Palm Beach Palm & Cycad Society

Affiliate of the International Palm Society

Monthly Update October 2014

UPCOMING MEETINGS

October 1, 2014
7:30 p.m.
at Mounts Botanical Garden

Speaker: Elvis Cruz
Subject: Palms of the Seychelles

October Featured Auction Plants:

Marojejya darianii (last one)
Neoveitchia storckii

INSIDE THIS ISSUE

SEPTEMBER "THANK YOU"

Food:	Ingrid Dewey, Janice DiPaola, Dale Holton, Tom Ramiccio, Angela Valero
Plants:	Mike Harris, Dale Holton, Chip Jones, Richard Murry
Book Donation:	Susan Cioci, Paul Craft, Bob Grimm
Door:	Jeff Hutchinson

All photographs in this issue were provided by Charlie Beck unless otherwise specified.

FEATURED THIS MONTH: *Livistona australis*

by Charlie Beck

Livistona australis is a solitary, medium sized, costapalmate palm native to the east coast of Australia. It ranges from Central Queensland in the north to Victoria in the south (latitude range of 25-37degrees). It is the most widely distributed, and also the most southernmost growing *Livistona* species. Due to its wide distribution, *L. australis'* ecological status is of least concern. It grows on hills and in swampy areas, so it should be quite adaptable to climate and moisture requirements. In habitat it can grow to heights of 75 feet. *L. australis* produces hermaphroditic flowers but is considered functionally dioecious. See article below for definition of the term "functionally dioecious."

L. australis looks quite similar to *L. chinensis*, the common Chinese Fan Palm, but it is much larger. Stems and leaves are larger, and petioles quite a bit longer. The petioles are armed with medium sized spines. Fruit color is black. Leaf tips droop which enhance its tropical appearance. Once this palm matures and the stem releases the old leaf bases, it becomes mostly self cleaning. It only holds a few old dry fronds. The falling fronds are light and they do not damage under plantings. *L. australis* is reported to be wind and salt tolerant.

L. australis is quite rare in South Florida. Fairchild Tropical Botanic Garden has only one specimen included in their collection. We have two in our garden and Dale Holton has one over 20 years old in his garden. Dale's *L. australis* is planted in deep shade and it receives no supplemental irrigation. Its leaves are dark green and it looks very healthy although vertical growth has been slow. If afforded more sunlight I would expect growth to accelerate.

The first time that I saw this palm was in Australia while attending the 2000 Post Biennial trip sponsored by the International Palm Society. Once I saw it, I knew I had to add it to our garden. We planted our first specimen in 2001. It is planted on a berm which is high and never floods. We added a second specimen in 2002. This palm was planted in a low lying area which floods after repeated heavy rainfall. The 13 year old specimen quickly grew a 22' tall stem which measures 17" in diameter. The leaves measure 5' across, and the petioles are 7.5' long. The 12 year old palm in the wet area measures an overall height of 11' to the top of the fronds and the stem is approximately 3' tall. Both of our palms were planted in full sun at an early age. Even though our oldest specimen has been blooming for several years it has not produced any fruit due to it being functionally dioecious. Our younger palm has not yet bloomed.

Both of our *L. australis* suffered from boron deficiency at one time. The deficiency looked quite similar to frizzle top (manganese deficiency). One or two applications of borax quickly cleared up the problem. Boron deficiency might be the reason why so few of these palms are successfully grown in South Florida. As you can see by the two palms in our garden, growth rates can be quite variable. Both of these palms have been fertilized 3-4 times a year with the recommended rate of palm special fertilizer. I think the different growth rates are due to genetic variability and not due to the different planting situations. If you like the appearance of this palm, you can be the first in your neighborhood to plant it. This palm is cold hardy to zone 9a and can be successfully grown anywhere in Palm Beach County.

Functionally dioecious vs. hermaphroditic

by Dr. John Leslie Dowe

"Functionally dioecious: when all plants in a population appear to have morphologically similar bisexual flowers, but certain plants act as males and others as females. In the male plants, the anthers produce pollen but the female parts are not able to be fertilized either with pollen from the same plant or from other plants. In female plants, fertile pollen is also produced and the female parts are either fertilized by its own pollen or from pollen from other plants. The barriers that stop the female parts of the flowers in the male plants from working properly are not known in *Livistona*, but in other plants (non-palms) it is often a chemical or micro-morphology barrier that prevents fertilization. However, sometimes I have noticed that a few flowers on male plants produce fruit, so the separation between plants being exclusively female or exclusively male, i.e. dioecy, (such as in the Boarassoids and other dioecious palms) has not yet fully evolved in functionally dioecious species. Some theories suggest that this is a stage in the evolution toward strict dioecy. So in *Livistona* there is indeed a continuum from hermaphroditism (e.g. *L. rotundifolia, L. chinensis* etc.) through functional dioecy (most of the Australian species) and dioecy (e.g. *L. humilis* and *L. concinna*). It appears that female plants of all species are capable of self-fertilization, both from anecdotal evidence and some research I did as part of my PhD in the late 1990s. Most single male plants remain fruitless, or only produce the odd few fruit.

Note: This clarification of functionally dioecious vs. hermaphroditic was submitted to Palmpedia by Dr. John Leslie Dowe.

(http://www.palmpedia.net)

13 year old *Livistona australis* in the Beck garden

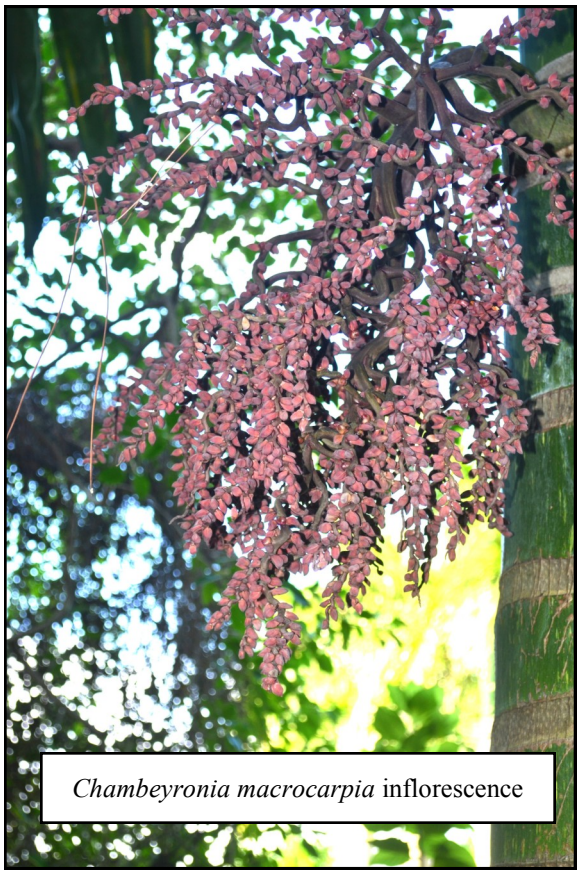
12 year old *Livistona australis* in the Beck garden

Dale Holton and Bella lending scale to *Livistona australis* in the Holton garden

13 year old *Livistona australis* in the Beck garden

Chambeyronia macrocarpia inflorescence

COLOR IN THE GARDEN



Chambeyronia macrocarpia inflorescence

Coconut Origin

by Charlie Beck

At our August Palm Beach Palm & Cycad Society meeting we had Dr. Larry Noblick, Palm Biologist from the Montgomery Botanical Center, speak on the latest findings and theories on the origin of the coconut palm, *Cocos nucifera*. In addition to the coconut origin, Dr. Noblick also shared his latest *Syagrus* species discoveries. For those of you who missed this meeting, I will attempt to sum up what was presented by Dr. Noblick concerning the theory of the true origin of the coconut palm.

Over the years taxonomists have disagreed on where the coconut palm originated. Earlier theories speculated that the coconut originated in the Americas. Later theories speculated that coconuts originated in Asia, Melanesia, or East Africa. Dr. Noblick noted that there are problems with both of these arguments for the origin of the coconut. For the American origin theory, he noted that no indigenous coconuts have been found in the Americas and the greatest diversity of coconuts is in southeast Asia. For the Asiatic origin theory, he noted that the coconut palm's closest relatives are found in the Americas.

Dr. Noblick reported that molecular data indicates that the Coconut is most closely related to *Attalea* and *Syagrus*, both native to the Americas. *Attaleinae* evolved during the Late Cretaceous period, 100 to 65 million years ago. During that time there was a wide channel of water dividing portions of what is now South America (see adjacent map). Coconuts could have originated along this waterway. This channel of water provided a route for coconut seeds to disperse to the ocean and later germinate on foreign shores.

What I deduced from Dr. Noblick's report is as follows. The map Dr. Noblick provided shows that this waterway was bordered by a mountainous area to the west. When the continents rearranged, this channel of water was closed and likely transformed into part of or adjacent to the Andes Mountain Range. This drastic change in habitat could have caused coconut palms to disappear from its place of origin. Coconut palms tend to be found along water courses. We know that coconut seeds are typically water dispersed. *Attalea* and *Syagrus* species might have adapted whereas coconuts could have disappeared.