Contributions of Brother León to the Study of Cuban *Copernicia* (Arecaceae), 1931–1936

Contribuciones del Hno. León al Estudio de *Copernicia* (Arecaceae) de Cuba, 1931–1936

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Abstract

The nomenclature, classification, and distribution of the genus *Copernicia* (Arecaceae) in Cuba, published by León (1931 and 1936), are revised and updated. León's first collection of *Copernicia* was in 1911 and the last in 1945. More than 90% of his collections were between 1930 and 1936. I reviewed 808 specimens of León's *Copernicia* collections, most of which he personally collected; the remainder his collaborators collected but León attached his own collection number to them. I designated 25 second-step lectotypes and their respective isolectotypes of species León described: 17 correspond to correct names; six are considered synonyms; and two varieties need further herbarium studies. Also, I designated two lectotypes of species that N. L. Britton and P. Wilson described and confirmed six lectotypes: one a species O. Beccari described and five I had previously designated. All corresponding syntypes are also listed.

Resumen

Se revisa y actualiza la nomenclatura, clasificación y distribución del género *Copernicia* (Arecaceae) en Cuba, publicada por León (1931 y 1936). La primera colección de *Copernicia* de León fue en 1911 y la última en 1945. Más del 90% de sus colecciones fueron entre 1930 y 1936. Revisé 808 especímenes de las colecciones de *Copernicia* de León, la mayoría de los cuales él mismo colectó; el resto fueron colectados por sus colaboradores, aunque León les asignó su propio número de colección. Designé 25 lectotipos de segundo paso y sus respectivos isolectotipos de especies descritas por León: 17 corresponden a nombres correctos; seis se consideran sinónimos; y dos variedades necesitan estudios de herbario adicionales. Además, designé dos lectotipos de especies que N. L. Britton y P. Wilson describieron y confirmé seis

lectotipos: uno es una especie descrita por O. Beccari y cinco que yo había designado previamente. También se enumeran todos los sintipos correspondientes.

Introduction

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).

In Cuba, 15 genera and 99 infrageneric taxa are reported for the Arecaceae: 79 species; 10 infraspecific taxa; and 10 hybrids. Of the total, 86 infrageneric taxa are endemic (86.9 %), one of the highest rates among plant families in the country (Moya 2024a).

Frère (Brother) León (Hermano León), born Joseph Sylvestre Sauget, Mesnay, Les Arbois, France, December 31, 1871 – November 20, 1955, La Habana, Cuba, was a French-born, Cuban botanist, a De La Salle Brother, and educator. He was a wise scientist and modest, kind and humble. He arrived in Cuba in 1905 after spending a year teaching in Canada. He taught in Colegio De la Salle of Vedado, Havana.

León engaged in botanical exploration of the entire country. At that time, Cuba's flora was poorly recorded, and León's collections included many new species and new records for the island. He made extensive collections of Cuban plants thanks to his collaborations with visiting botanists and plant collectors, which expanded the scope of his collections. He collaborated with John Adolph Shafer, Erik Ekman, Brother Marie-Victorin, Nathaniel Lord Britton, Percy Wilson, and the Cubans Juan T. Roig y Mesa and Julián B. Acuña Galé. His final trip was to western Cuba with Belgian botanist Frans Robyns.

León published some 70 works and discovered numerous new species. One of his best known works was *Flora de Cuba*, published in five volumes in collaboration with Brother Alain, which remains the standard reference on the Cuban flora. The De La Salle Herbarium, his personal herbarium with more than 23, 000 specimens, is currently part of the collections of the National Herbarium of Cuba (HAC). Among his preferred taxonomic groups are grasses, mosses, and cacti. But palms are the group in which he stands out the most, as he described 38 new species that allowed him nearly to double the number of Cuban species known at the time (77) (Álvarez Conde 1958).

1. An unidentified taxon of *Copernicia* near Moa, Holguín exemplifies the taxonomic work needed to be done on this complex genus in Cuba. © 2016 D. R. Hodel.

Copernicia is a neotropical genus of the tribe Trachycarpeae of the subfamily Coryphoideae (Dransfield et al. 2008). The first and only monograph on *Copernicia* from the insular Caribbean (Dahlgren and Glassman 1963) recognized two species in Hispaniola, and 20 species, one variety, and three natural hybrids in Cuba. From that time forward, publications and on-line databases do not agree on the taxonomic state of Cuban palms; they also list the other five non-Cuban species, two from Hispaniola and three from South America. While Moya (2024a) recognized 26 taxa in Cuba: 15 species, two varieties, and nine natural hybrids (**Fig. 1**).

More than 25 years ago, Johnson (1996) determined that Cuba was an important center of *Copernicia* diversity. His musings on conservation continue to be significant and he noted that "many threatened species occurring in restricted area in Cuba are now considered as synonyms of common species (Henderson et al. 1995), but further studies are needed." He added that the species limits are not well defined and no modern phylogenetic monograph of the genus existed. Thus, he proposed a multidisciplinary analysis that includes monographic, systematic, phylogenetic, population genetic, ecological, biogeographical, and ethnobotanical studies of *Copernicia*.

In order to understand the distribution of the taxa that León provided, it is necessary to know the political-administrative division of Cuba in the time of León (1931, 1936, 1939, 1940, 1941, 1943, 1944, 1946) compared to the current division. In his publications, León used the names of the provinces according to the territorial division of Cuba at the time, then the Real Decreto del Gobierno Español (1878) (Royal Decree of the Spanish Government) (**Fig. 2**). It divided Cuba into six provinces, see Cuba map (1898) (**Fig. 3**): Pinar del Río, La Habana, Santa Clara, Puerto Príncipe, and Santiago de Cuba. During the United States intervention from 1899 to 1902, Puerto Príncipe was renamed Camagüey, in 1905 Santiago de Cuba was renamed Oriente (Wikipedia 2024), and in the 1940 Constitution (Constitución de la República de Cuba 1940), Santa Clara was changed to Las Villas. At present (Ley No. 110. 2010, Art. 2) the Island of Cuba has 15 provinces and the special municipality Isla de la Juventud (**Fig. 4**).

Much has been written about León's contribution to the Flora of Cuba and especially to palms. Here I offer the concrete results from León's contribution to *Copernicia* in 1931 and 1936, in which I try to address the following questions and comments:

1. Botany is not the only critical information, and how do we respect judgment and scientific ethics when publishing?;
2. How does misinformation on websites and reference publications affect us?;
3. Which *Copernicia* taxa did León study and describe?;
4. Where are León's *Copernicia* specimens housed?;
5. What is the importance of the study of these taxa for conservation?;

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PUNTOS DE SUSCRICION.

En Madrid, en la Administracion de la Imprenta Nacional, calle del Cid, núm. 4, segundo.
En Provincias, en todas las Administraciones principales de Correos.
Los anuncios y suscriciones para la Gaceta se reciben en la Administracion de la Imprenta Nacional, calle del Cid, núm. 4, segundo, desde las doce de la mañana hasta las cuatro de la tarde, todos los dias ménos los festivos.

PRECIOS DE SUSCRICION.

		Pesetas.
Madrid	Por un mes	5
Provincias, inclusas las islas Baleares y Canarias	Por tres meses	20
Ultramar	Por tres meses	30
Extranjero	Por tres meses	45

El pago de las suscriciones será adelantado, no admitiendo sellos de Correos para realizarlo.

GACETA DE MADRID.

158 20 Julio de 1878. Gaceta de Madrid.=Núm. 201.

REALES DECRETOS.

Atendiendo á las razones que Me ha expuesto el Ministro de Ultramar; de acuerdo con el Consejo de Ministros,

Vengo en decretar lo siguiente:

Artículo 1.° Para el gobierno y administracion de la isla de Cuba se divide esta en seis provincias civiles, que tomarán los nombres de sus respectivas capitales, y serán las siguientes: Pinar del Rio, Habana, Matanzas, Santa Clara, Puerto-Príncipe y Santiago de Cuba.

Art. 2.° Será de primera clase la provincia de la Habana, de segunda la de Santiago de Cuba, y de tercera las de Pinar del Rio, Matanzas, Santa Clara y Puerto-Príncipe.

Art. 3.° Los límites divisorios de estas provincias entre sí serán los que se determinan en la descripcion detallada de los mismos, aprobada en esta fecha; pero si un pueblo situado á la extremidad de una provincia tuviese una parte de su término dentro de la provincia contigua, el territorio de dicho pueblo pertenecerá por completo á la provincia en que se halle situado el pueblo ó el grupo mayor de su caserío, aun cuando la línea divisoria parezca separarlos.

Art. 4.° El Ministro de Ultramar dictará las órdenes convenientes para que se marquen materialmente en el terreno los expresados límites de las provincias, y para que arreglados á esta division se rectifiquen los correspondientes á los términos municipales y se ajusten tambien á ella los relativos á los diferentes servicios del Estado en los ramos de Hacienda, Gobernacion y Fomento.

Art. 5.° El Gobernador general, oyendo al Presidente de la Audiencia de la Habana, formará y someterá á la aprobacion superior el proyecto de division judicial de la Isla de acuerdo con la de provincias que establece este decreto.

Art. 6.° Por los Ministros de la Guerra y de Marina se adoptarán igualmente las disposiciones conducentes para que los servicios dependientes de ellos se acomoden tambien á dicha division provincial.

Dado en Palacio á nueve de Junio de mil ochocientos setenta y ocho.

ALFONSO.

El Ministro de Ultramar,
José Elduayen.

2. León used the names of the provinces according to the Royal Decree of the Spanish Government (Real Decreto del Gobierno Español), 10 July 1878, which divided Cuba into six provinces.

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6. Why is it necessary to follow Johnson's (1996) advice to carry out modern studies to update the taxonomy of *Copernicia*?

3. Map of Cuba map by Rand McNally and Company, 1904. It is based on Royal Decree of the Spanish Government (Real Decreto del Gobierno Español) of 1878, which divided Cuba into six provinces; Scale 1:2,816,000. Library of Congress Control Number 2021668487. https://lccn.loc.gov/2021668487

4. Current map of Cuba has 15 provinces and the special municipality Isla de la Juventud. https://www.hicuba.com/mapas-lf/provincias.php

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Materials and Methods

I examined the protologues, descriptions, and status of the Cuban taxa of *Copernicia* and associated taxa in Martius (1838), Sauvalle (1871), Beccari (1907), Britton and Wilson (1914), Burret (1929), León (1931, 1936), Dahlgren and Glassman (1958, 1963), Liogier (1969), Muñiz and Borhidi (1982), Verdecia (2014, 2016), and Moya (2021a, 2021b, 2022a, 2022b, 2023, 2024a), Moya et al. (1989), Moya et al. (2019). I paid particular attention to nomenclature and type specimens. I also reviewed Beccari (1913), Dahlgren (1936), León (1946), Glassman (1972), and Cuccuini and Nepi (2006).

I found 808 specimens of taxa of *Copernicia* that León reported, most collected by him and others by his collaborators, in 15 herbaria: A, B [destr.], BH, C, F, FTG, GH, HAC, MT, NY, P, S, US, USF, and UT (all herbaria acronyms from Thiers (2024). Also, I found 91 specimens with some type status of other collectors present in 13 herbaria: BH, CM, F, FI, FTG, G, GH, HAC, K, MO, NY, S, and US. Here I also update the types of three species that León did not describe (*C. curtissii*, *C. cowellii*, and *C. rigida*) and are present in 17 herbaria: A, BH, CM, F, FI, FTG, G, GH, HAC, K, L, LE, M, MO, NY, US, and VT.

All information on the geographical distribution is updated in Moya (2024a) and here, based on herbarium material; protologues; literature, including Combs (1897), Moya et al. (1989), Hodel et al. (2016), Cañizares et al. (2017), Moya et al. (2019), Morales and Montero (2020), Moya (2021b, 2024a), and Moya and Hernández (2023); and personal communications (pers. com.) of Noel Coutin Lovaina, José Luis Gómez Hechavarría, and Pedro A. González Gutiérrez.

For typification of the names, I followed the recommendations of the International Code of Nomenclature for algae, fungi and plants (Turland et al. 2018), referred to in the text by the words "of the Code." I gave special emphasis to articles 9.1 and 9.17 of the Code. The “specified here” marking is used in compliance with article 9.2 when I determined that a holotype or lectotype designation contains correctable errors.

Applying Article 50.1 of the Code, which states “When a taxon at the rank of species or below is transferred from the non-hybrid category to the hybrid category at the same rank (Art. H.10 Note 1), or vice versa, the authorship remains unchanged but may be followed by an indication in parentheses of the original category,” I added “(pro sp.) to the species that were transferred to hybrid formulas without the need to cite the original name of the species to avoid confusion.

Because sometime other numbers were added to the number assigned by the collector at the time of depositing the specimen in an herbarium that eventually became part of HAC, the number

is still cited as being at HAC but is specified by adding "ex" followed by the acronym of the previous herbarium and the digits referring to the corresponding series, if any. Until HAC has barcodes, we use, based on the Recommendation 9C of the Code, any available number that permanently identifies the specimen. For those specimens at HAC with a similar label without anything that differentiates them, a period "." and consecutive numbers are added to the sheet number series. For the citation of specimens from HAC, I followed Regalado et al. (2008).

In the case of HAC, when different herbarium sheets correspond to the same collection, the original collector number or the original herbarium code is placed in brackets, as appropriate.

For multiple specimens mounted on the same herbarium sheet with original barcode in common but with different collection numbers, a period "." is added to the barcode, linked by consecutive lowercase letters "a, b, c . . . ." For single specimens mounted on different herbarium sheets with original barcode in common, a period "." is added to the barcode, linked by consecutive numbers "1, 2, 3 . . . " Specimens seen by the author are marked with "!," those not seen with "[n.v.]," and those without such designations were seen as digital images.

Although it is not frequently respected, here we follow principle IV of the Code: "Each taxonomic group with a particular circumscription, position, and rank can bear **only one correct name**, the earliest that is in accordance with the rules, except in specified cases." I use the "correct name" (Article 11.4 of the Code) for any taxon below the rank of genus, which is the combination of the final epithet of the earliest legitimate name (Article 6.5 of the Code) of the taxon at the same rank, with the correct name of the genus or species to which it is assigned.

I have maintained field observation records for the last 36 years, from 1985 to 2020. Locations generally refer to the nearest place of habitation in instances where locations are unnamed. Moya's field observation number system, after 2014, is in this format: *Serie Moya XXXX*.

Species information is provided in alphabetical order. Below, the complete scientific name is listed, along with its synonyms, type, and who and when updated it. Correct names appear in bold italics, followed by synonyms in italics. For types, distribution and revised specimens, the province is written followed by the municipality in parentheses. I also obtained information on the localities of some taxa from personal communications from colleagues.

The origin of the information used for each municipality or district is denoted by adding the superscripts "^{H}" for herbarium specimen, "^{R}" for bibliographic reference, "^{A}" for author field observations, and "^{P}" for personal communications.

The reasons why websites such as FWO, IPNI, POWO, Tropicos, and WFO or reference publications (Henderson et al. 1995, and Acevedo and Strong 2012) generally do not recognize taxonomic publications in Spanish or by authors not recognized by them are unknown. Also, they tend to create confusion when listing some "synonyms" by not correctly interpreting the current Code (Turland et al. 2018) regarding later homonyms (Art. 53.1 of the Code), "A name of . . . species, unless conserved, protected, or sanctioned, is illegitimate if it is a later homonym, . . . " therefore, it should not be listed as a synonym. Also, when a species name is transferred to a hybrid, it must follow Art. 50.1 of the Code, "When a taxon at the rank of species or below is transferred from the non-hybrid category to the hybrid category at the same rank, or vice versa, the authorship remains unchanged . . ." Of what I reviewed for *Copernicia,* only Greuter and Rankin (2022) is in line with these rules (Moya 2024b).

Related to the correct name and the sign of the hybrids, here I follow Article H.4.1 of the Code, "There can thus be only one correct name corresponding to a particular hybrid formula; this is the earliest legitimate name at the appropriate rank, and other names corresponding to the same hybrid formula are synonyms of it," and Note 1 of Recommendation H.3A, "The multiplication sign "×" in a hybrid formula is always placed between, and separate from, the names of the parents."

Information of the indigenous *Copernicia* of Cuba, which León (1931 and 1936) collected, studied, described, and/or published, is divided into five parts:

I. Miscellaneous supporting Information;
II. Correct, new names that León described;
III. New names that León described but are now considered synonyms;
IV. Taxa described by others but based on León collections;
V. Taxa based on León collections and described by others but that need further study for identification.

Results and Discussion

I. Miscellaneous supporting information.

Resolving Leon's (1931 and 1936) confusion about Copernicia macroglossa and C. Wright 3969.

León (1931) separated *Copernicia macroglossa* into two "pro parte" species when he published *C. torreana* sp. nov. for those without a petiole (León 1931: 40) and maintained *C. macroglossa*

for those with a petiole (León 1931: 41), to which he mistakenly assigned a type. However, León (1936: 208) attempted to resolve it by naming the species with a petiole *C. burretiana* nom. nov in honor of German botanist Max Burret.

Moya (2021a: 8) determined that Dahlgren and Glassman (1963: 86) summarized all the evidence and concluded that Beccari (1907) based *Copernicia macroglossa* on the plant with thick rachillae, larger flowers, large bracteoles, and sessile leaves (**Fig. 5**), arguing that Beccari's name was validly published by reference to a published description that was typified by the original material that the author clearly associated with the taxon in the context of the validating description; according to Articles 7.8, 9.14, and 9.4 of the Code, *C. Wright 3969* meets the requirement as type material for valid publication of *C. macroglossa* by Beccari (1907). They also noted that the specimen deposited at B was a holotype.

Then, Dahlgren and Glassman (1963: 87) showed evidence to indicate that *Copernicia burretiana* is a hybrid between *C. hospita* and *C. macroglossa* when they offered the comparison of these three taxa. Finally, Muñiz and Borhidi (1982: 333) transferred it to hybrid as *C.* × *burretiana* (pro sp.), which Moya et al. (2019: 4) considered as a synonym of *C.* × *escarzana* (**Fig. 6**).

In Moya (2021a: 9), I misinterpreted the Code relating to Article 46.4 because when Beccari (1907) attributed *Copernicia macroglossa* to Wendland, their rank was unchanged; thus, the names should be attributed to H. Wendl. ex Becc. I corrected this error in Moya (2023) at the suggestion of Turland (pers. comm., 31 August 2023). Thus, the correct name is *Copernicia macroglossa* H. Wendl. ex Becc. with Moya (2023) designating the type and updating it (Moya 2025).

For *Copernicia* × *burretiana*, I (Moya 2021a: 16) erred when I wrote that *C.* × *burretiana* (León 1936: 208) was published as a replacement synonym for *C. macroglossa* H. Wendl. ex Becc. p. p., emend. León (1931: 41), an illegitimate homonym of *C. macroglossa* Becc. (1907: 2), here, I consider a replaced name (Art. 6.11 of the Code). Following Article 7.4 of the Code, the type of *C.* × *burretiana* is, therefore, the type of *C. macroglossa* Becc. p. p., emend. León (non Becc.).

León (1931: 40) designated *León 14297* as the type of *Copernicia torreana*. In doing so he referred to a complete collection, thus creating syntypes, but did not note herbaria where specimens were deposited. Glassman (1972: 101) did the same, designating as the type all duplicates of *León 14297* at LS, now considered as lectotypes [first-step]. Moya (2021a: 11) designated HAC ex LS4701, as the lectotype [second-step] and the remaining specimens as isolectotypes.

5. Duanny Suárez Oropesa provides scale for this *Copernicia macroglossa*, in habitat, Sabanas de Muela Quieta, Aguada de Pasajeros, Cienfuegos. Note the leaves lack a petiole. © 2016 D. R. Hodel.

6. Flowering *Copernicia* × *escarzana* in habitat, La Pimienta, Cienfuegos. The presence of a petiole shows it is a hybrid. © 2007 D. Suàrez Oropesa.

León (1931:41) published the current replacement name *Copernicia macroglossa* Becc. p. p., emend, updated here as *C.* × *macroglossa* Becc. p. p. (pro sp.). León (1931: 42) published the hybrid *C.* × *escarzana* between *C. hospita* and *C. macroglossa*, which Moya et al. (2019) updated.

Dahlgren and Glassman (1963: 84) designated *León* 14730 as the type of *Copernicia burretiana*, which Moya (2021a: 16) considered lectotype first step, designating HAC ex LS.1 of *León & Pérez 14730* as the lectotype [second-step] and the remaining specimens as isolectotypes.

Therefore, these taxa are correctly:

Copernicia macroglossa H. Wendl. ex Becc., Webbia 2: 177. 1907. (Type: *C. Wright 3969, p. p. B, emend. Moya*).
= *Copernicia torreana* León, Revista Soc. Geogr. Cuba 4: 40. 1931. (Type: *León 14297*).

Copernicia* × *escarzana León, Revista Soc. Geogr. Cuba 4: 42. 1931. *C. hospita* × *C. macroglossa*. (Type: *León 14921*).
= *Copernicia* × *burretiana* León (pro sp.), Mem. Soc. Cub. Hist. Nat. ''Felipe Poey'' 10: 208. 1936. ≡ *Copernicia* × *macroglossa* Becc. (pro sp.), p. p., emend., León, Revista Soc. Geogr. Cuba 4: 41. 1931, replaced name (Type: *León & Pérez 14730*).
= *Copernicia* × *leoniana* Dahlgren & Glassman (pro sp.), Principes 2: 103. 1958. (Type C. *Wright 3969 p. p. A, emend. Dahlgren & Glassman*).

Beccari (1916) was the first to report natural intergeneric hybrids for Arecaceae while León (1931) was the first to report natural interspecific hybrids when he described three hybrids from Cuba: *Copernicia* × *escarzana*, *C.* × *sueroana*, and *C.* × *vespertilionum* although many still do not accept them. However, León (1936) omitted a hybrid from 1931 (*C. escarzana*) and transferred two to species (stat. nov.), explaining for *C. vespertilionum* (1936: 212), “I no longer consider this species to be a hybrid due to lack of proof and also because I have found in Romero (now Sancti Spíritus) individuals loaded with fruit like any normal species…, and other identical individuals … in the eastern province” and he stated, “It is not, however, absolute proof against, the parents *C. gigas* and *C. rigida*, being very close…” in the three localities including the type; for *C. sueroana* (1936: 215) he wrote, “Having found this species in several other localities in the East, so fruitful..., it is probably not a hybrid.”

Resolving the use or citation of Copernicia hybrid names in Cuba.

To avoid confusion when naming *Copernicia* hybrids from Cuba, it is suggested that Articles H.4.1, 50.1, and 53.1 of the Code be followed. **Table 1** lists the original names of all Cuban *Copernicia*

hybrids, using only one correct name, as defined in Article H.4.1. “There can thus be only one correct name corresponding to a particular hybrid formula; this is the earliest legitimate name at the appropriate rank, and other names corresponding to the same hybrid formula are synonyms of it.”). In this case, only the columns should be used “As Hybrid” and “Transferred to Hybrid.”

Table 1. List of Validly Published Names of Cuban Hybrids of *Copernicia*.

Author:	**As Hybrid**	**As Species**	**Transferred to Hybrid, by:**	**Now Synonym of, by**
León 1931: 42	*C.* × *escarzana*			
León 1931: 44	*C.* × *sueroana*			
León 1931: 57	*C.* × *vespertilionum*			
León 1931: 54		*C. textilis*	*C.* × *textilis* (pro sp.): Dahlgren and Glassman 1963: 199	
León 1931: 55		*C. molinetii*	*C.* × *molinetii* (pro sp.): Moya (2022b: 13	
León 1936: 208		*C. burretiana*	*C.* × *burretiana* (pro sp.): Muñiz & Borhidi 1982: 333	= *C.* × *escarzana*, Moya et al. 2019: 4
León 1936: 208 [León 1931: 41]		*C. burretiana* ≡ [*C. macroglossa* Becc. p. p., (non Becc.)]	*Copernicia* × *macroglossa* Becc. p. p. (pro sp.): Moya here	
León 1936: 218		*C. occidentalis*	*C.* × *occidentalis* (pro sp.): Muñiz & Borhidi 1982: 334	
León 1936: 213		*C. clarkii*	*C.* × *clarkii* (pro sp.): Moya 2022b: 7	= *C.* × *oxycalyx*, Moya 2022b: 7

Table 1. List of Validly Published Names of Cuban Hybrids of *Copernicia* (continued).

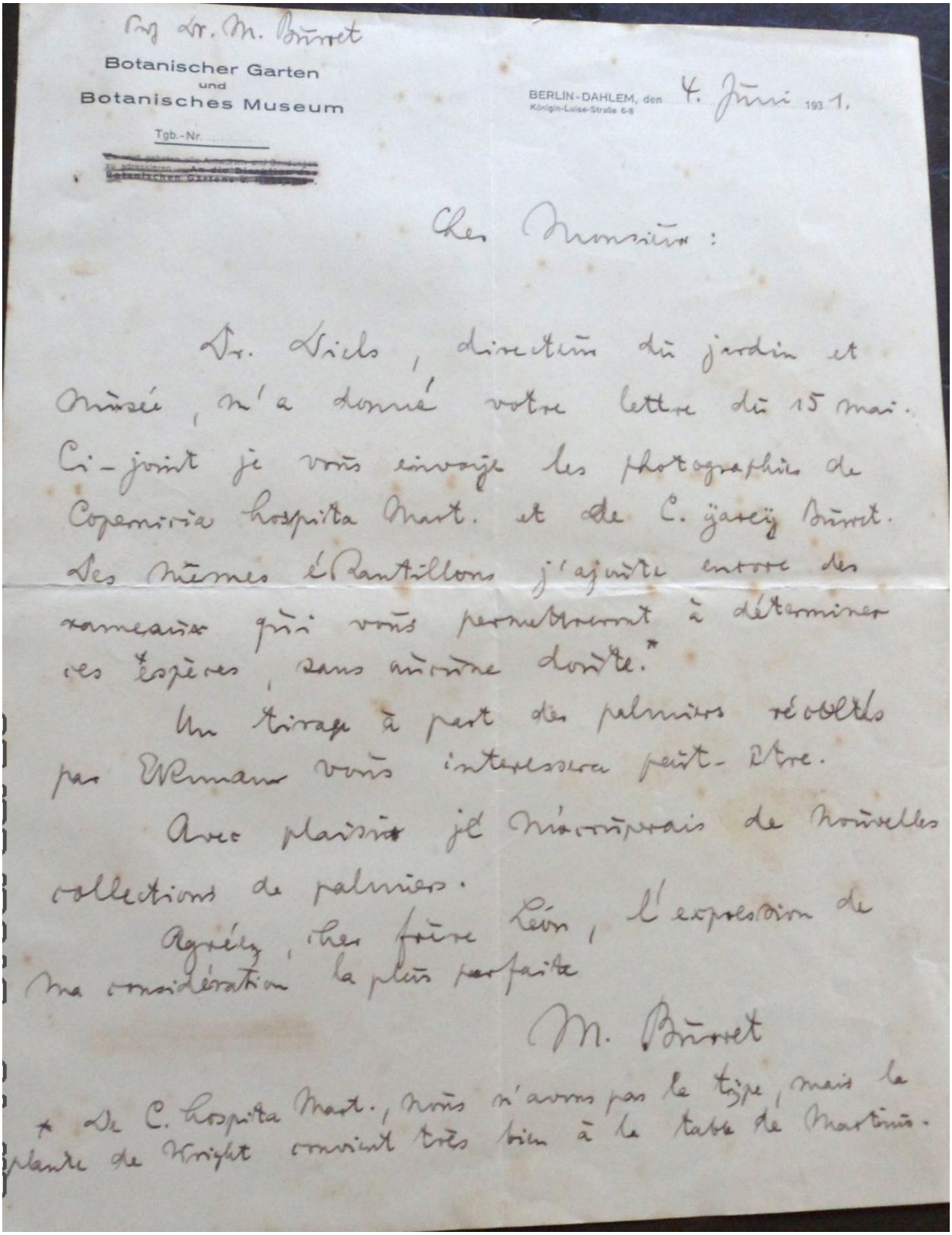
Author:	As Hybrid	As Species	Transferred to Hybrid, by:	Now Synonym of, by
Burret 1929: 6		*C. oxycalyx*	*C. × oxycalyx* (pro sp.): Verdecia 2014: 17	
Dahlgren and Glassman 1958: 103		*C. leoniana*	*C. × leoniana* (pro sp.): Moya et al. 2019: 5	= *C. × escarzana*, Moya et al. 2019: 4
Dahlgren and Glassman 1959: 88	*C. × shaferi*			
Verdecia 2016: 85	*C. × dahlgreniana*			

Labels of León on herbarium specimens

It is widely known that most of León's collections were deposited in the herbarium of the Colegio de La Salle where he carried out his main research; this collection that is currently housed at HAC. León used at least 12 different labels for the genus *Copernicia*. The specimens he shared with foreign specialists he typewrote in French or English and sent them to various herbaria, especially the collaborators in palms, including Liberty Hyde Bailey of BH, Nathaniel Lord Britton of NY, and Max Burret of B (now destroyed). Letters from Burret to León are extant (**Fig. 7**). Several type specimens that Dahlgren and Glassman (1963) listed as having been seen at LS are now in F. The most well known labels are “HERBARIO DEL COLEGIO de LA SALLE” (**Fig. 8A**), “EX HERBARIO DE LA SALLE” (**Fig. 8B**), and “Plantes de Cuba” (**Fig. 8C),** or “Plants of Cuba” (**Fig. 8D**).

General considerations on the typification of the names described by León

By reference to description or diagnosis, León (1931 and 1936) associated names of effectively published (Articles 29–31 of the Code) and validly published taxa (Articles 32–45 of the Code). Those specimens that he associated with the taxa and that he had available before or at the same time as the description was prepared, are considered original material (Article 9.4a of the Code). His type designations are accepted because he clearly indicated them by direct citation, including the term “tipo” (typus) (Article 7.11 of the Code).



Prof. Dr. M. Burret

Botanischer Garten
und
Botanisches Museum

Tgb.-Nr. [redacted]

BERLIN-DAHLEM, den Königin-Luise-Straße 6-8 4. Juni 1931.

Cher Monsieur :

Dr. Diels, directeur du jardin et musée, m'a donné votre lettre du 15 mai. Ci-joint je vous envoie les photographies de Copernicia hospita Mart. et de C. glareji Burret. Des mêmes échantillons j'ajoute encore des rameaux qui vous permettront à déterminer ces espèces, sans aucune doute.*

Un tirage à part des palmiers révoltés par Rumann vous intéressera peut-être.

Avec plaisir je m'occuperais de nouvelles collections de palmiers.

Agréez, cher frère León, l'expression de ma considération la plus parfaite

M. Burret

* De C. hospita Mart., nous n'avons pas le type, mais la plante de Knight convient très bien à la table de Martius.

7. Burret's first letter to León regarding the latter's shipments of specimens to B, which includes the formers's comments about *Copernicia*. © 2024 HAC archives.

8. León's labels. A. "HERBARIO DEL COLEGIO de LA SALLE"; B. (typewritten labels) "EX HERBARIO DE LA SALLE"; C. "Plantes de Cuba"; and D. "Plants of Cuba."

In the protologues of the described new species, León (1931, 1936) indicated the type by reference to an entire gathering; thus, more than one specimen must exist and these are syntypes (Article 9.6 and Article 40, Note 1 of the Code). However, in some cases he designated two specimens as types; any remaining cited specimens are syntypes and not paratypes (Article 9, Note 5 of the Code). Generally, the specimens that he used as types are not clearly labelled as being part of that same specimen or do not have a single, original label in common; thus, they are not clearly labeled as being part of a single specimen and are considered duplicates (Article 8.3 of the Code). When he used only one specimen for the type designation, it must be accepted as the holotype (Article 9, Note 1 of the Code). However, in most cases, it is necessary to designate a lectotype from the original material (Art. 9.3 of the Code).

Of *Copernicia*, 42 different taxa have been validly published for Cuba (**Table 2**), corresponding to 26 taxa currently recognized as having the "correct name." Of the total of 42 taxa, León validly published 28 (66.7%): 16 species, seven varieties, two forms, and three hybrids. Of these 28 taxa, 14 (50.0%) correspond to correct names: seven species, one variety and six hybrids (León [1931] published three as hybrids, and three of his species were later transferred to hybrids, one each by Dahlgren and Glassman [1963: 199], Muñiz and Borhidi [1982: 334], and Moya [2022: 13]); the remaining 14 taxa have become synonyms. Before León, only 10 taxa were published with correct names, one by Martius (1853), three by Beccari (1907), two by Britton (1914), and three by Burret (1929 [one of them transferred to hybrid by Verdecia 2014: 17]), who also published a

current basionym and another synonym. After León, only three hybrids have been described, two by Dahlgren and Glassman (1958 [now synonymous] and 1959) and one by Verdecia (2016).

Table 2. Updated list of all *Copernicia* taxa reported for Cuba.

Species:

Copernicia baileyana León, Revista Soc. Geogr. Cuba 4: 52. 1931.

= *Copernicia baileyana var. laciniosa* León, Mem. Soc. Cub. Hist. Nat. ''Felipe Poey'' 10: 224. 1936.

= *Copernicia baileyana* f*. bifida* León, Mem. Soc. Cub. Hist. Nat. ''Felipe Poey'' 10: 225. 1936.

Copernicia brittonorum León, Revista Soc. Geogr. Cuba 4: 49. 1931.

= *Copernicia brittonorum var. acuta* León, Mem. Soc. Cub. Hist. Nat. ''Felipe Poey'' 10: 222. 1936.

= *Copernicia brittonorum var. sabaloense* León, Mem. Soc. Cub. Hist. Nat. ''Felipe Poey'' 10: 223. 1936.

Copernicia cowellii Britton & P. Wilson, Bull. Torrey Bot. Club 41: 17. 1914.

Copernicia curbeloi León, Revista Soc. Geogr. Cuba 4: 53. 1931.

Copernicia curtissii Becc., Webbia 2: 176. 1907.

= *Copernicia pauciflora* Burret, Kongl. Svenska Vetensk. Acad. Handl., ser. 3, 67): 8. 1929.

= *Copernicia clarensis* León, Revista Soc. Geogr. Cuba 4: 45 1931). ≡ *Copernicia hospita* var. *clarensis* León, Mem. Soc. Cub. Hist. Nat. ''Felipe Poey'' 10: 219. 1936.

Copernicia fallaensis León, Revista Soc. Geogr. Cuba 4: 51. 1931. '*fallaense*'.

***Copernicia* gigas** Ekman ex Burret, Kongl. Svenska Vetensk. Acad. Handl., ser. 3, 67): 3. 1929.

= *Copernicia excelsa* León, Revista Soc. Geogr. Cuba 4: 56. 1931.

Copernicia glabrescens H. Wendl. ex Becc., Webbia 2: 170. 1907.

= *Copernicia glabrescens* var. *havanensis* León, Mem. Soc. Cub. Hist. Nat. ''Felipe Poey'' 10: 217. 1936.

Copernicia glabrescens var**. *ramosissima*** Burret) O. Muñiz & Borhidi, Acta Bot. Acad. Sci. Hung. 28: 332. 1982.

= *Copernicia ramosissima* Burret, Kongl. Svenska Vetensk. Acad. Handl., ser. 3, 67): 8. 1929.

Copernicia hospita Mart., Hist. Nat. Palm. 3: 243. 1838.

Copernicia humicola León, Mem. Soc. Cub. Hist. Nat. ''Felipe Poey'' 10: 221. 1936.

Copernicia macroglossa H. Wendl. ex Becc., Webbia 2: 177. 1907.

= *Copernicia torreana* León, Revista Soc. Geogr. Cuba 4: 40. 1931.

Copernicia longiglossa León, Mem. Soc. Cub. Hist. Nat. ''Felipe Poey'' 10: 210. 1936.

Copernicia rigida Britton & P. Wilson, Bull. Torrey Bot. Club 41: 17. 1914.

= *Copernicia rigida f. fissilingua* León, Mem. Soc. Cub. Hist. Nat. ''Felipe Poey'' 10: 210. 1936.

Copernicia roigii León, Revista Soc. Geogr. Cuba 4: 47. 1931.

Copernicia yarey Burret, Kongl. Svenska Vetensk. Acad. Handl., ser. 3, 67): 7. 1929.
= *Copernicia holguinensis* León, Revista Soc. Geogr. Cuba 4: 48. 1931.
Copernicia yarey var. ***robusta*** León, Mem. Soc. Cub. Hist. Nat. ''Felipe Poey'' 10: 221. 1936.

Hybrids:
Copernicia* × *dahlgreniana Verdecia, Palms 1999+) 60: 88. 2016. [*C. cowellii* × *C. macroglossa*].
Copernicia* × *escarzana León, Revista Soc. Geogr. Cuba 4: 42. 1931. [*C. hospita* × *C. macroglossa*.]
= *Copernicia* × *burretiana* León (pro sp.), Mem. Soc. Cub. Hist. Nat. ''Felipe Poey'' 10: 208. 1936. ≡ *Copernicia* × *macroglossa* Becc. (pro sp.), p. p., emend., León, Revista Soc. Geogr. Cuba 4: 41. 1931, replaced name.
= *Copernicia* × *leoniana* Dahlgren & Glassman (pro sp.), Principes 2: 103. 1958.
Copernicia* × *molinetii León (pro sp.), Revista Soc. Geogr. Cuba 4: 55. 1931.
Copernicia* × *occidentalis León (pro sp.), Mem. Soc. Cub. Hist. Nat. ''Felipe Poey'' 10: 218. 1936. [*C. curtissii* × *C. brittonanum*].
Copernicia* × *oxycalyx Burret (pro sp.), Kongl. Svenska Vetensk. Acad. Handl., ser. 3, 67): 6. 1929. [*C. baileyana* × *C. rigda*]
= *Copernicia* × *clarkii* León (pro sp.), Mem. Soc. Cub. Hist. Nat. ''Felipe Poey'' 10: 213. 1936.
Copernicia* × *shaferi Dahlgren & Glassman, Principes 3: 87. 1959. [*C. hospita* × *C. cowellii*].
Copernicia* × *sueroana León, Revista Soc. Geogr. Cuba 4: 44. 1931. [*C. hospita* × *C. rigida*].
Copernicia* × *textilis León (pro sp.), Revista Soc. Geogr. Cuba 4: 54. 1931. [*C. hospita* × *C. baileyana*].
Copernicia* × *vespertilionum León, Revista Soc. Geogr. Cuba 4: 57. 1931. [*C. gigas* × *C. rigida*].

Pending identification:
Copernicia sp. = Copernicia × *molineti var. cuneata* León, Mem. Soc. Cub. Hist. Nat. ''Felipe Poey'' 10: 216. 1936.
Copernicia sp. = Copernicia sueroana var. semiorbicularis León, Mem. Soc. Cub. Hist. Nat. ''Felipe Poey'' 10: 216. 1936.

II. New “correct names” that León (1931, 1936) described.

León (1931, 1936) validly published 28 names of *Copernicia* for Cuba. I list them here, by species and hybrids, updating their nomenclature, taxonomy, types, and geographical distribution.

Species

Copernicia baileyana León, Revista Soc. Geogr. Cuba 4: 52. 1931. (**Fig. 9**).

Type. CUBA. [La Habana (Cerro), cultivated], “Quinta Cobadonga, Cerro, Habana,” “probably introduced from Camagüey or Oriente,” fl., ft., 16 Apr. 1931, *León 14831* (lectotype [first-step]: Dahlgren and Glassman 1963: 69, LS; lectotype [second-step]: designated here, HAC ex LS!; isolectotypes: A00028300, BH000038088.1, BH000038088.2, F00092040 ex LS4490, F00092041 ex LS4491, F279206 [photo NY, n.v.], F279207 [photo NY, n.v.], HAC ex EEAB!, MT00116881, NY00071132, NY00071133, NY00071134, P00725578, P00725579, S-R-1227, US00087490).

Syntypes: CUBA. Camagüey (Florida), Feb. 1931, *León 14792*, collected by Acuña (HAC ex LS4570!). Granma (Bayamo), Bayamo, *León 14800* ([n.v.]). La Habana (Cerro), cultivated, Quinta Cobadonga, 16 Apr. 1931, *León 14830* (F279205 [photo NY, n.v.], HAC ex LS4499!, HAC ex LS4501!, HAC ex EEAB!, S-R-1226), *León 14832* (GH s.n., HAC ex LS4500!, HAC ex LS!, NY1662285), *Roig and Acuña sp.* (HAC ex Roig4753!). Las Tunas (Las Tunas), near Gamboa, *Bailey 15159* (BH.1, BH.2, BH.3, HAC ex Roig5633!, HAC ex LS4494! [as León 14882]). Mayabeque (Batabanó) cultivated, finca San Juan, E Batabanó, 24 Feb. 1931, *León 14755* (GH s.n., HAC ex LS4495!, HAC ex LS4496!, HAC ex LS4497!, S-PL-25258 [n.v.], US16351 [n.v.], US16352 [n.v.]).

= *Copernicia baileyana* var. *laciniosa* León, Mem. Soc. Cub. Hist. Nat. ''Felipe Poey'' 10: 224. 1936.

Type. CUBA. [Holguín (Cacocum)], “en la selva, finca Concepción, San Pedro de Cacocum (Oriente),” 26 Jul. 1935, *León 16305* (lectotype [first-step]: Dahlgren and Glassman 1963: 69, LS; lectotype [second-step]: designated here, HAC ex LS4512!; isolectotypes: BH000038947.1 ex LS, BH000038947.2 ex LS, BH000038947.3 ex LS, F0077044 ex LS4511, F0092033.1 ex LS[CHI], F0092033.2 ex LS4513.1, F0092033.3 ex LS4513.2, F279208 [photo NY, n.v.], HAC ex LS.1!, HAC ex LS.2!, NY00071135 ex LS, US00087449 ex LS, US00087450 ex LS).

= *Copernicia baileyana* var. *laciniosa* f. *bifida* León, Mem. Soc. Cub. Hist. Nat. ''Felipe Poey'' 10: 225. 1936.

Type. CUBA. [Holguín (Cacocum)], “en la selva, finca Concepción, San Pedro de Cacocum (Oriente),” 28 Jan. 1936, *León 16524* (lectotype [first-step]: Glassman 1972: 97, LS; lectotype [second-step]: designated here, HAC ex LS4509!; isolectotypes: HAC ex LS.1!, HAC ex LS.2!, HAC ex EEAB!).

9. *Copernicia baileyana* with it ventricose trunk and spectacular crown of leaves and inflorescences, in habitat, San Francisco de Porcayo, Camagüey. © 2018 D. R. Hodel.

10. An old *Copernicia baileyana*, in habitat, North El Toro, La Sierpe, Sancti Spíritus, with Lester Martínez for scale. Serie Moya 1680. © 2016 C.E. Moya López.

Other specimens of *Copernicia baileyana* collected by León but without type status. CUBA. Artemisa (San Cristóbal): Cultivated. Aspiro, Retiro, 25 Feb. 1932, *León 15468* (GH s.n., HAC ex LS4505!, US16355 [n.v.], US16356 [n.v.]). Ciego de Ávila (Baraguá): entre Ciego de Ávila y Florida, 28 Jun. 1931, *León 14894* (NY00071163.2 [frag., mix], NY1662286); (Chambas): Central Adelaida, 11 Jul. 1932, *León 15809* (US16353 [n.v.], US16354 [n.v.]). Granma (Bayamo): Bayamo, Mar. 1931, *León 14797* (HAC ex LS4498!). Holguín (Cacocum): Pesquero, 23 Mar. 1932, *León 15547* (HAC ex LS4740!); (Calixto García): Mir, 22 Mar. 1932, *León 15538* (GH s.n., HAC ex LS4503!, HAC ex LS4507!). Las Tunas (Manatí): Manatí sabanas, 28 Dec. 1933, *León 16007* (HAC ex LS4751!). Mayabeque (Batabanó): finca San Juan, E Batabano, 24 Feb. 1931, León 14791 (BH.1, BH.2); Durán, Apr. 1947, Dahlgren and León 47/047 (HAC ex LS4492!, F [n.v.]). Sancti Spíritus (La Sierpe): Mapos, Jun. 1931, *León 14911* (HAC ex LS4493!); playa Manatí, 28 Jun. 1931, León 15671 (GH s.n., HAC ex LS4506!); *León 14972* (GH s.n., HAC ex LS!).

Field Observations by C. E. Moya. CUBA. **[1985–2000]**. Camagüey (Florida): sur La Vallita; IX.1999 [P. Craft]. Granma (Bayamo): entre Bayamo y Jiguaní, IX.1999 [P. Craft]. Guantánamo (Guantánamo): entre Guantánamo y Yateras, IX.1999 [P. Craft]. Holguín (Holguín): entre Holguín y Tacámara Uno, IX.1999 [P. Craft]. Las Tunas (Jobabo): Cerrecito, rio Cayojo, 23.III.1999 [N. Barboza^{H}]; Zabalo, 1.IX.1999 [P. Craft]; (Las Tunas): Las Arenas-Ojo de Agua, 22.III.1999 [N. Barboza^{H}]. Sancti Spíritus (La Sierpe): comedor Peralejo, V.1995 [Moya, JBSS^{H}]. [**Post 2014**]. Camagüey (Florida): S entronque Urabo, 1.XI.2016, *Serie Moya 1641*; Guantánamo (Guantánamo): entronque Maquey, 14.V.2016, *Serie Moya 1645*. Sancti Spíritus (La Sierpe): N El Toro, 18.XII.2016, Serie Moya 1680 [*Copernicia baileyana*]. (**Fig. 10**).

Geographical Distribution. CUBA. Provinces Ciego de Ávila (Baraguá^{H}, Chambas^{H}), Camagüey (Camagüey^{H}, Céspedes^{H}, Florida^{H,A}, Nuevitas^{H}, Vertientes^{R}), Granma (Bayamo^{H,A}, Media Luna^{H}), Guantánamo (Manuel Tames^{A}), Holguín (Báguanos^{R}, Cacocum^{H}, Calixto García^{H}, Holguín^{A}), Las Tunas (Jobabo^{R,A}, Las Tunas^{H,A}, Manatí^{H}), Sancti Spíritus (La Sierpe^{H,A}). Cultivated: Artemisa (San Cristóbal^{C,H}), La Habana (Cerro^{C,H}), Mayabeque (Batabanó^{C,H}).

Notes. León (1931) designated *León 14831* as the type of *Copernicia baileyana*. In doing so he referred to a complete collection, thus creating syntypes, but he did not note where specimens were deposited. Dahlgren and Glassman (1963) did the same, relating as the type all duplicates of *León 14831* at LS, now considered as lectotype [first-step]. Here I designate *León 14831* at HAC ex LS as the lectotype [second-step] (**Fig. 11**) and I designate as isolectotypes the 17 duplicates at A, BH, F, HAC, MT, NY, P, S, and US.

11. Lectotype of *Copernicia baileyana*, *León 14831* HAC ex LS. © 2024 HAC.

12. Lectotype of *Copernicia baileyana* var. *Laciniosa*, *León 16305* HAC ex LS4512. © 2024 HAC.

13. Lectotype of *Copernicia baileyana* var. *bifida*. *León 16524* HAC ex LS4509. © 2024 HAC.

León (1936) designated *León 16305* as the type of *Copernicia baileyana* var. *laciniosa*. In doing so he referred to a complete collection, thus creating syntypes, but he did not note where specimens were deposited. Dahlgren and Glassman (1963) did the same, relating as the type all duplicates of *León 16305* at LS, now considered as lectotype [first-step]. Here I designate *León 16305* at HAC ex LS4512 as the lectotype [second-step] (**Fig. 12**) and I designate as isolectotypes the 12 duplicates at BH, F, HAC, NY and US.

León (1936) designated *León 16524* as the type of *Copernicia baileyana* var. *bifida*. In doing so he referred to a complete collection, thus creating syntypes, but he did not note where specimens were deposited. Glassman (1972) did the same, relating as the type all duplicates of *León 16524* at LS, now considered as lectotype [first-step]. Here I designate *León 16524* at HAC ex LS4509 as the lectotype [second-step] (**Fig. 13**) and I designate as isolectotypes the five duplicates at HAC and US.

León (1931) described *Copernicia baileyana* from a plant cultivated in Havana (Quinta Cobadonga currently is Hospital "Salvador Allende") and he later described *C. baileyana* var. *laciniosa* f. *bífida* with a diagnosis (León 1936).

Dahlgren and Glassman (1963) considered *Copernicia baileyana* var. *laciniosa* and *C. baileyana* var. *bifida*, which here I update as *Copernicia baileyana* var. *laciniosa* f. *bífida*, synonyms of *C. baileyana*. Also, they identified *Leon 14894* as *C. baileyana*.

Verdecia (2014) reported *Copernicia baileyana* for the Jobabo municipality while Risco et al. (2017) reported it for the Vertientes municipality.

The Adelaida central, where León collected several species, named later Enrique José Varona, was located on the outskirts of Chambas, Ciego de Ávila province.

Copernicia brittonorum León, Revista Soc. Geogr. Cuba 4: 49. 1931. (**Fig. 14**).

Type. CUBA. [Matanzas (Ciénega de Zapata)], "no lejos de la boca del río Alcalde Mayor, Zapata Oriental," fl., ft., 1 Aug. 1930, *León and J. Pérez 14615* (lectotype [first-step]: Dahlgren and Glassman 1963: 77, LS; [second-step]: designated here, HAC ex LS!; isolectotypes, A00028301, BH000038110, BH000038182, F0092038 ex LS4515, F0092039 ex LS4514, F279210 [photo NY, n.v.], F279211 [photo NY, n.v.], HAC ex EEAB.1!, HAC ex EEAB.2!, HAC ex Roig5425!, MT00116882, NY00071136, NY00071137, NY00071138, P00725580, S06-2448).

Syntype: CUBA. Matanzas (Ciénega de Zapata): río Alcalde Mayor, Jan., *León 14761* (n.v.).

14. *Copernicia brittonorum*, in habitat, Finca El Jaguey, Cienfuegos. © 2016 D. R. Hodel.

= *Copernicia brittonorum* var. *acuta* León, Mem. Soc. Cub. Hist. Nat. ''Felipe Poey'' 10: 222. 1936.

Type. CUBA. [Cienfuegos (Cienfuegos), “en claros de la manigua costera, playa de Patado, a la entrada de la bahía de Cienfuegos (Santa Clara),” Mar. 1932, *León 15471*, collected by L. Howell, (lectotype [first-step]: Dahlgren and Glassman 1963: 77, LS; lectotype [second-step]: designated here, HAC ex LS!; isolectotypes: F00075021 ex LS4519, HAC ex EEAB!, US00087451 ex LS).

Syntype. CUBA. Cienfuegos (Cienfuegos), playa de Patado, 20–21 Jun. 1932, *León 15596*, collected by L. Howell (HAC ex LS4520!, HAC ex EEAB!).

= *Copernicia brittonorum* var. *sabaloense* León, Mem. Soc. Cub. Hist. Nat. ''Felipe Poey'' 10: 223. 1936.

Type. CUBA. [Pinar del Río (Guane)], “hacienda Sabanalamar, El Sábalo (Pinar del Río),” fl., 20 Aug. 1934, *León and Iturrey 16145* (lectotype [first-step]: Dahlgren and Glassman 1963: 77, LS; lectotype [second-step]: designated here, HAC ex LS.1!; isolectotypes: BH000038944.1, BH000038944.2, F0075022 ex LS4532, F0075023 ex LS4531, F0075024 ex LS [CHI], F0075025 ex CHI, F279212 [photo NY, n.v.], HAC ex LS.2!, NY00071139 ex LS, US00087452 ex LS, US00087453 ex LS).

Syntypes. CUBA. Pinar del Río (Guane): hacienda Sabanalamar, El Sábalo, 6 Jan. 1932, *León & Yturray 15454* (HAC ex LS4523!, HAC ex LS4524!, HAC ex LS4529!, HAC ex LS!, HAC ex EEAB!, HAC ex UO!, US16375 [n.v.], US13676 [n.v.]); May 1932, *León, Pérez, Yturray 15576* (BH s.n., HAC ex LS4527!, HAC ex LS4521!); Aug. 1932, *León 15836*, collected by Yturray (HAC ex LS4528!, S11-24256 [n.v.]); Jan. 1934, *León 16059*, collected by Yturray (HAC ex LS4525!, HAC ex LS4530!).

Other specimens of *Copernicia brittonorum* collected by León but without type status. CUBA. Cienfuegos province, Cienfuegos municipality: Castillo de Jagua, Sep. 1932, *León 15851*, collected by C. Medina (HAC ex LS.1!, HAC ex LS.2!, S11-24586 [n.v.]); 4 Jan. 1934, *León & Medina 16053* (HAC ex LS4517!, HAC ex EEAB!). Matanzas province, Ciénaga de Zapata municipality: Bartolina, 1 Aug. 1930, *León & Pérez 14614* (HAC ex LS4516!, HAC ex LS!). Pinar del Río province, Guane municipality, Sabanalamar, 6 Apr. 1933, *León 15932* (HAC ex LS4526!, HAC ex EEAB!, US16509 [n.v.], US16532 [n.v.]); 4 Sep. 1935, *León 16416* (HAC ex LS4533!).

Field Observations by C. E. Moya. CUBA. [**1985–2000**]. Matanzas (Ciénega de Zapata): Guasasa, V.1997 [Hermes R. & Milián R.]; VIII.2000 [P.Craft]. [**Post 2014**]. Cienfuegos (Cienfuegos): Finca El

15. Lectotype of *Copernicia brittonorum*, *León* 14615 HAC ex LS. © 2024 HAC.

16. Lectotype of *Copernica brittonorum* var. *acuta, León 15471* HAC ex LS. © 2024 HAC.

Jaguey, 24.V.2014, *Serie Moya 1405*. [Pinar del Río (Guane): Estación Ferrocarril El Salado, 27.X.2016, *Serie Moya 1697c*.

Geographical Distribution. CUBA. Provinces Cienfuegos (Abreus[H], Cienfuegos[H,A]), Matanzas (Ciénaga de Zapata[H,A]), Pinar del Río (Guane[H,A]).

Notes. León (1931) designated *León 14615* as the type of *Copernicia brittonorum*. In doing so he referred to a complete collection, thus creating syntypes, but he did not note herbaria where specimens were deposited. Dahlgren and Glassman (1963) did the same, designating as the type all duplicates of *León 14615* at LS, now considered as lectotypes [first-step]. Here I designate *León 14615* at HAC ex LS as the lectotype [second-step] (**Fig. 15**) and I designate as isolectotypes 14 duplicates at A, F, HAC, MT, NY, P and S.

León (1936) described *Copernicia brittonorum* var. *acuta* and designated *León 15471* as the type. In doing so he referred to a complete collection, thus creating syntypes, but he did not note where specimens were deposited. Dahlgren and Glassman (1963) did the same, relating as the type all duplicates of *León 15471* at LS, now considered as lectotype [first-step]. Here I designate *León 15471* at HAC ex LS as the lectotype [second-step] (**Fig. 16**) and I designate as isolectotypes the three duplicates at F, HAC, and US.

León (1936) described *Copernicia brittonorum* var. *sabaloense* and designated León 16145 as type. In doing so he referred to a complete collection, thus creating syntypes, but he did not note where specimens were deposited. Dahlgren and Glassman (1963) did the same, relating as the type all duplicates of *León 16145* at LS, now considered as lectotype [first-step]. Here I designate *León 16145* at HAC ex LS.1 as the lectotype [second-step] and I designate as isolectotypes the 13 duplicates at BH, F, HAC, NY and US.

Dahlgren and Glassman (1963) considered *Copernicia brittonorum* var. *acuta* and *C. brittonorum* var. *sabaloense* as synonyms of *C. brittonorum*. Dahlgren and Glassman (1963: 77) identified *León 15932* as *Copernicia brittonorum* while León (1936: 219) had considered it a syntype of *C. x occidentalis.*

Copernicia curbeloi León, Revista Soc. Geogr. Cuba 4: 53. 1931. (**Fig. 17**).

Type. CUBA. [Las Tunas (Puerto Padre)], “en terrenos bajos, anegadizos, cerca de las cangrejeras, en Puerto Padre (Oriente),” fl., Feb. 1931, *León 14826* [*Curbelo s.n.*], collected by M. Curbelo (lectotype [first-step]: Dahlgren and Glassman 1963: 101, LS; [second-step]: designated here, F0092036 ex LS4568; isolectotypes, F0092030 ex CHI, F279226 [foto NY, n.v.], NY00071155.a, P00725583).

17. *Copernicia curbeloi* at Finca San Joaquín, Majibacoa, Las Tunas. © 2016 D. R. Hodel.

Syntypes. CUBA. Las Tunas (Puerto Padre), cerca de las cangrejeras, Puerto Padre, ft., Jul. 1931, *León 14978* [Curbelo s.n.], collected by M. Curbelo (NY00071155.b [frag.], MT00116883); *León 14986* [Curbelo s.n.], collected by M. Curbelo (HAC ex LS4558).

Other specimens of *Copernicia curbeloi* collected by León but without type status. CUBA. Holguín (Cacocum): Cacocum, 2 Jan. 1934, *León 16046* (HAC ex LS4562!); finca Concepción, 19 Jan. 1934, *León 16047* (GH s.n., HAC ex LS4556!, HAC ex LS4559!, US00016338 [n.v.], US00016361 [n.v.]); 28 Jan. 1936, *León 16523* (HAC ex LS.1!, HAC ex LS.2!, HAC ex LS4555!, HAC ex LS4557!, HAC ex LS4561!, HAC ex LS4569!, US00016315 [n.v.], US00016337 [n.v.]); 28 Jan. 1936, *León 16526 (*HAC ex LS!). Las Tunas (Majibacoa): Omaja, 1 Jan. 1934, *León 16040* (HAC ex LS4560!, HAC ex EEAB); (Manatí): Dumañuecos, Jul. 1932, *León 15872* (HAC ex LS4566!); potrero Guabino, 30 Dec. 1933, *León 16038* (HAC ex LS4563!, HAC ex EEAB!); May. 1934, *León 16105* (HAC ex LS4567!); (Puerto Padre): Puerto Padre on coast, 16 Feb. 1931, *Curbelo s.n.* (F21082233.1 ex *Roig5466*, F21082233.2 ex Roig5466, F21082233.3 ex Roig5466, F279224 ex Roig5466 [foto F, n.v.], F279225 ex Roig5466 [foto F, n.v.], NY1662308 ex Roig5466).

Field Observations by C. E. Moya. CUBA. [**1985–2000**]. Las Tunas (Manatí): Manatí a Santa Lucia, 24.III.1999 [N. Barboza^{H}];

Geographical Distribution. CUBA. Provinces Camagüey (Florida^{H}, Nuevitas^{H}), Holguín (Cacocum^{H}), Las Tunas (Majibacoa^{H}, Manatí^{H,A}, Puerto Padre^{H}).

Notes. León (1931) designated *León 14826* as the type of *Copernicia curbeloi*. In doing so he referred to a complete collection, thus creating syntypes, but he did not note herbaria where specimens were deposited. Dahlgren and Glassman (1963) did the same, designating as the type all duplicates of *León 14826* at LS, now considered as lectotypes [first-step]. Here I designate *León 14826* at F0092036 ex LS4568 as the lectotype [second-step] (**Fig. 18;** see: https://fm-digital-assets.fieldmuseum.org/219/515/V0092036F.jpg), which Dahlgren and Glassman (1963) noted as having been seen at LS, and I designate the remaining specimens as isolectotypes.

Dahlgren and Glassman (1963) doubtfully identified *León 14978*, a syntype of *Copernicia yarey* var. *robusta,* as *C. curbeloi*, noting their opinion on a label on MT116883.

Copernicia fallaensis León, Revista Soc. Geogr. Cuba 4: 51. 1931. '*fallaense*'. (**Fig. 19**).

Type. CUBA. [Ciego de Ávila (Chambas)], "sabanas de Ranchuelo, cerca de Falla (Camagüey)," ft., Aug. 1930, *León 14671*, [collected by Cervera] (lectotype [first-step]: Dahlgren and Glassman 1963: 117, LS; lectotype [second-step]: designated here, HAC ex LS.1!; isoletotypes

19. Duanny Suárez Oropesa provides scale for *Copernicia fallaensis* at Ranchuelo, Falla, Ciego de Ávila, the type locality. © 2016 D. R. Hodel.

20. Lectotype of *Copernicia fallaensis, León* 14671 HAC ex LS.1. © 2024 HAC.

A00028314, A00028315, BH000038934.1, BH000038934.2, BH000038934.3, F0092042 ex LS4578, F0092044 ex LS4577, F279237 [photo NY, n.v.], F279239 [photo NY, n.v.], HAC ex LS.2!, HAC ex EEAB!, HAC ex *Roig5428*!, MT00116889.1, MT00116889.2, NY00071163.1 [mixed], NY00071164, NY00071165, NY00071166, P00725587, P00725588, S-R-1230 [frag., mixed], US00087462).

Syntype. Ciego de Ávila [no locality], "región de Ciego de Ávila," [no date], *León 14987* (S11-21930 [frag., mixed]).

Other specimens of *Copernicia fallaensis* collected by León but without type status. CUBA. La Habana (Cerro), cultivated: Quinta Santovenia, Feb. 1931, *León 14829* (HAC ex LS4575!, HAC ex LS4576!).

Field Observations by C. E. Moya. CUBA. [**1985**–**2000**]. Ciego de Ávila (Chambas): Falla, Ranchuelo, 1.IX.1995 [Moya, JBSS^{H}]; 11.III.1999 [N. Barboza^{H}]; VIII.2000 [P. Craft]; VIII.1999 [K. Tansacha]. Camagüey (Florida): finca Perú, 1997 [P. Mayotte]. [**Post 2014**]. Camagüey (Florida): norte entronque Urabo, 1.XI.2016, *Serie Moya 1642*.

Geographical Distribution. CUBA. Provinces Camagüey (Céspedes^{H}, Florida^{H,A}), Ciego de Ávila (Baraguá^{R}, Chambas^{H,A}), Villa Clara (Ranchuelo^{H}).

Notes. León (1931) designated *León 14671* as the type of *Copernicia fallaensis*. In doing so he referred to a complete collection, thus creating syntypes, but he did not note herbaria where specimens were deposited. Dahlgren and Glassman (1963) did the same, designating as the type all duplicates of *León 14671* at LS, now considered as lectotypes [first-step]. Here I designate *León 14671* at HAC ex LS.1 as the lectotype [second-step] (**Fig. 20**) and I designate the remaining specimens as isolectotypes.

NY71163.1 has a mixture of leaves of *Copernicia fallaensis* from *León 14671* [NY71163.1a], with two fruits of *C. baileyana* from *León 14894* [NY71163.1b], without type status. At S a mixture of *C. fallaensis is present*: S11-21930, as a syntype, has flowers from *León 14987* while S-R-1230 has fruits of the isolectotype *León 14671*.

On that date that the type was collected, Ranchuelo, near Falla, was in Camagüey province; today it is in Ciego de Ávila province.

Hodel et al. (2016) reported *Copernicia fallaensis* for the Baraguá municipality.

21. *Copernicia humicola*, in habitat, Finca los Naranjos, Niquero, Granma, the type locality. © 2017 D. R. Hodel.

22. Lectotype of *Copernicia humicola*, *León 16379* HAC ex LS.1. © 2024 HAC.

Copernicia humicola León, Mem. Soc. Cub. Hist. Nat. ''Felipe Poey'' 10: 221. 1936. (**Fig. 21**).

Type. CUBA. [Granma (Niquero)], "junto al manglar; el Varadero, Niquero (Oriente)," ft., 2 Aug. 1935, *León 16379* (lectotype [first-step]: Dahlgren and Glassman 1963: 147, LS; [second-step]: designated here, HAC ex LS.1! (**Fig. 22**); isolectotypes, BH0000038943.1, BH0000038943.2, F0092045.1 ex CHI, F0092045.2 ex LS4634, F0092046.1 ex LS4633.1, F0092046.2 ex LS4633.2, HAC ex LS4636! mix, HAC ex LS.2!, HAC ex LS.3!, HAC ex EEAB, HAC28908! [photo US], HAC28910! [photo US], HAC28911! [photo US], NY00071174, US00087467, US000874678 ex LS, US00087469).

Geographical Distribution. CUBA. Province Granma (Niquero^{H}).

Notes. León (1936) designated *León 16379* as the type of *Copernicia humicola.* In doing so he referred to a complete collection, thus creating syntypes, but he did not note herbaria where specimens were deposited. Dahlgren and Glassman (1963) did the same, designating as the type all duplicates of *León 16379* at LS, now considered as lectotypes [first-step]. Here I designate *León 16379* at HAC ex LS.1 as the lectotype [second-step] and I designate the remaining specimens as isolectotypes.

In HAC a mixture of inflorescences of two different species is present: on the right is the isolectotype of *Copernicia humicola* from *León 16379* [HAC ex LS4636], and on the left is *Copernicia yarey* from León *16385* [HAC ex LS4635], without type status.

Copernicia longiglossa León, Mem. Soc. Cub. Hist. Nat. ''Felipe Poey'' 10: 210. 1936. (**Fig. 23**).

Type. CUBA. [Las Tunas (Manatí), "potrero de Guabino, al sur de Dumañuecos, Oriente," ft., 30. Dec. 1933, *León 16044* (lectotype [first-step]: Dahlgren and Glassman 1963: 150, LS; [second-step]: designated here, HAC ex LS!; isolectotypes, BH000038932, F0075036 ex LS4638, F0075037 ex CHI, F0092047 ex LS4639, F279244 foto NY [n.v.], HAC ex EEAB, HAC28902 [photo US], NY00071176, US00087470).

Geographical Distribution. CUBA. Province Las Tunas (Manatí^{H}).

Notes. León (1936) designated *León 16044* as the type of *Copernicia longiglossa*. In doing so he referred to a complete collection, thus creating syntypes, but did not note herbaria where specimens were deposited. Dahlgren and Glassman (1963) did the same, designating as the type all duplicates of *León 16044* at LS, now considered as lectotypes [first-step]. Here I designate *León 16044* at HAC ex LS as the lectotype [second-step] and I designate the remaining specimens as isolectotypes (**Fig. 24;** see: https://fm-digital-assets.fieldmuseum.org/137/556/V0075036F.jpg for an image of *León 16044* isolectotype at F ex LS).

23. A person provides scale for *Copernicia longiglossa*, in habitat, Ojo de Agua, Manatí, Las Tunas, at or near the type locality. © 2017 D. R. Hodel.

Copernicia longiglossa and its distribution are under review.

Copernicia roigii León, Revista Soc. Geogr. Cuba 4: 47. 1931. (**Fig. 25**).

Type. CUBA. [Las Tunas (Puerto Padre), "litoral cerca de Puerto Padre (Oriente)," ft., Jul. 1931, *León 14979* [*Curbelo s.n.*, collected by M. Curbelo (lectotype [first-step]: Dahlgren and Glassman 1963: 185, LS; [second-step]: designated here, F0075040 ex LS4671; isolectotypes, A00028332, BH000038939 ex LS, F0092053.1 ex LS4670, F0092053.2 ex CHI, F0092053.3 ex CHI, F279263 [foto NY, n.v.], HAC28914 [photo US], MT00116898, NY00071197, NY00071198, P00725601, S-R-1237, US00087479).

Syntypes. CUBA. Las Tunas (Puerto Padre), cerca de Puerto Padre, fl., 28. Apr. 1930, *Curbelo s.n.* [Roig5118], collected by M. Curbelo (BH000038xxx.a, BH000038xxx.2, HAC ex Roig5118.1, HAC ex Roig5118.2), now considered to be *Copernicia yarey* var. *robusta*.

Other specimens of *Copernicia roigii* collected by León but without type status. CUBA. Las Tunas province, (Puerto Padre) Feb. 1931, *León 14798* (NY166881).

Field Observations by C. E. Moya. CUBA. [**1985–2000**]. Las Tunas (Manatí): Tabor, 24.III.1999 [N. Barboza^{H}].

Geographical Distribution. CUBA. Province Las Tunas (Manatí^{H,A}, Puerto Padre^{H}), Matanzas (Jovellanos^{H}), Santiago de Cuba (Santiago de Cuba^{H}).

Notes. León (1931) designated *León 14979* as the type of *Copernicia roigii*. In doing so he referred to a complete collection, thus creating syntypes, but did not note herbaria where specimens were deposited. Dahlgren and Glassman (1963) did the same, designating as the type all duplicates of *León 14979* at LS, now considered as lectotypes [first-step]. Here I designate *León 14979* at F0075040 ex LS4671 as the lectotype [second-step] (**Fig. 26;** see: https://fm-digital-assets.fieldmuseum.org/137/560/V0075040F.jpg) and I designate the remaining specimens as isolectotypes.

Dahlgren and Glassman (1963: 187) identified HAC ex Roig5118 as *C. yarey* var. *robusta*.

Copernicia roigii and its distribution are under review.

25. *Copernicia roigii*, in habitat, San Miguel de los Baños, Matanzas. © 2016 D. R. Hodel.

Copernicia yarey var. robusta León, Mem. Soc. Cub. Hist. Nat. ''Felipe Poey'' 10: 221. 1936. Type. CUBA. [Las Tunas (Manatí), "Sabanas de Sabanalamar, Manatí, Oriente," fl., 28 Dec. 1933, *León 16010* (lectotype [first-step]: Dahlgren and Glassman 1963: 225, LS; [second-step]: designated here, HAC ex LS4721!; isolectotypes, BH000038946.1 ex LS, BH000038946.2 ex LS, F0075044 ex CHI, F0092061 ex LS4722, HAC ex EEAB!, HAC28915 [photo US], NY00071208 ex LS, US00087488, US00087489 ex LS).

Syntypes. CUBA. Las Tunas (Manatí): sabanas de Sabanalamar, 7 Jul. 1932, *León, Rionda & Clark 15739* (GH s.n., HAC ex LS4732!, HAC ex LS4734!); (Puerto Padre): sabanas Puerto Padre, Feb. 1931, *León 14858* [*Curbelo s.n.*], collected by M. Curbelo (HAC ex LS4717 [Roig5465A]!, HAC ex LS4718 [Roig5465A]!, HAC ex LS.1 [Roig5465A]!, HAC ex LS.2 [Roig 5465A]!); *Curbelo s.n.* (HAC ex Roig5465B.1!, HAC ex Roig5465B.2!, HAC ex Roig5465B.3!, NY1662440 ex Roig5465B); Puerto Padre, Jul. 1931, *León 14978* [*Curbelo s.n.*], collected by M. Curbelo (BH [n.v.], HACx2!, MT [Now *Copernicia sp. B*].

Other specimens of *C. yarey* var. *robusta* collected by León but without type status. CUBA. CUBA. Las Tunas (Las Tunas): Las Tunas, 30 May 1933, *León 15993* (HAC ex LS.1!, HAC ex LS.2!, HAC ex EEAB!, US00016500 [n.v.], US00016523 [n.v.]); [as syntype *C. roigii*, now *Copernicia yarey* var. *robusta*] (Puerto Padre), Puerto Padre, fl., 28. Apr. 1930, *Curbelo s.n.* (BH38xxx.a ex Roig5118, HAC ex Roig5118.1, HAC ex Roig5118.2, HAC ex LS [as *León 15008*); 4 Jan. 1931, *Curbelo s.n.* (HAC ex Roig5464.1!, HAC ex Roig5464.2!); costa Puerto Padre, Feb. 1931, *León 14856A* [*Curbelo s.n.*] (HAC ex LS4672!, HAC ex LS4735!; May 1931, *León 14856B* [*Curbelo s.n.*] (BH).

Geographical Distribution. CUBA. Provincias Granma (Bayamo^{H}), Las Tunas (Las Tunas^{H}, Manatí^{H}, Puerto Padre^{H}).

Notes. León (1936) designated *León 16010* as the type of *Copernicia yarey* var. *robusta*. In doing so he referred to a complete collection, thus creating syntypes, but did not note herbaria where specimens were deposited. Dahlgren and Glassman (1963) did the same, designating as the type all duplicates of *León 16010* at LS, now considered as lectotypes [first-step]. Here I designate *León 16010* at HAC ex LS4721 as the lectotype [second-step] and I designate the remaining specimens as isolectotypes (**Fig. 26;** for an image of isolectotype *León 16010* at NY00071208 ex LS see: https://sweetgum.nybg.org/science/vh/specimen-details/?irn=707334).

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Dahlgren and Glassman (1963) doubtfully identified *León 14978*, considered a syntype of *C. yarey var. robusta*, as *C. curbeloi* and they left a note with the same opinion on MT116883.

León wrote, on four LS labels, above *León 14858* "(*Roig 5465*);" therefore, the specimens of *Roig 5465* correspond to the syntype *León 14858*.

Dahlgren and Glassman (1963: 187) identified *Curbelo s.n.* [Roig5118} as *Copernicia yarey var.* robusta, which León (1931: 47) had included as a syntype of *C. roigii*.

Hybrids

Copernicia × escarzana León, Revista Soc. Geogr. Cuba 4: 42. 1931. (*C. hospita* × *C. macroglossa*). (**Fig. 6**).

Type. CUBA. [Sancti Spíritus (Trinidad)], "*cerca de la bahía de Macío al sudeste de Trinidad*," 27 Jun. 1931, *León 14921* (lectotype, [first-step]: Dahlgren and Glassman 1963: 145; [second-step]: Moya 2021: 15, HAC ex LS4574!; isolectotypes: BH000038951.1, BH000038951.2, F279233 [photo NY, n.v.], F279234 [photo NY, n.v.], HAC ex Roig5873!, MT00116888, NY00071157, NY00071158, NY00071159, P00725584 [as León 14607]).

Syntype. CUBA. Cienfuegos (Abreus): sabana de palmas de Antón Recio, 31 Jan. 1931, *León 14607* (F0092043, F279235 [photo NY], FTG, NY00071160, US00087460).

= *Copernicia* × *burretiana* León (pro sp.), Mem. Soc. Cub. Hist. Nat. ''Felipe Poey'' 10: 208. 1936.

≡ *Copernicia* × *macroglossa* Becc. p. p. (pro sp.), emend. León, Revista Soc. Geogr. Cuba 4: 41. 1931 (non Becc.), replaced synonym.

Type. CUBA. [Cienfuegos (Abreus)], "*sabanas de palmas de Antón Recio* (*Sta. Clara*)," fl., ft., Dec. 1930, *León & Pérez 14730*, (lectotype, [first-step]: Dahlgren and Glassman 1963: 84, LS, [second-step]: Moya 2021: 16, HAC ex LS.1!; isolectotypes: BH000038100 ex LS, FTG030929 [photo US], HAC ex LS4534!, HAC ex LS.2!, HAC ex EEAB!, HAC ex Roig5427!, HAC ex PC4538!, US00087491 ex LS).

= *Copernicia* × *leoniana* Dahlgren & Glassman (pro sp.), Principes 2: 103. 1958.

Type. CUBA. [Sancti Spíritus (Trinidad), "Potrero Manatí," Trinidad, [19 Mar. 1867], fl., ft., *C. Wright 3969 p. p. A, emend. Dahlgren & Glassman.*

Syntypes. CUBA. Camagüey (Camagüey), N Cromo, 8 Feb. 1949, *Dahlgren and Cutler 49/041* (F [n.v.]); finca Santa Rosa, 1 Apr. 1950, *Dahlgren 50/016* (F2122063); Sabana de Juan Grande, 7 Feb. 1952, *Dalhgren and G. Moore 52/028* (F [n.v.]); finca Carbonera, 24 Jan. 1953, *Dahlgren 53/003* (F [n.v.], *Dahlgren 53/004* (F [n.v.]), *Dahlgren 53/005* (F [n.v.]); (Florida), W Caobillas, 3 Mar. 1954, *Dahlgren 54/010* (F ex CHI]). Cienfuegos (Abreus), Florecita, N Antón Recio, 23

Jan. 1949, *Dahlgren and Cutler 49/017* (F2122065). Sancti Spíritus (Trinidad), near Macio Bay, Casilda, 27 Jan. 1931, *León 14922* (A, BH, MT00116894, NY1662297, NY1662299); 2 Feb. 1949, *Dahlgren and Cutler 49/069* (F1983354); finca Molina, Trinidad, 1 Mar. 1951, *Dahlgren and Macbride 51/052* (F [n.v.]).

Other specimens of *Copernicia* × *escarzana* collected by León but without type status. CUBA. Ciego de Ávila (Chambas): Adelaida, Aug. 1930, *León 14672* (HAC ex LS4544!). Cienfuegos (Abreus): Antón Recio, 30 Jul. 1930, *León 14613* (HAC ex LS4541!, HAC ex Roig5391!); 30 Jul. 1930, *León 14733* (HAC ex LS4543!, NY1662298, NY1662300, US16372 [n.v.]); 20 Jun. 1932, *León 15606* (HAC ex LS4542!); Antón Recio, n.d., *León 16730* (HAC ex Roig5427!); (Cienfuegos): Calicito, 15 Feb. 1930, *León 14292* (HAC ex EEAB!, HAC ex LS4504!); 11 Apr. 1930, *León 14313* (BH000038101.1, BH000038101.2 [frag.], HAC ex EEAB!, HAC ex LS4539!, HAC ex LS4540!, P01796653, P01796654, US16373 [n.v.], US16374 [n.v.]). Sancti Spíritus (Yaguajay), Jobosí, 5 Aug. 1934, *León 16140* (BH000038102.1 ex LS, BH000038102.2 ex LS).

Field Observations by C. E. Moya. CUBA. [**1985–2000**]. Cienfuegos (Cienfuegos): finca Antón Recio, V.1997 [Hermes R. & Milián R.]. Sancti Spíritus (Trinidad): (Trinidad): sabanas Casilda, 1992–1996 [Roberty H.]; norte Casilda, 1997, [JBSS]; 12.III.1999 [N. Barboza^{H}]. [**Post 2014**]. Holguín (Moa): road to Juracal, 12.X.2015, *Serie Moya 1510*. Matanzas (Matanzas): Tres Ceibas de Clavellinas, 20.I.2019, Serie Moya 1906, 1907.

Geographical Distribution. CUBA. Provinces Matanzas (Los Arabos^{P}, Matanzas^{H,A}), Cienfuegos (Abreus^{H}, Cienfuegos^{H,A}), Sancti Spíritus (Trinidad^{H,A}, Yaguajay^{H}), Ciego de Ávila (Chambas^{H}), Camagüey (Camagüey^{H}, Céspedes^{H}, Florida^{H}).

Notes. León (1931: 43) used two specimens, *León 14921* and *León 14607*, for the description of *Copernicia* × *escarzana* without designating the type, thus creating syntypes. Dahlgren and Glassman (1963: 145) designated *León 14921* at LS and referred to a complete collection, now considered as lectotypes [first-step]. Moya (2021a: 15) designated *León 14921* at HAC ex LS4574 as the lectotype [second-step] (**Fig. 27**) and I designated the remaining specimens as isolectotypes.

León (1931: 36) published *Copernicia burretiana* as a species but Dahlgren and Glassman (1963: 87) considered it a hybrid between *C. hospita* and *C. macroglossa,* and offered the comparison of these three taxa. Muñiz and Borhidi (1982: 333) designated it as a hybrid. Moya et al. (2019: 4) considered it a synonym of *C.* × *escarzana*. Dahlgren and Glassman (1963: 84) designated *León & Pérez 14730* (**Fig. 28**) as the type of *C. burretiana*, which is considered a lectotype first step.

27. Lectotype of *Copernicia ×escarzana, León 14921* HAC ex LS4574. © 2024 HAC.

28. Isolectotype of *Copernicia* × *burretiana, León & Pérez 14730* HAC ex LS, which is a synonym of *Copernicia* × *escarzana*. © 2024 HAC.

Moya (2021a: 16) designated *León & Pérez 14730* HAC ex LS.1 of *León & Pérez* 14730 as the lectotype [second-step] and I designate the remaining specimens as isolectotypes.

For *Copernicia* × *burretiana*, my mistakes in Moya (2021a: 16) are corrected here: *Copernicia* × *burretiana* León (1936: 208) was published as a replacement name for *C. macroglossa* H. Wendl. ex Becc. p. p., emend. León (1931: 41), an illegitimate homonym of *C. macroglossa* Becc. (1907: 2). Here I consider it a replaced name (Art. 6.11 of the Code). Following Article 7.4 of the Code, the type of *C.* × *burretiana* is therefore the type of *C. macroglossa* Becc. p. p., emend. León (non Becc.).

León (1931:41) published the current replacement name *Copernicia macroglossa* Becc. p. p., emend, updated here. While León (1931: 42) published the hybrid *C.* × *escarzana* between *C. hospita* and *C. macroglossa*, I updated it (Moya et al. 2019).

Copernicia × molinetii León (pro sp.), Revista Soc. Geogr. Cuba 4: 55. 1931 '*molineti*' (pro sp.). *C. gigas* × *C. hospita*.

Type. CUBA. [Sancti Spíritus (La Sierpe)], "*sabana no lejos del estero de las Guásimas, Mapos, Guasimal* (Santa Clara)," 24 Jun. 1931, *León 14912* (lectotype [first-step]: Dahlgren and Glassman 1963: 164, LS; lectotype [second-step]: Moya 2022: 13, HAC ex LS!; isolectotypes, A00028330, BH000038937.1, BH000038937.2, F0078038 ex LS[CHI], F279251 [photo A, n.v.], HAC ex EEAB5606!, HAC ex Roig5858!, MT00116895, NY00071179, NY00071180, P00725598, P00725599, P00725600, S-R-1232 ex LS, US00087471 ex LS).

Other specimens of *Copernicia* × *molinetii* collected by León but without type status. CUBA. Sancti Spíritus (La Sierpe): no lejos del estero de las Guásimas, Mapos, 22 Jul. 1931, *León 14985* (F2792548 ex LS, F279250 ex LS).

Field Observations by C. E. Moya. CUBA. [**Post 2014**]. Sancti Spíritus (La Sierpe): Casa de visita, 17.XII.2016, Serie Moya 1675 [*C. cf. molinetii*] (Fig. L.1931).

Geographical Distribution. CUBA. Province Sancti Spíritus (La Sierpe^{H,A}).

Notes. León (1931) designated *León 14912* as the type of *Copernicia molinetii*. In doing so he referred to a complete collection, thus creating syntypes, but did not note herbaria where specimens were deposited. Dahlgren and Glassman (1963) did the same, designating as the type all duplicates of *León 14912* at LS, now considered as lectotypes [first-step]. Here I designate *León 14912* at HAC ex LS as the lectotype [second-step] and I designate the remaining specimens as isolectotypes (**Fig. 29;** see https://herbarium.nrm.se/specimens/S-R-1232/image/875392 for an image of isolectotype *León 14912* at S-R-1232 ex LS).

Moya (2022b) argued for the new status as Copernicia *× molinetii.*

Copernicia × occidentalis León (pro sp.), Mem. Soc. Cub. Hist. Nat. ''Felipe Poey'' 10: 218. 1936. *C. brittonanum* × *C. curtissii*. (**Fig. 30**).

Type. CUBA. [Pinar del Río (Guane), "Sabana abierta y matorrales de la hacienda Sabanalamar, El Sábalo (Pinar del Río)," fl., 20. Aug. 1934, *León 16144* (lectotype [first-step]: Dahlgren and Glassman 1963: 165, LS; [second-step]: designated here, HAC ex LS!; isolectotypes, BH000038938, F0075039 ex LS4648, F0092105.1 ex LS4649, F0092105.2 ex LS, F0092105.3 ex CHI, F279253 [photo n.v.], NY00071181, US00087474, UT00014873).

Syntypes. CUBA. Pinar del Río (Guane): hacienda Sabanalamar, El Sábalo, 6 Apr. 1933, *León 15931*, collected by Alain & Acuña (BH000038060, GH s.n., HAC ex UO.1!, HAC ex UO.2!, HAC

30. *Copernicia* × *occidentalis*, in habitat, Finca Naranjo, Guane, Pinar del Río, at or near the type locality. © 2017 D. R. Hodel.

31. Lectotype of *Copernicia* × *occidentalis*, *León 16144.* HAC ex LS. © 2024 HAC.

ex LS4647!, HAC ex LS!); 6. Apr. 1933, *León 15932**, identified as *C. brittonorum* by Dahlgren and Glassman 1963: 77 (HACx2!, USx2 [n.v.]); 6. Apr. 1933, *León 15933* (GH s.n., HAC ex LS4646!, HAC ex LS!).

Other specimens of *Copernicia* × *occidentalis* collected by León but without type status. CUBA. Pinar del Río (Guane): sabanas Sabanalamar, 4 Sep. 1935, *León 16417* (HAC ex LS4644!).

Geographical Distribution. CUBA. Province Pinar del Río (Guane^{H}).

Notes. León (1931) designated *León León 16144* as the type of *Copernicia* × *occidentalis*. In doing so he referred to a complete collection, thus creating syntypes, but did not note herbaria where specimens were deposited. Dahlgren and Glassman (1963) did the same, designating as the type all duplicates of *León 16144* at LS, now considered as lectotypes [first-step]. Here I designate *León 16144* at HAC ex LS as the lectotype [second-step] (**Fig. 31**) and I designate the remaining specimens as isolectotypes.

Dahlgren and Glassman (1963: 77) identified *León 15932* as *Copernicia brittonorum*, which León (1936: 219) noted was a syntype of *Copernicia x occidentalis.*

León (1936: 218) published Copernicia *occidentalis* as a species, but Dahlgren and Glassman (1963: 165) considered it a hybrid between *C. brittonorum* and *C. curtissii* yet offered no data or a comparison of these three taxa. Finally Muñiz and Borhidi (1982) gave it hybrid status, apparently based on Dahlgren and Glassman (1963).

Copernicia × sueroana León, Revista Soc. Geogr. Cuba 4: 44. 1931. *C. hospita* × *C. rígida.* (**Fig. 32**).

Type. CUBA. [Cienfuegos (Abreus)], “sabana del Espinal entre Antón Recio y Yaguaramas (Santa Clara),” fl., Dec. 1930, *León & J. Pérez 14727* (lectotype [first-step Dahlgren and Glassman 1963: 195, LS; lectotype [second-step]: designated here, F0092054 ex LS4681; isolectotypes: BH000038941, BH000038942, F0092055 ex LS4682, F 279270 [photo NY, n.v.], HAC ex EEAB, MT00116899, NY00071200, NY00071201, P00725602, P0700725603, S-R-1238).

Syntype. CUBA. Camagüey (Nuevitas), Tiffin, 1–5 Nov. 1909, *Shafer 2894*, identified as *C. rigida* × *C. yarey* by R. Verdecia in 2016 on US16514 (HAC!, Nyx2, US [n.v.]).

32. *Copernicia* × *sueroana*, in habitat, Monte Grande, Camalote, Camagüey. © 2017 D. R. Hodel.

Other specimens of *Copernicia* × *sueroana* collected by León but without type status. CUBA. Las Tunas (Manatí): Sabanalamar, 7 Jul. 1932, *León 15744* (HAC ex LS4677); Central Manatí, Oct. 1933, *León 16004* (HAC ex LS4674).

Field Observations by C. E. Moya. CUBA. [**1985–2000**]. Las Tunas (Jobabo): sur Zabalo, 23.III.1999 [N. Barboza[H]]. [**Post 2014**]. Camagüey (Nuevitas): carretera Nuevitas, 8.VI.2017, Serie Moya 1717. Cienfuegos (Rodas): Sin Nombre, 24.V.2014, *Serie Moya 1405*; (Abreus): La Pimienta, 1.VI.2014, Serie Moya 1430.

Geographical Distribution. CUBA. Provinces Camagüey (Camagüey[H], Florida[H], Minas[H], Nuevitas[H,A]), Cienfuegos (Abreus[H,A]), Rodas[A]), Granma (Bayamo[H]), Holguin (Calixto García[H]), Las Tunas (Jobabo[R,A], Las Tunas[H], Manatí[H]).

Notes. León (1931: 44) published the hybrid *Copenicia* × *sueroana* between *C. hospita* and C. rigida.

León (1931) designated *León & J. Pérez 14727* as the type of *Copernicia* × *sueroana*. In doing so he referred to a complete collection, thus creating syntypes, but did not note herbaria where specimens were deposited. Dahlgren and Glassman (1963) did the same, designating as the type all duplicates of *León 14727* at LS, now considered as lectotypes [first-step]. Here I designate *León 14727* at F0092054 ex LS4681 as the lectotype [second-step] (**Fig. 33;** see: https://fm-digital-assets.fieldmuseum.org/219/538/V0092054F.jpg) and I designate the remaining specimens as isolectotypes.

Dahlgren and Glassman (1963) considered *Shafer 2894* as a "doubtful specimen;" they left a note, Nov. 1958, on NY1662450 stating "insufficient material for positive identification." Verdecia left a note dated 15 Nov. 2016 on US16514 identifying it as *Copernicia rigida*. This specimen coincides with another collection from the same locality, *Shafer 2895*, which Britton (1914) designated as the type of *Copernicia rigida*.

León (1936) changed *Copernicia* × *sueroana*, which he had earlier named as a hybrid (León 1931), to species status, creating a later homonym, and he reported a new collection in Las Tunas. Verdecia (2014) reported *C.* × *sueroana* for the municipality of Jobabo.

Copernicia × textilis León (pro sp.), Revista Soc. Geogr. Cuba 4: 54. 1931. *C. baileyana* × *C. hospita*. (**Fig. 34**).

34. *Copernicia* × *textilis*, in habitat, between Romero and Peralejo, Siete de Noviembre por la Sierpe, Sancti Spíritus. © 2016 D. R. Hodel.

Type. CUBA. [Sancti Spíritus (La Sierpe)], "potrero cerca del río Zaza, entre Guasimal y Mapos" [finca La Vega], 22 Jul. 1931, *León 14980* (lectotype [first-step]: Dahlgren and Glassman 1963: 199, LS; lectotype [second-step]: designated here, F0092057 ex LS4689; isolectotypes: BH000038952, F0075041 ex LS4683, F0075042 ex CHI, F279273 [photo NY, n.v.], F279274 [photo NY, n.v.], HAC ex Roig5871!, MT00116900, NY00071203, NY00071204, P00725604, P00725605).

Syntypes: CUBA. Sancti Spíritus (La Sierpe): Mapos, sabana Romero, Jul. 1931, *León 15007* (HAC ex LS4685!, HAC ex UO.1!, HAC ex UO.2!). Camagüey (Carlos Manuel de Céspedes): Sur El Quemado, Céspedes, 15May 1915, Roig, Luaces and Arango s.n. (HAC ex Roig888).

Other specimens of *Copernicia* × *textilis* collected by León but without type status. CUBA. Cienfuegos (Cienfuegos): Las Milpas, Feb. 1933, *León 15928* (HAC ex EEAB!). Sancti Spíritus (Sancti Spíritus): West Tunas de Zaza, Mar. 1932, *León 15469*, collected by Alonso, (HAC ex LS4686!, HAC ex LS.1, HAC ex LS.2, HAC ex UO!, NY1662420, P01796683); (La Sierpe): Mapos, Jun. 1931, *León 14975* (BH000038916); 20 Apr. 1932, *León 15568* (GH, HAC ex LS4687!, US00016505 [n.v.], US00016528 [n.v.]). La Habana (Plaza de la Revolución): Escuela Agronomía Habana, cultivated, Apr. 1938, León 18006 (HAC ex LS4684!).

Field Observations by C. E. Moya. CUBA. [**1985–2000**]. Sancti Spíritus (La Sierpe): atrás casa visita, 1988–1994, 21.II.1995[H], 2020 [JBSS]; comedor Peralejo, 21.VII.1995 [JBSS]; Estero Las Guásimas, 1.II.1994, VIII.1995, [P. Mayotte & Hermes R.]; El Toro, VIII.2020; Pasa Banao, 1997; sur Peralejo, 10.III.1999 [N. Barboza[H]]; Peralejo, 2000 [JBSS]. [**Post 2014**]. Camagüey (Nuevitas): carretera Nuevitas, 8.VI.2017, Serie Moya 1718a. Sancti Spíritus (La Sierpe): Casa de Visita, 17.XII.2016, Serie Moya 1672; El Toro, 17.XII.2016, Serie Moya 1677.

Geographical Distribution. CUBA. Provinces Camagüey (Camagüey[H], Céspedes[H], Florida[H], Nuevitas[R,A]), Ciego de Ávila (Majagua[E]), Holguín (Cacocúm), Sancti Spíritus (La Sierpe[H,A]).

Notes. Dahlgren and Glassman (1963: 201) concluded that *Copernicia textilis* is a hybrid between *C. baileyana* and *C. hospita* and they provided a comparison of these three taxa.

León (1931) designated *León 14980* as the type of *Copernicia textilis*. In doing so he referred to a complete collection, thus creating syntypes, but did not note herbaria where specimens were deposited. Dahlgren and Glassman (1963) did the same, designating as the type all duplicates of *León 14980* at LS, now considered as lectotypes [first-step]. Here I designate *León 14980* at F0092057 ex LS4689 as the lectotype [second-step] (**Fig. 35;** see: https://fm-digital-

assets.fieldmuseum.org/219/541/V0092057F.jpg) and I designate the remaining specimens as isolectotypes.

Copernicia × vespertilionum León, Revista Soc. Geogr. Cuba 4: 57. 1931. *C. gigas* × *C. rigida*. (**Fig. 36**).

Type. CUBA. [Sancti Spíritus (La Sierpe)], "selva próxima al estero de las Guásimas, Mapos, Guasimal (Santa Clara)," 22 Jul. 1931, *León 14983* (lectotype [first-step]: Dahlgren and Glassman 1963: 207, LS; lectotype [second-step]: designated here, HAC ex LS4712!; isolectotypes: A00028338, BH000038953, BH000038954, F0075043 ex CHI, F0092060 ex LS4710, F279276 [foto NY, n.v.], F2792777 [foto NY, n.v.], HAC ex EEAB!, HAC ex Roig5870!, NY00071205, NY00071206, MT00116903.1, MT00116903.2, P00725610, P00725611, S-R-1240, US00087487).

Other specimens of *Copernicia* × *vespertilionum* collected by León but without type status. CUBA. Las Tunas (*Majibacoa): Omaja, 1 Jan. 1934, León 16039 (*HAC ex LS.1!, HAC ex LS.2!, HAC ex LS4711!, S-PL-24255 [n.v.]*).* Sancti Spíritus (La Sierpe): monte Romero, Ju. 1931, *León 14974* (HAC ex LS4707!; playa Romero, 28 Jun. 1932, *León 15669* (HAC ex LS!, S-R-1241, US00016501 [n.v.], US00016502 [n.v.], US00016525 [n.v.]).

Field Observations by C. E. Moya. CUBA. [**1985–2000**]. Sancti Spíritus (La Sierpe): Estero Las Guásimas, 1985–1987 [José Luis V.]; 1988–1994, II.1994; VIII.1995, [P. Mayotte & Hermes R.]; Carenero, 1988–1994; comedor Peralejo, 21.VII.1995, 2000 [JBSS]; Romero, 29.III.1995 [JBSS]; sur Peralejo, 10.III.1999 [N. Barboza^{H}].Las Tunas (Jobabo): sur Zabalo, 23.III.1999 [N. Barboza]. [**Post 2014**]. Sancti Spíritus (La Sierpe): Casa de Visita, 17.XII.2016, Serie Moya 1673.

Geographical Distribution. CUBA. Provinces: Las Tunas (Jobabo^{R,A}, Majibacoa^{H}), Sancti Spíritus (La Sierpe^{H,A}), Villa Clara (Corralillo^{R}).

Notes. León (1931: 54) named and described the hybrid *Copernicia* × *vespertilionum* between *C. excelsa* [*gigas*] and *C. rigida*.

León (1931) designated *León 14983* as the type of *Copernicia × vespertilionum*. In doing so he referred to a complete collection, thus creating syntypes, but did not note herbaria where specimens were deposited. Dahlgren and Glassman (1963) did the same, designating as the type all duplicates of *León 14983* at LS, now considered as lectotypes [first-step]. Here I designate *León 14983* at HAC ex LS4712 as the lectotype [second-step] (**Fig. 37**) and I designate the remaining specimens as isolectotypes.

36. *Copernicia* x *vespertilionum*, in habitat, Siete de Noviembre, Sancti Spíritus. © 2016 D. R. Hodel.

37. Lectotype of *Copernicia × vespertilionum, León 14983* HAC ex LS4712. © 2024 HAC.

León (1931) described Copernicia × *vespertilionum* for Sancti Spíritus. León (1936) changed the status from hybrid to species, reporting collections in Las Tunas and for Corralillo in Villa Clara. Verdecia (2014) reported *C.* × *vespertilionum* for the municipality of Jobabo.

III. New names described by León (1931, 1936) transferred to a synonym of a "correct name."

Species

Copernicia curtissii Becc., Webbia 2: 176. 1907.

Type. CUBA. [(Isla de la Juventud)], "Nell'Isla de Pinos, in vecinanza della costa Sud Ovest di Cuba, presso Nueva Gerona," fl., ft., 5 Apr. 1904, *Curtiss 435* (lectotype Dahlgren and Glassman 1963: 105, G-DC, specified here: G00005831.1, G00005831.2; isolectotypes: A00028311, A00028312, BH000038851, CM108672, F0075031, F0075032, FI [dibujo ex G-DC, n.v.], FTG63890 [foto US], GH00028310, HAC ex WIP!, K000462906, K000462907, L0042092, LE00000802, M0157950, MO104367, MO104368, NY00071156, US00087456, US00087457, VT115376).

= *Copernicia pauciflora* Burret, Kongl. Svenska Vetensk. Acad. Handl., ser. 3, 6(7): 8. 1929.
The type of *C. pauciflora* was designated by Moya and Berazaín (unpublished).

= *Copernicia clarensis* León, Revista Soc. Geogr. Cuba 4: 45. 1931.
≡ *Copernicia hospita* var. *clarensis* León, Mem. Soc. Cub. Hist. Nat. ''Felipe Poey'' 10: 219. 1936.
Type. CUBA. [Villa Clara (Santa Clara)], "loma de Belén, cerca del Cerro Calvo, Santa Clara," fl., ft., 27 Mar. 1937, *León 14956* (lectotype [first-step]: Dahlgren and Glassman 1963: 106, LS; lectotype [second-step]: designated here, F0075026 ex LS4628, isolectotypes: A00028302, BH000038945, F0075027 ex LS4627, F279219 [foto A, n.v.], HAC ex EEAB!, HAC ex Roig5872!, HAC28897! [foto US], MT00116887, NY00071140, NY00071141, P00725581, P00725582, S-R-1228, US00087454).

Other specimens of *Copernicia curtissii* collected by León but without type status. CUBA. Cienfuegos (Cienfuegos): Castillo Jagua, 1947, *Dahlgren & León 47/060* (F [n.v.). Pinar del Río (Consolación del Sur): Consolación, 1947, *Dahlgren & León 47/039* (F [n.v.); 1948, *Dahlgren & León 48/038* (F [n.v.); (Guane): Boquerones, Mendoza, 2 Apr. 1931, *León 14817* (A s.n., GH s.n., HAC ex LS4651!, HAC ex UO!, NY1662313, NY1662318, NY1662327); Sabanalamar, 20 Aug. 1934, *León 16143* (HAC ex LS4655!, HAC ex LS4657!); (Minas de Matahambre): Las Manacas, 6 Jan. 1932, *León 15443* (HAC ex LS!, HAC ex LS4653!, NY1662328); (Viñales): San José, km 7, 16 Apr. 1930, *León 14373* (BH000038179, BH000038957, GH s.n., HAC ex LS!, HAC ex LS4654!, HAC ex

LS4656!, MT00116884, P01796422, P01796423); Aug. 1930, *León 14670* (BH000038852, HAC ex LS!, HAC ex LS4652!, MT00116885, NY1662309); 3 Apr. 1931, *León 14825* (HAC ex LS!, HAC ex LS4650!, NY1662328); Viñales, 1947, *Dahlgren and León 47/105* (F [n.v.]). Villa Clara (Santa Clara): río Primero, 27 Mar. 1934, *León 16079* (HAC ex LS!); East Santa Clara, 1947, *Dahlgren and León 47/057* (F [n.v.]); (Santo Domingo): Manacas, 1947, *Dahlgren and León 47/037* (F [n.v.]). (Isla de la Juventud): cerca Mac Kinley, Feb. 1939, *León 18783* (HAC ex LS4571!).

Field Observations by C. E. Moya. CUBA. [**1985–2000**]. (Isla de la Juventud), Embalse del Medio; N Calabaza; N Nueva Gerona; N Siguanea; SE Santa Fe, VIII.2000 [P. Craft]; Cultivated: Hotel Colony, VIII.2000 [P. Craft]. [**Post 2014**]. (Isla de la Juventud), Carretera Santa Fe, 1.X.2018, Serie Moya 1823; entronque aeropuerto, 1.X.2018, Serie Moya 1831; carretera a Bibijagua, 2.X.2018, Serie Moya 1863c; playa Bibijagua, 2.X.2018, Serie Moya 1864b.

Geographical Distribution. CUBA. Provinces Cienfuegos (Cienfuegos^{H}), Pinar del Río (Consolación del Sur^{H}, Guane^{H}, Minas de Matahambre^{H}, Pinar del Río^{H}, Sandino^{R}, Viñales^{H}), Villa Clara (Santa Clara^{H}, Santo Domingo^{H}), Isla de la Juventud^{H,A}.

Notes. Beccari (1907) stated *Curtiss 435* as the type of *Copernicia curtissii.* In doing so he referred to a complete collection, thus creating syntypes but did not note where specimens were deposited. Dahlgren and Glassman (1963) did the same, relating as the type all duplicates of *León 16145* at LS, now considered as lectotype [first-step]. Here I designate *León 16145* at HAC ex LS.1 as the lectotype [second-step] and designate as isolectotypes the 13 duplicates at BH, F, HAC, NY and US.

Dahlgren and Glassman (1963) designated *Curtiss 435* at G-DC as the type, which is considered the lectotype of *Copernicia curtissii*. *Curtiss 435* in G-DC consists of a single specimen mounted on two herbarium sheets, with the same G5831 barcode, both of which are part of the lectotype (Art. 8.3, Turland et al. 2018) (**Fig. 38;** for an image of the lectotype, see: https://www.ville-ge.ch/musinfo/bd/cjb/chg/adetail.php?id=98523&base=img&lang=en). The remaining 21 duplicates at A, BH, CM, F, FI, FTG, GH, HAC, K, L, LE, M, MO, NY, US, and VT constitute isolectotypes.

León (1931) validly published the name *Copernicia clarensis* based on an acompanying description. In doing so, he designated *León 14956* as the type and referred to it as a complete collection, thus creating syntypes. Dahlgren and Glassman (1963) also created syntypes when they designated *León 14956* at LS as the type (currently absent in HAC but somewhat surprisingly present at F), which is considered a lectotype [first-step]. Here I designate *León 14956* at F0075026 ex LS4628 as the lectotype [second-step] (**Fig. 39;** see: https://www.ville-

ge.ch/musinfo/bd/cjb/chg/adetail.php?id=98523&base=img&lang=en). The remaining 13 duplicates at A, BH, F, HAC, MT, NY, P, S and US are isolectotypes.

León (1936) transferred *Copernicia clarensis* to *C. hospita* var. *clarensis*. Dahlgren and Glassman (1963) considered *C. curtissii* the correct name of *C. pauciflora*, *C. clarensis,* and *C. hospita* var. *clarensis*, making them heterotypic synonyms.

Copernicia gigas Ekman ex Burret, Kongl. Svenska Vetensk. Acad. Handl., ser. 3, 6(7): 3 (1929). (**Fig. 40**). The type of *Copernicia gigas* was designated by Moya and Berazaín (in prep).

= *Copernicia excelsa* León, Revista Soc. Geogr. Cuba 4: 56. 1931.
Type. CUBA. [Sancti Spíritus (La Sierpe)], "en potreros, Mapos, Guasimal (Santa Clara)," fl., 22 Jul. 1931, *León 14984* (lectotype [first-step]: Glassman 1972: 98; [second-step]: designated here, HAC ex LS4590!, isolectotypes: A00028313, BH000038955, BH000038956.1, BH000038956.2, F279236 [foto A], FTG63887 [foto US], HAC ex LS4592!, HAC ex Roig5869!, NY00071161, NY00071162, P00725585, P00725586, US00087461).

Syntypes. CUBA. Sancti Spíritus (La Sierpe): "sabanas Romero," 24 Jun. 1931, *León 14910* (BH000038950, HAC ex LS4580!); sabanas Mapos, Jul. 1931, *León 14972* (HAC ex LS4759!, HAC ex LS!, MT00116890.1, MT00116890.2); *León 14973* (n.v.); finca La Vega, cerca rio Zaza, 21 Jul. 1931, *León 14981* (GH s.n., HAC ex LS4591!, HAC ex LS!).

Other specimens of *Copernicia gigas* collected by León but without type status. CUBA. Ciego de Ávila (Chambas): Adelaida, 11 Jul. 1932, *León 18535* (GH s.n., HAC ex EEAB!, HAC ex LS.1!, HAC ex LS.2!, HAC ex LS.3!). Las Tunas (Majibacoa): Omaja, 1 Jan. 1934, *León 16042* (HAC ex LS4586!). Sancti Spíritus (La Sierpe): playa Romero, 28 Jun. 1932, *León 15665* (HAC ex LS4582!); Mapos, 1 Aug. 1934, *León 16127* (HAC ex LS4583!, HAC ex LS4584!.

Field Observations by C. E. Moya. CUBA. [**1985–2000**]. Sancti Spíritus (La Sierpe): Carenero, 1988–1994; 16.II.1996; 2000 [JBSS]; VIII.1995, [P. Mayotte]; XII.1999 [F. A. and J. E. Moya] (**Fig. 41)**; El Basto, 1988–1994 [JBSS]; Estero Las Guásimas, 1988–1994 , II.1997 [JBSS]; (Yaguajay): Punta Judas, 1992–1996 [Roberty H.]. Las Tunas (Jobabo): sur Zabalo, 23.III.1999 [N. Barboza^{H}]. [**Post 2014**]. Sancti Spíritus (La Sierpe): Casa de Visita, 17.XII.2016, Serie Moya 1674; El Toro, 17.XII.2016, Serie Moya 1678.

40. *Copernicia gigas*, in habitat, is gregarious and abundant at Carenero, Siete de Noviembre, Sancti Spíritus. © 2016 D .R. Hodel.

41. Frank A. and Josué E. Moya provide scale for *Copernicia gigas*, Carenero, La Sierpe, Sancti Spíritus. © 1999 C. E. Moya López.

42. Lectotype of *Copernicia excelsa*, *León 14984* HAC ex LS4590, which is a synonym of *C. gigas*. © 2024 HAC.

Geographical Distribution. CUBA. Provinces Camagüey (Vertientes[R]), Ciego de Ávila (Chambas[H], Granma (Manzanillo[H]), Las Tunas (Jobabo[R,A], Las Tunas[H]), Sancti Spíritus (La Sierpe[H,A], Sancti Spíritus[H,A], Yaguajay[H]).

Notes. León (1931) designated *León 14984* as the type of *Copernicia excelsa*. In doing so he referred to a complete collection, thus creating syntypes, but did not note herbaria where specimens were deposited. Dahlgren and Glassman (1963) did the same, designating as the type all duplicates of *León 14984* at LS, now considered as lectotypes [first-step]. Here I designate *León 14984* at HAC ex LS4590 as the lectotype [second-step] (**Fig. 42**) and I designate the remaining specimens as isolectotypes.

León (1936) transferred *Copernicia excelsa* to *C. gigas*. Verdecia (2014) reported it in the Jobabo municipality.

Copernicia gigas grows in the coastal ecosystems of Majagua and Venezuela municipalities in the southwest of Ciego de Ávila province, similar to the La Sierpe municipality of Sancti Spíritus.

Copernicia glabrescens H. Wendl. ex Becc., Webbia 2: 170. 1907. (**Fig 43**).

Type. CUBA. Locality and date unknown, *C. Wright 3968 p. p. A*, emend Moya (lectotype, Dahlgren and Glassman 1963: 125, A: A00028318, isolectotype: F279241 [photo A, n.v.]).

= *Copernicia glabrescens* var. *havanensis* León, Mem. Soc. Cub. Hist. Nat. ''Felipe Poey'' 10: 217. 1936.

Type. CUBA. [Mayabeque (Batabanó)[, “orillas del monte húmedo de la costa sur, finca San Francisco, no lejos al este de Batabanó (Habana),” fl., 14 Jan. 1931, *León 14756* (lectotype [first-step]: Dahlgren and Glassman 1963: 125, LS; [second-step]: designated here, HAC ex LS!; isolectotypes: BH000038933, F0075035 ex LS4600, F279242 foto NY [n.v.], FTG63884 [foto US], HAC ex EEAB!, HAC ex LS4599!, MT00116891.1, MT00116891.2, NY00071170 ex LS, NY00071171, P01796418, P01796419, US00087465 ex LS).

Syntypes. CUBA. Mayabeque (Batabanó): finca San Francisco, este de Batabanó, 11 Jun. 1930, *León 14581* (BH000038103, HAC ex LS4603); 26 Jun. 1930, *León 14586* (BH000038848 [frag.], HAC ex LS4598, HAC ex LS4608).

Other specimens of *Copernicia glabrescens* collected by León but without type status. CUBA. Artemisa (Artemisa): entre Mangas y Artemisa, Apr. 1930, *León 14374* (HAC ex EEAB!, HAC ex LS4594!, HAC ex LS4597!); *León 14375* (HAC ex LS.1! [mix], HAC ex LS.2!, HAC ex LS4606!, US00016268 [n.v.], US00016360 [n.v.]); 27 Jan. 1931, *León 14765* (HAC ex LS4604!); Jul. 1936,

43. *Copernicia glabrescens*, in habitat, Cajalbana, Pinar del Río. © 2017 D. R. Hodel.

León 14591 (HAC ex LS!, HAC ex LS4607!, US00016291 [n.v.], US00016314 [n.v.]); (Bahía Honda): entre Las Pozas y B. Honda, Apr. 1938, *León 17094* (GH, HAC ex LS4602!). Mayabeque (Batabanó): finca San Francisco, 17 Dec. 1930, *León 14722* (HAC ex LS!, HAC ex LS4609!); (San José de las Lajas): Tapaste, 2 Jan. 1922, León 10659 (HAC ex LS4693!, NY1662367). Pinar del Río (Guane): Guane, 1 Apr. 1931, *Bailey, León, & Roig 15186* (BH.1, BH.2, HAC ex Roig5489.1!, HAC ex Roig5489.2!); (La Palma): Cajálbana, 6 Apr. 1915, *León 4927* (HAC ex PC4593!, NY1662339, P01796417); (Pinar del Río): road La Coloma, 1 Apr. 1931, *León, Bailey & Roig 14820* (A, GH, HAC ex LS4601!, HAC ex Roig5480!; HAC ex LS4605! [as *León 14808*]; [BH000038112, BH000038113]) [as *Bailey 15168*].

Field Observations by C. E. Moya. CUBA. [**1985–2000**]. Pinar del Río (Guane): Sabanalamar, road Sabalo km 3, road Sabalo km 5, west Guane, 10.IV.1999 [N. Barboza[H]]; La Palma): Cajalbana, 11.IV.1999 [N. Barboza[H]]; VIII.2000 [P. Craft]. [**Post 2014**]. Pinar del Río (La Palma): Cajalbana, 26.X.2016, *Serie Moya 1697a;* (Sandino): carretera a Cortés, 27.X.2016, Serie Moya 1967b.

Geographical Distribution. CUBA. Provinces Artemisa (Artemisa[H], Bahía Honda[H], Candelaria[H], San Cristóbal[H]), Mayabeque (Batabanó[H], Güines[P], Melena del Sur[P]), Pinar del Río (Consolación del Sur[H], Guane[H,A], La Palma[H.A], Minas de Matahambre[R], Pinar del Río[H], Sandino[H], San Juan y Martínez[H], San Luis[R]).

Notes. Moya (2025: 23) resolved *C. Wright 3968 p. p. A* when he designated A00028318 as the lectotype of *Copernicia glabrescens* (**Fig. 43;** see: https://s3.amazonaws.com/herbaria2/GPI-Types/HUHGPI0050/Arecaceae/full/full_A00028318.jpg); Moya (2025: 49) considered the rest of the collection *C. Wright 3968 p. p. B* to lack type status.

In Moya (2022a), I misinterpreted the Code relating to article 46.4 because when Beccari (1907) attributed *Copernicia glabrescens* to Wendland, their rank was unchanged; thus, the names should be attributed to H. Wendl. ex Becc. I corrected the error in Moya (2023) at the suggestion of Turland (pers. comm., 31 August 2023). Thus, the correct name is *Copernicia glabrescens* H. Wendl. ex Becc.

León (1931) designated *León 14756* as the type of *Copernicia glabrescens* var. *havanensis*. In doing so he referred to a complete collection, thus creating syntypes, but did not note herbaria where specimens were deposited. Dahlgren and Glassman (1963) did the same, designating as the type all duplicates of *León 14756* at LS, now considered as lectotypes [first-step]. Here I designate *León 14756* at HAC ex LS as the lectotype [second-step] and I designate the remaining specimens as isolectotypes (**Fig. 44;** for an image of isolectotype *León 14756* at P01796418 see: http://mediaphoto.mnhn.fr/media/1441309337305pqmwUcgFOxxzYW5Y).

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Ramona Oviedo (pers. comm., 13 February 2019) reported *Copernicia glabresecens* in the wetlands south of Güines and Melena del Sur in Mayabeque province.

Dahlgren and Glassman (1963: 123) considered *Copernicia glabrescens* var. *havanensis* and *Copernicia ramosissima* as synonyms of *C. glabrescens*. Also, they (1963: 137) doubtfully referred *León 10659* to *C. hospita*; here it is identified as *C. glabrescens*.

Copernicia macroglossa H. Wendl. ex Becc., Webbia 2: I77. 1907. (**Figs. 7, 45**).

Type. CUBA. Locality and date unknown, *C. Wright 3969 p. p. B,* emend. Moya. (lectotype, [first-step]: Dahlgren and Glassman 1963: 153, A*, [second-step]: designated Moya 2023e: 5, GH00028326).

= *Copernicia torreana* León, Revista Soc. Geogr. Cuba 4: 40. 1931.

45. *Copernicia macroglossa*, in habitat, Cartegena, Cienfuegos. © 2017 D. R. Hodel.

Type. CUBA. [La Habana (Guanabacoa)], "Loma de la Jata, Guanabacoa, Habana," 30 Mar. 1930, *León 14297* (lectotype, [first-step]: Glassman 1972: 101, LS [second-step]: Moya 2021: 11, HAC ex LS4701!; isolectotypes: A00028336, A00028337, F0092058.1 ex LS4697, F0092058.2 ex LS, F0092058.3 ex LS, F0092062 ex LS4700, HAC ex LS4698!, HAC ex LS.1!, HAC ex LS.2!, MT00116902.1, MT00116902.2, NY1662384, P00725606, P00725607, P00725608, S-R-1239, US00087483 ex LS, US00087484, US00087485, US00087486 ex LS).

Syntypes. CUBA. Cienfuegos (Cienfuegos): Calicita, 13 Jul. 1895, *Combs 335* (B [dest.], FI ex B [n.v.], GH [n.v.], K [n.v.], MO [n.v.], NY); (Abreus): Antón Recio, *León 14282* (n.v.), 23 Dec. 1930, *León 14732* (GH s.n., HAC ex LS4694!, HAC ex LS4704!, US00016410 [n.v.], US00016433 [n.v.]). La Habana (Guanabacoa): Feb. 1909, *Baker 2928* (HAC ex ECA!, FI ex ECA [n.v.]); Cuabal de Salomón, Minas, 23 Dec. 1932, *León 14252* (BH000038905, HAC ex LS4705!), Jata Hills Guanabacoa, 1 May 1914, *Ekman 568* (S×2, G [n.v.]); 7 Dec. 1921, *Ekman 13548* (NY×2, S×2). Mayabeque (Batabanó): Batabanó, 12 Feb. 1931, *León 14789* (HAC ex LS4691!, HAC ex LS4692!, HAC ex LS4706!, NY1662402, NY1662403); (Madruga): Madruga, 26 Mar. 1903, *Britton 722* (CM422037 [n.v.], CM422038 [n.v.], HAC ex NY.1!, HAC ex NY.2!, NY1662389, NY1662409,

NY1662474); cuabales Madruga, 4 Jan. 1930, *León 14277* (HAC ex LS4695!, HAC ex LS4703!); (Santa Cruz del Norte): cuabal del Espinal, 24 Apr. 1928, *Roig & León s.n.* (HAC ex Roig*4642*!). Villa Clara (Sagua la Grande): Motembo, 28 Jun. 1923, *Ekman 16848* (S); Sagua la Grande, *León 14217* (n.v.), *León 14222* (n.v.).

Other specimens of *Copernicia macroglossa* collected by León but without type status. CUBA. Cienfuegos (Abreus): Antón Recio, 23 Dec. 1930, León 14731 (GH s.n., HAC ex LS4702!, HAC ex UO!, US00016456 [n.v.], US00016479 [n.v.]). La Habana (Guanabacoa): La Jata, Jul. 1911, León 2652 (HAC ex PC 4699!, MT00116901, NY01476130, NY1662394); E de Minas, 28 Dec. 1914, *León 4755* (NY1662388, P01796652); cuabal Salomón, 20 May 1929, León 13890 (BH); 29 Dic. 1929, León 14271 (BH). Mayabeque (Santa Cruz del Norte): cuabal Canasí, 30 Dec. 1924, Roig & León s.n. (HAC ex Roig3413, HAC ex ECA.1!, HAC ex ECA.2!).

Field Observations by C. E. Moya. CUBA. [**1985–2000**]. Cienfuegos (Cienfuegos): finca Antón Recio, V.1997 [Hermes R. & Milián R.]. Mayabeque (Santa Cruz del Norte): Canasi, near presa, 30.III.1999 [N. Barboza^{H}]. Sancti Spíritus (La Sierpe): Estero Las Guásimas, Estero Las Guásimas, 1985–1987 [José Luis V.]; VIII.1995, [P. Mayotte & Hermes R.]; 1988–1994, 2000 [JBSS]; Peralejo, 2000 [JBSS]; (Trinidad): sabanas Casilda, 1992–1996 [Roberty H.]; VIII.2000 [P. Craft]; VIII.1999 [K. Tansacha]; laguna la Chorreras, 1997, [JBSS]; norte Casilda, 12.III.1999 [N. Barboza^{H}]; (Yaguajay): Jobosí, 1986 [José Luis V. & Martínez-Fortún]. [**Post 2014**]. Camagüey (Florida): antes entronque Urabo, 1.XI.2016, Serie Moya 1639. Cienfuegos (Rodas): Muelas Quietas, 24.V.2014, *Serie Moya 1404*; Sin Nombre, 24.V.2014, *Serie Moya 1408*; (Abreus): La Pimienta, 1.VI.2014, Serie Moya 1428. La Habana (Guanabacoa): La Jata, 4.III.2015, Serie Moya 1505; Habana del Este, desde finca Rigo, El Trebol, 28.I.2019, Serie Moya 1955. Matanzas (Matanzas): Tres Ceibas de Clavellinas, 20.I.2019, Serie Moya 1908. Sancti Spíritus (Trinidad): sabanas de Casilda, 25.V.2014, Serie Moya 1413, 1414; potrero Manatí, 13.III.2016, Serie Moya 1602.

Geographical Distribution. CUBA. Provinces Artemisa (Caimito^{H,A}), Camagüey (Camagüey^{H}, Florida^{H,A}), Cienfuegos (Abreus^{H,A}, Cienfuegos^{H}, Rodas^{A}), La Habana (Guanabacoa^{H,A}, La Habana del Este^{A}), Matanzas (Matanzas^{H,A}), Mayabeque (Batabanó^{H}, Jaruco^{R}, Madruga^{H}, Melena del Sur^{P}, Santa Cruz del Norte^{H,A}), Sancti Spíritus (La Sierpe^{R,A}, Trinidad^{H,A}, Yaguajay^{R,A}), Villa Clara (Corralillo^{H}, Sagua la Grande^{H}, Santo Domingo^{R}).

Notes. Moya (2023: 5) resolved *C. Wright 3969 p. p. B* when he designated GH00028326 as the lectotype of *Copernicia. macroglossa* (**Fig. 46;** for an image of the lectotype, see: https://s3.amazonaws.com/huhspecimenimages/JPG-Preview/00028326.jpp). Moya (2025: 51) considered the remainder of the collection of *C. Wright 3969 p. p. D* and *Wright 3969 p. p. E.* to lack type status.

In Moya (2021a), I misinterpreted the Code relating to article 46.4 because when Beccari (1907) attributed *Copernicia macroglossa* to Wendland, their rank was unchanged; thus, the names should be attributed to H. Wendl. ex Becc. I corrected the error in Moya (2023) at the suggestion of Turland (pers. comm., 31 August 2023). Thus, the correct name is *Copernicia macroglossa* H. Wendl. ex Becc.

León (1931: 40) designated *León 14297* as the type of *Copernicia torreana*. In doing so he referred to a complete collection, thus creating syntypes, but did not note herbaria where specimens were deposited. Glassman (1972: 101) did the same, designating as the type all duplicates of *León 14297* at LS, now considered as lectotypes [first-step]. Here I designate *León 14297* at HAC ex LS4701 as the lectotype [second-step] and I designate the remaining specimens as isolectotypes (**Fig. 47;** see: http://mediaphoto.mnhn.fr/media/1443725132891dUaNPj7fPxSTv5BW for an image of the isolectotype *León 14297* at P00725606).

Copernicia rigida Britton & P. Wilson, Bull. Torrey Bot. Club 41(1): 17. 1914. (**Fig. 48**).

Type. CUBA. [Camagüey (Camagüey)], "vicinity of Tiffin, Camagüey," 1–5 Nov. 1909, *Shafer 2895* (lectotype, [first-step]: Dahlgren and Glassman 1963: 172, NY [second-step]: designated here: NY00071189; isolectotypes: F0092106.1 ex CHI, F0092106.2 ex CHI, HAC ex IB!, HAC28858! [photo US], HAC28860! [photo US], HAC28919! [photo US], MO104365 ex NY, MO104366, NY00071187, NY00071188, NY00071190, US00087476, US00087477, US00087478).

Syntypes. CUBA. Camagüey (Nuevitas): 19 Mar. 1909, Santa Lucia [Lucea], Camagüey, Shafer 971 (NY00071191, NY00071192, NY00071193, US00016511 [n.v.], US00016534 [n.v.]). Cienfuegos (Cienfuegos), Punta Gorda, 24 Feb. 1910, *Britton & Wilson 4563* (NY00071194, NY00071195, NY01662469); Punta Gorda, 25–26 Mar. 1911, *Britton, Cowell & Earle 10299* (NY00071184, NY00071185, NY00071186, NY1662470 [frag.], NY1662471 [frag.]).

= *Copernicia rigida* f. *fissilingua* León, Mem. Soc. Cub. Hist. Nat. ''Felipe Poey'' 10: 210. 1936. Type. CUBA. [Las Tunas (Puerto Padre)], "sabanas próximas a Puerto Padre," 8 Dec. 1930, *Curbelo s.n.* (lectotype, designated here: HAC ex Roig5463.1!; isolectotypes: HAC ex Roig5463.2!, HAC ex EEAB [as *León 13984*], NY00071196 ex Roig5463 [frag.]).

Other specimens of *Copernicia rigida* collected by León but without type status. CUBA. Camagüey (Nuevitas): Nuevitas, 1948, *Dahlgren and León 48/052* (F [n.v.]. Cienfuegos (Abreus), entre Cieneguita y Espinal, 1 Aug. 1930, *León 14643* (BH.1, BH.2, GH, HAC ex EEAB!, HAC ex LS.1!, HAC ex LS.2!, HAC ex LS.3!, HAC ex LS4664!, HAC ex PC4660!, HAC ex PC4663!, HAC ex PC!, HAC

48. *Copernicia rigida*, in habitat, Finca Cubana, San Miguel de Bagá, Camagüey. © 2017 D. R. Hodel.

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ex Roig5292.1!, HAC ex Roig5292.2!, MT00116896.1, MT00116896.2, NY1662410, NY1662413, NY1662414, P01796646, P01796647, P017966468, S11-24635, US00016513 [n.v.], US00016536 [n.v.], US00016537 [n.v.]). Las Tunas (Puerto Padre), Feb. 1931, *León 14859* (HAC ex LS!). Holguín (Calixto García), Cañada del Yarey, Mir, León 15537 (GH, HAC ex LS4666!!, NY1662409, US00016535 [n.v.]). Sancti Spíritus (La Sierpe), Estero Las Guasimas, 21 Jun. 1931, *León 14913* (HAC ex LS4665!, HAC ex LS4667!, S [n.v.], US00016512 [n.v.]).

Field Observations by C. E. Moya. CUBA. [**1985–2000**]. Camagüey (Minas): sabanas SW Minas, VIII.1999 [K. Tansacha]; (Nuevitas): E Nuevitas, 1999 [P. Craft]. Las Tunas (Jobabo): sur Zabalo, 23.III.1999 [N. Barboza[H]]. Sancti Spíritus (La Sierpe): Estero Las Guásimas, 1985–1987 [José Luis V.]; casa de visita, 1988–1994, 2000 [JBSS]; comedor Peralejo, 21.VII.1995 [JBSS]; Estero Las Guásimas, 1988–1994, 2000 [JBSS]; VIII.1995, [P. Mayotte & Hermes R.]; Los Galleguitos, 1997 [P. Mayotte]; sur Peralejo, 10.III.1999 [N. Barboza[H]]. [**Post 2014**]. Camagüey (Nuevitas): camino a Tiffin, 4.VI.2017, Serie Moya 1714 [*C. rigida* "greenr"], 1715 [*C. rigida* "silver"];: carretera Nuevitas, 8.VI.2017, Serie Moya 1718;: pasando San Agustín, 5.IX.2017, Serie Moya 1739. Holguín (Moa): road to Juracal, 12.X.2015, *Serie Moya 1509* [*C. rigida* "silver"].

Geographical Distribution. CUBA. Camagüey (Camagüey[H], Minas[H,A], Nuevitas[H,A]), Cienfuegos (Abreus[H], Cienfuegos[H]), Holguín (Calixto García[H], Moa[A]), Granma (Bayamo[H]), Las Tunas (Jobabo[R,A], Manatí[H], Puerto Padre[H]), Sancti Spíritus (Trinidad[H], La Sierpe[H,A], Yaguajay[A]),

Notes. Britton (1914: 1) designated *Shafer 2895* as the type of *Copernicia rigida*. In doing so he referred to a complete collection, thus creating syntypes, but did not note herbaria where specimens were deposited. Dahlgren and Glassman (1963: 172) did the same, designating as the type all duplicates of *Shafer 2895* at LS, now considered as lectotypes [first-step]. Here I designate *Shafer 2895* at NY00071189 as the lectotype [second-step] (**Fig. 49;** see: https://sweetgum.nybg.org/science/vh/specimen-details/?irn=279573) and I designate the remaining specimens as isolectotypes.

León (1936: 210) noted forma *fissilingua* of *Copernicia rigida* collected by Curbelo that was present in the herbarium as *Roig 5463*. Dahlgren and Glassman (1963: 173) noted isotypes of *Curbelo 5463* in NY and SV, but without defining the holotype. Here I designate *Curbelo s.p. 4* at HAC ex Roig5463.1 as the lectotype. An isolectotype of *Curbelo 5463* is at NY00071196 ex Roig5463 (**Fig. 50;** for the image see: https://sweetgum.nybg.org/science/vh/specimen-details/?irn=386737).

The specimen *León 13984* in EEAB corresponds to *Curbelo s.p.*

Verdecia (2014) reported *Copernicia rigida* for the municipality of Jobabo.

Copernicia yarey Burret, Kongl. Svenska Vetensk. Acad. Hyl., ser. 3, 6(7): 7. 1929. (**Fig. 51**).

The type of *C. yarey* was designated by Moya and Berazaín (in prep.).

= *Copernicia holguinensis* León, Revista Soc. Geogr. Cuba 4: 48. 1931.
Type. CUBA. [Holguín (Holguín)], sabanas cerca de Holguín (Oriente),” May 1931, *León 14879*, collected by J. García Castañeda and G. Aguayo (lectotype, [first-step]: Dahlgren and Glassman 1963: 217, [second-step]: designated here: HAC ex LS!; isolectotypes: A00028319, BH000038935, F279243 [foto NY, n.v.], HAC ex LS4715!, HAC ex Roig5641!, MT00116904, NY00071172, NY00071173 ex LS, P00725590, US00087466S).

Other specimens of *Copernicia yarey* collected by León but without type status. CUBA. Camagüey (Nuevitas): Pastelillo, 29 Dec. 1934, *León 16201* (HAC ex 4739!, US00016409 [n.v.], US00016432 [n.v.], US00016455 [n.v.]. Ciego de Ávila (Morón): Cayo Romano, Jan. 1936, *León 16490* (HAC ex 4743!). Granma (Niquero), El Real, 1 Aug. 1935, *León 16378*, identified as *Copernia yarey* by Verdecia 2016, US16516, US16539 (HAC ex UO.1!, HAC ex UO.2!, HAC ex UO.3!, HAC ex

51. *Copernicia yarey*, in habitat, Rafael Freyre, Holguín. © 2017 D. R. Hodel.

UO.4!, HAC ex LS4626!, HAC ex LS4629!, HAC ex LS4630!, US00016516 [n.v.], US00016539 [n.v.]). Holguín (Cacocum): Hacienda Pesquero, 23 Mar. 1932, *León 15547* (HAC ex 4740!); Cacocum, 3 Jul. 1932, *León 15683* (NY1662424); (Holguín): pie de Fraile, 27 Jul. 1935, *León 16293* (HAC ex 4741!); (Mayarí): río Purio, 3 Jan. 1934, *León 15894*, collected by J.A. Garcia (HAC ex LS!); Loma Bandera, Jul. 1941, *León 20468* (HAC ex 4746!); (Moa): Monte Centeno, Aug. 1945, *León 22691* (GH, HAC ex 4736!, USF173519). Las Tunas (Las Tunas): Las Tunas, 25 Mar. 1932, *León 15549* (HAC ex 4714!); sabana Las Tunas, 9 Jul. 1932, *León 15797* (HAC ex 4742!); (Manatí): savanna Manatí, *León 16801* (GH, HAC ex 4738!). Santiago de Cuba (Guamá): pie Pico Turquino, Jun. 1936, *León 16750*, collected by Acuña (GH, HAC ex 4737!); (Santiago de Cuba): Bahía de Santiago de Cuba, Oct. 1932, León 15870 (HAC4720!); 4 Aug. 1935, *León 16385* (HAC ex LS4635! [mix]).

Field Observations by C. E. Moya. CUBA. [**1985–2000**]. Ciego de Ávila (Morón): Cayo Coco[H], 10.VIII.1995, [P. Mayotte & Hermes R.]. Las Tunas (Jobabo): sur Zabalo, 23.III.1999 [N. Barboza[H]]. [**Post 2014**]. Camagüey (Nuevitas): Pastelillo, 5.IX.2017, Serie Moya 1736; pasando San Agustí, 5.IX.2017, Serie Moya 1740. Holguín (Moa): road to Juracal to the left, 12 Oct. 2015, *Serie Moya 1510*.

52. Lectotype of *Copernicia holguinensis*, *León 14879* HAC ex LS, which is a synonym of *Copernicia yarey.* © 2024 HAC.

53. Map showing La Cruz Pt. (red), the type locality of *Copernicia yarey* (from Moya and Berazaín 2023). Adapted from: Map of Port of Santiago de Cuba, in Fernald (1898: 151), *The Spaniard in History*. Courtesy of British Library HMNTS 9181.bbb.8.

Geographical Distribution. CUBA. Provinces Camagüey (Esmeralda[H], Florida[H], Nuevitas[H] y Sierra de Cubitas[H]), Ciego de Ávila (Morón[A]), Granma (Bayamo[H], Niquero[H] y Pilón[H]), Guantánamo (Baracoa[R]), Holguín (Báguanos[H], Banes[H], Cacocum[H], Holguín[H], Mayari[H], Moa[H]), Las Tunas (Jobabo[R], Las Tunas[H], Manatí[H], Matanzas (Martí[P]), Santiago de Cuba (Guamá[H], Mella[H], Santiago de Cuba[H]), Villa Clara (Caibarién[H]).

Notes. León (1931; 48) designated *León 14879*, collected by García Castañeda and G. Aguayo, as the type of *Copernicia holguinensis*. In doing so he referred to a complete collection, thus creating syntypes but did not note herbaria where specimens were deposited. While Dahlgren and Glassman (1963: 216) noted isotypes of *Castañeda and Aguayo (León) 14879* in different herbaria, now considered as lectotypes [first-step]. Here I designate *Castañeda and Aguayo (León) 14879* at HAC ex LS) as the lectotype [second-step] (**Fig. 52)** and I designate the remaining specimens at A, BH, F, HAC, MT, NY, P, and US as isolectotypes.

In HAC a mixture of inflorescences of two different species exists on one sheet: on the left is León *16385* [HAC ex LS4635], which is *Copernicia yarey*, but lacking type status, and on the right is *León 16379* [HAC ex LS4636], which is an isolectotype of *Copernicia humicola*.

León (1936: 219) suggested the probability that *Copernicia holguinensis* "is not distinct" from *C. yarey*, as well as demonstrating that Ekman's collection of *C. yarey* was not from Cabo Cruz. Moya and Berazaín (2023) showed that the true type locality of *Copernicia yarey* is actually the Punta La Cruz (La Cruz Pt.) in the Bay of Santiago de Cuba (Fernald 1898), in the municipality and province of the same name. (**Fig. 53**).

Verdecia (2014) reported *Copernicia yarey* for the municipality of Jobabo. Ramona Oviedo (pers. comm., 2 February 2019) reported *C. yarey* for the Ciénaga (Swamp) de Majaguillar and the Cayos (Keys) de Cinco Leguas in the Martí municipality, Matanzas.

León (1936: 219) cited the collection *León 16378* as *Copernicia hospita* var. *clarensis* for Punta del Real, 12 km east of Cabo Cruz. Verdecia identified the same collection at US16516, US16539, as *C. yarey*.

Hybrid

Copernicia × oxycalyx Burret (pro sp.), Kongl. Svenska Vetensk. Acad. Hyl., ser. 3, 6(7): 6. 1929. *C. baileyana* × *C. rigida*. (**Fig. 54**).

The type of *C.* × *oxycalyx* was designated by Moya and Berazaín (in prep.).

54. Milián Rodriguez Lima inspects a *Copernicia* × *oxycalyx*, in habitat, Dumañecos, Las Tunas, the type locality. © 2018 D. R. Hodel.

= *Copernicia* × *clarkii* León (pro sp.), Mem. Soc. Cub. Hist. Nat. ''Felipe Poey'' 10: 213. 1936. Type. CUBA. [Las Tunas (Manatí)], "sabanas próximas a Manatí (Oriente)," fl., Sep. 1932, *León 15852*, collected by S. Clark (lectotype, [first-step]: Dahlgren and Glassman 1963: 168, LS [second-step]: designated here, HAC ex LS4547!; isolectotypes: BH.1, BH.2, BH.3, F0075028 ex CHI, F0092037 ex LS4548, GH00028303, NY00071142, US00012456 [n.v.], US00012457 [n.v.], US00012481 [n.v.]).

Syntype. CUBA. Las Tunas (Manatí): sabanas próximas a Manatí, ft., 7. Jul. 1932, *León 15746* (GH00028304, HAC ex LS4545!, HAC ex LS4546!, US00012410 [n.v.], US00012433 [n.v.], US00016371 [n.v.]); *León 15811* (F279221 [photo], HAC ex LS4549!); *León 16008* (F279220 [photo], HAC ex LS4551!, HAC ex LS!).

Other specimens of *Copernicia* × *oxycalyx* collected by León but without type status. CUBA. Las Tunas (Manatí): Central Manatí, Oct. 1933, *León 16003* (HAC ex LS4550); Manatí, 1947, *Dahlgren and León 47/081* (F [n.v.]).

Field Observations by C. E. Moya. CUBA. [**1985–2000**]. Las Tunas (Jobabo): sur Zabalo, 23.III.1999 [N. Barboza[H]].

Geographical Distribution. CUBA. Provincias Camagüey (Céspedes[H], Nuevitas[H], Sibanicú[H]), Ciego de Ávila (Chambas[H], Majagua[E], Venezuela[E]), Granma (Manzanillo[H]), Holguín (Calixto García[H]), Las Tunas (Jobabo[R,A], Las Tunas[H], Manatí[H]), Sancti Spíritus (La Sierpe[H], Yaguajay[H]).

Notes. León (1936: 214) designated *León 15852* and *León 15746* as types of *Copernicia clarkii*, thus creating syntypes, but did not note herbaria where specimens were deposited. Dahlgren and Glassman (1963: 168) created syntypes when they designated as types all duplicates of *León 15852* at LS; these are now considered as lectotypes [first-step]. Here I designate *León 15852* at HAC ex LS4547 as the lectotype [second-step] and I designate the remaining specimens as isolectotypes (**Fig. 55:** see: https://www.gbif.org/occurrence/1999238825 for an image of an isolectotype of *C. clarkii León 15852* at GH00028303, which is a synonym of *C*. × *oxycalyx*).

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León (1936: 209) reduced *Copernicia oxycalyx* to a synonym of *C. rigida*, and described *C. clarkii* for Las Tunas. Dahlgren and Glassman (1963: 167) moved *C. clarkii* to a synonym of *C. oxycalyx*. Verdecia (2014) reported *C. oxycalyx* as a hybrid for the municipality of Jobabo.

IV. Species described by others but based on León collections.

Copernicia cowellii Britton & P. Wilson, Bull. Torrey Bot. Club 41: 17. 1914. (**Fig. 56**).

56. A very old *Copernicia cowellii*, in habitat, road to Nuevitas, Camagüey. © 2016 D. R Hodel.

Type. CUBA. [Camagüey (Camagüey)], "savannas near Camagüey," 2–7 Apr. 1912, *Britton, Britton & Cowell 13187* (lectotype [first-step Dahlgren and Glassman 1963: 100, NY]; lectotype [second-step]: designated here, NY00071151; isolectotypes: (F0075029 ex CHI, F279222 [photo NY], F279223 [photo NY], FTG63891 [photo US], GH00028305, MO104369, MO104370, NY00071149, NY00071150, NY00071152, NY1662465 [frag.], US00087455).

Syntypes. CUBA. Camagüey (Camagüey): savanna south Sierra Cubitas, 20–21 Feb. 1909, *Shafer 508* (GH00028306, GH00028307, NY00071153, NY00071154); (Minas): Queen City to Riverside, 31 Mar. 1909, *Shafer 1144* (NY00071146, NY00071147, NY00071148, US00012458 [n.v.]); Queen City to Minas, 21 Nov. 1909, *Shafer 2917* (GH0028308, GH0028309, NY00071143, NY00071144, NY00071145, US00012434 [n.v.]).

Other specimens of *Copernicia cowellii* collected by León but without type status. CUBA. Camagüey (Camagüey): sabana de Yucatán, 7 Jul. 1932 *León 15780* (GH, HAC ex LS4553, HAC ex LS, P01796424, P01796425), San Serapio, sabana de Altagracia, 30 Dec. 1934 *León 16026* (HAC ex LS4554, as 16206: GH ex LS, HAC ex LS4552).

Field Observations by C. E. Moya. CUBA. [**1985–2000**]. Camagüey (Camagüey): sabanas Camagüey, 1997 [P. Mayotte]; VIII.1999 [K. Tansacha]; (Minas): SW Minas, 24.III.1999 [N. Barboza[H]]; VIII.1999 [K. Tansacha]; XII.1999 [F.A y J. E. Moya]. [**Post 2014**]. Camagüey (Camagüey): sabanas a Camagüey, 31.X.2016, *Serie Moya 1638*;: norte Albaiza, 4.VI.2017, *Serie Moya 1757*; (Minas): pasando Parada Unidad Militar, 5.IX.2017, *Serie Moya 1742*.

Geographical Distribution. CUBA. Province Camagüey (Camagüey[H,A], Minas[HA], Nuevitas[H], Jimaguayú[R]).

Notes. Britton (1914: 18) designated *Britton, Britton & Cowell 13187* as the type of *Copernicia cowellii*. In doing so he referred to a complete collection, thus creating syntypes, but did not note herbaria where specimens were deposited. Dahlgren and Glassman (1963: 100) did the same, designating as the type all duplicates of *Britton and Cowell 13187* at LS, now considered as lectotypes [first-step]. Here I designate *Britton and Cowell 13187* at NY00071151, with an annotation by Britton, as the lectotype [second-step] and I designate the remaining specimens as isolectotypes (**Fig. 57;** see *https://www.gbif.org/occurrence/1928574293* for an image of the lectotype of *C. cowelli Britton 13187* at NY71150).

Copernicia glabrescens var. ramosissima (Burret) O. Muñiz & Borhidi, Acta Bot. Acad. Sci. Hung. 28: 332. 1982. (**Fig. 58**).

≡ *Copernicia ramosissima* Burret, Kongl. Svenska Vetensk. Acad. Handl., ser. 3, 6(7): 8. 1929.

58. *Copernicia glabrescens* var. *ramoisissima*, in habitat, Tetas de Camarioca, Camarioca, Matanzas. © 2016 D. R. Hodel.

The type of *C. ramosissima* was designated by Moya and Berazaín (in prep.).

Other specimens of *Copernicia glabrescens* var. *ramosissima* collected by León but without type status. CUBA. Matanzas (Limonar): Tetas de Camarioca, 5 Sep. 1914, *León 4636* (HAC ex LS4659!, NY1662437); *León 14801* (A, HAC ex LS.1!, HAC ex LS.2!, HAC ex LS4658!, MT00116892.1, MT00116892.2, NY1662332, NY1662344, NY1662355, P01796649, US 00016461 [n.v.]).

Field Observations by C. E. Moya. CUBA. [**1985–2000**]. Matanzas (Cárdenas): La Sierra, Botinos hills, 28.III.1999 [N. Barboza[H]]; Los Botinos, VIII.1999 [K. Tansacha]. [**Post 2014**]. Matanzas (Limonar): Los Botinos, SW Tetas Camarioca, 19.I.2019, Serie Moya 1911[H].

Geographical Distribution. CUBA. Provincias Matanzas (Cardenas[H,A], Jovellanos[H], Limonar[H,A]).

59. Copernicia *hospita*, in habitat, Cartagena, Cienfuegos. © 2017 D. R. Hodel.

Copernicia hospita Mart., Hist. Nat. Palm. 3: 243. 1838. (**Fig. 59**).

Type. CUBA. [Matanzas province, Jovellanos municipality], "*Crescit in Cubae australis campis montosis aridis copiose*" [Lomas de Santa Ana], 1823, *Poeppig s.n* (lectotpye, [first step], Dahlgren and Glassman 1963: 135, BR, [second step], designated by Moya 2021b:13, (icon, Table 50.A, Fig. V. 1, 2, 3 and 4, in Martius 1824; isolectotypes: BH 000280999 photo of BR5639854, BR 0000005639854, F [photo, n.v.].

Specimens of *Copernicia hospita* collected by León but without type status. CUBA. Camagüey (Camagüey): savannas near Camagüey, 8 Jul. 1932, *León 15775* (NY1662370). Ciego de Ávila (Venezuela): Pozo Nuevo, N Júcaro, 24 Jun. 1932, *León 15836* (HAC ex LS4620). Cienfuegos (Abreus): Antón Recio, 11 Apr. 1930, *León 14314* (GH, HAC ex LS.1!, HAC ex LS.2!, HAC ex LS4614!, HAC ex LS4622!, HAC ex LS4637!); *León 14315* (HAC ex LS4616!); 31 Jul. 1930, *León 14610* (MT00116893); sabana Espinal, 24 Dec. 1930, *León 14726* (HAC ex LS4611!,). Las Tunas (Manatí): monte del Ocujal, 21 Dec. 1933. *León 16013* (HAC ex LS 4619). Matanzas (Jovellanos): cuabal de Jacán, 7 Dec. 1931, *León 15326* (HAC ex LS.1!, HAC ex LS.2!, HAC ex LS4615!); *León 15327* (GH, HAC ex LS4613!). Villa Clara (Corralillo): Motembo, 2 Jan. 1918, *León 8574* (C3920111, C3920112,

HAC ex PC4612!); (Placetas): sabana de Placetas, 9 Aug. 1918, *León 8140* (HAC ex LS4624!, NY1662373). Sancti Spíritus (Sancti Spíritus): rio Tayabacoa, Jun. 1930, *León 14915* (P01796415); (Yaguajay): sabana Venegas, 31 Dec. 1934, *León 16207* (GH, HAC ex LS4610!).

Field Observations by C. E. Moya. CUBA. [**1985–2000**]. Camagüey (Minas): SW Minas, 24.III.1999 [N. Barboza[H]]. Ciego de Ávila (Florencia): por Tamarindo, 6.VIII.1966, [JBSS]. Cienfuegos (Cienfuegos): Juraguá, V.1997 [Hermes R. & Milián R.]. Sancti Spíritus (Cabaiguán): Minas de Jarahueca, 11.III.1999 [N. Barboza[H]]; VIII.1999 [K. Tansacha]; VIII.2000 [P. Craft]; (Jatibonico): San Felipe, 3.IV.1995, [JBSS]; (La Sierpe), norte poblado, 1988–1994, 2000 [JBSS]; (Sancti Spíritus): Loma del Obispo[H], 23.I.1996 [JBSS]; presa Higuanojo, 22.XI.1966, [JBSS]; entronque Guasimal, VIII.2000 [P. Craft]; (Trinidad): (Trinidad): sabanas Casilda, 1992–1996 [Roberty H.]; laguna la Chorreras, norte Casilda, 1997, [JBSS]; Vallejo, cerca río Zaza, 10.III.1999 [N. Barboza[H]]. [**Post 2014**]. Camagüey (Camagüey): sabanas N Camagüey, 31.X.2016, Serie Moya 1644;: antes Parada San Serapio, 5.IX.2017, Serie Moya 1749; (Florida): antes entronque Urabo, 1.XI.2016, Serie Moya 1643; (Sierra de Cubitas); La Sierrita, 3.VI.2017, Serie Moya 1727; (Minas); pasando Parada Unidad Militar, 5.IX.2017, Serie Moya 1743. Cienfuegos (Rodas): Muelas Quietas, 24.V.2014, *Serie Moya 1401*; Sin Nombre, 24.V.2014, *Serie Moya 1407*; (Abreus): La Pimienta, 1.VI.2014, Serie Moya 1431. Matanzas (Jovellanos): Loma de Jacán, 19.I.2019, Serie Moya 1901; Loma Santa Ana [by Y. Hernández], 12.VI, 2021, Serie Moya 2102. Sancti Spíritus (Cabaiguán): Minas de Jarahueca, 22.VI.22, Serie Moya 1610, 1625 [*C. hospita* "silver"]; Serie Moya 1611, 1624 [*C. hospita* "green"]; 3.VII.2018, Serie Moya 1807; (La Sierpe): sur Peralejo, 17.XII.2016, Serie Moya 1669; norte La Ferrolana, 18.XII.2016, Serie Moya 1682; (Trinidad): sabanas de Casilda, 25.V.2024, Serie Moya 1413, 1414; camino San Pedro, 13.III.2016, Serie Moya 1601; sabana de Velázquez, 20.XII.2016, Serie Moya 1686.

Geographical Distribution. CUBA. Provinces Camagüey (Camagüey[H,A], Esmeralda[R], Florida[H,A], Jimaguayú[R], Minas[H,A], Nuevitas[H], Sierra de Cubitas[H,A]), Ciego de Ávila (Baraguá[H], Florencia[A], Venezuela[H]), Cienfuegos (Abreus[H,A], Aguada de Pasajeros[A], Cienfuegos[H], Rodas[R,A]),
Las Tunas (Las Tunas[H], Manatí[H], y Puerto Padre[H]), Matanzas (Jovellanos[H,A]), Mayabeque (San José de las Lajas[H]), Sancti Spíritus (Cabaiguán[H,A], Jatibonico[A], La Sierpe[H,A], Sancti Spíritus[H,A], Trinidad[H,A]), Villa Clara (Corralillo[H], Placetas[H], Santo Domingo[H]).

Note. Moya (2021b: 14) suggested that Martius (1824: 243) noted the illustration of Tab. 50.A, fig. V (1-4) with the name *C. hospita* on the protologue was original material. Therefore, in the second step, Moya designated the "icon" of Martius as the lectotype, replacing the lectotype designation of D&G (1963: 135) in BR, which Moya designated as an the isolectotype.

Here *León 15326* and *15327* are identified as *Copernicia hospita*.

V.1. León collections pending further studies for identification.

Here I suggest that *Copernicia molineti* var. *cuneata* and *C. sueroana* var. *semiorbicularis*, both validly published, require further herbarium studies to define their precise identification, which is why I do not relate them to any of the correct names of other *Copernicia* species.

Copernicia molineti var. cuneata León, Mem. Soc. Cub. Hist. Nat. ''Felipe Poey'' 10: 216. 1936.

Type. CUBA. [Las Tunas (Manatí)], “potrero de Guabino, Dumañuecos, Oriente,” ft., 20. Sep. 1932, *León 15959* (collected by S. Clark) (lectotype [first-step]: Dahlgren and Glassman 1963: 101, LS; [second-step]: designated here, HAC ex LS!; isolectotypes, BH000038936.1 ex LS, BH000038936.2 ex LS, F0092048.1 ex LS4643, F0092048.2 ex CHI, F0092101 ex LS4642, F2792852 [n.v.], US00087472, US00087473 ex LS).

Notes. León (1936: 217) designated *León 15959* as the type of *Copernicia molineti* var. *cuneata*. In doing so he referred to a complete collection, thus creating syntypes, but did not note herbaria where specimens were deposited. Dahlgren and Glassman (1963: 101) did the same, designating as the type all duplicates of *León 15959* at LS, now considered as lectotypes [first-step]. Here I designate *León 15959* at HAC ex LS as the lectotype [second-step] and I designate the remaining specimens as isolectotypes (**Fig. 60;** for an image of isolectotype *León 15959* (F0092101 ex LS4642 see: https://fm-digital-assets.fieldmuseum.org/136/266/V0092101F.jpg).

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Dahlgren and Glassman (1963: 101) considered *Copernicia molineti* var. *cuneata* León as a synonym of *C. curbeloi* León.

Copernicia sueroana var. semiorbicularis León, Mem. Soc. Cub. Hist. Nat. ''Felipe Poey'' 10: 216. 1936.

Type. CUBA. [Las Tunas (Manatí)], “finca Santa Rita, Dumañuecos, Oriente,” 7 Jul. 1932, *León 15747* (lectotype [first-step]: Dahlgren and Glassman 1963: 101, LS; [second-step]: designated here, F0092056 ex LS4680; isolectotypes, BH000038940 ex LS, F0092056 ex LS4680, HAC28921 [photo US], US00087482).

Notes. León (1936: 216) designated *León 15747* as the type of *Copernicia sueroana* var. *semiorbicularis*. In doing so he referred to a complete collection, thus creating syntypes, but did not note herbaria where specimens were deposited. Dahlgren and Glassman (1963: 101) did the same, designating as the type all duplicates of *León 15747* at LS, now considered as lectotypes

[first-step]. Here I designate *León 15747* at F0092056 ex LS4680 as the lectotype [second-step] and I designate the remaining specimens as isolectotypes (**Fig. 61;** for an image of the lectotype see: https://fm-digital-assets.fieldmuseum.org/219/526/V0092048F.jpg).

.

Dahlgren and Glassman (1963: 101) considered *Copernicia sueroana* var. *semiorbicularis* as a synonym of *C. curbeloi*.

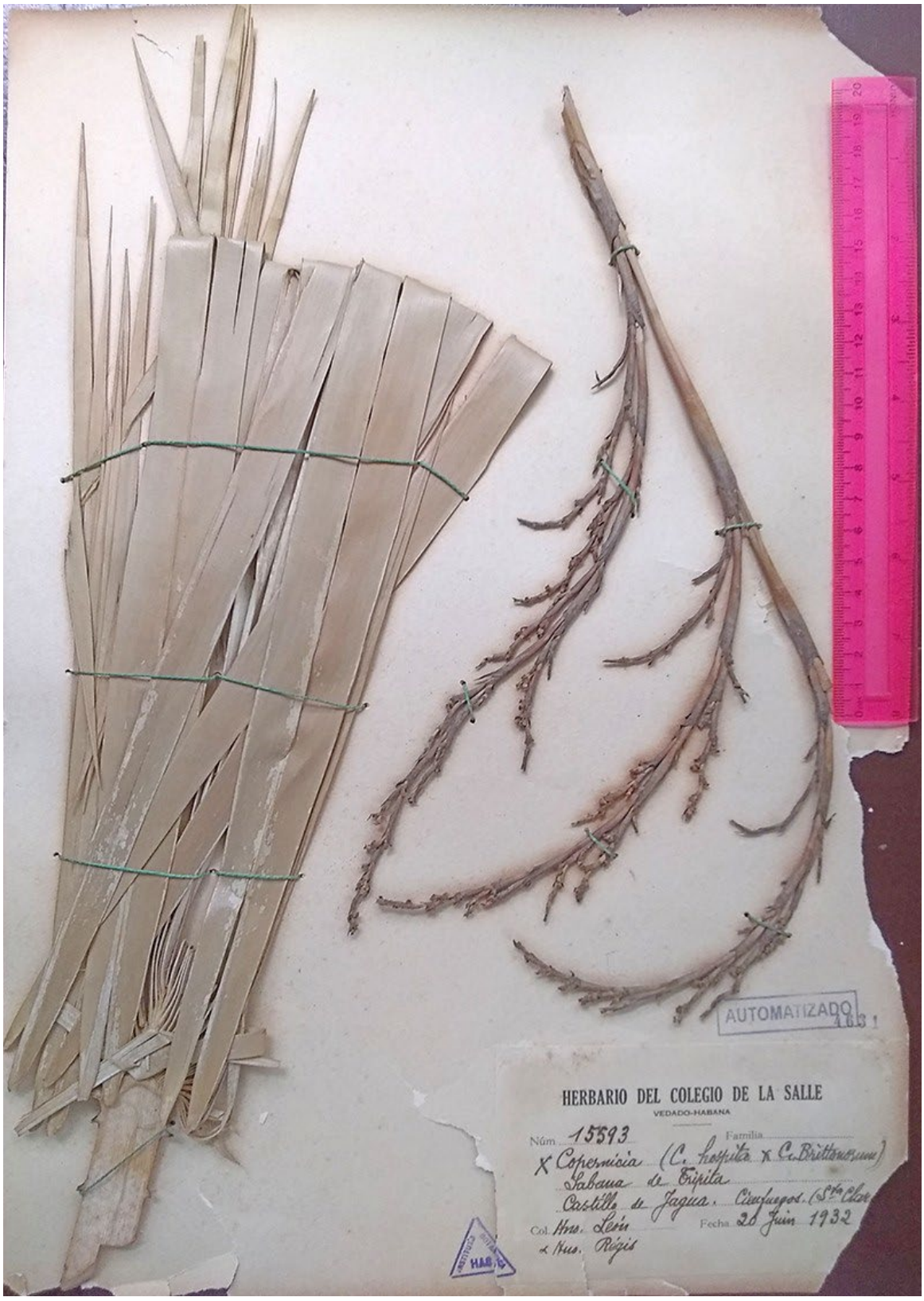
- **Copernicia brittonorum x Copernicia hospita** (Undescribed, identified by León on labels of HAC ex LS4631 and HAC ex LS4632). (**Figs. 62–63**).

CUBA. Cienfuegos (Cienfuegos) Oeste del Castillo de Jagua, 20 Jun. 1932, *León 15593* (HAC ex LS4631!, HAC ex LS4632!, HAC ex UO.1!, HAC ex UO.2!, US00016425 [n.v.], US00016448 [n.v.], US00016471 [n.v.]).

- **Copernicia rigida x Copernicia yarey** (Undescribed, identified as this hybrid by Verdecia in 2011 and 2016 on labels of *León 16002*, *16009*, and *16043*, and *Shafer 970* and *2894*. (**Fig. 64**).

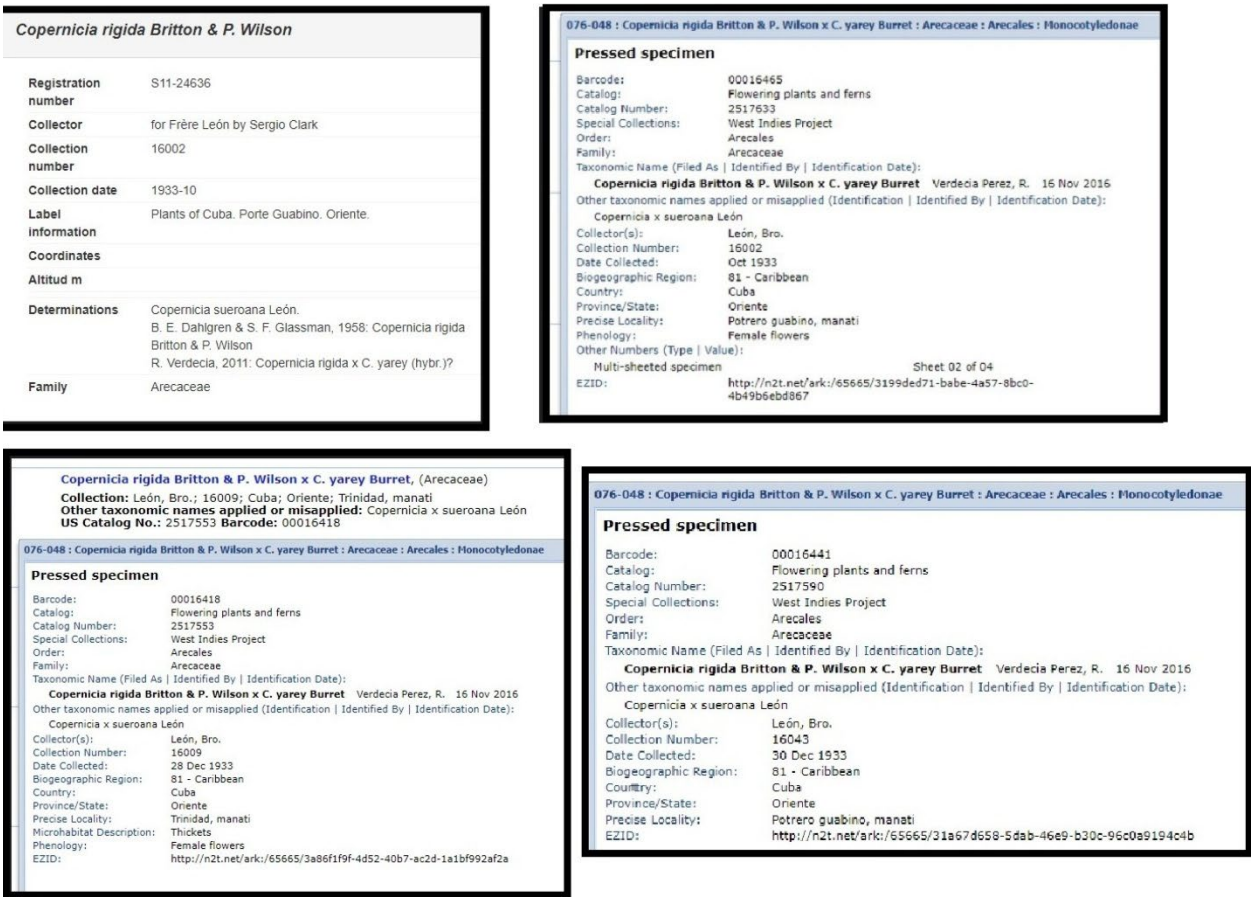
CUBA. Las Tunas (Manatí): potrero Guabino, Manatí, Oct. 1933, *León 16002*, collected by Clark & Toranzo, identified as *C. rigida x C. yarey* by Verdecia in 2011 on S11-24636, and 16.XI.2016 in US16419, US16442, US16465, US16488 (BH000038919, HAC ex EEAB!, HAC ex LS.1!, HAC ex LS.2!, HAC ex LS4678!, HAC ex LS4679!, NY1662412, S11-24636, US00016419 [n.v.], US00016442 [n.v.], US00016465 [n.v.], US00016488 [n.v.]); 30 Dec. 1933; *León 16043,* identified as *C. rigida* x *C. yarey* by Verdecia 16.XI.2016 in US16541, US16464 (HAC ex LS4564!, HAC ex LS4565!, US00016441 [n.v.], US00016464 [n.v.]); finca Trinidad, Manatí, 28 Dec. 1933; *León 16009*, identified as *C. rigida x C. yarey* by Verdecia 2016 in US16518 (HAC ex LS4673!, US00016418 [n.v.]). Camagüey (Nuevitas): Santa Lucia, 19 Mar. 1909, *Shafer 970*, identified as *C. rigida x C. yarey* by Verdecia 15.XI.2016 in US16447 (NY1662451, US00016447 [n.v.]); Tiffin, 1–5 Nov. 1909, *Shafer 2894* (syntype *C. sueroana*), identified as *C. rigida x C. yarey* by Verdecia 15.XI.2016 in US16514 (HAC ex EEAB!, NY00071199, NY00071202, NY02530892, NY1662450, US00016514 [n.v.]).

Field Observations by C. E. Moya. CUBA. [**Post 2014**]. Holguín (Moa): road to Juracal, 12.X.2015, *Serie Moya 1511*.



62. *Copernicia brittonorum* × *Copernicia hospita* (undescribed)*. León 15593* HAC ex LS4631. © 2024 HAC.

63. *Copernicia brittonorum* × *Copernicia hospita* (undescribed)*. León 15593* HAC ex LS4632. © 2024 HAC.



Copernicia rigida Britton & P. Wilson

Registration number	S11-24636
Collector	for Frère León by Sergio Clark
Collection number	16002
Collection date	1933-10
Label information	Plants of Cuba. Porte Guabino. Oriente.
Coordinates	
Altitud m	
Determinations	Copernicia sueroana León. B. E. Dahlgren & S. F. Glassman, 1958: Copernicia rigida Britton & P. Wilson R. Verdecia, 2011: Copernicia rigida x C. yarey (hybr.)?
Family	Arecaceae

076-048 : Copernicia rigida Britton & P. Wilson x C. yarey Burret : Arecaceae : Arecales : Monocotyledonae

Pressed specimen

Barcode:	00016465
Catalog:	Flowering plants and ferns
Catalog Number:	2517633
Special Collections:	West Indies Project
Order:	Arecales
Family:	Arecaceae

Taxonomic Name (Filed As | Identified By | Identification Date):
Copernicia rigida Britton & P. Wilson x C. yarey Burret Verdecia Perez, R. 16 Nov 2016
Other taxonomic names applied or misapplied (Identification | Identified By | Identification Date):
Copernicia x sueroana León

Collector(s):	León, Bro.
Collection Number:	16002
Date Collected:	Oct 1933
Biogeographic Region:	81 - Caribbean
Country:	Cuba
Province/State:	Oriente
Precise Locality:	Potrero guabino, manati
Phenology:	Female flowers

Other Numbers (Type | Value):
Multi-sheeted specimen Sheet 02 of 04
EZID: http://n2t.net/ark:/65665/3199ded71-babe-4a57-8bc0-4b49b6ebd867

Copernicia rigida Britton & P. Wilson x C. yarey Burret, (Arecaceae)
Collection: León, Bro.; 16009; Cuba; Oriente; Trinidad, manati
Other taxonomic names applied or misapplied: Copernicia x sueroana León
US Catalog No.: 2517553 **Barcode:** 00016418

076-048 : Copernicia rigida Britton & P. Wilson x C. yarey Burret : Arecaceae : Arecales : Monocotyledonae

Pressed specimen

Barcode:	00016418
Catalog:	Flowering plants and ferns
Catalog Number:	2517553
Special Collections:	West Indies Project
Order:	Arecales
Family:	Arecaceae

Taxonomic Name (Filed As | Identified By | Identification Date):
Copernicia rigida Britton & P. Wilson x C. yarey Burret Verdecia Perez, R. 16 Nov 2016
Other taxonomic names applied or misapplied (Identification | Identified By | Identification Date):
Copernicia x sueroana León

Collector(s):	León, Bro.
Collection Number:	16009
Date Collected:	28 Dec 1933
Biogeographic Region:	81 - Caribbean
Country:	Cuba
Province/State:	Oriente
Precise Locality:	Trinidad, manati
Microhabitat Description:	Thickets
Phenology:	Female flowers
EZID:	http://n2t.net/ark:/65665/3a86f1f9f-4d52-40b7-ac2d-1a1bf992af2a

076-048 : Copernicia rigida Britton & P. Wilson x C. yarey Burret : Arecaceae : Arecales : Monocotyledonae

Pressed specimen

Barcode:	00016441
Catalog:	Flowering plants and ferns
Catalog Number:	2517590
Special Collections:	West Indies Project
Order:	Arecales
Family:	Arecaceae

Taxonomic Name (Filed As | Identified By | Identification Date):
Copernicia rigida Britton & P. Wilson x C. yarey Burret Verdecia Perez, R. 16 Nov 2016
Other taxonomic names applied or misapplied (Identification | Identified By | Identification Date):
Copernicia x sueroana León

Collector(s):	León, Bro.
Collection Number:	16043
Date Collected:	30 Dec 1933
Biogeographic Region:	81 - Caribbean
Country:	Cuba
Province/State:	Oriente
Precise Locality:	Potrero guabino, manati
EZID:	http://n2t.net/ark:/65665/31a67d658-5dab-46e9-b30c-96c0a9194c4b

64. *Copernicia rigida* × *Copernicia yarey* (undescribed). Notes from Verdecia on S!!-24636, US00016418, US00016441, and US00016465).

V.2. León collections pending further studies for identification but considered as doubtful specimens by Dahlgren and Glasman (1963).

Copernicia sp. A.

CUBA. Las Tunas (Puerto Padre): sabanas Puerto Padre, VII.1931, colector Curbelo, *León 14978* [*Curbelo s.n.*] [Labels: *C. curbeloi* (MT00116883); *C. yarey* var. *robusta* (HAC ex LS4733, HAC ex LS); (BH, n.v.), NY, n.v.)]. Dahlgren and Glasman (1963: 102) as *C. curbeloi*?

Copernicia sp. B.

CUBA. Villa Clara (Santo Domingo): oeste Manacas, 28 Dec. 1915, *León & Cazañas 6044* [Label: *C. hospita* (HAC ex LS4618!, NY1662379)]. Dahlgren and Glassman (1963: 137) as *C. hospita*.

Copernicia sp. C.

CUBA. Las Tunas (Puerto Padre): Puerto Padre, II.1931, collector Curbelo [*León 14798* [Curbelo s.n.] [Label: *C. roigii* (NY166881)]. Dahlgren and Glasman (1963: 137) as *C. hospita*?

Copernicia sp. D.

CUBA. Matanzas (Limonar): cuabal Los Botinos, 28 Mar. 1931, *León 14795* [Label: *C. ramosissima* A (BH000038881, BH000038882, HAC ex Roig5477!)]. Dahlgren and Glasman (1963: 125, 127) as *C. glabrescens*?

Copernicia sp. E.

CUBA. Holguín (Calixto García): Mir, 22 Mar. 1932, *León 15559* [Label: *C. sueroana* (HAC ex LS4676!, NY1662415). Dahlgren and Glasman (1963: 195) as *C. sueroana*?

Copernicia sp. F.

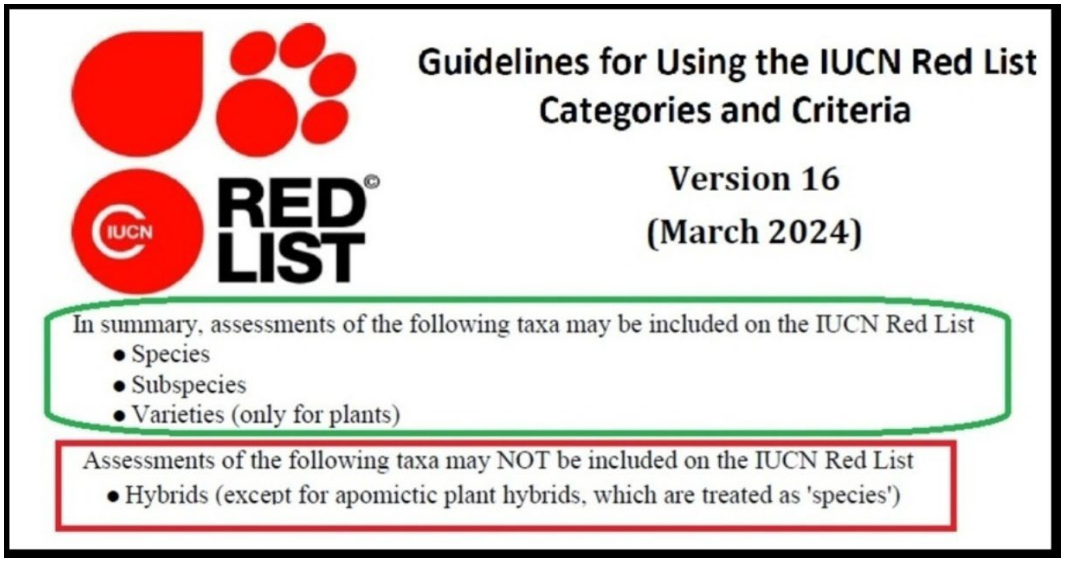
CUBA. Las Tunas (Manatí): Sabanalamar, 7 Jul. 1932, 28 Dec. 1933, *León 16011* [Label: *C. sueroana* (BH, HAC ex LS4675!). Dahlgren and Glasman (1963: 195, 196) as *C. sueroana*?

Notes. Dahlgren and Glasman (1963: 200) mistakenly listed as doubtful these specimens of *Copernicia* × *textilis*: Oriente, Cacocum, *León 15568* (SV) and Pinar del Rio: between Viñales and Sumidero, *León 15568*, collected by L. Howell (SV). *León 15568* was actually collected in Mapos, Sancti Spíritus.

In Moya (2024c) I was wondering: Why are natural *Copernicia* hybrids in Cuba not conserved *in situ*? This question is critical because 65% of the *Copernicia* taxa in Cuba (17) are implicated in the nine natural hybrids, not including two, new, undescribed hybrids. The reasoning is that the absence of actions prohibited by the IUCN for the *in situ* conservation of natural hybrids. For those who have doubts, I show only two photos of hybrids south of Ferrolana, La Sierpe, Sancti Spíritus province, where it is difficult to determine who is who. (**Figs. 65–66**). Further information about this situation is available through the IUCN (2024, **Fig. 67**).

65. Natural hybrids of *Copernicia*, in habitat, south Ferrolana, la Sierpe, Sancti Spíritus. Serie Moya 1676a. © 2016 C. E. Moya López.

66. Natural hybrids of *Copernicia*, in habitat, south Ferrolana, la Sierpe, Sancti Spíritus. Serie Moya 1676b. © 2016 C. E. Moya López.



67. IUCN guidelines excluding hybrids from Red List assessments.

Conclusions

This work shows that a new taxonomic treatment of the genus *Copernicia* and resolving the *in situ* conservation of natural *Copernicia* hybrids in Cuba (Moya 2024c) is necessary.

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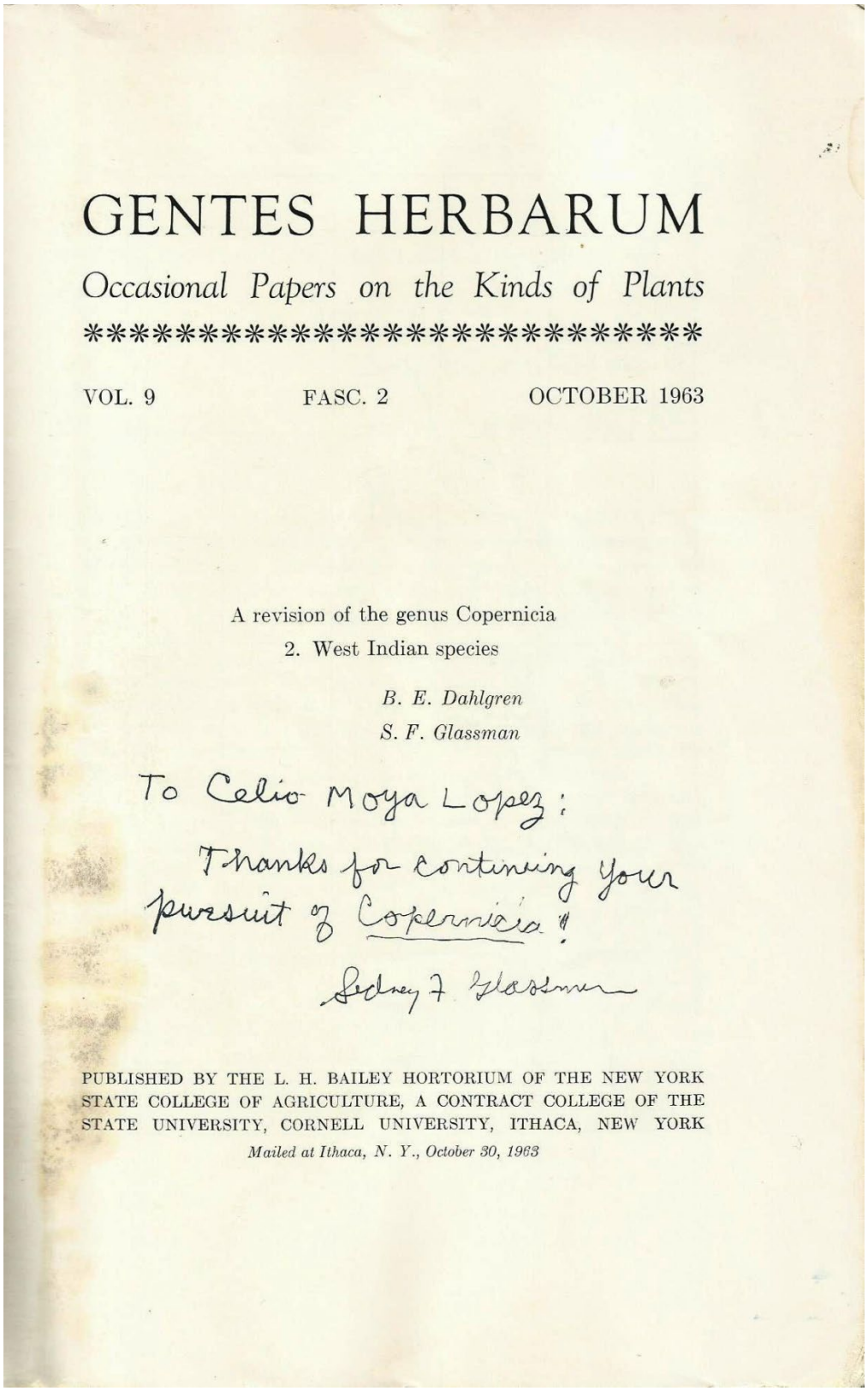

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A revision of the genus Copernicia
2. West Indian species

B. E. Dahlgren
S. F. Glassman

To Celio Moya Lopez:
Thanks for continuing your
pursuit of Copernicia!
Sidney F. Glassman

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68. My book *A Revision of the Genus Copernicia. 2. West Indian Species*, autographed by the late Sidney F. Glassman. Miami, Jul. 1999.

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Literature Cited

Álvarez Conde, J. 1958. Historia de la botánica en Cuba. Junta Nacional de Arqueología y Etnología, La Habana.

Acevedo, P., and M. T. Strong. 2012) Catalogue of seed plants of the West Indies. Smithsonian Contributions to Botany (98): 1–1192. https://repository.si.edu/bitstream/handle/10088/17551/SCtB-0098.pdf?sequence=2&isAllowed=y

Beccari, O. 1907. Le Palme Americane della Tribu delle Corypheae. Webbia. 2: 1–343. https://www.biodiversitylibrary.org/item/52725#page/257/mode/1up

Beccari, O. 1913. The palms indigenous to Cuba III. Pomona College Journal of Economic Botany 3(1): 391–417.

Britton, N. L. 1914. 32. Undescribed Cuban species in studies of West Indian plants. V. Bulletin of the Torrey Botanical Club 41(1): 17–18. https://www.biodiversitylibrary.org/item/45694#page/6/mode/1up

Burret, M. 1929. Palmae Cubenses et Domingenses a Cl. E. L. Ekman 1914–1923 lectae. Kongliga Svenska Vetenskaps-Akademiens Handlingar, Ser. 3. 6(7): 3–28.

Cañizares, L., C. E. Moya, and O. Ceballos. 2017. Norte de Tunas de Zaza, localidad más occidental de *Copernicia gigas*, *in*: XV Encuentro de Botánica Johannes Bisse in Memoriam, Camagüey, June 2017 (poster).

Combs, R. 1897. Plants collected in the district of Cienfuegos, province Santa Clara, in 1895–1896. Transactions of the Academy of Sciences of St. Louis 7(17): 393–491.

Constitución de la República de Cuba. 1940. Convención Constituyente, Guáimaro, en Gaceta Oficial de julio 8 de 1940. Biblioteca Digital del Caribe, University of Florida. https://ufdc.ufl.edu/aa00097170/00001

Cuccuini, P. and C. Nepi. 2006. The Palms of Odoardo Beccari. Quaderni di Botanica Ambientale e Applictan 17/1, Palermo. 251 pp.

Cuba, map. 1898 (published 1904). Rand McNally and Company. Scale 1:2,816,000. Library of Congress Control Number 2021668487. https://hdl.loc.gov/loc.wdl/wdl.11323

Dahlgren, B. 1936. Index of American Palms. Field Mus. Nat. Hist. Bot. Series 14: 1–456.

Dahlgren, B. and S. Glassman. 1958. A new species of *Copernicia* from Cuba. Principes 2: 103–105.

Dahlgren, B. and S. Glassman. 1959. A new Copernicia hybrid from Cuba. Principes, 3: 87–90.

Dahlgren, B. and S. Glassman. 1963. A revision of the genus *Copernicia*. 2. West Indian Species. Gentes Herbarum 9(2): 43–232.

Dransfield J., N. W. Uhl, C. B. Asmussen, W. J. Baker, M. M. Harley, and C. Lewis. 2008. Genera Palmarum: The Evolution and Classification of Palms. Royal Botanic Gardens, Kew.

Fernald, J. C. 1898. The Spaniard in History: 151. Map of Port of Santiago de Cuba. British Library HMNTS 9181.bbb.8. https://commons.wikimedia.org/wiki/File:(1898)_MAP_OF_PORT_SANTIAGO_DE_CUBA.jpg

Glassman, F. 1972. A Revision of B. E. Dahlgren's Index of American palms. Phanerogamarum Monographie, Tomus VI. Cramer, Lehre, Germany.

Greuter W. and Rankin Rodríguez R. 2022: Plantas Vasculares de Cuba. Inventario. Tercera edición, actualizada, de Espermatófitos de Cuba. Vascular Plants of Cuba. Botanischer Garten und Botanisches Museum Berlin; Jardín Botánico Nacional, La Habana. https://doi.org/10.3372/cubalist.2022.1

Henderson, A., G. Galeano, and R. Bernal. 1995. Field Guide to the Palms of the Americas. Princeton University Press, Princeton, New Jersey.

Hodel, D. R., R. Verdecia Pérez, D. Suárez Oropesa, M. Rodríguez Lima, and L. Mera .2016. *Copernicia fallaensis*. The greatest fan palm of them all. https://ucanr.edu/sites/default/files/2025-03/Copernicia%20fallaensis%20247344.pdf DOI: https://doi.org/10.21414/B10P42

IUCN. 2024. IUCN Standards and Petitions Committee. Guidelines for Using the IUCN Red List Categories and Criteria. Version 16. Prepared by the Standards and Petitions Committee https://www.iucnredlist.org/documents/RedListGuidelines.pdf (see pages 7 and 13 [Taxonomy]).

Johnson, D. (Ed.) and IUCN/SSC Palm Specialist Group. 1996. Palms: Their Conservation and Sustained Utilization. Status Survey and Conservation Action Plan. Gland, Switzerland and Cambridge. IUCN. https://portals.iucn.org/library/sites/library/files/documents/1996-025.pdf

León, Hno. 1931. Contribución al estudio de las palmas de Cuba. I. Revista de la Sociedad Geográfica de Cuba 4(2): 33–59.

León, Hno. 1936. Contribución al estudio de las palmas de Cuba. II. Género *Copernicia*. Memorias de la Sociedad Cubana de Historia Natural "Felipe Poey" 10: 203–226.

León, Hno. 1939. Contribución al estudio de las palmas de Cuba. III. Género *Coccothrinax*. Memorias de la Sociedad Cubana de Historia Natural "Felipe Poey" 13: 107–156.

León, Hno. 1940. Contribución al estudio de las palmas de Cuba. IV. Un corojo nuevo para la ciencia. Memorias de la Sociedad Cubana de Historia Natural "Felipe Poey" 14: 51–54.

León, Hno. 1941. Contribución al estudio de las palmas de Cuba. III. Género *Hemithrinax*. Memorias de la Sociedad Cubana de Historia Natural "Felipe Poey" 15: 379–384.

León, Hno. 1943. Contribution à l'étude de palmiers de Cuba. V. Nouveautés dans les palmiers royaux de Eastern Cuba. Memorias de la Sociedad Cubana de Historia Natural "Felipe Poey" 17: 1–44.

León, Hno. 1944. Contributions to the study of the Cuban palms. VII. The genus *Calyptrogyne* in Cuba. Contribuciones Ocasionales del Museo de Historia Natural del Colegio de La Salle 3: 1–12.

León, Hno. 1946. Flora de Cuba I. Gimnospermas, Monocotiledóneas. Contribuciones Ocasionales del Museo de Historia Natural del Colegio de La Salle 8: [Palmae pp. 236–269].

Ley No. 110/10: Modificativa de la Ley no. 1304 de 3 de julio de 1976 de la división políticopp. administrativa. 2010. En Gaceta Oficial de la República de Cuba No. 023 Extraordinaria. Asamblea Nacional del Poder Popular. http://juriscuba.com/wp-content/uploads/2015/10/Ley-No.-110-De-la-Division-Politica-Administrativa.pdf

Liogier, A, 1969. Flora de Cuba. Suplemento. Editorial Sauce, Caracas.

Martius, C. F. P. von. 1823–1850 [1838]. Historia Naturalis Palmarum. 3. 154–260. Leipzig.

Morales, A. and A. Montero. 2020. Estudio florístico de la Reserva Ecológica La Coca, provincias La Habana y Mayabeque, Cuba. Revista del Jardín Botánico Nacional. La Habana 41: 199–218.

Moya López, C. E. 2021a. An update of *Copernicia macroglossa* and *Copernicia × escarzana* (Arecaceaea). PalmArbor 2021-07: 1–22. https://ucanr.edu/sites/default/files/2025-03/Copernicia%20macroglossa%20and%20C.%20x%20escarzana%20349374.pdf DOI: https://doi.org/10.21414/B1JS3P

Moya López. C.E. 2021b. The type locality of *Copernicia hospita* located 198 years after Poeppig collected it in Cuba. PalmArbor 2021-09: 1–16. https://ucanr.edu/sites/default/files/2025-03/Copernicia%20hospita%20Type%20Locality%20353854.pdf DOI: https://doi.org/10.21414/B19887

Moya López, C. E. 2022a. Charles Wright y las Palmas Cubanas. 8. Update *Copernicia glabrescens.* PalmArbor 2022-03: 1–19. https://ucanr.edu/sites/default/files/2025-03/Charles%20Wright%20and%20Copernicia%20glabrescens%20PalmArbor%20FINAL.pdf DOI: https://doi.org/10.21414/B1C88V

Moya López, C. E. 2022b. *Copernicia × molinetii* León (Arecaceae), New Status for a Natural Hybrid from Cuba. PalmArbor 2022-10: 1–20. https://ucanr.edu/sites/default/files/2025-03/Copernicia%20x%20molinetii%20PalmArbor%20FINAL.pdf
DOI: https://doi.org/10.21414/B1G01C

Moya López, C.E. 2023. A Further Update on the Nomenclature of *Copernicia glabrescens* and *C. macroglossa* (Arecaceae). PalmArbor 2023-14: 1–9. https://ucanr.edu/sites/default/files/2025-03/Copernicia%20glabrescens%20and%20C.%20macroglossa%20Nomenclature%20389437.pdf
DOI: https://doi.org/10.21414/B1F59T

Moya López, C. E. 2024a. Inventario de las palmas nativas de Cuba, actualizado 17 de enero de 2024. Preprint, Research Gate: 1-37. https://www.researchgate.net/publication/377557555
DOI: 10.13140/RG.2.2.14897.97128

Moya López, C. E. 2024b. Alguien tiene que decirlo. ¡Cómo afecta la desinformación de páginas web a la botánica!, p. 131 *in*: Méndez Santos, I. E. (ed.). Libro de Memorias del Evento XVI Encuentro de Botánica "Johannes Bisse in Memoriam": 17–19 December 2024. https://www.researchgate.net/search.Search.html?query=Libro+de+Memorias+XVII+E.B.+J.+Bisse+in+Memoriam&type=publication

Moya López, C. E. 2024c. ¿Por qué los híbridos naturales de *Copernicia* en Cuba no se conservan in situ?, p. 155 *in*: Méndez Santos, I. E. (ed.). Libro de Memorias del Evento XVI Encuentro de Botánica "Johannes Bisse in Memoriam": 17–19 December 2024. https://www.researchgate.net/search.Search.html?query=Libro+de+Memorias+XVII+E.B.+J.+Bisse+in+Memoriam&type=publication

Moya López, C. E. 2025. The Collectors of Cuban Palms (Arecaceae) 3. Charles Wright. PalmArbor, 2025-01: 1–72 https://ucanr.edu/sites/default/files/2025-03/C%20Wright%20Final%20Cuban%20Arecaceae%20PalmArbor%20DRH.2.14%20cm2.12-3.pdf
DOI: https://doi.org/10.21414/B1H59F

Moya López, C. E and R. Berazaín Iturralde. 2023. Determinación de la localidad tipo de *Copernicia yarey* Burret (*Arecaceae*), *in*: XX Taller de la Flora de Cuba. Simposio de Diversidad Biológica y Conservación. La Habana (29 mayo–2 junio).

Moya López, C. E. and R. Berazaín Iturralde. (in prep.). Contribución de las recolectas de palmas de E.L. Ekman en Cuba, en la obra de M. Burret.

Moya López, C. E., J. Martínez-Fortún, J. L. Rios, J. L. Valdés, and E. Acosta. 1989. Las Copernicias (yareyes y jatas) en Sancti Spiritus. Palmas endémicas que necesitan protección. Revista del Jardín Botánico Nacional. Habana. 10(1): 49–62.

Moya López , C., M. Terry and Y. Hernández. 2019. Novedades en la distribución conocida de *Copernicia × escarzana* (Arecaceae); implicaciones para la conservación. Monteverdia 12 (2): 1–8. https://revistas.reduc.edu.cu/index.php/monteverdia/article/view/3013

Moya López, C. E. and Y. Hernández. 2023. *Copernicia hospita* and *C. yarey* (Arecaceaea): Updated distribution for these Cuban endemics. PalmArbor 2023-10: 1–23. https://ucanr.edu/sites/default/files/2025-03/Copernicia%20reported%20from%20higher%20elevations%20PalmArbor%2017%20July%202023%20Rev%2018%20Aug%202023.pdf
DOI: https://doi.org/10.21414/B1X595

Muñiz, O. and A. Borhidi. 1982. Catálogo de las palmas de Cuba. Acta Botanica Academiae Scientiarum Hungaricae 28: 309–345.

Real Decreto, nueve de junio de 1878. Gaceta de Madrid, año 217, no. 201. T.III: 158. https://www.boe.es/gazeta/dias/1878/07/20/pdfs/GMD-1878-201.pdf

Regalado L., I. Ventosa, and R. Morejón. 2008. Revisión histórica de los herbarios cubanos con énfasis en las series de especímenes. Revista del Jardín Botánico Nacional. Habana 29: 101–138.

Risco, R., C. E. Moya, R. Verdecia, D. Suárez, and M. Rodríguez. 2017. Las palmas en la provincia Camagüey. I. Inventario preliminar. Monteverdia 10: 55–72.

Sauvalle, F. A. 1871. Flora Cubana, in Anales de la Academia de Ciencias Médicas Físicas y Naturales de la Habana. 7: 560–566. Imp. La Antilla, de Cacho-Negrete. Habana. https://www.biodiversitylibrary.org/item/25027#page/568/mode/1up

Thiers, B. M. (2024, updated continuously). Index Herbariorum. https://sweetgum.nybg.org/science/ih/

Turland, N. J., J. H. Wiersema, F. R. Barrie, W. Greuter, D. L. Hawksworth, P. S. Herendeen, S. Knapp, W.-H. Kusber, D.-Z. Li, K. Marhold, T. W. May, J. McNeill, A. M. Monro, J. Prado, M. J. Price, and G. F. Smith (eds.). 2018. International Code of Nomenclature for Algae, Fungi, and Plants (Shenzhen Code) adopted by the 19th International Botanical Congress, Shenzhen, China, July 2017. Reg. Veg. 159. Koeltz Botanical Books, Glashütten. https://doi.org/10.12705/Code.2018

Verdecia, R. 2014. Monte Cabaniguán, donde reinan el guano y el yarey. Flora y Fauna 18(1): 14–18.

Verdecia, R. 2016. *Copernicia × dahlgreniana*, a new natural hybrid in the savannas of Camagüey, Cuba. Palms 60: 85–92.

Wikipedia 2024. Historia Territorial de Cuba. https://es.wikipedia.org/wiki/Historia_territorial_de_Cuba

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