

# Copernicia fallaensis

## The Greatest Fan Palm of Them All

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In a perfect world, with the luxury and capability to construct the ultimate, quintessential fan palm as we so desired, we would not have strayed far, if at all, from our goal by choosing as our prototype the splendid, monumental, and incomparable Cuban endemic *Copernicia fallaensis*. Yes, fan palms like *Bismarckia nobilis*, *Corypha umbraculifera* or *C. utan*, *Johannesteijsmannia perakensis*, *Lodoicea maldivica*, *Mauritiua flexuosa*, and *Sabinaria magnifica*, among a few others, would be worthy contenders, but none has the combination of characters that sets *C. fallaensis* apart. The solitary, colossal habit; strong, straight, robust, white trunk, like a marble column comprising the colonnade of the Greek Parthenon; stunning, full, dense canopy of huge, flat, rigid, rounded, grayish leaves; and full-sun, dryish, open-forest habitat make for an especially imposing and majestic specimen, one that has few rivals among fan palms (**Fig. 1**).

This palm has a boldness or chutzpah that is often beyond expression; indeed, mere words are largely insufficient to describe its resplendent nature, and it has an aura of

gestalt, where the whole entity is more than and different from the sum of its parts. Many have seen it but, so overtaken with emotion, most are unable to describe its unparalleled grandeur, yet all immediately recognize, understand, and appreciate it. This palm greatly moved us during field work in Cuba in March and April of 2016 as part of a larger project to produce a monograph on Cuban palms; so here we attempt to share and extoll its essence and attributes.

### History

Frère Léon (Brother Léon or in Spanish *Hermano Léon*) (1871-1955), famous French-born Cuban botanist and De La Salle Brother, named and described *Copernicia fallaensis* in 1931 (León 1931), basing this fabulous species on material that Cervera had collected at Ranchuelo near Falla, hence the specific epithet, in Ciego de Ávila province. Léon had spelled the epithet “*fallense*,” which was incorrect because *Copernicia* is feminine in its gender and, according to the rules of botanical nomenclature, it is automatically correctable to “*fallaensis*.”



Figure 1. Sonia González and co-author Leonel Mera provide scale for this colossal and spectacular specimen of *Copernicia fallaensis* in the Jardín Botánico Nacional in Habana, Cuba. It was transplanted to this site from the wild (D. R. Hodel).



Figure 2. Co-author Duanny Suárez provides scale for this *Copernicia fallaensis*, a remnant of a once more extensive grove near the type locality in Ranchuelo, Falla, Ciego de Ávila, Cuba. This species typically has a large, straight trunk to 20 m tall topped with leaves nearly four m long and a canopy that can spread for more than eight m across (D. R. Hodel).



Figure 3. The canopy of *Copernicia fallaensis* typically holds 30 to 40, stiffly ascending to spreading to drooping, waxy grayish, stunning leaves. Jardín Botánico Nacional in Habana (D. R. Hodel).



Figure 4. Petiole margins of *Copernicia fallaensis* are coarsely but sharply toothed. Near the type locality in Ranchuelo, Falla, Ciego de Ávila, Cuba (D. R. Hodel).

### Description

This description is based on Dahlgren and Glassman (1963), León (1931), Verdecia (2016), and our observations in the field. *Copernicia fallaensis*, the giant of the genus, grows to 20 m tall, has a trunk 80 cm in diameter, leaves nearly four m long, and a canopy that can spread for more than eight m across (**Fig. 2**). The trunk is straight and uniform, sometimes slightly spindle-shaped or narrowed proximally, the latter perhaps induced by overharvesting of leaves and/or fire at a young age. Faint leaf scars mark the otherwise smooth, whitish surface.

The canopy typically holds 30 to 40, stiffly ascending to spreading to drooping, waxy grayish leaves (**Fig. 3**). Leaf bases, to about 45 cm long and 75 cm wide, hold the rigid, stout petioles. These are about 1.75 m long, 7 cm wide distally, and 35 cm wide proximally where the margins are coarsely but sharply toothed (**Fig. 4**).

The expansive, mostly flat, ovate-orbicular blades are to two m long and divided about one-third to the base into about 120, stiff segments, the longest of which approach two m in length and seven cm wide (**Figs. 5-6**). Adaxially the hastula is nine cm

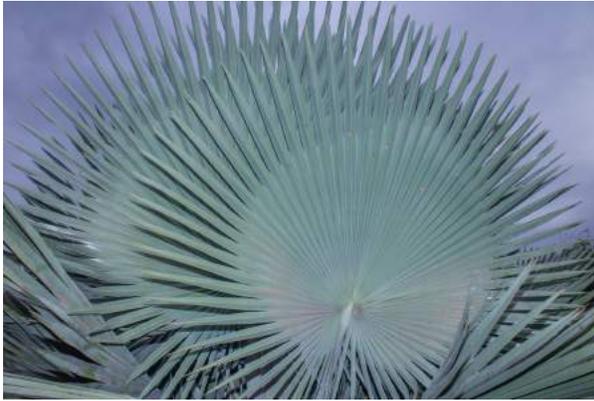


Figure 5. The expansive, mostly flat, ovate-orbicular blades of *Copernicia fallaensis* are to two m long. Near the type locality in Ranchuelo, Falla, Ciego de Ávila, Cuba (D. R. Hodel).

long (**Fig. 7**) and abaxially the rachis extends into the blade for 10 to 30 cm.

The inflorescences, which number about 12 and emerge erect but eventually droop on to subtending leaves, are from 3.5 to 4 m long and about equal or slightly exceed the leaves in length (**Figs. 8-9**). Branched up to six orders, they typically have 10 or more first-order branches, the most proximal ones originating from near the base (**Fig. 10**). Flower-bearing rachillae are to five cm long, four mm in diameter, densely hairy, stiff, and with close-set flowers (**Fig. 11**).

The whitish, likely insect-pollinated flowers are 4.5 mm long and solitary but so densely placed, up to 25 per one cm, that they might appear to be clustered. The ovate, proximally narrowed fruits are 23 mm long and 19 mm wide and mature yellow-green. Flowering occurs in May and June, at the onset of the first rainy period, and fruits develop over four months, maturing in late September and October at the onset of the second rainy period (León 1931, Verdecia



Figure 6. Leaf blades of *Copernicia fallaensis* are divided about one-third to the base into about 120, stiff segments. Near the type locality in Ranchuelo, Falla, Ciego de Ávila, Cuba (D. R. Hodel).



Figure 7. Adaxially the hastula of *Copernicia fallaensis* is nine cm long. Near the type locality in Ranchuelo, Falla, Ciego de Ávila, Cuba (D. R. Hodel).



Figure 8. Inflorescences of *Copernicia fallaensis* emerge erect but eventually droop on to subtending leaves. Near the type locality in Ranchuelo, Falla, Ciego de Ávila, Cuba (D. R. Hodel).



Figure 9. Inflorescences of *Copernicia fallaensis* are from 3.5 to 4 m long and about equal or slightly exceed the leaves in length. Near the type locality in Ranchuelo, Falla, Ciego de Ávila, Cuba (D. R. Hodel).

2016). Like other *Copernicia*, bats consume fruits and disperse the seeds of *C. fallaensis*, and germination is rapid, within one month (Verdecia 2016), probably to take advantage of the moist substrate before the onset of the fast-approaching and lengthy dry season.

#### Distribution and Ecology

Called “yarey” (the vernacular for all *Copernicia* in Cuba) or “yarey macho,” which seems more descriptive and appropriate, *C. fallaensis* historically occurred in mesic, seasonally dry, semideciduous forest, savannas, and woodlands on heavy but fertile

clay soils at low elevations (0-20 m) in the provinces of Camagüey, Ciego de Ávila, and Villa Clara in central Cuba. In addition to the type locality, classic localities for this species include between Florida in Camagüey and La Esperanza in Villa Clara provinces and between the towns of Ciego de Ávila in Ciego de Ávila and Santayana in Camagüey provinces. Previously, in 1954, the largest stand of *C. fallaensis* was at Finca El Peru between Florida and San Jerónimo in Camagüey province (Dahlgren and Glassman 1963, León 1931, Verdecia 2016).

However, because of a long history of overzealous leaf harvesting, primarily for roof thatching, and land clearing for agriculture, *Copernicia fallaensis* is currently restricted and highly fragmented. For example, only one adult remains at La Esperanza in Villa Clara. Now the best, largest, and healthiest population is near or at the type locality at Ranchuelo near Falla in Ciego de Ávila where 84 adult trees and 187 juveniles exist in a highly disturbed, secondary forest with a few scattered plants nearby in savanna and cleared pasture (Verdecia 2016) (Figs. 12-13).

Fortunately, co-authors Duanny and Milián



Figure 10. Inflorescences of *Copernicia fallaensis* typically have 10 or more first-order branches, the most proximal ones originating from near the base. Near the type locality in Ranchuelo, Falla, Ciego de Ávila, Cuba (D. R. Hodel).

recently discovered two new populations at Finca Juan Roig at San Nicolas and at El Yarey, both in the municipality of Baraguá in Ciego de Ávila. Milián also found another population of 94 individuals at Coralia in the municipality of Chambas in Ciego de Ávila.

### Local Uses and Threats

Because of their large size and durability, leaves of *Copernicia fallaensis* are much prized for thatch but they also find use to fashion mats, brushes, and baskets (Figs 14-15). Leaf harvesting was not a problem when the palm was abundant but now with a shrinking population this practice, if not carefully controlled and performed in a sustainable manner, can lead to overexploitation (Verdecia 2016), serious damage, and eventual death of the palm. Indeed, *C. fallaensis* should probably be considered endangered.

Fortunately, co-author Raúl Verdecia and the Las Tunas Botanic Garden have been



Figure 11. Flower-bearing rachillae of *Copernicia fallaensis* are to five cm long, four mm in diameter, stiff, and with close-set flowers. Near the type locality in Ranchuelo, Falla, Ciego de Ávila, Cuba (D. R. Hodel).



Figure 12. The best, largest, and healthiest population of *Copernicia fallaensis* is near or at the type locality at Ranchuelo near Falla in Ciego de Ávila (D. R. Hodel).

successfully working with the local community and officials to educate them about the uniqueness, importance, and conservation of *yarey macho*, harvesting leaves in a sustainable manner, and collecting seeds and propagating for eventual reintroduction and/or development of *ex situ* “mother block” collections for leaf harvesting and seed production (Verdecia 2016). The owner of the land parcel that has the best remaining significant population of *yarey macho* seems empathetic to protecting and conserving this majestic species, and has largely prohibited leaf harvesting on his property although it is not unusual to see an occasional palm with a much reduced canopy because of leaf harvesting (**Fig. 13**). At a

close-by site with just a few scattered but still glorious specimens, the land owners are adamant about following Raúl’s guidance about protecting the palms and have strictly prohibited leaf harvesting. In both cases, a financial incentive might help support conservation because the palms are, to a certain extent, sources of revenue for the owners.

### Similar Species

In its large, imposing habit, *Copernicia fallaensis* is most similar to the striking and nearly equally impressive *C. baileyana* and *C. gigas*. Indeed, these three species are sometimes called the “Big Three,” “Three Kings,” or “Magnificent Three” of



Figure 13. At this large population of *Copernicia fallaensis* 84 adult trees and 187 juveniles exist in a highly disturbed, secondary forest with a few scattered plants nearby in savanna and cleared pasture. Note that some individuals have had leaves harvested. Near or at the type locality in Ranchuelo, Falla, Ciego de Ávila, Cuba (D. R. Hodel).



Figure 14. Because of their large size and durability, leaves of *Copernicia fallaensis* are much prized and are harvested for a variety of products. Note the remnant petioles and leaf bases from which leaves were harvested. Near the type locality in Ranchuelo, Falla, Ciego de Ávila, Cuba (D. R. Hodel).

Cuban *Copernicia*. Henderson et al. (1995) actually considered *C. fallaensis* as a synonym of *C. baileyana*, which was originally and formally named and described one page later in the same article as *C. fallaensis* (León 1931) but is much more widely cultivated and better known.

*Copernicia baileyana* differs in its generally smaller habit; shorter green or grayish leaves (always gray in *C. fallaensis*); shorter petioles, the latter of which are toothed throughout along the margins; rounded rather than ovate-rounded leaf blades; typically shorter rachis (petiole extension into leaf blade); longer, more flexible rachillae; and clustered flowers (Beck 2016, Dahlgren and Glassman 1963, León 1931, 1936).

*Copernicia gigas* differs in its smaller leaves with longer petioles and only one bract subtending a rachilla rather than a series of tubular bracts (Dahlgren and Glassman 1963, León 1931, 1936).

### Conclusion

How do we end the story of this most monumental and superbly stunning palm? We have extolled its many virtues, provided documenting evidence in the form of a detailed description and illustrations, discussed its distribution, ecology, local uses, and threats, and compared it to its close relatives. Lest we forget, *Copernicia fallaensis* has those special intangibles, that exceptional *chutzpah* and *gestalt* that the others, no matter how impressive, just can't seem to match. But is this sufficient? Yes, we think so, and, indeed, in reviewing our case to proclaim *C. fallaensis* as "The Greatest Fan Palm of Them All," we now conclude that

perhaps it would be more appropriate to amend the title to "The Greatest Palm of Them All."



Figure 15. Even at the best population of *Copernicia fallaensis* some of the palms have evidence of leaf harvesting. Near or at the type locality in Ranchuelo, Falla, Ciego de Ávila, Cuba (D. R. Hodel).

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