

The Palmateer

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Central Florida Palm & Cycad Society

March, 2008



*Christian Faulkner, CFPACS West VP, holds a seedling of the newly discovered palm, *Tahina spectabilis*, at Fairchild. Story, page 12. (Photo by Mike Harris)*

December Meeting Report

By John Kennedy

December 8th: fair, warm, perfect for the winter meeting in St. Pete. About 60 members met at Gizella Kopsick Palm Arboretum to check out the new palms (more than 100 planted in the last year) and the growth of those last seen three years ago. Kopsick is a park owned by the City of St. Petersburg and is tenderly cherished by volunteers, among them Rick Nale and Phil Stager. Phil conducted the group around, especially showing off the new plantings. Kopsick does seem larger than a mere two acres though this may be because there are so many palms and cycads in beautiful condition; also, the palm arboretum—with no fences or admission charges—is joined on both sides by the larger bayfront North Shore Park that includes recreational facilities.

The large open space between Kopsick and the tennis courts, looks like further expansion space for palms—two acres. However, this has been kept open, in lawn, to preserve the bay view of the high-rise condo immediately across the street.

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March 8th Meeting: Orlando

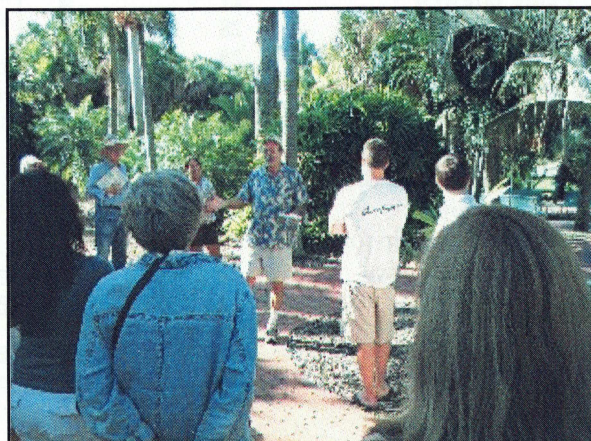
It's Leu Gardens for the first stop in the March 8th meeting. The last time CFPACS went to Leu was five years ago. Since then many more palms and cycads have been planted and those already there are much bigger than in January, 2003. Eric Schmidt will give a tour of the plantings for us.

Leu has about 375 species of palms and 65 species of cycads in its collection, 125 of which have been planted in the last five years. That number is especially impressive, a knowledgeable Orlando member points out, in that most home landscaping in Orange County is confined to three species of palms (Queen, Washingtonia, and Pygmy Date Palm), while commercial landscapers usually add only two more species (*Phoenix dactylifera* and *Sabal palmetto*). Leu hasn't experienced freezing temperatures during those five years until early January of this year, when the thermometer sank briefly to 31°. No damage was noted by the Editor during a visit late in the same month.

Some of us may recall that January, 2003 board meet-
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Phil Stager leads the tour group around Gizella Kopsick Palm Arboretum during the December 8th St. Pete meeting.

(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. 33) of any changes in street address, phone number, area code, or e-mail address. The newsletter is sent to the address of record.



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HEY, YOU! Changed your e-mail address recently? Our president, Bob Johnson, wants an up-to-date e-mail list so that we can send out occasional messages to members between issues of this stalwart publication. Send your new address to the Membership Chair, Karen Barrese, at cfpacsmembership@msn.com. This way our Seed Bank will also be able to keep you current with seed offerings.

The Palmateer

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The Palmateer

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March 8th Meeting

Directions to Leu Gardens, Orlando

From the North:

- __ Take I-4 West to Exit 85
- __ Take exit 85 for Princeton St
- __ Turn left at E Princeton St/SR-438 Continue to follow E Princeton St
- __ Turn right at N Mills Ave/US-17-92
- __ Turn left at Virginia Dr
- __ Slight left at N Forest Ave
- __ Turn left to stay on N Forest Ave
- __ Leu Gardens is on the Left (1920 N. Forest Ave.)

From the East (TOLL ROADS)

- __ SR-528-TOLL W toward Orlando
- __ Merge onto SR-528 W
- __ Take exit 16 for SR-417-TOLL N toward Orlando
- __ Merge onto Central Florida Greenway/SR-417 N
- __ Take exit 33B for SR-408 Toll W toward Orlando
- __ Merge onto East-West Expy/SR-408 W
- __ Take exit 12B toward Crystal Lake Dr
- __ Merge onto E South St
- __ Turn right at S Crystal Lake Dr/SR-526 Continue to follow SR-526
- __ Turn right at N Bumby Ave
- __ Turn left at Corrine Dr
- __ Turn right at N Forest Ave
- __ Leu Gardens is on the Left (1920 N. Forest Ave.)

From the East (NO TOLL ROADS)

- __ SR 520 W toward Orlando
- __ SR 50 E toward Orlando
- __ Turn right at N Bumby Ave
- __ Turn left at Corrine Dr
- __ Turn right at N Forest Ave
- __ Leu Gardens is on the Left (1920 N. Forest Ave.)

From the South and West

- __ Take I-4 East to Exit 85
- __ Take exit 85 for Princeton St
- __ Turn right at E Princeton St/SR-438 Continue to follow E Princeton St
- __ Turn right at N Mills Ave/US-17-92

- __ Turn left at Virginia Dr
- __ Slight left at N Forest Ave
- __ Turn left to stay on N Forest Ave
- __ Leu Gardens is on the Left (1920 N. Forest Ave.)

Approximate driving time from Daytona Beach ,1 hour.; from Gainesville, 2 hours; from Tampa, 1 hour, 30 minutes; from Sarasota, 2 hours, 15 minutes; from Melbourne, 1 hour, 20 minutes (via 528/417/520)

Directions from Leu Gardens to Gordon & Pat Smith's, Maitland

- __ Head south on N Forest Ave toward Corrine Dr
- __ Turn right to stay on N Forest Ave
- __ Slight right at Virginia Dr
- __ Turn right at N Mills Ave/US-17-92. Continue to follow US-17-92
- __ Slight right at N Orlando Ave/US-17-92
- __ Turn right at E Horatio Ave
- __ Turn right at Adams Dr
- __ Turn left at E Adams Dr
- __ Turn right at Northwind Rd
- __ Turn left at Eastwind Dr.
- __ Smiths' property is at the end of the cul-de-sac (1 Eastwind Ln.)

Approximate driving time from Leu Gardens to the Smiths' - 15 minutes

CFPACS 2008 Quarterly Meetings

June 14 - East Coast
September 13 - West Coast
December 13 - Region TBA

Apply for a HOMETOWN GRANT to beautify your locale with palms and cycads. See page 31 for details.

March Meeting: Orlando

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ing in the parking lot at Leu when the temperature hovered not much above freezing.

Among the more unusual sights is the common *Livistona chinensis* that at Leu are 40-50 feet tall, often mistaken for *Washingtonia robusta*. A flowering, trunkless *Attalea rostrata* is not exactly commonplace. *Normanbya normanbyi* is among the group of more tender palms that have flowered in this favorable location. A *Ravenea rivularis*, planted in an ideal marshy site as a 5-gallon plant in Fall, 1995, has become a massive 30-foot specimen.

Away from the concentration of palms and quite close to the house is a small *Parajubaea sunkha*.

Lunch is members' choice. About a mile down Mills Avenue—off which Leu is reached—is an assortment of Vietnamese restaurants near the intersection of Colonial Drive (SR 50). Some others may head for Shakers, an Orlando institution, not all that far away on Edgewater Drive. And, of course, America's gifts to the world (fast food chains) are also not far away. Winter Park, between Leu and the second stop, also

has a number of restaurants.

Maitland, just north of Winter Park and a few miles beyond Leu, is the second destination. Here is the garden of Pat and Gordon Smith, who were members of the group (along with Hersh and Jackie Womble, Dave and Marian Besst, Ed and Nancy Hall) that revitalized what was then the virtually dormant Central Florida Palm Society in the fall of 1978 or 1979.

The Smiths' is a long-established collection, more than 40 years old, with many large, mature specimens. Among the palm genera to be seen there are *Arenga*, *Acoelorrhaphe*, *Allagoptera*, *Archontophoenix*, *Bismarckia*, *Butia*, *Caryota*, *Chamaedorea*, *Chamaerops*, *Hyphaene*, *Livistona*, *Phoenix*, *Rhapis*, *Sabal*, *Serenoa*, *Syagrus*, *Trachycarpus*, *Washingtonia*, and *Zamia*.

Cycad genera at the Smiths' include *Bowenia*, *Ceratozamia*, *Cycas*, *Dioon*, *Encephalartos*, *Lepidozamia*, *Macrozamia*, and *Zamia*. The palms and cycads have flourished in an ideal microclimate of a point surrounded by canals off Lake Maitland.

The chapter has visited the Smiths' place twice, long ago, probably when most current CFPACS members were still in middle school.

The plant auction and sale will take place at the Smiths'.

—John Kennedy



Above, in the right foreground is Gordon and Pat Smith's mailbox in Maitland. Their house, like that of all good palm mavens, isn't visible. Right, the crown of a very big and very old *Livistona* decora. Get past those plants at the entrance and there are lots more goodies inside.

(Photos by Bob Johnson)



Out of Sight, Out of Mind

Mycorrhizae—Palms' Little Helpers

[This article was published in the Summer 07/08 issue of NZ Palm & Cycad and is reprinted here with the permission of editor John Prince and of the author.]

By R.L. Watkins

There is an ancient proverb; "Out of sight out of minde", which was revealed in 1562 by John Heywood, in his "*Woorkes. A dialogue conteynyng prouerbes and epigrammes*", and it is this proverb that could apply to the lack of our awareness of probably the greatest partnership between two or more different kingdoms that have existed on earth, both in the past and continuing to the present.

Most readers, of a horticultural persuasion, will be aware of the term mycorrhiza and that it defines a symbiotic contributing function of a group of root inhabiting micro-organisms. Mycorrhizal organisms exist in an intimate and mutually beneficial association with the roots of their host plant. What possibly readers don't realize is the incredible diversity and vital importance of mycorrhizal associations and the range of benefits that are conferred, usually a little biased, to one organism or the other.

The earliest recognition of mycorrhizal endophytes occurred in the early 1800's and the term mycorrhiza (Greek "myki" fungi, Latin "rhiza" pertaining to roots) was bestowed by Frank (1885) on this phenomenon. At the time the fine mycelial growth, growing over the plant roots was thought to be a form of parasitism and pathogenic as far as the host plant was concerned. It was not until Schlicht (1889), Dangeard (1896) and Janse (1897) described and illustrated the associated anatomy of the mycorrhizal fungi and the host plants. In 1887 Frank recognized two differing forms of mycorrhiza which he named ectotropic (outside) and endotropic (inside) mycorrhizas. The two structures observed within the host plant tissues, that contained the mycorrhizal fungi, were called vesicles by Janse (1897) and arbuscules by Gallaud (1905). This combination of internal structures led to the establishment of the term vesicular arbuscular mycorrhiza (VAM) which has only recently been changed to arbuscular mycorrhiza (AM).

Today seven types of mycorrhizal associations are, provisionally, described; ectomycorrhizas, arbuscular mycorrhiza, ectendo mycorrhiza, arbutoid mycorrhiza, monotropoid, ericoid and orchid mycorrhiza. An eighth fungal group, dark septate fungi are now

thought to have mycorrhizal associations. It is currently estimated that over 98% of plants have an association with a form of mycorrhizal fungi.

Many of the fungal mycorrhizas also host mycorrhizal like bacteria,

*"Great fleas have little fleas upon their backs to bite 'em,
And little fleas have lesser fleas, and so ad infinitum.*

(Augustus de Morgan, 1806-71)

One early example of a mycorrhizal fungal endophyte was found within the fossilised remains of a Liverwort, a group of plants thought to have been among the contenders for being the first land plants on earth. This liverwort fossil was dated to the Devonian period 395-345 million years ago (mya) and this date was verified by subsequent molecular data, in both 2003 and 2005, so you see that mycorrhizal fungi have been around for some considerable time.

The arbuscular mycorrhizal fungi (AMF) are the most abundantly represented form, and are probably of the greatest interest to palm aficionados. Over 80% of all plant species have an association with this group of fungi, generally found in the order Glomales.

The AMF have approximately 170 species arranged into 3 families of 6 genera and are universal in their distribution with most of the mycorrhizal forming species appearing to belong to the family Glomaceae including the genera *Glomus* and *Sclerocystis*. These genera develop a network comprising a mycelium, of fine hyphae (fungal roots) in the soil. When filaments of these fungal hyphae come in contact with a young root, they thrust their way into the cortex of the root and commence branching eventually forming arbuscules and sometimes vesicles. The interior of these structures resemble a tightly contained network of tangled spaghetti like structures that are enveloped within the root cells, cortex, of the host plant roots. The very intimate contact between the host plant cell envelope, the plasmalemma, and the chitin containing hyphal wall create a transfer zone in which nutrients, electrolytes and proteins are exchanged.

Many of the mycorrhizal fungi exist in an anamorphic state (vegetative non-sexual) and can really only be identified by molecular DNA sequencing. Some will, given appropriate conditions, convert to a teleomor-

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Mycorrhizae—Palms' Little Helpers

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phic state (sexual) and produce spores on various spore forming structures. The comparative anatomy and histology of the sexual structures and spores have, up until recently, been used for taxonomic purposes. This process can often be long and arduous and so DNA extraction, PCR amplification and sequencing is now generally used for positive identification to species level.

The importance of mycorrhizas can be realized with this overview of the various benefits they confer to their host plant.

- 1 They increase nutrient uptake from soils especially phosphates and nitrogenous compounds
- 2 They can help control pathogenic fungi, bacteria, nematodes and insects.
- 3 Many mycorrhizal fungi have the ability to sequester heavy metals thus protecting plants from toxic levels of these substances.
- 4 Many mycorrhizas have the ability to restore depleted sites.
- 5 Some external mycorrhiza can transfer nutrients, water, secondary metabolites (insecticides, antibiotics, anti-herbivoury, predator attractants etc.) between plants thus creating the basis of companion planting.
- 6 Provide seedling inoculum, essential in reintroduction of plant diversity and preservation of existing species.
- 7 Help establish anti-stress products within plants allowing the host plant to survive heat / drought / wind stresses.
- 8 Specialist mycorrhizal endophytes are obligate mycoheterotrophs (the fungus is essential for their metabolism) ensuring germination of seeds ie. orchids.
- 9 Secure minerals by chemically breaking down rocks.
- 10 Some varieties produce fruiting bodies such as truffles, chanterelles that are highly prized by gastronomes ensuring dispersal of spores.

Plant mycorrhizal endophytes usually consist of specific genera of bacteria or fungi, which, exist in a relationship, either internally or externally to the host plant. The host mutualism lies in the provision of carbohydrates, gases, balanced electrolytes, protection,

temperature regulation and many other intrinsic factors to the mycorrhizal endophyte.

Most members of the Palmaceae form mycorrhizal associations with arbuscular mycorrhizal fungi (AMF) although recently Dark Septate Fungi (DSF's) have been identified. There is little available information describing the benefits of inoculation with mycorrhizal fungi on different aspects of palm productivity except for those palms grown for commercial purposes. Very sparse information exists describing the effects of mycorrhizal fungi in ornamentals.

Comparative results, between AMF inoculated and non-inoculated palm species have shown that plant nutrient composition and levels of nitrogen and carbohydrates are significantly enhanced in AMF inoculated species. With some species, inoculation with AMF decreases the number of days prior to leaf emergence and also influences partitioning of plant development between overall growth and leaf frond development for some species. This causes changes in plant form and development during the first growing season and in the growing season following inoculation. Seedlings of palm species are also influenced by inoculation with AMF. Palm nutrient composition and levels of storage reserves were different between inoculated and non-inoculated plants for several of the factors measured. Changes in plant growth suggest that although nutrient reserves are important for growth after planting, inoculation with AMF can still influence early plant growth. Changes in the timing of plant development could be a result of differential carbon partitioning or nutrient acquisition between plants with or without AMF.

In one experiment the results, obtained after a 9 month trial period from an inoculation of palm seedlings of *Euterpe oleracea* with the AMF fungi *Scutellispora gilmorei*, showed a comparative increase of 92% in total plant height, 116% in stem diameter, 361% in dry matter production, 191% in N, 664% in P, 46% in K, 562% in Ca, 363% in Mg and 350% in Zn contents, comparing to non-inoculated controls. The length of actual infection of the roots was positively correlated to nutrient content and plant growth. The researchers concluded that growth and nutrient uptake by *E. oleracea* seedlings could be significantly improved by the introduction, to the container soil, of appropriate AMF fungi.

Phosphate, owing to its poor solubility and having associated difficulties in being chemically changed into a form suitable for absorption by plant roots, is a limiting factor on plant growth. The AM fungi transport phosphate, after converting the phosphates into solu-

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***Gulubia costata* – A Handsome Palm for the Warm Subtropics**

[This article was published in the Summer, 2007 issue of the bulletin of the South Florida Palm Society and is here reprinted with the permission of the author. The Kew checklist now shows *Gulubia costata* as a synonym for *Hydriastele costata*. The taxonomists have struck again!—Editor]

By Chris Migliaccio

Department of Natural Sciences, Health, Wellness & Dietetics

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Gulubia costata - a striking palm with distinctive pendant leaflets - is worthy of more widespread cultivation in the warm subtropics.

In October of 1989 at a Fairchild Tropical Garden sale, I purchased a juvenile palm that I knew little about at the time - *Gulubia costata*. Later I discovered that two years earlier, the Garden had received seed collected from Cape York, Australia (FTG 87-525) and had grown the plants in quantity for their members.

In May, 1990, I planted the palm in a sunny but wind protected location on the northwest side of my home - about six feet from the cement block structure. Soils in my garden are all derived from alkaline limestone marl but have been heavily augmented with mulch for over twenty years. This specimen was only 0.5m tall at planting but I soon learned it was a fast growing species. Unfortunately, when Hurricane Andrew hit South Florida in August, 1992, the *Gulubia* was 3m overall and was easily knocked down by the 100kph winds that blasted our neighborhood. A week after the storm, I set the palm upright, staking it with a support tripod for the next year. Sadly, all the plants in the ground at FTG from this accession were destroyed.

In the past 9 years, the *Gulubia* has grown to an overall height of 8m and holds a crown of about 16 leaves with broad pendant leaflets. Winter winds annually take their toll by shredding the relatively thin leaflets and browning their tips when the temperatures drop into the 5-7 degrees C range. In this regard, *Gulubia* shows greater susceptibility to cold damage than my 9m tall *Pigafetta filiaris* planted 10m away. In January, 1996 a combination of cold and dry winds over a three day period damaged the *Gulubia* so much that I wasn't sure it would survive. The following growing season saw a complete recovery. Then, from late December,



Gulubia costata in the author's garden, Miami.

2000 to early February, 2001 South Floridians experienced the fourth coldest winter on record with temperatures lingering for many days in the 12-15 degree C range before warming slightly. Interestingly, in the week immediately following two consecutive nights of temperatures barely above freezing, this palm dropped the four oldest fronds that had previously not shown any signs of senescence. Eight months later, during the June-October rainy season, the plant has recovered and is again pushing out new leaves and two inflorescences.

In November, 1999 the *Gulubia* flowered for the first time and set three infructescences with over 500 fruit each. Cream flowers were followed by pale yellow-orange ovoid fruits that ripened to a blue-grey background with prominent longitudinal charcoal grey striping. Within two days of harvesting, the fruits turned black.

As if this color change wasn't dramatic enough, the

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Gulubia costata

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thin pulp was raspberry red in color.

Fruits range from 6-10mm in length and because the pulp, while thin, is difficult to remove by hand, I have simply soaked the fruit in water for 2 days and sowed them on the surface of a standard nursery mix (peat moss – perlite – silica sand). Two community pots of about 100 seeds each were held in the FTG Nursery at about 30 degrees C from December, 1999 until June, 2000 when the first seedlings emerged. Within a month, approximately 75% of the seeds had germinated and by September, 2000, all had a second leaf. Most of these seedlings were donated to FTG for future planting and distribution to members.

The subsequent fruiting in December, 2000 resulted in over a thousand fruit which were distributed to collectors and nurseries in South Florida. At that time I cleaned the fruit by hand by adding some silica sand to a handful of seed and vigorously rubbing my handful of sand & seed to remove the pulp. This yielded very clean seeds in less time than any other methods I had tried. These seeds were sown on 8 January 2001 but upon dissection in October, 2001 all the ungerminated seeds I sampled were dessicated or showed signs of fungal activity. Despite my hope that depulping the seeds would improve germination, this wasn't the case. I wonder if the act of removing the endocarp somehow promoted fungal infection or speeded up dessication before the seeds germinated.

This year, I'll clean some seeds but not the entire batch to see if epicarp removal is the limiting factor in germination.

Of all the pendant leaflet palms that are so graceful and so reminiscent of the tropics, *Gulubia* seems to be the best adapted for cultivation in warm areas outside the tropics. As attractive as they are, I have found *Euterpe oleracea*, *precatatoria* and *edulis* to be even more cold tender and intolerant of our alkaline soils and dry winter winds. Although *Gulubia costata* has been rarely available to collectors in South Florida, we now know that this species can be raised to maturity in our area with only minimal cold protection when young and can become a welcome addition to the landscape. Once the germination problems are solved, cultivated seedlings of this palm may be available to more palm enthusiasts than ever before.



Entrance to Puerto Rican Palm Paradise or, Borassic Park South. Labeled 'calle de entrada' by the proprietor: "view looking south is of a group of *Veitchia* grown from seeds we collected at Teddy Buhler's—late '90s?—in the foreground. In back, a group of mostly *Archontophoenix alexandrae* grown from Ed Carlson's seeds. In between much smaller groups of *Bentinckia nicobarica*."

(Photo by himself, Mike Dahme)

Welcome to New Members!

Several folks have recently joined CFPACS. We welcome you and, should you have any questions about palms and cycads, contact the Editor or any member of the Board. (We don't have all the answers, but know people who mostly do.)

Alyce Parsons, Inglis
 Jay Sockriter, Orlando
 John Kovach, Longwood
 Bob Cooper, Indialantic
 Dale Wallace, Bradenton
 Carol Farrald, Elsa, Texas
 Spencer Salser, Wimauma
 Edward Perry, Melbourne
 Barbara Mitchell, Coldstream, BC
 Howard Nelson, Vero Beach

Mycorrhizae—Palms' Little Helpers

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ble polyphosphate forms, from distant sources to the plant. This chemical ability and the fineness of the mycorrhizal hyphae enables the plant to utilize soil areas and soil types that are otherwise beyond the reach and absorbent capacity of normal root hairs. A group of researchers, using ^{33}P (an isotope of Phosphorus) provided in exclusive compartments that were only available to fungal hyphae and not to plant roots, proved that plants rely mainly on their fungal symbionts for total phosphate provision. However, high phosphate levels in any soil have generally proved to be detrimental to many mycorrhizal fungi.

All AM fungi play an equally active role in nitrogen transport. They are able to liberate nitrates from complex organic material within the soil. It has been shown that mycorrhizal fungi can both enhance decomposition of and increase nitrogen capture from complex organic material, such as wood, animal remains and litter, in soils. This feat is something that plant roots, acting alone, have a limited ability to accomplish.

Over the many millions of years a complex signaling / response reaction has evolved between endophytes and their hosts, specific products are liberated by the host plant seedling in an endeavour to attract the most advantageous endophyte. The trail and strength of various exudates from the host plant root support and guide specific fungal hyphae to a suitable site on the root surface and, in the case of endomycorrhizal forms, into the root cortex. Once established with the host the fungus signals its presence with the release of strigolactones (a group of sesquiterpene lactones) which accelerates the branching and growth of the fungal hyphae to form a mycelium.

The big obstacle that slows the work of artificially culturing the various mycorrhizal endophytes is their obligate (must have) symbiont status. The mycorrhizal fungi can normally grow only in association with a "host plant", which requires that their production has to use a "pot culture, technique in specially constructed growth chambers or in greenhouses. There has been an in vitro (in glass) culture method on excised roots (monoaxenic culture) developed, but only a few strains have been so far developed.

As a source for AM fungus, suitable for palms in New Zealand, aliquots of soil including some coralliform roots (they look like coral, swollen, fleshy, much fatter than the host plants normal root and often coloured or white) could be taken from a palm that appears to be doing well and these samples could be placed in the



Stangeria eriopus, one of Leu's many cycads to be seen during the March 8th Orlando meeting.

(Photo by Eric Schmidt)

moist soil, close to the roots of the plant you wish to inoculate without delay. Generally it has been found that mycorrhizal fungi will not survive in the ground or in plants removed from the ground for much longer than a few days.

The hidden plant helpers, even though they are out of sight, should be very much on the mind.

Generally the hyphae are much finer, 2-5 μm width (1 μm = 0.000001 of a metre) than normal plant roots and it is this that allows the hyphae access to areas that normal plant roots just can't get to, especially for water and contained nutrient stores.

R. L. Watkins expected to complete by the end of 2007 a Ph.D. at Massey University, New Zealand, within the Institute of Molecular Biosciences, with research on the "biogeography of some members of NZ terrestrial orchids. . .specifically the . . .reliance on mycorrhizal fungi for a carbon source." He has run his own nursery, developed several garden centers and has served as vice president of the New Zealand Nurserymen's Association.

—Editor

Diana Wehrell-Grabowski, who feared that she had been chosen CFPACS President-for-Life, (no, only for an extra year beyond her two-year term) was given a token of appreciation by the chapter: a gift certificate at Colonial Photo in Orlando—candy store to the photographically-inclined. The Editor made the presentation in Rick Nale's garden during the December meeting, announcing that it was a gift certificate for Wal-Mart. This explanation is for those listening who, unfortunately, believed him.

(Photo by Rick Nale)



December Meeting Report

(Continued from page 1)

After everyone had gawked his or her fill of all the Kopsick beauties, it was on to the next stop in St. Pete, Rick Nale's funky house and garden. The chapter provided sodas, bottled water, and other potable drinks, along with supermarket fried chicken and salad. Attendees all brought more food and managed to eat most of it. Rick's small property is completely fenced in, completely private. Walkways meander through plantings, there are tables and chairs all about—perfect for a party. To anyone who's been to Germany, there's the look of a *Biergarten* or (perhaps) *Weinstube*. However, at this Rick's place (*Casablanca*?) there are no hefty waitresses in dirndls with six 1-liter steins in each hand. Maybe this colorful addition can be arranged for a future visit some years ahead?

After much chat and consumption of healthful beverages, everyone was ready for the plant sale. As usual, there were some fairly common species and some unusual. It should be pointed out that while Faith Bishock did attend, no pictures were taken that testify to her presence. (But, fans, she's on page 12.)

As ever, no cars/vans/trucks/SUVs departed without waving fronds visible.

A comprehensive video on the basics of palm care and culture may be found online at <http://www.stpete.org/parks>. The 13.5-minute video features our own Ray Hernández (as [then] president of CFPACS and shows Phil Stager pruning dead leaves).



*Above, a group of *Copernicia alba* seen at Kopsick. in early December visit.*

(Photo by Ray Hernández)

To see the video, go to the Parks Dept. address and hit "Palm Paradise" under the central picture. Go to <http://www.stpete.org/palm.htm> for the specific page devoted to Kopsick. It is very evident that the City of St. Petersburg cherishes its palms and its palmy image. [The Editor did manage to slip into Haslam's, Florida's oldest and most famous used-bookstore, between Kopsick and Rick's, but left empty-handed, there not being enough time really to poke around.]

Opposite page: Phoenix theophrasti at Kopsick.

(Photo by Bob Johnson)

The USF Spring Plant Festival 2008

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 12th, and Sunday, April 13th. The hours will be 10AM to 4 PM on Saturday, and 10AM to 3 PM on Sunday. Members of the USF Botanical Garden get in early at 9:30 AM. 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 8:00am.-6:00pm. 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. The treasurer's contact info is on the next to 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.

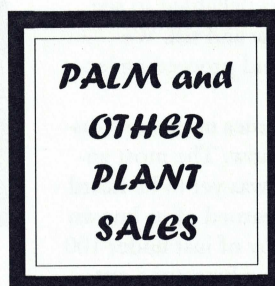
If you need more information on the sale, or would like to be one of our vendors, please contact Chuck Grieneisen at chuckfg@bellsouth.net or 407-359-6276.

—Chuck Grieneisen



Palm Beach Sale April 12-13

Palm Beach Palm & Cycad Society's (20th?) annual spring sale is on Saturday and Sunday, April 12 & 13 in Caloosa Park (1300 SW 35th Ave., Boynton Beach). Hours are 9-4. Directions: take I-95 south to Boynton Beach, exit west on Woolbright Rd. Continue to Congress Ave., go south on Congress to 35th Ave. The entrance is on the left and the park is back a bit. Contact Kitty Philips, Kitty.Philips@fnis.com



March 1—Florida Institute of Technology Botanical Garden, FIT Botanical Fest, Melbourne

March 8-9—Marie Selby Botanical Gardens, Plant & Garden Festival, Sarasota

March 8-9—Flamingo Gardens, 12th Annual Spring Garden Event, Davie

March 15-16—South Florida Palm Society Spring Sale, Montgomery Botanical Center, Miami

March 29-30—Harry P. Leu Gardens, Annual Plant Sale, Orlando

March 29-30—Kanapaha Botanical Gardens, 18th annual Spring Garden Festival, Gainesville

April 12-13—USF Botanical Garden, Spring Plant Festival, Tampa

April 12-13—Palm Beach Palm & Cycad Society Spring Sale, Caloosa Park, Boynton Beach

April 19-20—Heathcote Botanical Gardens Spring Festival Plant Sale, Fort Pierce

The New Madagascar Palm: *Tahina spectabilis*

By Christian Faulkner

Faith Bishock and I had finally finished the trek across the Everglades and were pulling into the North entrance to Fairchild's parking area. Our featured guest for the evening was sitting up front with us - a living seedling of the newly described palm. After getting out, we soon met up with others who had done field work on the magic island of Madagascar--Peter Balasky and Dr. John Dransfield. He immediately recognized the palm I had in my hand and was delighted to see there would be a live plant for show and tell. We shifted upstairs for the reception and proceeding lecture.

After meeting many interested parties in the new discovery, we sat down for the slideshow. The most anticipated information on the palm was yet to be heard - what would it be called? We first learned of its known history. This palm grows in a colony of just under 100 specimens surrounding, but not on a limestone outcropping in the middle of a seasonal swamp. This swamp is located on the north-central coast of Madagascar, northeast of the town of Mahajanga. The natives use the nearby area for rice cultivation.

The name was finally revealed near the end of the show...*Tabina spectabilis*! *Tahina* means "blessed" in Malagasy, and, and one of the discoverers of the plant to the Western world is named Anne-Tahina Metz. Thus the naming of the palm as such was its destiny. Another question asked by the onlookers was where when could be cultivated. Since this plant is monocarpic (it dies after it flowers), seeds become available as one of the mature plants goes into its terminal inflorescence. The natives in the area claim they have not seen this palm flower in an entire generation, however, two

From the Kew Press Release:

Tahina spectabilis

- **Huge trunk** 18m (59 ft) high
- **Fan leaves** 5m (16.4 ft) in diameter
- **Chuniophoeniceae tribe**, allied with *Nanorrhops*, *Kerriodoxa*, and *Chuniophoenix*
- **Habitat dry** 8 months of the year
- **Mean annual** temperature in habitat is 27°C (80.6°F)
- **Grows in** fertile soil at foot of limestone hill that is seasonally flooded
- **Most massive** Malagasy palm

palms have seeded in the past two years, the latter of which now have ripe seed. These will be available through Tobias Spanner through

www.rarepalmseeds.com out of Munich, Germany.

This is an effort to bring money to the village and conserve the remaining plants in the wild from extinction. A percentage of the harvested seed is being cultivated for re-establishment into habitat and increase the numbers of this already highly endangered palm.

I must say it was a pleasure meeting Dr. Scott Zona and Dr. John Dransfield, and hope to see this palm in Florida in the near future. Dr. Dransfield did note that due to its savannah habitat, much like *Bismarckia*, it should be a good candidate for growing in Central/South Florida.



*At Fairchild, Faith Bishock prepares to take a picture of Christian Faulkner, holding the seedling *Tahina spectabilis*, as Dr. John Dransfield (second from left) and Peter Balasky (second from right) look on.*

(Photo by Mike Harris)

Linospadix, A Genus Seldom Seen in Florida Gardens



Left, a typical leaf of *Linospadix monostachya*. Right, the palm's long, arching inflorescence.

[This article was published in the November, 2007 issue of *Tropica*, the publication of the Tropical Garden Society of Sydney, an IPS chapter, and is reprinted here with the permission of the author-editor.]

By Ian Edwards

The genus *Linospadix* includes five Australian species and another two from New Guinea. They are small understory palms, most of the Australian ones being very suitable for Sydney gardens. Australia's equivalent of *Chamaedoreas* and small *Dypsis* species, they are sadly underused in our gardens. Even the main botanic gardens apparently cultivate only *Linospadix monostachya* and *Linospadix minor*. *Linospadix microcarya* and the two forms of *Linospadix palmeriana* are cultivated by a few enthusiasts. These two species come from mountain rain forests in Far North Queensland, at altitudes up to 1500 m. Their habitats are difficult to reach, so seeds are rarely available. The other Australian species, *Linospadix apetirolata*, from Mt Lewis in Queensland, has failed to grow in Sydney. [Sydney is located at 33.55° South.—Editor]

All species have a number of inflorescences that arch down, each as a single spike, on the outer end of which

the flowers are grouped in triads, the two males in the triad opening first and then falling off. The segmentation of the leaves is so variable as to make it often quite difficult to be sure, without a microscope, of the species to which some of the clustering ones belong.

Linospadix monostachya

This is the only species that is always solitary, and the largest, with a stem reaching 6 m in habitat. With a sturdy stem only 2.5 cm in diameter, and a base below ground that made a good knob, this was the original Walking-stick Palm. It was grown in Sydney's Royal Botanic Gardens as Port Macquarie Cane in 1825, only four years after Port Macquarie was founded as a penal settlement.

The names of both the genus and the species refer to the fact that each inflorescence is a single spike. It is yellow when flowering, followed by red fruit, roundish, and about 1 cm in diameter.

Usually the leaflets are variable in width and spacing, as on the leaf above left, but there is a form with regularly pinnate leaflets and a broad terminal leaflet.

As with all the other species, this one does best in a

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Linospadix

(Continued from page 13)

moist shady place. Those 6 m specimens in habitat might be centenarians: it is about as slow-growing as most palms, so it would be best to start with one that already has some trunk.

Linospadix minor

The next species to be discovered was somewhat shorter, so became "minor", although stems may eventually reach 5 m in habitat. It comes from rainforests in north-eastern Queensland, at altitudes to 1200 m, and grows happily enough in coastal Sydney. It is a clustering species, but usually with only one or two dominant stems and some basal suckers, or even as an apparently solitary palm. It also is variable in leaf form, with few to many segments of different widths. The inflorescences are again single spikes, but in this species the flowers and fruit are smaller and the fruit more elongate in shape and sometimes orange rather than red.

Linospadix minor is the only other species that is sometimes available in nurseries. If available, seeds are not difficult to germinate, but young plants are slow to grow.

Linospadix microcarya

Also from Queensland rainforests, at altitudes to 1600 m. A clustering palm, even smaller than *Linospadix minor*, with up to six stems. It can be up to 3 m tall in habitat. The leaves can be regularly pinnate or irregularly segmented, with a variable number of leaflets. The single spike inflorescence has yellow flowers, and the fruit are small (hence "microcarya"), round, and varying from yellow to red.

Linospadix palmeriana

The shortest and perhaps the prettiest of the genus, this clustering palm can grow to 3 m, in habitat, but is usually less than 1 m tall. It comes from a small area of rainforest at elevations to 1600 m. Each leaf has a fish-tail terminal leaflet and often only one other broad leaflet on each side, with occasionally a narrower leaflet as well. The leaflets are much thicker and more rigid than those of the other species.

The inflorescences are the pendulous spike that is typical of the genus, with yellow flowers followed by fruit that are orange to red, elongated, 10-15 mm long by 5-7 mm wide.

There is another form of *Linospadix palmeriana* which
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Above, *Linospadix minor* in the author's Sydney garden.
Below, a young *Linospadix palmeriana*.





Linospadix palmeriana inflorescence, above.
Below, the form of the species also known as *Linospadix aequisegmentosa*.



Keuper Statue for Florida Tech

Florida Tech (FIT) is raising money to erect a bronze statue on the campus of Dr. Jerome Keuper, the founding president of the university. Jerry Keuper was also the seventh president of The Palm Society (now IPS), 1968-70. He was responsible for the founding of the Dent Smith Trail, precursor to today's re-vitalized botanical garden.

In the 1960s, FIT had the second largest palm collection in Florida, after Fairchild.

The proposed statue will be 125% of life size and is to be made by a nationally known artist. Its cost is expected to be about \$80,000. About a third of this amount has so far been raised. Any contributions to the fund for the statue may be sent to:

Florida Institute of Technology
Attn: Tama Johnson, Development
150 W. University Blvd.
Melbourne, FL 32901

—John Kennedy

Linospadix

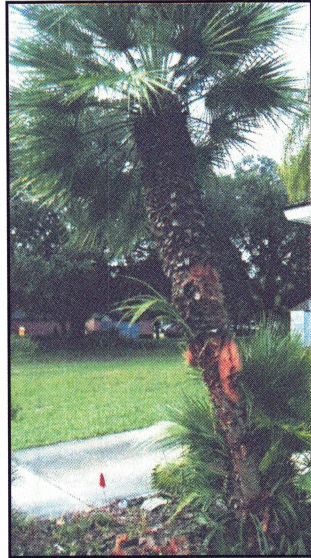
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appears entirely different and was for many years known as *Linospadix aequisegmentosa*. Clustering, with two to four dominant stems, as well as some basal suckers, it has about nine pairs of narrow, evenly spaced leaflets (hence the name).

Pale yellow flowers on relatively short inflorescences are followed by small elongated orange/red fruit.

It could be easily be mistaken for a finely segmented leaf form of *Linospadix microcarya*, but the latter has longer leaves and a longer inflorescence, with roundish fruit.

Chamaerops Passenger



Left, *Chamaerops humilis* at Ben Ciesla's Brandon home. At center on trunk, looks like a sucker. Right, above, a closeup; below, the palmlet removed.

President's Message

2007 was a good year financially for CFPACS. Revenue from membership dues and sales increased while the seed bank made a comeback during the second half of the year (after a few months of inactivity during transition to a new seed bank coordinator). Thanks go to Karen Barrese who continues her duties as membership secretary, to John Green, our new seed bank coordinator and to Claudia Walworth and Mike Dahme who worked with the seed bank during our time of transition in the first half of the year. All of these persons - plus the rest of our board, Christian Faulkner, Mark Grabowski, Chuck Grieneisen, John Kennedy, Frankie Ramos and our now retired president, Diana Wehrell-Grabowski - have worked especially hard over the past year and deserve our thanks. Thanks also goes to all of those who donated seeds to the seed bank and plants to our auctions, to the vendors who sold plants at CFPACS meetings and public sales, and to all those who purchased seeds and plants from CFPACS.

Because of your contributions to the society through

By Ben Ciesla

This occurrence might be of some interest to seed germinators. I have a *Chamaerops humilis* growing in my yard. My daughter pointed out to me that the trunk had sprouted a seedling palm at about the middle of the trunk.

It was exciting to see roots intertwined in the dried out leaf bases of the palm, right up next to the trunk. There was no attachment of the roots; the plantlet was independent of the trunk. I recalled that this- *Chamaerops humilis* had never had an inflorescence, so the plantlet could not be an offspring. The root part of the plantlet had the vestige of the bulbous root of a *Sabal palmetto* seedling.

What is unusual is that the seedling germinated and grew under pretty dry conditions and that there was so much root growth on the plantlet. Also, it is a mystery as to how the seeds were placed there (there were additional seeds and sprouts). *Sabal* seeds are much smaller than *Chamaerops humilis* seeds. We have squirrels, but they keep away from this palm and I can't see them as dealing in such small seeds.

membership dues and the donation of plants and seeds, we continue to publish a first rate newsletter (expenses decreased by over \$1000 during 2007) and to fund grants that advance the knowledge and planting of palms and cycads. Late last year our newsletter editor, John Kennedy, told the board about a "hometown grant" that the Southeastern Palm Society has been awarding over the past several years. Our board unanimously agreed that this would be a valuable program to begin in our chapter and approved the funding of the grant for this year. The Hometown Grant will award money to plant a new palm garden somewhere in our region. Please read the details on page 31 and consider applying for this grant.

Driving around the Orlando area I see a tremendous need for the passion for and knowledge about palms and cycads that CFPACS members have to offer. Even with the dizzying amount of new residential and commercial construction, the palm palette seems unnecessarily limited. When palms are used at all in new subdivisions it is rare to see anything beyond *Phoenix roebelenii*, *Syagrus romanzoffiana* and *Washingtonia robusta* planted (with a possible addition of another *Phoenix* species or perhaps a *Bismarckia nobilis* at the community entrance). New commercial construction uses the

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COFFEE, CYCADS' NEW BEST FRIEND?

[This article appeared in the December, 2007 issue of The Cycad Newsletter and is reprinted here by permission.]

By Tom Broome

In the last 12 years since it was brought into Miami, the Asian scale, or CAS (cycad aulacaspis scale) has killed somewhere between 100 to 500 million dollars worth of *Cycas revoluta* and *Cycas rumphii* plants in our landscapes and nurseries. It has been spread to most of the southern United States and Hawaii.

The scale has been brought to Guam and Taiwan, and has killed tens of thousands of *Cycas micronesica* and *C. taitungensis* plants. Many nursery owners are throwing their sagos away because they don't want to spend the time and money to treat them. I know of one nursery owner who was growing just *Cycas revoluta* as his retirement fund and after getting the scale, he dug a big hole and pushed 400,000 sagos into the hole with a bulldozer and covered them up. Homeowners are giving up on growing sagos, and because *Cycas revoluta* is the most commonly grown cycad, they are getting a bad attitude about growing cycads in general. There is no doubt that CAS is the worst plague in modern history of cycad cultivation.

Over the years, I have experimented with treatments that would be longer lasting than the recommendations we have been given by county extension agents and others who are still guessing at what should be done. My best recommendation was to use products with Imidacloprid because that, at least would work by using it a few times each year. This is a little complicated to use because it concentrates only in the new leaves, and you have to understand how cycads grow to make it work most effectively. It is also fairly expensive to use and many people would rather dig up their plants as opposed to spending the money and time to treat them correctly. Using the combination of Safari (a similar product as Imidacloprid) and Distance (a grow regulator) works very well, but these products are not available to homeowners and are very expensive. People are getting tired of using so many chemicals on their plants, and taking the time to apply them, so they are giving up on cycads. Little did we know that the

secret to treating scales, and mealybugs for that matter, was sitting in our own kitchen cabinets.

Five years ago Kurt Decker and I went to see a nursery comprised of a few plots of field-grown coonties (*Zamia floridana*) for a total of about two to three acres. They had been planted from seed and placed at, what I estimated to be, 4-6" centers. Seven years after planting, he had a thick mass of leaves with little or no gaps between plants. He had originally planted the seeds on top of the sandy ground and then topped the seeds and the entire growing plot with a few inches of used coffee grounds. A coffee extract plant in his town would give away truckloads of used coffee grounds to whomever wanted them because they would have to pay to dump them otherwise. The man thought it would be a free way to get extra organic material in his soil and keep the seeds moist enough to sprout. After germination, the coffee would also give a little extra nitrogen and minor elements to promote growth. The coonties looked very nice and well-grown for what seemed to be such little care otherwise.

I noticed something about his plants that was not like most I have seen. Any time I have seen coonties grow-

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Fig. 1: *Cycas revoluta* fully covered with aulacaspis scale that makes it look ghostly.

COFFEE FOR CYCADS?

(Continued from page 17)

ing so close together in mass, they always have mealy-bug infestations, but his were clean. He said he had not seen any insects on the plants and he had not used any insecticides, but I don't think he realized how lucky he had been. I thought to myself that this was very strange and was worth looking into, so started my new quest for answers.

There are plants that naturally produce alkaloids that ward off insect predation. Some plants such as *Coffea arabica* (coffee) concentrate their alkaloids in the seeds, and their way of propagating, so that insects can't eat their seeds and destroy the population. *Camellia sinensis* (tea) not only produces alkaloids that kill predatory insects, but the lower leaves that drop to the ground act as a preemergent herbicide, keeping weeds from taking extra nutrients that the plant can use.

Information on caffeine and other alkaloids that are in coffee and tea plants is very sketchy. I have read articles that talked about two major alkaloids in coffee, but I have heard from other people that thought there was at least 50 and even close to 100 alkaloids in coffee that may be involved with insect defense. Either way, it was worth experimenting with to see if it could be useful for cycads and especially with *Cycas* species infested with CAS.

I started by asking a server we knew from a local restaurant if the restaurant would be willing to save all their used coffee grounds for me to experiment with, and he told me that the Starbucks right down the street gave large bags away all the time.

I went right over and found that they had a metal pail next to where you pay for items with silver bags of used coffee grounds with a sticker on them that reads "Grounds For Your Garden" (Fig. 2). Each bag weighs between six and seven pounds. There were three bags that day, which gave me a good start for experimenting.

These grounds are good because Starbucks has a drip type system that wouldn't remove as much of the alkaloids as would a percolator; also, they use mostly espresso beans, which are known for having a high caffeine content. Used coffee grounds are also not as acidic as people think. I tested several bags of the used grounds with a pH meter and found them to have a pH of around 6.2 which is just below the 6.5 of my regular potting soil mix.

I started several experiments that day. I mixed 10% used coffee grounds into my regular soil mix and planted some coonties that had the brown round scale on them. I mixed some grounds in water and

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Fig. 2 (above): Coffee grounds as packaged by Starbucks and given free to anyone who asks for them, labeled "Grounds for Your Garden."

Fig. 3 (below): *Cycas debaoensis* plant before treatment with coffee grounds, infested with scale.



COFFEE FOR CYCADS?

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poured the mixture over some mealy bugs that were on a new flush of leaves on an *Encephalartos laurentianus*, and on some *Ceratozamia hildae* cones that had some of the common snow scale (the type that infests camellias and magnolias in my area) on them.

After doing this, I brought a leaf of a sago from down the road that was covered with CAS and laid it down on a small *Cycas debaoensis* plant. By the end of the first day I checked the plant that had mealy bugs on it and wherever the mixture touched the insects, they were dead. On the third day I checked the *Ceratozamia hildae* cone and those scales were dead. In the same amount of time, the introduced scales had already started multiplying on the *Cycas debaoensis*.

Fig. 3 shows the base of the *C. debaoensis* with the scales on the stem and just starting up the leaves. I poured the used coffee grounds over the entire stem and soil area and cut off all but two leaves (as opposed to cutting all the leaves off) to help give the plant energy. There was also a new leaf just coming out with scale already on it.

Fig. 4 shows the plant covered in the used coffee grounds. Checking the plant, two days later, all the scale insects appeared to be dead. After that, the new leaf came out normally without any scale on it. A couple of months later another leaf was produced and I cut off the original leaves, now yellow. I gave the new leaf time to harden off, so at about three months after the original mulching of grounds, I decided to test for any possible systemic qualities.

I took a small piece of a leaf from down the road again and laid it on the same plant (Fig. 5, with closeup inset of scale). Each day I inspected this experiment and each day, none of the scales crawled onto the plant. After three weeks, the leaf had turned brown and all the scale insects were dead (Fig. 6).

It was amazing that an insect that spreads so rapidly elsewhere totally refused to crawl on the mulched plant, and died instead. At this same time, I checked the coontie that was infested with brown scale and those insects were also dead. This showed that for at least a few months, plants that have been mulched with the used coffee grounds can be immune to insect predation.

Even though this does not pertain to cycads, I did find another experiment interesting that would give me insight on other cycad experiments. It is common in my area for some bamboo plants (genus *Bambusa*) to get mealybugs during the summer months. I had a few

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Above, Fig. 4: Same *Cycas debaoensis* plant as in Fig. 3 after treatment with coffee grounds.

Below, Fig. 5: Attempting to reinfest the *Cycas debaoensis* plant of Figs. 3 and 4 with live CAS (see inset).



COFFEE FOR CYCADS?

(Continued from page 19)

of these in 25-gallon containers that were pushing new culms and were covered with mealybugs, so I mulched those pots to see what would happen. The same plants pushed some more culms three weeks later and all of the culms were totally clean. The alkaloids had been seeping down slowly every time I watered the plants and killed all the mealy bugs in the soil. This was important to know because properly treated soil is the most important part of keeping CAS in check. I was very happy with my experiments so far and now it was time to experiment on *Cycas revoluta* plants in local landscapes.

In order to treat sagos properly you need to understand the life cycle of the CAS. In the winter, the mobile scales crawl down into the root system until the weather gets warm again. When they crawl back up onto the stem depends on how cold the winter was. On average, in my area, the scales are crawling back up in late spring, and by July and August, they are in full swing, and the sagos are covered. They first crawl up the main stem of the plant and settle on leaf petioles. After they accumulate in mass around the petiole area, they will then crawl up onto the leaf and leaflets. Throughout this time, they are still covering the root system, taking energy that should be going into the plant.

My first treatment was to spray a few large sagos with horticultural oil to kill as many of the scales as possible, as opposed to cutting off all the leaves and draining the plant of needed energy. I mulched the entire root area (Fig. 7). I also mixed some grounds with a little water and poured the mixture around the apex (Fig. 8). As long as the plant gets enough water to wash down the alkaloids throughout the root area, the mulch will take care of everything below ground. If any more scale insects try to crawl up the stem, the grounds in the apical zone will prevent them from crawling onto the petioles. **Not only** that, but every time it rains, the alkaloids will run down the stem and kill insects that are on the way up. All of these treated sagos stayed clean for ten full months, and all the time there were other sagos within 100 feet that were totally white with scales.

During this ten-month period I had thought about my experiments, and realized that if alkaloids were being washed into the root area and this killed scales and mealy bugs, then you should be able to cook the coffee grounds again and use the weak coffee mixture in a pump sprayer.

I took a used 55-gallon drum that is used for orange



Above, Fig. 6: Same plant as in Fig. 5 three weeks later, with introduced leaf and scale apparently dead.

Below, Fig. 7: Mulching the root zone of a large sago with coffee grounds.



juice and cut a hole in the top and put a hose bib on it near the base. I took a piece of 4" corrugated pipe that has holes in it that here in Florida is used for septic tank drain fields. I covered it with the mesh that is sold for these pipes to keep dirt from stopping up the pipes when being used, and tied a knot at the bottom (Fig. 9).

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COFFEE FOR CYCADS?

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Fig. 8: Coffee grounds scattered in the crown of a large sago palm.



Fig. 9 (top): 4" corrugated pipe used in the 55-gallon drum to contain coffee grounds.
Fig. 10 (bottom): 55-gallon drum for making "sun coffee" to treat scale, mealybugs, and aphids.

I put a pin in the top of the pipe to keep it from falling into the barrel and lowered it down. I put a bag of the used coffee grounds into the pipe and filled the barrel full of water (Fig. 10). This was like a large-scale version of making "sun tea." I had located the barrel in full sun and five days later, the "sun coffee" had turned to a dark brown color. I used the mixture in my pump sprayer and treated sagos with CAS on them, different coonties with mealybugs and scale insects, bamboos with mealybugs, and crepe myrtles with aphids on them. By the next day all the aphids and mealybugs were dead and after checking a couple of weeks later, the majority of the scale appeared to be dead.

Since then, when I treat a sago for CAS I use coffee spray instead of horticultural oil, while the rest of the treatment is the same as before. So now all I need are used coffee grounds to treat cycads, and don't use any store-bought chemicals.

I've been using this kind of treatment for cycads with any type of insect on them for the last 16 months and have almost completely done away with pesticides, except for chemicals required by the USDA for shipping to certain states.

I have treated many sagos in Lakeland with great success, but have also learned a few more important things. The barrel mixture is only good for 3-4 months, so it is best to make only as much spray as needed for a short period of time. Also, the bagged coffee grounds get moldy after a long period of time and are not effective to treat scale. Used coffee grounds can be kept dry with a desiccant and don't appear to mold if kept dry, but as long as used grounds are easy to obtain, it doesn't seem worth the effort.

For those of us who live near a Starbucks, it is just as easy to get fresh grounds as needed to treat some plants. I have found that treating sagos twice a year whether they need it or not has kept them totally clean, even when sagos nearby are covered with scale.

The first treatment for CAS each year should be while the infestation is primarily in the root system; a second treatment is best around August when the scale is at its worst and most likely to fly onto your plants from infected plants nearby. I have tested different strengths of the "sun coffee" and found that I only needed half the amount of used coffee grounds that I originally used.

Since *Camellia sinensis* leaves act as a pre-emergent herbicide, I thought I would check the coffee mulch to see how it worked on weed seeds. I did find that I had far less weeds in the containers with the mulch in

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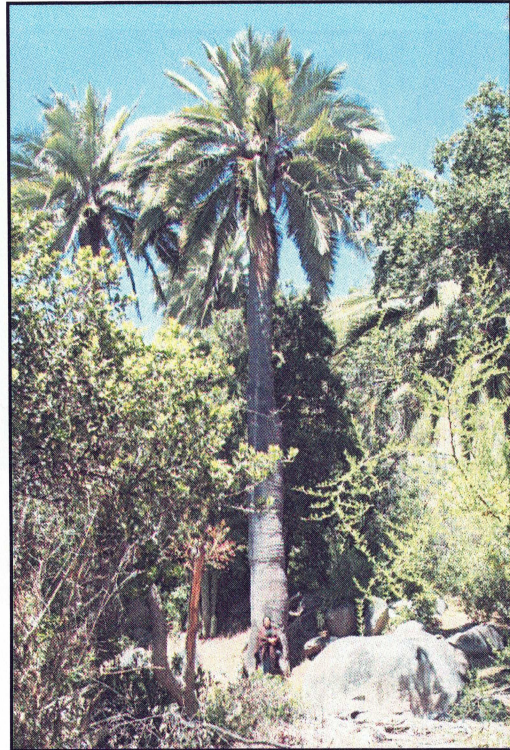
COFFEE FOR CYCADS?

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them, but it is hard to determine if the coffee itself did this, or the simple fact that there was mulch of any kind in the containers.

I think the use of coffee grounds and tea leaves to kill insects will be a revolutionary concept for horticulture in general, and not only to be used in treating cycads. *Keep in mind that it is a treatment and not a cure. [Emphasis added.]* As long as CAS is growing on a sago anywhere within a mile from your house, there is still a chance that you will get the scale again. But if this can be an extended time treatment, people are more apt to use it. **Used coffee** grounds are free, even if you live in an area where you have to save your own. It is also organic and has great potential for organic gardening. I think in time, if enough people are educated about using used coffee grounds, that the CAS can be greatly reduced to the point that people will start using *Cycas* species again in their landscapes, and will have a much better attitude about cycads in general.

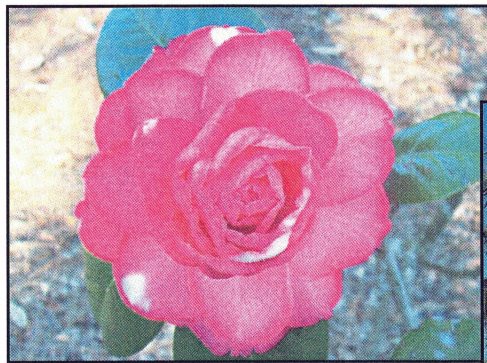
I want to thank everyone who has helped me by experimenting with coffee grounds and giving me feedback. I want especially to thank the people at Starbucks who have made their used coffee grounds available in every store. They wanted to help out people with extra organic material for their gardens, but they may help us all to keep CAS and other pests from killing our beloved cycads.



Above, Dr. Joe Chaparro took this picture in November of Jubaea chilensis on a private estate in Chile, with seemingly two more in the background. That's his wife, Lynnette, giving scale to the immense palm. Has anyone ever grown it in Florida?

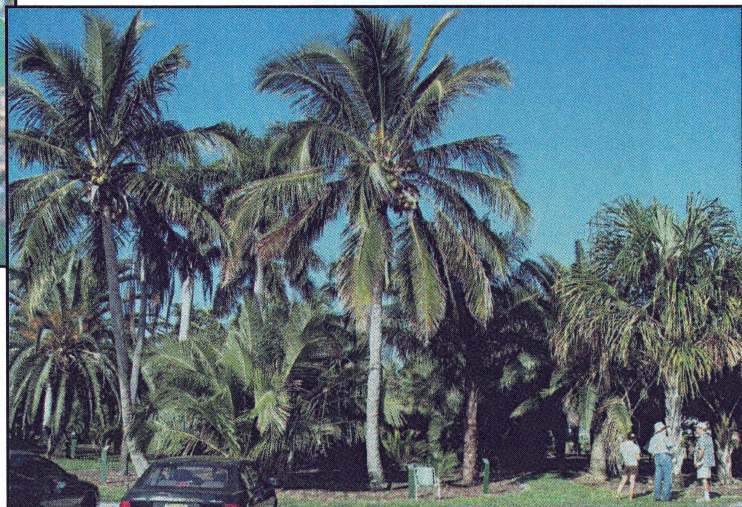
Below, one small section of Kopsick during the December meeting. Looks like prez Diana, the Editor, and Dave Reid, with coconut palms to their left.

(Photo by Tom Pavlucik)



Camellia reticulata 'Valentine's Day' at Leu Gardens, Orlando. The camellias will likely be past bloom by the time of our March visit. The flower is 6 inches across.

(Photo by Eric Schmidt)



The Royal Palm and Philately

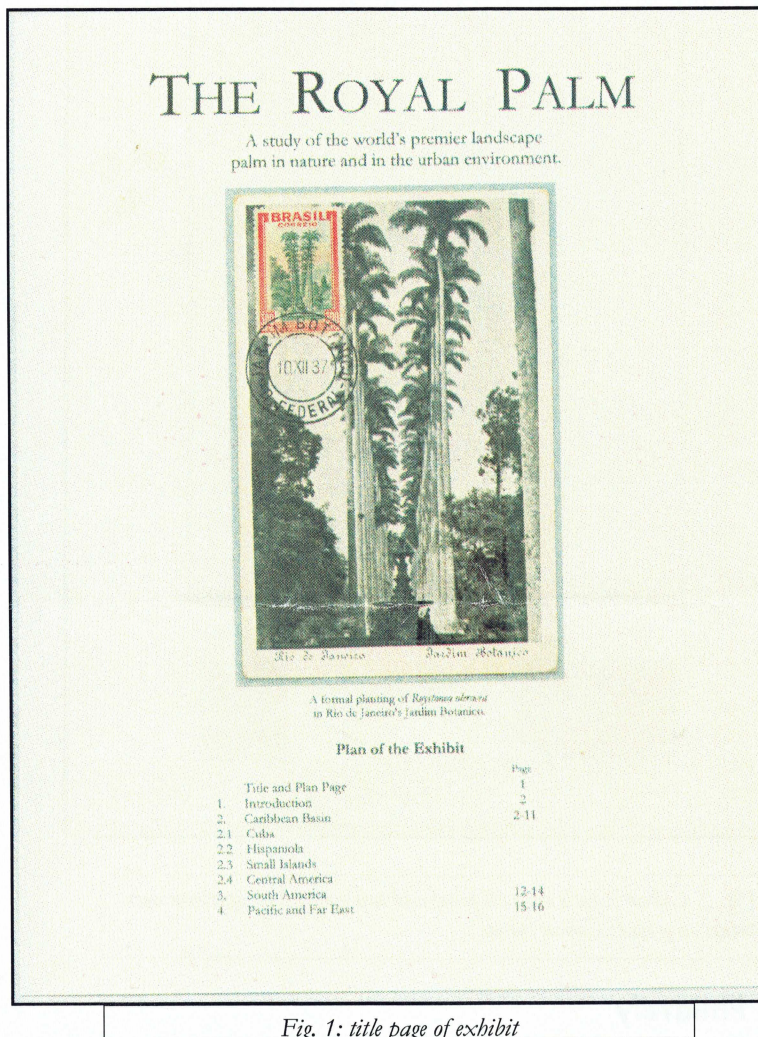


Fig. 1: title page of exhibit

By Phil Stager

Royal Palm - common name for palm in the genus *Roystonea*. A genus of 10 large, solitary-trunked, pinnate-leaved, monoecious palms in tropical America, principally in and around the Caribbean basin. The species are similar and often difficult to distinguish from one another.

Scientific differentiation is by inflorescence size, flower color and other floral details, as well as height and color of the stem.

(Ref: *An Encyclopedia of Cultivated Palms*, Riffle & Craft, Timber Press, 2003)

Philately - the study of stamps.

This article briefly describes how I have combined my love of palms, royal palms in this case, with another hobby, philately. The article is based upon a 16 page competitive philatelic exhibit titled THE ROYAL PALM.

Figure (1) is the Title Page and shows the organization of the exhibit. The philatelic element is a maximum card - so called because the stamp, the cancel, and the post card are in

(Continued on page 24)

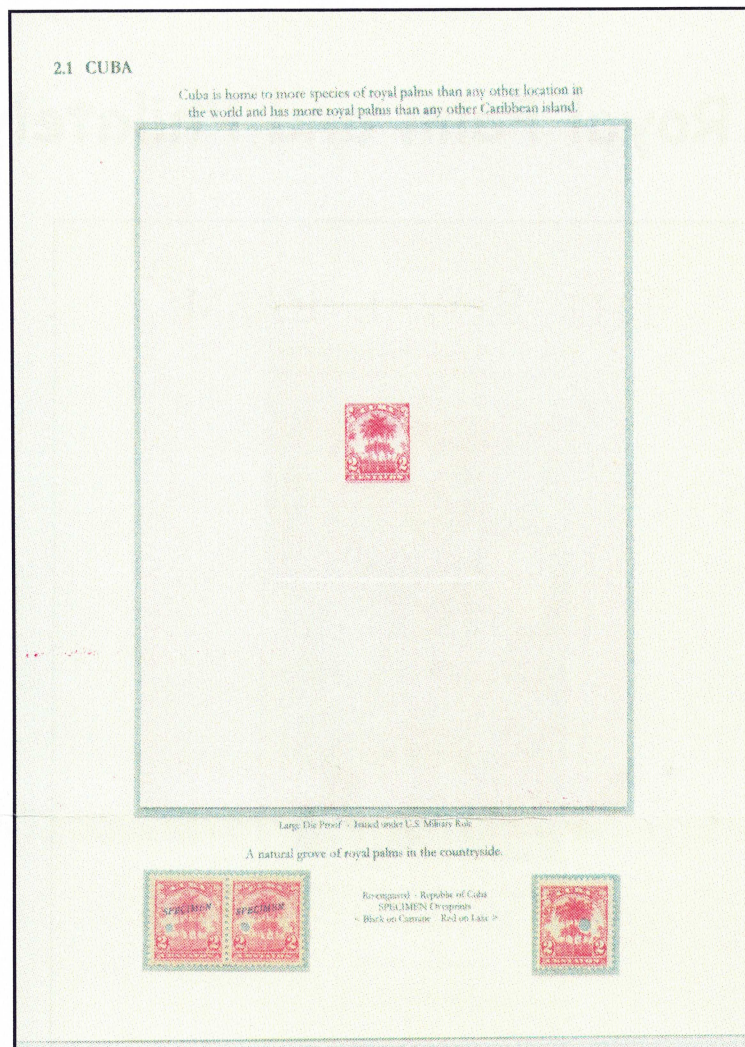


Fig. 2 Cuban Royals on a die proof and two varieties of specimen overprints on a basic Cuban stamp.

The Royal Palm & Philately

(Continued from page 23)

maximum concordance, i.e., the stamp shows the royal palms (*Roystonea oleracea*) in Rio de Janeiro's Jardim Botânico, the card shows the same thing, and is cancelled at the Jardim Botânico on 10-Dec 1937.

Figure (2) shows what differentiates a casual stamp collector from a philatelist. Here we see a die proof and two varieties of SPECIMEN overprints on a basic Cuban stamp showing a grove of royal palms.

Philately is not limited to the study of postage stamps but also includes postal stationery as shown in Figure (3). At the top is a postal card with Royal Palms on the indicium (the pre-printed stamp in the upper right

corner) and on the photo at the left where we see two royal palms in front of the cathedral at Aracaju. The card was carried by the airship Graf Zeppelin in 1935 from Recife, Brasil to Bathurst, Gambia. The back side of the letter card at the bottom shows royal palms in front of the Mint Building (Casa da Moeda) in Rio. The letter card was used in 1898 and was sent from Sao Paulo to London. All the royals are probably *R. oleracea*.

Figure (4) shows some of the uses of the Royal Palm in Cuba - place it on a coat of arms, feed the seed to pigs, or use the crown shafts for storing and aging

(Continued on page 25)

Right, Fig. 3. A preprinted stamp on the indicium of a postcard. Royal Palms also on the stamp at left pictured in front of the cathedral at Aracaju. The card at the bottom shows Royals before the Mint Building in Rio de Janeiro.



The Royal Palm & Philately

(Continued from page 24)

tobacco. The postal card at the bottom shows a grove along the Rio Canimar in Matanzas province. (Postal cards are issued by a governmental entity and have the postage prepaid. Post cards are issued by almost anyone and do not have the postage prepaid).

Figure (5) shows Royal Palms in several British Caribbean colonies and how the stamps were used for postage on a registered letter to Canada and for fiscal or revenue purposes, a four cent tax on a check.

Shown are only sample pages from the exhibit. For anyone interested in viewing the entire 16-page exhibit, send \$3 for postage and I'll send you a CD with this exhibit, another 16-page exhibit on Dates—the Genus

Phoenix, and a large 96-page exhibit on Coonuts.

But, wait, there's more!

If room remains on the CD, I'll include a 16-page exhibit on Pineapples and another on Bamboo.

Phil Stager,
4184 51st Ave., S.
St. Petersburg, FL 33711-4734

[The Editor has seen the whole, staggering work of great complexity, representing an almost unimaginable amount of time, and subsequently requested that its maker provide a scaled-down version of his magnum opus, which is what appears here.]



Left, Fig. 4. These stamps show some of the uses for Royal Palms in Cuba: as part of a coat of arms, trunks for feeding the pigs, or for helping to cure tobacco. The card at the bottom shows a grove of Royals along the Rio Canimar in Matanzas Province.

Fig. 5 is on next page.



Next Christmas in Florida? Your very own electronic Phoenixes? The wave of the future seen here at a motel in Auckland, New Zealand, where real *Phoenix canariensis* is on the verge of being banned as an invasive plant. Electronic coconut palms are also available in a full range of colors. Trunks and fronds have lights. Imagine the scene at night! For a full look at these palms that are unaffected by disease, blight, drought, or freeze, see the retail company's website: www.effective-lighting.co.nz. Plastic flamingos, optional.

(Photo by John Prince)



Fig. 5 shows Royal Palms on stamps in British Caribbean colonies, on a registered letter, and (bottom) as tax stamps on a bill.

Good-bye to Largest Chinese Fan?

What probably was the world's Champion Chinese Fan Palm has been chopped down by the time you read this. The Associated Press reported in late January that an 82-foot *Livistona chinensis* growing in Europe's largest greenhouse--in Vienna--will be removed on Feb. 18 before it breaks through the glass ceiling. The greenhouse is at Schönbrunn Palace.

The 170-year-old palm is named the "Sisi Palm" after the Empress Elisabeth of Austria-Hungary whose nickname was "Sisi" and who, apparently, often came to see *her* palm.

The greenhouse is 364 feet long, 92 feet wide, but only 82 feet high. It is regarded as an architectural

treasure. The palm was removed from a large urn in 1990 and was replanted in a hole dug beneath the Palm House floor. But it's flourished in the hole, doubling in size over the past 18 years, its very vigor resulting in this ultimate fatality.

"Sisi Palm" has been a tourist attraction in Vienna, visited by thousands. A small palm of the same species is to be planted in its place. Empress Elisabeth, wife of Emperor Franz Josef, was assassinated by an anarchist in 1898.

(Thanks to Phil Stager and to Rick Nale, who both sent the wire service piece on to me.—Editor)



Above, Rick Nale's house in 1992. Below, almost totally concealed in 2007.

From the Editor's Desk

What's retirement like? So ask the *Palmenfreunde*, a little enviously. After a month, only now am I starting to feel that I don't have to be somewhere, do something immediately, or finish reading a stack of student essays by tomorrow. I read a million words a year written by students, not all of which were entirely exhilarating. Somehow, I don't seem to miss this. I'm getting a little itchy, will start to look around for a part-time job (for pay); anyone with ideas (non-profane suggestions) should contact me. I've already thought of greeter-at-Wal-Mart and of bagboy at Publix, but wish to extend possibilities into higher, more arcane areas where I won't have to conceal all that frivolous education of mine.

Return to Maitland. . . it's been a long time, too long, since we last visited the garden of Pat and Gordon Smith in Maitland. I can't recall how many years, maybe 15 years? At the time, Ed and Nancy Hall were still active in the chapter, which they had held together through its lowest period. I can date one visit there as occurring about 1981: Pat Smith gave me a small *Tab-*

Rick Nale's

'Creating Joy in the Jungle'

By John Kennedy

How to describe Rick Nale's garden in the Forest Hills section of central St. Pete? A street of small 1960s houses on small lots. Modest, with lawns and a few palm trees but, like many neighborhoods in all Florida towns, few of the denizens seem much interested in growing anything. The yards here are mostly open, unfenced, with bare lawns.

Rick's house, on 51st Street, South, faces east. Not much is visible from the street other than the driveway because of a wooden fence all around the property and because of the heavy plantings outside the fence and within.

Once inside the gate, the house is only a few feet directly ahead. To the right, is what looks like a bar, long, narrow, fitted up against the fence; with colorful coverings, high bar chairs in front. On the ground is a curving, slatted wooden walkway painted light blue, with scattered tables and chairs. The palms and cycads are planted in pockets surrounded by the walkways. Whimsical ornaments are here and there, a big butterfly, a plastic flamingo (no mushrooms or elves [yet]). Overhead are strings of lights. The atmosphere is that

(Continued on page 34)

buia umbellata that has been blooming with spectacular wheels of yellow flowers before my front door for many years now. The bush morning glory from a subsequent visit, obtained through the enterprise of Merrill Wilcox, has not done so well, barely clinging to life. But it is exuberant elsewhere—I gave a small plant to a friend who slashes it back regularly.

Hometown Grants is a great idea lifted from the Southeastern Palm Society (SPS). Our chapter will award \$500 to an applicant—who is a member—willing and able to make a planting of palms and cycads in some public place within our service area, county list on page 2. The purpose is to make homeowners and public bodies more aware of palms and cycads, resulting (we hope) in wider planting, especially of species not commonly found at the Big Box stores, yet not too demanding in care. Details for the Hometown Grant may be found on page 31. Southeastern Palm Society has an attractive website: www.sps.org, worth a visit.

John Kennedy

CFPACS SEED BANK REPORT

4th Quarter 2007

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 very active over the past 4 months. There were 33 seed orders filled from October 2007 through December 2007, which resulted in a sales total of \$996. We have had many of our customers from Florida. But also had orders sent to Kansas, Texas, Arizona, Tennessee, Hawaii, and Puerto Rico. We even had some international orders that went to Thailand, Italy, and 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 *Archontophoenix cunninghamiana*, *Attalea maripa*, *Chamaedorea cataractarum*, *Geonoma interrupta*, *Licuala spinosa*, *Livistona benthamii*, *Livisitona decora*, *Manicaria saccifera*, *Ptychosperma microcarpum*, *Roystonea borinquena*, *Sabal causiarum*, and *Serenoa repens*. Neil Yorrio donated *Pseudophoenix sargentii ssp saonae/navassana*, which resulted in the largest single species sales return. Paul Craft, on behalf of the International Palm Society, donated a large number of *Livistona carinensis* (these were seeds collected in habitat in Africa, and sold out within two weeks of the offer).

Christian Faulkner provided seeds from *Arenga australasica*, and *Pseudophoenix sargentii ssp sargentii*. Dean Van DerBleek donated seeds from *Butia capitata*, *Chamaedorea radicalis*, *Dypsis decaryi*, and *Phoenix sylvestris*.

Joe and Anne Michael provided seeds from *Borassus aethiopum* and *Bismarckia nobilis* species (both very popular). John Green donated seeds from *Arenga caudata*, *Arenga engleri*, *Chamaedorea seifrizii*, *Dypsis lutescens*, *Livistona decora*, and *Phoenix reclinata* (most of these were collected from our good friends at the Florida Institute of Technology).

Rick Nale provided very popular seeds from *Archontophoenix alexandrae*, *Dictyosperma album*, and *Dypsis leptochelos*. Phil Stager and Eddie Williams provided the always-popular *Wodyetia bifurcata* species.

Joseph Prabhaker (from Ortanique) provided *Arenga hookeriana*, *Dypsis rivularis*, *Lepidozamia*

4th Quarter 2007 Board Minutes

The fourth quarter Board meeting was called to order at the Gizella Kopsick Palm Arboretum on Dec 8.

Board members present were Diana Wehrell-Grabowski, Bob Johnson, John Kennedy and Chuck Grieneisen. The March meeting was discussed, whether to have it in the central or east coast. An east coast and central vice presidents are still needed. Having a survey in *The Palmateer* on what our members can do for the society, such as dropping our brochures at libraries, agriculture extensions, etc., was discussed. In the treasurer's report the society took in \$1172 and had expenses of \$925 for a \$247 surplus.

--Chuck Grieneisen, Secretary



Aiphanes erosa seen at Kopsick in December.
(Photo by Ray Hernández)

peroffskyana, and *Salacca wallichiana* (all of which sold out shortly after they were offered). Richard Lundstedt provided a larger number of *Livistona australis*, which have sold very well. Shri Dhar donated some non-palm seeds *Gmelina hystrix* and *Murraya koenigii* (both from India).

Additionally, we have been able to make donations of seeds from our Seed Bank to the Florida Institute of Technology Botanical Garden, the Palm Prodigies Club at Socrum Elementary School in Lakeland, Florida, and the Southeastern Palm Society.

And thanks to all of you who supported this chapter with your seed purchases and donations!

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

Central Florida Palm & Cycad Society 2007 TREASURER'S REPORT

	2006	2007
INCOME:		
Donations.....	_____	343.90
Membership Dues.....	2,625.00	3,099.26
Private Sales (CFPACS meetings) ..	2,359.00	3,660.00
Public Sales (FIT, Leu, USF).....	5,984.23	11,242.08
Seed Sales.....	5,548.13	3,847.26
Total Income	16,516.36	22,192.50
EXPENSES		
Bank Charges.....	94.25	21.00
CFPACS Meeting Expenses.....	158.40	433.60
Corporate Report Fee.....	61.25	61.25
Events (Dowe Lectures).....	682.79	-----
Gifts Given.....	100.00	100.00
Grants	760.77	1,000.00
Membership Expenses.....	28.15	56.12
Office Supplies.....	102.29	348.93
Publications (Palmateer).....	6,317.73	5,297.18
Public Relations.....	-----	182.69
Seed Bank Supplies.....	620.14	576.98
Sales Tax.....	358.85	685.88
Vendor Fees.....	818.41	1,039.51
Vendor Proceeds.....	6,116.80	10,312.80
Web Site.....	30.00	30.00
Total Expenses	16,249.83	20,145.94
INCOME-EXPENSES		
Bank Balance January 1	20,362.78	21,740.87
Bank Balance December 31	21,740.87	22,589.80
Net Increase.....	1,378.09	848.93
(Note: Society budget and bank reporting periods do not exactly coincide)		
ASSETS:		
Endowment (mutual funds).....	10,886.88.	11,201.62
Printer.....	3,825.00	2,975.00*
Office equipment and tent.....	ZERO**	-----
Computers and software.....	ZERO**	-----
Total Assets	14,711.99	14,176.62
NET WORTH	36,452.86	36,766.42

*Purchased in 2005 for \$4,250, depreciation over 5 years

** Over five years old, fully depreciated

- - submitted by Bob Johnson, CFPACS Treasurer

RULES FOR CFPACS HOMETOWN GRANT

1. Who can apply for the grant?

Applications are open to active, dues-paying CFPACS members. (Dues must be current for 2008.)

2. How may the funds be spent?

The amount of the grant is \$500 and must be used to purchase palms and/or cycads only. Funds may be used to cover shipping costs as well, and if the recipient picks up plants, he or she may use the funds to reimburse fuel costs. However, no funds may be used for meals, lodging or other personal expenses.

3. What palms and cycads can I use?

The palms and/or cycads planted must be hardy for your area. No experiments, please! We want to demonstrate that palms and cycads are worthy landscape subjects, and nothing shows this better than healthy plants.

4. Where should the palms and/or cycads be planted?

Palms and cycads must be planted in a public place (no private gardens) within the CFPACS service area with regular maintenance and, preferably, some type of irrigation system.

5. How do I apply for the grant?

Applicants must submit a proposal that includes:

- a one-page (maximum) rationale

- a site map showing the proposed location, species and size of palms and cycads

- letter granting permission to do the planting from the appropriate authority

- nursery sources the applicant intends to use

- a timeline

- a cost estimate.

Grant proposals should be sent via email to Bob Johnson (tropicalbob@earthlink.net). Proposals will be forwarded to the CFPACS Board, who will select a recipient.

6. What's the deadline to submit an application?

Proposals are due by May 1, 2008. The winner will be announced at the CFPACS meeting on Saturday, June 14, 2008.

7. If I am awarded the grant, how will I be reimbursed for purchases?

Receipts for purchases must be turned in to the treasurer no later than November 30, 2008. Any unused funds must be deposited back into the general fund of the Central Florida Palm and Cycad Society.

President's Message

(Continued from page 16)

same three palms with the addition of *Phoenix dactylifera* and *Sabal palmetto*. I know that those who live in a zone 10 climate see a bit more variety than this in newer developments, but nowhere in our area - outside of palm enthusiast's homes or botanical garden - do you see anywhere near the variety of palms and cycads that will readily grow here.

Although many of us with more refined palm tastes make fun of the palms carried at the big box stores, those outlets at least provide a source for residents to add to the limited plantings offered by developers and begin making their landscape more 'palmy.' The many *Adonidias* and *Wodyetias* appearing around Orlando show that there are plenty of people that enjoy having palms in their landscape - they just have not yet heard of CFPACS and/or growers who offer more unusual palms. When you drive by such a residence, do you see a potential CFPACS member? Why not knock on their door and introduce them to yourself and the society,

give them a brochure (or just leave a brochure with a note if you are not the type that would knock on a stranger's door). You can pick up some membership brochures for distribution from one of our meetings or sales - or you can download the brochure from the CFPACS web site to print out.

You may want to consider giving a gift membership to a neighbor or friend who is into palms but has not yet joined us. Most new members come into clubs and organizations through word of mouth invitation. I encourage you to 'talk up' CFPACS within your circle of acquaintances and invite people to meetings and membership.

I look forward to our very full spring schedule - our quarterly meeting in Orlando and three public sales, one each in the West, Central and East regions of our service area. I hope to see you at the March meeting and one of the sales. As always, your comments and suggestions are welcome. Please speak to myself or any board member (or call or email one of us) about any ideas that you might have to advance the mission of CFPACS. We could especially use suggestions of new gardens to visit for our quarterly meetings. This is your society - every member has something to offer.

Bob Johnson

GIVE A GIFT MEMBERSHIP TO A FRIEND! A letter will be sent to the recipient that announces the gift and its giver. Contact the Membership Chair (see right) for details. Check or PayPal accepted.



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.org' 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 in the message field.

The International Palm Society (IPS)
Anyone interested in joining the IPS and receiving the quarterly, illustrated journal, *Palms*, should send a check for \$35 (regular membership) or \$45 (family membership) to:

International Palm Society
P. O. Box 368
Lawrence, KS 66044

Dues may also be paid online at the IPS website, www.palms.org

Please print

Name _____
Street _____
City _____
State, _____
County _____
Zip _____
Email _____
Phone (area) _____

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

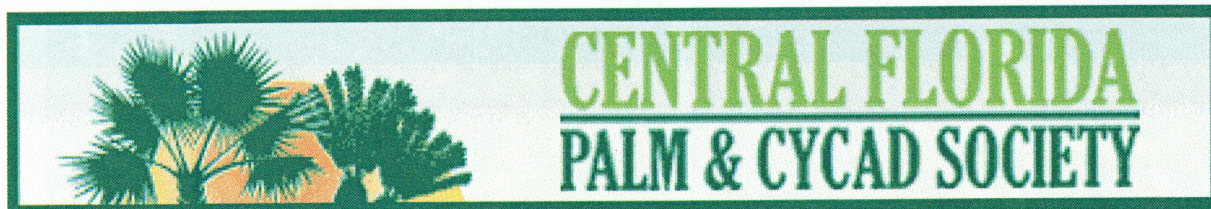
Membership also available at website:
www.cfpacs.org

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

Those joining before October 1 receive all four issues of *The Palmateer* for the current year (March, June, September, December).

Deadline for material for June issue:

MAY 1



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Below, left, visitors to Rick's place during the December meeting. Above, left, the bar. Top, right, not exactly the yellow brick road, but —instead—the blue slat path.

'Creating Joy in the Jungle'

(Continued from page 28)

of a German *Biergarten*. Party, anyone? No word on whether the cops have visited on some late occasions. **The blue** slats of what Rick calls the lower (north) yard give way to a handsome laid-stone curving path in the upper yard—closer to the house, towards the back of the lot. Because there are no straight lines of sight, the yard appears to be much larger than it really is (including the house, only 50' deep x 127' wide). All paths curve past plantings that block further visibility. A surprising number of palms—92 species—cycads, bamboos, and other tropicals are tucked into the yard, though all are slim verticals or small species. The larger stuff, such as *Bismarckias*, is outside the fence to fill in between the fence and the street. On the south side of the house is the nursery and a pond, not visible from the 'café' area.

Rick bought the house in 1992, when the yard looked as typically barren and sterile as much of the neighborhood but transformed it in a few years into the lush, intimate, private place that it now is. The house itself? Well, the carport got enclosed, along the way. The furnishings and décor might best be described as 'funky.' Highly individual are the house and garden of "Rick The Palm Boi."



Two shots of the laid-stone path.

