

Identifying *Coccothrinax*

Article and photos by Larry R. Noblick
Palm Biologist, Montgomery Botanical Center
(Reprinted with the permission of Larry R. Noblick)

Some of the most ornamentally attractive leaves in the palm family are palmate fan leaves and they are especially so in the genus *Coccothrinax*. The dark shiny green upper leaf surface contrasts with the silvery sheen of the lower surfaces on the palmate leaves of most *Coccothrinax* species. That may be at least one reason that species of this genus are highly prized by most palm collectors.

At Montgomery Botanical Center one can find 23 taxa of *Coccothrinax*, but we are still missing many taxa. Our collection includes 487 living plants in 168 accessions of *Coccothrinax*. Henderson (1995) writes that there are only 14 species. Riffle, Craft and Zona (2012) do not even attempt to enter into this nomenclatural conflict, they only say that there is about 50 species. Needless to say it is a genus that is badly in need of a revision.

I do not pretend to be an expert in this group of palms, having personally collected only 2 species in the field, *C. argentata* (Florida) and *C. barbadensis* (Trinidad and Tobago, Martinique, St. Lucia, and Montserrat). However that said, I still have an interest in confirming that all of our specimens are correctly identified at Montgomery, which after taking and comparing many pictures of our specimens in preparation for this paper, I can honestly say I am a little less confident of.

One of the few keys that I have seen of *Coccothrinax* was published in *Principes* by Nauman and Sanders (1991). They used only those species that they found in cultivation at Fairchild Tropical Botanic Gardens at the time they worked on the paper and they wrote that the key only works on adult specimens. Although this key is quite incomplete, it at least gives us a basic framework to begin building on. Not wanting to plagiarize, but feeling a need to further divulge this valuable information, I have reproduced their key here, but with modification; removing most of the scientific jargon and replacing it with plain English. Nauman and Sanders did a fine job of illustrating many of the characters in their paper and if interested and you are a member of the International Palm Society, you can freely download their paper from www.palms.org.

All of the species in this key are currently accepted by the online Monocot Checklist based at KEW. The KEW Palm Checklist contains around 106 taxa of which 65 are currently accepted. So although this key is very incomplete with only 26 taxa, it still offers us a good place to start and helps us to focus on the important characters that will aid us in identifying and separating the other species of *Coccothrinax*.

The first part of this key involves holding the leaflet up to the light to see if the leaf has cross veinlets (Fig. 1). A small hand lens can help here. I often use my binoculars in reverse to do the same.

LITERATURE CITED

- HENDERSON, A., G. GALEANO AND R. BERNAL. 1995. Field Guide to the palms of the Americas. Princeton. 1-352.
NAUMAN, C. E. AND R. W. SANDERS. 1991. An annotated key the cultivated species of *Coccothrinax*. *Principes* 35(1): 27-46.
RIFFLE, R. L., P. CRAFT AND S. ZONA. 2012. The encyclopedia of cultivated palms. Second Edition. Timber Press. 1-517.

Key to some Cultivated Species of *Coccothrinax*

(Continued on page 2)

(Continued from page 1)

1. Cross veinlets present (Fig. 1) [Argentea Group]

2. The undivided central part of the fan leaf less than 20 cm long; grooves on the seed 3-6. \pm straight. with endosperm lobes not closely compressed but separated by thin to rather wide spaces (at least on the upper 2/3)

3. Leaf segments mostly 30-50 cm long; inflorescence 30-50 cm long or less with 2-4 (5) primary branches, stamens 6-8 (9), ca. 1 mm long *C. argentea*

3. Leaf segments mostly 50-80 cm long; inflorescence (50) 60-100 cm long with (4) 5-8 primary branches; stamens 9-15, ca. 2 mm long *C. guantanamensis*

2. The undivided central parts of the fan leaf 20 cm or more long; seed grooves 6 or more, straight to curvy, very narrow, with endosperm lobes closely compressed or overlapping and not separated by any spaces (Fig. 2).

4. Seed grooves much branched, curvy or contorted giving the seed a brainlike appearance (Fig. 2); inflorescence with (4) 5-10 primary branches; fruiting stalks usually more than 3 mm long *C. barbadensis*

4. Seed grooves little branched, \pm straight, not giving the seed a brainlike appearance; inflorescence with 3-4 (6) primary branches; fruiting stalks usually 0.5-3 mm long

5. Stem 5-15 cm thick, like a column, primary inflorescence branches less than 25 cm long *C. alta*

5. Stem 20-30 cm or more thick, often narrow at the top and bottom but swollen in the center (Fig. 3); primary inflorescence branches 25-45 cm long *C. spissa*

1. Cross veinlets absent

6. Leaf-sheath layers always 2 with fine strands, the larger ones usually less than 0.5 mm thick (Figs. 4-7);. Leaf segments usually bending down or drooping, becoming flattened beyond the undivided central part of the fan leaf, usually lacking shoulder-shaped margins [Argentata Group].

7. Leaf sheath with free strand tips present, the most distant end of the leaf sheath a swath of hair more than 10 cm long (Fig. 4) [Crinita complex]

8. Seeds less than 12 mm or more in diameter; leaf segments 40-70 cm long; petioles 10-15 cm long; inflorescence less than 70 cm long; stamens 7-9 *C. borhidiana*

8. Seeds 12 mm or more in diameter; leaf segments 70 cm long or more; petioles more than 20 cm long; inflorescence 70 cm long or more; stamens 10 or more

9. Distant end of the leaf sheath equal to or longer than the tubular portion of the sheath (Fig. 4); lower surface of the leaf blade shiny with conspicuous rusty colored glands *C. crinita subsp. crinita*

9. Distant end of the leaf sheath shorter than the tubular portion of the sheath; lower surface of the leaf blade dull with short, dense wooly rust-colored hairs that eventually fall off leaving the surface smooth, exposing whitish colored glands *C. crinita subsp. brevicrinis*

7. Leaf sheath lacking free strand tips, the most distant end of the leaf sheath an entire or tardily fragmenting flap of woven strands 0-30 cm long.

10. Lower surface of the leaf blade dull, green or grey-green, lacking a covering of hairs or scales or, if present, partially falling off becoming thin to patchy on the lower surface of the mature leaves.

11. Leaf blade shallowly saddle-shaped, the lower surface with scattered pale mounded dots that are conspicuous under a 10 X lens and give the veins a noded appearance; leaf segments shallowly split into two equal parts 1-3 (5) cm long at the tip; distant end of the leaf sheath 0-3 cm long, usually appearing almost cut off straight across *C. fragrans*

11. Leaf blade like an inverted umbrella, the lower surface without minute pale mounded dots, veins appearing smooth not noded; leaf segments usually deeply split into two equal parts (3.5) 5-11 cm long at the tip; distant end of the leaf sheath often long tapering or narrowly triangular, (3) 10-30 cm long *C. inaguensis*

10. Lower surface of the leaf blade lustrous, silvery, metallic light green, golden or bronze, the covering of hairs or scales persistent and dense on the mature leaves.

12. Primary inflorescence branches 2-6 (rarely more); the longest fruiting stalks mostly 1-3 mm long.

13. Leaf segments mostly 30-50 (70) cm long; undivided center of the fan leaf 4-15 (20) cm long; distant end of the leaf sheath triangular

(Continued on page 3)

(Continued from page 2)

- (Fig. 6), lobed, or appearing almost cut off straight across; stem 3-15 cm in diameter; inflorescence axes dark yellow when the palm is in fruit *C. argentata*
- 13.** Leaf segments mostly 70-100 cm long; undivided center of the fan leaf 20-40 cm long; distant end of the leaf sheath usually irregularly cut off straight across; stem (12) 15-20 cm in diameter; inflorescence axes greenish in color when the palm is in fruit *C. litoralis*
- 12.** Primary inflorescence branches (4) 6-9 (mostly 7); the longest fruiting stalks (3) 4-7 mm long.
- 14.** Leaf segments 60-100 cm long; sheath strands wiry, often 0.5 – 1 mm thick; style plus stigma longer than the ovary (in young flowers) *C. proctorii*
- 14.** Leaf segments 40-70 cm long; sheath strands thread-like (Fig. 7), usually 0.5 mm thick or less; style plus stigma shorter to almost equaling the ovary.
- 15.** Upper center of the leaf (hastula) two-toothed at the tip; stem 3-6 (9) cm in diameter; number of leaf segments usually fewer than 40 *C. readii*
- 15.** Upper center of the leaf (hastula) not two-toothed at the tip; stem 6-20 cm in diameter; number of leaf segments usually 40 or more *C. jamaicensis*
- 6.** Leaf-sheath layers 2-3 with strands rather thick, the larger ones mostly 1-2 mm or more thick (if less than with 3 sheath layers) (Figs. 8-11); leaf segments usually rigidly folded lengthwise from the center to near the tips, usually with prominent shoulder-shaped margins (Fig. 12) [Miraguama Group].
- 16.** Leaf sheath with free strand tips lacking or only up to about 1 cm long; sheath strand layers 2 or 3.
- 17.** Number of leaf segments mostly 40-55; longest fruiting stalks mostly 3-6 mm long (rarely 2).
- 18.** Strands of the leaf sheath wiry, the larger ones 0.5-1 mm thick, in 3 layers; upper leaf center triangular egg-shaped, about 1.5-2.5 cm long *C. miraguama subsp. arenicola*
- 18.** Strands of the leaf sheath woody, the larger ones (1) 1.5-2.5 mm thick (Fig. 8), in 2-3 layers; upper center of the leaf low, rounded or with a central rounded triangular part, usually 1.5 cm long or less.
- 19.** Leaf segments mostly 40-50 cm long, with the tip that is beyond the shoulder like margin mostly 4-14 cm long; sheath strand layers 3; fruits maturing rose-purple *C. miraguama subsp. roseocarpa*
- 19.** Leaf segments mostly 60-70 cm long, with the tip that is beyond the shoulder like margin mostly (15) 20-30 cm long; sheath strand layers 2-3; fruits maturing through a rose-purple phase but quickly turning purple-black.
- 20.** Leaf-sheath layers 2; stamens 8-10, with filaments fused together only at the very base, fruit usually 7-9 mm in diameter *C. miraguama subsp. miraguama*
- 20.** Leaf-sheath layers 3 (Fig. 8); stamens usually 12, with filaments often fused together in the lower 1/3 forming a shallow cup; fruits usually 8-12 mm in diameter *C. miraguama subsp. havenensis*
- 17.** Number of leaf segments 20-38; longest fruiting stalks mostly 0-2 mm long.
- 21.** Leaf blade forming a semi-circle to $\frac{3}{4}$ of a circle; filaments fused together for about $\frac{1}{2}$ their length, forming a cupule around the ovary *C. cupularis*
- 21.** Leaf blade forming a complete circle or at times the outer leaf segments even overlapping forming a spiral-like blade (Fig. 13); filaments fused together only at their very base, not forming a cupule around the ovary.
- 22.** Number of leaf segments about 32-38; leaf-sheath strands in 2 layers; petal (corolla) lobes egg-shaped or rounded, each with 3 or more irregular apical teeth *C. scoparia*

(Continued on page 4)

(Continued from page 3)

22. Number of leaf segments about 20-30; leaf-sheath strands in 3 layers; petal lobes triangular, long tapering, or having cusps or points, \pm entire tip, with no teeth.
23. Leaf-sheath strands about 1-2 mm thick, woody; leaf segments 1-1.8 cm wide; stamens ± 6 *C. gracilis*
23. Leaf-sheath strands about 0.5-1 mm thick, wiry; leaf segments 2-4 cm wide; stamens ± 9 *C. yuraguana*
16. Leaf sheath with free strand tips well developed, more than 2 cm long, sheath-strand layers only 2.
24. Number of leaf segments 35-50; leaf-sheath with free strand tips 4-9 mm wide *C. salvatoris*
24. Number of leaf segments 20-32; leaf sheath with free strands tips 1-3 mm wide.
25. Ovary studded with short, rough points, fruit dry and corky; leaf blade forming a semicircular shape (Fig. 14) *C. ekmanii*
25. Ovary smooth, fruit fleshy; leaf blade forming a \pm complete circular shape (Fig. 15).
26. Leaf sheath with free strand tips 2-3 cm long (Fig. 11); leaf segments 30-60 cm long; primary inflorescence branches 4-7 *C. clarensis*
26. Leaf sheath with free strand tips 4-7 cm long; leaf segments 20-25 cm long; primary inflorescence branches 2-4 *C. garciana*

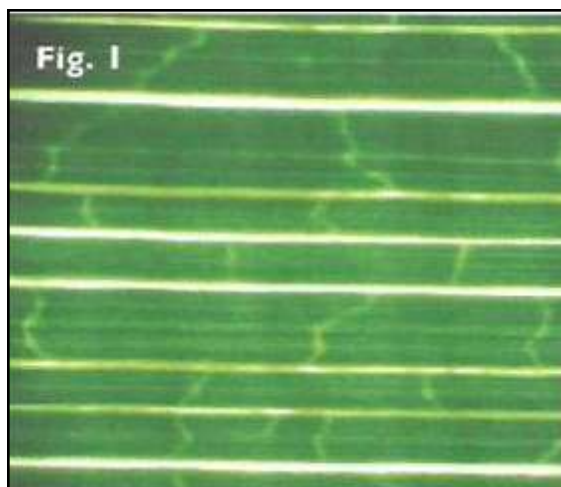


Fig.1. Leaf segment of *C. barbadensis* showing the cross veinlets typical of the Argentea Group.



Fig. 2. The "brain-like" seed of *C. barbadensis*

Fig. 3. The thickening middle of the stem of *C. spissa* is beginning to swell into a belly. Stems showing thin leaf sheath fibers of the Argentata group.



Fig. 4. *C. crinita*
Fig. 5. *C. inaguensis*
Fig. 6. *C. argentata*
Fig. 7. *C. jamaicensis* Stems showing the thick leaf sheath fibers of the Miraguama group.





Stems showing thin leaf sheath fibers of the Argentata group

Figure 4 - *C. crinita*

Figure 5 - *C. inaguensis*

Figure 6 - *C. argentata*

Figure 7 - *C. jamaicensis*

Stems showing the thick leaf sheath fibers of the Miraguama group

Figure 8 - *C. miraguama subsp. havenensis*

Figure 9 - *C. gracilis*

Figure 10 - *C. ekmanii*

Figure 11 - *C. clarensis*



Fig. 12



Fig. 13

Figure 12 - *C. miraguama* showing the "shoulders" on the margins of the leaf segments.

Figure 13 - *C. alta* showing how the outer leaflet segments overlap forming a spiraled leaf

Figure 14 - *C. ekmanii* showing the semicircular leaf blades.



Fig. 14



Fig. 15

Coccothrinax clarensis showing the nearly complete circular leaf blades