Palm Review

Volume 17, Issue 3 *Journal of the Central Florida Palm and Cycad Society* *May, 1997*

The third issue of the Palm Review is here! Several people answered the call for articles in the last issue and submitted excellent reports on disease control and prevention for this issue's theme. You didn't submit anything? Well, now's your chance to redeem yourself! The next issue will deal with "Maintenance Techniques" and you have over a month to get some of your thoughts down on paper and send them in (deadline for submission is July 1st) but don't think we're only interested in articles on the issue theme! That's just a suggestion to get you started. We welcome letters, articles, anecdotes and comments on any subject that is of general interest to our society. We want to hear about recent events, see questions submitted to our expert, know about your palm care secrets and anything else that's on your mind! Your participation is essential and we need to hear from you!

Disease Control and Prevention Issue

New Pest Threatens Cycas

by William Tang

In most cycad growing areas of the world cycad growers enjoy relatively pest-free conditions for their plants. In these areas, cycads grown outdoors with proper nutrition and climatic conditions are tough durable landscape plants that need little or no applications of insecticides or fungicides. This was the case for South Florida for many years. In the last two years, however, there has been an outbreak of a new, serious pest of cycads in South Florida, which is potentially lethal to many cycads.

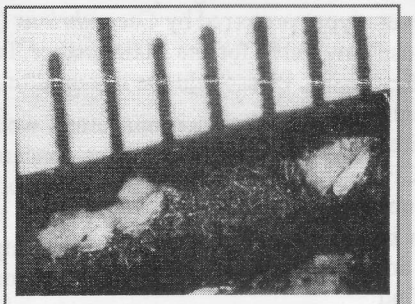

Figure 1: This magnified *Cycas revoluta* leaflet reveals the larger oval females of *Aulacaspis yasumatsui* and the smaller elongated males. Scale in mm.

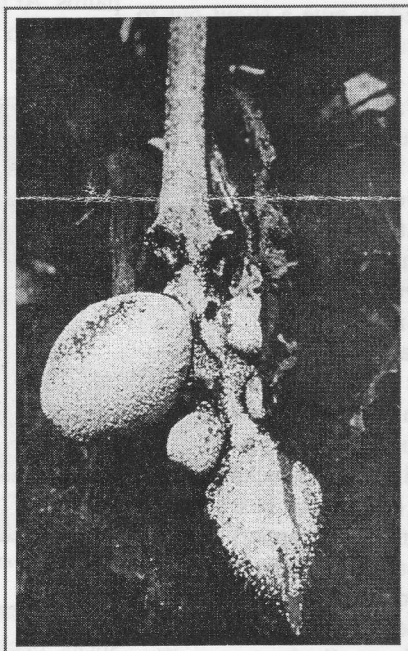

Figure 2: The megasporophyll and seed of this *Cycas rumphii* are completely covered with *Aulacaspis yasumatsui*.

The pest in question is a scale insect, family Diaspididae, which preferentially attacks *Cycas,* but also infests other cycad genera. This insect has been identified as *Aulacaspis yasumatsui* Tagaki. This is a whitish-coloured insect 1.0-1.5 mm long (Figure 1). This scale insect was originally described from Thailand in 1977 and was subsequently found in southern China. It is probably native to

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Keeping Your Palms Fern-Free

by Eric Schmidt

One way that seems to help keep certain dry climate palms healthy and disease free in our humid and sometimes wet climate is to keep epiphytic ferns from sprouting and growing in the crowns of the palms. Here, in central Florida, one sees many *Phoenix canariensis*, *P. dactylifera, P. sylvestris* and *Butia capitata* with a multitude of Sword fern (*Nephrolepsis exaltata*) nestled in the crown. Often a close look will reveal a fungal leaf spot on the fronds of the palm.

Here at Leu Gardens, the above mentioned palm species were often gracious hosts for Sword ferns. The fibrous material surrounding dead leaf bases provided an excellent spot for these ferns to take hold and multiply. When I began removing the fern, I discovered that the fern had produced a one to two foot thick "mat" of a humus material and rhizomes which held a great deal of water and always remained soaking wet. It seemed that keeping a thick, wet material around the crowns of these palms was not to their liking. Once removed, these palms seemed to grow healthier and the fungal leaf spot almost completely disappeared.

The removal of this "fern mat" is usually a dirty and laborious job but often improved the look and health of a sometimes shabby palm. Ferns growing in the crown do not seem to bother all *Phoenix* or *Butia* palms. *Butia capitata* seems to be the species least affected of the four (*P. canariensis, P. dactylifera* and *P. sylvestris*). In con-

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Letter From The Editor

Dan Peterson rose to the call for issue theme ideas and submitted "Maintenance Techniques" for the next issue. Great idea Dan! This can cover any topic from fertilizers and pruning to sun vs. shade. Everyone's talking about Ecosane. Please submit any updates you may have on this product. It doesn't have to be a formal article, a simple paragraph is just as informative. You say you've never submitted an article? Perhaps it's because you feel that you don't have any real information to contribute. For years, I thought that the experiences I've had were typical and of no real use to the experts of CFPACS. I must admit that I have only submitted 1 article in the 4 years I've been in the society and it was for this issue! I am slowly learning the error of my ways. I find that I **can** answer questions and have valuable input because my collection and experiences are unique, *as are yours*. I'm sure you have found yourself describing your palm victories (as well as defeats) to others. Many more people would benefit from your experiences if you submit them to the *Palm Review*. This is a "hometown" publication and everyone's input is valuable. I will be writing my second article on soil types preferred by *Coccothrinax* (at least in my yard) for the Maintenance Techniques issue. Please join me in submitting!

On a more serious note, I would like to discuss a subject of some concern to me. I started the "Letters to the Editor" column to provided a forum for readers to express their feelings on any subject important to them and of general interest to our society but have since been criticized for printing controversial messages. I feel that free exchange of ideas is essential to the vitality of any society and I will continue to print letters of this nature. I would like to think that any controversy raised by a letter could be handled in a professional manner by writing a letter of opposing opinion and submitting it to the *Palm Review* for all to see but this has not been the case. Instead, authors have been threatened and attacked personally for expressing their opinion. This is deplorable. How can we grow and improve as a society if no one is allowed to express their opinion? I would hope that such intimidation tactics are never repeated. Instead, I look forward to our society encouraging an environment where free expression of ideas is welcomed.

Leu Gardens Spring Sale

by Dave Witt

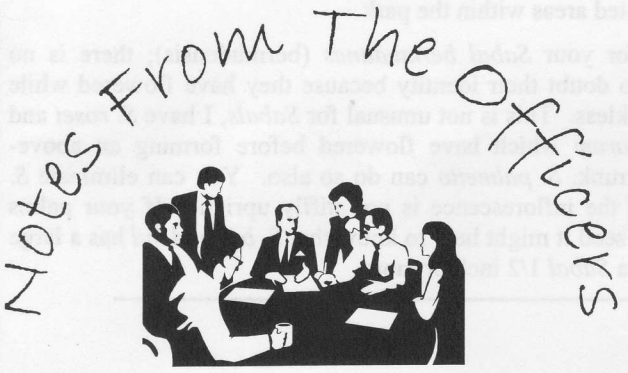
If you are a palm & cycad lover and missed the Spring sale at Leu Gardens in Orlando you should be kicking yourself; if you're not let me know and I'll come by and kick you myself. We had a great time with perfect weather, great company and loads of palms & cycads including some all too uncommon species that fare surprisingly well here in central Florida.

Leu Gardens breezed through this past winter with basically no damage to the collection and was a magnificent sight to behold. The vast majority of the plant lovers were most impressed by the big, bold *Bismarckia* and oddly enough the *Acrocomias*. When returning from touring the collection most people "had to have a *Bismarckia*". They were easily the most popular sell of the weekend. Hopefully by next year's sale we'll have plenty of Acrocomias to go around as well. The other big sellers were our native *Zamia integrifolia, Zamia furfuracea,* lots of different *Chamaedorea* species, several *Dioon* & *Cycas* sp., *Coccothrinax* & *Hyophorbes*, and all of the *Borassus* seedlings. Too bad we don't have some tracking devices to stick on those so we can monitor their progress as the years go by. In a way we do as we nearly ran out of applications to join our chapter. It was great to see such an enthusiastic response from a wide variety of people. There is a definite interest in what we do; we just need to continue to let people know we exist & the plants will do the rest.

Now we need to give a shout out to the people that made this happen : Tom & Cindy Broome, Jerry Hooper, Richard Lundstedt, and Paul Craft (who made the trip up all the way from West Palm), Eric Schmidt & Neil Yorio. We sold over $2200, with a percentage of that total going to the chapter. If I'm not mistaken, that's the best we've done at Leu in several years but it's only the beginning. I've already mapped out several strategies to make next Spring's sale even bigger. We all need to keep in mind that participating (i.e. spending some bucks at these sales) is one of the best ways you as a member can support your chapter. Donating plants is another. The generosity of the aforementioned people is greatly appreciated. Thanks to all of you as well as the people who stopped by to check us out & purchase some plants.

For the many of you who are now sorry you missed it, I have decided to grant you a 2nd chance. On Sunday October 5th, we will be holding our 2nd annual "giant auction" at Leu Gardens. I am also pleased to announce that Larry Noblick of the Montgomery Foundation has agreed to come up and give us a presentation on *Syagrus* palms. At this writing he is planning a new expedition into Brazil later this summer of which I'm sure we'll be the first to get a sneak peek at. Mark your calendars now for this one; you really don't want to miss it; besides I have a membership roster & a map so I'll find you if I have to. ■

L-R: Dave Witt, Tom Broome and John Stryjewski at the CFPACS table.



The Board of Directors consists of 10 members. 6 of these members are elected to their positions, 3 are appointed by the elected officers and the remaining seat is filled by the immediate past president. If you would like a copy of the new chapter bylaws which outlines election procedures and the responsibilities of the officers, send a self-addressed stamped envelope to the journal editor with that request.

President - Tom Broome

Since the time of distribution of our last issue we have had two sales, one at Leu Gardens and one at the U.S.F. Botanical Garden (see pages 2 and 11 for reviews of these events). Between the two sales, we gave out 56 palm society applications. I would not be surprised if we get at least 40 new members for our local chapter. People do not realize the good we do at these sales. At least 100 people had questions about how to take care of their palms and cycads. Some had leaves of plants with various ailments that needed identification. Not only does the chapter make money, but we donate money to the botanical gardens as well. Many times we also donate plants to these gardens for people to enjoy for years to come.

Our next meeting will be at Ron Lambert's, Buckhorn Nursery. Keep your date books open for May 24th. See page 14 for details.

Immediate Past President - Mike Dahme

Recently, and in the company of Jacksonville member Ed Brown, I visited Brazil for three weeks (including a few days in Bolivia) of palm-viewing and seed collecting. While we were perhaps a few months too early to benefit from optimum seed production, the palms in habitat were in many cases spectacular* (though I even-

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A Fight With A Palmetto Weevil

by Elizabeth Stryjewski

The first signs that something was wrong were very subtle and probably went unnoticed by us for quite some time. Finally we began to notice that the shape of our *Phoenix canariensis* was changing. It began to take on the appearance of a flat dome rather than the typical pyramidal shape of a healthy *Phoenix* (figure 1 shows both forms). We had often seen well-established *P. canariensis* in other neighborhoods take on this flattened shape and thought that it was perhaps a normal stage in their development. Not realizing that this was significant, we never examined the tree any more closely. Over the next several weeks, the fronds began to take on a more "weeping" or "reclining" habit. The damage eventually became severe enough to kill several of the center spears and this is the first time we realized something was very wrong.

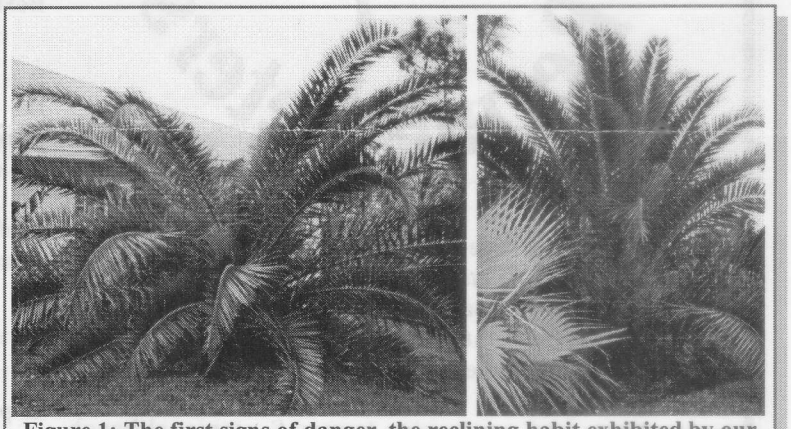

Figure 1: The first signs of danger, the reclining habit exhibited by our *P. canariensis* infected with a Palmetto Weevil (left) versus the pyramidal shape of a healthy specimen (right).

For a closer inspection of the bud, John pulled a latter up to the tree. The dead, dried-out spears fell easily out of the bud with a gentle tug. These dead spears were riddled with small holes. This was terrible. One of our most prized palms with particular sentimental value (but then again, which ones aren't?) had something awfully wrong with it. Our realtor had given us this *P. canariensis* when we first bought our lot. It was the first palm we ever planted and although a common one now was quite exotic to us then. This particular palm, despite our being novices at palm care when it was just starting out in life, had always done very well, a fast healthy grower for the past 4 years. Of all our palms, we least suspected this one to fall victim to disease.

After John had removed these spears, he saw that where the bud should have been was instead a pile of what looked to be freshly ground mulch. He scooped out handfuls of this material and passed them on to me. We were both very familiar with the rotten smell that accompanies a decaying, slimy bud that has succumbed to a fungal infection, but the material he was removing from this bud was very dry and had no smell at all. Fungal infection was therefore out of the question. He continued to scoop out this mulch-like material at first with his hand and then a spoon to get every last bit of it. What was

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Ask The Expert by Bernie Peterson

Bernie,

Do you know a sure-fire way of differentiating between *Sabal minor* and *S. etonia* while in the field? I've come across a colony of palms growing in scrub in nearby DeBary along Interstate 4 and Dirkson Road. Many have inflorescence but none have seed at this time. None are over three feet tall. Most of the leaves are strongly costapalmate, so I am leaning toward S. etonia, although, to be perfectly honest, I really do not know.

I also have five *S. bermudensis* growing in my yard. The seed was labeled as such several years ago. Most of them are now 4 - 5 feet tall and are producing multiple florescence from the ground. They have no trunk at this time. Any guesses? I'm leaning toward *S. minor*.

-Doug Keene, Deland

Doug,

Thanks for the interesting questions. The answer for the first comes from Scott Zona's "A Monograph of *Sabal*...". It should be easy to tell the difference between *S. etonia* and *S. minor* in the field if the inflorescence are present. *S. minor* has a distinct stiffly upright inflorescence even after the fruits have formed, also the inflorescence is open the branches are not crowded. *S. etonia* has an inflorescence which is somewhat ascending and arching and becoming more pendulous as the fruits develop. The inflorescence of *S. etonia* is denser and more crowded than that of *S. minor*. *S. etonia* grows in scrub pine forest while *S. minor* usually inhabits wetter sites, often with deciduous trees.

Incidentally, Zona's distribution map for *S. etonia* confirms the DeBary area as a known habitat for this species but not for *S. minor*.

For those interested in native palms Highlands Hammock state park near Sebring has all 5 of Central Florida's native palms within its confines. *Sabal etonia* is seen near the entrance while *S. minor, S. palmetto, Serenoa repens* and some very fine examples of *Rhapidophyllum hystrix* are found in the forested areas within the park.

As for your *Sabal bermudanas* (bermudensis); there is no reason to doubt their identity because they have flowered while still trunkless. This is not unusual for *Sabals*, I have *S. rosei* and *S. causiarum* which have flowered before forming an above-ground trunk. *S. palmetto* can do so also. You can eliminate *S. minor* if the inflorescence is not stiffly upright. If your palms produce seed it might help to know that *S. bermudana* has a large fruit for a *Sabal* 1/2 inch or more.

Bernie,

I have a *Phoenix reclinata* that is suckering profusely and it is starting to look like a ball of foliage. How can I remove the suckers safety? If you recall, I asked last issue about the possibility of the mulch I get from the county landfill spreading diseases to my palms. If I just cut these suckers off, won't that leave a perfect entry point for disease? Is there a way to protect the palm? Someone told me that sulfur applied to the wound would prevent disease from getting in.

- Sarah Noah, Merritt Island

Sarah,

I guess the trick would be to remove the suckers as completely as possible without damaging the remaining trunks, this would require a lot of care and might get to be very tedious especially if your *P. reclinata* has a very dense suckering habit. Treating the cut surfaces with sulfur won't hurt but I doubt if it will help.

If I had a *P. reclinata*, I wouldn't hesitate to thin it, I think the risk is small if you do the work yourself and use clean tools. Another approach would be to just keep the foliage cut off the unwanted suckers, thereby (hopefully) suppressing their growth while encouraging the growth of the untrimmed trunks.

Bernie,

Could you comment on the advisability of the method of rescuing severely freeze-damaged palms as described in the Dent Smith article in the most recent issue of the CFPACS "Palm Review", namely sawing the upper trunk or bud off below the point of freeze damage.

- Mike Dahme, Grant

Mike,

Thanks for the question, I'm afraid the answer is going to be rather long.

Generally speaking, there are about as many leaves in the process of formation inside the terminal bud of a palm as there are fully expanded green leaves visible in the crown of the palm. The smallest and youngest ones are very tiny and are deep inside the palms upper trunk. Only a few of these need to escape the damage caused by the freeze itself for the palm to be able to recover. Often these tiny forming leaves survive the cold only to

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A New Pest Threatens...

(Continued from page 1)

Southeast Asia and is probably present in countries neighbouring Thailand and China. It appears to be adapted to feed specifically on the genus *Cycas*. An outbreak of this pest was first observed on *Cycas* plants at Fairchild Tropical Garden (FTG) in 1995 (Evans 1996). On most *Cycas* it breeds prolifically, quickly covering the foliage, cones and seeds, giving them a white appearance (Figure 2). When this outbreak began, this scale insect was initially misidentified as *Pseudoaulacaspis cockerelli* Cooley, known commonly as the magnolia white scale or false oleander scale. *Pseudoaulacaspis cockerelli* was first recorded in South Florida in 1942 and is a serious pest, being known to infest about 200 different types of ornamental plants (Leibee & Savage 1994). Mild infestations of *P. cockerelli* on various species of cycads have been noticed at FTG since the early 1970's, so it was originally thought that this new scale was a severe outbreak of an old established pest.

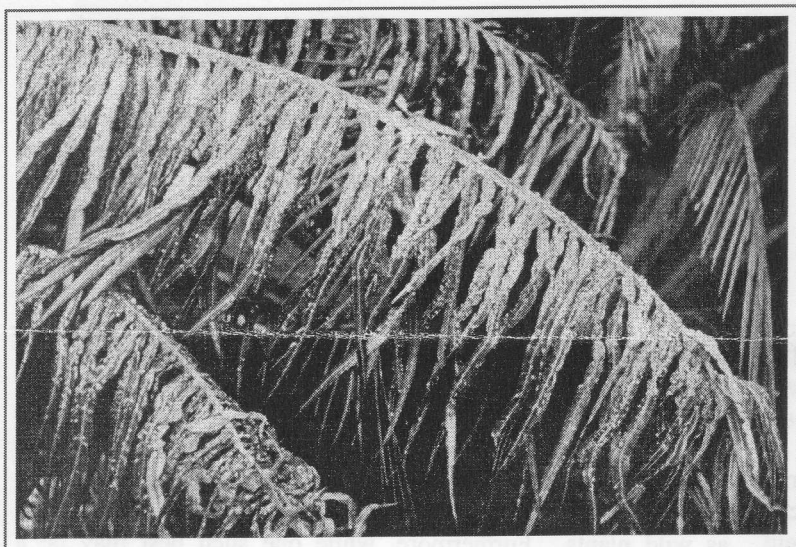

Figure 3: The new leaves of this *Cycas rumphii* are deformed **due to an infestation of** *Aulacaspis yasumatsui.*

In their natural habitats scale insects are preyed upon by various predators and parasites, which keep their numbers down. When introduced to areas where their predators are absent, scale insects may spread unchecked and literally engulf their host plants. Given such a situation, the only alternatives are chemical pesticides. At FTG attempts were made to control the infestation of *Aulacaspis yasumatsui* on *Cycas* by first cutting off the most heavily infested foliage and then applying dimethoate (trade name Cygon), a potent systemic insecticide. Application of dimethoate once a week for three weeks failed to eliminate the scale and they soon spread through the foliage. *Cycas revoluta* and *C. rumphii* appear particularly vulnerable to this scale. These cycads are widely planted as ornamentals in South Florida. In two years the infestation has spread several miles around FTG (Tasker 1996). *Cycas revoluta* and *C. rumphii* plants that become infested decline rapidly, with entire crowns of leaves yellowing or browning and dying as the scales suck the energy and nutrients from them. Subsequent flushes of leaves emerge stunted and twisted (Figure 4). These leaves soon die and the cycle is repeated. Large specimen plants may die in about a year's time. The less healthy the plant, the quicker it succumbs.

Within a species of *Cycas,* there appears to be some variability in susceptibility among different individuals. For instance, I have observed specimens of *C. media* heavily infested with this scale growing a few metres away from a specimen with only a mild infestation. My observations suggest that this scale insect spreads most rapidly on plants that are going through a flush of growth, where the insects can tap into the abundant flow of nutrients in leaves and cones. Some *Cycas* species are resistant. For instance, I have observed that *panzhihuaensis* plants are either free of this scale or suffer only mild infestations.

As the populations of this scale have increased on the *Cycas* collections at FTG and the nearby Montgomery Foundation, this insect has begun to heavily infest other cycad genera as well. It has been found on most cycad genera, except perhaps *Lepidozamia, Macrozamia, and Zamia.* Some of the more vulnerable species include *Encephalartos manikensis* (Figure 5), *E. gratus* (Figure 6), *Ceratozamia robusta* (Belize form), and some forms of *Dioon edule,* with cones being particularly vulnerable. Infestations on these other genera, while severe, do not reach the proportions found on *Cycas.*

This scale insect is so serious to *Cycas* that it threatens to eliminate *Cycas* as a viable ornamental landscape plant in South Florida. It appears that, unless insecticides are applied continuously, most *Cycas* plants in the landscape of South Florida will become disfigured, decline, and die. Every effort should be made to prevent the spread of this scale insect to other cycad growing areas, including other parts of Florida, California, and overseas. It is uncertain how this insect may behave in other climates or regions, however, it is strongly urged that *Cycas* plants not be transported from South Florida to other cycad growing areas. If plants of other cycad genera are shipped from this area, they should be carefully examined for any signs of this pest and treated with a heavy dose of insecticide as a precaution.

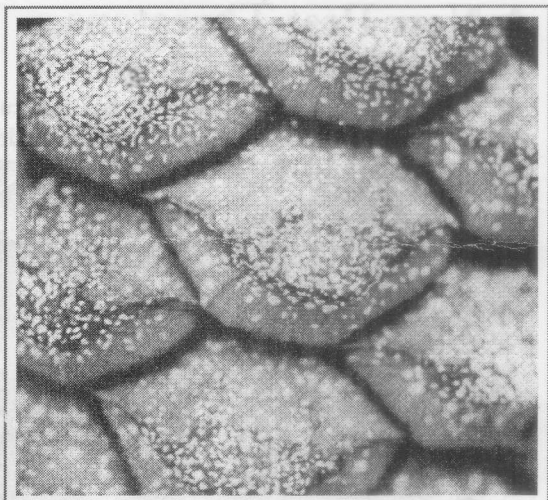

Figure 4: *Aulacaspis yasumatsui* **infestation on a male cone of** ***Encephalartos manikensis.***

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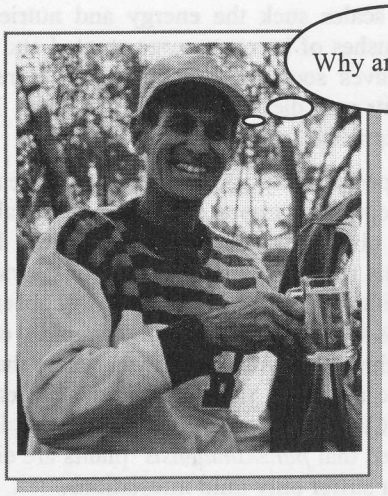
MEMBER PROFILE



Our Immediate Past President, Mike Dahme, is here because no one has volunteered to write this column! His smiling face will continue to show up here until someone does! By the way, Mike knows nothing about this, so save him any further anguish by agreeing to write this column and get someone else's photo up here instead! This column can be about any member of our group, a long-time or recent member, perhaps the person who first introduced you to the society. Not only will this column help us to get to know each other and remember faces (you'll remember Mike's, right?), we can also get a better idea of the kinds of collections others in our climate are raising. So have fun, meet other CFPACS members, take pictures and share your experiences through this column. Interested? Contact the *Palm Review* editor.

A New Pest Threatens...

(Continued from page 5)

To date no treatment has been found that can eradicate this scale from large *Cycas* specimens planted outdoors. A recommended spray programme that appears to check an infestation of this scale consists of three parts: 1) spray first with a systemic insecticide, 2) spray once a week thereafter for three weeks with an oil insecticide that will clog the breathing pores of the insect Superfine, a non-toxic paraffin insecticide is recommended, and 3) 4 weeks after the initiation of this spray programme, a contact insecticide, such as Diazinon, should be applied. Diazinon appears to be especially effective against the crawlers, the mobile immatures, of this scale. Such a spray program must be continued or the insects will re-establish themselves in the plants.

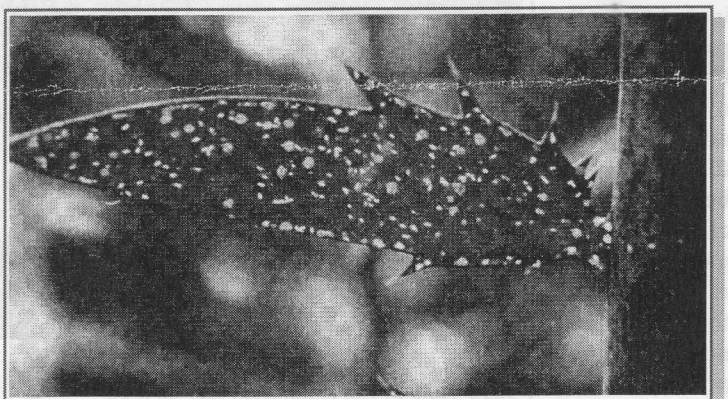


Figure 5: *Aulacaspis yasumatsui* **infestation of leaflets of** ***Encephalartos gratus.***

In Southeast Asia, most wild populations of *Cycas* do not appear to suffer severe outbreaks of *Aulacaspis yasumatsui*. A natural predator, perhaps a species of parasitic wasp, probably attacks this scale in the wild and keeps its population at low levels. It is hoped that this predator can be found and introduced into infested areas to bring this serious pest under control.

CONCLUSION

As more cycads are introduced from the wild into cultivation and as plants are transported from one part of the world to another, insect pests and diseases of cycads are also introduced into regions that originally were free of cycad pests. The introduction of these pests to new areas can have very serious consequences for the use of cycads as ornamentals and to naturally existing populations of cycads. A new insect or disease organism, suddenly released in an environment where its natural predators are missing can spread unchecked and decimate cultivated as well as wild plants. Furthermore, while one such pest may be a manageable problem for a plant, the presence of two or more introduced pests of cycads may be a debilitating or lethal combination. Recently, tissue samples of cycads that died at FTG were diagnosed with infestations of nematodes and ganoderma, a fungal disease that normally attacks palms. Perhaps a combination of introduced disease organisms were responsible for the death of these plants. One pest may weaken a plant and allow another normally nonlethal pest to finish the plant off.

In light of these observations, the need for a proper plant quarantine programme for cycads becomes all the more urgent. Whether plants are introduced to a new country or just into your private collection, all insects, diseased leaf parts, and soil should be excluded. Growing cycads from cleaned, disinfected seeds is the best option.

ACKNOWLEDGEMENTS

I thank B. Gaskell, C. Hubbuch, M. Perry, E. Shroyer, and T. Walters for sharing their observations with me.

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This articele was reprinted from Encephalartos, *the journal of the Cycad Society of South Africa. Thanks to Bob and Marita Bobick for keeping an eye out for articles in other journals that are of interest to our members and obtaining the proper permissions to reprint this one here.* ■

Seed Distribution Update

by Neil Yorio

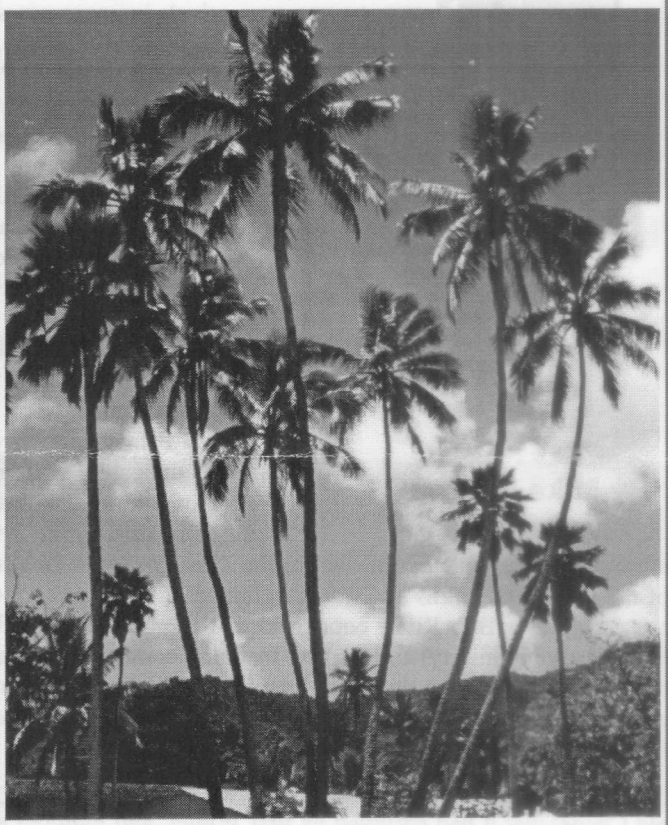
The seed distribution effort continues to be successful with recent seed dissemination including *Calyptrocalyx* sp. "drip tip", *Zamia fisherii*, *Corypha umbraculifera*, *Calamus acanthospathus*, *Calamus erectus*, *Trachycarpus* sp. "sikkimensis", *Attalea phalerata*, *Geonoma schottiana*, and *Bactris glaucescens*, among others. Interestingly, once mention of the *Trachycarpus* "sikkimensis" was made to the IPS Email subscribers, a reply via Email was made by Dr. John Dransfield on the validity of the name "sikkimensis". It turns out that the *Trachycarpus* from the Sikkim area will be formally described as a new species, *T. latisectus*, in an article by Martin Gibbons, Toby Spanner and Henry Noltie in the next Edinburgh Journal of Botany (Also, an article is forthcoming in Principes on the palm and its discovery). Needless to say, this news resulted in increased interest in this species; regrettably, all remaining seed had been sent out (much of it at cost) the day before. Many thanks to Tom Broome for seed donations and especially Mike Dahme for donations as well as his major role in coordinating the efforts of the distribution effort. The recent distributions will net in excess of $225 to the chapter's treasury once donations are collected.

On another note, a letter to the editor in the March edition of the Palm Review raised the issue of possible illegal or unsanitary practices regarding seed distributions. Seed obtained for distribution come from various sources, including commercial seed vendors as well as other palm enthusiasts. It is, and has been, the practice of those involved with the seed distribution effort that seed sent is clean and free of insects. The few participants in the program are aware of this, however, inadvertently it had not been explicitly stated in recent seed distribution updates. Seed distributors thus far hold USDA permits for plants and plant products, and are well aware of the issues regarding posting seed. In addition, information provided from officials of the Florida Dept. of Agriculture Division of Plant Industry and the USDA itself went to great depth to state that there are no restrictions on seed postings and CFPACS seed distribution volunteers have been in full compliance with their regulations. Simply put, there is no criminal or ethical wrong-doing by members of the CFPACS, nor has there been a single complaint from seed recipients to date, rather, praises and recognition for the efforts of our chapter.

Finally, if anyone has any knowledge of legal requirements that we are not in compliance with, or for those who wish to participate (through seed donations) in this extremely worthwhile fund-raising effort of the chapter, please contact myself or Mike Dahme. ■

The next issue theme is *Maintenance Techniques!* In addition to general comments on this subject, we're looking for comments and updates from all of you who have bravely chosen to enter the world of Ecosane! We know you're out there-let's have some updates!! Deadline for the "Maintenance Techniques" issue is July 1st.

Feature Foto



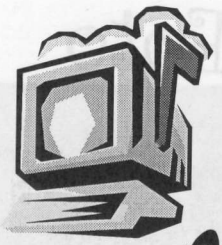
All seven of the Cocos nucifera trunks shown here sprouted from the same nut! Peter Mayotte, CFPACS member from Winter Park, submitted this photo of this amazing individual of Rarotonga, the largest of the lower Cook Islands in the southwest Pacific Ocean. Thanks Peter!

Keeping Palms Fern-Free...

(Continued from page 1)

trast, *Sabal Palmetto* is also a common "host" for Sword fern and more often for the native Golden Polypod fern (*Phlebodium aureum*) and Resurrection fern (*Polypodium polypodioides*). Since *S. Palmetto* often grows wild in moist areas, ferns in its crown do not seem to cause problems. Also, Sword fern often grows in the fibrous material covering the trunks of Needle palms (*Rhapidophyllum hystrix*). It also does not seem to bother them as it usually is found in the wild in moist locations.

The above observations are just that: my personal observations and experience over the last several years and not a scientific study. The *Phoenix* and *Butia* palms at Leu Gardens are now kept fern-free and are healthier than in the past. If anyone else has any experience with this or any knowledge on the subject please share your observations.



Internet Spotlight

By Mike Dahme

Early in March a contributor reported the survival, in some cases almost without damage, of large palms in the El Paso/ Ciudad Juarez area of SW Texas/Mexico after overnight lows on the nights of Dec. 18 - 20th of 6 and 11F. Species mentioned were *Washingtonia* (both), *Phoenix canariensis* and *P. dactylifera* and *Chamaerops humilis*. In a subsequent remark, the contributor mentioned two Queen Palms near an outdoor, unheated swimming pool of a hotel also escaping unscathed. The writer attributed these feats of survival to the already-proven hardiness of the individual palms and the dry climate of the region. Houston contributor Bob Riffle concurred that the "dryness" (lack of high relative humidity) and the fact that temperatures don't stay at reported lows for long durations enables survival, adding that no way would *Washingtonia* spp. have withstood 6 F in Dallas or Houston (or, he might have added, in Florida).

In mid-March an LA hobbyist reported planting-out a 16 year old Cocos, that it had survived its first Winter, and inquired as to minimum heat and light requirements. In response, a Florida resident cited the case of Bermuda, which, though at Latitude 32 degrees N, has mature Coconuts that either fail to set fruit or do so only lightly. Carlo Morici added that the species is an uncommon ornamental on Tenerife (Canary Islands), at Lat. 28 deg. N., and that only on the South side of the island are good quantities of fruit produced. He ascribed this to the warmer, dryer climate of the South shore, that the cooler nights (average 16 C in Winter, 20 C in Summer) of the other coasts preclude good fruit set. Mr. Morici added that Cocos had failed (died) on the "Costa Tropical" in Southern Spain, which he said is the warmest part of the European Mediterranean (Lat. 36 deg N) whereas species of *Ptychosperma* and *Roystonea* not only survive but set fruit there.

In late March a questioner asked whether it was possible to distinguish between one year old seedlings of the two *Washingtonia* spp., leading to the response of Dr. R. B. Hole, Jr., of the Biology Dept. of New Mexico State University, that in his opinion the genus is monotypic, that even mature specimens can't be distinguished, and that he is working on a revision. To a query (from our own Kyle Campbell) concerning leaf color, trunk diameter, and fiber presence as identifying characteristics Dr. Hole responded that he was unaware of any of these being usable in distinguishing specimens in wild populations of *Washingtonia*. He concluded by advising of genetic work being under way comparing *W. filifera* and *W. robusta,* the results of which he anticipates to show insufficient difference to maintain separation of the species. ■

Much Ado at Gizella Kopsick Palm & Cycad Garden

by Bruce Turley

Events of the last month has necessitated a need to report substantial news to you, so I shall try to give you the run down from St. Petersburg.

Hershell and Jackie Womble have been a bonafide resource to the garden with their previous donations, and now, 7 shiny new *Washingtonia filifera* grace the north periphery of the park, thanks to them. Also, Paul Craft has donated 3 great *Corypha utan* and 4 much needed Majesty Palms. Paul has been a great source for our other new additions, which I will expand on shortly. Dave Duren worked diligently to align our recent needs with Paul. Thanks to everyone for your contributions.

You may have noticed in the article title, things are a stir with our moniker. The City Beautiful Commission, under the intense direction of chairman Lester Wolff, is walking a proposal through city government to change the name to the above title. Firstly, we desire to reflect the inclusion of cycads in this collection with full intention to see many more in the future. Secondly, we want to be technically correct and eliminate the incorrect arboretum designation for a friendlier description, "garden".

At last, on Sunday, March 2, the first individual identifier signs were installed at the garden with a follow up batch to follow within weeks. It is really pleasing to see these signs heavily used since installation and we fully expect this to be a tremendous historical turning point. Jerry Shrewsbury formatted and prepared the print-ready information for these educational enhancers and Lester Wolff worked wonders to produce a viable stanchion and placard for our very public placement. Thanks to both of you for the long hard road traveled. Remember folks, this is all volunteer labor!

New signs and a name change all come in time to coincide with the 20th anniversary of the original GKPA on Friday, May 16th, 1997. A rededication ceremony is being planned for 3:30 P.M.. All are encouraged and invited to attend.

Last but not least, is the workday on Sunday, March 16th. Thanks to City of St. Petersburg staff and a host of volunteers, close to 50 specimens of palms and cycads were planted. I will spare detail, for advise to come experience the upgraded Gizella Kopsick Palm & Cycad Garden! CFPACS members present and smiling for this fete were, Phil Stager, Ed Barr, Jim Videto, Rick Nale, Jerry Shrewsbury, and Dave Duren, in addition Lester Wolff and Chris Davies. Thank you one and all, you make a difference! ■

The new CFPACS T-Shirts are now available! The price is $18.00 plus $3.00 postage. Please send your check (made payable to "CFPACS") to: Ed Hall, 1111 Glen Garry Circle, Maitland Florida, 32751

Fairchild's Wish

by Mike Dahme

Last Summer's mega-distribution of seed of the *Borassus* palm by Joe Michael (Wabasso) raises the question as to which of the two main variants, African or Asian, the parent plants represent. What is known is that two seeds were obtained in 1959 from the United States Department of Agriculture facility south of Miami known as Chapman Field, and that they were identified as being of the Asian species, i.e., *B flabellifer*. End of story, except that more than 30 years later, circa 1992, the second of the resulting trees matured and the annual crop of seeds commenced (ironically, coincident with the end of production at such South Florida locales as Fairchild Tropical Garden, the Montgomery Foundation, and Chapman Field due to Hurricane Andrew: see the cover photo of the October 1992 issue of Principes).

14 year old specimen of *B. flabellifer* at 1904 S. Abington Dr. Daniel Alf is pictured with this palm for scale

While the seed distributed in 1959 might have been correctly identified as the Asian species, there is considerable reason to suspect that the monster plants (diameter at base in excess of three feet) at the Michael's (and most others scattered in the South of the state grown from seed originating at Chapman Field) may in fact be of the African form, *B. aethiopium*. In an article which appeared in *Economic Botany* 42(3)1988 (1), Julia Morton documented the earliest receipts of seed of *Borassus* by the USDA in Washington and, when records were available, disposition. Between 1927 and mid 1930s, six receipts from the African continent (five of these from West Africa and the first two acquisitions by Fairchild himself) were recorded, at least four of which were (incorrectly) catalogued as *B. flabellifer*. Of these six accessions, records indicate that a number of these seeds germinated and were planted out at Chapman Field. In addition to the USDA records, Fairchild wrote extensively of the early introductions in a paper on the subject in 1945 (2). Meanwhile, there were also introductions during this era of the Asian form, from Ceylon, once in 1929 and again in 1931, but Morton found no records as to what became of these seeds.

Figure 2: Close-up of Alf palm showing coloration of leaf bases.

(Continued on page 10)

Ask The Expert...

(Continued from page 4)

be subsequently killed by bacteria, fungus or insect infestation. The point of the radical surgery is to remove all the damaged tissue thus preventing bacterial and fungal infections. It is difficult however to know exactly where to cut, so one must start rather high on the trunk and cut relatively thin sections until solid undamaged bud is reached with no damage in the center. I can say from my own sad experience that there is a great potential for killing your palm with this radical procedure.

A more conservative, and preferable in my opinion, method is to apply a copper based fungicide as a drench or heavy spray to the bud area of palms that are thought to be cold damaged. Copper is recommended because it is effective in preventing both fungus and bacteria, it should be remembered however, that in large and strong enough doses copper is toxic to all plants (especially bromeliads). A first application should be made fairly soon after the freeze. In the following weeks or even months the spear leaves of the palms should be checked regularly, by giving a firm, but not hard, pull upwards. At this point it should be mentioned that some palm species may lose their foliage in a freeze but have their terminal buds undamaged, while others (*Thrinax, Pseudophoenix, Livistona*) may have undamaged foliage only to have their spear leaves fall out weeks or even a month or more after a very severe freeze, so its a good idea to spray and check all of your palms after a severe freeze.

If, eventually, the spear leaf does pull out of one of your palms, at least it will be easier to apply copper fungicide and perhaps insecticide, but the problem of water collecting in the resulting cavity is created. A makeshift covering is sometimes made with tinfoil or plastic or a hole can be drilled through the side of the cavity to drain the accumulated rain or irrigation water. Various suction devices can also be used to keep the cavity relatively dry.

PALM PUZZLER

Do not assume that others are contributing and you don't have to!! We did not receive any submissions for the puzzeler this issue- please don't send me back into my yard for the next palm puzzeler!

Fairchild's Wish...

(Continued from page 9)

Other receipts during this period (which therefore would have had age sufficient to have had a role in seed distribution by 1959) were recorded from South American countries, namely British Guyana in 1932 and (Sao Paulo) Brazil in 1934. Four plants of the former introduction were recorded as having succumbed to lethal yellowing in the 1970's, while five of the latter had likewise been planted out at Chapman Field. However, even if the South American plants factored into the 1959 seed production it would, considering the extensive slave trade of the 19th century between Africa and the new world, seem likely that the preponderance of South American populations of *Borassus* derived from Africa.

Figure 3: *Borassus* planted from seed (obtained from Chapman Field) circa 1986, at Flamingo Garden.

Evidence more empirical than the foregoing towards a conclusion that the *Borassus* palms at Joe Michael's are not of the Asian form, however, can be seen: a picture (Figures 1+2) being worth 1000 words. In 1982 CFPACS member Frank Radosta arranged for several seeds, some of which germinated in transit, to be imported from India (from a "Professor") and, as it happens, one resulting plant grows, a mile from the palm collection at Florida Institute of Technology, as a street planting at Joe Alf's house in Melbourne. This *Borassus flabellifer* specimen has grown sufficiently to note a disparity in size: of bole, which will not exceed a foot and one-half in diameter at ground level (once leaf bases are shed), of petioles, and of fronds, which are well less than two feet across. Contrast this to the much larger specimen., planted as seed (obtained from USDA Chapman Field) circa 1986, at Flamingo Garden in Broward County (Figure 3), which is assuming the far more massive proportions of it's forebears. There appears also to be a difference in "waviness", or undulations, of the leaf segments, those on the Melbourne plant being considerably more pronounced, which accords with Dransfield's observations of the two species: "*B. aethiopium* appears to be altogether a much more massive plant than *B. flabellifer*, and the combination of apparently completely rigid leaflets, much greater in number forming a gently undulating leaf surface, and the often ventricose stem, give *B. aethiopium* a completely different appearance from *B. flabellifer* with less rigid , fewer leaflets held to form a deeply folded surface and the absence of stem ventricosity" (3).

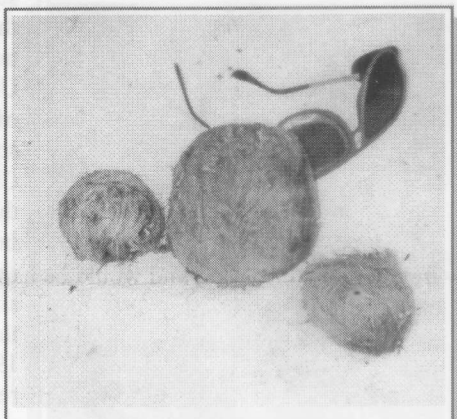


Figure 4: Seed of the "South Florida" type *Borassus* (center) flanked by seeds sent by Shri Dhar, India.

Another indication of the distinction of the species is that two growers who received seed of the CFPS distribution and seed from a commercial service labeled as *B. flabellifer* (and thus, presumably from India or Thailand) report that the seed of the Michael plant is considerably the larger of the two (4), and seed sent from West Bengal State in India clearly pales in comparison (Figure 4) with seed of the "South Florida" type. And, a photograph of Mr. Michael's pistillate plant supplied the Indian botanist S. K. Basu was returned with the notation " . . . not the Indian Bo."

Regardless of whether the foregoing suffices to persuade (all but a botanist) that the "common" (if such a term is appropriate for a palm so uncommon) form of *Borassus* in Florida is the African one, it may be fair to assume that David Fairchild's wish, expressed in the opening and concluding paragraphs of his 1945 paper, that the Borassus palm be planted widely in Florida, is now closer to reality than ever: a few more years as bountiful as the one just past (in which perhaps 1000 seeds were distributed) and the palm of "801 uses" may indeed become, a few decades hence, relatively commonplace.

REFERENCES:

1. Notes on Distribution, Propagation, and Products of *Borassus* Palms (Arecaceae), pp 420 - 441, Economic Botany 42(3).

2. The Introduction of Borassus Palms Into Florida, Occasional Paper No. 15 (1945), Fairchild Tropical Garden.

3. Flora of Tropical East Africa (Palmae) 1986 (P 21)

4. Jeff Marcus and Francisco Bermudez, pers. com.

■

Letters to The Editor

Dear Editor,

As an addendum to the mentions in the March '97 issue of the "Illawarra Palm", I would like to add that the recent monograph of the genus *Archontophoenix* (Dowe and Hodel, 1994) made no mention of this name as a variety of *A. cunninghamiana.*

Thanks to the PACSOA bookstore I have a copy of this monograph (17 pages) and would be happy to share with anyone interested for the cost of copying and mailing.

PS. What a pleasure it was to see the adjective "notorious" used correctly (for a change) in a palm publication.

Mike Dahme, Grant

Dear Editor,

I would like to comment on a "letter to the editor" written in the last issue of *Palm Review*. It deeply disturbed me that it was suggested that the Palm Journal only focus on palms and cycads of its own "temperate" zone. Taken to the extreme, it would suggest that our readers only be exposed to information on a handful of plants that were classified as USDA hardiness 9a. I certainly hope that this is not the wishes of the society at large. Since 75% of the CFPACS membership belong to the IPS, then it seems likely that at least this portion of our population is interested in learning about all types of palms and cycads. We are all well aware that the boundaries of the CFPACS are far-reaching, and include numerous climactic variations to be simply lumped as "temperate". Where would we be as a plant society if its founding members such as Dent Smith in Daytona Beach had not gone so far as to grow every type of palm he could to ultimately be "cold-tested" for his particular climate? His passion and enthusiasm for these beautiful plants ultimately led to the formation of International Palm Society, of which we are a chapter. If this type of enthusiasm for experimentation with palms and cycads described in "coffee table" books as adaptable to hardiness zones other than 9a exists in any member of CFPACS, then it should certainly not be stifled by the Palm Journal. There are numerous examples of gardens in our district that contain palm and cycad "climate anomalies". It should not be considered offering "false hope" to disseminate information about the more tropical species, especially if members in some regions can grow them successfully. Finally, I would like to add that our bulletin is a composite of articles of various topics and species written by members of the CFPACS and that fact alone makes them worthy of publishing in The Palm Journal.

Eric Curry, Indian Harbor Beach

U.S.F. Botanical Garden Sale

by Tom Broome

On April 12th and 13th we had a plant sale at the U.S.F. Botanical Garden. Frank and Jennie Tintera, Tom and Cindy Broome and Hersh Womble were our vendors this season.

Not only do we sell palms and cycads, but many of the other societies participate as well. The people at U.S.F. have made many improvements this year. There were five food vendors present, as well as live music playing most of the day. On Saturday a radio station played music for everyone to listen to.

Lots of people came out to see us, as well as many people that needed advice about growing their palms and cycads. We gave out several applications to the palm society, and I think most of those people will actually join our group. At the rate we are going right now, we may have 500 members in the next year or so. I don't have the final figures but we made around $300 for the society, as well as an equal donation to the U.S.F. Botanical Garden. We also donated enough seeds of *Zamia fischeri*, that the garden will be able to have a colony for possible seed production in the future.

I would like to thank Hersh Womble for helping with taking the money, as well as answering questions about palm and cycad culture. I would also like to thank Ted Langley for setting up, and bringing home the tent that we use to shelter the sales area. Even though the weather turned out to be very nice, there was a good possibility that we could have been rained out. Keep in mind that we will have an autumn sale at U.S.F. We will have details and dates in the *Palm Review* on this sale when it comes time.

Frank and Jennie Tintera (left) help customers with their selections.

Palmetto Weevil.....

(Continued from page 3)

left was a cavity about a foot deep in the shape of an inverted cone where there is normally a thick column of emerging fronds. A good portion of the bud was already gone.

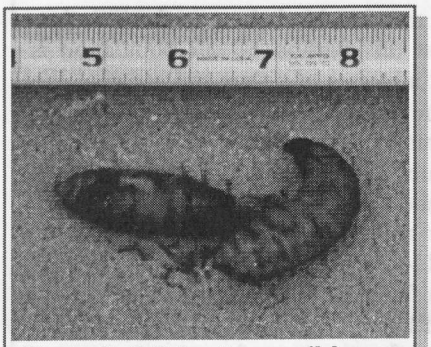


Figure 2: 2 Palmetto weevil larvae found at the base of the eaten bud. Scale is in inches.

As we usually do in this kind of emergency, we contacted Bernie Peterson. After a long discussion, we agreed that such damage must be the result an insect infestation. Bernie also added that although such an infection is often fatal, it doesn't have to be. As a general rule, the bud of a palm contains as many developing leaves buried deep within the bud as are present on the exterior of the tree, which in this case was about 50 (see also his answer to Mike Dahme's question in "Ask the Expert", page 4). Even after considerable damage to the bud, it is possible that some healthy fronds remain at its base. Therefore, even though the insects had killed the emerging spears and a great deal of this bud, it was possible that some of the pre-emergent leaves were left which had escaped damage and could be saved. To add hope to our cause, Bernie told us of a time when Dent Smith had treated a *P. canariensis* that had completely dead-headed from a palmetto weevil infection by drenching it in DDT. Although it took over a year, this palm eventually fully recovered.

With thoughts of resurrection in our minds, we mixed up 2 gallons of Lindane (according to the directions on the label for pine borers) and poured the mixture into the cavity, drenching it and the surrounding trunk.

After 2 weeks, we examined what was left of the bud again. The "mulch" had re-appeared and had again filled much of the cavity, though the amount was significantly less this time. Again, John began scooping out this shredded material but this time uncovered the culprits- 2 large palmetto weevil larvae (figure 2). They were dead and we were therefore hopeful that the treatment had been effective at killing any relatives of these invaders as well. As is indicated in the directions for Lindane, a second treatment is necessary 2 weeks after the first and we treated the cavity as before and waited.

Fearing that a fungus might take advantage of the now damp cavity that we created, we treated it a week after the second Lindane application with a copper fungicide. We mixed a gallon of the fungicide according to the concentrations recommended on the label and drenched the cavity and surrounding trunk with the mixture.

Through the next month we kept a close eye on the bud and although there were no signs that the palm was recovering, there were also no more signs of additional mulch production. Just to play it safe, we again drenched the bud area with Lindane. An agonizing wait was all that was left.

After about another month, signs of life began to emerge from the bud. Emergent leaves began to rise up from the bud in a dense cluster. All had the appearance of being chewed-off (figure 3). The chewed-off emergent fronds continued to push up out of the bud at an amazing rate. At the time of writing this article, the first emergent that is completely whole and healthy has appeared. We are now confident that the tree will fully recover. We have hopefully had our last confrontation with a palmetto weevil.

Some changes in palm health are obvious. Yellowing leaflets could be signaling a mineral deficiency, which could be treated at the owners convenience without ever being life-threatening to the palm. More subtle changes in health, such as changes in growth habit, may actually be signaling the more catastrophic problems. To exacerbate this, these subtle signals are the ones which may go unnoticed while the palm is under attack. A constant vigil must be kept for any change in growth habit to prevent such occurrences. Perhaps the best defense is a regular inspection of all buds. It is far better to take extra time now and recognize a problem at its earliest stages and treat it before any significant damage occurs. ■

Figure 3: The emerging "chewed off " fronds from the damaged bud of *P. canariensis*.

Palms at the Brevard Zoo!

by Bernie Peterson

Permission has been obtained for members of the Central Florida Palm and Cycad Society to provide some plants for the zoo. This is a good opportunity to put some of our little known as well as relatively common favorites in the public eye. Plant donations are welcome, plants **must be in good condition** and **must be cold hardy**. Seven to 15 gallon size plants would be most desirable. Planting help may also be needed. Plans are tentative for now and should be finalized and planting done sometime in June. Call Bernie Peterson at (407) 636-3661 for information.

Palm Insects and Their Control

by D. O. Wolfenbarger

Reprinted from Principes 2 (1958): 107-112. Although some of the treatments suggested here are no longer legal, they are included for historical interest.

Well-kept palm trees enhance the beauty of and lend interest to the Florida landscape and make real estate more valuable. Many insects inhabit palm trees, however. It requires vigilance to detect and control them before extensive damage occurs. A brief discussion is presented of some of the most important insect pests, with consideration of some factors affecting their abundance and management.

A few general comments are given concerning insect pest infestations. All parts of the trees are susceptible to attack by one to many species. Many insects present on palms are harmless to the plants and to man; some are beneficial. Most of the species which are damaging to the plants are held in check by their enemies. Occasionally conditions become favorable for the rapid multiplication of a species. Then many trees may be injured and some killed. Scale insects, *Aspidiotus destructor* Sign and *Chrysomphalus aonidium* (L.) on coconut leaves in 1956 and the royal palm bug, *Xylastodoris luteolus* (Barb.), in 1957 are examples of insects that recently reached and passed epidemic abundance. Epidemic populations of insects develop and occur periodically. Apparently there is great irregularity in the appearance of these epidemics which appear to be non-cyclic, dependent on conditions favoring reproduction of a species. Epidemic populations of harmful insects are not now predictable, nor can the degree of harmfulness be foretold.

Palms are comparatively slow in reacting to severe insect infestations. As a result great damage or even death may occur before there is any manifestation of injury by the plant. The scale insect infestation of the coconut palms in 1956 is an example. In this instance the scale populations infesting the fronds reached their peak before most people realized that the palms were heavily infested. Hordes of ladybeetles feeding on the scale insects were observed by many and occasionally were blamed for the premature yellowing and death of the fronds. The author observed the onset of this epidemic about May, 1956, its peak about August, and the decline through September and October. Time for chemical control measures would have been early June.

Many species of insects infest palms. A total of 59 coconut palm pests was listed by Capco (1950) in the Philippines. Two endemic and 30 non-endemic species were listed by Simmerman (1948) as inhabitants of the genus *Pritchardia* in the Hawaiian Islands. Bruner, *et al.* (1945) listed 23 insect species as those which attack the coconut palm in Cuba, while 13 insects were named as pests of the royal palm. No compilation of palm infesting insect pests, other than that of scale insects by Riddick (1955), has been made for Florida.

Scale Insects

Most palms in Florida are infested by the coconut scale, *Aspidiotus destructor* Sign.; Florida red scale, *Chrysomphalus aonidium* (Linn.), (Fig. 58e) ; *latania scale, Aspidiotus lataniae* Sign. Scale insects are probably more injurious to Florida palms year after year than any other group of insects. A total of 22 scale insect species is listed, Riddick (1935), as infesting the coconut palm and the same number the royal palm. A total of 20 scale insects is listed, Capco (1956), as pests of the coconut palm in the Philippines. A list of eight scale insect pests was given by Bruner *et al.* (1945) as those which attack the coconut palm in Cuba, while six scale insects were named as those which attack the royal palm.

Many coconut, Florida red, and latania scale insects infested the fronds of trees in Florida in 1956. This epidemic was concurrent with the application of malathion-bait sprays for eradication measures against the Mediterranean fruit fly, *Ceratitis capitata* (Wied.). As a result the sprays were frequently blamed for the scale infestations. Observations of palm trees on New Providence Island, Bahamas, however, where no malathion-bait spray was applied, showed that deterioration of the fronds from insect infestations was about equal to that in Florida. Conditions were favorable in 1956 for the scale increase and are believed to account for the epidemic.

Homeowners who wish to treat palms for scale insect control will get most effective results from spray applications. An oil emulsion spray containing 1 1/4 to 1 1/3% actual oil in water is effective. Parathion at 0.15 to 0.30 pounds active ingredient per 100 gallons of water is probably more effective than oil emulsion. Trees may be injured by applications of oil. Parathion is very toxic to man and other animals. It should be used with caution and extreme care and only on trees some distance from a residence or arterial highway. Malathion, which is safer than parathion, may be used for scale control but is less effective. A combination of one gallon of oil emulsion concentrate and four pounds of 25% wettable powder of malathion may be used.

Above recommendations are for treating a few trees. Chemical control applications for trees on streets or other public property are considered impractical at this time for the following reasons: (1) size of trees which makes coverage difficult because toxicant must contact each insect, (2) drift of spray mixtures to nearby objects and adjoining properties, (3) cost of treatment would be rather high for preservation of some green fronds, since trees are not killed by infestations.

Palm Leaf Skeletonizer

Palm fronds of several species are attacked by the palm leaf skeletonizer, *Homaledra sabalella* (Chamb.), according to Creighton (1937). It was a major pest in the decade 1930-1940, and is very common today but the populations are sparse. Larvae feed on the leaflets and usually go unnoticed until there is much injury. Most of the larvae are parasitized and perish without having been observed or of importance.

Conditions may become favorable again for increase of the skeletonizer and make application of chemical control measures desirable. Three pounds of lead arsenate per 100 gallons of water may be used, but a visible residue may remain. Nicotine sulfate (one pint of 40% nicotine sulphate per 100 gallons of water) was

(Continued on page 15)

Community Clipboard

May

24th: Our next CFPACS meeting at Ron Lambert's Buckhorn Nursery. Festivities beginning at 10:00 with a Board of Directors Meeting. All are welcome to attend. The general meeting gets underway at 11:00- see adjacent article.

October

5th: CFPACS trip to Leu Gardens in Orlando featuring a plant auction and speaker Larry Noblick from the Montgomery Foundation in Miami- more details to follow in upcoming issues.

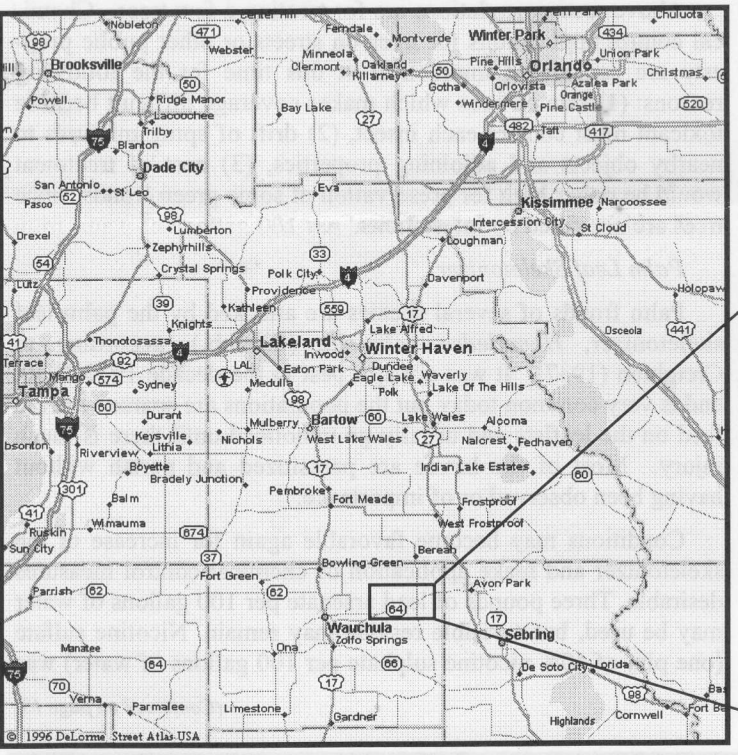
If you have events you would like to let other CFPACS members know about, please submit them to the Palm Review editor.

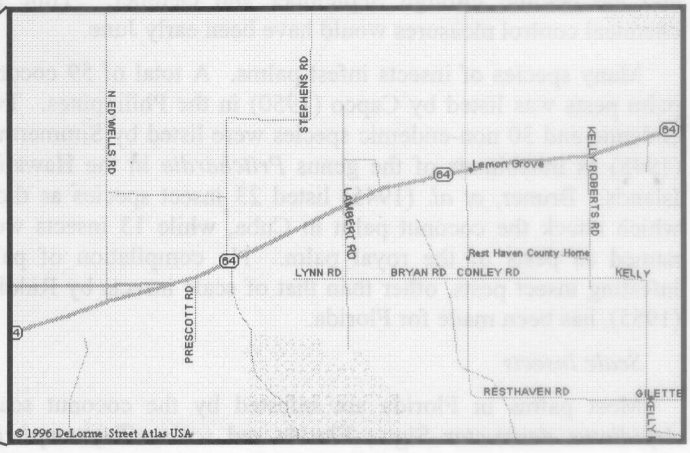
Our Next Meeting

Our next meeting will be on May 24th, at Ron Lambert's, Buckhorn Nursery. Ron is not a palm society member, so this is an extra special opportunity to see this nursery that is normally not open to the general public. We will be given the grand tour that even if you were in the business, you might not get to see all that we will see.

At 10:00 AM we will have a council meeting in the office at the nursery. Even though it is not necessary for the general membership to be present for this, you are invited to be there if you wish. Around eleven, the regular meeting will start. We will be given a hay ride style tour of this spread out nursery. This is definitely a meeting that you should dress property for. Cindy and I toured the nursery in April. We saw twenty five foot, clustering canary island date palms, many fifteen foot mule palms, a native stand of needle palms and a branched Butia among the many acres of palms. After we have seen all we want to see, we will have a picnic lunch. Ron has been kind enough to supply us with all the soft drinks we want but you are to bring your own food. You can eat amongst the trees or in the building where the council meeting will be held. There are bathrooms and a microwave if you need to heat something for lunch. After lunch we will have a plant raffle with around a half dozen palms and cycads up for grabs. When Dent Smith founded the palm society, he tried to have meetings that anyone could afford to go to. This is a place that has been in the family for many years. It reminds me of the old time cracker properties that was part of our Florida history. Dent would have been pleased to have a meeting like this. I hope you all will enjoy it.

From the east, take route 27 to route 64 in Avon Park. Approximately eleven miles west of route 27, you will see Lambert Road on the left hand side. It's a dirt road, almost a mile down the road you will get to the office of the nursery. From the west, take route 64 or from route 17, go east on 636. Seven miles east of Wauchula, just past the 636 X 64 intersection Lambert Road will be on the right hand side. See maps on this page for details and see you there!





Palm Insects...

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reported by Wolcott (1933) to control the insect in Puerto Rico. Emulsion formulation of some of the newer insecticides-chlordane, dieldrin, lindane and malathion may be used, applied according to suggestions on the container.

Ambrosia Beetles

Very small beetles about 1/10 inch long frequently burrow into trunks of coconut palms. (One species was tentatively determined by Howard V. Weems as *Xyleborus alfinis* Eich.). These burrows are usually constructed in logs of recently cut or killed trees and in trees of low vitality. (Fig. 58d, f). Trees having low vitality lack pressure of "sap flow" to repulse attacks. Ambrosia beetles are contaminated with fungi which grow in the burrows. Larvae which hatch from eggs deposited by the beetles grow and develop by feeding on mycelia of the fungus. The fungi also extend beyond the insect burrows into the tree trunk tissues and frequently cause the tree to perish. It is frequently impractical or impossible, however, to determine whether the beetle infestations, fungal invasions or the low tree vitality was the most important factor in the death of individual trees. Trees that appear vigorous are sometimes infested. Sometimes a nearby pile or dump of removed trees may be the source of an unusually dense population of beetles. Injured trees or those of low vitality which often cannot be detected are attacked by ambrosia beetles.

Control of the beetles generally is achieved by keeping trees in vigorous condition and destroying or removing infested logs or trees. Those who wish to spray for control of the beetles may use benzene hexachloride or lindane. Two pounds of 10% gammaisomer of benzene hexachloride or one pound of 25% gamma-isomer of lindane per five gallons of water for each tree trunk is suggested.

Coconut Flower Moth

A small grayish colored moth larva, *Batrachedra mathesoni* Busck, feeds on coconut bloom and destroys much fruit production (correspondence F. Sein, Jr.). The larvae feed among the flowers, spinning some webbing which produces unsightly masses. This insect, although present, has not been a problem in Florida. The moth may benefit man by preventing fruit production on trees in parks and on streets. Liability for injuries from falling fruits necessitates removal of fruits before they fall.

Royal Palm Bug

Infestations of the royal palm, *Roystonea*, had not been observed for many years. In 1957, however, the royal palm bug, *Xylastodoris luteolus* Barb., infested royal Palm trees throughout Florida. Leaves of larger trees were affected more noticeably than those on smaller trees. Fronds became yellow, then brown colored, and died earlier than is usual, making the trees unsightly. No tree is known to have been killed by the insect. Some interesting life studies on this bug are reported (Baranowski, 1958).

Control was achieved by sprays of chlordane and dieldrin. Emulsion and wettable powder formulations were equally effective at one pound technical chlordane or one-quarter pound technical dieldrin. Successful sprays were those applied by power sprayers. Airplane applications were not satisfactory in reducing bug populations.

Termites

Infestations of the smooth-headed, powder-post termite, *Cryptotermes cavilrons* Banks (determination by F. Gray Butcher), (Fig. 58b) occur in tree trunks. These infestations occur apparently in trees of low vitality where the tissues have become lifeless. Unsightly trunk scars occur from termite infestations and decomposition of the fibers. The best control is achieved by maintaining healthy trees. Applications of aldrin, chlordane, dieldrin or heptachlor to the initially infested areas might reduce the cavities in the trees.

Palmetto Weevil

The palmetto weevil, *Rhynchophorus cruentatus* occasionally kills trees of *Phoenix canariensis.* Early infestation indications are reclining and falling fronds . Such fronds are often loose enough to be pulled from the tree trunk. At the bases of these loose fronds very large white grubs may be found. The same or a closely related species is called "gru-gru" in Puerto Rico and is an item of food. These larvae hatch from eggs, develop in the tree, pupate and give rise to adults in the tree. The coconut palm, *Cocos nucifera,* is also infested with the beetle.

The beetle has been controlled by applying DDT and lindane to the center of the palm where new fronds are emerging. Lindane or benzene bexachloride is preferred to DDT, since scale insects do not increase following their application. Liberal amounts of the aqueous suspension, mixed according to the maximum recommendations listed, are suggested.

Greenhouse Thrips

Greenhouse thrips, *Heliothrips haemrnorrhoidalis* (Bouche), were found feeding on royal palm fronds. Other thrips species may be found. These insects remove or destroy the green color in leaves by rasping leaf tissue and sucking the plant juices. Infestations begin in the newly opened frond and soon the frond is yellow, then brown colored. Death of the leaf occurs earlier than usual. Thrips have not been numerous on Palms in Florida.

Dieldrin, four ounces technical per 100 gallons of water from wettable powder or emulsion formulations, has given excellent thrips control on mangos and avocados and is suggested for use on palms.

Mites

The tumid mite, *Septanychus tumidus* (Banks), has been taken from royal palm fronds. They have been observed in low populations without having been serious. *Brevipalpus* sp. also has been found on the coconut palm and have not been serious. Other species are probably present but have not been recognized. On mite-infested fronds the leaves appear dry and powdery in early stages of infestations. In later stages of mite injury, dead brown leaf tissues are evident. Sulfur is suggested if control is needed. If sulfur is ineffective, one of the newer miticides, such as Kelthane

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Notes From the Officers...

(Continued from page 3)

tually wearied of *Acrocomia*, weed-like in distribution). Look for an article about this trip by Ed in a future issue, including, I hope, an account of his ride on "The Train From Hell" (the guide book's appellation).

* Ask me about Mauritia!

Membership — John Stryjewski

The results are in! After 3 mailings asking members if they still want to receive the *Palm Review* (one by Ed Hall and two by me) we received 224 responses from 328 members. If you receive this issue, you are one of the ACTIVE members. If you are reading a friend's issue because you didn't receive yours --- fill out the application at the back of this issue and send it in! Also, in addition the the 224 old members, we have signed up 16 new members since the beginning of the year. Special thanks go to Jerry Hooper, Ed Hall and Tom Broome for signing up the most new members. Have you signed anyone up lately? If not, I will have blank applications and complementary copies of the Palm Review at the meeting on the 24th for you. See you at the meeting! P.S. -- Bring a new member! ■

Palm Insects...

(Continued from page 15)

or Chlorobenzilate, may be tried.

A number of destructive insects affecting palms are not known to be present in Florida. The coconut rhinoceros beetle, *Strategus quadriloveatus* (Palisot de Beauvois), is very destructive in Puerto Rico, according to Plank (1948), where larvae and adults feed principally in the trunk. It is significant to note that most infestations in Puerto Rico are observed about two years after hurricanes. Two other beetles, *Oryctes rhinocerus* Lind. and *Rhina oblita* Duval, harmful to coconut trees in other parts of the world, are not known to exist in Florida.

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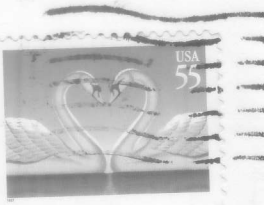

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