The Palmateer

Volume 39, Number 3 Central Florida Palm & Cycad Society September 2017

Left, idyllic scene at the Michael homeplace on Orchid Island, visited by seed collection team on Aug. 23rd. Below, left, Jerry Luedeke and Neil Yorio discuss cycad seeds there. *See page 4 for more.* *(Photos by Libby Luedeke)*

OCT. 28 MEETING: ST. PETE & SARASOTA

Sunken Gardens is a 6-acre, 100-year-old garden in the middle of St. Petersburg. It's the first stop at the CFPACS October 28th meeting. Beginning time is 10:00 a.m. The chapter is paying the admission charge for all members, so a good idea to be there at the opening time. This is a reciprocal garden admission site, so if anyone belongs to another botanical garden, say so during the headcount before we go in. We will have a guided tour of the plantings.

Bring a picnic lunch and drinks. We will eat there at noon. Restaurants are within walking distance, if you prefer.

Second stop is the Tropiflora Fall Plant Sale in Sarasota. This is the 17th year of the huge sale that brings vendors from all over the state with just about every kind of garden plant.

Addresses: **Sunken Gardens, 1825 4th Street, North, St. Petersburg**
Tropiflora Garden Center, 3530 Tallevast Road, Sarasota

CENTRAL FLORIDA PALM & CYCAD SOCIETY

YES, it's now October. YES, this is the September issue of the newsletter. Irma and aftermath caused delays.

The Palm Beach Palm & Cycad Society fall sale for October 7-8 at Mounts has been cancelled.

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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.
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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
Central Florida Palm & Cycad Society
3225 13th Street
Vero Beach, Florida 32960-3825
(772) 567-9587
Editor: John D. Kennedy
palmateer@cfpacs.com

Update on UA Young and Other Cycads at Kopsick

By Phil Stager

Almost all of the cycads from the U.A. Young collection at Kopsick have flushed twice or more and are looking splendid.

The sole exception are the large *Ceratozamia*s which are still slow to take off. We have installed ten smaller *Ceratozamia*s to fill in the large bed that holds most of the large specimens.

The three pier pots are empty but will be planted with Encephalartos sclavoi which are on hand. Two new *E. turneri* have also been purchased and installed and have flushed once. Stop by and see for yourself before, during, or after the upcoming meeting.

Blue section cycads *offset by pea gravel mulch.*

Linda Lane and its healthy Dioons*.*

New E. turneri *first flush*

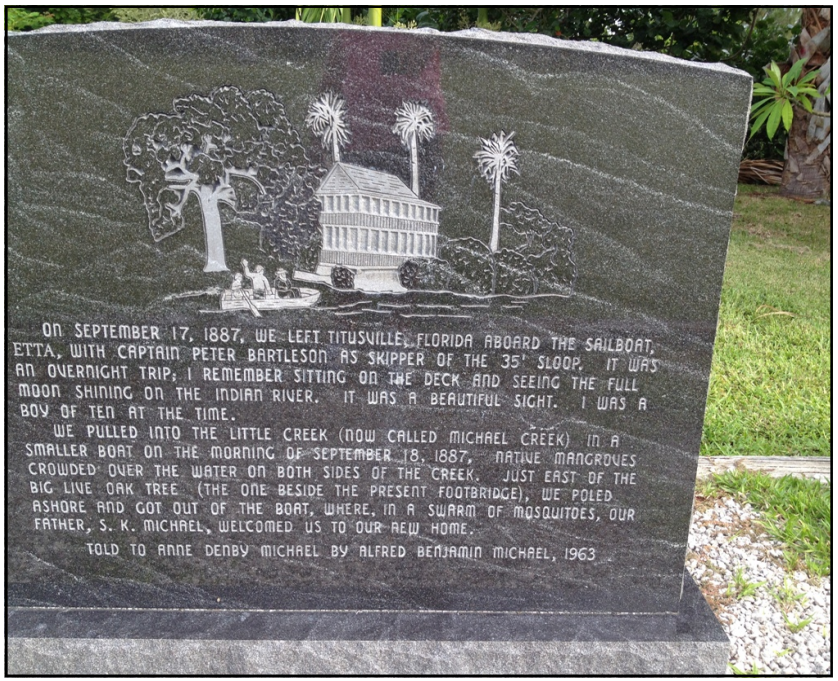
Lots of healthy Encephalartos *cycads.*

2nd Quarter Seed Bank Report

By Jerry & Libby Luedeke,
Seed Bank Coordinators
We had a slow second quarter. We weren't getting many donations and didn't have a lot to offer. The total sales not including postage was $98.25. Fortunately our regular customers came through for us to get that amount. Many thanks to them.
Things are looking real good for the upcoming 3rd quarter though. Anne Michael, Rob Branch, Steve Farnsworth, David Martin, Neil Yorio and John Kennedy have come through with some interesting donations that should pull us from the summer doldrums.
Thanks to all who have donated and purchased. Please feel free to contact us if you have something to donate or have any questions about the seeds we are offering and we'll do the best we can. Looking forward to seeing you all at the October meeting.

Jerry and Libby Luedeke
117 East Connecticut Ave
Edgewater, FL 32132
theseedbank@yahoo.com

Orchid Island Adventures
The Seed Bank coordinators and some other brave adventurers made a trip to Orchid Island on August 23rd to collect some new seeds thanks to the generosity of Anne Michael. Neil Yorio and David Martin joined us and brought donations of their own plus our esteemed President Dave Hall gave us a hand.
We were blessed with a wonderful breeze and partly cloudy skies and we were joined by Shadow the cat who seemed to enjoy our company. Along with Neil's and Dave's knowledge we were able to collect a few species. We got some *Coccothrinax argentata*, *Copernicia macroglossa*, *Hyphaene coriacea,* and *Syagrus schizophylla*. We were hoping to collect some *Borrassus* but there were only 3 seeds and they weren't viable. Neil brought us some *Cycas edentate* (syn. *litoralis*), *Dypsis baronii, Dypsis psammophila*, *Ptychosperma schefferi*, *Ptchosperma microcarpum*, *Schippia concolor*, and *Zombia antillarum* . David Martin provided us some *Wodyetia bifurcata*.
As always, we thank Anne for continuing to provide us access to her and her husband Joe's legacy of amazing palms and awesome Florida history. Their collection is a close rival to Fairchild Botanical Gardens in Coral Gables. We always enjoy a trip to her little piece of paradise.



Historic marker of pioneering Michael family on the Orchid Island property. (Photo by Libby Luedeke)

Palm Nutritional Deficiency Correction and Antagonistic Nutritional Relationships

By Charlie Beck

[Reprinted by permission from the July 2017 issue of the Palm Beach Palm & Cycad Society's Monthly Update.]

Every palm enthusiast wants to grow beautiful palms. Recommended fertilization and irrigation are key to growing attractive palms in Palm Beach County (PBC). Many palms respond to this treatment and grow vigorously, but palm enthusiasts want to grow a wide variety of palms, some of which might not respond favorably to standard maintenance practices. Even within a species of palm there are genetic differences which make them prone to nutritional deficiencies.

The first thing one must decide is whether deficient palms are worth growing. Some palm enthusiasts grow only palms which survive with little or no maintenance. Others follow all of the recommended practices. Some palms can recover from a deficiency with a few applications of supplemental elements but other palms take a real commitment by the enthusiast. In my mind, some palms do deserve special treatment, so their beauty can be appreciated.

This article is my attempt to simplify the correction of palm nutritional deficiencies. Most of the recommendations in the article are based on the research done by Dr. Timothy Broschat at the University of Florida. Other information from research papers, published domestically and overseas, were also included in my perspective. Also, recommendations are based on my decades of experience growing a wide variety of palms in Palm Beach County.

If you want to ID a palm deficiency, use the multitude of Electronic Data Information Source (EDIS) University of Florida publications. Just search the internet for EDIS + palm + suspected deficient element. You will see all of the EDIS research with accompanying photos. This is valuable information.

Unfortunately many of the photos look similar, even with differing deficiencies. Symptoms may look different depending on the species, and not many species are shown. EDIS publications make suggestions on how to correct the deficiency. This is great information, except many of the recommended products are not available unless you order a minimum four ton purchase from a fertilizer company.

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Nutritional Deficiencies

Roystonea regia *showing effect of using high Nitrogen fertilizer. Potassium deficiency first shows in old fronds. All photos by the author.*

Nutritional Deficiencies

Roystonea regia
Late stage Potassium deficiency is often confused with Manganese deficiency (Frizzle Top)

Phoenix roebelenii *showing effect of using high Nitrogen fertiizer. Manganese deficiency first shows in new fronds.*

Below, Bismarckia nobilis *seems content growing beside declining* Roystonea regia

Palm Deficiency Corrections & Nutritional Antagonisms

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Tables in this article recommend nutritional elements that <u>are</u> available for purchase in Palm Beach County. Where slow release EDIS recommended products are not available, the tables will list quick release products applied more frequently at reduced amounts. Use these tables as a starting point for nutritional correction.

Your experience growing palms in your garden (considering soil type and PH) may lend you to alter the application timing and rates. Most EDIS recommendations are expressed in pounds per 100 sq. ft. I converted weight recommendation into a more convenient measure of volume (cups).

EDIS publications recommend a Palm Special formulated with proper nutritional ratios. This fertilizer was developed to supply a balanced amount of nutrients

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Nutritional Deficiencies

Left, Copernicia baileyana *in the Beck Garden displaying symptoms of Potassium deficiency. Picture taken June 2014.*
Right, same palm 3 years later after supplemental applications of Sulfate Potash Magnesia.

Palm Deficiency Corrections & Nutritional Antagonisms

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which are tailored to palm requirements. In a previous newsletter we published a practical guide to these recommendations. **First line** of defense is to apply approved Palm Special fertilizer as recommended by EDIS. Standard application rate is 1.5 pounds (approximate 2 1/2 cups) per 100 sq. ft. All supplemental feeding recommended in this article are meant to be <u>in addition to</u> regular applications of Palm Special fertilizer.
See link: http://www.palmbeachpalmcycadsociety.com/documents/Fertilizer_Guide_for_Landscape_Palms.pdf

Synergism- Antagonism
Application of excessive amounts of one nutrient affects the uptake of others, thereby causing a nutritional deficiency. An example of this is the nutritional deficiency that occurs when high Nitrogen (N) lawn fertilizers are used around palms. Excessive N spurs growth, which triggers deficiency of other elements, which are not available in balanced amounts.
To see a good example of this, observe palms growing along the median of A1A between Donald Ross Road and Indiantown Road in Jupiter, FL. Most of the *Roystonea regia* (Royal Palm) planted there are in a death spiral due to application of high N fertilizer.
Classic Potassium deficiency is evident. It first occurs in old fronds and eventually moves up to the newest fronds causing "stem pencil pointing" and eventual death. How do I know this is due to high N fertilizer?
The lawn underplanting is dark green and lush, and is provided with plenty of irrigation. These palms repeatedly die and are replaced- what a waste of money. I've seen this happen for years. The *Phoenix roebelenii* (Pigmy Date Palm) planted there are dy-

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Palm Deficiency Corrections & Nutritional Antagonisms

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ing of Manganese deficiency (Frizzle Top) also caused by poor fertilizer choice. Keep in mind- not all palms show negative effect to High N fertilizer.

Synergism is the positive effect between nutrients applied at the recommended percentages. Antagonism is the negative effect between nutrients, when an excessive amount of one nutrient reduces the uptake of another. Soil type and PH influence antagonistic relationships, example- palms grown in alkaline soil are more prone to Manganese deficiency.

This is why fertilizer for potted palms (acid soil) is vastly different from fertilizer formulated for in-ground planting (neutral to alkaline soil). Many of the papers published on nutrient Antagonism refer to agricultural crops, including coconut and oil palms.

Experience is key when evaluating a nutritional deficiency. Some species are especially sensitive to certain deficiencies.

Nutrient Antagonism	**Based on EDIS publications and/or Internet**
EXCESS ELEMENT	NUTRIENTS AFFECTED
Nitrogen	Iron, Manganese, Potassium, Calcium
Potassium	Magnesium, Manganese
Magnesium	Calcium, Potassium
Manganese	Iron, Magnesium
Iron	Manganese
Calcium	Boron

Royal Palms are declining all over Palm Beach County due to Potassium deficiency. *Syagrus romanzoffiana* (Queen Palm) often suffers from Manganese deficiency. Boron deficiency is evident in many genera, including *Copernicia, Dypsis, Livistona* and *Syagrus*. As we plant new species from around the world, we will discover their individual requirements.

I divide deficiencies into two categories- "Old Frond" and "New Frond."

- **Potassium (K) and Magnesium (Mg) deficiencies first appear in <u>old fronds</u>.**
- **Iron (Fe), Manganese (Mn) and Boron (B) deficiencies first appear on <u>new fronds</u>.**

Recommendations are based on the canopy size of the palm.

Small Palms = 100 sq. ft. = 5.6' long fronds such as *Phoenix roebelenii* (Pigmy Date Palm)

Medium Palms = 300 sq. ft. = 9.8' long fronds such as *Syagrus romanzoffiana* (Queen Palm)

Large Palms = 450 sq. ft. = 12' long fronds such as *Bismarckia nobilis* (Bismarck Palm).

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Palm Deficiency Corrections & Nutritional Antagonisms

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Potassium deficiency is the most widespread in Palm Beach County. EDIS Pub ENH1009 recommends applying a 3/1 blend of slow release K & Mg every 3 months. Slow release K is currently not available in PBC. Slow release Mg (Kieserite) is available at box stores sold as Rite Green Magnesium Sulphate.

I recommend applying quick release products monthly or a combination of available products as shown in the table. The tables show equivalent amounts of products listed by weight and volume.

I highly recommend the use of Sulfate Potash Magnesia which is reasonably priced and widely available at landscape supply outlets. The K/Mg ratio is 2/1 rather than 3/1 as recommended by EDIS. I've applied this product monthly and have had successful results. You might choose to apply more product less frequently.

DEFICIENCY in OLD FRONDS

Percentage of elements and weight per cup were considered when determining the values in the tables.

Option 1 (recommended)

Apply 0-0-22-11Mg, Sulfate Potash Magnesia (Landscape Supply Outlets)
May take 3 years for full recovery

Sulfate Potash Magnesia Apply monthly

Weight	Volume	
9 oz.	¾ cup	Small Palm (100 sq. ft.)
1 ½ pounds	2 ½ cups	Medium Palm (300 sq. ft.)
2 ½ pounds	3 ½ cups	Large Palm (450 sq. ft.)

I find most Mg deficiencies cured by this recommended blend of K and Mg. If severe Mg deficiency is present see EDIS pub ENH1014

OR

Option 2

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Palm Deficiency Corrections & Nutritional Antagonisms

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DEFICIENCY in OLD FRONDS

Option 2

Apply 0-0-60 Potash (Internet Source) with either Magnesium source listed below:
Rite Green Magnesium Sulfate 16% Mg (Box Stores) applied every **3 months**
or
Epsom Salt 10% Mg applied **monthly**
May take 3 years for full recovery.

0-060 Potash Apply Monthly

Weight	Volume	
4 oz.	⅓ cup	Small Palm (100 sq. ft.)
10 oz.	1 cup	Medium Palm (300 sq. ft.)
14 oz.	1 ½ cups	Large Palm (450 sq. ft.)

AND

Rite Green Magnesium Sulfate
Apply every 3 months

Weight	Volume
6 oz.	½ cup
18 oz.	2 cups
27 oz.	3 cups

OR

Epsom Salt - Apply monthly

Weight	Volume	
3 oz.	½ cup	Small Palm (100 sq. ft.)
10 oz.	1 ¼ cups	Medium Palm (300 sq. ft.)
14 oz.	2 cups	Large Palm (450 sq. ft.)

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Palm Deficiency Corrections & Nutritional Antagonisms

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Fe, Mn and B deficiencies appear in new fronds. Fe deficiency is indicated by production of abnormally light green fronds. There is an antagonistic relationship between Fe and Mn.

Mn deficiency causes frizzled emergent fronds which sometimes can be confused with B deficiency. Mn deficiency also can be confused with late stage K deficiency. Prior to death from K deficiency emergent fronds are frizzled, but remember K deficiency first appears on old fronds.

Dr. Broschat informed me that the only palmate leaf palm that he has ever seen with Mn deficiency was *Acoelorraphe wrightii* (Paurotis Palm). That information might help you to distinguish between Mn and B deficiency. We might find exceptions to this observation as we plant more and more species.

EDIS Pub ENH1013 Iron Deficiency in Palms recommends applying Fe per label directions to Fe deficient palms. Chelated Iron EDDHA is the most effective Fe supplement when applied to alkaline soil. This product is expensive but is very effective. It can be found locally at landscape supply outlets.

The products I use are Chelated Iron EDDHA and Techmangam. Both of these products are water soluble.

I mix appropriate amounts of both products with 4 gallons of water in a 5 gallon bucket. Once the solution is thoroughly mixed, I transfer a portion of the solution to a watering can and mix with additional water to further dilute. Then I evenly distribute the mixture from the watering can to the root zone.

I repeat the process until all of the original solution from the 5 gallon bucket is gone. It might take 3-4 watering cans of solution to cover the entire zone out to the frond tips. I only use this process on a few palms that display Fe deficiency. Some palms (*Dypsis, Metroxylon*, etc.) seem to need extra Fe.

DEFICIENCY in NEW FRONDS

EDIS pub ENH1012 Boron Deficiency in Palms states that B is readily leached through most soils, with a single heavy rain event temporarily leaching most B out of the root zone.

After a leaching event, B is replaced by decomposition of organic matter. It recommends diluting Borax in 5 gallons of water and evenly applying to root zone. Do not over apply this product because it becomes toxic in higher amounts.

For convenience, I do not mix Borax in water but carefully spread the recommended amount evenly to the root zone. I've never noticed a negative effect on lawn or other underplanting due to applying in the dry form.

The EDIS pub also explains that most forms of B mixed in Palm Special fertilizers are powders which tend to settle to bottom of fertilizer bag. This may cause uneven application of B when spreading the product, causing over and under application. Granubor is a better B source which does not tend to settle in fertilizer bags.

Another interesting antagonistic relationship is B with Calcium (Ca). I've been told by a nurseryman that a combined product with B & Ca (Calcibor) has been effective at his nursery. Unfortunately this product is not available locally.

EDIS pub ENH1015 Manganese Deficiency in Palms states "Excessive Mn applications normally result in an induced Fe deficiency, with its characteristic new leaf chlorosis."

To address Fe-Mn antagonism in Fe deficient palms, I recommend a full dose of Fe and a quarter

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Palm Deficiency Corrections & Nutritional Antagonisms

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dose of Mn as shown in the table. **To address** Fe-Mn antagonism in Mn deficient palms, I recommend a full dose of Mn as recommended by EDIS and a half dose of Fe as shown in table.

DEFICIENCY in NEW FRONDS

IRON (Fe) DEFICIENCY- apply Fe supplement per label directions plus low dose of Manganese (Mn) to counteract nutrient Antagonism**. Apply 4-6 times per year until deficiency is gone**.
Percentage of element and weight per cup were considered when determining the values in the tables.

Possible Fe supplements:

1. Chelated Iron EDDHA 6% Fe (Sequestrene 138Fe or equivalent) available at landscape supply outlets. Chelated Iron is 10 times more effective (by weight) than non-chelated iron sources. (Recommended- most effective Fe source when applied to alkaline soils)
2. Ironite 1-0-1-20%Fe (available at box stores)
3. Chelated Liquid Iron 5%Fe (Southern Ag or equivalent available at landscape supply outlets)

HIGH DOSE Fe

Chelated Iron EDDHA 6% Fe (water soluble)	Ironite 20%Fe (granular)	Chelated Liquid Iron 5%Fe	
½ cup	0.3 pound or ½ cup	2 fl. oz.	Small Palm (100 sq. ft.)
1 ½ cups	0.9 pound or 1 ½ cups	5 fl. oz.	Medium Palm (300 sq. ft.)
2 ¼ cups	1.4 pounds or 2¼ cups	7 fl. oz.	Large Palm (450 sq. ft.)

Possible Mn supplements: 1. Techmangam 32% Mn (available at landscape supply outlets)
2. Manganese Sulfate 27% Mn (Rite Green available at box stores)

LOW DOSE (25%) Mn

Techmangam 32% Mn (water soluble)	Manganese Sulfate 27% Mn (granular)	
0.3 or 1/3 cup	0.3 pound or ½ cup	Small Palm (100 sq. ft.)
0.8 pound or 1 cup	1.0 pound or 1½ cups	Medium Palm (300 sq. ft.)
1.2 pounds or 1½ cups	1.5 pounds or 2¼ cups	Large Palm (450 sq. ft.)

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Palm Deficiency Corrections & Nutritional Antagonisms

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DEFICIENCY in NEW FRONDS

Boron (B) DEFICIENCY Apply Borax (available at supermarket) evenly to soil either dry or dissolved in 5 gallons of water. **Repeat at 5-month intervals until deficiency is gone.**

Borax	
⅛ cup	Small Palm (100 sq. ft.)
¼ cup	Medium Palm (300 sq. ft.)
½ cup	Large Palm (450 sq. ft.)

Manganese (Mn) DEFICIENCY (frizzle top) - apply high dose of Mn as shown in table below **and** apply low dose Fe to counteract nutrient Antagonism. **Repeat every 2-3 months until deficiency is gone.**

Possible Mn supplements:

1. Techmangam 32% Mn (available at landscape supply outlets)
2. Manganese Sulfate 27% Mn (Rite Green available at box stores)

High Dose Mn (Frizzle Top)

Techmangam 32% Mn (water soluble)	Manganese Sulfate 27% Mn	
1.1 pounds or 1 ½ cups	1.3 pounds or 2 cups	Small Palm (100 sq. ft.)
3.3 pounds or 4 cups	4 pounds or 6 cups	Medium Palm (300 sq. ft.)
5 pounds or 6 ¼ cups	6 pounds or 9 cups	Large Palm (450 sq. ft.)

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Palm Deficiency Corrections & Nutritional Antagonisms

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DEFICIENCY in NEW FRONDS

Manganese Deficiency

Possible Fe supplements:

1. Chelated Iron EDDHA 6% Fe (Sequestrene 138Fe or equivalent) available at landscape supply outlets. Chelated Iron is 10 times as effective (by weight) than non-chelated iron sources. (Recommended- most effective Fe source when applied to alkaline soils)
2. Ironite 1-0-1-20%Fe (available at box stores)
3. Chelated Liquid Iron 5%Fe (Southern Ag or equivalent available at landscape supply outlets)

Low (50%) Dose FE

Chelated Iron EDDHA 6% Fe (water soluble)	Ironite 20%Fe (granular)	Chelated Liquid Iron 5%Fe	
¼ cup	¼ cup	1 fl. oz.	Small Palm (100 sq. ft.)
¾ cup	¾ cup	2 ½ fl. oz.	Medium Palm (300 sq. ft.)
1 cup	1 cup	4 fl. oz.	Large Palm (450 sq. ft.)

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Palm Deficiency Corrections & Nutritional Antagonisms

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DEFICIENCY IN NEW FRONDS

Manganese deficiency
Possible Mn supplements:

1. Techmangam 32% Mn (available at landscape supply outlets)

Low Dose (25%) Mn

Techmangam 32% Mn (water soluble)	Manganese Sulfate 27% Mn	
1.1 pounds or 1 ½ cups	1.3 pounds or 2 cups	Small Palm (100 sq. ft.)
3.3 pounds or 4 cups	4 pounds or 6 cups	Medium Palm (300 sq. ft.)
5 pounds or 6 ¼ cups	6 pounds or 9 cups	Large Palm (450 sq. ft.)

Low Dose (50%) FE

Chelated Iron EDDHA 6% Fe (water soluble)	Ironite 20%Fe (granular)	Chelated Liquid Iron 5% Fe	
1/4 cup	1/4 cup	1 fl. oz.	Small Palm (100 sq. ft.)
3/4 cup	3/4 cup	2 1/2 fl. oz.	Medium Palm (300 sq. ft.)
1 cup	1 cup	4 fl. oz.	Large Palm (450 sq. ft.)

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Product Availability

Landscape Supply Outlets carry products that sell in large quantities. Golf courses and landscape maintenance companies are major customers.

Lawn maintenance products and palm nutritional products are very different. Sometimes a lawn care product intersects with a palm nutritional product, such as, Sulfate Potash Magnesia which is commonly applied to golf greens.

Otherwise, we are stuck using products that are commonly applied by landscape maintenance companies.

Either cost or lack of knowledge drives these companies to use products which are inappropriate for palm maintenance. All you need to do is observe palms, such as *Wodyetia bifurcata* (Foxtail Palm) and *Roystonea regia* (Royal Palm), planted in PBC commercial settings to conclude that palm nutrition is not a priority. Lucky for us, Palm Special fertilizer, approved by UF, is available.

'Orchid Island Dreams' is Libby Luedeke's caption for this picture she took at the Michael property in August.

Here are some Landscape Supply Outlets located in PBC:

Helena Chemical

Winfield Solutions

SiteOne Landscape Supply

Uncle Bim's Garden Center

Palm Deficiency Corrections & Nutritional Antagonisms

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SAFETY- -Always use appropriate safety gear when applying nutritional products. Breathing dust and skin contact should be avoided. Contact with products may have a cumulative, negative effect on your health. Wear appropriate respirator and gloves. Follow label warnings.

General Supplemental Palm Nutritional Mixture

Craig Morrell gave our group a lecture a few years ago pertaining to supplemental palm nutrition. He reported success using a special mixture of products sprayed on the canopy and root zones of palms. I forwarded this supplemental recipe to Dr. Broschat for his opinion. He stated that it is hard to cure palms of a nutritional deficiency without applying the prescribed amount of the element. The amount of K in this General Supplemental Palm Nutritional Mixture would be inadequate to cure a K or Mg deficiency.

I did experiment with this General Supplemental Palm Nutritional Mixture. I applied it monthly to the entire garden. It is expensive and requires special equipment (high output sprayer) to apply in an efficient manner. I did see positive effect in mostly healthy palms, but this mixture wouldn't correct a severe nutritional deficiency. I include this recipe for your reference. This mixture is great on crotons.

Craig Morrell Formula

Product	Per 100 gallons of water	Per 25 gallons of water	Per gallon of water
Keyplex	3 quarts	3 cups	2 tablespoons
Potassium nitrate	2 pounds	1 cup	2 teaspoons
20-10-20	2 pounds	½ pound or 1¼ cups	1 tablespoon
Mn liquid	3 quarts	3 cups	2 tablespoons
Epsom salt	2 pounds	1 cup	2 teaspoons
liquid dish soap	1 quart	1 cup	2 teaspoons

Charlie Beck, author of the nutritional deficiency article

Charlie Beck is editor of the Palm Beach *Monthly Update* newsletter.

"We moved to Florida in 1984. I became a palm enthusiast a couple of years earlier when we visited Disney World. I still remember seeing my first *Sabal palmetto* at the airport. We grew palms in Jupiter from 1984-1999. **We purchased** 2.62 acres in unincorporated Palm Beach County in 1993 after attending the 1992 IPS Biennial in Miami and post-trip to Costa Rica. The Lantana lot was previously cleared of vegetation and was used to train racing greyhounds.

"We installed irrigation and began planting palms there in 1993. "Brenda and I worked many weekends planting the garden. On weekdays, I left work at Pratt & Whitney at 3 p.m. and then traveled to Lantana to work in the garden until dark.

"We built our current home in 1999 and moved from Jupiter in that year."

Charlie has a degree in Mechanical Engineering Technology and worked at Pratt & Whitney until 2000 when all engineering was consolidated in Connecticut. He then found employment at Jet Avion in Hollywood. "I always planned to retire at 55 to enjoy gardening, so I did in 2005."

—John Kennedy

No, this is not Charlie Beck, but-
Saw Palmetto Art in St. Augustine
(Photo by Dave Hall)

Rescuing a Cycad After Hurricane Irma & Visiting a Nursery

By Libby Luedeke
theseedbank@yahoo.com

Thanks to Hurricane Irma many of us have been given unique garden problems. In our case this became a blessing. Lisa Moore, a member and good friend, informed us that Charlene Palm had an *Encephalartos ferox* (curly leaf variety) that was partially uprooted and laying on its side. Fortunately for us, Charlene was not in love with it anymore and wanted it gone.

She was very close to taking a chain saw to it when Lisa says," I bet Jerry Luedeke would come and get that out for you." The next Sunday we were on our way to save the cycad. We were joined by Michael Olivera, who had bought many seeds from Charlene in the past and was anxious to meet her.

Thank goodness for me because I wasn't sure how I was going to help Jerry get this monster out of

Encephalartos ferox *awaits rescue in Charlene Palm's backyard after Hurricane Irma.*
(Photos by Libby Luedeke)

the ground. We headed down early, perused the damage in the yard, which considering the magnitude of the storm, could have been much worse. The fronds on some palms were pretty chewed up and broken, but for the most part in good health.

Then saw what we were up against. A huge cycad that's probably about 200 to 250 lbs. and add to that the gnarly leaves that can leave you bloody from head to toe. Jerry and Michael tied it up with rope around the leaves to provide access to the base and the shoveling began.

Fortunately it was already leaning to one side so that they were able to lean it over on the other side and loosen it up and get more dirt out from under. The tap root was about 3 to 4 feet down.

After much grunting and sweat, Jerry, Michael, Charlene and I managed to haul it out and onto a wagon. Then we rolled it out to the truck and thanks to Greg Palm and Jerry's good thinking, parked the truck at the bottom of the drive way which has a fairly sharp drop to the road.

Then we only had to pick up the cycad a few inches and slide it right into the back of the truck. Mission accomplished, thanks to many hands.

We left a grateful Charlene and Greg with new real estate in their small yard and headed to GTC of Brevard Nursery since we were in the neighborhood. Neil Yorio had

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Jerry Luedeke stands next to his prize, the rescued Encephalartos ferox *at Charlene Palm's.*

Michael Olivera in "cycad heaven" at GTC of Brevard Nursery.

Rescuing a Cycad

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a short list of cycads he was in the market to let go of and Michael and Jerry were ready to buy.

Michael looked a little like he was in cycad heaven. He found *Dioon edule* Palmasola, *Encephalartos ferox*, *Encephalartos gratus* and *Encephalartos* natalensis. As you can see by the pictures, every spare inch of truck bed was utilized. Jerry reined it in and only bought an *Encephalartos longifolius*, much to my surprise.

Lisa Moore caught up with us and took the nursery tour as well but due to the condition of her garden in Cocoa, she refrained from adding to her collection.

We took our new found treasures home and once again I can't thank Michael enough, he helped us get the *ferox* out of the truck.

We have yet to figure out its placement in the yard, but are so

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Rescuing a Cycad

(Continued from page 20)

grateful to Charlene for allowing us to take it away.

To our many, many members affected by the hurricane, we hope all is well. We are a large society and have a wealth of members with lots of knowledge, so if you have questions or concerns about your palms and cycads please reach out.

We have email addresses on our website, of officers who can direct you to other members who are able to answer questions. That's what being a member is all about and we appreciate all of you that continue to be involved in our society. Spread the word. We hope to see you at our next meeting in St. Petersburg!

Palms and Gardens in the vicinity of Puerto Vallarta, Mexico

By Mike Merritt

Puerto Vallarta is a resort and tourist mecca on the Pacific Coast of Mexico, enclosed within the Bahia de Banderas, and, in the first week of April, was the location of the 2017 Interim Board Meeting of the International Palm Society. At latitude 20.5 degrees,Puerto Vallarta is tropical, with an all-time low temperature of 45 Deg F. Nearly all the annual rainfall (averaging 21.7 inches) is in the summer months of June through September.

Puerto Vallarta originated as a fishing town, but has evolved into a major tourist destination with many large beachfront hotels. **"Downtown waterfront"** may have a sinister sound, but in Puerto Vallarta, that area has been developed into El Malecon, a twelve-block promenade (cars forbidden) bordered by tourist shops, restaurants, and hotels. During our stay, huge throngs of tourists sat on benches, enjoyed the tropical landscaping, the ocean view, and the many commissioned sculptures (some quite abstract) located every block along the way. One non-abstract sculpture (fig. 1) was of a boy perched on the back of a seahorse. This is the symbol of Puerto Vallarta, the seahorse indicating that the local people depend on the sea for their livelihood, and the boy representing the human population supported by the sea.

Boy on seahorse (fig. 1)

As in most of the IPS interim

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Palms, Gardens in Puerto Vallarta

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meetings, one day was dedicated to the meeting, and the remaining days were for palm exploring or general touring. Our main contact and sponsor in the Puerto Vallarta area was Dr. Felix Montes, owner of a large garden and nursery. Unfortunately, Dr. Montes had a serious medical emergency several weeks before the meeting, which caused some difficulties in our planning. He was, however, able to join us midway through the tour, and welcomed us to his garden on day 5.

The morning after the welcome dinner at a seafood restaurant, we boarded a bus for a trip to the Puerto Vallarta Botanical Garden, where we received a friendly greeting and a tour from the garden staff. Several palms endemic to the local region were cultivated at the garden. One was *Cryosophila nana*, a small member of the group of palms re-

Cryosophila nana, *a rootspine palm (fig. 2)*

ferred to as "rootspine" palms. Mature specimens had small crowns on slender stems only a few feet higher than a human (fig.2).

More attractive to me were juveniles with beautiful leaves that blended in with other vegetation (fig. 3).
In one location, a specimen hardly larger than a juvenile had produced a flower (fig. 4).

Juvenile Cryosophila nana *(fig.3)*

Cryosophila nana *juvenile with flower (fig. 4)*

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Palms, Gardens in Puerto Vallarta

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Later, on a walk through a semi-wild brushy area, we viewed another indigenous palm at the extreme northwesterly end of its natural range (Henderson et al, 1995), the well-known and very

On day 3, we traveled north to the San Blas area to view the seaside garden of Robert Brown. Day 4 was for the board meeting. Then, in the morning of day 5, we visited the garden and nursery of Jorge del Real.

Jorge has been buying plants from Floribunda Palms for decades and planting them without identification. So we viewed a number of marvelous palms, often without having much agreement on what we were looking at.

One that was identified was *Raphia vinifera* (fig. 6). Members of the IPS group are underneath. Fig. 7 shows a beautiful landscape setting in Jorge's

Below, Raphia vinifera *(fig. 6). Right, Jorge del Real's garden (fig. 7).*

Palms, Gardens in Puerto Vallarta

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In the afternoon, we visited Tropical America Farm, the garden and nursery of Dr. Montes. Fig. 8 shows the IPS group trekking a long path between rows of Cuban Royals (*Roystonea regia*), and in fig. 9 (below), IPS director

Trekking through the Cuban Royals (fig. 8).

Grant Stephenson (left) mugs with Dr. Montes.

Dr. Montes showed us one of the best-grown "old man palms" (Coccothrinax crinita) *that I have ever seen (fig.10), below.*

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Palms, Gardens in Puerto Vallarta

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On day 6, it was time to see another indigenous palm, *Attalea cohune*. Considered by Henderson et al (1995) to be near the northwestern end of its natural range, it was nevertheless a common siight throughout the Puerto Vallarta area. Even from beachfront hotels, numerous of these palms could be seen nearby on the surrounding hillsides. The ones closest to the beach occasionally showed some browning on the edges of the leaves, suggesting salt burn, but, if so, it did not seem to have inhibited their growth.

To best view the *Attaleas*, we traveled north of the Bahia de Banderas to Sergio's Garden Magnifico on the Pacific Coast near Sayulita. Besides an open dining building with a huge kitchen, Sergio's estate included numerous small guest lodges, some with picturesque swimming pools (fig. 12).

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Walking around the nursery area, it dawned on me that Dr. Montes probably sells quite a few foxtail palms (*Wodyetia bifurcata*) (fig.11), below.

Swimming pool just off the guest lodge porch (fig. 12).

Palms, Gardens in Puerto Vallarta

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From these chalets, numerous *Attalea cohunes* could be seen on the hills overlooking the sea (fig. 13):

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We were transported to an area where we could have a closer encounter with these giants (fig. 14).

Palms, Gardens in Puerto Vallarta

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Fig. 15, below left, shows the fruit of an *Attalea cohune*, and fig. 16, below right, shows a juvenile with humans for scale.

Other palm species,three *Brahea* species and *Sabal rosei*, are also indigenous to the Puerto Vallarta area, according to Henderson et al (1995), but these did not make their appearance before our group.

Day 7 was a free day, and I took the opportunity to stroll along El Malecon, taking pictures of the sculptures and visiting the flea market along the river. The following day, I departed Puerto Vallarta with memories of a pleasant tropical environment of botanical and scenic splendors, and friendly people.

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Palms & Global Warming

By John Kennedy

The President says that global warming is a 'Chinese hoax' to discredit capitalism. Others believe that it is a conspiracy/plot by thousands of climate scientists. I won't argue what looks like a political dispute. But I do have a question, or two.

Do palms believe in the 'Chinese hoax'? Or are they in cahoots with the climate scientists?

Looking at my palms, I realize that I have species that were completely out of the question in the 1980s, when I started out. In the 1980s (and '90s) Vero Beach could expect about 4 episodes of freezing weather every winter. The culmination was the Christmas [Eve] Freeze of 1989, when the temperature dropped to 18° in my yard. Water in the birdbath frozen, of course. Three more freezing nights followed. Daytime high temperatures, if I recall correctly, were in the 40s. Ordinary winter temperatures—lows in the 50s, highs in the 70s—returned 4 days later.

All of Vero Beach stank for a month of decaying crotons, bougainvillea, ixora, as well as coconut palms everywhere. At the time, I figured that coconut palms had a life expectancy here of about five years, that when they inevitably died, the owners could go back to Walmart to buy new coconuts.

Nursery owners went to Jacksonville to buy plants to sell after all their tropicals went to glory. My two *Cleyera japonica* shrubs date from that time. There was a renewed interest in *Rhapis* species and, for a while, ill-fated *Trachycarpus* (which died after getting to 6 feet) and unfortunate *Chamaerops* (some of which survived).

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PRESIDENT'S MESSAGE

Living here in Central Florida is like living in paradise most of the time. For us palm enthusiasts, there are only two events that make us tremble freezes and hurricanes. This past month we experienced the latter with Hurricane Irma. We would like to know how you and your palms fared. Which ones did well and which did not. Please send your pictures and descriptions in to *The Palmateer* now. Next year, send us an update so we can follow the recovery and renewal.

The CFPACS Board met and came up with the following schedule for the upcoming year.

October 28, Sunken Gardens in St. Pete and Tropiflora Fall Plant Sale in Sarasota.

December 9, Rob Branch's in Sarasota for our holiday celebration, plant sale and auction.

March 2018 we will be going to a member's private garden in Lutz, FL.

June's plan involves a sale and auction at a restaurant in Orlando, admission will require you to bring something palm or plant related to the auction. Hmm grapes grow on vines. A silent auction maybe? Share your ideas with us.

October 2018, we plan to go to the Naples Botanical Gardens. If you are a member and have a garden that you would like to host us in, please let one of the board members know.

Dave Hall

Palms & Global Warming

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I bought a small *Veitchia arecina* a year or so later, asured by the vendor—Paul Craft?-- at the Palm Beach Palm & Cycad Society's fall sale, that it was a quick grower, that if it got to 6 feet—which would be quickly--was likely to survive any short-term freezes in the upper 20s. I wasn't sure I believed this but hoped it was true.

Yes, I covered it with a sheet during brief subsequent freezes. And, yes, it grew quickly to 6 feet, a crucial height after which covering becomes increasingly difficult.

Aside from two brief dips just to freezing in January 2014, the last real freeze at my house was in February 2011. After this 2011 freeze was over, the-then 45-foot Montgomery Palm dropped its two oldest leaves and quickly put out replacements. It's now a little over 50 feet high and, two years ago, bloomed the first time, setting seed. In late summer I picked up the fruit, since I didn't want any volunteers, just dropped maybe 30 in an empty plastic pot among the small potted stuff, and forgot about them. In the spring I noticed several small sprouts in the forgotten pot, pulled these out and potted them. Eventually, nearly all germinated—in no soil, just some light covering by drifted down tree leaves. (Have I discovered a new method of germination?)

On the property next door, the owner two back (four owners since it was built in 1981,after our house) planted two Solitaire Palms (*Ptychosperma elegans*), common enough in Palm Beach County but unheard of Indian River County. He was a driveway contractor, had been given these somewhere in the early '90s. The palm planted out in the open died in a subsequent freeze. The other, however, grew up into the shelter of an upright 'Little Gem' magnolia which shielded its crown from the freezes. It is now about 35 feet high, healthy, and has survived hurricanes and total neglect.

I've recently seen *Veitchia*s about 10 feet high planted surrounding a new elder-care facility, at least 20 of them. Not sure which species, probably *Veitchia joannis*, which I've written about previously growing here in an old, sheltered neighborhood. I should also note that I have several other species of *Veitchia*s: *V. filifera* (4 feet high), *V. spiralis* (20 feet), *V. joannis* (3 feet, from seed).

What about *Ptychosperma*? Not a genus seen here back in freezing winters. But I was given, somewhere in the '90s, a small *P. microcarpum*, and planted it with little expectation that it would be around all that long. It was a seedling from a group of these in the atrium of a house. This palm is now 25 feet high, didn't look good for a while, then grew into partial shelter of two trees , a bald cypress and a yellow-flowered *Tabebuia*. Now I also have an amazingly skinny *Ptychosperma*, 15 feet high, no suckers. Don't recall what the tag said at a palm sale, maybe "Ptychosperma sp." I thought, for a while that I had *P. waitianum*, pleased since I had known Lucita Wait—until someone more knowledgeable looked at it and said No, but then couldn't identify it. That's when I learned that *Ptychosperma* are completely promiscuous, so Lord knows what anybody has. I also have two small individuals (not more than 4 feet high), both clumpers, one with a red new leaf.

There's also a small clumper, *Mauritiella armata*—from the Amazon—that has formed no trunks but is still alive. Where did I buy this? From Richard Moyroud's nursery in Palm Beach County? Of course, the initially daring genus venturing into the Arctic areas of Indian River County was *Archontophoenix*, species *cunninghamiana*, particularly in the form 'Illawarra' said to

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From the Editor's Desk

When we arrive at a certain age (I won't say when), we get to take numbers of pills that we couldn't imagine when we were 18. Just to keep all systems in working order.

And each doctor—there are several or perhaps a small squad of them by this stage—wants to know what else the patient is taking. The reason, of course, is to make sure that none of the medications conflict with each other or lessen the effectiveness of a particular med.

Turns out that it sort of works like that with palms. Whatever you may be giving as supplements beyond a balanced palm fertilizer may reduce the help you wish for an ailing palm.

Charlie Beck, editor of the Palm Beach newsletter and proprietor of more than 2 acres of palms was curious how this worked. He researched the literature, talked to the experts for months, then applied his findings and observed the effectiveness of these rostrums, then wrote up the results for the July issue of his publication.

Charlie has been kind enough to permit reprinting this in *The Palmateer*. (See page 5.) It's long and complicated. I don't recommend a beer or anything harder to sip while you contemplate Charlie's accomplishment, which is very helpful if you are trying to diagnose a problem.

* * * *

We've survived Irma, for many of us with little damage. We are very fortunate that Hurricane Maria did not visit Florida. I'm sure you've taken pictures of flooded areas, of palms knocked out of kilter. Send me some pictures of what (hopefully) little damage was caused to your palms that I can run in the December issue. We'll track back next year to see how well recovery has happened.

* * * *

I am still eager to learn what is this year's New Palm. Maybe I should contact Scott Zona? Somehow, I'm not thrilled to know of *Sabal antillensis* which, from a couple of not very good pictures is not in the stakes for revealing new beauty about palms. But OK, surely there is a palm in a jungle area in Peru, occupied by hostile tribesmen, just waiting to be discovered by intrepid Latin American palm biologists.

To get big publicity for the discovery—maybe of a new genus—the discoverers should name it "Trumpia." That would guarantee widespread publicity on Twitter. How about "Trumpia melaniarum"? (Other species epithets might be considered.) This would guarantee the biologists a trip to Washington—or at least to Mar-a-lago—to present a specimen for growing in a pot <u>in the White House</u>!

* * * *

In the past I have always been game for buying a reasonably-priced small palm that had a reasonable chance to survive the chilly climes of Vero Beach (as seen from Miami).

Recently, I have found in myself a disinterest in small palms that may have a trunk in 15-20 years. I think I know why. On the other hand, I was thrilled a few days ago, buying jug wine at Winn Dixie to be asked (by the teenage cashier) for my driver's license to prove I was not underage! The last time this happened was 50 years ago! I was later told by my son that wine had been sold to underage buyers, so the response was to require everyone, includ-

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From the Editor's Desk

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ing those with many years of Social Security benefits to prove their legality to buy. I should point out that I remain interested in small stature palms (not much room left) that grow fairly quickly (you know why).

* * * *

Book-lovers might enjoy a stop at Haslam's Book Store on Central Ave. in St. Pete—an 85-year-old independent business with new and used books, in many fields.

John Kennedy

Casualty in the Kennedy garden in Vero Beach from Hurricane Irma. Above, see crack in trunk of Archontophoenix cunninghamiana *'Illawarra'. Below, the downed crown of the palm.*

Palms & Global Warming

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be more cold-hardy than the species (not true). And now I have five more species of the genus: *A. purpurea, A. myolensis, A. maxima, A. alexandrae, A. tuckeri.* Three are in the canopy, the three others are working on getting there.

OK, *Carpentaria acuminata*. . . No. **Enough**. And the coconut palms in Vero now are looking, well, mature. Not cut down in their adolescence by Father Frost (to use a Russian term for Santa Claus). Bearing coconuts—to the danger of passersby!

If you are growing some formerly too tender palm species for your area, let me know what you have. I remember a palm book some years back that said that Bismarck Palms could not be grown north of Palm Beach County--when I was starting to see them in Orlando!

Hurray for the 'Chinese hoax'!

PayPal Tutorial

Here is how to make a payment to CFPACS using PayPal

1) Log on to http://www.paypal.com

2) If you have a PayPal account, log into your account. If you do not have a PayPal account, click on the 'Personal' tab. Once on the 'Personal' page go to 'Send Money' and then 'Send Money Online.'

3) Once on the 'Send Money' page, type 'payments@cfpacs.com' in the 'To' field. Type in your email address in the 'From' field and the amount you wish to pay in the 'Amount' field.

4) From there you will be taken to a secure page where you can enter your name, address and credit card information.

5) When you are ready to finish up the payment process, please indicate whether your payment is for membership or seeds or t-shirts in the message field.

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Maryann Krisovitch
Membership Chair
1008 Little Fawn Court
Apopka, FL 32712
membership@cfpacs.com

Membership also available at website: www.cfpacs.com

Those joining before October 1 have access to all four issues of *The Palmateer* for the current year.

CENTRAL FLORIDA PALM & CYCAD SOCIETY

CFPACS Board

PRESIDENT
David Hall
250 North Causeway
New Smyrna Beach, FL 32169
president@cfpacs.com

EAST VICE-PRESIDENT
Janice Broda
12396 Hwy. A1A
Vero Beach, FL 32963
eastvp@cfpacs.com

CENTRAL VICE-PRESIDENT
Terrence Williams
420 La Paz Dr.
Kissimmee, FL 34743
centralvp@cfpacs.com

WEST VICE-PRESIDENT
Mike Evans
6015 - 100th Way N.
St. Petersburg FL 33708
westvp@cfpacs.com

IMMEDIATE PAST-PRESIDENT
Ron Hart
1008 Little Fawn Ct.
Apopka, FL 32712
pastpresident@cfpacs.com

SECRETARY
Chuck Grieneisen
PO Box 621689
Oviedo FL 32762
secretary@cfpacs.com

TREASURER
Tracy Hines
250 North Causeway
New Smyrna Beach, FL 32169
treasurer@cfpacs.com

MEMBERSHIP CHAIR/
Maryann Krisovitch
1008 Little Fawn Ct.
Apopka, FL32712
membership@cfpacs.com

***PALMATEER* EDITOR**
John Kennedy
3225 - 13th St.
Vero Beach FL 32960
palmateer@cfpacs.com

CFPACS SEED BANK
Jerry & Libby Luedeke
117 E. Connecticut Ave.
Edgewater, FL 32132
seedbank@cfpacs.com

DIRECTOR
Michael Ricigliano
11 Palm Dr.
New Smyrna Beach, FL 32169
director@cfpacs.com

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Saw Palmetto Art in St. Augustine
(Photo by Dave Hall)
[or—alternative caption—maybe "Greenlander Sees First Palm Tree"]