RENEW YOUR MEMBERSHIP!

The membership year expires at the end of December. To keep up with all those other palm/cycad nuts, renew your membership ***now***. For one year, it's $10.00, for three (bargain!), $25.00. Send your check , made out to CFPACS, to the Membership Chair , 7026 Burnway Drive, Orlando, FL 32819.

The PALMATEER

Volume 19, No. 4 *Central Florida Palm & Cycad Society*

TWO MEETINGS. . .NOVEMBER AND SEPTEMBER

By John Kennedy

That's Tom Broome, auctioneer, at the November meeting in Sarasota. Looks like (maybe) Coccothrinax argentata. *John Bishock stands ready to hand up another palm or cycad.*

Almost lost in the greenery at the Sept. picnic meeting, Norm and Ann Moody watch the plant auction. George Baker stands behind Norm.

Place: Sarasota, Siesta Key
Date: November 13
Occasion: CFPACS's quarterly meeting

A sunny Saturday, temperatures in the 70s, but starting out coolish, reminding everyone that winter is approaching (but we won't think about that ugly topic right now). The first stop was at Marie Selby Botanical Garden, on the mainland. The chapter visited Selby last year and many were happy to see its well-kept collections once again. Cycads are the major attraction there. Indeed, cycads are the focal point of the private garden that was the second, and final stop, across the bridge on Siesta Key.

Libby and Byron Besse were the hosts at their lovely property on Sarasota Bay. It's only about an acre and

(Continued on page 9)

Lake Worth, Florida, September 4, 1999. About 80 people came to enjoy palms, sunshine, heat (95° ?), food, and much chat. The occasion, in the town just south of West Palm Beach, was the annual picnic of the Palm Beach Palm & Cycad Society. Our own chapter was invited to attend (for the second year) and, nearly half of those present were members of the Central Florida Palm & Cycad Society. The Palm Beach chapter holds its annual picnic and auction at the palm-filled 5½-acre property of Ruth Sallenbach, on Military Trail.

The only thing lacking at Ruth's is a pond, but then that would take up space that would otherwise be filled with palms. And palms there are, by the thousand. Towering over Ruth's house is a giant *Borassus*, flanked by tall *Carpenteria* in fruit. Possibly the most common

(Continued on page 8)

Dates to Remember

Deadline for articles and pictures for publication in the March issue is <u>February 14</u>. Talented amateurs who have always wanted to see their names in print (other than on bills) are encouraged to send in comments, questions, materials on or about palms and cycads. The Editor can assist those who may need a little help. ***The spring quarterly meeting will take place on the weekend of <u>March 11-12</u>. Details are unavailable at present, having yet to be invented.*** The Palmateer ***will appear in very early March with the necessary info. The impatient may contact Neil Yorio after the Christmas***

Member Jules Horwits of Fort Pierce, retired nurseryman and present worker for Habitat for Humanity, stands beside a 5-gallon pot filled with bright red foxtail fruit. Jules has three times donated this much in demand seed to our *seedbank. The source is Bob Grice's* Wodyetia bifurcata *growing in the Indian Trails subdivision, Vero Beach. (See "Vero's Fruiting Foxtail" in the September issue of* The Palmateer.*)*

SEEDBANK REPORT

By Mike Dahme

In the three months ending with October another 30 species of palms [29] and cycads [one] were sent out, thanks to the gifts of a dozen donors. Net receipts for the chapter will exceed $1200 for the period, with the donations of nine species by the **Montgomery Botanical Center** of Miami providing over $500 of the total.

[**Seed donations** from this source have resulted in well over $1000 for the chapter treasury in the last year alone.]

Other contributors for the period were:

Joe and Anne Michael - continuing distribution of four species

Lou Thomas - a second donation of the rare *Chamaedorea adscendens*

César Díaz - *Syagrus orinocensis* and S *stenopetala*

Mike Dahme - four species

Jules Horwitz - a third donation of the Foxtail [*Wodyetia*]

Neil Yorio & Greg and Charlene Palm - *Syagrus schizophylla*

Mark Grabowski - *Allagoptera arenaria*

Richard Lundstedt - Panama habitat-obtained *Attalea butyracea* and *Bactris major*

John Kennedy & Ruth Sallenbach - for seed of the unknown, clustering *Caryota* species growing at the latter's Palm Beach house

Ed Brown - for Lat 31 S seed of Argentine-sourced *Butia yatay* and *Syagrus romanzoffianum*

Ballot: Vote for Millennial Board

Candidates for the year 2000 are listed on pages 3-5, with brief biographies. Take the time to show your approval of those named by sending in the clipped ballot (reproduced if you do not wish to cut your Palmateer You may notice that there is only one candidate for each position, reminiscent of the ballots for the old Supreme Soviet. However, there has been no great rush of members eager to join the CFPACS Board. A place for entering the names of write-in candidates is provided. All ballots must be received within 30 days of your receipt of this issue of the newsletter.

For the Board: Central VP Marilyn Bachmann

I have had a lifelong interest in living things. From turtles in the backyard and a love of horses, I earned a degree in biology from Ball State University in Indiana and taught high school biology for several years.
I then went to the University of Michigan for my masters and Ph.D. in zoology.
I taught and did research in the Department of Animal Ecology at Iowa State University in Ames, Iowa until Roger and I came to Gainesville in the fall of
1993. Here we are both associated with the Department of Fisheries and Aquatic Sciences. My work here includes computer work on lake management problems, website development, and help with Florida LAKEWATCH (our statewide citizens lake monitoring program). One result of this is a recent book "Living at the Lake, A Handbook for Florida Lakefront Property Owners", 1999, published by the University of Florida (IFAS). My interest in palms isn't new; however, gardening in Iowa is restricted by long, cold winters.
Even house palms are difficult in dry, heated houses. So, I settled for blue spruces and summer vegetables! Once in Florida, though, palms (and roses) took over and the fun began! We built our house in 5 acres of pine woods and began to plant. Why grow vegetables when the farmers market has such great ones? We began to look for palms which were hardy in North Central Florida, then stretched to those somewhat marginal. Then, of course, we have to try those which might grow here! Palms in pots get moved in and out of the garage as old snaps occurred. Small tropical cones followed and the greenhouse just arrived! Joining the International Palm Society and CFPACS gave us resources and people to help us learn more about palms
We particularly enjoy the visits to members' gardens. Not only do we get to see older and mature trees, but gain invaluable information from experienced and

For the Board: West VP Ray Hernandez

M**y name** is Ray Hernandez and I have lived in Tampa all of my life. My parents are Cuban and have been in this country since 1966. My father and mother are 75 and 70 years of age so it's safe to say that I'm a late season goof!! My sister is 15 years older than me so I really had two moms growing up.
I recently turned 30 now so I guess it's time to start acting like an adult. In all actuality, I matured long before I probably had to but that's all in your up-bringing I suppose. Even though Tampa has been my home, I have travelled quite extensively.
Aside from several cities in the continental U.S. and Canada, I've been in Alaska, China, Venezuela, Mexico, England, France, and Spain. The next place I'd like to go is Fiji for obvious reasons!!
I graduated from the University of South Florida in 1993 with a Bachelor of Science in Mechanical Engineering. I've worked at Cast Steel Products of Treasure Island, Fl for the last 4 years in this capacity. Currently, I'm in a transition into a sales engineering position that I have pursued for the last year or so. We'll see what the future brings with this new opportunity.
The palm insanity started in 1994 with a weekend trip to Ft. Myers with my girlfriend. One trip down McGregor Blvd and the Edison estate was all it took. Not two weeks later I had a couple of 3 gallon Royals of my own. Now I've got a young but diverse palm garden with some 40 varieties growing. I have other hobbies and interests aside from the palms. I work out faithfully 4 or 5 days a week, jog, play soccer and volleyball, and am currently trying to learn how to

Peter Mayotte's sharp eye caught these palms in an unexpected place, Trachycarpus fortunei *on a roundabout on the Champs Élysées in Paris.*

For the Board: East VP Charlene Palm

Family-Married to husband Greg for 16 years
2 boys- Danny age 10, Andrew age 3
Hobbies-Palm gardening, walking, school volunteer
I inherited my interest in tropical plants from my Mother who was always dragging me to nurseries as a teen.
My real interest in Palms began in 1979 when I got my first job at Robert Berriz Landscaping Co. in Indian Harbour Beach.
On one particular day Bob walked me around the nursery to show me some palms he had just gotten in. They were Red *Latania*, *Dictyosperma album* and *Archontophoenix alexandrae*. He said to me "aren't they beautiful!"
I was hooked after that and have been a member of the I.P.S. on and off for the past 20 years.

Is this Copernicia macroglossa *the largest in Brevard? (Look closely for an actually really visible trunk.) Baseball cap gives perspective. Specimen grows at famous palm-pilgrimage spot, "The*

For the Board: Secretary Chuck Grieneisen

I've been interested in growing cycads and palms for about 4 years. I live on 5 acres in Oviedo, unfortunately about 4 1/2 acres is swamp, so everything is in pots until I can find that perfect piece of land (probably when I retire). I'm getting more into cycads, there seems to be more potential for "new" cycads in this area, since it freezes here pretty regularly.

For the Board: Treasurer Mike Merritt

I am newly retired from a federal water-science position. My interest in palms and cycads began during my 15-year residence in south Florida. The early 1990's found me planting numerous palms on an acre lot in the Redlands. Hurricane Andrew initiated a series of changes, and my current residence (and palm and cycad garden) is on a 5-acre lot in Geneva in central Florida. I was very pleased with the visits to many splendid gardens sponsored by the CFPACS, and the friendly advice offered by more-experienced chapter members stimulated my efforts to learn more about palm and cycad genera and how to grow these plants.
When I was asked to assume the Treasurer duties last May, I accepted, and I am ready to continue for another year if asked by the membership.

For the Board: President Neil Yorio

(For Neil Yorio's statement about the past year and about future prospects, see page 32.)

Those stiff leaves are a tip-off—it's a Copernicia *but which one?* C. baileyana, *glimpsed at the botanical garden in Caracas by our own Ray Hernandez. The story of his visit there may be found on page 38.*

TREASURER'S REPORT

June 12, 1999 to November 13, 1999

INCOME	
Seed sales……	$1,702.06
Membership dues……	240.00
Donations……	10.00
Public sales (USF Fall Sale)……	115.44
Private sales (June 13 meeting)……	284.05
Sales, back issues of The Palmateer	0.00
Total----------	$2,351.55
EXPENSES	
Publications (vol. 19, no. 3, Sept., 1999)	495.37
Computers and software……	0.00
Donations……	0.00
Printing flyer……	234.85
Miscellaneous……	252.58
Total----------	$ 982.80
INCOME – EXPENSES……	$1,368.75
Bank balance 06/12/99……	8,993.85
Bank balance 11/13/99……	10,362.64
Net increase……	1,368.79
ASSETS	
CD, matures 01/09/00……	6,450.00
Annual interest……	241.88
Office equipment and tent……	1,570.00
Computers and software……	2,544.41
minus depreciation	

("Printing flyer" under Expenses is for 2,000 copies of the membership brochure.—Ed.)

No, not a hut in Grant, but in Andohahela, southeast Madagascar. It's thatched with Dypsis decaryi *leaves. (Photo by Peter Mayotte)*

Ask Tom

By Tom Broome

I have several small cycads planted in the ground that exhibit a strange phenomena. As they grow, they seem to be sucking themselves into the ground to a where the caudex becomes totally subterranean. It doesn't seem to happen with larger cycads (caudexes greater than 2 or 3 inches). Should these plants be raised up to keep the caudex above ground? Neil

Neil, you have observed something that is very common with cycads. Cycads have what are called contractile roots. When the plants are young, the stems are pulled below the surface of the ground. The reason for this is speculative, but the general idea is that the plants like the uniform temperature and moisture that is below the surface. It is a way that the small plant can protect itself better. As long as you have a well drained soil, it is safe for this to happen. If you plants are in pots, and you have a very organic soil you may want to expose the apex of the stem. If you water often, and you have a soil mix that holds a lot of moisture, you can rot the apex of a small cycad. I have found that exposing the apex is important for some of the cycads that can rot easy like *Microcycas* and many of the *parazamias.*(smaller *Macrozamias*)

Do you have any experience with 2-4 D. Will it hurt or kill cycads. Thanks, Larry

First of all I will need to explain to everyone else what this is. 2-4 D is a growth regulator that is used in certain herbicides. Larry, I have had some bad experiences with this when a neighbor used some on his plants next door. One day in late spring when many of the cycads were flushing, I had around 100 plants that were producing leaves become very deformed. All the new growth on all the plants started twisting in circles. It made all of these plants not saleable until new leaves were produced again. From what I have been told, because it is a growth regulator, the chemical made the leaves grow almost so fast that they became distorted. This was from someone who used it 200 feet away from where the plants were. As far as trying to spray directly on the plants, I wouldn't advise using this product anywhere near the cycads. I have not killed any personally, but I have heard stories from friends who have killed their plants by using products with 2-4 D in them.

MAYOTTE IN MADAGASCAR

Below, that's Ravenea musicalis*, the aquatic palm, growing in a fast-moving cool stream in southeast Madagascar.*

Right, a beautiful Dypsis sp. *with whitish/glaucous crownshaft (*D. malcomberi*?) in a clearing in Andohahela, southeast Madagascar.*

CFPACS Reaches Out

On October 7, members of the CFPACS joined forces with the Dynamac Corporation to participate in a United Way "Days of Caring." The project consisted of building a respite garden for patients of the Women's Center, located on Aurora Road in Melbourne. Along with Dynamac employees, CFPACS members Scott Young and Neil Yorio helped landscape the area behind the building that was in desperate need of some palms and cycads, among other plants. Special thanks go to CFPACS members Richard Lundstedt and Jerry Hooper for their generous

South Miami? No, much more lush, the coconut palms of India that so impressed Norm Moody on his visit there with his son. See story of his Indian adventures on the opposite

A Trip to India: October, 1998

By Norm Moody

Sixty-two years ago I left Indian at age 14. I was born there of American parents and went to school in the Himalayas (pronounced *Him-ahll-yas* in India—after all, it's an Indian word). I knew very little of palms at that time except for phoenix and coconut.

My son Dale (47) and I went as a sort of pilgrimage back to my roots. It was a three-week trip with sightseeing, shopping in Delhi and Agra. Our host in Delhi was a friend who furnished us with a car and driver, opened his beautiful home to us, and served us exotic food. We traveled mostly by train—nine trips, seven of which were all night. We went to Central India where my parents worked and back to Delhi before going to a hill station in northern India near Dehra Dun to a place called Massoorie where Woodstock International School is at 7,000 feet. Then back to Delhi and to South India by air to Madras and up the Western Ghats to Kodaikanal School at 6,600 feet, sister school to Woodstock. From there, a 12-hour bus trip took us to Travandrum in Southwest India before we returned to Madras.

Prior to making the trip I had contacted Mr. R. Haresh, a Palm Society member in South India. He assured me that *Bentinckia condapanna* was a recognized species and kin to *Bentinckia nicobarica* and that this rare palm grows around Kodaikanal School. *Bentinckia condapanna* inflorescences with prominent colored brachts of violet blue or bright red were used in religious ceremonies and seeds are a substitute for betelnut. Its population was diminished due to elephant feeding and the cutting of forests in the hills of Travandrum.

We went to two agricultural and botanical gardens there; my son Dale, who has little interest in palms, was dragged along. We asked about *B. condapanna*; you would have thought we were asking for a sperm whale. They knew about *Areca catechus* and thought that was what we wanted. The people at the botanical garden told us they had it but after walking around, we found it was not there at all. We did find two *Trachycarpus* palms that were probably *martianus* and *takil*, but when I saw a large printed sign on one, it was marked *Areca triandra*; how far off could you get? I gave up.

Later, Mr. Haresh told me that the Sacred Heart Institute, a few miles from Kodaikanal, has five condapanna palms on their grounds. He also said that the best place to see these palms is an hour's drive from Travandrum. We probably saw some of them from the train on our way back to Madras, and didn't know it. I kept thinking they were all *Areca catechu*. I hope to get some seed soon.

Left, a very big Indian Borassus *dwarfs Norm at its base.*

Right, a Borassus *carved in white marble in a Hindu temple attests to its importance in India.*

We saw many palms from the train: loads of *Phoenix*, probably *humilis, farinifera,* and *loureirii*. One thing I do remember as a child, eating the heart of a very small *Phoenix* in Central India. I discovered this on my own, while hacking away a clearing. We saw thousands of *Borassus* and coconut palms, as well as many *Areca catechu*, some *Caryota* (*urens*?), *Livistona, Pritchardia,* and *Cyrtostachys*.

On the campus of Woodstock School I was surprised to see a large *Trachycarpus*, probably *martianus*. I am sure it must have been over 100 years old. The seeds were green we found out after pelting it with rocks from our bedroom window; Dale threw while I watched for people below. We saw several of these palms growing higher up on the mountain with snow caps in the background.

The coconut palms were miraculous. I have never seen such beautiful, majestic 90 to 100-foot palms in countless numbers. The leaves seemed to be much larger with a wider spread and thicker growth in South India than our palms here in Florida. I saw very few diseased palms.

This was not exclusively a palm hunting trip, so our time in this endeavor was limited. I would like to know more about the many palms of India.

SEPTEMBER MEETING

(Continued from page 1)

palms, growing almost everywhere, are tall *Veitchia*s. "Remarkable" is the word for a large clumping *Caryota*, species unknown, about 25 feet high, trunks maybe 12 inches in diameter, with lacy leaves at least 12 feet long. Wherever its home, it looks as if it must be a timber tree. No one *has* been able to identify some other palms growing in the "Sallenbach Botanical Garden." Among the unusual palms is *Orania palindan,* an old specimen that has outgrown the more familiar juvenile features. Palm Beach County palms tend to be of species too tender for arctic Central Florida and, thus, are often unfamiliar as well as beautiful. (Perhaps the most common palm in Florida is the queen palm, *Syagrus romanzoffianum;* here was possibly the most lovely example of this over-planted species: large, healthy, lush.) Paul Craft is amazed at how well the *Mauritia flexuosa* has done growing in a non-wet area and also in surviving the '89 freeze; the *Normanbya*s are the only fruiting individuals that he knows of in South Florida.

Likewise remarkable was the fact that food was left over, even though everyone brought a "covered dish" and the attendees ate hugely. They drank just as hugely in Florida's typical September heat and humidity. (The editor of ***The Palmateer***, who lacks the male gene for beer-drinking, consumed about eight beers and at least four Cokes, without feeling either waterlogged or queasy.)

The auction was of tropical plants--orchids, bromeliads, lilies, vines—as well as of palms and cycads. Seeds of various palms were offered free to any takers, but the group bid well on germinating *Borassus aethiopum* seeds from the Wabasso tree of Joe and Anne Michael.

Fun was had by all. Central Floridians already knew what great people belong to the chapter to our south, friendly, and wonderfully hospitable. Our thanks to Ruth Sallenbach for opening her grounds once again to the hordes of appreciative palm nuts. Other Palm Beachers whom we would like to thank include Rick Kern (president), Chris Covington, Mike Harris, Pat Encinosa (vice-presidents), and Don Bittel (present treasurer, recent editor).

* * * * * *

In a conversation in the week following the picnic, Ruth noted that her late husband, Hank, was crazy about palms, adding—reflectively—"it's contagious." Hank, who worked for the phone company and later for the City of West Palm Beach, died in 1990. Most of the big palms now happily in the ground were in very large pots during his lifetime and were planted after his death. At one time, in the 1970s, when Hank was involved with De Hull and the now-defunct IPS Seed Bank, there were 1,000 species in the collection.

Ruth continues to plant palms and bemoans the approaching demise of a huge single-trunk *Caryota.* She has not had an irrigation system and, during our drought in the first half of this year, exhausted herself by having to water by means of a series of very long hoses. Ruth believes she has lost five big palms because of her inability to water sufficiently, even though she has had some assistance from her granddaughter. However, a new well and an irrigation system were about to be installed in the weeks following the meeting. There will also be a gazebo. (Where, Ruth?) Under the palms, doubtless.

Above, another scene from the plant auction on Labor Day weekend in Lake Worth. The smiling guy in the palm shirt is our prez, Neil Yorio. To his right is Geri Prall; nearly invisible next to Geri is Ray Hernandez, candidate for West VP. Folks in front are Palm Beach chapter members. The picture came with a cryptic note: "Lapse in the bidding war, Neil with his hand at rest."

Left, Livistona robinsoniana*, reputedly more hardy than* L. rotundifolia, *glimpsed at Jardin Sallenbach. (But will either species play in*

At the November meeting, below, the seated figure in the tourist hat with the deer-in-the-headlights look is none other than the Editor. On the ground at his right is Mark Grabowski; crouched on his left is Ray Hernandez. Standing in the left foreground is René Coativy. Other French visitors from Manureva stand watching the plant auction.

Another view of the attendees at the Sarasota meeting's plant auction.. In the right background, the dark shapes under the live oaks are large and beautiful cycads. On the far right, one knee to the ground, is our Secretary, Chuck Grieneisen. Both photos by Roger Bachmann.

NOVEMBER MEETING

(Continued from page 1)

a half, but none of the 65 people attending would have believed this: mature live oaks, a winding unpaved driveway, irregular property lines, and heavy plantings all seem to amplify the size.

Few visitors, except members of the Board, saw the house, which is perched on the edge of the bay. It is a glass box of Sixties vintage, spare and handsome. Two stories, all glass, face east on the bay, with a single-story wing to the north.

West of the house are mature palms, higher and older than most members are used to seeing. Lordy, what's at the top of that trunk, the leaves just emerging from the canopy? The leaves look familiar, but. . . Why, it's a *Latania lontaroides*! Over there, a greenish trunk with prominent leaf scars, can't quite see the top (oak tree in the way). Yes, crownshaft, pinnate leaves: *Archontophoenix cunninghamiana*. (It gets this big? Yes.) And that **big** clump right next to it? *Zombia antillarum*.

The underplantings were enough to make the cycad-lovers among us drool. Among the most notable: *Zamia roezlii*, huge, with new, pink-leaved flush, and very large *Encephalartos whitelockii*, bearing multiple male cones.

Lunch was catered pork barbecue and barbecued chicken with the usual picnic fixings, set up buffet-style in front of the Besses' guest cottage. What followed was what many had been waiting for, the plant auction. Tom Broome made a good auctioneer, backed up by Neil Yorio who recorded the sales, and Mike Merritt who collected the money. All the plants were donated, mostly by individuals, some from the Montgomery Botanical Center, so the entire proceeds went into the chapter's treasury. There were a few cycads among the many palms auctioned, together with an unidentified ginger and an unknown *Tabebuia*. A member contributed free cuttings of that weedy but beautiful sunflower, *Tithonia grandiflora*.

After the auction, visitors wandered around for a while, chatted with each other, and—with some difficulty—extracted their cars, trunks, vans from parking places and driveway. Now about 5:00 p.m., with another hour or so of daylight left, there was still time to visit Faith and John Bishock's estancia in the easternmost reaches of Sarasota County; palms there required viewing, so the French visitors (and quite a few others) were ready to oblige.

BARTRAM'S ROYALS REPLANTED: THE ST. JOHNS EXPEDITION

By Mike Dahme

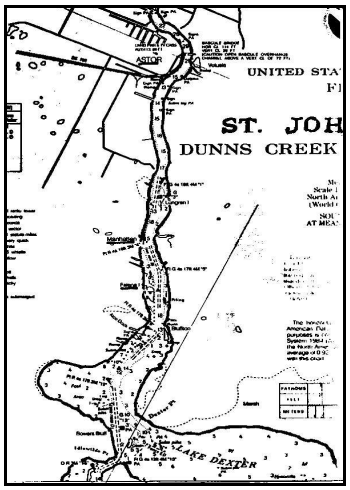
"The palm trees here seem to be of a different species from the Cabbage tree; their strait trunks are sixty, eighty or ninety feet high, with a beautiful taper of a bright ash colour, crowned with an orb of rich green plumed leaves: I have measured the stem of these plumes fifteen feet in length, besides the plume, which is nearly of the same length."

This one, strangely punctuated sentence, not even comprising its own paragraph, has been the source of much conjecture in the two centuries since it was first published in 1791. That it is a description of the Florida Royal Palm (now *Roystonea regia*) has never been in question; rather, it is the mystery of how numbers (how many?) of this palm came to be present on the bank (which? or both?) of the St. Johns River a few miles south of present day Astor, some 230 miles or more north of the scattered portions of Collier, Monroe, and Dade Counties where the species was otherwise found in the state, that intrigues.

The occasion in spring or late summer[1] was not the author's first trip on this stretch of the St. Johns, however, for he had accompanied his father, John, on a trip seven years earlier, and the editor/commentator, Francis Harper, of *The Travels of William Bartram* (Naturalist's Edition, 1958) remarks that it was "astonishing" that Bartram *père* had made no record of the palms' presence. That he didn't, and he was at least as botanically-inclined as his son, implies that they weren't observable in 1765-6, something difficult to square with the presence of 60 foot plus tall palms "of a different species" a mere seven years later. For even if the trees were galloping along at a rate of five feet a year (probably do-able under ideal, tropical conditions), they still couldn't have attained that height by 1773. This contradiction is easily bridge, though, if one questions, as Harper does (in another context), William Bartram's eye: "It is well to remember, however, that Bartram is none too accurate in his general statements of dimensions and distances." (p. 356)

But still the question remains, how did they get there? Generally, commentators like Harper have simply accepted this colony as though it were but a disjunct population, an outlier of the South Florida populations, and have speculated mostly as to its fate[2]—i.e., a wipe-out in the freeze of 1835 or a subsequent one.

I suggest that the specimens Bartram observed had been recently planted, whether by Indians or white men[3] and to test the theory, a small band of CFPSers set forth on a pontoon rental on a fine, pre-Hurricane Floyd, September morning. The short, three-mile



The expedition that replanted royals on the St. Johns did so in this stretch of the river. Astor is at the top left of the chart. Manhatten (correct spelling) is middle left, with Lake Dexter at the bottom.

stretch of the river between Astor (Hwy 40) and the opening of Lake Dexter (the "little lake" of Bartram's paragraph immediately following his noting of the Royal Palms) is largely undeveloped, one bank being part of a large water management reserve and the other verging on the Ocala National Forest. The west bank does have a small grouping of homes at the point at which the N.O.A.A. chart 11495 records as "Manhatten," in the vicinity of which Harper wrote that Bartram camped his first night out after leaving his base of "Spaulding's Upper Store" (Astor). The following morning, somewhere in the mile-long stretch between Manhatten and the lake, is when he sighted the Royals, and it is in that stretch that we planted about 40 palms, mostly Florida Royals (and a smattering of hardier species, *Livistona saribus* and *Arenga pinnata*), but also, for no reason other than availability, three Puerto Rican Royals (*R. borinquena*).

The river banks, as well as a sizeable island (Falana, not mentioned by Bartram, perhaps a Corps of Engineers creation), are mostly low and swampy, but Royals appear to like wet soil and, per the chart, there;s only a six-inch rise and fall of the river level. So our task was quickly accomplished and next year we'll be back with a sack of Leonard's "palm special" to succor the survivors. The river's wide and will moderate all but the worst of cold fronts to the extent that survival, once plants are established, may well be possible for a number of years. But whether due to cold, hurricanes, or just lightning, it's as doubtful now as it was 226 years ago that anyone will see 60-90 foot tall Royals, so far from habitat, on the upper St. Johns.

(Continued on page 24)

The Tropics of North Carolina

By Maurice Davis

Oh, yes, palms in North Carolina. Right her in Charlotte in the heart of zone 7 (7b). I like to think of this as my tropics. My name is Maurice R. Davis, and I'm absolutely a palm nut and have been for nearly 20 years, but I've only been growing palms for about 9 years since I relocated to North Carolina from Maryland (Washington, D.C. area).

My very first palm was a *Butia capitata* (3-gallon size), only about 2½ feet tall that I purchased at a nursery near Myrtle Beach, S. C., back in the spring of 1991. That palm has been in the ground for 8½ years and it is 9 feet tall now. Shortly afterwards, I learned about the *Trachycarpus fortunei* (Windmill palm) from a college professor (Dr. Mellenchamp) at the University of North Carolina in Charlotte (Botany Dept.) that the Windmill palm should do well in this area also.

So I set out to find me a nice Windmill palm. I found my first Windmill palm (3-gallon size) at a nursery in Columbia, S. C., about one month after planting my *Butia capitata*, so that went into the ground also. Today that Windmill palm is about 8 feet tall. I normally get approximately one foot of growth each year out of my Windmills. I now have 12 Windmills around my property—from 8 feet, 6 feet, 4 feet, to several around 3 feet tall.

Here in the Charlotte area, we only have about 4½ months of hot weather, and the cool and cold weather set in. So, for that reason, I try most anything to get as much growth out of my palms as possible during the warm months. Most of my palms are the cold hardy variety, although I do have a few that are "border line" for this area. Most of these are kept in my greenhouse during the winter months and outside during warmer months to get the benefit of rainwater since rainwater does have much more oxygen than tap water, which benefits the plants with faster growth.

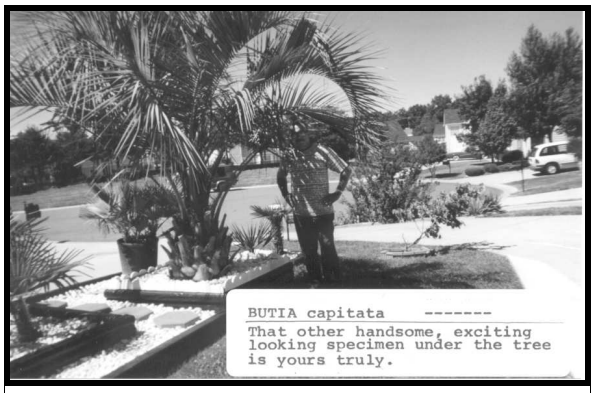
I've even tried Dr. Bitts' remedy of Ecosane, but to be honest, I could not see any difference in the growth rate. The claim is that Ecosane will increase the growth rate of your plants. I don't feel that I got that, so I stick to good old Peters 20-20-20.

This is the list of all my palms I have in the ground. All are cold hardy.

Butia capitata *1*
B .capitata X Jubaea 1
Sabal Louisiana 3
S. etonia 1
S. minor 6
S. bermudana 1
S. riverside 2
S. mexicana 1
*S. princeps*1
Chamaerops humilis 3
C. humilis var. *cerifera* 1
Trithrinax acanthacoma 1
T. brasiliensis 1
Trachycarpus fortunei 12
T. martianus 2
T. wagnerianus 1
Rhapidophyllum hystrix 4
Washingtonia filifera 1
W. filia X busta 1
Serenoa repens 4
Brahea dulcis 1
B. edulis 1
Livistona australis 1
Phoenix canariensis 1

Species in the greenhouse. I've gotten a little bold with some "border line" palms for this area. These are kept in the greenhouse during the winter months.

(Continued on page 12)



Two sides of the driveway at Maurice Davis' house in Charlotte, N. C.: clearly not the typical Tarheel shrubberies. Maurice provides the scale for his prized Butia capitata.

More sights at "Carolina Palms" in Charlotte. Left, the backyard with sizable Trachys. *Above, a little South American palm in a chillier home. Pictures and IDs from*

Tropical Carolina

Continued from page 11)

Parajubaea cocoides 7-gallon
Bismarckia nobilis 5-gallon
Arenga engleri 10-gallon
Copernicia alba 5-gallon
Ceroxylon alpinum 3-gallon
Acoelorraphe wrightii 15-gallon
Howea forsteriana 5-gallon
Archontophoenix cunninghamiana 'Illawara' 10-gallon

I think I'm perhaps the only one living in this area (of Charlotte) with a tropical looking yard, front and rear. People drive by and look a little "startled" or in disbelief. Some slow up, some back up and look as if they can't figure if they're still in North Carolina or in Florida. I've even had people stop by and ask me if they are real, how do I keep them alive during winter.

I've come to the conclusion that most people here in the Carolinas seem to think that palms are only a "Florida and California thing" and there's no way they can or should be grown here in North Carolina. Most feel that they can't live in the cold winter months. I've tried to explain to them and most of my neighbors that there are quite a few palms that will survive in cold weather.

Now, some of my neighbors are constantly after me to tell them what type of palm to get for their yard, and where they can buy them. Sometimes I try to be a little stubborn, especially to those who told me I was wasting my time planting them in North Carolina. For the past three winters we've had temperature lows of 14°F in 1997, low of 20°F in 1998. Back during the winter of 1996, the temperature dropped to 12°F. My *Phoenix canariensis* got burned pretty bad, but made a great comeback the following summer.

In most cases, during winter months I'll wrap Xmas lights around my palms when I know it's going to be very cold, and that has really worked well for me. The soil here is a little tough. We have red clay soil. Some palms love it, and others don't. It seems that my Windmills and *Butia* love the clay soil best.

There are two palms in my greenhouse that I'd love to put outside in the ground but I'm a little hesitant because of the winter lows here. I'm speaking of my *Parajubaea cocoides* and *Ceroxylon alpinum*. Both are cold hardy, but I'm not sure on just how much. One day I'll just say, "what the heck," and do it.

Around here I have really grown to hate winter weather and love summer weather because of my palms.

Well, that is it for me from my little tropical paradise here in Charlotte, North Carolina. So long for now.

One trunk of an unknown, massive clumping Caryota *seen at Ruth Sallenbach's in Lake Worth in September. One of our members, determined to identify the species, has been trying to catch the plant when in flower to send an inflorescence to a* Caryota *expert. So far, the palm has eluded the*

DYING PAUROTIS AT FIT, MELBOURNE

By Mike Dahme

The row of 'Paurotis' palms lining the service road at Melbourne's Florida Institute of Technology are on their way out due to the fungal disease, *Ganoderma zonaturm*. These palms, which University founder Jerry Keuper says predate Dent Smith's mid '60s planting involvement, serve to connect the specimens around the administration building with those clustered around the entrance to the Dent Smith Trail. As there is no treatment for this pathogen which can be transmitted from palm to palm by pruning equipment, it's just a matter of time til they're gone. The University is well-known for its aggressive pruning of the campus palms (inflorescences, as well as fronds), so it's possible that the palms of this allée were infected one time in this manner.

Since there's nothing to be done once a palm has infected (save, according to *Diseases and Disorders of Ornamental Palms*, complete removal from the landscape), it is critical to prevent *Ganoderma*'s introduction in the first place. Key to this is the cultural practices employed. Ideally, only dead fronds should be trimmed and equipment (loppers) sterilized between use on different palms, and care taken to avoid injury to trunks with string trimmers or mowers. If the pathogen is present in the landscape, however, the basidiocarps ("conks") that occur near to ground level on the trunks of dead or dying palms should be removed on formation: the spores by which the fungus spreads are produced on the lower surface of these.

Above, the row of dying Acoelorraphe wrightii *lining the wall of a campus building at Florida Institute of Technology in Melbourne. Top right, a close-up of a cut clump of Paurotis. At right, a similar infection on palms in Belize (not Melbourne): basidocarps on trunk of a dead* Attalea cohune *at Cockscomb National Park. Not necessarily* Ganoderma zonatum*, four other species of the genus exist.* A. cohune is listed as susceptible to G. zonatum, *which is believed to exist in Central America. (See* Diseases and Disorders of Ornamental Palms, *Chase & Broschat, 1993)*

ED BROWN IN BRAZIL-LAND

Part 2 Brazil Trip

By Ed Brown

With this , I pick up the second week of our adventure .We had been in the country for only a week but the sojourn was becoming timeless and it had a eerie quality that we had been down there far longer than the 7 days. The figure details the various legs and places we visited during the 3 weeks.

Foz de Iguascu (Foz) is one of the wonders of the world comprising several large cataracts and falls dwarfing the diminutive Niagara Falls. The area is cerrado but the constant moisture from the falls provides the humidity for a wet tropical forest. We had planned to see the southern *Euterpe edulis*, *Geonoma*, and the ubiquitous *S. romanzoffianum*. The idea was that some of these species might be a bit more frost hardy in a part of the range that sees cold.... Actually we were there to see the Falls.

We had suspicions that this part of Brazil would see freezes . It does but only light freezes each year. We saw some coconuts that were not very large so I suspect a good freeze comes every 10 years or so and wipes them out.

The queen palm is common there and is the "southernmost" *Syagrus* species. The palm enjoys a huge range rivaling Sabal palmetto. During the trip, we traveled a substantial part of the range. We saw tremendous variation of plants from the acualescent monsters in Tijuca forest to the giants in Jardim Botanico Rio to depauperate specimens in the cerrados of Minais Gerais. *Syagrus romanzoffianum* is different from the rest of the *Syagrus* so different that it once was in a separate genus -----*Arecastreum*. Its salient feature is that the rough the geometry of the internal endosperm of the seed. Though it differentiated in other ways.

From the vista of a moving vehicle, it is difficult to differentiate this from *S. botryphora*, *S. oleracea, S macrocapra*, though, it is note worthy that *Syagrus* differs from *Butias* by the shallow grooves on its peduncular bract of the inflorescence The other, almost defining trait is the lack of petiole spines (almost constant for the genus with the exception of *S. schizophylla*) Besides a good defining tool, it also serves to define the hybrid *Butiagrus*.

A second defining feature of *Syagrus* is the overlapping leaf pattern (turn a leaf over and you will see what I mean). The queen has extremely plumose leafs, this is the identifying factor from an automobile. Other palms with in its range are *S. oleracea*, *S. macrocarpa*, and *S. Botryphora* The table shows the differences between *S. romanzoffianum* and the other similar *Syagrus* found in its range.

In Foz de Iguascu, large queens share dominion of the forest with palmeritos or *Euterpe edulis*. This is beautiful feather palm and this was its southernmost distribution. This area is dry and cerrado but the mist from the great cataracts permit a dis-climax rainforest where one shouldn't be. The mist takes the edge off the climate and permits this palm to thrive and be the host for a variety of birds. To walk under a canopy of this forest spirits is a sublime pleasure and true intimacy with nature.

You might wonder why would we go so far to see Queen palms the reason is the variation in the field. Queens are common in Florida. We see variation but since it is in cultivation and a limited gene pool, you wonder what you are seeing. I have heard so many folks argue vehemently and passionately that the plant they have is a species because it has unique characteristics yet they haven't clue on the purity of the seed or the origin. Seeing plants in habitat with their genetic variation gives me the pleasure of insight that I

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Map below shows itinerary of Brazilian trip. Legend: Dia=Diamantina; Belo=Belo Horizonte; Calc=Calceres; Foz=Foz de Iguascu.

A HISTORY OF FREEZE RESULTS IN CENTRAL FLORIDA

By Dave Witt

My main purpose in tackling this particular subject is to demonstrate to palm growers (the hobbyist & the commercial grower alike) the vast array of palms that can be grown with a little effort in central Florida. However it is necessary to preface a subject this "all encompassing" with a few of the obvious disclaimers, the first being micro-climates : lakes and other waterways to the north or north west of our gardens, tall plants that can provide windbreaks and large oak trees or other evergreens to provide a canopy which helps deter frost from settling on anything underneath. Any of us lucky enough to have these examples in our gardens can surely attest to their advantages. In order for this to remain a newsletter article and not a book I have refrained from noting any of the surroundings of the palms listed in the following table. The other caveat in reporting on something as subjective as this is that there really are no standard "rules" when it comes to freezes in our corner of the world. It seems that nearly every freeze is somehow different in its own way, be it a low temperature reading, the amount of frost, its duration and more importantly, the damage (or lack of) left behind. So what I have attempted to do is collect the results of several different freezes from several different areas over a period of time, then fuse them into one table, kind of an EKG for palms if you will. The only limit I had to deal with was the actual information that is published; there just isn't a whole lot out there but fortunately there is enough to give us all some guidelines on most species.

And that is exactly what this article is – a guideline and nothing more. There will be a few readers whose results were different, maybe even totally opposite from what is published here and that's to be expected from such a diverse topography as central Florida. This article tallies results from specific freezes and no others. Just because a *Ptychosperma* listed here died @ 25 Fahrenheit (hereon referred to as F) degrees doesn't mean it will die @ 25F degrees in your garden, just fair warning that it could. On the opposite spectrum I know of several large *Bismarckia nobilis* located in "warmer" winter locales than Orlando, and they sometimes suffer severe damage at temps in the high 20's while several large specimens in Orlando barely burn at 23F. So it would be silly to suggest that anyone totally eliminate any attempts to grow a palm based on this table nor should it be used to decide on planting a row of something marginal in the front yard. If the table indicates a palm that may be somewhat of a risk for you then plant just one or two of them, observe their progress then decide. There are plenty of factors involved when considering a palm's cold hardiness. For instance the length of time the palm has been in the ground is very important. A well-established planting of two summers or more will rebound from cold damage faster than a newly planted palm. The type of treatment the palm received is extremely important. Was it a well-cared for and strong growing specimen or nutrient deficient and weak from the beginning? After the freeze was the correct fungicide application rendered, did it live for awhile only to die from insect damage to the weakened bud, was it subject to prolonged cold spells before or after the freeze? None of those items are noted (newsletter vs. book again). The actual size of the palm also plays a part with some of the larger growing species. Thicker stems can help to insulate the irreplaceable growing point. Larger specimens usually have lots of fronds already formed in their "bud", and thus are able to recover much faster than a smaller palm or seedling. The last factor to consider is that some palms can recover nicely from one freeze but what happens if they are hit with a 2nd blast the following winter? Or separate freezes during the same winter? If you look at the data carefully you will notice some of those results.

For the purposes of this article a freeze is considered to be any time when the low temperature has reached 32F. In the past 100 years there have been 54 freezes "officially" recorded in Orlando and Tampa combined. Twelve of them recorded lows of 29F or higher. These freezes are known as *advective* or advection freezes. They are caused by cold air masses being pushed into Florida by the polar jet stream. These air masses usually form in Canada with the truly frigid ones originating from as far away as Siberia. When a freeze occurs during the 1st night of a cold front it is almost always an advective freeze. These are rarely able to kill an established, healthy palm. Unfortunately the sudden drop in temperature will usually chill the moisture in the air which in turn forms frost. A little frost for an hour or so may cause some slight cosmetic damage to palm foliage but when moving in on the heels of warm, humid weather heavy frost can occur. Most tropical species can be completely defoliated unless under a protective canopy or other covering. Sometimes the accompanying winds can delay the settling of frost for most of the night by forcing the warm air radiated from the ground back down to the surface. Freezes with a low reading in this range are also of short duration (usually 3 hours or less below 32F).

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A HISTORY OF FREEZE RESULTS IN CENTRAL FLORIDA

(Continued from page 15)

Of the past 100 years twenty eight freezes had lows in the 28F – 24F range. It is at these temperatures that actual cold damage occurs and in some of the species with more tropical origins, death can be the result as well. A few of these lows can be attributed to advective freezes but the vast majority can be termed as a *radiation* freeze. This type occurs on the 2nd night of a cold front. In a nutshell there are usually no winds to delay frost settling and no cloud cover to help trap heat to the ground. Thus any heat attained during the day is lost, radiated into the atmosphere and a cooling occurs at ground level as well as an adjacent layer of air around it. When these conditions are forecast, protective covering is a must to minimize or prevent foliage damage for all but the hardiest species.

The remaining fourteen freezes from the past 100 years had lows of 23F or less. These "hard" freezes are usually not the norm for most of central Florida but when they do occur, all bets are off regarding most palms' chances to escape any damage and in some cases survive at all. Even some of the most hardy and widely planted species (e.g. *Syagrus romanzoffiana*) can suffer severe damage or death if not properly maintained. Nevertheless the table identifies more than a few species which can survive hard freezes including several which at this time are not widely planted but deserve to be so, if for nothing else than their ability to withstand this type of cold. Mathematically, the chances of a severe or "hard" freeze occurring averages out to once every 7 to 8 years. You can adjust this figure to fit your location. For example draw a line from Tampa to Daytona. North of the line it is usually colder, south of it will be warmer with some coastal areas perhaps going well over a decade or longer without a hard freeze. There are also some areas known as "cold pockets" throughout our region. The best known is a large section with borders roughly west of Hwy. 27, east of I-75, south of I-4 and north of Lee county. When considering your location, remember that water does not cool as rapidly as land so wet areas have averaged 3 degrees warmer than dry areas. Also cold air is denser than warm air so it collects in pockets at the bottom of hills. Thus the eastern "half" of the state always cools slower than the western half. This has held true for both coasts as well as inland.

As more and more species become available for purchase this type of report can be expanded upon in greater detail as well as narrowed to specific areas (Orlando only, Tampa only, and so on). Each freeze can be isolated, the results broken down and noted for posterity. With the advent of the Internet, e-mail, etc. more and more information can be easily shared in the future and hopefully it will be. But for now this will have to do. All information gathered was collected from various past copies of our local newsletter, records from my garden in Orlando and finally two separate reports originally published in Principes by our own local palm pioneer/forefather, Dent Smith. From reading his findings and viewing other member's gardens I have been motivated to try and grow as many different palms as possible all the while realizing that their presence on earth can be as temporary as my own. So go outside, grab a shovel and start digging!

FREEZE DETAILS

ORLANDO - my garden; approx. 95% of all plantings in open areas (no canopy)
1/99 : 28F low; 8 hrs below freezing; moderate frost in open areas
1/97 : 26F low, 7 hrs below freezing; heavy frost in open areas
2/96 : 23F low; 10 hrs. below freezing; heavy frost in open areas, minor under oak canopy
1/96 : 27F low; 5 hrs. below freezing; heavy frost in open areas
12/95 : 29F low; 3 hrs. below freezing; moderate frost in open areas
2/95 : 25F low; 6 hrs. below freezing; heavy frost in open areas; very little under oak canopy

12/89 ALL OF CENTRAL FLORIDA

two consecutive freezes - 12/24 & 12/25 : lows to 23F along much of the Atlantic coast with lower readings inland; highs into the 30's/lower 40's the next day, lows ranging from 30F to 25F the following evening.

DAYTONA BEACH
12/12/62 : 22F low; approx. 14 hrs. below freezing
12/13/62 : 26F low; approx. 11 hrs. below freezing
12/14/62 : 29F low; approx. 3 hrs. below freezing

DAYTONA BEACH
12/12/57 : 25F low
12/13/57 : 27F low

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A HISTORY OF FREEZE RESULTS IN CENTRAL FLORIDA

(Continued from page 16)

1/9/58 : 27F low
2/17/58 : 29F low
2/18/58 : 26F low
2/19/58 : 26F low

BOTANICAL NAME & (overall height if available; M = mature)	**NO DAMAGE or MINOR = 10% or less**	**Moderate = 50% foliage burn or less**	**Major = well over 50% foliage burn**
ACOELORRAPHE wrightii (7' & 3')	22f @ Daytona in 1962		
ACROCOMIA aculeata (M to sdlgs.)	28f @ Orlando 1/99		22f @ Ind.Harbour 12/89
ACROCOMIA "totai" (M)	19f @ So.Brevard 12/89	19f @ So.Brevard 12/89	
ACTINORHYTIS calapparia (7' to 3')	28f @ Orlando 1/99		26f @ Orlando 1/97
ADONIDIA merrillii (9' to 3')			29f @ Orlando 12/95
AIPHANES aculeata (3')	28f @ Orlando 1/99		
AIPHANES acanthophylla, erosa = minima (6')		29f @ Orlando 12/95	
ALLAGOPTERA arenaria (M)	23f @ Orlando 2/96		
ARCHONTOPHOENIX alexandrae (6')	28f @ Orlando 1/99		
ARCHONTOPHOENIX cunninghamiana (8',7')	29f @ Orlando 12/95	26f @ Orlando 1/97	27f @ Orlando in 1/96
ARENGA caudata (5')	28f @ Orlando 1/99		
ARENGA engleri (9' & under)	17f @ Zephyr Hills 12/89	22f @ Daytona in 1962	
ARENGA pinnata (M, 7')	28f @ Orlando 1/99		26f @ Orlando 1/97
ATTALEA butyracea (2' +)	28f @ Orlando 1/99	26f @ Orlando 1/97	
ATTALEA cohune (over 4')	25f @ Daytona in 1957	23f in 1989 @ Vero	
ATTALEA speciosa (over 4', sdlgs.)	25f @ Daytona in 1957	28f @ Orlando 1/99	
BECCARIOPHOENIX madagascariensis (2'+)	28f @ Orlando 1/99	26f @ Orlando 1/97	
BISMARCKIA nobilis (13' to sdlgs.)	23f @ Orlando 2/96		23f in 1989 @ Vero
BORASSUS aethiopum (M to 1')	23f @ Orlando 2/96		23f in 1989 @ Vero
BRAHEA armata (over 2')	22f @ Daytona in 1962		
BRAHEA brandegeei	19f @ So.Brevard 12/89		
BRAHEA edulis	22f @ Daytona in 1962		
BUTIA capitata	17f@ Zephyr Hills 12/89		15f@ Sorrento
CARPENTERIA acuminata	28F@Orlando 1/99		
CARYOTA "Himalayan Mts."	28f @ Orlando 1/99		
CARYOTA mitis (10', over 20')		28f @ Orlando 1/99	27f @ Orlando in 1/96
CARYOTA ochlandra (4' or more)		26f @ Orlando 1/97	
CEROXYLON alpinum		27f @ Jacksonville 1/99	

Botanical name, height	**No damage, minor**	**Moderate**	**Severe damage**
CHAMAEDOREA brachypoda (2')	22f @ Daytona in 1962		
CHAMAEDOREA cataractarum (3')	25f @ Daytona in 1957		
CHAMAEDOREA elegans (4')			25f @ Daytona 1957
CHAMAEDOREA ernesti-augustii			22F @ Daytona 1962
CHAMAEDOREA erumpens (?)	25f @ Daytona in 1957		
CHAMAEDOREA glaucifolia	28f @ Orlando 1/99		
CHAMAEDOREA klotzschiana (5')	23f @ Lakeland in 1/99		
CHAMAEDOREA metallica	28f @ Orlando 1/99	26f @ Orlando 1/97	
CHAMAEDOREA microspadix (2' & over)	17f @ Zephyr Hills 12/89		
CHAMAEDOREA plumosa		23f @ Lakeland in 1/99	
CHAMAEDOREA radicalis (16" & over)	18f @ Umatilla in 12/89		
CHAMAEDOREA seifrizii (3')	25f @ Daytona in 1957		22f @ Daytona in 1962
CHAMAEDOREA stolonifera (3')	26f @ Orlando 1/97		
CHAMAEROPS humilis	18f @ Umatilla in 12/89		15f @ Sorrento in 12/89
CHAMBEYRONIA macrocarpa	28f @ Orlando 1/99	26f @ Orlando 1/97	
COCCOTHRINAX argentata (M)	22f @ Ind.Harbour 12/89	19f @ So. Brevard 12/89	
COCCOTHRINAX barbadensis (5')	27f @ Orlando in 1/96		23f @ Orlando 2/96
COCCOTHRINAX crinita (2')	22f @ Daytona in 1962	23f @ Orlando 2/96	
COCCOTHRINAX miraguama (M)	27f @ Orlando in 1/96	26f @ Orlando 1/97	
COCOS nucifera (12' to M)			29f @ Orlando 12/95
COPERNICIA alba (7' or more)	22f @ Daytona in 1962	19f @ So. Brevard 12/89	
COPERNICIA baileyana (2')	28f @ Orlando 1/99		
COPERNICIA berteroana (2' or more)	28f @ Orlando 1/99		
COPERNICIA gigas (sdlg.)	28f @ Orlando 1/99		
COPERNICIA glabrescens (2' or more)	28f @ Orlando 1/99		
COPERNICIA hospita (2',1')	28f @ Orlando 1/99	26f @ Orlando 1/97	
COPERNICIA macroglossa (2' or more)	22f @ Daytona in 1962	26f @ Orlando 1/97	
COPERNICIA prunifera (6')	26f @ Orlando 1/97		
COPERNICIA yarey (sdlg.)	28f @ Orlando 1/99		
CORYPHA umbraculifera (over 20')		23f in 1989 @ Vero	23f in 1989 @ Vero
CORYPHA utan (8')			28f @ Orlando 1/99
CRYOSOPHILA argentea = stauracantha (2')	28f @ Orlando 1/99	26f @ Orlando 1/97	23f @ Orlando 2/96
CYPHOPHOENIX nucele (2'+)	28f @ Orlando 1/99	26f @ Orlando 1/97	
DESMONCUS sp.		23f in 1989 @ Vero	
DYPSIS cabadae (ave. 4')	28f @ Orlando 1/99		29f @ Orlando 12/95
DYPSIS decaryi (14')	28f @ Orlando 1/99	26f @ Orlando 1/97	
DYPSIS decepiens (1')	26f @ Orlando 1/97		
DYPSIS leptocheilos (6')		28f @ Orlando 1/99	27f @ Orlando in 1/96
ELAEIS guinniensis (M, 7')	28f @ Orlando 1/99	29f @ Orlando 12/95	27f @ Orlando in 1/96
EUTERPE edulis (4')		26f @ Orlando 1/97	
GASTROCOCOS crispa (1')		26f @ Orlando 1/97	
GAUSSIA maya (6' to 2'	28f @Orlando 1/99	26f@ Orlando 1/97	
GUIHAIA argyrata (2')	26f @ Orlando 1/97		

Botanical Name, height	**No damage, minor**	**Moderate damage**	**Severe damage**
HOWEA forsteriana (7' to 2')	25f @ Daytona in 1957	29f @ Orlando 12/95	
HYBRID = B.capitata X S.romanzoffianum (M)	19f @ So. Brevard 12/89		
HYOPHORBE "hybrid" (3')	28f @ Orlando 1/99		
HYOPHORBE verschaffeltii (9')		28f @ Orlando 1/99	27f @ Orlando in 1/96
HYPHAENE coriacea (6' to 4')	27f @ Jacksonville 1/99	26f @ Orlando 1/97	23f @ Orlando 2/96
JUBAEA chilensis (2')	22f @ Daytona in 1962		
KERRIODOXA elegans (2')	28f @ Orlando 1/99		26f @ Orlando 1/97
LACCOSPADIX australasica (1' to 3')	27f @ Jacksonville 1/99		
LATANIA loddigesii (5' to 1')			25f @ Daytona in 1957
LICUALA grandis (2', 16" & 10")		25f @ Daytona in 1957	29f @ Orlando 12/95
LICUALA spinosa (4')		22f @ Daytona in 1962	
LINOSPADIX monostachys (3')	27f @ Jacksonville 1/99		22f @ Daytona in 1962
LIVISTONA australis (M)	19f @ So. Brevard 12/89		
LIVISTONA benthamii (3')	28f @ Orlando 1/99	26f @ Orlando 1/97	
LIVISTONA carinensis	25f @ Sebring in 1988		
LIVISTONA chinensis (M)	19f @ So. Brevard 12/89	18f @ Umatilla in 12/89	
LIVISTONA decepiens (6' and more)	23f @ Orlando 2/96	19f @ So. Brevard 12/89	
LIVISTONA drudei	25f @ Sebring in 1988		
LIVISTONA fulva (2'+)		26f @ Orlando 1/97	25f @ Sebring in 1988
LIVISTONA jenkinsiana (1')		26f @ Orlando 1/97	
LIVISTONA mariae (4')	28f @ Orlando 1/99	26f @ Orlando 1/97	
LIVISTONA muelleri (3' plus)		26f @ Orlando 1/97	19f @ So. Brevard 12/89
LIVISTONA rigida (over 2')	22f @ Daytona in 1962		19f @ So. Brevard 12/89
LIVISTONA saribus (6' and more)	19f @ So. Brevard 12/89		
LYTOCARYUM weddellianum (5' to 2')	25f @ Daytona in 1957	26f @ Orlando 1/97	
MEDEMIA argun (2')	28f @ Orlando 1/99	27f @ Jacksonville 1/99	
NANNORRHOPS ritchiana (3')	22f @ Daytona in 1962		
PARAJUBAEA cocoides (2')	25f @ Daytona in 1957		
PHOENIX canariensis	18f @ Umatilla in 12/89		
PHOENIX dactylifera (M)	19f @ So. Brevard 12/89		
PHOENIX hanceana = lourei	28f @ Orlando 1/99		
PHOENIX pusilla (5' to 2')	25f @ Daytona in 1957		
PHOENIX reclinata (11' to 4')	22f @ Daytona in 1962	23f @ Orlando 2/96	19f @ So. Brevard 12/89
PHOENIX roebelenii (5' to 3')	25f @ Daytona in 1957	26f @ Orlando 1/97	23f @ Orlando 2/96
PHOENIX rupicola (5')	25f @ Daytona in 1957		22f @ Ind.Harbour 12/89

Botanical Name, height	**No damage, minor**	**Moderate damage**	**Severe damage**
PHOENIX sylvestris	22f @ Daytona in 1962		
PHOENIX theophrasti	19f @ So. Brevard 12/89		
POLYANDROCOCOS caudescens (3')		29f @ Orlando 12/95	
PRITCHARDIA beccariana (2')			26f @ Orlando 1/97
PRITCHARDIA sps. (thurstoni, pacifica)			29f @ Orlando 12/95
PSEUDOPHOENIX sargentii (2' & more)	23f @ Orlando 2/96	26f @ Orlando 1/97	
RAVENEA rivularis (9' to 6')	28f @ Orlando 1/99	29f @ Tampa in 1/99	26f @ Orlando 1/97
RAVENEA xerophila (1')	26f @ Orlando 1/97		
RHAPIDOPHYLLUM hystrix	native, unaffected		
RHAPIS excelsa (6' to 2')	22f @ Daytona in 1962	22f @ Ind.Harbour 12/89	
RHAPIS humilis (over 3')	22f @ Daytona in 1962	22f @ Ind.Harbour 12/89	
RHAPIS subtilis (3', 2')		29f @ Orlando 12/95	27f @ Orlando in 1/96
RHOPALOSTYLIS sapida	27f @ Jacksonville 1/99		
ROYSTONEA oleracea (3')		28f @ Orlando 1/99	
ROYSTONEA regia (8', 6')	28f @ Orlando 1/99		26f @ Orlando 1/97
SABAL bermudana (over 2')	22f @ Daytona in 1962		
SABAL causiarum (M)	18f @ Gainesville in 12/89		
SABAL domingensis (over 2')	22f @ Daytona in 1962		
SABAL etonia	native, unaffected		
SABAL mauritiiformis (over 7', 5')	23f in 1989 @ Vero	26f @ Orlando 1/97	19f @ So.Brevard 12/89
SABAL mexicana (M)	22f @ Daytona in 1962		
SABAL minor	native, unaffected		
SABAL palmetto	native, unaffected		
SABAL rosei (over 2')	22f @ Daytona in 1962		
SABAL uresana	25f @ Sebring in 1988		
SABAL yapa (over 2')	22f @ Daytona in 1962	26f @ Orlando 1/97	19f @ So.Brevard 12/89
SATAKENTIA liukiuensis (6', 3')	29f @ Orlando 12/95		27f @ Orlando in 1/96
SCHIPPIA concolor (over 2')	26f @ Orlando 1/97	23f @ Orlando 2/96	
SERENOA repens	native, unaffected : green as well as blue forms		
SYAGRUS amara (9', 6')	26f @ Orlando 1/97		25f @ Daytona in 1957
SYAGRUS coronata (4')	28f @ Orlando 1/99	26f @ Orlando 1/97	
SYAGRUS "X" costae (M)		28f @ Orlando 1/99	26f @ Orlando 1/97
SYAGRUS glaucescens		27f @ Jacksonville 1/99	
SYAGRUS oleracea (1', over 3')	28f @ Orlando 1/99		
SYAGRUS romanzoffiana (M)	22f @ Daytona in 1962	22f @ Ind.Harbour 12/89	19f @ Orlando 12/89
SYAGRUS sancona (over 7')	28f @ Orlando 1/99		
SYAGRUS schizophylla (4' to 8')		29f @ Orlando 12/95	27f @ Orlando in 1/96
SYAGRUS vagans (1')	28f @ Orlando 1/99		
THRINAX morrissii (10' to 5')	23f @ Orlando 2/96		19f @ So.Brevard 12/89

Botanical Name, height	No damage, minor	Moderate damage	Severe damage
THRINAX parviflora (2')	28f @ Orlando 1/99	26f @ Orlando 1/97	
THRINAX radiata (3')	28f @ Orlando 1/99	26f @ Orlando 1/97	27f @ Orlando 1/96
TRACHYCARPUS fortuneii	18f @ Umatilla in 12/89		
TRACHYCARPUS martianus	22f @ Daytona in 1962		
TRITHRINAX brasiliensis	19f @ So. Brevard 12/89		
TRITHRINAX campestris	19f @ Tampa in 12/89		
VEITCHIA winin (3')		29f @ Orlando 12/95	
WASHINGTONIA filifera (M)	23f @ Orlando 2/96	18f @ Umatilla 12/89	
WASHINGTONIA robusta (M)	19f @ So. Brevard 12/89		
WODYETIA bifurcata (8' - 4')	28f @ Orlando 1/99	26f @ Orlando 1/97	
ZOMBIA antillarum (3')	28f @ Orlando 1/99		26f @ Orlando 1/97

BOTANICAL NAME & (overall height if available; M = mature)	DEFOLIATED but recovered	KILLED
ACANTHOPHOENIX rubra (2')		25f @ Daytona in 1957
ACOELORRAPHE wrightii (7' & 3')	18f @ Umatilla in 12/89	
ACROCOMIA aculeata (M)	22f @ Daytona in 1962	
ACROCOMIA mexicana (2')	22f @ Daytona in 1962	
ACROCOMIA totai (M)	18f @ Umatilla in 12/89	
ADONIDIA merrillii (9' to 3')	27f @ Orlando in 1/96	25f @ Daytona in 1957
AIPHANES aculeata (11')		25f @ Daytona in 1957
AIPHANES lindeniana (2')	25f @ Daytona in 1957	22f @ Daytona in 1962
AIPHANES acanthophylla, erosa = minima (8',5',3')	27f @ Orlando in 1/96	25f @ Daytona in 1957
ARCHONTOPHOENIX alexandrae (25' - 6')		25f @ Daytona in 1957
ARCHONTOPHOENIX cunninghamiana (16'- 7')	25f @ Daytona in 1957	22f @ Daytona in 1962
ARECA catechu (4')		25f @ Daytona in 1957
ARECA triandra (8')	22f @ Daytona in 1962	22f @ Daytona in 1962
ARENGA pinnata (M, 7')	19f @ Orlando in 1989	22f @ Daytona in 1962
ATTALEA butyracea (2' +)	22f @ Daytona in 1962	
ATTALEA cohune (over 4')		22f @ Daytona in 1962
ATTALEA speciosa (over 4', sdlgs.)	22f @ Daytona in 1962	
BACTRIS gasipaes (6')	25f @ Daytona in 1957	
BISMARCKIA nobilis (13' to sdlgs.)	22f @ Daytona in 1962	
BORASSODENDRON machodonis (over 2')		26f @ Orlando 1/97
BRASSIOPHOENIX schumanii		19f @ So. Brevard 12/89
CARYOTA cummingii (2')		25f @ Daytona in 1957
CARYOTA mitis (10', over 20')	23f in 1989 @ Vero	
CARYOTA ochlandra (4' or more)		22f @ Daytona in 1962
CARYOTA urens (22')	25f @ Daytona in 1957	22f @ Daytona in 1962
CHAMAEDOREA brachypoda (2')	22f @ Daytona in 1962	

Botanical Name, height	**Defoliated**	**Killed**
CHAMAEDOREA cataractarum (3')	25f @ Sebring in 1988	
CHAMAEDOREA costaricana (2')	19f @ So.Brevard 12/89	
CHAMAEDOREA elegans (4')		22f @ Daytona in 1962
CHAMAEDOREA ernesti-augusti		22f @ Daytona in 1962
CHAMAEDOREA erumpens	22f @ Daytona in 1962	
CHAMAEDOREA glaucifolia	19f @ So.Brevard 12/89	22f @ Daytona in 1962
CHAMAEDOREA klotzschiana (5')		22f @ Daytona in 1962
CHAMAEDOREA metallica		19f @ So.Brevard 12/89
CHAMAEDOREA oblongata (3')		25f @ Daytona in 1957
CHAMAEDOREA tepejilote (3' and more)	19f @ So.Brevard 12/89	25f @ Daytona in 1957
COCCOTHRINAX argentata (M)	22f @ Daytona in 1962	25f @ Daytona in 1957
COCCOTHRINAX argentea (2')		22f @ Daytona in 1962
COCCOTHRINAX barbadensis (5')		22f @ Daytona in 1962
COCCOTHRINAX crinita (2')	22f @ Ind.Harbour 12/89	22f @ Daytona in 1962
COCCOTHRINAX miraguama (M)	22f @ Daytona in 1962	19f @ So.Brevard 12/89
COCOS nucifera (12' to M)	23f in 1989 @ Vero	23f in 1989 @ Vero
COPERNICIA baileyana	19f @ So.Brevard 12/89	
COPERNICIA berteroana (2' or more)	19f @ So.Brevard 12/89	
COPERNICIA glabrescens (2' or more)	19f @ So.Brevard 12/89	
COPERNICIA macroglossa (2' or more)	19f @ So.Brevard 12/89	
COPERNICIA prunifera (M to 6')	19f @ Tampa 12/89	22f @ Daytona in 1962
CORYPHA umbraculifera (over 20')	23f in 1989 @ Vero	
CORYPHA utan (8')	26f @ Orlando 1/97	
CRYOSOPHILA warscewiczii = albida (6')	25f @ Daytona in 1957	22f @ Daytona in 1962
DICTYOSPERMA album (9' to 2')	29f @ Orlando 12/95	25f @ Daytona in 1957
DRYMOPHLOEUS beguinii (4')		25f @ Daytona in 1957
DYPSIS cabadae (4')	22f @ Daytona in 1962	
DYPSIS decaryi (14')	23f @ Orlando 2/96	
DYPSIS leptocheilos (6')		23f @ Orlando 2/96
DYPSIS lucubensis		19f @ So.Brevard 12/89
DYPSIS lutescens (12')	22f @ Daytona in 1962	
DYPSIS madagascariensis (4' or more)	22f @ Daytona in 1962	
ELAEIS guinniensis (M, 7')	19f @ So.Brevard 12/89	22f @ Daytona in 1962
EUTERPE edulis (4')		25f @ Daytona in 1957
GASTROCOCOS crispa (1')		22f @ Daytona in 1962
GAUSSIA attenuata (3')		25f @ Daytona in 1957
GAUSSIA maya (6' to 2')	25f @ Daytona in 1957	25f @ Daytona in 1957
HEDYSCEPE canterburyana (10")		25f @ Daytona in 1957
HETEROSPATHE elata (4')		25f @ Daytona in 1957
HOWEA belmoreana (3')		25f @ Daytona in 1957
HOWEA forsteriana (7' to 2')	27f @ Orlando in 1/96	25f @ Daytona in 1957
HYDRIASTELE wendlandiana (8')		22f @ Daytona in 1962
HYOPHORBE lagenicaulis (5')	25f @ Orlando in 2/95	23f @ Orlando 2/96
HYOPHORBE verschaffeltii (9')	23f @ Orlando 2/96	25f @ Daytona in 1957
HYPHAENE coriacea (6' to 4')	19f @ So.Brevard 12/89	
HYPHAENE crinita (2')	22f @ Daytona in 1962	

Botanical Name, height	**Defoliated**	**Killed**
HYPAENE thebaica (4')	22f @ Daytona in 1962	
KERRIODOXA elegans (2')		23f @ Orlando 2/96
LACCOSPADIX australasica (1' to 3')	26f @ Orlando 1/97	23f @ Orlando 2/96
LATANIA sp. ?	19f @ So. Brevard 12/89	
LATANIA loddigesii (5' to 1')	25f @ Daytona in 1957	25f @ Daytona in 1957
LATANIA lontaroides (8')		22f @ Daytona in 1962
LICUALA grandis (2', 16" & 10")	26f @ Orlando 1/97	25f @ Daytona in 1957
LICUALA paludosa	19f @ So. Brevard 12/89	
LICUALA spinosa (4')	19f @ So. Brevard 12/89	22f @ Daytona in 1962
LIVISTONA chinensis (M)	15f @ Sorrento in 12/89	
LIVISTONA drudei	19f @ So. Brevard 12/89	
LIVISTONA humilis (2')		22f @ Daytona in 1962
LIVISTONA mariae (4')	19f @ So. Brevard 12/89	19f @ So. Brevard 12/89
LIVISTONA muelleri (3' plus)		23f @ Orlando 2/96
LIVISTONA robinsoniana		22f @ Daytona in 1962
LIVISTONA rotundifolia (3' & 1')	25f @ Daytona in 1957	22f @ Daytona in 1962
LYTOCARYUM weddellianum (5' to 2')		22f @ Daytona in 1962
MAURITIA setigera = flexuosa ? (2')		25f @ Daytona in 1957
METROXYLON amicarum (3')		25f @ Daytona in 1957
NEPHROSPERMA vanhoutteanum (1')		25f @ Daytona in 1957
NORMANBYA normanbyi (10')		22f @ Daytona in 1962
ORANIOPSIS appendiculata (over 2')		26f @ Orlando 1/97
PHOENIX canariensis (M)	15f @ Sorrento in 12/89	
PHOENIX dactylifera (M)	18f @ Umatilla in 12/89	
PHOENIX hanceana = lourei	22f @ Daytona in 1962	
PHOENIX pusilla (5' to 2')	22f @ Daytona in 1962	
PHOENIX reclinata (11' to 4')	22f @ Daytona in 1962	
PHOENIX roebelenii (5' to 3')	19f @ So. Brevard 12/89	19f @ So. Brevard 12/89
PHOENIX rupicola (5')	19f @ So. Brevard 12/89	19f @ So. Brevard 12/89
PHYTELEPHAS macrocarpa (2')		25f @ Daytona in 1957
PINANGA kuhlii (4')	22f @ Daytona in 1962	
POLYANDROCOCOS caudescens (3')	27f @ Orlando in 1/96	22f @ Daytona in 1962
PRITCHARDIA affinis (over 2')		22f @ Daytona in 1962
PRITCHARDIA beccariana (2')	25f @ Daytona in 1957	
PRITCHARDIA sps. (thurstoni, pacifica)	25f @ Daytona in 1957	23f in 1989 @ Vero
PSEUDOPHOENIX sargentii (2' & more)	22f @ Daytona in 1962	19f @ So. Brevard 12/89
PSEUDOPHOENIX ssp. "saonae" (18")		25f @ Daytona in 1957
PSEUDOPHOENIX vinifera (5')		25f @ Daytona in 1957
PTYCHOSPERMA elegans (10' to 5')		25f @ Orlando in 2/95
PTYCHOSPERMA macarthuri (4')	22f @ Daytona in 1962	
RAPHIA farinifera (9' to 3')	22f @ Daytona in 1962	

Botanical Name, height	Defoliated	Killed
RAVENEA rivularis (9' to 6')	23f @ Orlando 2/96	23f @ Orlando 2/96
REINHARDTIA gracilis (1')		25f @ Daytona in 1957
RHAPIS subtilis (3', 2')		23f @ Orlando 2/96
RHOPALOSTYLIS baueri (1')		25f @ Daytona in 1957
ROYSTONEA oleracea (5', 3')		25f @ Daytona in 1957
ROYSTONEA regia (M)	23f in 1989 @ Vero	22f @ Daytona in 1962
SABAL mauritiiformis (over 7', 5')	22f @ Daytona in 1962	
SALACCA edulis (3')		25f @ Daytona in 1957
SATAKENTIA liukiuensis (6', 3')	23f @ Orlando 2/96	
SCHIPPIA concolor (2' +)		19f @ So. Brevard 12/89
SYAGRUS amara (9')		22f @ Daytona in 1962
SYAGRUS coronata (4')	25f @ Daytona in 1957	22f @ Daytona in 1962
SYAGRUS flexuosa (over 7')	22f @ Daytona in 1962	
SYAGRUS oleracea (1', over 3')	19f @ So. Brevard 12/89	
SYAGRUS pseudococos (over 1')	26f @ Orlando 1/97	
SYAGRUS quinquefaria (3')	25f @ Daytona in 1957	
SYAGRUS romanzoffiana (M)	19f @ Orlando 12/89	18f @ Umatilla in 12/89
SYAGRUS sancona (over 7')	25f @ Daytona in 1957	22f @ Daytona in 1962
SYAGRUS schizophylla (4' to 8')	22f @ Daytona in 1962	25f @ Daytona in 1957
SYNECHANTHUS fibrosus		19f @ So. Brevard 12/89
THRINAX morrissii (10' to 5')		22f @ Daytona in 1962
THRINAX radiata (M)	22f @ Daytona in 1962	22f @ Ind.Harbour 12/89
VEITCHIA joannis (over 3')		22f @ Daytona in 1962
VEITCHIA montgomeryana (6', 5')		25f @ Daytona in 1957
WALLICHIA disticha (4')		22f @ Daytona in 1962
WASHINGTONIA robusta (M)	18f @ Umatilla in 12/89	15f @ Sorrento in 12/89
WODYETIA bifurcata (8' - 4')	23f @ Orlando 2/96	
ZOMBIA antillarum	23f in 1989 @ Vero	22f @ Daytona in 1962

ST. JOHNS ROYALS

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Notes

[1]Bartram used "literary exigencies" in compiling his book for publication some 18 years after the event, and combined two separate river trips into one. But though Francis Harper, the researcher working for Philadelphia's John Bartram Association, documented many factual insistencies in his two decades of investigating Bartram's four-year odyssey, Bartram went no farther south in Florida than the Lake Beresford area, some 15 miles upstream, and would never have had the opportunity to otherwise see, and translocate, Royal Palms.

[2]J.K. Small in a 1828 *New York Botanical Garden Journal* article speculated that the palms were "carried northward by birds" or that they were "introduced there generations ago by the aborigines."

[3]Although the 1770's seems a long time ago, Florida had already been well-explored and colonized by both the Creek Indians (re-located from piedmont Georgia and Alabama starting earlier in the 18th century and still in the process of evolving into the 'Seminoles') and by Europeans. Bartram frequently mentions camping near to (or in) abandoned citrus groves (sour orange fruits which he used to flavor his dinners), plants native to East Asia, during the Florida portion of his peregrinations, the lingering effects of (often absentee landlord) plantation experiments of the first Spanish period (16th century – 1763). Authors Mahon and Weisman (Chapter 11, *The New Florida History*, M. Gannon) refer to the subsequent, if brief, English period (1763-1783) as the start of the 'enterprise period,' and mention the wide-ranging ("far south to the Everglades," and even, via large, seaworthy canoes, from Suwannee and Charlotte Harbor towns on the Gulf, to

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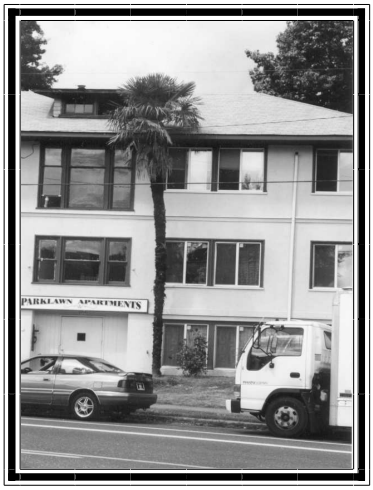
PALMS IN CHILLY PLACES: PORTLAND, OREGON



Right, Tony Nazzaro stands behind his daughter , both lending scale to a Washingtonia robusta *that survived 11°F and six days below freezing, "with lots of protection." Left, probably the tallest Trachy in Portland, "maybe*

Tony's tips on winter protection can be applied right here in Central Florida.

By Tony Nazzaro

Greetings from Portland, Oregon, known for its towering Douglas firs, flowering rhododendrons, and a lot of other mundane stuff I would frankly rather see dug up and replaced with whatever subtropical plants we could get away with.

While blessed with a fairly mild climate, we are limited in what subtropicals and palms will grow in the Pacific Northwest. However, being chronically in "zone denial", this hasn't stopped me from trying just about anything with a remote chance of survival. *Trachycarpus fortunei* is really about the only palm that grows here unprotected and neglected. Last winter we had a sudden six-day cold snap at Christmas. Temperatures plunged with little warning from the mid-40s F to a low of 11° F, not rising above freezing for six days. I lost *Butia capitata*, *Sabal palmetto*, *Brahea edulis*, *Chamaerops humilis*, even a small needle palm! These were all unprotected as I wanted to test their endurance. An expensive and disappointing test, to say the least. On the bright side, my four *Washingtonia robusta*, protected, came through in flying colors, while my *Trachycarpus fortunei* were undamaged.

My folly with subtropicals and palms began in 1995 when I relocated stateside to Portland from Indonesia. Moving along a learning curve over the last 4 years, I submit the following tidbits to those growing palms in a Zone 8 region. Here's what I've learned:

Be realistic in palm selection. Unless you're prepared to lose sleep when winter weather turns against you, choose palms that require moderate or no winter protection for your area. There's nothing wrong with a couple of *Sabal palmettos* you don't have to worry about versus a tender coconut palm you know has no rightful squatting rights in North Florida. This may fly in the face of budding palmophiles, but sooner or later one must come to terms. If you can't resist planting something too tender for your location (like my *Washingtonia robustas*), try to create a micro-climate that will increase chances of survival.

Amend soil for adequate drainage. Perhaps not as much an issue in Florida, but certainly a major factor in the Pacific Northwest. Here our soil is typically hard clay, and we get winter rain for 3-4 months. A freeze followed by lots of cold rain is the biggest threat to palm survival in Portland, especially if the species are native to desert regions.

Maintain a regular fertilization regimen once Spring weather warms enough to begin new growth. I usually start in April and stop by mid-August. By the end of September, the last application will have been absorbed so the palm can slowly shut down as cooler weather approaches.

Keep well-mulched. A good organic mulch in warm weather will protect against heat stress and provide continuous soil enrichment. In winter, the obvious

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PALMS IN PORTLAND

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benefit is cold protection.

Weekly inspect palms for any signs of trouble, whether it looks like a bug infestation, nutritional deficiency, or (common in Portland) fungal attacks. Treat immediately before the problem gets out of hand.

Winter protection. If it looks like cold weather is coming, let your palms get hit a few times before protecting them. This will harden them off so they will be more likely to survive an extended freeze once they've shut their engines down. Unless the weather suddenly changes without warning, you should have enough notice if local weather reports are accurate. Once they've endured a mild frost, protection of more tender species may be necessary if cold weather persists.

Prepare in advance in an area where regular winter freezes occur. Nothing is worse than scrambling around your back yard after just seeing the 11PM weather report. My motto is "Who cares what the neighbors think?" about the bizarre contraption installed to cover my palms. A few days of abject ridicule by passersby is nothing compared to the humiliation of digging up a dead palm in the Spring! My *Washingtonia robustas* absolutely would not have survived last winter if I hadn't wrapped the trunks with insulation, pounded stakes into the ground, stapled tar paper all around, hooked up a light bulb, and covered the top with burlap weighted down with boards, an old hammer and other objects to fend off strong winds.

The larger a palm gets, the harder it is to protect. Once my *Washingtonias* get much bigger, I may have to let them fend for themselves. My mistake for not really knowing what I was getting into 4 years ago. Nonetheless, I'm happy they survived this far and won't let a few casualties dampen my spirit.

Syagrus comosa *in Brazil, as seen by Ed Brown.*

Below, Iguascu Falls, site of one portion of the Brown expedition to Brazil.

ED BROWN IN BRAZIL

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would not otherwise enjoy.

Table 1. Description and Comparison of Major Syagrus Features

(from A. Henderson Palms of the Americas)

S. comosa: light green leathery leaves 1-1.5 meters with 32-82 leaflets arranged in clusters of 2 and 4 leaflets.
S. macrocarpa (I.Maria Rosa) very l large fruit 6-7 cm long and tomentose leaflets.
S. oleracea: (guariroba) spirally arranged leaves with persistant leaves and peduncular bracts
S. picophylla : Coco de quaresmas : fruits 3.5- 4.5 cm long X 2-2.5 cm in circumference. Fruit is orange brown cinnamon color with seeds splitting into 3 hemispheres.
S. *pseudococcos* (piririma) ovoid fruits with prominent beaks and deeply ruminate endosperm.
S. romanzoffianum (guariroba) very irregular endocarp in section with woody ridges that penetrate into the irregular seed. Extremely plumose leaves ,fruit are 1-3" and orange in color.

Chapado de Gomerias : After visiting Foz de Iguazu , we took a 5 hour flight deep into the interior of the continent to Matto Grosso du Sul. We landed in Cuiaba. This is a the capital and jumping off point for the Pantanal About 40 miles north of Cuiaba is a national park called Chapado de Gomerias. This park is the mountainous region in the middle of Pantanal

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ED BROWN IN BRAZIL

(Continued from page 26)

and an evolutionary laboratory for plants. . As we drove up the mountain I saw a small species of pinnate palm and wondered what it might be. . A beautiful *Syagrus* It reminded me of a very small Jubeaopsis.

We stopped and walked down through a dry cerrado. We were pleased with the stand of *Syagrus comosa*. This is a diminutive species of *Syagrus* 6 feet tall. It has the v-shaped overlapping pattern of the leaves that distinguishes *Syagrus* from *Butia* and other pinnate palms. The leaves were leathery and resembled a dwarf coconut in color. We combed the woods for several hours to study this species. We were initially perplexed with the identity. It was definitely *Syagrus* (due to the pattern of the leaves). Henderson's maps placed it as *S. petrea*. But it did not have the *Butia* character of the leaves. It didn't look like the pictures of *S. comosa* nor even matched the height. It was not *S. sancona* (also reportedly found in the area) as it did not have the plumose more membranous leaves and it was **exclusively** solitary trunk so it was definitely not *S. flexuosa*. We were able to consult with Dr. Noblick and learned it was *S. comosa.*

Thoughout of its purported range, it was in the typical

ST. JOHNS ROYALS

(Continued from page 24)

Cuba) movements of Florida Indian hunters engaged in the animal skin trade. Might not a returning hunter or trader have, having chanced upon a 'palm of a different species,' pocketed (assuming he wore clothes with pockets, the whole argument hangs on this thread) some seeds?

The John Bartram Association operates the Bartram homestead in Philadelphia as a museum and botanical garden. Situated on the banks of the Schuylkill River, not far from Philadelphia International Airport, it was in the 18th century located in the country a few miles northwest of William Penn's "greene countrie towne." Long ago swallowed by the city, the site includes a late 17th century stone house and about 30 acres, half of which contains specimens of native plants discovered and named by the Bartrams, father and son, or first introduced by them as nurserymen. In this latter category is an immense gingko tree from the first ones offered for sale in this country in, I think, 1780. I paid a visit, my first, in 1991 and realized, as a member of the Florida Native Plant Society, that one species discovered by William Bartram and hardy for the Philadelphia area was not represented: Illicium floridanum*, the Florida anise (a magnolia relative) first found near present-day Jacksonville. My offer to donate two plants was first researched then enthusiastically accepted. In 1997, I visited Bartram's Garden again and was dismayed at its poor, unkempt condition. I do hope, by now, that this has been remedied. Did William B. discover* Sabal minor*? I'll have to ask Mike. That palm species was grown for a number of years by a prominent gardener not more than 10 miles north of the Bartrams' place.* —*John Kennedy*

Alabama Palms, Etc.

A day-trip to Alabama by the Editor and his family (during the pass-by of Hurricane Floyd in September) provided an opportunity for some palm gazing. On Dauphin Island, a beautiful sandspit with handsome summer houses (on pilings) and very carefully non-commercial, *Sabal palmetto* and *Serenoa repens* were visible in undeveloped, wooded areas. Neither species was plentiful. On the mainland, in Bayou LaBatre (the Seafood Capital of Alabama, according to signs), in Coden, in Alabama Port-- all very small fishing ports—the two kinds of palms seemed to be completely absent. According to Kyle Brown and others, *Sabal palmetto* is a pioneering species slowly making its way around the Gulf of Mexico; supposedly, it is now as far west as Panama City.

In Mobile, and elsewhere in the area, *Sabal palmetto* was fairly common in house plantings and around businesses, though possibly less frequent than might have been expected. Also visible was that old favorite, *Trachycarpus fortunei*, as well as the occasional and mostly small *Washingtonia robusta*. No sightings of *Chamaerops humilis* which would seem a distinct possibility for growing in Mobile County. Perhaps there is little palm-awareness in the vicinity, or few species may be available from nurseries and garden centers.

That more palm species can be grown there is evidenced by the garden of Maxwell Stewart, IPS board member and Mobile resident, which is profiled in the August issue of *The Palm Journal*, the handsome glossy publication of the Southern California Palm Society.

r.

Allagoptera arenaria Germination

Mark Grabowski of Cocoa Beach revealed at the November meeting in Sarasota an unusual, but effective, way of germinating this stubborn-to-sprout species. He puts the cleaned seeds in a Ziploc bag with damp sphagnum moss. The bag then goes on top of

Paul Craft on Germination, an E-mail

Regarding *Pseudophoenix*, they do germinate much better with the outer shell removed. Often though the seed from Dominican Republic has come in with the outer shell already removed.

For years people planted *Pseudophoenix sargentii* seed without much success at germination. It did not seem to matter whether the seed was very fresh or not. Often two or three years later a seed or two would finally sprout. A germination of 2% or even less was not unusual. This seed has a thin, hard shell which made a few of us start wondering if this may be the problem. We found that seed that had been picked a few weeks earlier did not absorb water very well when soaked in water. If the seed could not absorb water through its shell, it seemed reasonable that it may have a hard time germinating through it as well. In the end we came
up with a very successful method of germination.

After picking the seed and cleaning the fruit off, let it dry in a shady area for a day or two. Place the seed in a plastic bag and forget about it for three or four weeks. The purpose of this is to allow time for the endosperm to shrink and pull away from the shell so the shell can be cracked and removed. When fresh, there is there is no room between the endosperm and the shell so it does not crack easily. After a few weeks, take the seed out and see if the shell cracks easily. You may have to apply a little force on the seed on a hard surface. If the shell cracks, go ahead and remove the shell completely from the seed. If it does not crack and come off easily, you may have to wait another week or two. Take care removing the shell as there is only a thin covering protecting the endosperm from the outside elements. If this covering is nicked, fungus can easily set in and kill the seed.

Once you have removed the shell, soak the seed in room temperature water for 48 hours. Plant the seed in straight perlite or some other medium that is relatively sterile and very well drained. The seed should be just barely covered. Place in a shady area and water as needed. Bottom heat is very important so try and keep the container at 90 - 95 degrees during the day and no less than 75 degrees at night. If cooler it will take longer for the seed to germinate. In about 8 weeks some of the seed should start to germinate. They will germinate sporadically over a period of about 6 to 8
months. With any luck you should get about 75% to 90% germination this way. I have tried the same

Solicitations. . .

Looking ahead, your Editor has the March issue in mind. The Southern California *Palm Journal* usually features in each issue a particular genus of palm. Various members then comment on their experiences with palms in the genus, some with very happy results, others with unfortunate tales to relate. Most of these contributors write (or e-mail) about 100 words. Where did the person get the palm, what size, how/where it was planted, how well (or badly) did it do?

I'm looking for members to relate their experiences with *Trachycarpus fortunei* or, indeed, any other species in the genus. I would also look for experiences with that old soldier, *Livistona saribus*. A minimum of five contributions would be necessary to make the feature viable. The deadline for the March issue is Wednesday, 2 February 2000.

Another E-mail on Germination

I have four different batches of "hybrid seeds" from last year. I get anywhere from 50 to 75 per cent germination when I cut the seeds open, remove the kernel, and wrap them in a damp paper towel.

I am still opening seeds from last year and germinating them. They remain viable for about one year.

After the seeds (actually, the seed kernels removed from the shell) have been wrapped in damp paper towel for a couple of weeks, they plump
up.

There is a little tit (technical term) over the embryo. After the seed has "plumped up," the little tit can be removed. If the operation is successful, you can see the embryo, sometimes the embryo even pops up.

Once the embryo is exposed, it will start to grow rapidly. This is all pretty labor intensive, it take a lot of time. You can tell I don't have a life!

—Richard Kennedy

CAN WORLD CYCAD CONSERVATION BECOME A REALITY?

By Tom Broome

As I think about all the tasks involved to insure world cycad conservation, it seems to be an impossible job for one person to handle. Our society has many members from every walk of life, with a multitude of talents. Whether you own a nursery, have a talent for writing, or just like to keep your yard looking nice, you can in some way help with cycad conservation.

Let's at least look at some of the problems at hand. All over the world, cycad habitats are being destroyed. In some countries, the forests are being clear cut for timber, with no regard for the other plants in the area. In many countries, small populations of cycads will get wiped out to plant crops. In Mexico, I have heard of five hundred-year-old specimens of *Dioon edule* being destroyed to plant twenty dollars worth of corn in their place. In probably all countries where cycads are native, plants are being destroyed for housing of one kind or another. We are not immune to this here in the United States. In Florida, thousands of the native *Zamia*s are being wiped out every year for subdivisions, shopping centers, and other kinds of land use. If you own land, and want to build on it, you can destroy all the coontie you want without even having to get a permit. If you want to dig the plants up and try to sell them, then you need to get a permit for that. Coontie that are in wetlands, or coastal areas, are protected just because of the location and not because they are on the endangered species list.

Even though the C.I.T.E.S. regulations have reduced poaching to some extent, it still happens in many countries. With the demand for cycads on the increase, prices have also gone up. *Encephalartos* species in Africa are selling for a premium, with large specimens going for thousands of dollars. For the most part, the only way to get a large plant is to remove it from the wild. In Florida, with the increase in demand for native plants, thousands of *Zamia*s are being poached every year.

Our botanical gardens are the repositories for our endangered species throughout the world. A botanical garden can get a permit to remove a cycad from the wild for research purposes, where a nursery owner cannot. As far as I know, there are only three botanical gardens in the United States that have a regular cycad pollination program. I was asked not to mention the names of these gardens for security reasons. After asking many of the directors from other gardens why they don't pollinate their cycads I got a variety of answers. For the most part, they felt they did not have the money to pay someone to do this. Others had no interest at all in trying to propagate their cycads. Even though these gardens are allowed to bring cycads into this country, they are dooming the cycads to a slow death without the chance to reproduce themselves.

As if all these problems aren't enough to worry about, it seems that many of the cycad experts can't even get along with each other, let alone agree on ways to conserve cycads. Many collectors fight amongst themselves for reasons such as jealousy, or competition for plants with a marginal availability. You would think a group of people with a common goal would work together to reach this goal. This is why cooperation amongst society members is essential to make world cycad conservation a reality.

Now that I have discussed the problems, what can we do to help solve these problems? The most important way is to preserve the natural habitats, and the insect pollinators associated with the various species. There are wildlife funds, and rain forest preservation funds that are set up to save many of our forests. Many times they are not specifically trying to save cycad habitats, but on the other hand, there are many cycads in some of these forests. Eco-tourism is starting to become a big business. One group in Costa Rica has helped to preserve the habitat of *Zamia fairchildiana* by bringing tourists out to see the cycads. If people can make a living from the land without destroying it, the plants can be preserved. I have heard of ecotour companies in Costa Rica, Peru, and South Africa, and I am sure there are others.

There are two projects that have the best direct influence to save the cycad populations. One project headed by Andrew Vovides in Mexico, and one by the kaNgwane Parks Corporation in South Africa. A small township of people in Mexico has decided to pick the seeds from the native *Dioon edule* population, and grow them in a nursery situation. Portions of the seedlings produced are planted back into the habitat, and the rest are sold to make an income. In the first year, they doubled what they had made growing crops the year before. In South Africa, the Mananga Village is working on a similar project where they are trying to save *Encephalartos lebomboensis*, and *E. paucidentatus*. They have sold seedlings locally and throughout the world.

Another important way to save the cycads is to propagate them in any possible way. This may simplify the matter just a little, but if there were just three hundred individuals, nurseries, and botanical gardens that would propagate larger quantities of just one

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WORLD CYCAD CONSERVATION?

(Continued from page 29)

species each, none of the species would become extinct. There are many people who could take on the task of growing five species at a time. We would only need sixty people this way. If someone were to do this, they should make sure that the group of species could not cross- pollinate with each other. The two examples I have already mentioned are a great way to save the plants and the habitat. Others could start their own corporation and save a habitat of their choice.

People who live in countries where cycads are native could buy habitats in their own area. Even if you don't have cycads that are native, it still would help to choose a target species that may grow well and produce cones in your area. This will reduce the pressure from the wild populations, at least from poaching. Many of the botanical gardens might want to propagate their cycads but can't pay someone to do the job. If each botanical garden would target a single species, it would not take a lot of time to do this. Many species will drop pollen and become receptive over a three or four week period. This way a worker could spend twenty minutes a day at the most for four weeks and propagate these plants. Many gardens have a problem with theft. They also normally don't want to have a large group of the same species on display. If the garden took aside a small area in a more private location, they could take care of a colony and avoid these two problems.

If you want to propagate cycads but really don't have the area to do it, ask your local botanical garden if you could propagate theirs. The three gardens that are pollinating their plants now are doing this mainly with volunteer help. I would also like to see cooperation between interested individuals and national parks, where someone could come in, fertilize the cycads, and increase the seed production. A fraction of the seedlings could be planted back in the habitat, and some could be distributed to botanical gardens, and concerned individuals.

If you can't work directly with cycads but like to write, you can write our local government agencies to see what they can do to help preserve our native habitats and plants. It also wouldn't hurt to write to officials in other countries, praising them for their efforts in saving cycad habitats. I know Costa Rica and Thailand have turned over quite a bit of their land to use as national parks. Writing any kind of article about cycad conservation or propagation can help get the word out to as many people as possible.

As a society, we should get along together for the benefit of cycad conservation. With the free exchange of information, we can all benefit. The cycad list on the Internet has been an excellent way to exchange information all over the world. Our society as a group, or an individual chapter could fund projects like the installation of a cycad garden at a local college. By teaching our students about cycads early, they would get exposure to these great plants where normally they might not even be taught anything about them. A chapter could provide a small scholarship to the student who learned the most about cycads, or had performed some sort of research with cycads. I think this would be very motivating for students.

Even if all you want to do is keep your yard looking nice; you can help with promoting cycads. Display your cycads, and invite classes from a local school to tour your collection. I know if someone had taught me about cycads when I was in high school, I would have started growing them 25 years earlier. The school children of today, will be the cycad experts and conservationists of the future.

There are many people throughout the world that are doing their part to promote cycad conservation in their own way. No matter what your forte may be, we can all do our part in the task to conserve cycads. If we all work together, and do what is best for the cycads, world cycad conservation can become a reality.

(Reprinted, with permission, from The Cycad Newsletter*.)*

Right, Aiphanes luciana, *native to (where else?) the island of St. Lucia in the West Indies. Picture by Peter Mayotte,* en route*—we assume—from Madagascar back to home base in Winter*

WHAT WAS DISCUSSED AT BOARD MEETING IN SARASOTA

Minutes of the fourth quarter meeting of the Central Florida Palm and Cycad Society
Location: The Besses' residence in Sarasota
Date: November 13, 1999

1.Upcoming plant sales were discussed.There will be one at Leu Gardens at the end of March. In early April there will be a plant sale in South Florida. Also at the PACSOF palmfest.Tom Broome will E-mail board members with further details.

2.Officers' reports were given by the sitting board members as follows:
Treasurer's report as given by Mike Merritt: Income from seed sales, membership dues,donations and plant sales were $2351.55. Expenses for publication of *The Palmateer* , flyer printing and miscellaneous were $982.80 for a net increase from 6/12/99 to 11/13/99 of $1368.79.

Membership report was given by Neil Yorio for the absent Dave Witt. Twenty four new people have joined CFPACS since the distribution of the membership brochures. It was also discussed to ship each member of the IPS one of our membership brochures.

Editor's report was given by John Kennedy. The CFPACS now has Publisher 2000 for the making of *The Palmateer*. The beginning of February is the deadline for the next issue.

Old Business was as follows:
The CFPACS endowment fund matures January 9. It will go into a mutual fund. There will be two options for board members to vote on as to which one.

The CFPACS website is still under construction.

The chapter's *Principes* collection is still missing a few issues. The missing issues are still sought. It will be a library for any member who requests it. It was discussed how to run the" library "of the *Principes* issues but was not worked out yet.

The new by-laws were signed by president Neil Yorio and secretary Chuck Grieneisen.

Membership flyer feedback was good. Tom Broome and Ray Hernandez were both contacted from it (their names were on the back). It was also discussed to put the flyers in local libraries and to give to local county agents. It was also discussed to send it to local newspapers to put in the gardening section.

The candidates for the '00 board are as follows:
East Vice President—**Charlene Palm**
West Vice President—**Ray Hernandez**
The Central Vice President did not have a candidate at the time. *[**Marilyn Bachmann** subsequently agreed to be a candidate for this position. —Ed.]*

New Business

The quarterly meetings for 2000 are as follows
First quarter: March 11/12
Second quarter: June 10/11
Third quarter: September 9/10
Fourth quarter: a motion was made and passed for November 18/19

A motion was made and passed to donate $200 to Montgomery Botanical Center

Getting a published membership roster was talked about.

A motion was made and passed to decide who can vote for officers in the upcoming election. The following can vote for officers: any dues paying members, current members, lifetime members. Exempt are the editorial exchange .

Complimentary memberships were given to the following:
Ralph Perry ,who drove the donated plants for auction from the Montgomery Botanical Center.
Mark Van Antwerp, who produced the membership flyers
Janice Broda, who helped on the CFPACS computer and newsletter

Frequency of checking and responding to E-mail was also discussed.It was decided that for officers, any matter to vote on that is sent by E-mail should be responded to within 2 days.

It was also approved to spend $100 to initiate CFPACS with PACSOF.

—Chuck Grieneisen,

From the President

Now in the final quarter of 1999, the CFPACS has made it through another year with several updates and improvements to how our chapter is run. Among many developments over the last year, most notably are that we now have finalized and approved by-laws for the operation of the chapter and we have a plan for investment of the 10K endowment fund, of which proceeds are to be used for bulletin improvements.

Recently, membership flyers have been created and initial distributions of them have been made to CFPACS area nurseries. It has been a long time coming for these flyers, and it is hoped that they will increase the visibility of our group and result in increased memberships. If you have not seen one of these flyers, please feel free to ask one of the chapter officers. If you know someone who would be a likely new member to our group, then please ask for a few copies for distribution. The CFPACS relies mainly on word of mouth membership recruitment, so it is up to all of us to insure growth of the chapter.

In the current age of high tech and email, we are currently considering the use of a CFPACS email list to distribute electronically the news and seed distributions of the chapter. We feel that this would give the CFPACS members a greater chance of participating in the seedbank activity of the chapter. If you would like to participate in a group email list for the CFPACS, then please contact Dave Witt [bizmark@mindspring.com] or Neil Yorio [neil.yorio-1@ksc.nasa.gov].**Finally, I** would like to recognize everyone who has helped make the CFPACS a successfully operating and growing community of palm and cycad lovers. In particular, Mike Dahme for continued efforts with the seedbank operations and general gophering services, John Kennedy for his continued (and passionate) trials with the continually improving bulletin, Mike Merritt for his dutiful and expert handling of the chapter treasury, Dave Witt for his maintenance of the membership roster, and the rest of the board for their continued support of the cause. I'm looking forward to next year as one of continual improvement and growth of the chapter, many new members to meet, and great chapter meetings.

Above, Livistona rigida *after Hurricane Irene hit Grant. A pine downed by winds smashed into the crown. For other reports on Hurricane Irene's effects on the east coast, see below.*

Minimal Hurricane Irene Brings Considerable Damage

By John Kennedy

Nobody really expected much damage from Hurricane Irene. After all, this was a minimal hurricane, not nearly as scary as Hurricane Floyd which, a few weeks previously, seemed to aim its 150-mph winds right at us. Floyd veered off, but minimal Irene did strike the east coast on October 16 with some surprisingly substantial damage. From Palm Beach County north to Brevard County, residents became alarmed at the blown over trees, the flooding, the debris everywhere. If this is what a "little" hurricane could do, what might a "big" hurricane do some day?

The rest of the state felt barely a ripple. Ray Hernandez in Tampa and Marilyn Bachmann in Gainesville saw no impact on their gardens. Mike Merritt in Geneva (north of Orlando) reported 50-60 mph winds and fallen pines but no damage to his relatively small palms.

In Vero Beach, where gusts got as high as 75 mph, the first reaction was amazement at all the litter. Who would have thought the live oaks and laurel oaks had so many dead branches and twigs? Few trees seemed actually to have blown over, but many shrubs were uprooted—wax myrtles, loquats appeared to have lost their anchorage in the sodden ground: 6-8 inches of rain fell.

The Editor's yard showed some odd damage. In a

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From the Editor's Desk

I've been apologizing for the pictures in the September issue for some time now, at least to those whom I encountered. Dreadful, right? And I took such pains to have better pictures, all for naught. The pictures looked really good on the computer monitor and I thought, ha! I've done it. We are all in the hands of the gods, however, and those who get too pleased with themselves are punished as a reminder of this. Russo Printers' printer dropped dead immediately before or during the printing of our newsletter. (I didn't have the heart to inquire into particulars and the company is not suing us for causing the catastrophe. I suspect old age was to blame.)

The September issue was essentially printed on a copier, the text relatively unscathed by such treatment, but not the quality of the pictures. Against the odds, Russo did produce the issue, on time and only through quite a bit of extra work. There is a new printer now at Russo; I've set the chapter's computer to the new printer's brand and model. What you are reading indicates how successfully this has been done, but there is a slight variant in Russo's driver disk that our computer refused to install. (A lot of our effort rests on faith: in the lap of the gods again?)

Mike Merritt, our treasurer, told the Board at the November meeting that he had received payment for 24 new memberships. This has happened in the first six weeks of our distributing the membership brochure and is very encouraging, just what we all hoped for. I myself have left brochures in extension agents' offices in Indian River County and St Lucie County, in the reference departments of the main libraries in each of these counties, as well as at three nurseries. I've mailed copies to branch libraries. Most interesting, to me, is a counter space at the Indian River County Main Library where many organizations leave their materials. I have placed 10 membership brochures there. Whenever I go in, once a week at least, I check the number. I believe that 15 or more have been picked up (I go out to the car and bring in more, so that it's 10 again). Now, of course, I have to go back to replenish the brochures in those other places where I've left them. I feel slightly guilty at not having hit more nurseries, but I do have a job and I do have a family; both require considerable time and attention.

Several years back, membership records were in disarray and sometimes people sent in checks that were cashed (occasionally, not cashed) but never received the newsletter or meeting notices. Should any CFPACS members encounter someone to whom this happened, get the name and address, then contact Dave Witt or Neil Yorio or me. I was given the name and address of one of these misfortunates at the Sarasota meeting. The person will be given a membership for the upcoming year.

Don't forget to renew your membership for the year 2000 now! Send check made out to CFPACS: $10 for one year, $25 for three. Mail to Dave Witt, 2036 Burnway Drive, Orlando, FL 32819.

Several chapters of the IPS publish in-house directories of their members. I have suggested to the Board that CFPACS do the same. It would make it easier for us to contact each other, especially useful for those of us who live somewhat remote from major population centers. Anything that would foster a sense of belonging would, I think, be useful. Do you know who else in your immediate area belongs to the chapter? Would it be useful to know? Maybe directory listings could be set up by county. In any case, the entry would include name, postal address, phone number, and e-mail address. If folks did not wish to include any of these items, this could be honored. Perhaps some members would want only to include name and e-mail address. This could be done. What do **you** think?

Getting up at 5:15 a.m. to drive to Sarasota with Neil Yorio must have sharpened my wits more than is customary for me at so ungodly an hour. I actually had, a few hours later, another suggestion for the Board—that when a new member is enrolled, someone active in the chapter in the same area call the person to welcome him/her aboard and to offer any information that might be useful. What do **you** think?

Contact Neil Yorio or me to offer your feelings about these two possibilities. The directory/membership roster could not be published until March, at earliest, so there's time to express opinion on these matters, perhaps fine-tuning the suggestions.

Another idea tossed around at the Board meeting was having a librarian, someone appointed to be the holder of the chapter's back issues of *Principes* (now *Palms*). Should a member wish to have (say) the Fall, 1984, issue, he/she could contact the librarian for a photocopied or electronically reproduced copy which would be supplied at minimal cost. The original would remain with the librarian. The idea needs polishing, but

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From the Editor's Desk

(Continued from page 33)
has merit. Anyone out there in Central Florida who might like to take this on?

Merrill Wilcox has supplied what looks like conclusive evidence that the bush morning glory cuttings that he and I got from Pat Smith at the June meeting are not—as I had announced—*Ipomea carnea.* It is, according to *Hortus. III*, *Ipomoea fistulosa.* The entry in the reference book seems to indicate that it is a native plant. (I'll check with my sources [Janice Broda, is this true?] and let you know.)

While I am in the confessional mode, admitting my mistakes, I have to concede another. A member, renowned as a major-league nitpicker, has pointed out that prez Neil Yorio's SUV, pictured in the September issue getting a jump from treasurer Mike Merritt's Snazzmobile, did not then start (as I had stated in the caption). For the record, Neil did go to Wal-Mart and did buy a new battery. The nameless member recalled several other incidents of "inaccuracy." I pointed out that my version of events was more interesting than what actually occurred—which he allowed to be true. No one has mentioned that the vintage Snazzmobile is really an old Pontiac.

Publisher 2000 has simplified my life, I am happy to announce, even though one of the Helps I consulted has incorrect information (unchanged from the previous version). With this issue, I have learned how to insert tables that the program says are too big to get in. Just so I don't get too complacent, the scanner has been acting oddly, refusing to scan full photos. Good thing I get paid in satisfaction rather than by the hour.

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Happy Hanukkah, Merry Christmas, Joyous Kwanza to all of you. May we all have a healthy, happy, prosperous New Year in which there are ***no freezes***. St. Jude, Patron of the Impossible, pray for us palm & cycad people!

Places to See Palms

Myriad Botanical Gardens, Oklahoma City

By Eric Schmidt

This past October I visited my brother in Oklahoma City, OK. While there we visited Myriad Botanical Gardens. MBG is located downtown OKC and encompasses 17 acres. The centerpiece of the Garden is the Crystal Bridge Conservatory.

The Conservatory is a 7-story glass cylinder that spans a 2 acre lake in the center . Inside is a fantastic collection of tropical plants. There are many palms and cycads being grown. The Conservatory is very lush and well maintained. At one end is a 35 foot cascading waterfall surrounded by rainforest plants. At the other end is a "desert mountain" with tropical cacti, euphorbias, and other succulents. At both ends a stairway leads to a connecting bridge where you have a bird's-eye view of the Conservatory.

One of the most impressive palms there is the Foxtail Palm (*Wodyetia bifurcata*). It is at least 30 feet tall and is probably the largest and most massive one I have seen. With its enormous trunk it resembles a Royal Palm. It was also heavily loaded with seed. Near the Foxtail Palm is a large clump of *Oncosperma tigilarum* and a mature *Verschaffeltia splendida.* Other impressive palms to be seen include *Astrogyne martiana*, *Aiphanes caryotifolia*, *Gronophyllum pinangoides*, *Howea belmoreana*, *Howea forsteriana, Bismarckia nobilis*, *Areca vestiaria*, *Drymophloeus beguinii*, *Gaussia maya*, *Coccothrinax crinita*, *Zombia antillarum, Cryosophila warscewiczii, Licuala grandis*, *Normanbya normanbyii*, and a tall *Cocos nucifera* loaded with coconuts. Many of these are mature specimens towering over the surrounding plants.

A small collection of cycads is also being grown. These include *Ceratozamia hildae*, *C. kuesteriana*, *C. mexicana*, *C. robusta,* Cycas *revoluta, Dioon edule, D. purpusii, Encephalartos altensteinii, E. arenarius, E. hildebrandtii, E. trispinosus, Zamia furfuracea,* and *Z. pumila*.

If you are ever in the vicinity of Oklahoma City then a visit to Myriad Botanical Gardens is well worth the stop. The palm collection is superb even though I have never seen much written about it.

CENTRAL FLORIDA PALM & CYCAD SOCIETY

A familiar majesty palm—not at Wal-Mart—but in an unusual place: "an elegant Ravenea robustior*" on cleared land, Andohahela Reserve, southeast Madagascar. You know who took this picture before leaving for St. Lucia.*

HURRICANE IRENE

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sheltered area—a wind pocket?—an *Archontophoenix cunninghamiana* 'Ilawarra' 20 feet high was blown to a 45-degree angle, its crownshaft bent, the emerging spear twisted even more; a nearby 8-foot *Carpenteria acuminata* suffered the same fate. Beside it, *Archontophoenix myolensis*, 18 feet high, had only two leaves snapped, but looked battered. In the open, an *Arenga pinnata* with a 4-foot trunk was blown over. The glory of the back lawn, the *Latania lontaroides*, with its 12-foot spread and 10 feet high, exhibited almost no sign of disturbance.

An odd result of the winds was that the lower leaves on a 15-foot *Sabal domingensis* and on an 8-foot *Chamaerops humilis* were flattened against the trunk without being broken off. Shrubs in the open were beaten; a more than 20-year-old, 12-foot *Olea europea* looked as if it had been mugged.

The old *Latania lontaroides* (more than 60 years old) at Ken Macht's Vero property --visited by the chapter in March--came through unscathed, but one of his three big royals was blown down.

Ed Carlson—remember the house with the plane last March?—experienced much damage:

Bad Night, Irene. Not a good night! The Hurricane that wasn't coming our way roared through Vero Beach. Much rain and 75 mph wind, flooded areas, and downed vegetation. In our yard: One of the coconuts was knocked down, dead. Palms bent over, living: Areca camarensis, Beccariophoenix madagascariensis, Chamaedorea tepejilote, C. pinnatifrons, Gaussia maya, Livistona australis, Syagrus oleracea. *Seriou s bud damage:* Acrocomia aculeata, Aiphanes aculeata, A. minima, Syagrus oleracea. *There was no damage to palms outside in containers. Cycads show no damage. Oaks and other deciduous trees were considerably defoliated. Almost all gingers and heliconias wer knocked down. After two weeks, many palms show stressed leaves and damaged stems. Several of the* Chamaedorea*s may not survive. It could have been worse if Hurricane Floyd had visited, but as for Irene, I hope never again to "see you in my dreams" or in Vero Beach.*

Mike Dahme in Grant, below Melbourne, was horrified at the damage in Borassic Park. *Damage from the hurricane wasn't too bad, though clearly winds of the second, 'Irene', were higher than those of the first. [Ed Carlson said that the Vero AP recorded gusts of 70 knots.] Nevertheless, there was enough damage, including possible loss of large specimens of* Livistona*, to be thankful that the hurricanes weren't any stronger, or closer, than they were. In one instance a falling pine scored a direct hit on a* L rigida *causing the distal two feet of the 14 foot stem - the "growing tip" - to be bent about 45 deg. This occurred during 'Floyd'. 'Irene', however, similarly bent the "growing tip" of a 20+ plus foot tall, extremely fast-growing,* L decipiens *hybrid by the force of the wind alone. Whether either of these palms will survive this stress to the apical meristem is uncertain. Additional damage included the loss of three tall* Washingtonia*, but the winds must have been simply the hastening of the inevitable loss of these plants, likely due to the palm beetle. Finally, a* L australis *with some 15 feet of clear trunk that was leaning southward 10 deg. as a result of 'Floyd' is now at 30 deg. after 'Irene', and in need of a brace. Too bad that winds of both hurricanes came from the same quadrants. The big fan palms, such as* Bismarckia *and* Borassus*, which as a result of the '92 Miami hurricane we know to be highly vulnerable to strong winds, fared okay: plenty of twisted and bent petioles, tattered fronds, but no stem damage.*

In Indian Harbour Beach, Neil Yorio reported only broken leaves. Charlene Palm in nearby Satellite Beach was not so fortunate. *Floyd vs. Irene: **I live** approximately 1 block from the ocean in Satellite Beach. Floyd had a higher storm surge and bigger waves but Irene's winds were stronger than Floyd's. Floyd's damage was minimal. One of my 30+ feet coconut palms had 6 leaves snapped off, all on the north side and* Copernicia alba *lost many many leaves, most on the north side. As Irene's eye skirted just off shore, I'm sure we experienced hurricane force winds. Irene took down my back fence and severely shredded* Sabal mauritiformis. *But I was completely traumatized when I looked out my back porch and saw my* Copernicia albas*, affectionately known as the "twin towers", leaning badly. The copernicias were planted in 1991 & 1992 but are both approximately 20 feet tall. Coper #1 has a much larger, wider, more mature head and has set seed for the second year. Copernicia #1 was leaning much worse than #2; perhaps the bigger head made it more top heavy.*

I was sure it was going over and if it did it was going to take down my power, cable and telephone lines with it. Greg managed to go out during the storm and brace it with our picnic table on one side and a huge concrete pot on the roots that were lifting on the other side. Luckily, it held!

This palm has since been righted but I am quite astounded at Copernicia alba's *lack of wind tolerance, considering their deep rooted nature. Coper #2 is still leaning.* Livistona decipiens and L. saribus *were moderately shredded.*

Large palms that did especially well in the storms were-Hyphaene, Borassus, Wodyettia, Dypsis decaryi, Sabal yapa, Latania, *Bottle and Spindle (slightly shredded).*

Palm Beach County got hit harder, with stronger winds, more rain (as much as 18 inches in some areas), and extensive flooding. Paul Craft emailed an eye-witness view four days after Irene: *Patty and I had our 25th wedding anniversary last week. Since she has never seen Fall color, we stayed the week in a resurrected barn turned house up in Vermont. We returned Sunday night.* [the hurricane was on Saturday] *The Fall color was in its peak. It was a*

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Hurricane Irene

(Continued from page 36)

rather bizarre feeling to be sitting in front of the fireplace with a roaring fire, snow falling outside, and watching the weather channel showing Hurricane Irene plowing right over our house. It was perhaps even more bizarre to have people call us on their cell phone during the big blow wanting to know what Irene was doing since their other phones and power were out.

With that said, I can say I was very happy to see no damage to the ole homestead when we arrived home. A couple palm leaves lay on the ground and a couple heliconia stems were broken off. I was disappointed that the heaps of pine needles on the roof were still there and had not blown off.

I cannot say the same for everyone around us though. Our neighborhood did well, but elsewhere close by there was a great amount of flooding, Trees such as Acacia *and* Tabebuia *snapped in two,* Ficus *were uprooted and laying over, and many palms are leaning to pray to some mysterious god to the west. I have seen a handful of* Washingtonia*s snapped in two. Most palms were recently transplanted so had not had a chance to root in properly. I did make my way around town some the last couple days and the area of Boynton Beach and Manalapan were hit rather hard. 18 inches of rain and high winds occurred there where the eye of the storm passed over. Norm and Ann Moody's lost a couple of their large* Caryota no*s and they had over 18 inches of water in their nursery area which lasted several days. Gemini Garden in Manalapan was hit quite hard with a few palms snapped in two and many laying over. Even at the feverish pace they work at, it will take another week to get everything stood up. Flooding was the biggest problem which loosened up the soil so the winds could push palms over easier. Actual losses will end up being rather minimal in the landscape. Nurseries with shadehouses were hit the hardest. Shadecloth was ripped off as well as plastic panels. Palms underneath are getting sunburned and it will take some time to get shadehouses resurrected. Everyone here seems relieved it was not any worse. The biggest problems so far are loosened up plants in the ground and containers, leaves broken, and some fraying from wind and salt. Some problems may not show up for weeks or months such as damage to buds and fungus from all that water.*

Most canals and lakes are still over their banks and very few plants have been stood back up. It will be a couple weeks before things are back to normal. As of Tuesday, there were still over 10,000 without power in Palm Beach County.

There you have our Hurricane Irene roundup. But what damage to Ruth Sallenbach's, site of the Labor Day weekend picnic? Next hurricane season has been predicted by Dr. William Gray at Colorado State University (*he's* safe enough there) to be more active than usual, that a busier cycle of storms has

USF Sale

By Tom Broome

On October 9th and 10th, we attended the fall sale at the University of South Florida. Many of our society members got together to talk about palms and cycads. We had quite a few members come out to buy plants as well. We had a new vendor this year. I'd like to welcome Frank Brandt of the Living Fossil Nursery to our group of vendors. Frank and Jennie Tintera were not able to be there this year, and I would like them to know that they were missed. I would like to thank all our vendors as well as Hersh Womble , David Besst, and Ray Hernandez for helping out with taking the money and answering questions about palms and cycads. I would like to especially thank Ted Langley. He has brought, and set up our tent for the sales for years now, and has passed the job to someone else now. Thanks Ted, for all your help these many years.

We also passed out many of our newly printed flyers to people who were interested in joining our group. I think everyone who attended had a good time. These sales help our cause by getting more palms and cycads into the hands of many more people. We also make extra money for the chapter. I look forward to seeing everyone at the next sale in the spring.

A palm for Kissimmee? For a Kissimmee greenhouse, perhaps, but Pelagadoxa henryana *is shown here in full glory at the Caracas, Venezuela, botanical garden. See story on next page.*

A Visit to Venezuela: Hola Cas Palmas!

By Ray Hernandez

It's the first time I've come home, gotten off the airplane, and proceeded to put on a sweater I didn't need while away. That's the price you pay when living in Central Florida, the Lambeau Field of tropical palm lovers! I spent four days in Puerto Ordaz, Venezuela, and two in Caracas. It's a bit discouraging to look at the streets here in Tampa lined with *Washingtonia*, *Syagrus r.,* and *Sabal p.* after seeing the multitudes of *Attalea, Pritchardia, Roystonea*, *Coccothrinax*, and A*crocomia* that abound in this equatorial nation. Maybe global warming will help out around here someday soon!! They clearly don't need that in Venezuela.

I arrived in the Caracas botanical garden around 1:00 pm, the temperature somewhere around 85F with about 90% humidity.....paradise! The slight breeze offset the familiar feeling that we know as July and August around here. The first thing you notice (and some folks hate these) are the 100' *Washingtonias* lining both sides of the entering walkway. These are surrounded by cacti and succulents that thrive in a *Washingtonias* native climate. Next was the influx of *Sabals*, *causiarum, mauritiformis*, *minor*, *yapa*, rosei, and our Floridian ambassador, palmetto. Florida was actually well represented with *Serenoa, Thrinax morrisii*, and *radiata. Pseudophoenix sargentii*, *Acoelorraphe*, and *Coccothrinax argentata* standing proudly and holding their own in this palm paradise. Cuba was definitely well represented with a 15' *Copernicia macroglossa*, and 10' *C. Baileyana* at an age that I think gives this palm its most awesome appearance. *Ptychosperma*, *Hyophorbe*, *Adonidia*, and small *Arenga*s (*tremula* and *engleri*) abound throughout the park. *Raphia farnifera* and *Arenga pinnata* planted side by side is a nice touch with both seemingly trying to outgrow the other (Get out of the way!!!!). The most awesome sight here is the yet to flower 70' *Corypha umbraculifera* with a canopy about as big as that of medium sized oak. The trunk is about 4 feet wide and any thoughts of me trying to find a spot for one in my yard disappeared at that moment. There were also nice *Mauritia flexuosa* and *aculeata*s to see planted within close proximity of each other. *Pelagodoxa henryana* and *Archontophoenix* were planted in the same area with pools of water all around the trunks. This definitely gave new meaning to the words "water lover". *Pritchardia* seems to be readily available in Venezuela. My fav is *hillebrandii* planted in a group of 5 or 6 in a relatively shady area (hence no picture of this). I also saw *Licuala spinosa* and *elegans*, several *Aiphanes*, and a couple of awesome *Attalea* (quickly becoming my favorite genus). Oh, the 60' *Acrocomia aculeatas* were also quite a site. I hope mine gets to that size!! Finally, the highlight for me was my first brush with the genus *Metroxylon.* The particular variety was not labeled but it sure appeared to be the classic Sago palm. They were only about 15' in total height but impressive nonetheless. It's a shame it's too cold here in our own corner of the arctic tundra to successfully grow one of these. Fortunately, we're only a few hundred miles from a some of the world's real palm paradises!!

Above, the botanical garden in Caracas. Below, a feature of that garden, a group of Pritchardia hillebrandii.

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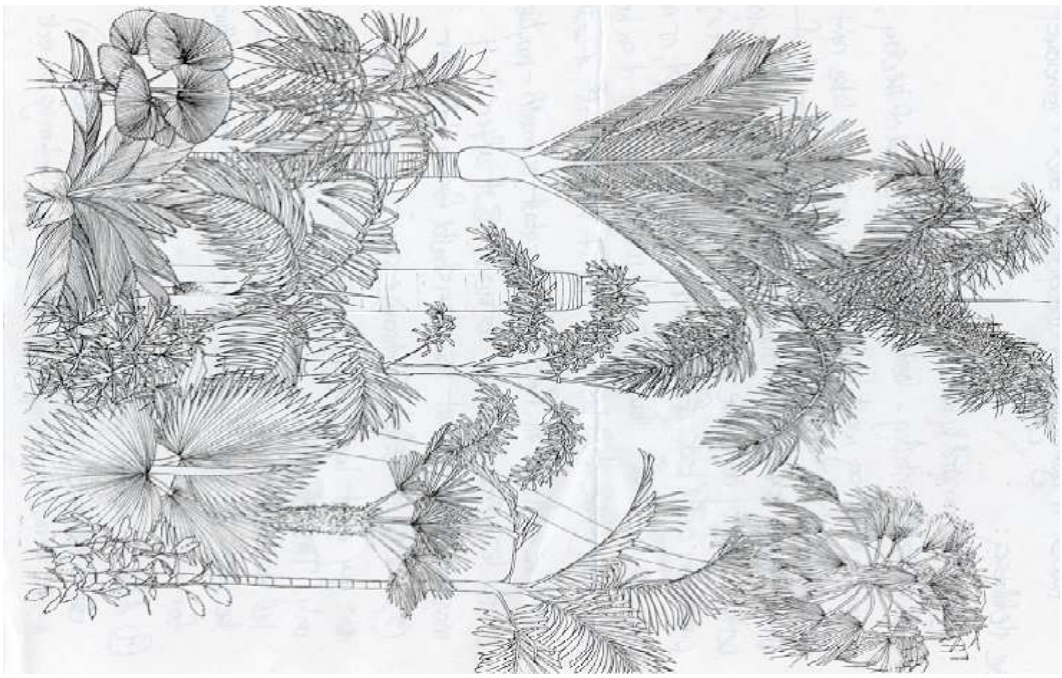
Overleaf, part of cover illustration for Palms of Southern California *drawn by Geoff Stein. Look for his musings on palm-growing in Central Florida in the March issue of* The Palmateer.



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