

GROWING *Cocos nucifera* 'Fiji Dwarf' IN PALM BEACH COUNTY

Submitted by Charlie Beck

Many years ago, prior to my arrival to Florida in 1984 and prior to the outbreak of Lethal Yellowing (LY) disease, South Florida was widely planted with coconut palms. I've been told that the predominant canopy tree was the coconut. I'm sorry that I missed that time because it must have been beautiful. The predominant coconuts planted back then were of the tall variety. The Jamaican and Panama Tall varieties were common. They are impressive palms. Their canopies are much larger and more robust than the dwarf varieties which are most commonly planted in South



Cocos nucifera 'Maypan Hybrid',
notice long petioles and widely spaced leaflets

Florida these days. The tall varieties had stems with large boles (swollen bases) which improved their resistance to hurricanes. These tall coconuts also were much more salt and wind tolerant than the dwarf varieties. If you drive along the coast in Palm Beach and farther south you can see remnant survivors of these magnificent palms. Most of these tall variety coconuts were killed by LY disease. Either the surviving tall variety coconuts were naturally resistant to the disease or they have been continually injected with oxytetracycline to protect them from LY.

Lethal Yellowing devastated commercial production of coconuts in places like Jamaica. It was reported that six million coconut palms were killed by LY in the Caribbean. A research project was created to find coconut palms which were naturally resistant to this disease. David Romney was appointed in 1962, Director of the Coconut Industry Board in Jamaica. David led the search for resistant varieties. Three varieties were selected at that time which had improved resistance to LY. They were the Malayan Dwarf, the Maypan Hybrid and the Red Spicata Dwarf. Of the three only the Maypan Hybrid had the robust canopy and boled stem of the tall varieties. Red Spicata never caught on and the Malayan Dwarf was most widely planted.

Dave Romney eventually left Jamaica and moved to Homestead, FL to operate his palm nursery. Dave also published a book in 1997 named Growing Coconuts in South Florida. This is "the" book on coconuts. Everything anyone would want to know about growing coconuts is in this excellent publication. While in Jamaica, Dave researched many aspects concerning coconuts including breeding, fertilizers, rat control, herbicides, spacing, mulching and copra quality. Dave sold coconuts and other palms at his nursery and at sales at Fairchild Tropical Botanic Garden. He even came to our meetings at the Mounts Garden to present his findings on LY resistant coconut varieties.

When I arrived in South Florida, Malayan Dwarf coconuts were the rage. Maypan Hybrids which required hand cross pollination were less common at that time. To insure the varieties were true to form, you had to import certified seeds from Jamaica. This went on for a long while until the first wave of certified Malayan Dwarf Coconuts matured and produced coconuts. Once seeding occurred, importing certified seed from Jamaica ceased. Also, it was discovered that these coconut varieties had a LY resistance considerably less than 50 percent- not the 70-90% resistance expected.

Another variety, Fiji Dwarf, was also being evaluated for resistance to LY. I know they had a grove of them at the Subtropical Horticulture Research Station at Chapman Field located near Fairchild Tropical Botanic Garden. At the last presentation Dave Romney gave to our group at the Mounts Garden, he stated that the Fiji Dwarf was the most LY resistant coconut known at that time. Its resistance was 50 percent, better than the other supposedly resistant varieties.

Lucky for me I obtained a Fiji Dwarf coconut palm from Dave Romney which was hand pollinated from the stock of palms at Chapman Field. I planted out our first *Cocos nucifera* 'Fiji Dwarf', in 1999. It's planted in shell rock that we brought in, to create a solid base for home construction. Not only is this palm planted in highly alkaline soil but it is located in a bed surrounded by concrete so that the root zone extends below the driveway. Even though this is not an ideal planting location our palm has grown well. In 15 years, from a small seedling, it has grown 15' of stem. The leaves measure 10' long and the stem has formed the distinctive bole which is characteristic of this variety. It has been producing coconuts for many years. This is the source of the sprouted nuts and potted plants I bring to the meetings for auction or give away. Keep in mind that these plants are not hand pollinated but the closest coconut of a different variety is located at least 200' away. Our healthy bees (no imidacloprid used here) do a great job pollinating the female flowers so the possibility of hybridization is low although it does occur.

What sets this coconut variety apart from the other commonly grown varieties? Aside from the improved LY resistance and the reinforced, boled stem, the leaf structure is quite different. The leaflets tend to be more closely spaced than other coconut varieties. I feel this leaflet spacing makes it appear more lush. You almost cannot see openings between the leaflets. The petioles also appear shorter so that the leaflets extend closer to the stem. It has been reported that the overall width of the leaves is greater than that of the Malayan Dwarf variety. The first Fiji Dwarf I saw was planted at Flamingo Gardens. It was located close to the Flamingo exhibit. I sure did admire that palm's distinctive beauty (see photo on page 3).

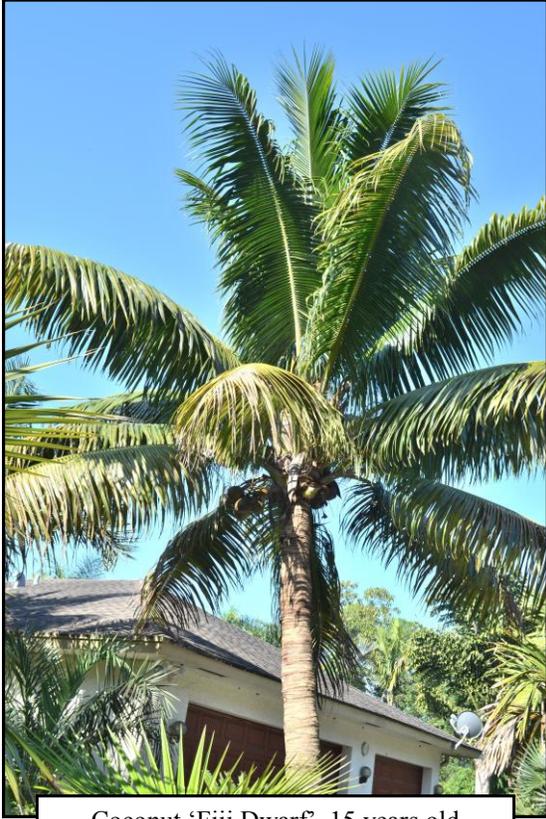
I have planted three offspring of our original specimen palm, two were true Fiji Dwarfs and one must be a hybrid with another variety. These three offspring were planted nine years ago in typical Palm Beach County sugar sand in a low lying area in the garden. These palms are much happier planted in sand as opposed to shell rock. In nine years, stem heights measure 5' and 8'. These palms are planted in an area which floods after repeated heavy rainfall. It doesn't seem to bother them. The hybrid is growing much faster, but it doesn't display the Fiji Dwarf characteristics.

Coconut palms are beautiful palms which grow well in Palm Beach County but they do have some drawbacks. The fronds are self cleaning but they are heavy. They are not as heavy as a *Roystonea regia* but falling leaves can damage underplantings or people standing below. The coconut seeds can also pose a danger when falling from 40' above. Coconut palms are usually cold hardy in our area but they can be set back by extremely cold winters. My observation is that the Fiji Dwarf is a little more sensitive to cold weather than the Malayan Dwarf. I have discovered that fertilizing every three months does produce coconut palms with higher frond counts. Since I added the fourth winter fertilization my coconuts hold more green fronds below the horizontal position.

Harvested coconuts can be used in many ways. Coconuts can be drilled and drained of refreshing coconut water. You can then split the nuts to harvest the sweet endosperm. Finally you can cut the husk into chunks and use it as orchid growing medium.

Coconut palms symbolize the tropics. What defines the tropics more than a tall coconut waterside? I know people in California are envious of how we can successfully grow coconuts in Palm Beach County. There is a famous stunted coconut palm growing in Newport Beach, CA. Californians seem proud of this single specimen. I'm not sure if it's still alive but the photos that I've seen were pretty sad.

Give the Fiji Dwarf variety a try. They are offered at our meetings as free sprouted seeds or reasonably priced potted auction plants. All proceeds benefit our Palm and Cycad Society when purchased at our auction.



Coconut 'Fiji Dwarf', 15 years old
in the Beck Garden



Coconut 'Fiji Dwarf', 9 years old
in the Beck Garden



Coconut 'Fiji Dwarf'
at Flamingo Gardens



Coconut 'Fiji Dwarf' bold stem
in the Beck Garden

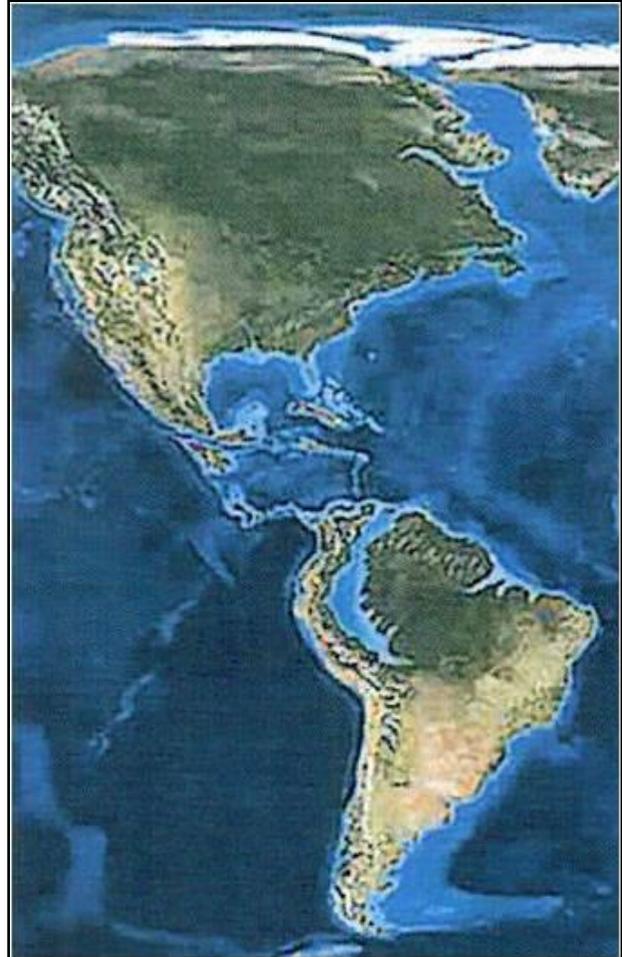
Coconut Origin

Submitted 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.