CHARLES WRIGHT AND THE CUBAN PALMS
9. UPDATE *SABAL JAPA*

CHARLES WRIGHT Y LAS PALMAS CUBANAS
9. ACTUALIZACIÓN DE *SABAL JAPA*

CELIO E. MOYA LÓPEZ, RODRIGO DUNO DE STEFANO, AND RAMONA OVIEDO PRIETO

Abstract

The nomenclature, distribution, and uses of *Sabal japa* (formerly *S. yapa*), based on *Wright 3971* from western Cuba 155 years ago, are updated. New information includes a revised, accepted spelling of the specific epithet; the location and date of collection; a list of excluded names; and the designation of three lectotypes for synonyms.

Resumen

Se actualiza la nomenclatura, distribución y usos de *Sabal japa* (antes *S. yapa*), basada en *Wright 3971* del occidente de Cuba hace 155 años. La nueva información incluye una ortografía revisada y aceptada del epíteto específico; el lugar y la fecha de recolección; una lista de nombres excluidos; y la designación de tres lectotipos para sinónimos.

Introduction

This paper is the ninth contribution of the senior author about the role of Charles Wright in our knowledge of Cuban palms (Moya 2020a, 2020b, 2020c, 2020d, 2020e, 2021a; Moya and Méndez 2018; Moya and Zona 2018).

Charles Wright (29 October 1811, Wethersfield, Connecticut to 11 August 1885, Wethersfield, Connecticut) was an American botanist who explored and collected plants in Cuba in the mid-19th century. Considered one of the most important naturalists of his era, he made a remarkable contribution to the Cuban flora (León 1918). Over a span of eight years, he conducted three expeditions to Cuba, the first from November 30, 1856 to August 1857, the second from November 29, 1858 to August 1864, and the third from May 10, 1865 to July 1867 (Howard 1988).

León (1918) added that Wright collected more than 4000 specimens, including higher terrestrial plants and lichens and mosses. His collections represent an important contribution to our knowledge of the Cuban plant diversity, including ferns and allied group (Eaton 1859, 1860), lichens (Muller 1885, Nylander 1876), mushrooms (Berkeley and Curtis 1869, mosses (Sullivant 1861; Muller 1898), orchids (Lindley 1858, 1860,) and other angiosperms (Grisebach 1862, 1866).

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

Sabal, a Neotropical genus of the subfamily Coryphoideae, is one of the most common genera of palms in and around the Caribbean basin with extensions to North, Central and South America (Zona 1990). The most recent monograph of *Sabal* recognized 15 species (Zona 1990) although two of them have since been reduced to synonyms. Govaerts et al. (2021) listed 16 species and one hybrid of *Sabal*.

Beccari (1907, 1912) recognized three species of *Sabal* in Cuba: *S. florida*, *S. parviflora*, and *S. yapa.* Beccari (1912) mentioned that *S. yapa* is easily distinguished from the other two Cuban species by its leaves, which have blade segments united in groups of two or three for about half their length, forming bi- or tricostulate segments with deeply forked apices and lending an uneven appearance to the leaf blade (**Figs. 1–2**). Unfortunately, Beccari mistakenly considered *Corypha maritima* as a synonym of *S. yapa* when he named the latter species, which has serious nomenclatural ramifications for the authority of the specific epithet. Zona (1990, 1992) recognized four species of *Sabal* in Cuba: *S. domingensis, S. maritima*, *S. palmetto*, and *S. yapa*.

In terms of Sabal in the Yucatan Peninsula, Beccari (1907) recognized only one species: *S. yapa*; Zona (1990) recognized three species: *S. mexicana*, *S. guatemalensis* (now considered a synonym of the prior species), and *S. yapa*; and Quero and Salvador (2004) recognized four species: *S. gretherae*, *S. guatemalensis*, *S. mauritiiformis*, and *S. mexicana*.

The main objective of this paper is to update and refine the nomenclature of *Sabal yapa* and discuss its geographical and biogeographic distribution.

1. Leaf blades of *Sabal japa* have segments united in groups of two or three and with deeply forked apices. Las Pozas, San Juan Guacamayo, Bahia Honda, Artemisa, Cuba. ©2017 Donald R. Hodel.

2. Leaf blades of *Sabal japa* have segments united in groups of two or three. Mirador Sierra Las Casas, Isla de la Juventud, Cuba. *Serie Moya 1834*. ©2017 Celio Moya López.

Materials and Methods

We examined the protologues, descriptions, and status of *Sabal yapa* and associated taxa in the following references: Sauvalle (1871), Gómez de la Maza (1889, 1893), Millspaugh (1895, 1898), Beccari (1907), Bailey (1934, 1944), Bartlett (1935), Dahlgren (1936), León (1946), Standley and Steyermark (1958), Moore (1971), and Glassman (1972). Particular attention was paid to nomenclature and type specimens.

We found a total of 76 specimens of *Sabal yapa* with some category of type designation in 13 herbaria: A, BH, BRU, F, FI, GH, HAC, K, MICH, MO, NY, P, and US. We also reviewed 316 additional specimens (127 collections) that have no type category in 26 herbaria: A, B, BH, CICY, CM, E, F, FI, FTG, G, GH, HAC, MEXU, MHES, MICH, MO, MT, NO, NY, P, RSA, S, UCR, US, USAM, and XAL (all herbaria acronyms from Thiers 2016). We also reviewed all pertinent material in the Yucatan Scientific Research Center (CICY) and the National Herbarium of Cuba "Onaney Muñiz" (HAC) of the Institute of Ecology and Systematics. All specimens cited were examined from high-resolution photographs except for those at CICY and HAC, which we examined in person. Specimens seen by the authors are marked with ”!,” those not seen with ”[n.v.],” and those without marks were seen as digital images.

For each taxon, the list of validly published accepted names is updated, including the corresponding synonyms. Also, information about the assigned type specimen for each name is updated, including notes explaining proposed decisions regarding the original protologue and the original herbarium labels. Some additional information about the location and date of collection, as well as data about the barcode of each specimen is included. Some digital images of herbarium specimens are included. The geographic and biogeographic distribution of each species is discussed.

For the citation of specimens from HAC, we followed Regalado et al. (2008). All material previously stored in the Academy of Medical, Physical and Natural Sciences of Havana and transferred to HAC is mentioned as HABA.

For typification of the names, we followed the recommendations of the International Code of Nomenclature for algae, fungi and plants (The Shenzhen code, Turland et al. 2018, referred to in the text by the word "Code." We 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 we determined that a holotype or lectotype designation contains correctable errors.

Borhidi and Muñiz (1986, 1996) and Morrone (2014) discussed the biogeography of Cuba the latter author also discussed and outlined the biogeography of Mexico and the Yucatan Peninsula. The geographical distribution information and other revised materials include the country in uppercase letters and bold, followed in lower case and bold, in alphabetical order by the districts of Belize, the provinces of Cuba, and the states of Mexico, with the municipalities of these latter two countries in lower case and between brackets. The biogeographical information includes the province in uppercase letters, followed by the subprovince and the corresponding sector, with the districts in parentheses. 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 senior author has maintained field observation records for the last 25 years, where the natural distribution area of the species and the hybrid was verified. His field observation number system is in this format: *Serie Moya XXXX*.

Results and Discussion

Bartlett (1935) validly published *Sabal japa*, basing it on *Wright* 3971, and in doing so used the previously unpublished original name that Wright had proposed.

Taxonomic Treatment

Sabal japa C. Wright ex Bartlett, Publ. Carnegie Inst. Wash. 461: 36. 1935. ≡ *Inodes yapa* (Bartlett) Standl., Publ. Field Columb. Mus., Bot. Ser. 3: 219. 1930.

Type: CUBA. [Pinar del Río province, Minas de Matahambre municipality, La Güira, Luis Lazo, 12 Dec. 1866], *Wright 3971* (holotype [US33398] US 00087509; isotypes: A 00028542, A 00028543, A 00028544, B [dest.], F 920958.1, F 920958.2, FI-frag. [n.v.], FI [photos of B, n.v], GH 00028545, GH 00028546, GH 00028547, GH 00549119, GH 00549126, HAC ex HABA.1!, HAC ex HABA.2!, HAC 28877 [photo of US87507!], HAC 28874 [photo of US87508!], HAC [photo of US87509!], K 000462867, K 000462868, K 000462869, K 000462870, MO [n.v.], NY 00071241, NY 00071242, NY 00071243, NY 1661990, NY 1661991 [n.v.], P 00725549, P 00725550, US 00087507, US 00087508).

= *Sabal mayana* Bartlett, Publ. Carnegie Inst. Wash. 461: 35. 1935. '*mayarum*'

Type: BELIZE. Belize District, British Honduras, Maskall, 19 Feb. 1934, *Gentle 1156* (lectotype, designated here, MICH 1050278B; isolectotypes: GH [n.v.], K [n.v.], MICH 1050278A, MICH

1050278C, MICH 1050278D, MICH 1050278E, MICH 1050278F, MICH 1050278G, MO 106817 [n.v.], MO 976846 [n.v.], NY 00067596).

= *Sabal peregrina* L. H. Bailey, Gent. Herb. 6: 400. 1944.

Type. [Cultivated. USA, Florida state, Monroe County], "Key West, Florida, in a yard at Duval and Caronline," 5–7 Aug 1935, *Bailey 2DH* (lectotype, [first step] Reveal & Nixon 2013: 35, [second step] designated here: BH 000281614.1, BH 000281614.2, BH 000281614.3, BH 000281614.4, BH 000281614.5, BH 000281614.6; isolectotypes: BH 000281615.1, BH 000281615.2, BH 000281615.3, BH 000281615.4, BH 000281615.5, BH 000281615.6, BH 000281615.7, BH 000281615.8).

Syntype. CULTIVATED. USA, Florida state, Monroe County, "Key West, Florida, in a yard at Duval and Caronline," 5–7 Aug 1935, *Bailey 322x* (BH 000281613.1, BH 000281613.2).

= *Sabal yucatanica* L. H. Bailey, Gent. Herb. 6: 418. 1944.

Type. MÉXICO. [Yucatán State], "Chichen Itza in yard of hacienda, native in the area," Jun. – Jul. 1938, *Lundell & Lundell 7368* (lectotype, [first step] Glassman 1972: 201, MICH [second step] designated here: MICH 1050280A; isolectotypes: BH 000283898 [frag.], MICH 1050280B, MICH 1050280C, MICH 1050280D, MICH 1050280E, MICH 1050280F, MICH 1050280G, MICH 1050280H, MICH 1050280I, MICH 1050280J, MICH 1050280K, MICH 1050280L, MICH 1050280M, MICH 1050280N, MICH 1050280O).

Syntype. MÉXICO. [Quintana Roo state, Cozumel municipality], "Quintana Roo at Coba, bordering Lake Macanxac," *Lundell & Lundell 7727* (MICH [n.v.]).

Sagra made the first collection of what would become *Sabal japa* in 1829 but the location is unknown. Sauvalle (1871) first listed *Sabal japa* C. Wright, associating *Wright 3971* with the name, but without any description; therefore, it must be regarded as a *nomen nudum*. Shortly thereafter, Sauvalle (1873) considered it as a later isonym, which has no nomenclatural status. Gómez de la Maza (1889) published *Sabal japa* (Sauvalle) M. Gómez but again without a description; it, too, must be regarded as a *nomen nudum.* Kerchove (1878) and Salomon (1887) overlooked the name *Sabal japa*.

3. Holotype of *Sabal japa*, *Wright 3971*, US 00087509. ©2021 US.

4. Lectotype of *Sabal mayana*, *Gentle 1156*, MICH1050278B, a synonym of *S. japa*. ©2021 MICH.

Beccari (1907) published the name *Sabal yapa* C. Wright ex Becc., which up until the present was the accepted name and authority; however, it is an illegitimate name because Beccari cited *Corypha maritima* Kunth and its type as a synonym for his new species, which according to articles 52.1 and 52.2(e) of the Code renders the name superfluous and, thus, illegitimate. Beccari (1907) confirmed as much when he wrote, "It is very probable that the *Corypha maritima* Humb. et Bonpl. should be referred to the *Sabal Yapa* . . ." Since then, Beccari (1912, 1931), Burret (1929), Bailey (1934, 1944), Dahlgren (1936), Hawkes (1949), Moore (1971), Glassman (1972), Henderson et al. (1995)and others have all considered *S. yapa* as the accepted name. As a side note, Henderson et al. (1995) incorrectly attributed the authority to the Englishman Charles Henry Wright (C. H. Wright) instead of the American Charles Wright (C. Wright).

Bartlett, professor emeritus at the University of Michigan, finally provided a description of *Sabal japa* C. Wright in the "Botany of the Maya Area" (Bartlett 1935). Regarding the spelling "Japa" rather than "Yapa," Bartlett preferred and adopted the spelling on Wright's original label, and, although Bartlett attributed the name to Charles Wright, the validating description is his own (Art. 46.5 of the Code). He designated the specimen *Wright 3971* as the holotype (US33398, now US 00087509) (**Fig. 3**). The remaining 32 duplicates become isotypes.

León (1946) attributed *Sabal japa* to C. Wright but his action is now considered a later isonym and lacks nomenclatural status.

In terms of the collection date of Wright's type, *Wright 3971*, Wright wrote on the specimen GH549119 (now an isotype), "La Güira in Luis Lazo Dec." Howard (1988) noted that Wright visited Luis Lazo in December, 1866, and La Guira on the 29th of the same date; therefore, the date and location of *Wright 3971* was December 29, 1866, municipality of Minas de Matahambre, province of Pinar del Río.

Moore (1971) was the first to treat *Sabal mayarum*, *S. peregrina*, and *S. yucatanica* as synonymys of *S. japa* but, of course, considered it *S. yapa*.

When Bartlett (1935) named *Sabal mayarum*, he designated *Gentle 1156* (MICH) as the holotype but this specimen is mounted on seven sheets without being clearly labelled as part of that same specimen or bear a single, original label in common; therefore, they must be considered syntypes. Dahlgren (1936), Standley and Steyermark (1958), and Glassman (1972) mentioned the same specimens as types. Here we designate MICH1050278B (**Fig. 4**) as the lectotype and the other 12 duplicates as isolectotypes .

Bartlett (1935) named *Sabal mayarum*, he noted that it "occurs in the Maya area," referring to a geographic name. According to Art. 60D.1 of the Code, *the* epithet derived from a geographical

5. One of six parts of the lectotype of *Sabal peregrina*, *Bailey 2DH*, BH 000281614.1, a synonym of *S. japa*. ©2021 BH.

name is preferably an adjective and usually takes the termination, in this situation, "*-ana," which, i*n this case, makes the name *Sabal mayana*. Epithets ending in "*-arum*" (Art. 60.8) and "*-ara"* (Art. H.6.3) are used for names honoring persons, not geographic associations.

When Bailey (1944) named *Sabal peregrina*, he noted in the protologue two different specimens as types: *Bailey 2DH* and *Bailey 322X*, thus creating syntypes according to article 9.6 of the Code. Glassman (1972) designated *Bailey 322X* at BH as the type, and Zona (1990) did the same as holotype. However, Reveal and Nixon (2013) replaced that designation because it is in conflict with the protologue: that specimen at BH consists only of a ripe fruit. They designated *Bailey 2DH* as the lectotype consisting of several specimens in two folders (5 sheets, 1 packet, and 1 box), and in doing so they referred to the entire collection. Their designation is considered lectotype [first-step], according to article 9.17 of the Code. Here we designate BH 000281614.1 (**Fig. 5**) to BH 000281614.6 as the lectotype [second-step] because it is mounted in six sheets as being part of that same specimen and bears a single, original label in common (Art. 8.3 of the Code). We designate the eight duplicates of *Bailey 2DH* at BH as isolectotypes.

6. Lectotype of *Sabal yucatanica*, *Lundell & Lundell 7368*, MICH1050280A, a synonym of *S. japa*. ©2021 MICH.

When Bailey (1944) named *Sabal yucatanica*, he noted in the protologue the specimen *Lundell & Lundell 7368* as the type, which consists of 15 herbarium sheets, thus creating syntypes. Glassman (1972) and Zona (1990) designated the entire collection of *Lundell & Lundell 7368* at MICH as type, thus creating syntypes again. Glassman's designation is now considered lectotype [first-step], according to article 9.17 of the Code. Here we designate MICH1050280A (**Fig. 6**), with shorter, thicker, and stiffer rachillae than *S. japa* as the lectotype [second-step]. We designate the other duplicates at BH and MICH as isolectotypes.

Excluded names:

"*Sabal japa*" C. Wright, in Sauvalle, Anales Acad. Ci. Med. Habana, 8: 562. 1871, nom. nud.

"*Sabal japa*" C. Wright, in Sauvalle, Fl. Cub. (Sauvalle): 152. 1873, later isonym without nomenclatural status.

"*Sabal japa*" Sauvalle, in M. Gómez, Dicc. Bot. Nombres Vulg. Cub. Puerto-Riq.: 57. 1889, nom. nud.

"*Sabal japa*" Sauvalle, in M. Gómez, Noc. Bot. Sist. 51. 1893, later isonym without nomenclatural status.

"Sabal mexicana" Millsp., Publ. Field Mus. Nat. Hist., Bot. Ser. 1(1): 11. 1895, non Mart.

"Sabal mexicana" Millsp., Publ. Field Mus. Nat. Hist., Bot. Ser. 1(4): 355. 1898, non Mart.

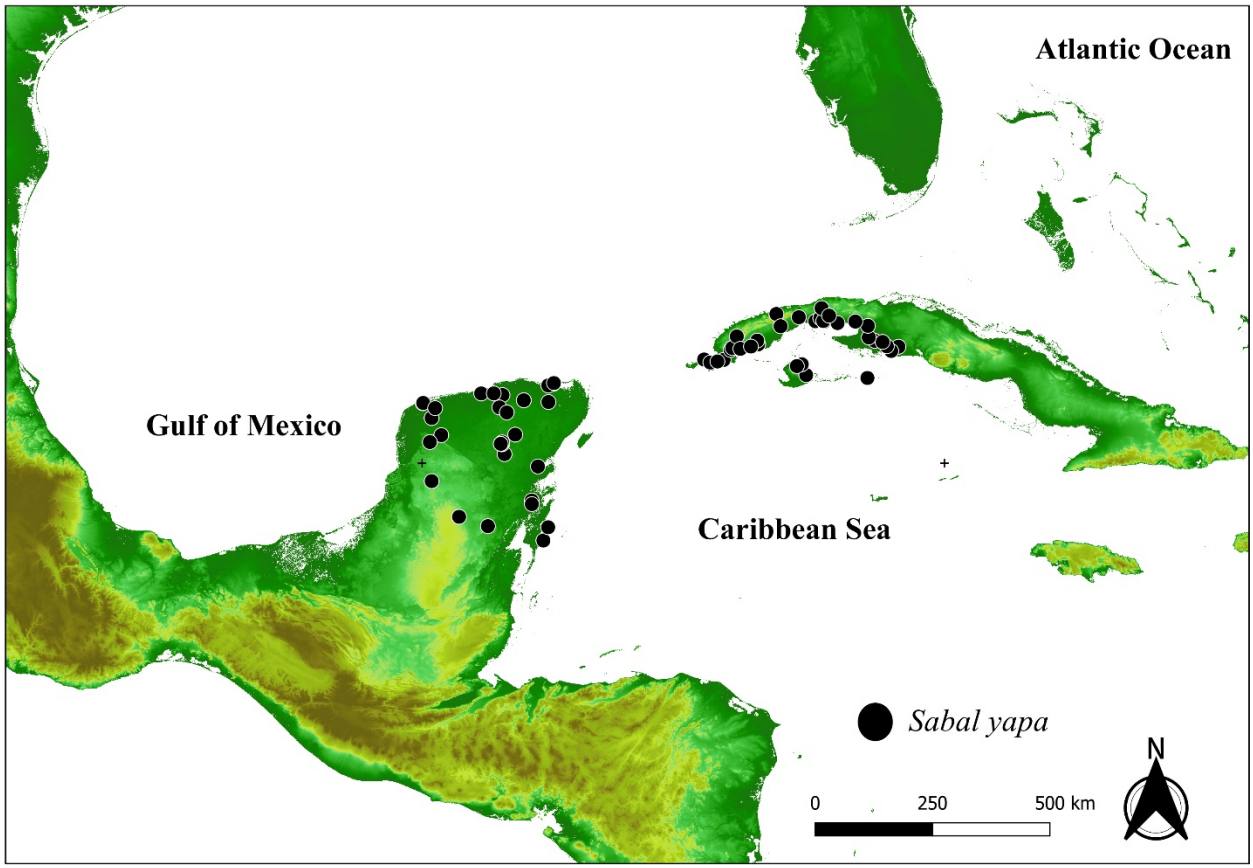
"Sabal mexicana" Gaum., Pl. Yucatanae 317, non Mart.

"Sabal yapa" C. Wright ex Becc., Webbia 2: 64. 1907, illeg. name.

"*Sabal japa*" Bartlett, Publ. Carnegie Inst. Wash. 461: 36. 1935, in Bailey (1944), incorrect citation of authors.

"*Sabal japa*" C. Wright ex León, in León, Contr. Ocas. Mus. Hist. Nat. Colegio De La Salle 8: 248. 1946, later isonym without nomenclatural status.

"*Sabal japa*" C. H. Wright ex Becc., Webbia 2: 64. 1907, in Henderson et al. (1995), incorrectly attributed authority.



7. Map showing Distribution of *Sabal japa* in the Yucatan peninsula (Mexico, Belize) and western Cuba. Prepared by Claudia Ramirez Díaz.

Geographical Distribution (Fig. 7).

BELIZE. **Belize**[H], **Corozal**[H], **Orange Walk**[H], **Stann Creek**[H], **Toledo**[H]. **CUBA**. **Artemisa** [Artemisa[A], Alquizar[A], Bahía Honda[P], Güira de Melena[A], Mariel[A], Quivicán[A,P], San Cristóbal[A]; **Cienfuegos** [Aguada de Pasajeros[P]]. **La Habana** [Boyeros[H]]. **Matanzas** [Matanzas[H], Unión de Reyes[R]]. **Mayabeque** [Batabanó[H], Bejucal[H], Guines[A], Melena del Sur[A], Nueva Paz[A]]. **Pinar del Río** [Consolación del Sur[R], Guane[H], Minas de Matahambre[H], Pinar del Río[H], Sandino[R], San Juan y Martínez[H], San Luis[P]], and **Isla de la Juventud**[H]. **MÉXICO**. **Campeche** [Calakmul[H], Calkin[H], Campeche[H], Carmen[H], Champotón[H], Escárcega[H], Hopelchén[H], Tenabo[H]]. **Quintana Roo** [Bacalar[H], Benito Juárez[H], Cozumel[H], F. Carrillo Puerto[H], Lázaro Cárdenas[H], Ma. Morelos[H], Othón P. Blanco[H]]. **Yucatán** [Celestún[H], Dzilam del Bravo[H], Dzemul[H], Halacho[H], Hocabá[H], Honucmá[H], Izamal[H], Maxcanú[H], Mérida[H], Muna[H], Oxkutzcab[H], Progreso[H], San Felipe[H], Sucilá[H], Ticul[H], Tizimín[H], Tzucabab[H], Valladolid[H], Yobaín[H]].

8. A juvenile plant of *Sabal japa*. Cerro San Juan, Isla de la Juventud, Cuba. *Serie Moya 1818.* ©2018 Celio Moya López.

Biogeographical Distribution

Province **CUBA**, subprovince Western Cuba, sector Peninsularicum (Guanahacabibense[H], Zapatense[H]), sector Pinaricum (Sabaloënse[H], Pinarense[H], Geronense[H]), sector Rosaricum (Cajalbanënse[H]; subprovince Central Cuba, sector Havanicum (Güinense[H], Havanense[A]). Province **YUCATÁN PENINSULA** (Northern Yucatán[H] and Belizean Swamp Forests[H]).

Extreme Points of *Sabal japa*

Northernmost point: Cuba, Artemisa province, Mariel municipality, Protected Natural Landscape Guajaibón. 23°1'N, 82°41'W. [ROP Observ.].

Southernmost point: Belize, Orange Walk state: Rio Bravo Cons. Area, Hill Bank Field St. 17°35'N, 88°42'W. [*Ganesan 84* (MO)].

Easternmost point: Cuba, Cienfuegos province, Aguada de Pasajeros municipality, Orbea: 22°13'N, 80°52'W. [M. Rodríguez, Pers. Comm.)].

Westernmost point: México, Campeche state, Carmen municipality: between Sabancuy and Checobul, 18°54'N, 91°3'W. [*Zona 146* (RSA)].

Additional Specimens Examined and Field and Bibliographic Citations:

Moya field observations. CUBA. **Isla de la Juventud** municipality: Cerro San Juan (**Fig. 8**), Sta. Fe, 1 Oct. 2018, *Serie Moya 1818*; Mirador Sierra Las Casas (**Fig. 2**), 1 Oct. 2018, *Serie Moya 1834*; playa Bibijagua (**Fig. 9**), 3 Oct. 2018, *Serie Moya 1864c*; Lomita W Bibijagua, 3 Oct. 2018, *Serie Moya 1867* (**Fig. 10**).

BELIZE. **Belize**: Maskall, 19 Feb. 1934, *Gentle 1156* (GH [n.v.], K [n.v.], MICHx7, MOx2 [n.v.], NY); **Corozal**: 1931, *Gentle 602* (MICH [n.v.]), 1931, *Gentle 628* (MICH [n.v.]); **Orange Walk**: Orange Walk state: Rio Bravo Cons. Area, Hill Bank Field St. 16 Apr. 2006, *Ganesan 84* (E [n.v.], MOx2 [n.v.]); **Stann Creek**: Humming Bird Cafe, Humming Bird Highway, 15 Aug. 1956, *Gentle 9211* (MEXU [n.v.], NYx4); **Toledo**: Moffredye Creek, San Antonio, 12 Aug. 1944, *Gentle 5059* (NYx2). Unknown locality, no date: *Gentle 3103* (MICH [n.v.]); *Balick 3280* [n.v.], *Balick 3298* [n.v.], *Balick 3365* [n.v.] (Balick et al. 2000). **CUBA**. **Artemisa**. [**Artemisa**: Majana (ROP Observ.); **Alquizar**: Guanimar (ROP Observ.); **Bahía Honda**: San Juan de Guacamayo (**Fig. 11**), Rodríguez & Suárez, 9.19.2021, Pers. Comm.; **Güira de Melena**: Cajío (ROP Observ.); **Mariel**: Paisaje Natural Protegido Guajaibón (ROP Observ.); **Quivicán**: SW monte Sotolongo, sur Pablo Noriega, Rodríguez, 9.19.2021, Pers. Comm.; **San Cristóbal**: S Taco (ROP Observ.)]; **Cienfuegos. [Aguada de Pasajeros**: Orbea, Rodríguez 9.19.2021, Pers. Comm.[; **La Habana**. [**Boyeros**: finca la Cámara, Apr. 1938, *León 18009* (HAC!)]; **Matanzas.** [**Ciénaga de Zapata**: Monte Santo Tomas, 4 May 1927, *Acuña s.n.* (HACx2!); Cayo Ramona (**Fig. 12**), Rodríguez & Suárez, 9.19.2021, Pers. Comm.; Maíz en camino Santo Tomás, Palpite, camino a Jiquí río Los Sábalos; **Unión de Reyes**: Hato de Jicarita, Rodríguez, 9.19.2021, Pers. Comm.]; **Mayabeque. [Batabanó**: Batabanó, *Torralba 179* (B [dest.]); 3 Oct. 1904, *Baker 2308* (HACx2!), 14 Mar. 1890, *Morales 1157*, (HAC!); *Bailey 12548* ([n.v.]) (Bailey 1944); Pozo Redondo, *Bailey 12564* ([n.v.]) (Bailey 1944); Sabana de Pimienta, 12 Jun. 1928, *León 13394* (HAC!, NYx2); Hacienda Quintana, 4 Jul. 1929, *León 13908* (GH [n.v.], HACx2!, NY, USx4 [n.v.]); *León 14160* (BH [n.v.]); 17 Aug. 1929, *León 14161* (HACx2!); 13 Feb. 1930, *León 14287* (HACx2!, GH [n.v.], S [n.v.]); *León 14288* (NYx2); 3 Apr. 1930, *León 14298* (HAC!); *León 14299* (HACx2!); *León 14302* (HACx2!); *León 14304* (HAC!); Feb. 1943, *Ma. Victorin 56463* (MT);

9. *Sabal japa* at Playa Bibijagua, Isla de la Juventud, Cuba. *Serie Moya 1864c*. ©2018 Celio Moya López.

10. *Sabal japa* at Loma West Bibijagua, Isla de la Juventud, Cuba. *Serie Moya 1867c*. ©2018 Celio Moya López.

11. *Sabal japa* at San Juan Guacamayo, Bahia Honda, Artemisa, Cuba. ©2021 Milián Rodríguez.

12. Milián Rodríguez holds leaf of a juvenile *Sabal japa* at Cayo Romana, Matanzas, Cuba. ©2021 Duanny Suárez.

---

27 Apr. 1943, *Ma. Victorin 58168* (GH [n.v.], MTx2, US [n.v.]); Hacienda Peralta, Oct. 1929, *León 14240* (HAC!); 13 Feb. 1930, *León 14289* (HAC!); **Bejucal**: La Pita, base Sierra Bejucal, *Bailey 331* ([n.v.]) (Bailey 1944); 21 Apr. 1931, *Roig s.n.* (BH [n.v.], HACx2); **Guines**: S de Güines, próximo a costa (ROP Observ.); **Melena del Sur**: Guara (ROP Observ.), **Nueva Paz**: Reserva Florística Sureste del Inglés (ROP Observ.)]; **Pinar del Río.** [**Consolación del Sur**: (Saakov 1970); **Guane**: Guane, sur de El Cayuco, 21 Feb. 1926, *Roig s.n.* (HACx2!); Feb. 1928, *Fors s.n.* (HAC!); Boquerón, Mendoza, 2 Apr. 1931, *Bailey 15183* (BH [n.v.], HACx2!); río Los Portales (Ma. Victorin & León 1944); **Minas de Matahambre**: La Güira, carretera a Luis Lazo; **Pinar del Río**: La Coloma, río El Punto, Rodríguez, 9.19.2021, Pers. Comm.; **Sandino**: costa norte y oeste península Guanahacabibes (Delgado and Ferro 2013); La Bajada y Vallecito (Rosete et al. 2006); **San Juan y Martínez**: Galafre, 7 Mar. 1911, *Britton 9845* (GH [n.v.], MO [n.v.], NYx4, P, US [n.v.]); **San Luis**: Caimana, Rodríguez, 9.19.2021, Pers. Comm.]; and **Isla de la Juventud** municipality: Cerro San Juan del Mar, 20 Feb. 1916, *Britton 14646* (CMx2 [n.v.], MO [n.v.]); Cayo Largo (García E.E. and P. Herrera 2010); Cerro San Juan, Sta.

Fe, 1 Oct. 2018, *Serie Moya 1818*; Mirador Sierra Las Casas, 1 Oct. 2018, *Serie Moya 1834*; playa Bibijagua, 3 Oct. 2018, *Serie Moya 1864c*; Lomita W Bibijagua, 3 Oct. 2018, *Serie Moya 1867*]. Cuban unknown locality: 1829, *Sagra 222* (F, FI [n.v.], G [n.v.], Px2). **MÉXICO**. **Campeche. [Calakmul**: Unión 20 junio, 3.8 km E-SE, 24 Mar. 2005, *Martínez 37503* (CICYx2!, MEXUx3, MHES [n.v.]); **Calkiní**: El Remate 14 km Tankuché, 10 Aug. 1988 *Murphy 1* (CICY!); Nunkiní, 11 Aug. 1988, *Murphy 2* (CICY!); El Remate, 1 km al W, no date, *Quero 3051* (MEXU); **Campeche**: Campeche, 17 km SW, 24 Apr. 1980, *Quero 2994* (MEXUx13); Campeche, 8 Jul. 1996, *Fadiman 1* (NOx2); San Antonio Cayal, 13 May 2009, *Chi 138* (CICYx2!); **Carmen**: between Sabancuy and Checobul, no date, *Zona 146* (RSA [n.v.]); **Champotón**: Champotón, 21 km al S, no date, *Quero 2684* (MEXU); Huiná, afuera Ejido, 14 May 2009, *Chi 147* (CICYx2!); **Escárcega**: carretera Escárcega-Chemtumal km 20, no date, *Quero 2389* (MEXUx5); Rancho Zaiz, 13 Apr. 1976, *Quero 2387* (MEXUx3, MOx2 [n.v.]); *Quero 2386* (MEXUx3); *Quero 2388* (MEXUx6); no date; **Hopelchén**: Xcocchcak, 10 Mar. 1987, *Labat 1930* MEXU, P); **Tenabo**: Campeche-Tenabo, no date, *Zona 143* (RSA [n.v.])]. **Quintana Roo.** [**Bacalar**: San Felipe Bacalar, Chetumal-P. Carrillo, 12 Aug. 1976, *Quero 2417* (MEXUx6); **Benito Juárez**: Puerto Juarez, 11 km W, no date, *Quero 2401* (MEXUx2); autopista a Mérida, 10 km, 26 Jun. 1994, *Durán 2291* (CICYx2!); **Cozumel**: Coba, Lake Macanxoc, Jun. 1938, *Lundell 7727* (MICH [n.v.]); Calica, 28 May 1994, *Durán 2229* (CICY!); **Felipe Carrillo Puerto**: Carrillo Puerto, 11 km NW, no date, *Quero 3248* (MEXU); Chetumal a F. Carillo Puerto, km 118, 28 Oct. 1982, *Flores 9638* (CICY!); Chetumal a F. Carillo Puerto, km 43, 11 Jan. 1995, *Durán 2393* (CICYx2!); Chetumal a F. Carillo Puerto, km 47.5, 11 Jan. 1995, *Durán 2395* (CICYx3!); Carrillo Puerto, 13 km NW, no date, *Quero 3284* (MEXU); **Lázaro Cárdenas**: Granja Kuxche, 9 km Kantilkin, 10 Jan. 1995, *Durán 2389* (CICYx2!); 23 May. 1995, *Trejo 357* (CICYx2!, MEXU); Rancho El Edem, 17 Feb. 1999, *Schults 1087* (UCR [n.v.]); Cancún, 56 km W, 9 Feb. 2010, *Balslev 8162* (NY); Cancún, 69 km W, 12 Feb. 2010, *Balslev 8166* (NY); **J. Ma. Morelos**: Chichankanab, no date, *Gaumer 1359* (GH [n.v.], MO [n.v.], P, S [n.v.], UPS [n.v.], US [n.v.]); **Othón P. Blanco**: Caderitas, 1 km N, Aug. 1976, *Quero 2418* (MEXUx5); 14.5 km entronque a Escarzega-Chetumel, 13 Apr. 1978, *Quero 2612* (MEXUx6); Zoo Playa Obispo, 27 Mar. 1990, *Herrera 169* (CICY!, MEXU); Estación Flora y Fauna, San Felipe, 26 Mar. 1992, *Macario 201* (CICYx2!); Chetumal, 77 km SW, 23 Feb. 2010, *Balslev 8208* (NY); Chetumal, 76 km SW, 27 Feb. 2010, *Balslev 8229* (NY); Caderitas, 1 km N, no date, *Quero 2391* (MEXUx6); Rancho Los Limones, Chetumal-C. Puerto, no date, *Quero 2394* (MEXUx9)]. **Yucatán. [Celestún**: Reserva Estatal El Palmar, 7 Apr. 1993, *Chan 7967* (CICY!); **Dzilam del Bravo**: reserva de Dzilam, 21 Apr. 1991, *Trejo 72* (CICY!); **Dzemul**: Telchac Puerto-Chicxulub, cruce Dzemul, 16 May 2011, *Godoy-Herrera 4* (CICYx2!); **Halachó**: Halachó, Aug. 1974, *Quero 2327* (MEXUx4, MO [n.v.]3); **Hocabá**: Hocabá, 29 Aug. 1985, *Bricker 301* (NO); 12 Sep. 1985, *Bricker 409* (NO); 6 Jun.1986, *Bricker 549* (NO); **Honucmá**: Rancho La Milpa, antes Sisal, 14 Jun. 1990, *Simá 1199* (CICYx2!, MEXU); Sisal, 2 km S, 12 Mar. 1992, *Orellana 869* (CICY!, MEXUx4); Petén Elepetén, 26 Feb. 1994, *Febles 5* (CICYx3!); **Izamal**: Izamal, 20 Mar. 1916, *Gaumer et al. 23316* (A [n.v.], Fx3, GH [n.v.], NYx2), MO [n.v.]; **Kinchii**: Celestún, 23 km antes, 21 Jun. 1990,

13. *Sabal japa* at Zona Arqueológica Xcambó, Progreso, Yucatán, México. ©2021 Rodrigo Duno de Stefano.

Simá 1205 (CICYx2!, MEXUx2); **Maxcanú**: Chunchucmill, 18 Mar. 1978, *Ward s.n.* (USAM); Hacienda Chunchucmil, 3 Mar. 1988, *Ortega 235* (UCR [n.v.]); Maxcanú, Maya Garden, no date, *Zona 144* (RSA [n.v.]); **Mérida**: Merida, 23 Jan. 1865, *Schott 196* (USx2 [n.v.]) Jan. 1866, *Schott 802* (US [n.v.]); ciudad Mérida, 13 Jul. 1987, *Espinosa-López 7* (CICY!); **Muna**: 7 km entrada Kekén, 29 Sep. 2009, *Tapia 2172* (CICY!); **Oxkutzcab**: Labná, 14 Mar. 1981, *Narváez 285* (CICY!); Xul, 11 Feb. 1984, *Sanabria 355* (CICYx2!); **Progreso**: Progreso, no date, *Gaumer 2176* (US [n.v.]); Progreso, 11 km E, 4 Nov. 1984, *Sanders 1727* (CICYx2!, FTG [n.v.], MEXU); Zona Arqueológica Xcambó (RDDS, Observ.) (**Fig. 13**); **San Felipe**: S de Playa Chisascab, 20 Dec. 1989, *Trejo 44* (CICY!); N Rancho Santa Clara, 21 Oct. 1990, *Trejo 50* (CICY!); **Sucilá**: Rancho Montecristo, 9 Jen. 1995, *Durán 2380* (CICYx2!); **Ticul**: Rancho San Agustín, 24 Oct. 1981, *Narvaez 779* (CICY!); Ticul, 24 Oct. 1981, *Narváez 776* (XAL [n.v.]); 24 Oct. 1984, Ticul, *Narvaez s.n.* (XAL [n.v.]); 28 Apr. 1985, *Orellana 262* (CICYx4!); Rancho San Enrique, 13 Jan. 1995, *Durán 2409* (CICYx3!, F); 25 May 1995, *Trejo 360* (CICY!); **Tizimín**: colonia Yucatán, 20 Apr. 1980, *Quero 2991* (MEXU); 30 Dec. 1982,

Quero 3111 (MEXUx9); *Quero 3248* (MEXU); El Cuyo, 7 km antes, 12 Jun. 1985, *Chan 5177* (CICYx2!); El Cuyo, 8 km S, 20 Oct. 1993, *Méndez 754* (CICYx4!, MEXU); **Tzucabab**: Tzucabab, 10 km SE, 28 Dec. 1976, *Quero 2487* (MEXUx4); **Valladolid**: Valladolid y Tizimin, Aug. 1974, *Quero 2327* (MEXUx6); Apr. 1976, *Quero 2400* (MEXUx6); **Yobaín**: Yobaín-Chabihau, 3 Feb. 1988, *Martínez 1153* (CICY!, NY)]. Mexican unknown locality, no date: *Gaumer 317* (FI [n.v.], MO [n.v.], NY, US [n.v.]); *Gaumer 21464* (US [n.v.]; 1916, *Gaumer 23967* (F, MO [n.v.], NY, USx2 [n.v.]); 1917, *Gaumer 24166* (A [n.v.], NY, MO [n.v.], S [n.v.], UPS [n.v.], US [n.v.]).

Uses

Sabal japa (*huano* in in the Mayan language) is the most important palm species used in the Yucatan Peninsula. It is employed for human and animal food, production of honey, and especially medicine and materials for construction (Torre et al. 2009). Leaves have been used to roof houses for the last 3000 years and buildings of ceremonial centers of the Classic period (Caballero 1994). Evenly presently its leaves are used to roof Mayan houses. More recently, the palm is used to construct *palapas*, an open-sided dwelling with a thatched roof made of dried palm leaves; these are especially popular in tourist facilities like hotels and resorts in the Mayan region (Caballero 1994). Also, its leaves are currently widely used in the Yucatan peninsula for making handicrafts and for roofing (**Fig. 14**) while the trunks are used for rural construction (Quero and Salvador (2004).

At least in the Yucatan Peninsula, humans have possibly modified the original distribution of *Sabal yapa* (Sánchez-Suárez 2006).

Leaves are also harvested in Cuba although their exact use is undocumented (**Figs. 15–16**).

Conclusions

Determining the valid nomenclatural status of plant names is useful and necessary for publications and to update databases in herbaria, botanical gardens, nurseries, floristic lists, and conservation inventories, allowing for accurate and consistent information that all can use with confidence.

Acknowledgements

We are grateful to Donald R. Hodel for carefully review the manuscript, providing photographs, and improving the English of the manuscript. We are also grateful to Walter Kittredge of A and GH, Anna M. Stalter and Kevin C. Nixon of BH, Chiara Nepi of FI, staff of MEXU, and Meghann S. Tonner of US for making specimens and/or photos available for study. Special thanks go to the facilities offered at HAC for the review of the specimens studied, especially to Bertha L. Toscano

14. Harvested leaves of *Sabal japa* used for handicrafts and roofing, Yucatán, México. ©2021 Dennis Pedersen.

15. *Sabal japa* at Las Pozas, San Juan Guacamayo, Bahia Honda, Artemisa, Cuba showing leaf harvest. ©2017 Donald R. Hodel.

16. *Sabal japa* at Las Pozas, San Juan Guacamayo, Bahia Honda, Artemisa, Cuba showing how leaves have been harvested. ©2017 Donald R. Hodel.

Silva for her great help during the review of the collections. We also thank staff of the following herbaria whom we have consulted online: F, K, NY, P, and US, as well as the GBIF, JSTOR, Mid-Atlantic Herbaria Consortium, and Tropicos staffs. We thank Milián Rodríguez Lima and Duanny Suárez Oropesa for photos of *Sabal japa* in Cuba, Dennis Pedersen of Palm Harvest Impact in Tropical Forest for a photo of *S. japa* in the Yucatán, Claudia Ramirez Díaz of CICY for making the map, and an anonymous reviewer for checking the manuscript. All have our sincere thanks.

Literature Cited

Bailey, L. H. 1934. Art.6. American Palmettoes. Gent. Herb. 3(6): 275–337.

Bailey, L. H. 1944. Article 11. Revision of the American Palmettoes. Gent. Herb. 6(7): 366–458.

Balick, M. J., M. H. Nee, and D. E. Atha. 2000. Checklist of the Vascular Plants of Belize. Memoirs of the New York Botanical Garden 85: 246 pp.

Bartlett, H. H. 1935. Botany of the Maya area: miscellaneous papers II. Publ. Carnegie Inst. Washington. Washington, DC. 461: 29–37.

Beccari, O. 1907. Le palme Americane della tribu delle Corypheae. Webbia. 2: 1–343.

Beccari, O. 1912. The palms indigenous to Cuba II. Pomona Coll. J. Econ. Bot. 2(2): 253–276.

Beccari, O. 1931. Asiatic palms–Corypheae: the species of the genera, revised and edited by U. Martelli. Ann. Roy. Bo. Gard. Calcutta 13: 1–344.

Berkeley, M. J. and M. A Curtis. 1869. Fungi Cubenses (Hymenomycetes). J. Linn. Soc. Bot. 10: 280–392.

Borhidi, A. and O. Muñiz. 1986. The phytogeographic survey of Cuba: 2. Floristic relationships and phytogeographic subdivision. Acta Bot. Hung. 32(1–4): 3–48.

Borhidi, A. and O. Muñiz. 1996. The phytogeographic subdivision of Cuba, en Borhidi, Phytogeography and vegetation ecology of Cuba. Akad. Kiado, Budapest: 281-385.

Burret, M. 1929. Palmae Cubenses et Domingenses a Cl. E. L. Ekman 1914–1923 lectae. Kungl. Svenska Vetensk. Acad. Handl., Ser. 3. 6(7): 3–28.

Caballero, J. 1994. Use and management of *Sabal* palms among the Maya of Yucatan. Ph. D., University of California, Berkeley, U.S.A.

Cuenca, A. and C. B. Asmussen-Lange. 2007. Phylogeny of the palm tribe Chamaedoreeae (Arecaceae) based on plastid DNA Sequences. Syst. Bot. 32(2): 250–263.

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

Delgado, F., J. Ferro, and E. González. 2018. Lista florística actualizada de la península de Guanahacabibes, Cuba. Ecovida 8(2): 179–212.

Delgado, F., and J. Ferro. 2013. Vegetación de la Reserva de la Biosfera Península de Guanahacabibes, Cuba: mapa actualizado a escala 1:300 000. Ecovida 48(1): 111–129.

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.

Eaton, D. C. 1859. Enumeration of ferns collected by Mr. Charles Wright in Eastern Cuba in 1856–7 Amer. J. Acad. Sci. Arts, ser. 2, 27(80): 197–201.

Eaton, D. C. 1860. Filices Wrightianae et Fendlerianae Ex Mem. Acad. Amer. Acad. Scient. et Artium N. Ser., 8: 193–218.

García, E. E. and P. P. Herrera. 2010. Flora, vegetación y modificaciones ecólogo paisajísticas del Archipiélago de los Canarreos, Cuba. Acta Bot. Cubana 209: 1–24.

GBIF. 2020. GBIF Backbone Taxonomy. *https://www.gbif.org/dataset/d7dddbf4-2cf0-4f39-9b2a-bb099caae36c* Accessed: 14 April 2020.

Glassman, F. 1972. A revision of B. E. Dahlgren's index of American palms. Phanerogamarum Monografiae, Tomus VI. Cramer, Lehre, Germany.

Gómez de la Maza, M. 1889. Diccionario Botánico de los Nombres Vulgares Cubanos y Puerto-Riqueños. Imprenta la Antilla, Habana.

Gómez de La Maza, M. 1893. Nociones de Botánica Sistemática. A. Alvarez y Co., Havana.

Govaerts, R. and J. Dransfield. 2005. World Checklist of Palms. Royal Botanic Gardens, Kew.

Govaerts, R., J. Dransfield, S. Zona, D. R. Hodel, and A. Henderson. 2021. World Checklist of Arecaceae. Facilitated by the Royal Botanic Gardens, Kew. On-line: *http://wcsp.science.kew.org/* Accessed 23 September 2021.

Grisebach. A. H. R. 1862. Plantae Wrightianae, e Cuba orientali. 2. Cambridge, Boston.

Grisebach. A .H. R. 1866. Catalogus Plantarum Cubensium. Wilhelm Englemann, Leipzig.

Hawkes, A. D. 1949. Studies in Antillean botany. I. A checklist of the palms of Cuba. Phytologia 3: 145–149.

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

Howard, R. A. 1988. Charles Wright in Cuba, 1856–1867. Chadwyck-Healy, Cambridge.

IPNI. 2020. International Plant Names Index. The Royal Botanic Gardens, Kew, Harvard University Herbaria & Libraries, and Australian National Botanic Gardens. *http://www.ipni.org* Accessed: 3 June 2020.

Kerchove de Denterghem, O. 1878. Les Palmiers Histoire Iiconographinque. J. Rothschild, Paris.

León, H. 1918. Exploraciones Botánicas en Cuba. Mem. Soc. Cubana Hist. Nat. "Felipe Poey" 3: 178–224.

León, H. 1946. Flora de Cuba 1. Gimnospermas. Monocotiledóneas. Contr. Ocas. Mus. Hist. Nat. Col. La Salle 8: 236–269.

Lindley, J. 1858. A list of the orchidaceous plants collected in the east of Cuba by Mr. C. Wright; with characters of the new species. Ann. Mag. Nat. Hist. Zoo. Bot. Geol. 1(3): 325–336.

Marie-Victorin, Fre. and Fre. León. 1944. Itinéraires botaniques dans l'île de Cuba. Cont. l'Inst. Bot. l'Univ. Montreal. No. 50, 2me. série.

Millspaugh, C. F. 1895. Contribution to the Flora of Yucatan. Publ. Field Columbian Mus., Bot. Ser. Chicago 1(1): 1–56.

Millspaugh, C. F. 1898. Contribution III to the coastal and plain Flora of Yucatan. Publ. Field Columbian Mus., Bot Series. Chicago 1(4): 347–397.

Moore, H. E. 1971. Notes on *Sabal* in Cultivation. Principes 15: 69–73.

Morrone, J. J. 2014. Biogeographical regionalization of the Neotropical region. Zootaxa, 3782 (1): 1–110. *https://doi.org/10.11646/zootaxa.3782.1.1*

Moya López, C. E. 2020a. Charles Wright and the Cuban Palms. Pt. 3. Update of *Acoelorraphe*, *Colpothrinax*, and *Gaussia*. PalmArbor 2020-7: 122. *https://ucanr.edu/sites/HodelPalmsTrees/files/330687.pdf*

Moya López, C. E. 2020b. Charles Wright y las Palmas Cubanas. 4. *Wright 3221*. Repositorio de Información de Medio Ambiente de Cuba. Contribución al estudio de las palmas del Caribe. *http://repositorio.geotech.cu/jspui/handle/1234/4333*

Moya López, C. E. 2020c. Charles Wright y las Palmas Cubanas. 5. Grisebach. Repositorio de Información de Medio Ambiente de Cuba. Contribución al estudio de las palmas del Caribe. *http://repositorio.geotech.cu/jspui/handle/1234/43334*

Moya López, C. E. 2020d Charles Wright y las Palmas Cubanas. 6. Sauvalle "Flora Cubana" Repositorio de Información de Medio Ambiente de Cuba. Contribución al estudio de las palmas del Caribe. *http://repositorio.geotech.cu/jspui/handle/1234/4360*

Moya López, C. E. 2020e. Charles Wright y las Palmas Cubanas. 7. *Wright 3969*. Repositorio de Información de Medio Ambiente de Cuba. Contribución al estudio de las palmas del Caribe. *http://repositorio.geotech.cu/jspui/handle/1234/4361*

Moya, López, C. E. 2021a. An Update of *Copernicia macroglossa* and *Copernicia × escarzana* (Arecaceaea). PalmArbor 2021-07: 1-22. *https://ucanr.edu/sites/HodelPalmsTrees/files/349374.pdf*

Moya López, C. E. 2021b. Inventario de las palmas nativas de Cuba, actualizado 15 de julio de 2021. ResearchGate, preprint. DOI: *10.13140/RG.2.2.16603.08480*

Moya López, C. E., and I. E. Méndez Santos. 2018. Charles Wright and Cuban Palms. 1. Resurrection of *Coccothrinax acuminata*. Palms 62(1): 42–50.

Moya López, C. E., and S. Zona. 2018. Charles Wright and the Cuban Palms. 2. The genus *Calyptronoma.* Palms 62(3): 129–135.

Muller, J. 1885. Pyrenocarpea Cubenses a cl. C. Wright lectae, in Engler, Bot. Jahrb. Syst. 6: 374–421. Leipzig

Muller, C. 1898. Analecta bryographica Antillarum. Hedwigia 37: 219–266.

Muñiz, O. and A. Borhidi. 1982. Catálogo de las palmas de Cuba. Acta Bot. Acad. Sci. Hung. 28: 309–345.

Nylander W. 1876. Circa Pyrenocarpeos in Cuba collectos a cl. C. Wright. Flora 59: 364–365.

Quero, H. and S. Flores. 2004. Arecaceae de la Península de Yucatán. Etnoflora Yucatense 23. Universidad Autónoma de Yucatán.

Rosete, S., N. E. Ricardo, P. Herrera, and G. Green. 2006. Usos artesanales de las palmas (Arecaceae) en La Bajada, El Valle y Vallecito, Reserva de la Biosfera Península de Guanahacabibes, Pinar del Río, Cuba. Acta Bot. Cubana 198: 12–15.

Saakov, S. G. 1970. Endemic palms of Cuba. Bot. Zhurnal. 55: 196–221.

Salomon, C. 1887. Die Palmen nebst ihren Gattungen und Arten für Gewächshaus und Zimmer-Kultur. Parey, Berlin.

Sánchez-Suárez A. 2006. La casa maya contemporánea: usos, costumbres y configuración espacial. Península 1(2): 81–105.

Sauvalle, F. A. 1871. Flora Cubana. Revisio Catalogi Grisebachiana vel Index Plantarum Cubensium. Anales de la Academia de Ciencias Médicas Físicas y Naturales de la Habana. 7: 560–566. Imp. La Antilla, de Cacho-Negrete, Habana.

Sauvalle, F. A. 1873. Flora Cubana. Enumeratio nova plantarum Cubensium. Imp. La Antilla, de Cacho-Negrete, Habana. 427 pp.

Standley, P. C. and J. A. Steyermark. 1958. Palmae, in Flora of Guatemala. I. Fieldiana Bot. 24: 196–299.

Sullivant, W. 1861. Musi Cubense, or mosses collected by Charles Wright in the eastern part of the island of Cuba during the years 1856, 1857, and 1858. Proc. Amer. Acad. Arts Sci. 5: 273–290.

Thiers, B. 2016. Index Herbariorum: a global directory of public herbaria and associated staff. New York Botanical Garden's Virtual Herbarium. *http://sweetgum.nybg.org/science/ih/* Accessed: 17 September 2020.

Torre, L. de la, L. M. Calvo-Irabién, C. Salazar, H. Balslev, and F. Borchsenius. 2009. Contrasting palm species and use diversity in the Yucatan Peninsula and the Ecuadorian Amazon. Biod. Cons. 18: 2837–2853

Tropicos. 2020. Missouri Botanical Garden. *http://www.tropicos.org/Name/2401902* Accessed: 14 February 2020.

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*

Zona, S. 1990. A monograph of *Sabal* (Arecaceae: Coryphoideae). Aliso 12: 583–666.

Zona, S. 1992. Distribution update: *Sabal domingensis* in Cuba. Principes 36: 34–35.

Celio E. Moya López is an independent researcher specializing in the palm biology of Cuban and Caribbean palms. *celio.moya@gmail.com*
https://orcid.org/0000-0002-5033-483X

Rodrigo Duno de Stefano, Doctor of Sciences, and researcher and professor of Yucatan Scientific Research Center, A C. (CICY), specializing in systematics of the Leguminosae family, as well as diversity and phytogeography of the Yucatan Peninsula.
roduno@cicy.mx
https://orcid.org/0000-0003-1707-4121

Ramona Oviedo Prieto is a Doctor of Sciences of Forest and Tourism Management, Senior Naturalist Curator of the National Herbarium of Cuba "Onaney Muñiz" (HAC), and specializes in wetlands, threatened species, invasive plants, and floristic studies of the Cuban and Caribbean Flora. *roviedo1953@gmal.com*
https://orcid.org/0000-0002-2766-6924

Publication Date: 31 December 2021.

PalmArbor: *http://ucanr.edu/sites/HodelPalmsTrees/PalmArbor/*
ISSN 2690-3245
Editor-In-Chief: Donald R. Hodel
Hodel Palms and Trees: *http://ucanr.edu/sites/HodelPalmsTrees/*