

The Collectors of Cuban Palms (Arecaceae)

2. Ramón de la Sagra

The Status of His Collections

Los Recolectores de Palmas Cubanas (Arecaceae)

2. Ramón de la Sagra

El Estado de Sus Colecciones

CELIO E. MOYA LÓPEZ

Abstract

The taxonomy of palm collections in Cuba carried out by Sagra or collaborators, some of them published by Richard in 1850, is discussed and updated. Here, ten species, nine of them indigenous or endemic and belonging to seven genera, are identified. Sagra's collections are present in seven herbaria. He was the first in Cuba to collect six species of palms.

Resumen

Se relaciona y actualiza la taxonomía de las recolectas de palmas en Cuba realizadas por Sagra o colaboradores, algunas de ellas publicadas por Richard en 1850. Aquí se identifican 11 especies, de ellas 10 nativas, pertenecientes a siete géneros y las colecciones de Sagra están presentes en ocho herbarios. Él fue el primero en Cuba en coleccionar seis especies de palmas.

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 Areaceae: 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 2024).

Ramón Dionisio José de la Sagra y Peris (A Coruña, Galicia, Spain, 8 April 1798 – Neuchâtel, Switzerland, 23 May 1871) was a Spanish economist, politician, writer, naturalist, and botanist. Sagra lived in Havana from 1823 to 1835. He was director of the Botanical Garden and Professor of Botany in Havana. Sagra, together with his studies in botany and agriculture, developed historical, economic, and geographical essays on Cuba, which he published in Havana from 1827 onwards in the journal that he created, *Los Anales de Ciencias, Agricultura, Comercio y Artes*. His botanical and agricultural publications and expertise enabled him to publish his masterpieces *Historia Económico-Política y Estadística de la Isla de Cuba* (Economic-Political and Statistical History of the Island of Cuba) (Sagra 1831), *Histoire Physique, Politique et Naturelle de L'île de Cuba* (Physical, Political and Natural History of the Island of Cuba)] (Sagra 1838–1857), and *Historia Física, Política y Natural de la Isla de Cuba* (Sagra 1838–1861). In the latter, Camille Montagne published the cellular plants and Aquilles Richard published the vascular plants of Cuba based on Sagra's collections and publications.

Ramón de la Sagra published in French and Spanish, as shown here in *Physical, Political and Natural History of the Island of Cuba*, comprising 23 volumes, including *Historia, física y política. Atlas geográfico*, but not in chronological order, from 1838 to 1861. Nine are in French and 14 are in Spanish, with two volumes where illustrations were accompanied by text in each language. Sagra assumed the authorship of 10 volumes in total, in the remaining 13 the authorship corresponded to his scientific collaborators, M. M. Cocteau, Alcide D'Orbigny, and M. F. E. Guérin-Ménéville for the animals and Camille Montagne and Aquille Richard for the plants.

Achille Richard (Paris, Île-de-France, France, 27 April 1794 in Paris – Paris, Île-de-France, France, 5 October 1852) was a French botanist, botanical illustrator, and physician. He served as curator of the Delessert Herbarium and at the Muséum d'Histoire Naturelle in Paris from 1817–1831. He was professor of Botany in the Faculty of Medicine, Paris. He was a member of the French Academy of Sciences and French National Academy of Medicine and a foreign member of the Linnean Society. He received his Doctor of Medicine degree in Paris in 1820. Richard (1841, 1846, 1851) published in French and Spanish everything related to the botany of vascular plants in *Plantes vasculaires, Histoire Physique, Politique et Naturelle de L'île de Cuba*, edited by Sagra (with the alternate title of *Essay on the Flora of the Island of Cuba*). He published additional botanical material (Richard 1845, 1850, 1855) in *Plantas vasculares, Historia Física, Política y Natural de la Isla de Cuba*, also edited by Sagra.

The goals of this study are to present, discuss, and update the information on the first palms collected and described for Cuba collected by the Spaniard Ramón de la Sagra in the first two decades of the 19th century.

Materials and Methods

I examined Richard (1850) in Sagra where Richard published his botanical accounts, and Sagra (1845) where he ascribed the names to Richard.

Also, I examined the protologues, descriptions, and status changes related to the taxa of palms collected or reported by Sagra: Beccari (1907), Dahlgren and Glassman (1963), Glassman (1972), Moya (2018, 2021, 2023a, 2023b, 2024), Moya et al. (2021), IPNI (2024), and POWO (2024).

For the biographical accounts, I consulted Stafleu and Cowan (1983a, 1983b), and TL-2 (2023a, 2023b) for information on herbaria with references to Sagra.

I located 29 specimens of palms that Sagra collected in Cuba in eight herbaria: B [destr.], BR, F [n.v.], FI, G, HAC, L, and P (acronyms from Thiers 2024).

In all cases the names of the Cuban palm species are updated according to Moya (2024).

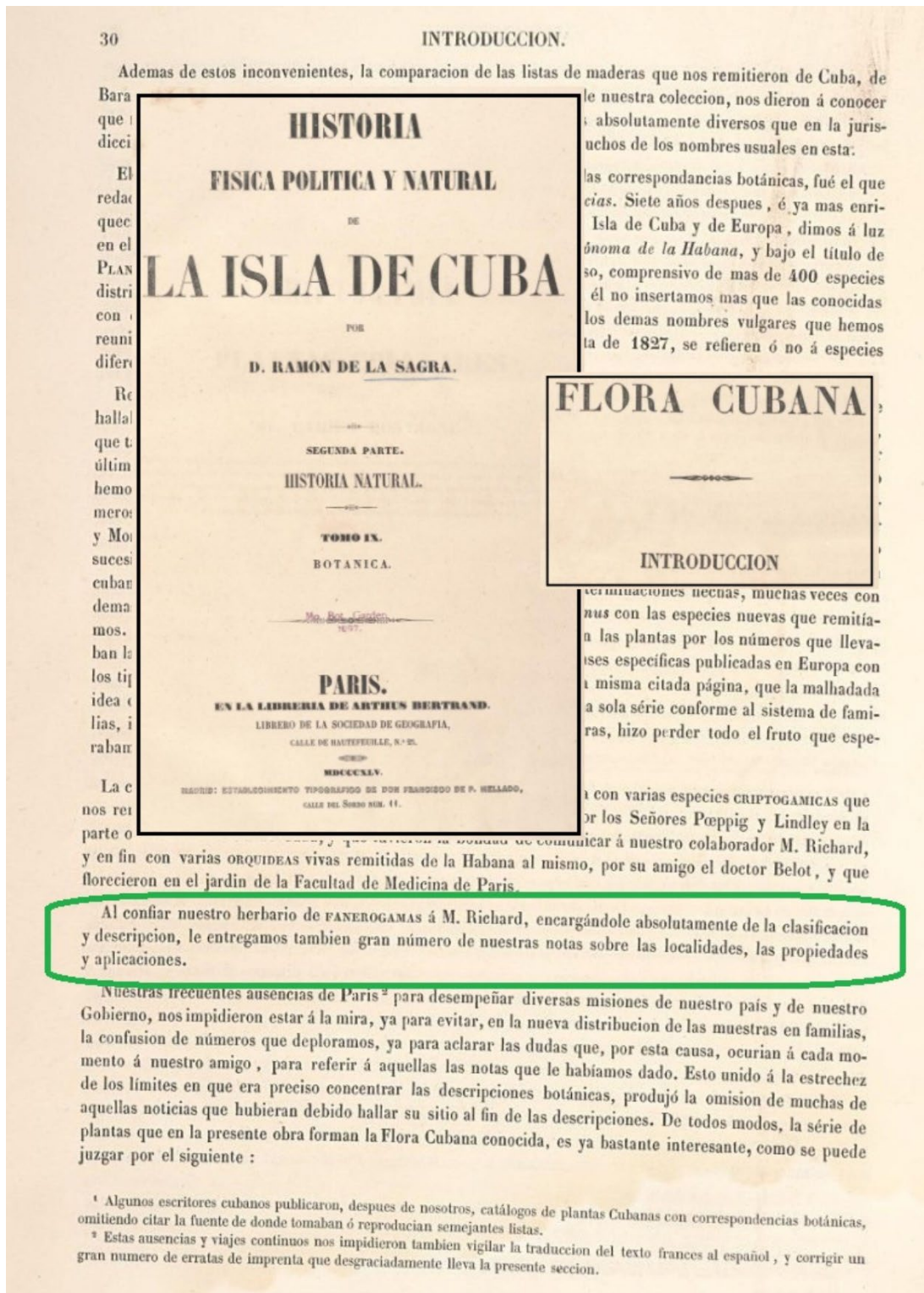
Results

Evidence of the ascription of the names of Sagra to Richard.

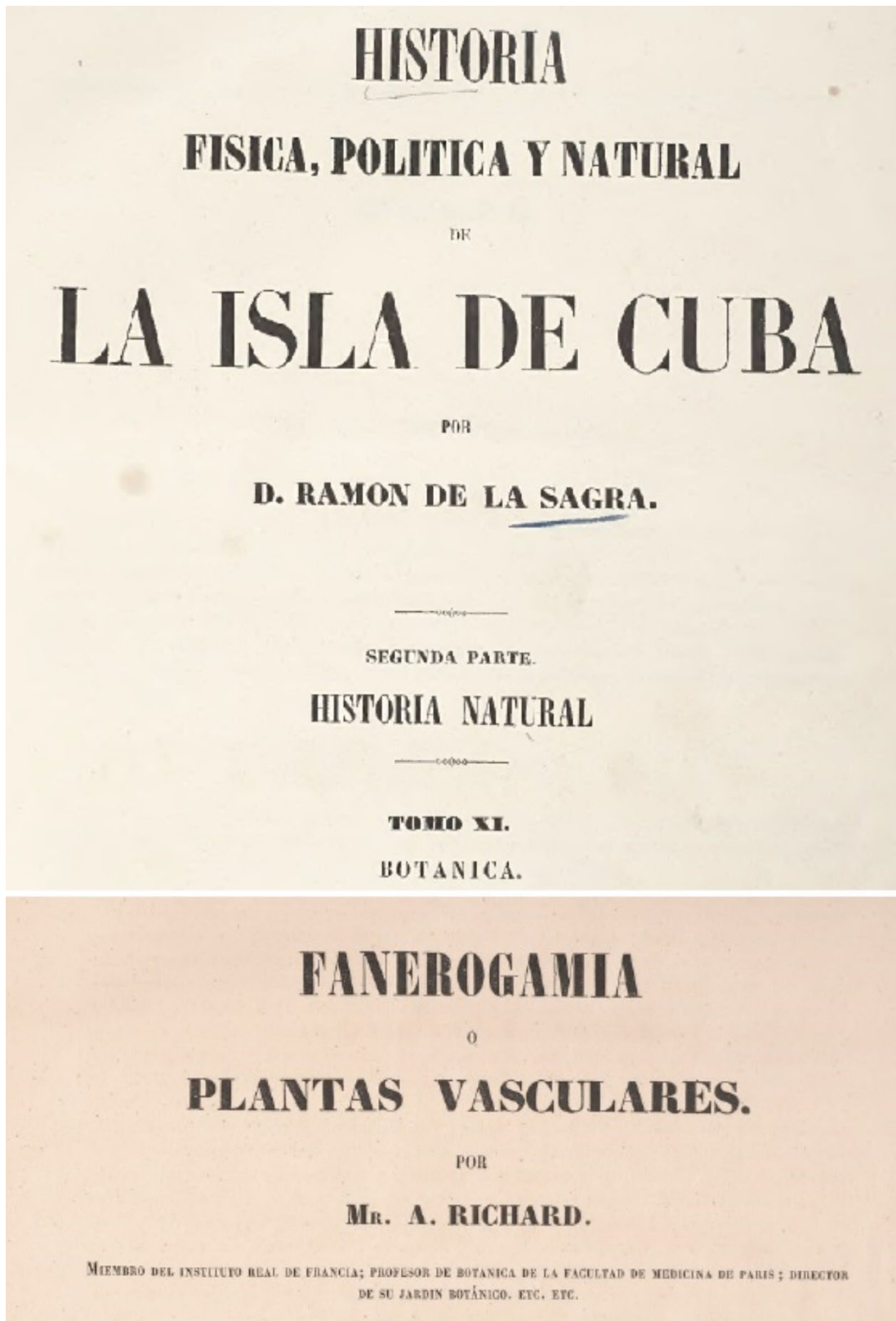
Moya (2023b) explained that Sagra (1845) wrote in Spanish [volume 9, page 30] the general introduction for *Physical, Political and Natural History of the Island of Cuba*, referring to vascular plants: “By entrusting our herbarium of phanerogams to A. Richard, entrusting him absolutely with the classification and description, we also give him a large number of our notes on localities, properties and applications.” (Fig. 1). This statement in the introduction by Sagra (1845) is internal evidence that the name was validly published and ascribed to Achilles Richard while Sagra is simply the editor (Turland et al. 2018: Art. 46.8).

A. Update of the taxonomy of palm names Richard (1850) published in Sagra. (Fig. 2).

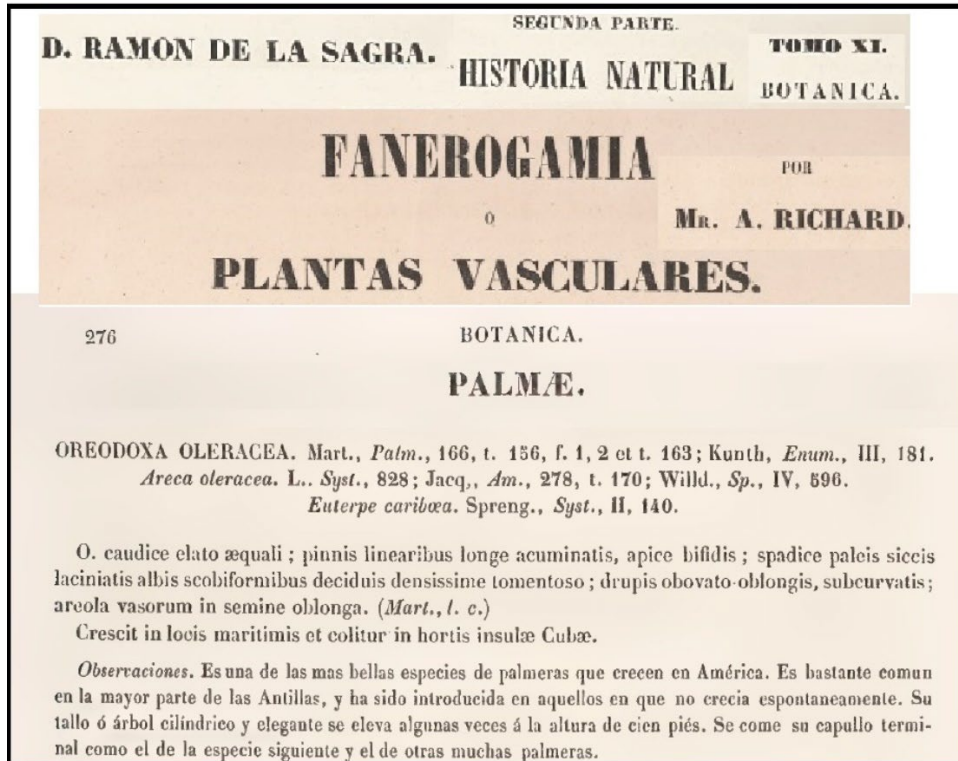
Richard (1850), based on the Sagra palm collections in Cuba, listed nine botanical names of indigenous or endemic palms, three of them correct names, two basionyms, one synonym, and the remained were incorrect names. Of the nine species, five are endemic and one naturalized. Richard also included a common name for one that enables its current identification. From the



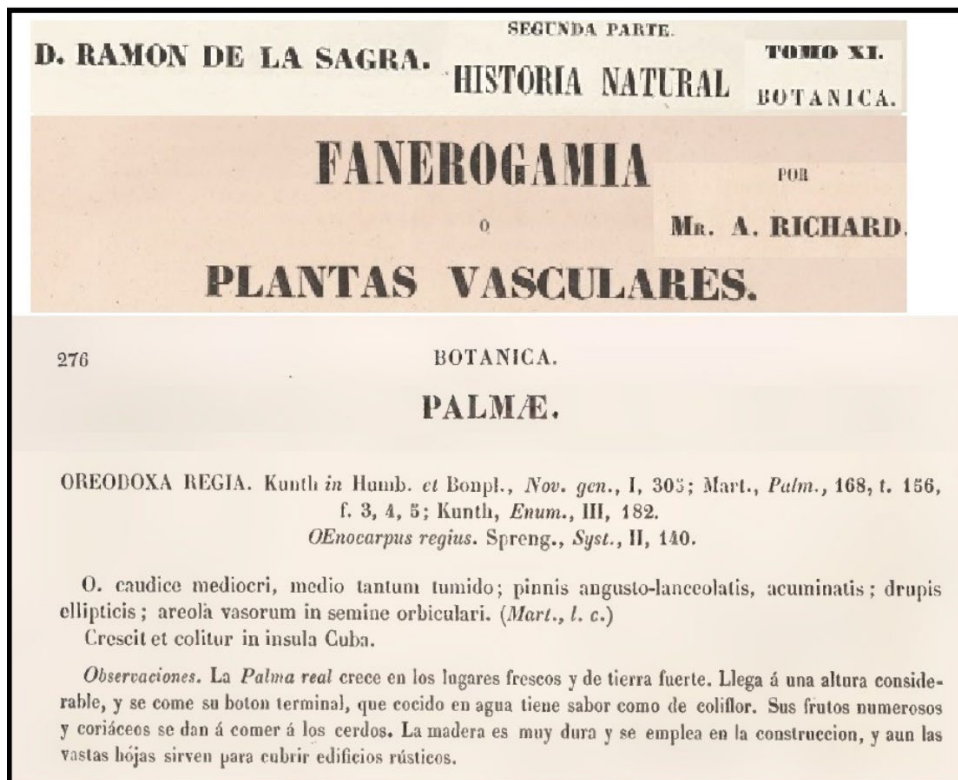
1. Proof that as editor Sagra (1845) ascribed names to Achilles Richard.



2. Richard (1850) published the names of Cuban plants in *Historia Física, Política y Natural de la Isla de Cuba*, which Sagra edited.



3. *Roystonea regia*, as *Oreodoxa oleracea* Mart., by Richard (1850) in Sagra.



4. *Roystonea regia*, as *Oreodoxa regia* Kunth, by Richard (1850) in Sagra.

Sagra collections I located, which includes 29 specimens, one of which I have not seen and two destroyed at B, Richard had identified two and here I have identified five more.

1. *Oreodoxa oleracea* Mart. and *Oreodoxa regia* Kunth, by Richard (1850: 276) in Sagra. (**Figs. 3-4**). Updated by Moya (here).

Roystonea regia (Kunth) O. F. Cook, Science, 12(300): 479. 1900.

≡ *Oreodoxa regia* Kunth, Nov. Gen. Sp. [H.B.K.] 1: 305 (ed. qu.). 1816, nom. cons.

≡ *Oenocarpus regius* (Kunth) Spreng., Syst. Veg. 2: 140. 1825.

Richard (1850) in Sagra confused *Oreodoxa oleracea* with *Oreodoxa regia*.

Richard (1850) discussed the common name “royal palm” and some of its uses: the apical meristem cooked in water tastes like cauliflower for human food, fruits for pig food, wood for construction, and leaves for roofing sheds and other structures.

Apparently, Sagra did not collect *Roystonea regia*; Richard only reported the species for Cuba, without having seen the collections of Humboldt and Bonpland. I found no Sagra specimens in the herbaria reviewed.

2. *Copernicia hospita*, by Richard (1850: 277) in Sagra (**Fig. 5**).

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

Richard (1850) noted that, according to Poeppig, this species is very common in the dry and arid savannahs of eastern Cuba, and that its leaves are used to roof sheds and other buildings.

Apparently, Sagra did not collect *Copernicia hospita*; Richard only reported the species for Cuba, without having seen Poeppig's collections. I found no Sagra specimens in the herbaria reviewed.

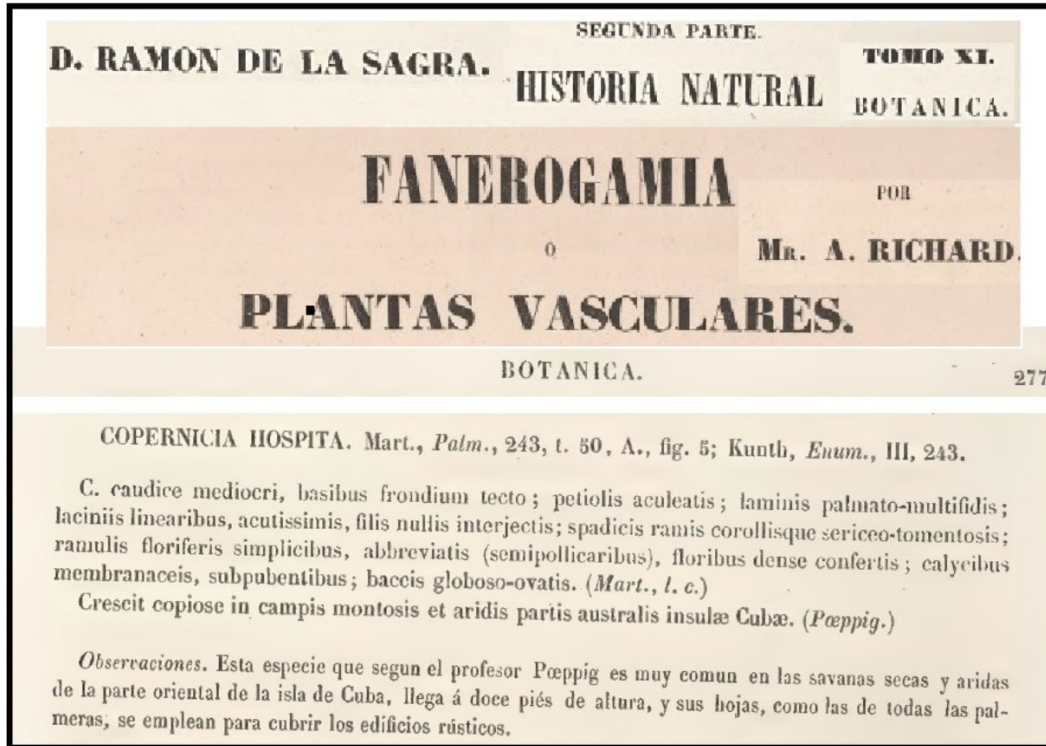
3. *Copernicia maritima*, by Richard (1850: 277) in Sagra. (**Fig. 6.**) Updated by Moya (here).

Sabal maritima (Kunth) Burret, Repert. Spec. Nov. Regni Veg. 32: 101. 1933.

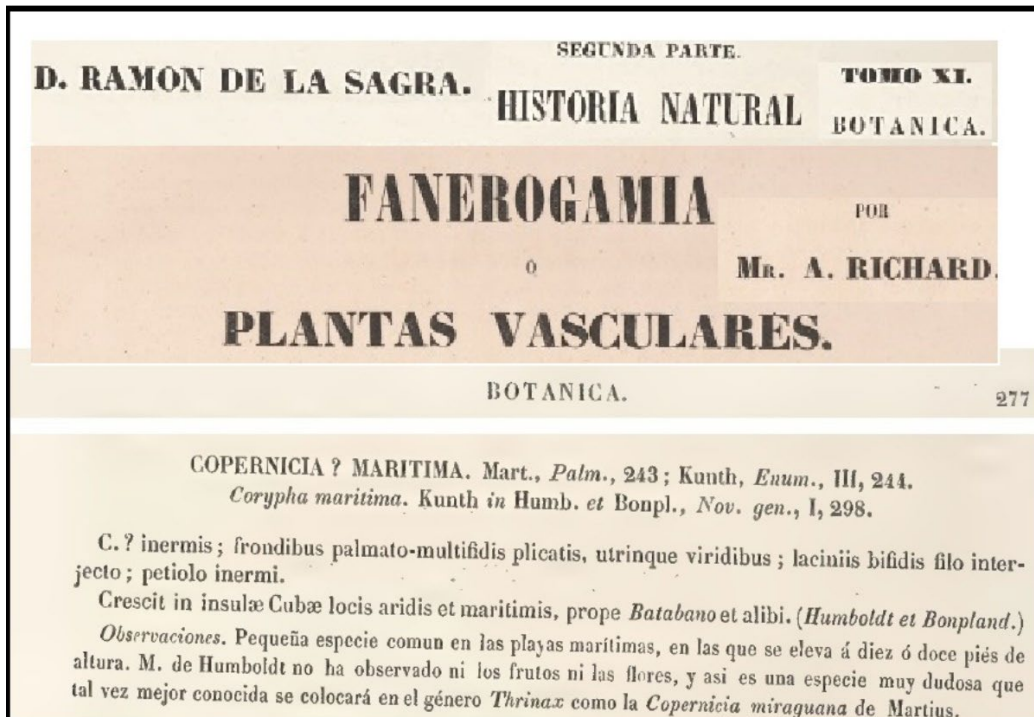
≡ *Corypha maritima* Kunth, Nov. Gen. Sp. 1: 298. 1816.

≡ *Copernicia maritima* (Kunth) Kunth, Enum. Pl. 3: 244. 1841. [Cuba].

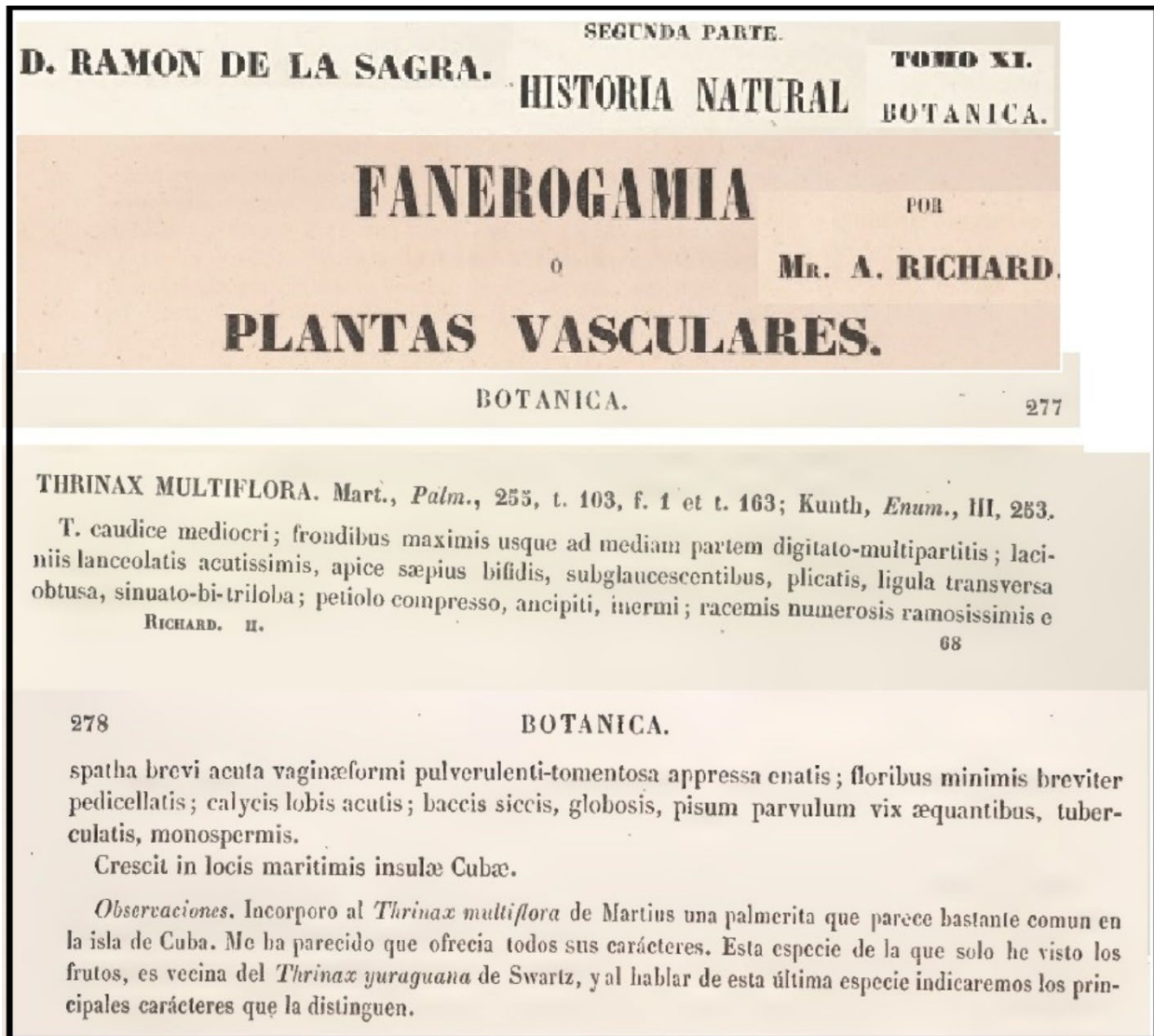
Richard (1850) reported that this species was common on maritime beaches and that Humboldt and Bonpland did not observe flowers or fruits, making it a very doubtful species.



5. *Copernicia hospita*, by Richard (1850) in Sagra.



6. *Sabal maritima*, as *Copernicia maritima*, by Richard (1850) in Sagra.



7. *Thrinax radiata*, as *Thrinax multiflora*, by Richard (1850) in Sagra.

Apparently Sagra did not collect *Sabal maritima*; Richard only reported the species for Cuba, without having seen the collections of Humboldt and Bonpland. I found no Sagra specimens in the herbaria reviewed.

4. *Thrinax multiflora*, by Richard (1850: 277-278) in Sagra. (Fig. 7). Updated by Moya (here).

Thrinax radiata Lodd. ex Schult. & Schult.f., Syst. Veg. 7(2): 1301. 1830. (Fig. 8).

≡ *Coccothrinax radiata* (Lodd. ex Schult. & Schult.f.) Sarg., Bot. Gaz. 27: 89. 1899. [Cultivated].

= *Thrinax wendlandiana* Becc., Webbia 2: 265. 1907. [Cuba].



8. Sagra made the first collection of *Thrinax radiata* in Cuba. Here it is close to the coast at Punta Guanós, Matanzas. © 2016 D. R. Hodel.

Richard (1850) reported that the species appears quite common on the island of Cuba. He also reported that he only saw the fruits of the species, which were present on P1794818 and P1794820; he identified both on the labels as "*Thrinax multiflora*." Furthermore, he pointed out that "it is a neighbor of *Thrinax yuraguana* from Swartz," confusing the name with *Thrinax parviflora* Sw. from Jamaica. Richard apparently observed that the seed was different from the *Thrinax* that he described, but without explicitly stating it he suggested that it belonged to the genus *Thrinax*. Here, in addition to documenting that what Richard saw corresponds to *Thrinax radiata*, the other two flowering specimens present in P are identified as the same species.

Richard wrote in labels of P725676 and P725686 "*an differd a Thrinax yuraguana nob.*" [What is different from *Thrinax yuraguana* new].

The above corroborates the decision of Beccari (1907) who included the specimen of *Thrinax wendlandiana* at B, which Read (1975) considered synonymous with *Thrinax radiata*.

CUBA. Locality and date unknown. 1829, fl., *Sagra* 222 (Not type category (B* [destr.], P00725676, P00725686, P01794341, P01794819, P01794820).

*Reported by Beccari (1907: 267).

Here specimen P01794341 is identified as *Thrinax radiata* by the presence of conspicuous transverse veinlets on the adaxial leaf surface (**Fig. 9**). The note at P states, "common palm" and "*Sabal umbraculifera*." Zona left a note in 1998 "leaf not *Sabal*, probably *Coccothrinax* sp."

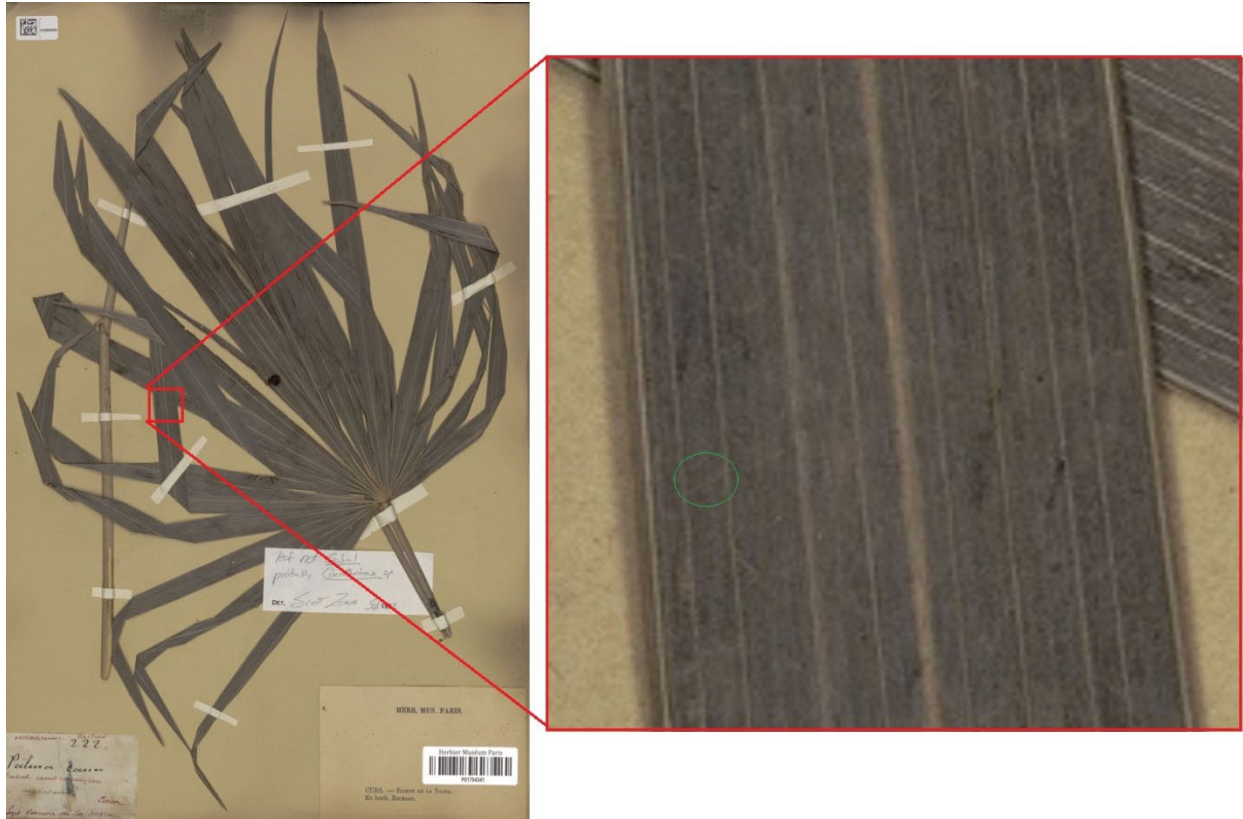
5. *Thrinax yuraguana* A. Rich., (1850: 278), in *Sagra*. (**Fig. 10**). Updated by Moya (2018 and here).

Coccothrinax yuraguana León, in Mem. Soc. Cub. Hist. Nat. "Felipe Poey" 13: 119. 1939.

Type. CUBA. Artemisa province, Bahía Honda municipality, "*Faldas serpentinosas entre Pan de Guajaibón y Las Pozas*, Apr. 1934, ft., *León 16103*, colector G. Nateson (lectotype [first step] Glassman 1972: 86, [second step] Moya 2019: 47, HAC ex LS4471!; isolectotypes: HAC ex LS.1!, HAC ex LS.2!, HAC ex LS.3!, US01210480).

– "*Thrinax yuraguana*" A. Rich., in *Sagra*, Hist. Fis. Cuba, Bot. 2(11): 278 (1850). *nom. illeg.*

CUBA. Pinar del Río, province, La Palma municipality, "*prope Cajalvana [Cajalbana] in parte occidental insulae Cubae*, June 1833, *La Sagra* 30, collected by J. M. Valenzuela (syntypes of *C. yuraguana*: P00725675, P00725685).



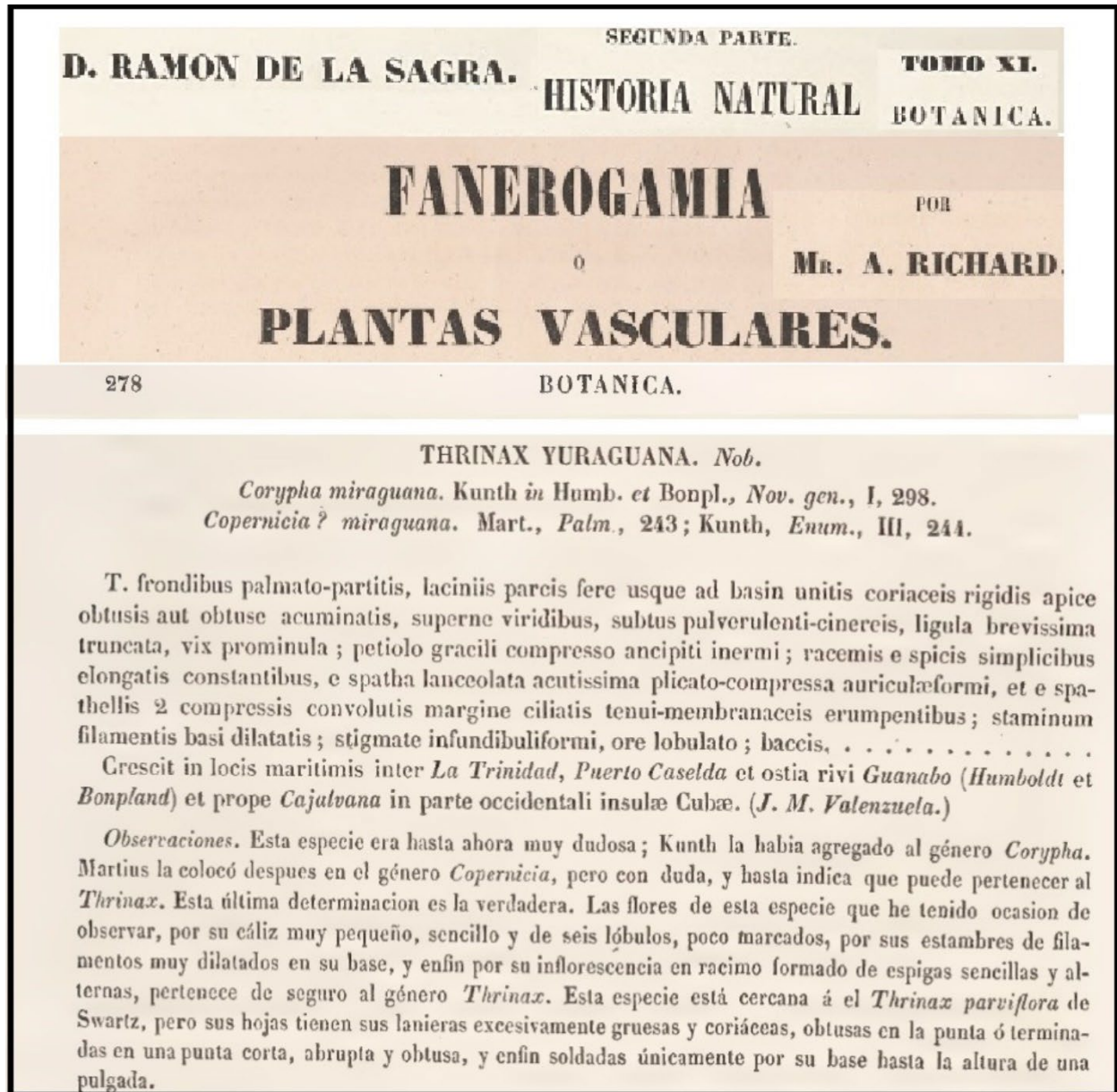
9. Specimen at P, P0179434, shows the presence of conspicuous transverse veinlets on the adaxial leaf surface, one of the clues that it is *Thrinax radiata*. © 2024 Muséum National d'Histoire Naturelle, Paris.

Here, I update as the first step lectotype to Glassman (1972), which designated *León 16003* in LS, and the error of Moya (2018) is corrected as the second step lectotype. The illegitimate name of Richard is also separated from synonymy.

León (1939) made the combination under the genus *Coccothrinax* and established *Coccothrinax yuraguana* (A. Rich.) León, without realizing that, because Richard's name was illegitimate, it did not classify as a basionym and therefore, what he was actually doing was legitimizing the name of the taxon.

The name *Coccothrinax yuraguana* León is accepted by IPNI and POWO.

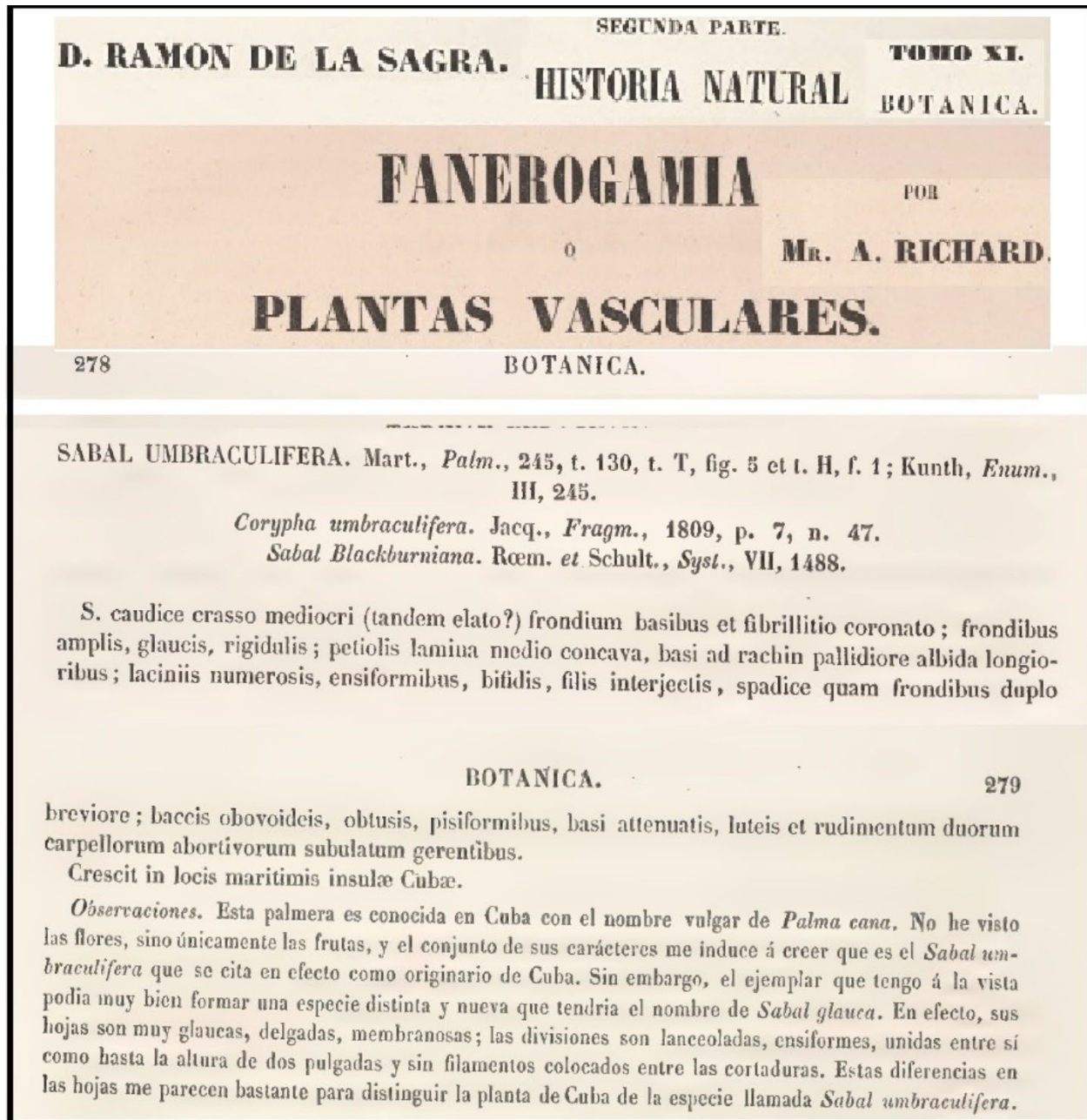
The name is updated according to Moya (2018) and the locality according to Richard (1850), and here the specimens at P are designated as syntypes.



10. *Coccothrinax yuraguana*, as *Thrinax yuraguana*, by Richard (1850) in Sagra.

6. *Sabal umbraculifera*, by Richard (1850: 278-279) in Sagra (Fig. 11). Updated by Moya et al. (2021) and Moya (here).

Sabal yapa Becc. Webbia 2: 64. 1907. (Fig. 12).

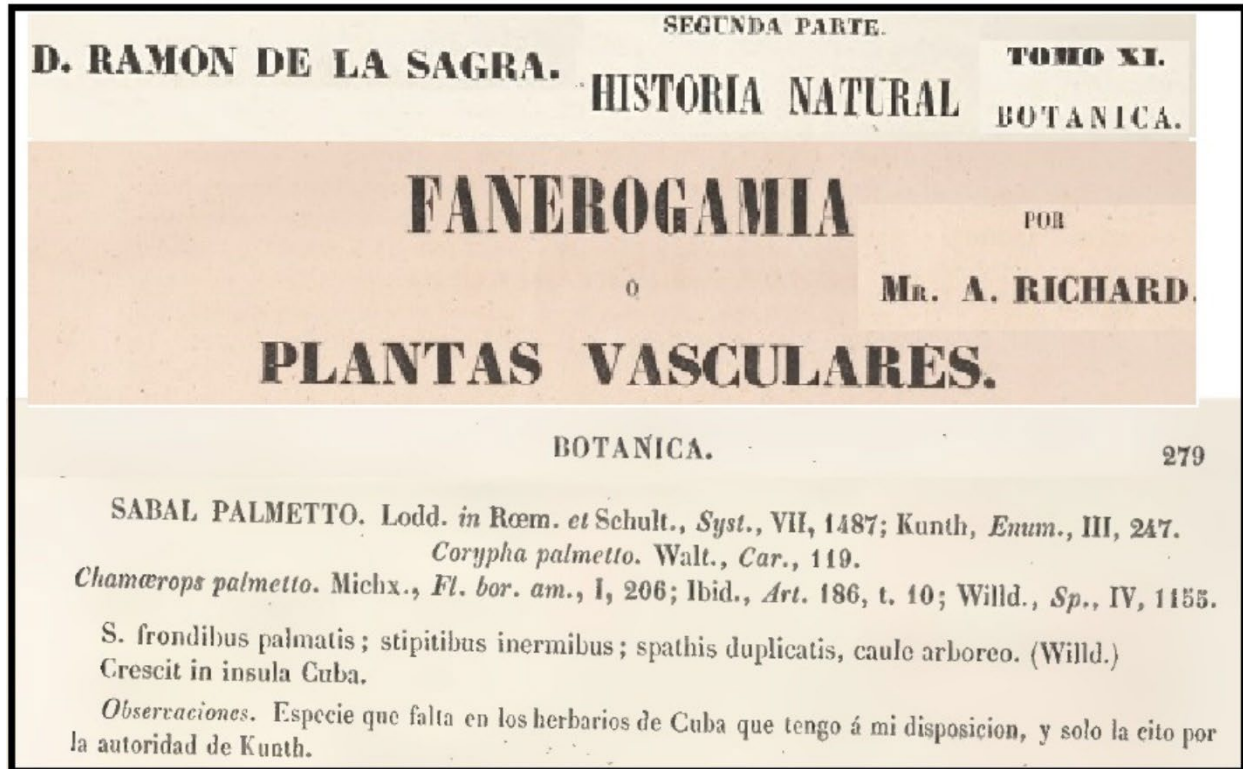


11. *Sabal yapa*, as *Sabal umbraculifera*, by Richard (1850) in Sagra.

Richard (1850) discussed the plants with the common name *palma cana*, noting that he did not see flowers but he did see fruits. He described the leaves with their divisions (segments) joined together in groups of two, the only species of *Sabal* in Cuba with such an arrangement.



12. Sagra made the first collection of *Sabal yapa* in Cuba. Here it is close to Bahía Honda, Artemisa. © 2017 D. R. Hodel.



13. *Sabal palmetto*, by Richard (1850) in Sagra.

Sagra made the first collection of what would become *Sabal yapa* in 1829 as *Sagra 222*, but the location is unknown. Beccari (1907) identified it as *Sabal yapa*. The second collection is from *Wright 3971* dated December 12, 1866 (Moya et al. 2021).

CUBA. Locality and date unknown. 1829, ft., *Sagra 222* (F233583 [photo G], FI052579.d [frag. ex G, mix], G-DC* [n.v.], P01794502, P01794505).

*Reported by Beccari (1907: 67).

7. *Sabal palmetto*, by Richard (1850: 279) in Sagra. (**Fig. 13**).

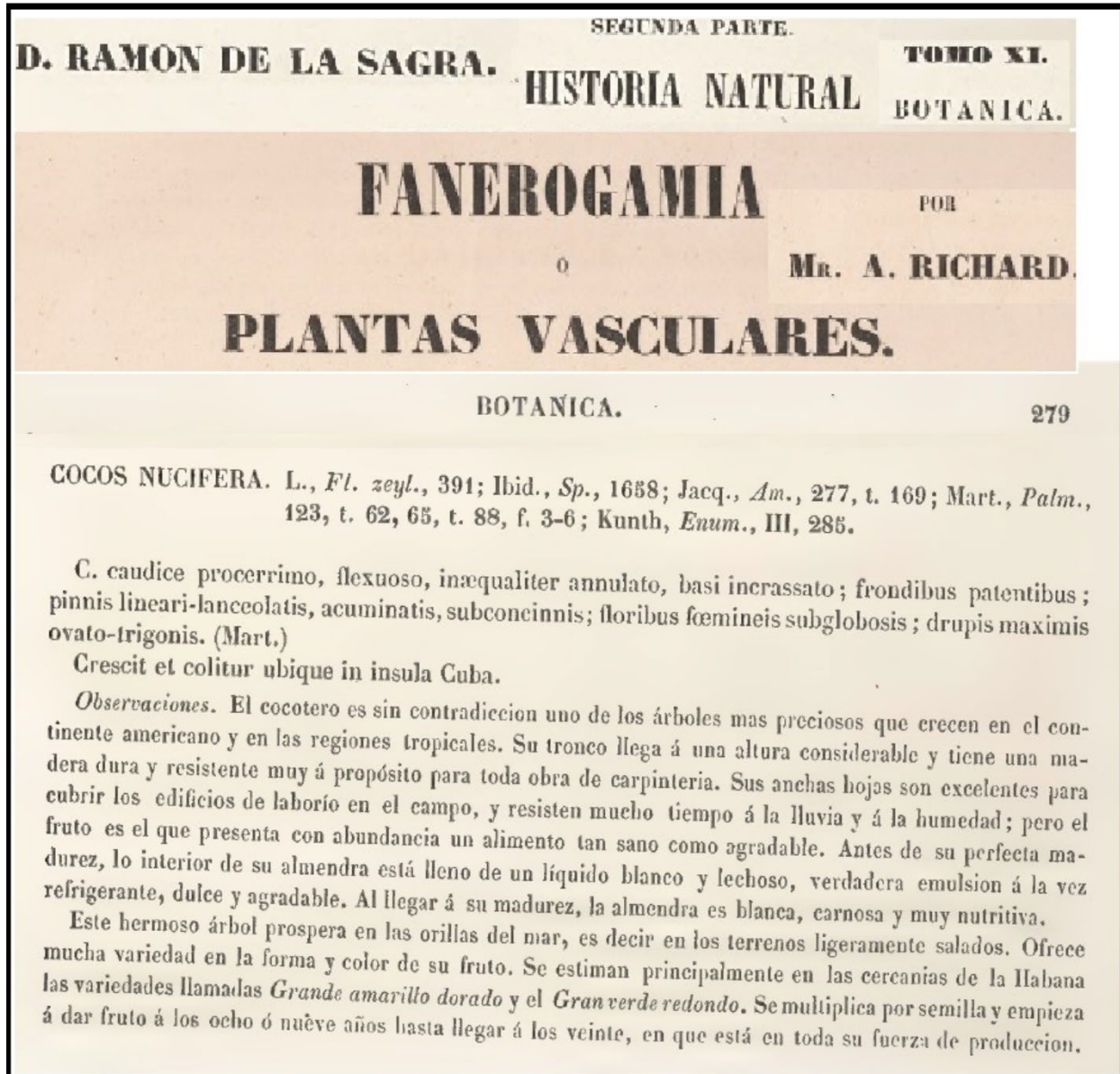
Sabal palmetto (Walter) Lodd. ex Schult. & Schult.f., Syst. Veg. 7: 1487. 1830.

≡ *Corypha palmetto* Walter, Fl. Carol.: 119. 1788.

≡ *Chamaerops palmetto* (Walter) Michx., Fl. Bor.-Amer. 1: 206. 1803.

≡ *Inodes palmetto* (Walter) O. F. Cook, Bull. Torrey Bot. Club 28: 532. 1901. [EE.UU.].

Sagra did not collect *Sabal palmetto*; Richard only reported the species for Cuba, clarifying that it had not been collected.



14. *Cocos nucifera*, by Richard (1850) in Sagra.

8. *Cocos nucifera*, by Richard (1850: 279) in Sagra. (Fig. 14).

Cocos nucifera L., *Sp. Pl.* 2: 1188. 1753.

Richard (1850) cited this species of palm was naturalized in Cuba, noting that it thrives on the seashore and that two varieties exist, "*Grande amarillo dorado*" [large golden yellow] and "*Grande verde redondo*" [big green round].

9. *Cocos crispera* Kunth, by Richard (1850: 280) in Sagra. (**Fig. 15**). Updated by Moya (here).

Acrocomia crispa (Kunth) C. F. Baker ex Becc., Pomona Coll. J. Econ. Bot. 2: 364 1912.

≡ *Cocos crispera* Kunth, Nov. Gen. Sp. 1: 302. 1816.

≡ *Astrocaryum crispum* (Kunth) M. Gómez, Noc. Bot. Sist.: 50. 1893.

≡ *Gastrococos crispa* (Kunth) H. E. Moore, Principes 11: 121. 1968. [Cuba].

Richard (1850) related the vernacular name “*corojo*” and argued why it should not belong to the *Cocos* genus, comparing the size of the fruits and the pulpy and non-fibrous exterior. He also mentioned that when the fruits are cooked, a material known as “*manteca de corojo*” [*corojo* butter].

Apparently Sagra did not collect *Acrocomia crispa*; Richard only reported the species for Cuba, apparently without having seen the Humboldt and Bonpland collections. I found no Sagra specimens in the herbaria reviewed.

10. “*Palma jata*”, by Richard (1850: 280) in Sagra. (**Fig. 16**). Updated by Moya (2021 and here).

Copernicia macroglossa H. Wendl. ex Becc., Webbia 2: 177. 1907. (**Fig. 17**).

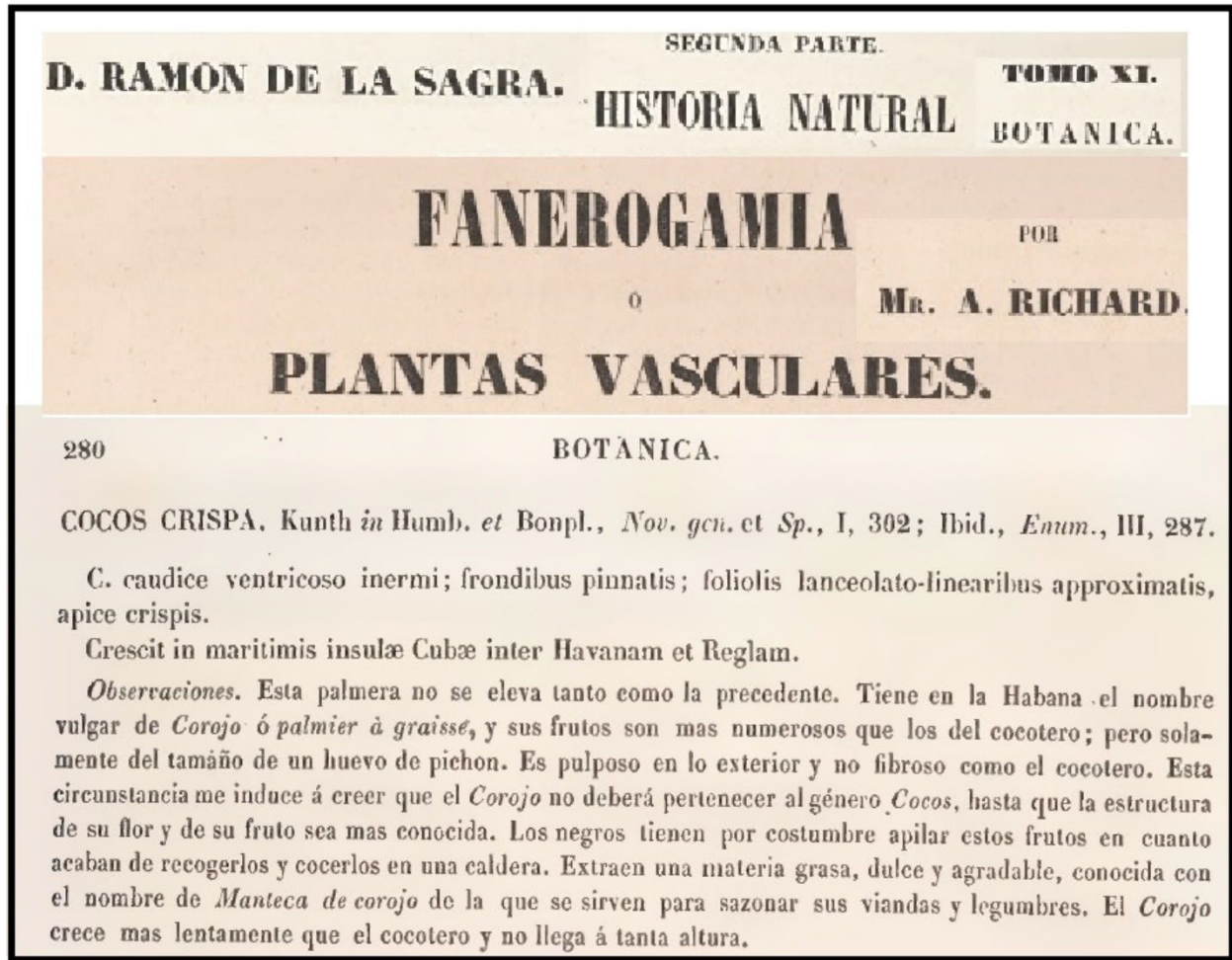
CUBA. La Habana province, Guanabacoa municipality: Guanabacoa, Jata, La Havanne, 1829, fl., Sagra 101 (Syntypes: B*¹ [destr.], BR0000005737697, F248567 [photo G], G00005833.1, G00005833.2, HAC [photo B] (**Fig. 18**), HAC4537 [frag. ex B of G] (**Fig. 19**), L*² [n.v.], P00725609, P01796655).

*¹Reported by Moya (2021: 10) in HAC, sent by Burret to León; *² reported by Dahlgren and Glassman (1963: 153).

Among the species of palms that have not been able to be identified, Richard (1850) relates the common name “*palma jata*,” which Beccari (1907) would later identify.

Richard (1850) discussed two other common names of palms that Sagra did not collect:

- “*Palma guanito de Ciénaga*,” textual quote in Spanish “*que crece en los lugares húmedos de la región del sur. Sus frutos sirven para alimento de los cerdos.*” [that grows in humid places in the southern region. Its fruits are used as food for pigs].
- “*Palma espinosa.*”



15. *Acrocomia crispa*, as *Cocos crispa*, by Richard (1850) in Sagra.

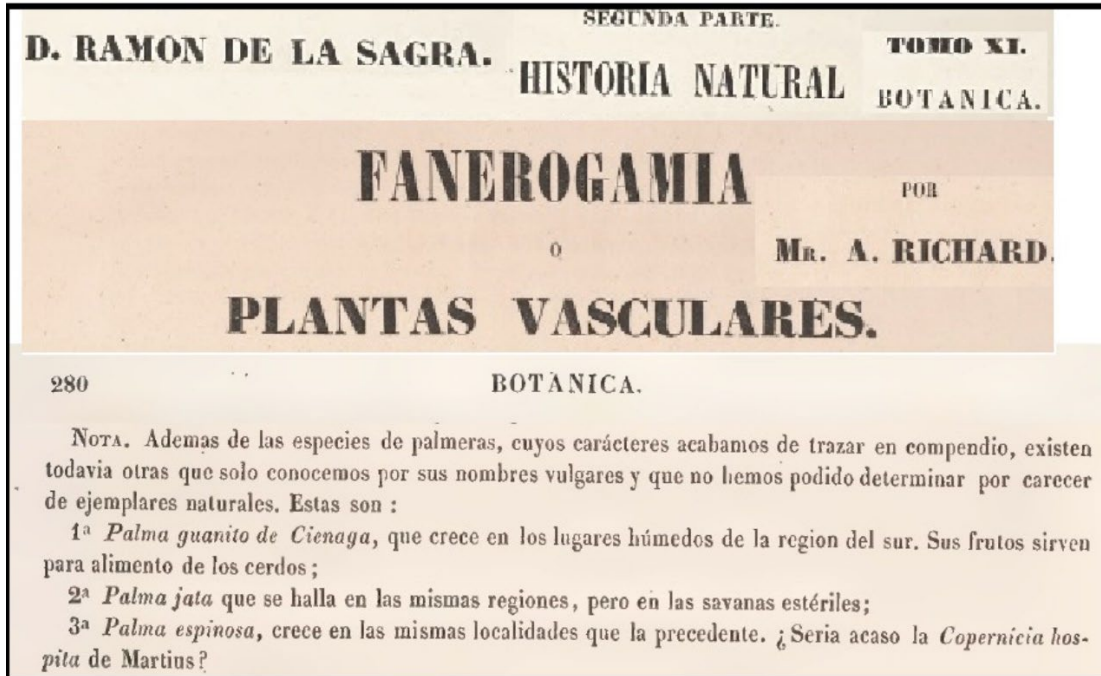
B. Update on the taxonomy of the other palms that Sagra collected in Cuba.

B.1. Not published in Richard (1850).

Bactris cubensis Burret, Kongl. Svenska Vetensk. Acad. Handl., ser. 3, 6(7): 25. 1929. (Fig. 20).
Specimen at herbarium: P02145700.

Coccothrinax miraguama (Kunth) Becc., Webbia 2: 295. 1907. 'miraguano'.

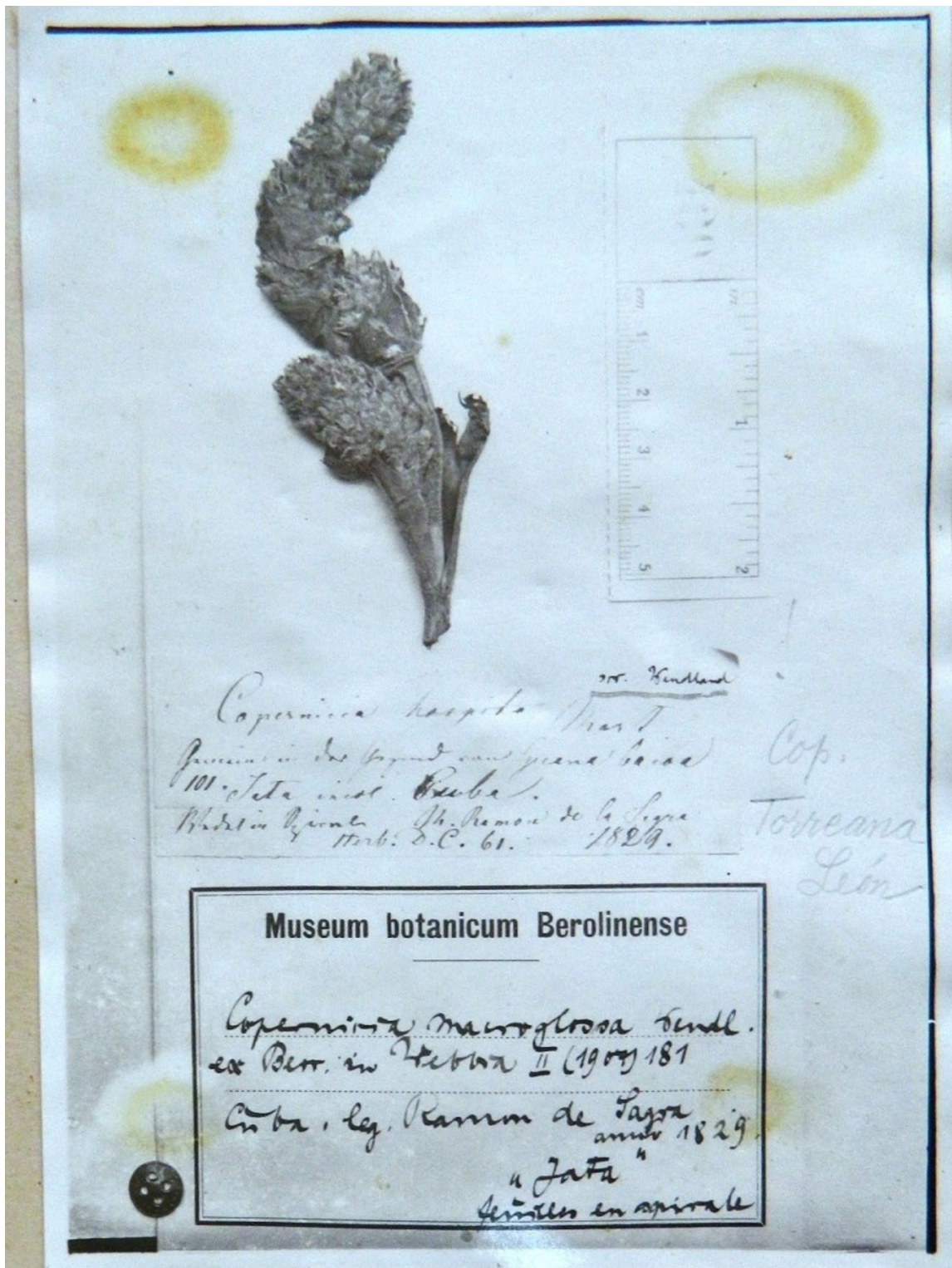
Presence of specimens in herbaria: CUBA. La Habana province, "Havane" 1831, *Sagra* 543 (G00305378.1, G00305378.2, G00305378.3) (Fig. 21).



16. *Copernicia macroglossa*, as *Palma jata*, by Richard (1850) in Sagra. At the time, this unidentified species was known as *Palma guanito de Ciénaga* and *Palma espinosa*.



17. Sagra made the first collection of *Copernicia macroglossa* in Cuba. Here it is close to Camagüey. © 2017 D. R. Hodel.



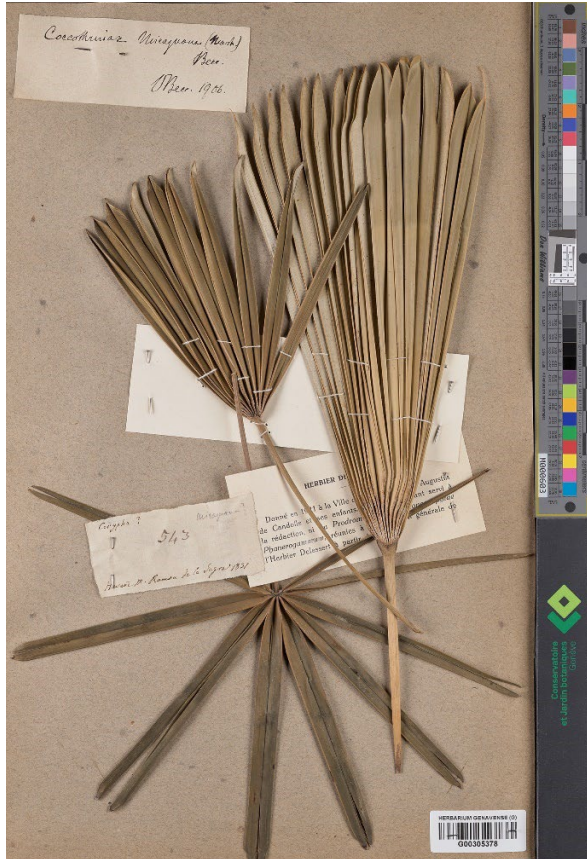
18. *Copernicia macroglossa* at HAC (historic photo of destroyed specimen at B). © 2024 Herbario Nacional de Cuba and Jovani Rojas.



19. Historic fragment of *Copernicia macroglossa* at HAC from B. © 2024 Herbario Nacional de Cuba and Jovani Rojas.



20. Sagra made the first collection of *Bactris cubensis* in Cuba. Here it is near Moa, Holguín. © 2016 D. R. Hodel.



21. *Coccothrinax miraguama*, Sagra 543. G00305378.1 (left); G00305378.3 (right). © 2024 Conservatoire et Jardin Botaniques de la Ville de Genève.

Beccari in 1906 left a note identifying G305378.1 as *Coccothrinax miraguana*. Later, Beccari (1907) officially identified Sagra 543 in G-DC as *Coccothrinax miraguano*.

Prestoea acuminata* var. *montana (Graham) A. J. Hend. & Galeano, Fl. Neotrop. Monogr. 72: 53. 1996. (Fig. 22).

Specimens at herbarium: P02146598.

B.2. Presented in Richard (1850) with correct identification.

Acrocomia crispata (Kunth) C. F. Baker ex Becc., Pomona Coll. J. Econ. Bot. 2: 364 1912. (Fig. 23).
 ≡ *Cocos crispata* Kunth, Nov. Gen. Sp. 1: 302. 1816.

Coccothrinax yuraguana León, Mem. Soc. Cub. Hist. Nat. "Felipe Poey" 13: 119. 1939. (Fig. 24).

***Cocos nucifera* L.** (Fig. 14)



22. Sagra made the first collection of *Prestoean acuminata* var. *montana* in Cuba. Here it is at Gran Piedra, Santiago. © 2017 D. R. Hodel.



23. *Acrocomia crisper* in habitat near Rafael Freyre, Holguín. © 2016 D. R. Hodel.



24. Sagra made the first collection of *Coccolthrinax yuraguana* in Cuba. Here it is near Cajalbana, Pinar del Río. © 2017 D. R. Hodel.

Copernicia hospita Mart., Hist. Nat. Palm. 3: 243. 1838. (Fig. 25)

Roystonea regia (Kunth) O. F. Cook, Science, 12(300): 479. 1900. (Fig. 26).

Sabal palmetto (Walter) Lodd. ex Schult. & Schult.f., Syst. Veg. 7: 1487. 1830. (Fig. 27).

B.3. Unidentified specimens that Sagra collected.

Sagra. 1 (Fig. 28). CUBA. Location and date unknown. (P01794332). A note on this specimen is written: "*miraguano blanco*."

C. Sagra was the first to collect the following species of palms in Cuba.

Bactris cubensis Burret, Kongl. Svenska Vetensk. Acad. Handl., ser. 3, 6(7): 25. 1929.

The date and location of Sagra's collection are unknown. Liogier identified it in 1967 as *B. cubensis* at P. The second collection is from C. Wright 599, dated June, 1857. (reported here).

Coccothrinax yuraguana León, Mem. Soc. Cub. Hist. Nat. "Felipe Poey" 13: 119. 1939.

Sagra 30 was collected by Valenzuela in Cajalbana in June, but the year is unknown (Moya 2018). Richard (1850) identified the collections at P as *Coccothrinax yuraguana*. The second collection is from León 16103 at HAC, collected by Nateson, dated April, 1934. (reported here).

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

Sagra made the first collection of this species in 1829 as *Sagra 101* in Jata [La Jata], Guanabacoa. Beccari (1907) identified it as *Copernicia macroglossa*. The second collection is C. Wright 3969 p. p. B dated March 19, 1867. (Moya 2021).

Prestoea acuminata* var. *montana (Graham) A. J. Hend. & Galeano, Fl. Neotrop. Monogr. 72: 53. 1996.

The date and location of Sagra's collection are unknown. Liogier identified the specimen at P in 1967 as *Prestoea montana*. The second collection is C. Wright 1468 p. p. A, dated June 30, 1859. (reported here).

Sabal yapa Becc. Webbia 2: 64. 1907.



25. *Copernicia hospita* in habitat near Camagüey. © 2016 D. R. Hodel.



26. *Roystonea regia* in habitat, Sierra de Nipe, Mayarí, Holguín. © 2016 D. R. Hodel.



27. *Sabal palmetto* in habitat, Cayo Romano, Camagüey. © 2018 D. R. Hodel.



28. Sagra 1, an unidentified specimen at P, P01794332. © 2024 Muséum National d'Histoire Naturelle, Paris.

The location of Sagra's collection is unknown but the collection date is 1829 as *Sagra* 222. Beccari (1907) identified the specimen as *Sabal yapa*. The second collection is *C. Wright* 3971 dated December 12, 1866. (Moya et al. 2021).

Thrinax radiata Lodd. ex Schult. & Schult.f., Syst. Veg. 7(2): 1301. 1830.

The date and location of Sagra's collection are unknown. Here, I identify five specimens at P as *Thrinax radiata*. The second collection is *C. Wright* 2329, dated August 6, 1865. (Moya, 2023a).

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