

# GROWING *Hydriastele costata* (formerly *Gulubia costata*) IN PALM BEACH COUNTY

*Submitted by Charlie Beck*

Many truly, tropical palms have distinctive appearance unlike ones typically seen in Palm Beach County. Palm enthusiasts must travel to tropical locales to see these magnificent palms in their full glory. These palms are nearly impossible to grow here in Palm Beach County. Truly tropical palms can't survive winters in Palm Beach County because they are too sensitive to the cold.

Some of these tender palms display wide leaflets and stilt roots, such as *Iriartea deltoidea* and *Socratea exorrhiza*. Other tropical palms have pendulous leaflets which almost hang straight down to the ground, such as some *Euterpe* sp. These palms seem so "laid back" that they couldn't be bothered holding out their pinnae. They let gravity do the work for them. There are some *Oncosperma* sp. with pendulous leaflets that can be successfully grown here in the right situation, but they are very large, clumping palms covered in sharp spines - not suited for the typical quarter acre homestead.

If you were interested in palms back in the 1980's and visited Fairchild Tropical Botanic Garden (FTBG), you might remember a very distinctive palm, *Hydriastele costata* (previously named *Gulubia costata*). A grouping of three specimens were prominently displayed in the Palmetum near the old entrance and adjacent to the old bookstore/library. You couldn't walk by these palms without noticing how lax their leaflets were. They looked very exotic, unlike any other palm in the garden. These were not old palms. They were not listed in the 1979 FTBG Catalog of Plants, so they were probably only a few years old when I took photos in 1989. These palms grew at an amazing rate. Every time I visited FTBG, they were noticeably larger. They obviously loved growing in Fairchild's limestone soil. I thought they were going to be the new "popular palm" in South Florida, but in 1989 the Christmas Freeze occurred. On two consecutive nights temperatures dipped to 27°F at FTBG. Freeze damage outright killed the *H. costata*. No recovery was evident months later.

Jason Lopez, horticulturist at FTBG, informed me that a single specimen of *H. costata* survived that Christmas Freeze in the protected environment of the Rare Plant House. The staff at FTBG transplanted that survivor out into the garden but it didn't survive the transplant. In subsequent years another specimen was planted out but it was snapped in half by Hurricane Wilma.

*Hydriastele costata* is a pinnate palm native to New Guinea, Bismark Archipelago, and northeastern (Cape York) Queensland Australia. Native habitat extends only to 11°S so it occurs close to the Equator. In New Guinea *H. costata* in one of the most common lowland palms. It can be found growing in swampy, seasonally flooded areas but also grows on well drained limestone hills. In Australia it grows in wet laterite soil which is rich in iron and aluminum. This palm appears to be tolerant of many different soil types.

In habitat, *H. costata* is a canopy palm which might grow 100' tall on 2' diameter stems. Fronds measure 12-15' long. It has a light green crownshaft. The specimens observed at FTBG were medium size, about the scale of *Veitchia arecina*. The most distinctive feature was its drooping pinnae. The lax pinnae have been described as looking like hanging curtains.

I must admit that the single *H. costata* planted in our garden approximately 20 years ago died of some unknown reason other than cold damage. I couldn't find a replacement at that time. Container grown plants are still not available today but internet sources do offer seeds for sale.

I know that *H. costata* is a fast grower on limestone soil but I bet it would grow equally fast on the marl soil found in western Palm Beach County. With a warming climate, *H. costata* is certainly worth a try. If winters are mild, you might even grow it to maturity and become a seed source. If tropical looking palms with lax pinnae appeal to you, this is definitely your palm.

Chris Migliaccio wrote an article on successfully growing *H. costata* to maturity in Miami. Chris is a well-known plant explorer and Professor of Ecology & Environmental Sciences at Miami-Dade Community College. Chris gave permission to reprint his article which was originally published in a 2002 issue of *Principes*, Journal of the International Palm Society. In 9 years, Chris' *H. costata* grew 26' tall and fruited, producing viable seeds. Unfortunately, Chris' *H. costata* died in the mid 2000's from crown rot.



Towards north Biak, Papua, Biak, Indonesia. Photo by  
Dr. William J. Baker,  
Royal Botanic Gardens, Kew/Palmweb.  
*Photo courtesy of palmpedia.net*

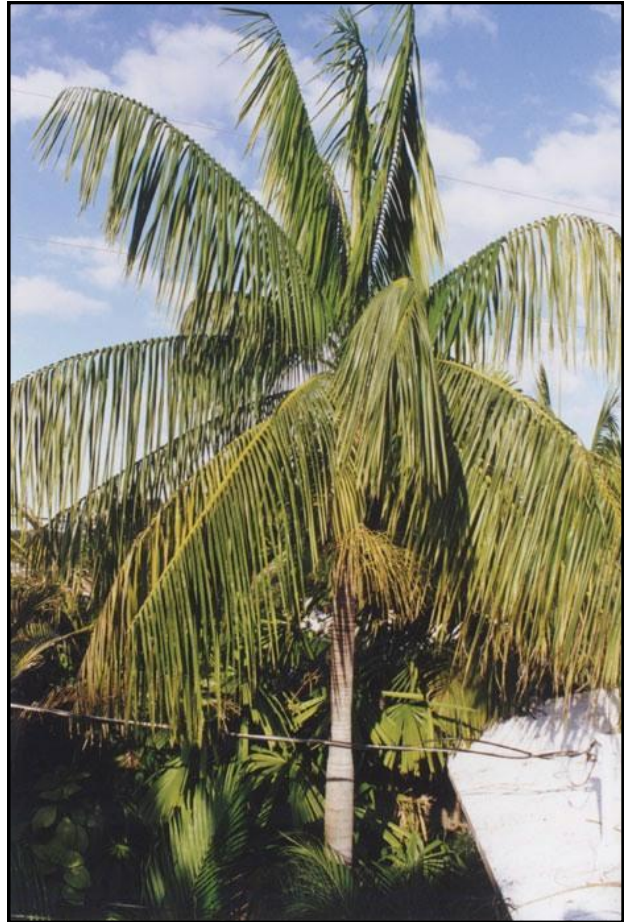


Fig. 1: *Hydriastele costata* in the Migliaccio Garden,  
Miami, Florida. (2002)  
*Photo by Chris Migliaccio*



*Hydriastele costata* at Fairchild Tropical Botanic Garden months prior to 1989 Christmas Freeze  
*Photos by C. Beck*



# GROWING

## *Hydriastele costata* (formerly *Gulubia costata*) – a Handsome Palm for the Warm Subtropics

*Submitted by Chris Migliaccio*  
*Reprinted with permission of Chris Migliaccio*

*Hydriastele costata* – a striking palm with distinctive pendant leaflets – is worthy of more widespread cultivation in the warm subtropics.

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

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

In the past nine years, *H. costata* has grown to an overall height of 8 m and holds a crown of about 16 leaves with broad pendant leaflets (Fig. 1). Winter winds annually take their toll by shredding the relatively thin leaflets and browning their tips when the temperatures drop into the 5 – 7°C range. In this regard, *H. costata* shows greater susceptibility to cold damage than my 9 m tall *Pigafetta filiaris* planted 10 m away. In January 1996, a combination of cold and dry winds over a three-day period damaged *H. costata* so much that I was not sure it would survive. The following growing season saw a complete recovery. Then, from late December, 2000 to early February, 2001, South Floridians experienced the fourth coldest winter on record with temperatures lingering for many days in the 12–15°C range before warming slightly. Interestingly, in the week immediately following two consecutive nights of temperatures barely above freezing, this palm dropped the four oldest fronds that had previously not shown any signs of senescence. Eight months later, during the June–October rainy season, the plant has recovered and is again pushing out new leaves and two inflorescences.

In November 1999, the *H. costata* flowered for the first time and set three infructescences with over 500 fruit each. Cream flowers were followed by pale yellow-orange ovoid fruits (Fig. 2) that ripened to a blue-grey background with prominent longitudinal charcoal grey striping (Fig. 3). Within two days of harvesting, the fruits turned black. As if this color change was not dramatic enough, the thin pulp was raspberry-red in color.

Fruits range from 6–10 mm in length and because the pulp, while thin, is difficult to remove by hand, I have simply soaked the fruit in water for two days and sowed them on the surface of a standard nursery mix (peat moss/perlite/silica sand). Two community pots of about 100 seeds each were held in the FTG Nursery



Fig. 2: *Hydriastele costata* infructescence  
Photo by Chris Migliaccio

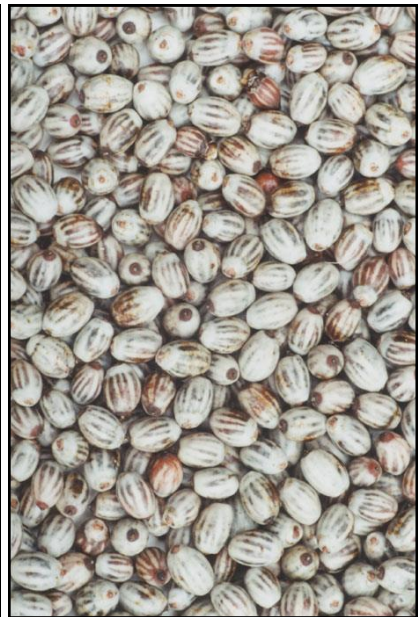


Fig. 3: *Hydriastele costata* seeds with distinctive striping  
Photo by Chris Migliaccio

at about 30°C from December 1999 until June 2000 when the first seedlings emerged. Within a month, approximately 75% of the seeds had germinated and by September 2000, all had a second leaf. Most of these seedlings were donated to FTG for future planting and distribution to members.

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

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

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