is pictured on the CFPACS membership brochure

(Photo by John Kennedy)

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One night—the second of the four cold nights—brought heavy frost. Other nights were windy. The last night dipped barely below freezing (31°) for a couple of hours. Almost no perceptible damage except some leaf-spotting on a few smallish *Ptychosperma* sp. and to a 3-foot *Veitchia joannis*. A small *Lantania lontaroides*—replacement for the big one killed by palm weevils—had all uncovered leaves browned.

I had been wondering if I were crazy to have planted *Mauritia flexuosa* and *Mauritiella armata*—even smaller—but they emerged undamaged from the plastic garbage cans covering them. All around the neighborhood, coconut palm fronds were brown, but the spears seemed to be green. Two 15-foot *Dypsis leptocarpus* growing in the open, a few blocks away, showed no damage. We may all see in the future some damage that is not yet apparent.

PALM COLD DAMAGE RECOVERY IN ORLANDO

[This article appeared in the December 2002 issue of The Palmateer. It is reprinted here for the encouragement of those reeling from the past winter's cold damage. Dave has written frequently in the past about cold hardiness. —Editor]

By Dave Witt

I often write or talk about how palms fare during cold weather and I thought it might be a good idea to put some of that data to practical use. So I decided to take a look back over the ten years that I have been growing palms and try to figure out which palms can recover from annual freezes and or defoliations and which ones cannot. So without going into very specific details on each species listed I have attempted to categorize them into several groups.

The size of the palm plays an important role in this. Small palms (three gallon size and under, also some seven gallons) cannot be relied upon to recover. So for the most part the following info is based on palms of a 15-gallon size or larger. Basically, with few exceptions, this means any palm that has begun to if not already formed some stem at the base. I think the first group can be considered more “cold hardy” than the second, the second more so than the third. None of the palms listed below were “protected” in any way. However, many of them were treated for subsequent bud rot when applicable.

Several items jump out at me after reviewing the lists. For instance “crownshaft” palms are very susceptible to their foliage shrinking in size, reducing their growth rate and having to virtually start all over again, losing a year or more of normal growth time. This means it often takes the palm twice as long to grow (in overall height as well as frond size) as it normally should. But this is not confined to crownshaft palms only, and the reduction in canopy and frond size appears to be the main culprit in preventing many palms from recovering at all.

Many of the larger growing fan palms appear to have problems with bud rot; having the center spear(s) pull out and needing to be treated with a copper fungicide. This, in turn, also forces them to start all over, often producing very small fronds for a palm that size/age. This would explain why I have a *Corypha* that is half the size it should be for its age. But, on a positive note, this species as well as others with their growth buds buried well below ground (e.g. *Sabal*, *Borassus*) can recover quickly enough to have a full canopy by the start of the next winter. This

quick recovery seems to ensure their survival, at least for another year. But once this growth bud is finally above ground what happens then? Perhaps a drastic reduction in their ability to re-grow leaves and recover?

There appear to be some very “tropical” palm species that can adapt to growing where annual freezes occur, provided the ground itself does not freeze. Almost every example of this is a palm that clusters or grows multiple stems. These palms re-grow quickly from the roots, fast enough to look good by summer's end and thus be considered cold hardy for here, at least as a “palm annual”. And, lastly, palms that are normally slow growers in producing fronds don't stand a chance at recovering at all when defoliated more than once.

Palms that completely recovered from more than one consecutive defoliation

Acrocomia aculeata: the *totai* palm never has any damage

Arenga pinnata: some frond shrinkage does occur

Attalea (genus as a whole): the growth bud is well underground for decades

Beccariophoenix madagascariensis: a surprise but these are somewhat shaded

Borassus aethiopum & *flabellifer*: growth bud underground for many years

Caryota mitis: new growth from roots but even tall stems usually recover

Corypha utan: growth bud underground for many years

Cryosophila stauracantha: another surprise, again somewhat shaded as well

Dypsis decaryi: some frond shrinkage occurs

Elaeis guineensis: some frond shrinkage occurs

Euterpe edulis: another “surprise” species but again in partial shade

Hyophorbe verschaffeltii: no shrinkage here, seems to not need full canopy

Hyphaene coriacea: tall stems recover as well, growth bud well underground

Licuala spinosa: some taller stems die back completely, others live

Sabal mauritiiformis & *yapa*: growth bud underground for many years

Syagrus coronata X *oleracea* hybrid (= *costae*): fairly quick growth

(Continued on page 21)

COLD DAMAGE RECOVERY

(Continued from page 20)

Wallichia disticha: quick recovery

Palms that have completely recovered from one defoliation but not two in a row

Aiphanes aculeata: severe reduction in frond size & canopy

Adonidia merrillii: severe reduction in frond size & canopy

Archontophoenix alexandrae & *cunninghamiana*: see above

Areca triandra (new stems arise from roots below ground)

Astrocaryum mexicanum: prone to bud rot

Bactris gasipaes & *setosa* (new stems arise from roots below ground)

Borassodendron machadonis: prone to bud rot

Carpentaria acuminata: severe reduction in frond size & canopy

Chamaedorea tepejilote: suckering variety can stay alive for many years

Cocos nucifera: severe reduction in frond size & canopy

Daemonorops angustifolia: not sure on this one

Dypsis leptocheilos: severe reduction in frond size & canopy

Dypsis lutescens (new stems arise from roots below ground)

Gastrococos crispa: prone to bud rot

Geonoma schottiana: growth rate too slow to recover

Heterospatha elata: unsure of problem with these

Hyophorbe lagenicaulis: severe reduction in frond size & canopy

Kerriodoxa elegans: prone to bud rot

Laccospadix australasica (single-stem form): severe reduction in frond size & canopy

Livistona robinsoniana & *rotundifolia*: severe reduction in frond size & canopy

Lytocaryum weddellianum: bud rot & growth too slow to recover

Marojejya darianni: bud rot ???

Mauritiella armata: large stems always died, small ones appear but at lower numbers

Normanbya normanbyi: severe reduction in frond size & canopy

Phoenix paludosa & *roebelenii*: prone to bud rot

Pinanga coronata = *kuhlii* (new stems arise from roots below ground)

Polyandrococos caudescens: severe reduction in frond size & canopy

Pseudophoenix sargentii: growth rate too slow

Ptychosperma macarthurii: older stems usually die off, new growth from roots

Raphia taedigera: bud rot, not sure yet

Ravenea rivularis: severe reduction in frond size & canopy

Roystonea regia = *elata*: severe reduction in frond size & canopy

Schippia concolor: severe reduction in frond size & canopy

Syagrus amara, *botryophora*, *sancona*: severe reduction in frond size & canopy

Thrinax radiata: severe reduction in frond size & canopy

Veitchia winin: severe reduction in frond size & canopy

Wodyetia bifurcata: severe reduction in frond size & canopy

Zombia antillarum: older stems usually die off, new growth from roots

Palms that came close to but did not recover from one defoliation

Actinorhytis calapparia: trialed several specimens with 3-4 ft. of stem; never recovered

Cyphophoenix nucele: growth rate way too slow, severe frond shrinkage

Cyrtostachys renda: small offshoots can re-appear but usually die off as well

Dictyosperma album: severe reduction in frond size & canopy

Kentiopsis oliviformis: severe reduction in frond size & canopy

Latania (all species): prone to bud rot, however some increase in hardiness as they age

Licuala grandis: severe reduction in frond size & canopy

Mauritia flexuosa: prone to bud rot, never recovered

Oraniopsis appendiculata: growth rate way too slow, severe frond shrinkage

Pritchardia remota: severe reduction in frond size & canopy

Ptychosperma elegans: severe reduction in frond size & canopy

Satakentia liukuensis: trialed many times, severe reduction in frond size & canopy

Veitchia arecina: severe reduction in frond size & canopy

CFPACS SEED BANK REPORT 4th Quarter 2008

Note to all members: please keep me updated with your email changes, as you will not be able to receive the Seed Bank's Seed Offerings unless I have your current email address. My email address is at the bottom of this report, please notify me if you have an email change.

The CFPACS Seed Bank has been somewhat slow over the past 3 months, although there was an increase over the same period last year. There were 16 seed orders filled from October 2008 through December 2008, which resulted in a sales total of \$315, excluding shipping charges. As usual we have most customers from Florida. But also had orders sent to California and Kansas. We had one international order that went to England.

Significant seed donations were received from CFPACS members, making for several very attractive and successful seed offers. During this period Mike Dahme donated the largest number of species, which included *Arenga engleri*, *Carpentaria acuminata*, *Licuala paludosa*, *Licuala spinosa*, *Ptychosperma caryotoides*, *Raphia farinifera*, and *Serenoa repens*. John Green provided *Coccothrinax miraguama*, *Livistona decora*, and *Ptychosperma schefferi* (all collected at FIT Botanical Garden), which brought in the largest total sales amount and with the *Coccothrinax miraguama* bringing in the largest single species sales total. John Kennedy donated *Alagoptera arenaria*, *Coccothrinax argentata*, and *Sabal etonia*, which resulted in the second highest sales total. Anne Michael donated *Copernicia glabrescens*, *Copernicia macroglossa*, and *Syagrus schizophylla*.

PJ Klinger donated some very popular *Butia x Jubaea* seeds, which sold faster than any I have seen recently. Christian Faulkner provided seeds for *Pseudophoenix sargentii ssp sargentii*. Dean Van DerBleek donated *Chamaedorea radicalis* and *Phoenix sylvestris* seeds. Neil Yorio provided another batch of the very popular *Syagrus botryophora* seeds. Dave and Gerry Prall donated *Archontophoenix myolensis* and *Syagrus sancona*. Other popular seed donations came from Tom and Karen Barrese - *Zamia Floridana*, Mike Merritt - *Pritchardia beccariana* and *Rhopaloblaste augusta*, Rick Nale - *Dypsis leptocheilos*, Lyle Niswander - *Veitchia arcina*, and Richard Lundstadt - *Livistona australis*. **Special thanks** go out to our Seed Bank customers for their continued support of the CFPACS, espe-



Dypsis lutea at Ron's Palm Sanctuary, Valkaria.
(Photo by Bob Johnson)

CHANGES

As John Green notes below, he is turning over the Seed Bank to Christian Faulkner. John has now taken the position of East Vice President.

Christian Faulkner is succeeded as West Vice President by Mike Evans, St. Petersburg. Ron Hart, Apopka, becomes Central Vice President, succeeding Claudia Walworth.

cially Mike Ricigliano who again ordered a list topping \$95 of seeds during this period.

Your seed donations are always greatly appreciated by the CFPACS, without which we would have no Seed Bank at all. To donate, please contact the Seedbank Coordinator at Seedbank@cfpacs.org to arrange shipping or pickup.

I wanted to also mention that I will be passing on the Seed Bank Coordinator duties to Christian Faulkner. I have very much enjoyed my time in this position, and consider it an honor to be associated with such a great group of folks.

—John Green, Seed Bank Coordinator
Seedbank@cfpacs.org

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BECOME A CFPACS MEMBER!

Please print

Name _____

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Email _____

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Wish to be added to Seed Bank E-mail list? (Circle one) YES NO

Willing to be listed publicly in roster? (Circle one) YES NO

Mail check made out to CFPACS (domestic: \$15 one year; \$40 three years; foreign: US\$20 one year) to:

Karen Barrese
CFPACS Membership Chair
5942 Ehren Cutoff
Land O Lakes, FL 34639
cfpacsmembership@msn.com

Membership also available at website: www.cfpacs.org

The dues of anyone joining after October 1 are applied to the following calendar year and include the December issue.



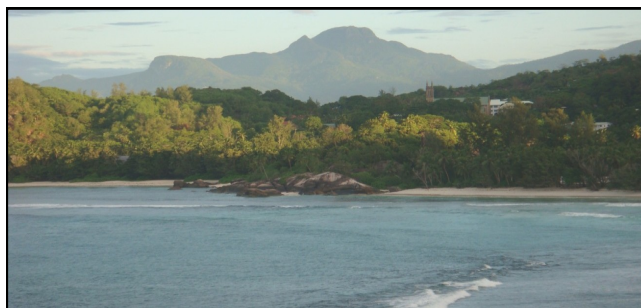
Give a gardening friend the gift of a year's membership in Central Florida Palm & Cycad Society! Four issues of The Palmateer. Reasonable: \$15, not available at the mall. A letter or e-mail message will be sent to the recipient announcing the donor's gift. Send check to Karen Barrese (above) or use PayPal.





Scenes from the Seychelles: Left, Anse Source d'Argent on the island of La Digue. Below, Morne Blanc on Mahé; below, left, a tall Vershaffeltia splendida in the Vallée de Mai on Praslin.

(Photos by René Coativy; story on page 14)



Right, Lodoicea maldivica on the beach, Anse Lazio, Praslin. Left, Roscheria melanochaetes on Morne Blanc, Mahé.

(Photos by René Coativy)



*See story on page 7.
(Photo by Dave Reid)*