

# CHARLES WRIGHT AND THE CUBAN PALMS

## 10. UPDATE OF *COLPOTHRINAX WRIGHTII*

# CHARLES WRIGHT Y LAS PALMAS CUBANAS

## 10. ACTUALIZACIÓN DE *COLPOTHRINAX WRIGHTII*

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### Abstract

A literature review and examination of herbarium specimens document the chronology of the discovery, taxonomy, nomenclature, and typification of *Colpothrinax wrightii* (Arecaceae), which is based on *Wright 3964*. Its distribution, uses, conservation, common names, and excluded names are also provided.

### Resumen

Una revisión de la literatura y un examen de especímenes de herbario documentan la cronología del descubrimiento, la taxonomía, la nomenclatura y la tipificación de *Colpothrinax wrightii* (Arecaceae), que se basa en *Wright 3964*. También se proporciona su distribución, usos, conservación, nombres comunes y nombres excluidos.

### Introduction

This paper is the tenth contribution in a series by the senior author about the role of Charles Wright in our knowledge of Cuban palms. A list of the contributions in the series “Charles Wright and the Cuban Palms” includes: Wright No.1 (Moya and Méndez 2018); Wright No.2 (Moya and Zona 2018); Wright No.3 (Moya 2020); Wright No.4 (Moya 2022a); Wright No.7 (Moya 2021a); Wright No.8 (Moya 2022b); and Wright No.9 (Moya et al. 2021). Wright No.5 and Wright No.6 were published as preprints.

Charles Wright (29 October 1811, Wethersfield, Connecticut to 11 August 1885, Wethersfield, Connecticut) was an American botanist who explored and collected plants in Cuba in the mid-19th century. Considered one of the most important naturalists of his era, he made a remarkable



1. *Colpothrinax wrightii* growing in pine forest at APRM Sierra de La Cañada, near Biological Microstation, Isla de la Juventud, Cuba. *Serie Moya 1846*. ©2018 C. E. Moya López.



2. *Colpothrinax wrightii* growing in swamp grasslands at Laguna Santa María, San Luis, Pinar del Río, Cuba. © Photo taken by León, in Marie-Victorin and León 1944.



3. *Colpothrinax wrightii* growing in anthropic savanna, near La Barbarita, Pinar Pinar del Río, Cuba. ©2016 D. R. Hodel.

contribution to the Cuban flora (León 1918). Over a span of eight years, he conducted three expeditions to Cuba, the first from November 30, 1856 to August 1857, the second from November 29, 1858 to August 1864, and the third from May 10, 1865 to July 1867 (Howard 1988).

The Arecaceae family, commonly known as palms, is composed of flowering, woody, perennial plants with varying life habits. About 180 genera and 2,600 species comprise the family (Dransfield et al. 2008), and it is one of the most conspicuous plant families of the tropics and subtropics but occurs only rarely in temperate regions (Cuenca and Asmussen-Lange 2007). Palms are important components and most species diverse in many tropical ecosystems (Henderson et al. 1995). They are easy to recognize, and throughout their range are one of the most useful groups of plants for forest dwellers, rural farmers, villagers, and tropical populations in general (Torre et al. 2009).

In Cuba, 15 genera and 98 infrageneric taxa are reported for the Arecaceae: 79 species; 10 infraspecific taxa; and 9 hybrids. Of the total, 85 infrageneric taxa are endemic (86.7 %), one of the highest rates among plant families in the country (Moya 2021b).

Wendland (1879) provided diagnoses within a key, thus fulfilling conditions for valid publication of the genus name *Colpothrinax* (Turland et al. 2018, Art. 38.2).

*Colpothrinax* includes three species with palmate leaves, two of which occur in Central America, and one in Cuba, *C. wrightii*, which it is endemic to the western part of the country (Evans 2001), growing in pine forests (**Fig. 1**), swamp grasslands (**Fig. 2**), and anthropic savannas (**Fig. 3**) on sandy quartz soils and clay-sandy deposits (Urquiola et al. 2010). It differs from other unarmed Cuban palms with palmate leaves by the ventricose trunk, which is very slender distally; the gynoecium composed of one to four carpels always free basally, leaf blades typically only with adaxial splits (Dransfield et al. 2008), and the color transitional stages of the fruits, from intense green, yellow, orange, to nearly black when ripe. Dransfield et al. (2008) considered *Colpothrinax* as unplaced members of Trachycarpeae tribe of the subfamily Coryphoideae.

*Colpothrinax wrightii* is a western Cuba endemic, growing only in Pinar del Rio province and Isla de la Juventud municipality (Urquiola 1998). It is protected in Pinar del Rio in the Managed Floristic Reserve (RFM) "San Ubaldo-Sabanalamar" while in Isla de la Juventud it is protected in the Ecological Reserve (RE) "Los Indios" and the Protected Area of Managed Resources (APRM) "Sierra de La Cañada" (Ruiz-Plasencia et al. 2019).

The main objective of this work is to document the chronology of the discovery, taxonomy, nomenclature, and typification of *Colpothrinax wrightii*, which is based on *Wright 3964*, and also discuss its distribution, uses, and conservation.

## Materials and Methods

We developed information about the distribution of *Colpothrinax wrightii* from herbarium specimens, locations cited in the literature (bibliographic references), and our field observations. We examined and obtained location data from 118 wild-collected specimens of the 14 primary collectors of *Colpothrinax wrightii* at the following herbaria: A, B, BH, BRU, CM, F, FI, G, GH, HAC, K, L, LY, M, MO, MT, NY, P, and US (acronyms follow Thiers 2016). Also, we examined nine cultivated specimens of four primary collectors at the following herbaria: BH, FI, FTG, GH, HAC, S, and US. All specimens cited were examined from high-resolution photographs except for those at HAC, which we examined in person. Specimens seen by the authors are marked with "!", those not seen with "[n.v.]," and those without marks were seen as digital images.

We have maintained field observation records for the past 26 years, from 1994 to 2019. Locations generally refer to the nearest place of habitation in instances where locations are unnamed. Moya's field observation number system is in this format: *Serie Moya XXXX*.

We followed the recommendations of the International Code of Nomenclature for algae, fungi and plants (The Shenzhen Code, Turland et al. 2018, referred to in the text by the word "Code"). Article 6.3 on Note 2 of the Code states that when the same name, based on the same type, has been published independently at different times, then only the earliest of these "isonyms" has nomenclatural status, the others are later isonyms, which are included in Excluded Names.

In assembling the list of Excluded Names, we listed them in chronological order: Sauvalle (1871, 1873), Schaedtler (1875), Rodríguez Ferrer (1876), Kerchove (1878), Salomon (1887), Gómez de la Maza (1887, 1889, and 1893), Siebert and Voss (1896), Beccari (1907, 1913 and 1931), Bailey (1916, 1930 and 1940), Beccari and Rock (1921), Burret (1929), Dahlgren (1936), León (1946), Hawkes (1949), Alain (1961), Moore (1963), Glassman (1972), Muñiz and Borhidi (1982), Henderson et al. (1995), Leiva (1999), Moya and Leiva (2000), Evans (2001), Govaerts and Dransfield (2005), Bisby et al. (2008), Bourgoin and Baillargeon (2010), Acevedo and Strong (2012), Greuter and Rankin (2016, 2017), Quattrocchi (2017), Craft (2017), Dowe (2019), Moya (2020), EOL (2022), GBIF (2022), Govaerts et al. (2022), IPNI (2022), Palmweb (2022), The Plant List (2022), and Tropicos (2022).

We list only the publication in which a common name was cited for the first time; we consulted Franco (1792), Sauvalle (1871), Gómez de la Maza (1889), and Dahlgren (1936) for names in Spanish, and Bailey (1916), Britton (1910), Kyburz (1994), Moore (1961), Puccio (2018), and Zona et al. (2000) for names in English. For uses we relied on Franco (1792), González-Oliva et al. (2014), Lanier (1836), León (1946), Marie-Victorin and León (1942, 1944), Pichardo (1836, 1849), Roig y Mesa (1928), Urquiola (1998), and Zona et al. (2000). For locations we consulted Beccari and Rock (1921), Chang and Vilamajó (2002), Díaz et al. (1981), González-Oliva et al. (2014), Hernández et al. (1995), Kotlaba and Pouzar (2013), Marie-Victorin and León (1942, 1944), Shafer (1912), Urquiola (1998), and Urquiola et al. (2010).

Uses are reported since the late 18<sup>th</sup> century. In cases where uses can damage or kill the plant, we recommend sustainable uses only, typically employing less than half of the plant parts.

For conservation status we consulted Berazaín et al. (2005), Borhidi and Muñiz (1983), Dransfield et al. (1988), González-Oliva et al. (2014), González-Torres et al. (2016), Johnson (1996), Leadlay and Wyse Jackson (1989), Moya (1998), Urquiola (1998), Urquiola et al. (2010), Walter and Gillett (1998), and Zona et al. (2007)

## Results and Discussion

### Taxonomy, Nomenclature, and Typification

***Colpothrinax*** Griseb. & H. Wendl., Bot. Zeit. 37: 148. 1879.

Lectotype: ***C. wrightii*** Voss.

***Colpothrinax wrightii*** Voss, Vilm. Blumengärtn. ed. 3, 1: 1147. 1895. '*wightii*'  $\equiv$  *Pritchardia wrightii* (Voss) Becc., Webbia 2: 203. 1907.

Type. CUBA. [Pinar del Río province], [Sept. 1865 or 1866], fl. *Wright 3964* (neotype, [first-step]: Glassman 1972: 96, GH; neotype [second-step]: designated Moya 2020: 7, GH 00028451; isoneotypes: A 00028453, A 00028454, A 00028455, B [destroyed], BH [photo-B, n.v.], BRU 00054034, BRU 00054035, F 0092035.1 F 0092035.2, F 0092035.3, F278818 [photo, n.v.], F278819 [photo, n.v.], F278820 [photo, n.v.], FI052574 [frag. ex B], GH 00028452, GH 00028456, HAC ex HABA!, K 000462844, K 000462845, K 000462846, K 000462847, MO ex GOET [photo, n.v.], NY 00071129, NY 00071130, NY 00071131, NY 00312170, NY 00312171, NY 00312172, P 00725575, P 00725576, P 00725577, US 00087423, US 00087424, US 00087425, US 00087426).

Sauvalle (1871) first used the name "*Colpothrinax wrightii*" Griseb. & Wendl., attributing it to Wright and relating it with Sauvalle's own number 2365, basing it on *Wright 3964*, but provided no description, diagnosis, or reference, making the name a *nomen nudum* and invalid according to article 38.1 of the Code (Moya 2020). Also, he provided the common name *palma barrigona de la Vuelta Abajo*.

Sauvalle (1873), when publishing "*Colpothrinax wrightii*" Griseb. & Wendl. ex C. Wright, re-used the *nomen nudum* published in Sauvalle (1871). Therefore, he created a later isonym without nomenclatural status, meaning only the earliest of these isonyms has nomenclatural status (Art. 6.3, Note 2).

A few years later, Schaedtler (1875) associated the name *Colpothrinax wrightii*, which Sauvalle (1871) had published as *nomen nudum* (Moya 2020), with characteristics of a non-specific palm, describing it as "Wright's palm. Is present as a seedling, with long and very narrow, slightly drooping leaf tips in a fine fan-shape, of seedling it already has a strong petioles." The characterization could refer to nearly any palmate-leaved palm; thus, the above cannot be considered a description or diagnosis, or does it provide any characteristic that relates it to the taxon in question. It is clear that Schaedtler's (1875) statement is unaccompanied by a description or diagnosis of the taxon because it lacks a statement of a feature or features of that taxon that clearly distinguishes it from other taxa. As there is no descriptive statement that meets the requirements of Art. 38.1 (a) of the Code, it is considered *nomen nudum*. Neither is it accompanied by an illustration that validates it (articles 38.7 and 38.8) nor does it meet the

requirements of Note 1 of article 38.1: “When defining the certainty of *nomen nudum*, the application of article 38.4 is not justified.”

According to TL-2 the authorship of Vilmorin's Blumengärnerei Beschreibung was an independent work by Andreas Voss with the collaboration of August Siebert, therefore the citation is only for Voss in “Vilm. Blumengärtn. ed. 3”, not Siebert and Voss.

Voss (1895) published the first valid combination of *Colpothrinax wrightii*, attributing it to Griseb. & H. Wendl., which could not be used as a basionym because, as explained earlier about Sauvalle (1871), it was without description or diagnosis and, thus, is a *nomen nudum* and precluded from such use.

### Excluded Names

We list Excluded Names, whether validly or invalidly published (*nomen nudum* [Art. 38.1 of the Code] or a later isonym [Art. 6, Note 2 of the Code]), only where it was first published.

“*Colpothrinax wrightii*” Griseb. & H. Wendl, sensu C. Wright, in Sauvalle (1871: 563), nom. nud.

“*Colpothrinax wrightii*” Griseb. & H. Wendl, sensu C. Wright, in Sauvalle (1873: 153), later isonym.

“*Colpothrinax wrightii*”, sensu Schaedtler (1875: 160), nom. nud.

“*Colpothrinax wrightii*” H. Wendl., sensu Kerchove (1878: 241), nom. nud.

“*Colpothrinax wrightii*” Griseb. & H. Wendl. ex Voss, sensu Siebert & Voss (1896: 1147), later isonym.

“*Colpothrinax wrightii*” Griseb. & H. Wendl., in Kerchove, sensu Beccari (1913: 398), later isonym.

“*Colpothrinax wrightii*” H. Wendl. ex Bailey, sensu Bailey (1916: 2810), later isonym.

“*Colpothrinax wrightii*” Griseb. & H. Wendl. ex Siebert & Voss, sensu Moore (1963: 139), later isonym.

“*Colpothrinax wrightii*” Griseb. & H. Wendl. ex Voss, in Kerchove, sensu Acevedo and Strong (2012: 75), later isonym.

*“Colpothrinax wrightii”* Griseb. & H. Wendl ex Sauvalle, sensu Dowe (2019: 103), later isonym.

*“Pritchardia wrightii”* (Griseb. & H. Wendl.) Becc., sensu Beccari (1907: 203), later isonym.

*“Pritchardia wrightii”* Becc., sensu Beccari (1913: 398), later isonym.

*“Pritchardia wrightii”* (Griseb. & H. Wendl. ex Siebert & Voss) Becc., sensu Moore (1963: 139), later isonym.

*“Pritchardia wrightii”* (Griseb. & H. Wendl. ex Voss) Becc., sensu Govaerts and Dransfield (2005: 185), later isonym.

*“Pritchardia wrightii”* (Schaedtler) Becc., sensu Quattrocchi (2017), later isonym.

### Distribution Derived from Specimens Examined and Other Information

**CUBA.** PROVINCE **Pinar del Río.** Municipality **Consolación del Sur:** Herradura, 30 Apr. 1903, *Shafer 424* (BH [n.v.], CM [2 sheets, n.v.], HAC! [2 sheets]), NY [5 sheets]); 21 Nov. 1904, *Hermann 301.6* (NY), Feb. 1909, *Hermann 5392* (B [destr.], FI [photo of ECA], HAC!); 6 Aug. 1910, *Earle s.n.* (NY); 27 Aug. 1910, *Britton et al. 6464* (NY [4 sheets]); 9 Aug. 1930, *León 14651* (GH [n.v.], HAC!); 4 Jul. 1933, *León 15934* (GH [n.v.], HAC! [2 sheets]); 16 Aug. 1955, *Acuña 15934* (HAC! [4 sheets]); Consolación del Sur [without defining locality], no date, *Bailey 12504* (BH [n.v.]); *Bailey 12504x* (BH [n.v.]); *Bailey 12516* (BH [n.v.]); *Roig s.n.* (BH [n.v.]); *Moore 6807* (BH [n.v.]). Municipality **Guane:** Laguna La Máquina, San Ubaldo, 4 Mar. 1943, *Marie Victorin 58394* (MT), 10 Nov. 2012, *Verdecia et al., RV12/27* (NY [3 sheets]). Municipality **Pinar del Río:** Pinar del Río to Coloma, savannas, 28 Feb. 1911, *Britton et al. 9675* (K [n.v.], NY [2 sheets]). Municipality **San Juan y Martínez:** El Pitirre, sandy savannah, *Roig and Fuentes s.n.*, 12 Dec. 1925 (HAC!). Municipality **San Luis:** San Luis, sandy savannah, *Labrada s.n.*, 17 Apr. 1925 (HAC!). Without defining locality and date, Sept. 1865 or 1866, *Wright 3964* (A [3 sheets], B [destr.], BH [n.v.], BRU [2 sheets], F [3 sheets], [3 sheets [n.v.]], FI, GH [3 sheets], HAC!, K [4 sheets], MO, NY [6 sheets], P [3 sheets], US [4 sheets]). Municipality **Isla de la Juventud:** bank of river [without defining locality], 23 Feb. 1904, *Curtiss 364* (B [destr.], BH [n.v.], CM [2 sheets, n.v.], FI [ex G], G [n.v.], HAC!, L, LY [3 sheets], M [n.v.], MO [2 sheets], NY [2 sheets], P [2 sheets], US [3 sheets, n.v.]); San Pedro and vicinity, pine forest, 19 Feb. 1916, *Britton and Wilson 14548* (BH [n.v.], NY, US [n.v.]); La Melvis, road to Colony km 24.5, 17 Nov. 2012, *Verdecia et al., RV12/43* (NY [2 sheets]).

**CULTIVATED.** Cuba. Cienfuegos Botanical Garden (Evans 2001): *Bailey 12366* (BH [n.v.], *Bailey 12367* (BH [n.v.]), *Jack 8269* (BH [n.v.], GH [n.v.], US [n.v.]), *Moore 6090* (BH [n.v.], S [n.v.]). Aspiro,



4. *Colpothrinax wrightii* at RFM San Ubaldo-Sabanalamar, Pinar del Río, Cuba. © N. Barboza 1999.



5. *Colpothrinax wrightii* near Las Barrigonas, with grazing cattle and yucca plantation (background), Pinar del Río, Cuba. *Serie Moya 1697e*. ©2016 Celio E. Moya López.



6. *Colpothrinax wrightii* growing in anthropic savanna at RE Los Indios, near Biological Microstation, road to Siguanea, NE Hotel Colony, with seedling, juveniles and adults together, Isla de la Juventud, Cuba. *Serie Moya 1862c*. ©2018 Celio E. Moya López.



7. *Colpothrinax wrightii* planted as an ornamental at Hotel Colony, Isla de la Juventud, Cuba. Serie Moya 1861ac. ©2018 Celio E. Moya López.



8. *Colpothrinax wrightii* growing in an agricultural field/pasture near La Barbarita, Pinar del Río, Cuba. ©2016 D. R. Hodel.



9. *Colpothrinax wrightii* growing in an agricultural field near Las Barrigonas, Pinar del Río, Cuba. ©2017 D. R. Hodel.



10. *Colpothrinax wrightii* growing in a cattle pasture just down turn-off from the Viñales-Las Ova road, Pinar del Río, Cuba. ©2018 D. R. Hodel.



**11.** *Colpothrinax wrightii* growing in anthropic savanna and disturbed forest remnants just off the autopista on the Viñales-Las Ovas road, Pinar del Río, Cuba. ©2016 D. R. Hodel.

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Jardín de Blaine: *León 18007* (HAC ex LS4488); Escuela Agronomía, La Habana: *León 15556* (HAC ex LS4489). USA. California, Santa Barbara [died], Chabaud s.n. (FI); Florida, Miami, FTBG (Hodel photo), Loxahatchee, Holton's nursery (Holton 2013, photo). For many years it grew in the Hilo Nursery Arboretum in Hilo, Hawaii, where annual precipitation averages 4,000 mm but it died in the middle 1990s (Hodel photo).

### Field Observations

**Celio E. Moya: CUBA. [1985-2000]. Pinar del Río province.** Guane municipality: RFM San Ubaldo-Sabanalamar (**Fig. 4**), 10 Apr. 1999, Barboza, Moya and Urquiola: pine forest of Sabanalamar, South Sábalo; and Laguna Sabanalama. **Consolación del Sur** municipality: around Herradura, Moya et al., Dec. 1996; between Herradura and Juan Pérez, Moya et al., Sept. 1999 and Aug. 2000. **Isla de la Juventud** municipality: Aug. 2000, Moya et al., RE Los Indios: road to Sigüanea, near Hotel Colony, and East of Punta Los Indios; East of APRM Sierra de La Cañada. Non-protected



12. *Colpothrinax wrightii* growing in disturbed forest remnants just off the autopista on the Viñales-Las Ovas road, Pinar del Río, Cuba. ©2016 D. R. Hodel.

area: S. of dam Del Medio-Las Nuevas; road junction to Demajagua; West of Los Almácigos before Road 41; San Andrés, road Santa Fe to Cayo Piedras; and Colony hotel as ornamental. [Post 2014]. **Pinar del Río** province. Moya et al., 27 Oct. 2016: **Consolación del Sur** municipality: Southwest Herradura, on autopista E-W, around Las Barrigonas (**Fig. 5**), Serie Moya 1697e. **Sandino** municipality: North Laguna Santa Bárbara. **Isla de la Juventud** municipality: North of APRM Sierra de La Cañada, Biological Microstation, pine forest, (**Fig. 1**), 2 Oct. 2018, Serie Moya 1846; South road to Sigüanea, anthropic savannas, 2 Oct. 2018, Serie Moya 1862b; RE Los Indios, east to Colony hotel, (**Fig. 6**), 2 Oct. 2018, anthropic savannas, Serie Moya 1862c; as ornamental in Colony hotel, (**Fig. 7**), 2 Oct. 2018, Serie Moya 1861a.

**Donald R. Hodel: CUBA. Pinar del Río** province. **Consolación del Sur** municipality: on autopista to Pinar del Río, road junction to La Barbarita, 4 April 2016 (**Fig. 8**), and around Turistic Center Las Barrigonas, 15 April 2017 (**Fig. 9**); just down turn-off from road Viñales-Las Ova, 1 March 2018 (**Fig. 10**), and on road Viñales-Las Ovas, ca. 1 km NE of autopista, 4 April 2016 (**Figs. 11–12**).

#### Locations Cited in Literature (bibliographic references)

CUBA. **Pinar del Río** Province. **Consolación del Sur** municipality: Herradura (Beccari 1913) (**Fig. 13**), Paso Real de San Diego (Shafer 1912), El Punto (Urquiola 1998), Paso Quemado a Herradura (González-Oliva et al. 2014). **Guane** municipality: near Lagunas Los Carneros (Díaz et al. 1981), in RFM San Ubaldo-Sabanalamar, Sabanalamar (Urquiola 1998). Santa Teresa (Urquiola 1998). **Mantua** municipality: middle course of Las Calenturas (Urquiola et al. 2010). **Minas de Matahambre** municipality: Baja (Urquiola et al. 2010). **Pinar del Río** municipality: Las Ovas, and road to La Coloma km 13 (Urquiola et al. 2010). **San Juan y Martínez** municipality: Galafre and Galope (Urquiola et al. 2010). **San Luis** municipality: Laguna Santa María (**Fig. 2**) (Marie-Victorin and León 1942 and 1944). **Sandino** municipality: Laguna Herradura, SW Laguna Jovero (Shafer 1912), in RFM San Ubaldo-Sabanalamar, San Ubaldo (Urquiola 1998). **Viñales** municipality: valle San Vicente (Marie-Victorin and León 1942), Ceja Ana de Luna (Urquiola et al. 2010). **Isla de la Juventud** municipality: base of hills of Sierra La Cañada (Marie-Victorin and León 1944). El Soldado y Buenavista (Hernández et al. 1995). In ER Los Indios (Urquiola 1998): in pine forests, Old ESBEC W dam Los Indios (Chang and Vilamajó 2002). Out ER Los Indios, in pine forests, 1 km W and 2 km SW dam Cristal (Chang and Vilamajó 2002), and anthropic savannas, El Soldado, W. of goldmine (Chang and Vilamajó 2002), Estero del Pino (Kotlaba and Pouzar 2013).

Localities excluded, due to doubts about their geographical location or because the species is not reported: Pinar del Río Province. Mantua municipality: Los Pretiles, and Sandino municipality: Lagunas Alcatraz, La Culebra and El Jovero (all of them by Urquiola 1998, omitted in Urquiola et



**13.** Possible first photo of *Colpothrinax wrightii*, taken by Baker at Herradura in 1909, Pinar del Río, Cuba. ©In Beccari 1913, f. 160.



**14.** *Colpothrinax wrightii* at SW Embalse Herradura, with the bird *carpintero jabado*, Pinar del Río, Cuba. ©2015 D. Suárez Oropesa.

al. 2010). Viñales municipality: Las Barrigonas (Urquiola et al. 2010, possible he was referring to San Luis).

### Locations from Personal Communications

CUBA. **Pinar del Río** province. **Consolación del Sur** municipality: West “Entronque Herradura,” Central road, Mike Harris (Sep. 1999); southwest Embalse Herradura, on old central road (**Fig. 14**) Duanny Suárez Oropesa (4 Nov. 2015).

**Geographical Distribution.** CUBA. Province Pinar del Río (Consolación del Sur<sup>H</sup>, Guane<sup>H</sup>, Mantua<sup>R</sup>, Minas de Matahambre<sup>R</sup>, Pinar del Río<sup>H</sup>, San Juan y Martínez<sup>H</sup>, San Luis<sup>R</sup>, Sandino<sup>H</sup>, and Viñales<sup>R</sup>; and Isla de la Juventud<sup>H</sup> municipality (Moya 2020).

**Biogeographical Distribution.** Subprovince Western Cuba, sector Pinaricum (Geronense<sup>H</sup>, Indiosense<sup>H</sup>, Pinarense<sup>H</sup> and Sabaloense<sup>H</sup>).

### Extreme Points of *Colpothrinax wrightii* (Fig. 15)



**15.** Map showing distribution of *Colpothrinax wrightii* in Cuba, including extreme points. ©C. E. Moya López and D. R. Hodel 2022. Drawn over map from *hicuba.com*



**16.** Leaves of *Colpothrinax wrightii* ready to use for roof thatch, Pinar del Río, Cuba. © from P. Craft (2018). Used with permission.



**17.** Leaves of *Colpothrinax wrightii* used as thatch for sides of tobacco drying sheds (*casa de tabaco*), Pinar del Río, Cuba. © from P. Craft (2018). Used with permission.



**18.** Farmer models hat made from leaves of *Colpothrinax wrightii* near La Barbarita, Pinar del Río, Cuba. ©2016 D. R. Hodel.

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Northernmost point: Cuba, Pinar del Río province, Viñales municipality: Ceja Ana de Luna, 22°39'59"N, 83°37'58"W (Urquiola et al. 2010).

Southernmost: Cuba, Isla de la Juventud municipality: San Pedro and vicinity, 21°37'30"N, 82°52'59"W (*Britton and Wilson 14548 [NY]*).

Easternmost point: Cuba, Isla de la Juventud municipality: San Andrés, N Calabaza, 21°40'52"N, 82°45'46"W (Moya et al. August 2000).

Westernmost point: Cuba, Pinar del Río province, Sandino municipality: Laguna Herradura, 22° 1'16"N, 84°10'48"W (Shafer 1912).

### Common names

Common names include *palma barrigona* (Franco 1792), *palma barrigona de la Vuelta Abajo* (Sauvalle 1871), *barrigona* (Gómez de la Maza 1889), and *barrigón* (Dahlgren 1936).

*Colpothrinax wrightii* is also known (English) as barrigona palm (Britton 1910), barrel palm (Bailey 1916), belly palm (Kyburz 1994), bottle palm (Bailey 1916), Cuban barrel palm (Puccio 2018), Cuban bottle palm (Kyburz 1994), Cuban pot-belly palm (Moore 1961), pot-bellied palm (Zona et al. (2000).

## Conservation and Uses

### Uses

NON-DESTRUCTIVE USES of the individual palm (not leading to death of the plant):

Flowers for honey (León 1946).

Ornamental in gardening and landscaping (when plants are seed-grown).

Leaf sheaths of juvenile plants for fibers to make brooms (González-Oliva et al. 2014).

Leaf sheaths of adult plants for fibers to make brooms (León 1946).

Fruits for pig food (Lanier 1836).

Seeds for human consumption (when immature and soft (León 1946).

Leaves (**Fig. 16**) for thatching (León 1946), tobacco drying sheds (“*casas de tabaco*”) (**Fig. 17**) (Craft 2018), and hats (**Fig. 18**).

NON-DESTRUCTIVE uses of the palm grove or ecosystem, such as agricultural activities like plantations of tobacco or minor crops and livestock do not directly kill the palms but alter or damage the ecosystem where the palms reside, making regeneration from seeds difficult if not impossible (Urquiola et al. 2010) (**Fig. 5**).

DESTRUCTIVE USES of the palm (leading to death of the plant):

Upper part of the trunk to fashion handmade mortar and pestle (“*mazo de pilón*”) (León 1946) and ashtrays (**Fig. 19**) (Craft 2018).

The swollen belly “*barriga*” of the trunk (**Fig. 20**) has several uses, including for fashioning into chairs or seats (**Fig. 19**) (Roig y Mesa 1928), canoes (**Fig. 21**) (Lanier 1836), bee hives or hive boxes (Pichardo 1836), feed troughs and planters (Zona et al. 2000), pots for flowers (León 1946), large mortar “*pilón*” (**Fig. 22**) for coffee and rice (León 1946), pipes or water containers (**Fig. 23**) (León 1946), “jars” for water (Pichardo 1836), vases (Pichardo 1836), small tables (**Fig. 19**) (Craft 2018), animal watering troughs (**Fig. 24**) (Marie-Victorin and León 1942); corner posts of house (**Fig. 25**) (Zona et al. 2000), and posts in construction (González-Oliva et al. 2014).



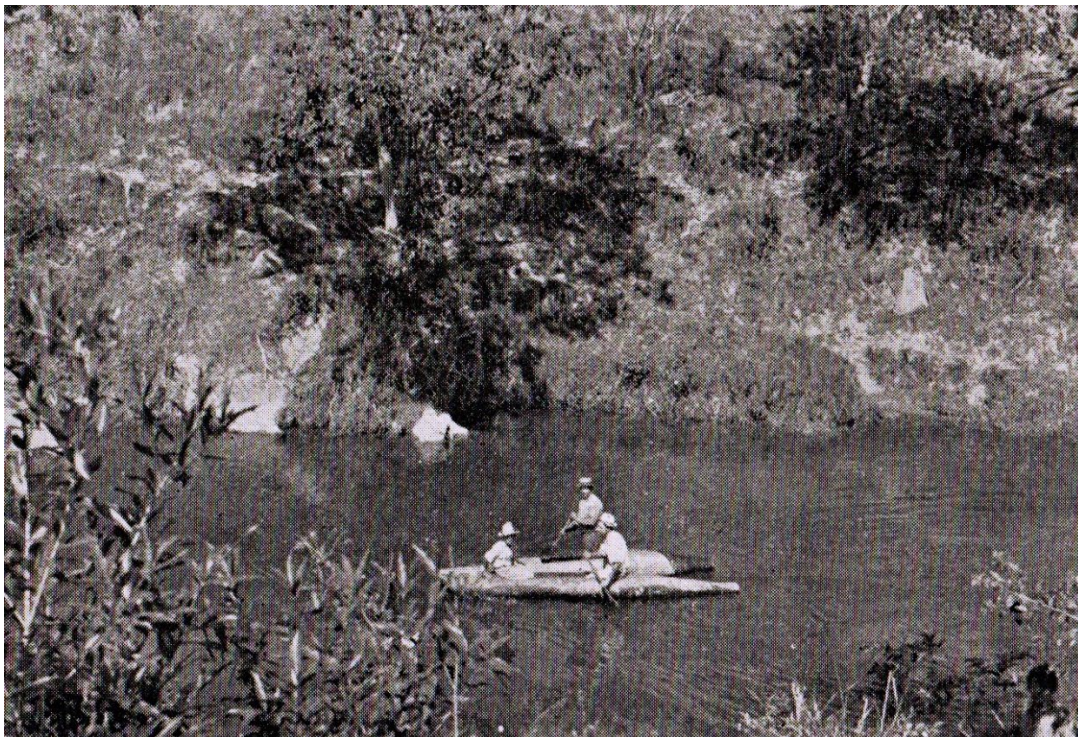
**19.** Trunks of *Colpothrinax wrightii* are used to make artistic chairs, ashtrays, and small table, Pinar del Río, Cuba. © from P. Craft (2018). Used with permission.

Currently, despite protective measures, on many occasions adult palms are harvested from natural stands and used as ornamentals (**Fig. 7**) or their trunks are used as decorative posts in rural homes or tourists sites and accommodations.

DESTRUCTIVE USES of the palm grove or ecosystem will kill palms when they are removed during land clearing for mining activities (Urquiola 1998) and other deforestation practices (González-Oliva et al. 2014).



**20.** Freshly cut trunks of *Colpothrinax wrightii* are ready to put to use, Pinar del Río, Cuba. © Photo taken by León, in Marie-Victorin and León 1942.



**21.** Canoes made from the trunks of *Colpothrinax wrightii* traverse the Cuyaguateje River, Pinar del Río, Cuba. © Photo taken by León, in León 1946.



**22.** A water container with a mortar on the top, both made from the trunk of *Colpothrinax wrightii*, Pinar del Río, Cuba. © Photo taken by León, in Marie-Victorin and León 1944.



**23.** Water container made from the trunk of *Colpothrinax wrightii* and carried by an oxen-driven cart, Pinar del Río, Cuba. © Photo taken by León, in Marie-Victorin and León 1942.



**24.** Animal watering trough made from the trunk of *Colpothrinax wrightii*, Pinar del Río, Cuba. © Photo taken by León, in Marie-Victorin and León 1942.



**25.** Decorative roof supports for a house made from the trunks of *Colpothrinax wrightii*, Pinar del Río, Cuba. © Photo taken by S. Zona, from Zona et al. 2000. Used with permission.

Conservation *in situ*: *Colpothrinax wrightii* occurs in protected sites, including Reserva Florística Manejada San Ubaldo-Sabanalamar, Pinar del Río and Reserva Ecológica Los Indios and Área Protegida de Recursos Manejados Sierra de La Cañada, the last two in Isla de la Juventud, which offer some protection from destructive and non-destructive activities.

Conservation *ex situ*: *Colpothrinax wrightii* is cultivated in several Cuban and international sites, including Cienfuegos and the National Botanical Garden in Cuba (**Fig. 26**); in Germany at Jena Botanical Garden; in the USA at Fairchild Tropical Garden (**Fig. 27**), Miami, and Holton's nursery, Loxahatchee (**Fig. 28**). For many years it grew in the Hilo Nursery Arboretum in Hilo, Hawaii, USA, where annual precipitation averages 4,000 mm, which is a testament to its tolerance of wet, humid conditions, but it died in the middle 1990s (**Fig. 29**).

### Chronology of the Conservation Status of *Colpothrinax wrightii*

Borhidi and Muñiz (1983) did not discuss the conservation status of *Colpothrinax wrightii* but Borhidi, on February 2, 1987, sent a letter to Vernon H. Heywood, Head of Plant Conservation IUCN, where he suggested that *C. wrightii* should be moved into the endangered category in the near future if the causal factors described under Uses continue. For these reasons, Dransfield et al. (1988) listed the species as Vulnerable, assigning for the first time an endangered category to the species.

Leadlay and Wyse Jackson (1989) and Johnson (1996) also listed *Colpothrinax wrightii* as Vulnerable (V).

Walter and Gillett (1998) also included *Colpothrinax wrightii* as Vulnerable on The 1997 IUCN Red List of Threatened Plants. They based their opinion on Borhidi's letters to Vernon H. Heywood and to Hugh Synge, which became the United Nations World Conservation Monitoring Centre.

Urquiola (1998) was the first in Cuba, using the IUCN (1994) criteria, to list *Colpothrinax wrightii* as Endangered (EN). He used the criteria *B2abc*, meaning (B) estimated of extent of occurrence < 5,000 km<sup>2</sup> and area of occupancy < 500 km<sup>2</sup>, of (2) continuing decline of (a) extent of occurrence, (b) area of occupancy, and (c) area, extent and/or quality of habitat. Also, he discussed current and potential threats to the species when he considered that the population was declining due to habitat loss or fragmentation and the geographic range becoming smaller. He also recounted the causes and impacts of the primary threats, including harvesting and trade in stems and leaves, construction of dams, presence of exotic (invasive) plants, agricultural development, and open pit mining.



**26.** *Colpothrinax wrightii* cultivated at the National Botanical Garden, La Habana, Cuba. ©2018 D. R. Hodel.



**27–28.** *Colpothrinax wrightii* cultivated in Florida, USA. **27 (L).** Fairchild Tropical Botanic Garden, Miami. ©2008 D. R. Hodel. **28 (R).** ©2022 Holton's Nursery, Loxahatchee.



**29.** The late Robert W. Read, botanist at the Smithsonian Institution, Washington, D. C., who specialized in palms, stands by a *Colpothrinax wrightii* at the Hilo Forestry Arboretum, Hilo, Hawaii in 1987. This palm died in the mid 1990s. ©1987 D. R. Hodel.

Berazaín et al. (2005), using version 3.1 of the IUCN (2001), listed *Colpothrinax wrightii* as Endangered (EN) based on the criteria B2 a+b(iii,iv) (B2a+c+d, update here), meaning (B2) estimated of area of occupancy < 500 km<sup>2</sup>, (a) severely fragmented, (b) continuing decline of (iii) area, extent and/or quality of habitat, and (iv) number of locations or subpopulations. Zona et al. (2007) agreed and accepted these findings.

Urquiola et al. (2010) listed *Colpothrinax wrightii* as endangered based on the criteria A2cd, meaning (A) the population with a tendency to decrease ≥ 50% in the future, (2) the population reduction observed in the past where the causes of reduction may not have ceased based on (c) a decline in area of occupancy, extent of occurrence and habitat quality, and (d) actual or potential levels of exploitation. González-Oliva et al. (2014) and González-Torres et al. (2016) agreed with this assessment.

### Curiosities and Notes about *Colpothrinax wrightii*.

The common name “*palma barrigona*” has been known since the late 18th century by Franco (1792). Sauvalle by Lanier (1836) also used this name.

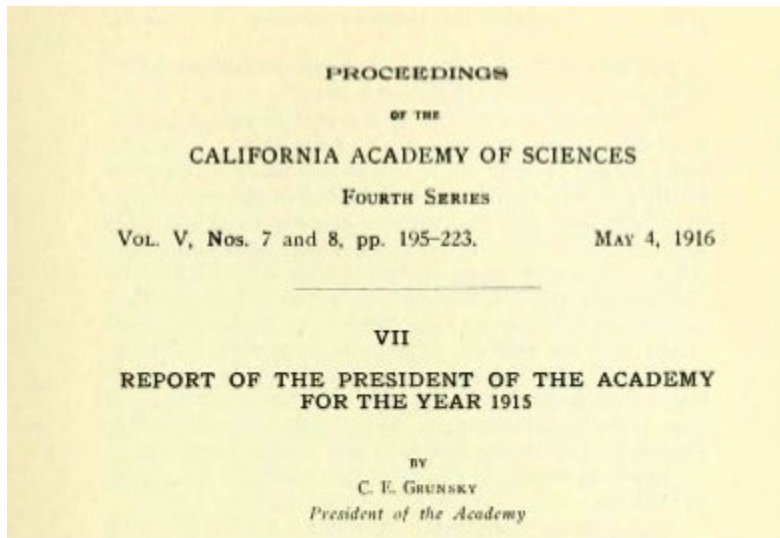
Beccari (1913) posted possibly first photo of *Colpothrinax wrightii*, which Dr. Charles F. Baker took in 190, in Herradura, Pinar del Río (**Fig. 13**).

Grunsky (1916) reported Cuban palm traveled abroad, meaning that Cuban Fan Palm (*Colpothrinax wrightii*) was carried by Loynaz del Castillo on behalf of Cuba and exhibited it during the Panama-Pacific International Exposition, in San Francisco, California. In the end, the palm was donated to the California Academy of Sciences. Unfortunately, a recent search was unable to find any historic remnants of this palm (E. Magnaghi, pers. comm.) (**Fig. 30**).

Roig y Mesa (1928) related that in many places it forms large and extensive colonies called “*barrigonales*.”

Beccari and Rock (1931) posted curious photo of *Colpothrinax wrightii*, taken by Dr. R. H. Howard, one apparently showing the digging and boxing of a handsome specimen, likely for transport into a garden or collection, perhaps even outside of Cuba. (**Fig. 31**).

Marie-Victorin and León (1942) related that in March 1941, near the town of San Luis, *Colpothrinax wrightii* was at all stages of development. They offered the first distribution map of *C. wrightii* (**Fig. 15**).



|                                                                                                                                                                                                                                                                                               |                                     |     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-----|
| VOL. V]                                                                                                                                                                                                                                                                                       | EVERMANN—DIRECTOR'S REPORT FOR 1915 | 217 |
| Cockerell, T. D. A., State University of Colorado, Boulder, Colo.: One bundle of specimens of plants from New Mexico. Gift.                                                                                                                                                                   |                                     |     |
| Combined Amusements Co., Panama-Pacific International Exposition, through Mrs. Nellie Waterhouse Dorne, San Francisco: Two aningas and one manatee from Florida. Gift.                                                                                                                        |                                     |     |
| Coombs, Mrs. A. L., San Francisco: Seventy-four specimens of plants from Oregon. Gift.                                                                                                                                                                                                        |                                     |     |
| Cuba, Government of, through General E. Loynaz del Castillo, Commissioner General for Cuba, Panama-Pacific International Exposition: Section of a Cuban Fan Palm ( <i>Colpothrinax wrightii</i> ); eight specimens of ores; one specimen of serpentine rock; and a specimen of asphalt. Gift. |                                     |     |
| Dickerson, Dr. Roy E., California Academy of Sciences: Two snakes                                                                                                                                                                                                                             |                                     |     |

30. Announcement in the *Proceedings of the California Academy of Sciences*, 1916, about the government of Cuba donating a section of the trunk of *Colpothrinax wrightii* to the Panama-Pacific Exposition in San Francisco, California, USA.

Alain (1961) wrote “The palma barrigona is much used by the Cubans in the region from Sumidero to Guane and in the savannas of southern Pinar del Rio.”

Kyburz (1994) wrote “unfortunately regeneration is poor.”

Henderson et al. (1995) noted “it is rare to see a palm from which the leaves have not been harvested.”



**31.** A photo taken by Dr. R. H. Howard showing the digging and boxing of a specimen of *Colpothrinax wrightii*, likely for transport into a garden or collection, perhaps even outside Cuba. © from Beccari and Rock 1931.

## Conclusions

*Colpothrinax wrightii* has had a long, colorful, and sometimes confusing botanical history. Because of its unusually swollen trunk, it has found favor in a wide array of destructive and non-destructive uses and can also suffer from inadvertent habitat damage and destruction. To ensure that this species will survive and thrive long into the future, protective measures, in addition to those already present, should be implemented.

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