

A Review of the Nomenclature and Types of *Pseudophoenix* (Arecaceae)

Una Revisión de la Nomenclatura y los Tipos de *Pseudophoenix* (Arecaceae)

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Abstract

The nomenclature and typification of *Pseudophoenix*, a neotropical genus of four species, are reviewed and updated. Plumier's involvement in the description of *P. vinifera* is reported and discussed, and unpublished Plumier illustrations of the species present at the National Museum of Natural History in Paris are published.

Resumen

Se revisa y actualizan la nomenclatura y los tipos de *Pseudophoenix*, un género neotropical de cuatro especies. Se informa y discute la participación de Plumier en la descripción de *P. vinifera*, y se publican las ilustraciones inéditas de Plumier de las especies presentes en el Museo Nacional de Historia Natural de París.

Introduction

Pseudophoenix consists of four species of mostly insular distribution in the Caribbean basin. They are known for their handsome trunks, these often swollen, white, and with attractive, dark, ring-like leaf scars; plumose, pinnate leaves; and infructescences with showy, reddish fruits (**Fig. 1**). Three species are restricted to the island of Hispaniola, *P. ekmanii* (southwestern Dominican Republic), *P. lediniana* (southern Haiti), and *P. vinifera* (Haiti and Dominican Republic), while the fourth, *P. sargentii*, the most widely distributed of the four species, occurs in Belize, Cuba, Dominica, Dominican Republic, Haiti, Mexico (Yucatán Peninsula), Puerto Rico, The Bahamas, Turks and Caicos Islands, and U. S. A. (South Florida) (Read 1968, Zona 2020).



1. With its handsome, swollen, white, dark-ringed trunk, *Pseudophoenix ekmanii* exemplifies the genus. Parque Nacional Jaragua, Dominican Republic. © 2008 D. R. Hodel.

Pseudophoenix stands apart in the Cyclospatheae tribe of the subfamily Ceroxyloideae as the only genus having hermaphroditic flowers and a well-developed crownshaft (Dransfield et al. 2008).

Charles Plumier (Marseille, France, April 20, 1646–Puerto de Santa María, Spain, November 20, 1704), a French monk, botanist, biologist and explorer, participated in three expeditions (1689, 1693 and 1695) to the Caribbean, visiting the former French colony and current Haiti during the second and third trips from 1689 to 1697, which resulted in countless drawings that contributed to the descriptions of various plant species (Urban 1920). Plumier collected the first herbarium specimen that would eventually bear the name and be the type for *Pseudophoenix* although Charles Sargent later first described the genus (Sargent 1886).

Carl Friedrich Philipp van Martius (Erlangen, Germany, April 17, 1794–Munich, Germany, December 13, 1868) was a German botanist and explorer and keeper of the botanic garden and herbarium at Munich. He traveled to Brazil from 1817–1820, collecting plants for his *Nova Genera et species Plantarum Brasiliensium* and *Icones Selectae Plantarum Cryptogamicarum Brasiliensium*. In Brasil, he became enamored with palms and was easily the foremost student of palms of his era. From 1823–1850 he published the first volume of his best known, monumental, and epic, three-volume *Historia Naturalis Palmarum*. In it he published the name *Euterpe vinifera* (Martius 1845), which would eventually be transferred to *Pseudophoenix*.

Charles Sprague Sargent (Brookline, Massachusetts, April 24, 1841–Boston, Massachusetts, March 22, 1927) was an American botanist and horticulturist. He was the first director of Harvard's Arnold Arboretum, a position he held for the first 55 years of its existence. He published *The Silva of North America* (1891–1902) and *Manual of the Trees of North America* (1905) and also founded the journal *Garden and Forest* (1888–1897) and the *Journal of the Arnold Arboretum* (1920–).

Sargent (1888) first reported *Pseudophoenix* in April 1886, when, in the company of C. E. Faxon, A. H. Curtiss, and Hubbard, he visited the Light-house Tender “Laurel” near the eastern end of Elliott Key, South Florida. There they saw a solitary palm, which they mistook for *Oreodoxa* (*Roystonea*). Sargent sent specimens of the fruits to Dr. Hermann Wendland of Hanover, Germany, who considered it to be a new genus, suggesting the name *Pseudophoenix*, which Sargent (1886) himself then published as *Pseudophoenix sargentii*, in doing so ascribing the name to “Wendland.” Sargent further explained that in the spring of 1887 he visited Long Key in South Florida where he found about 200 of these palms of different sizes. Sargent sent to Wendland a photo by J. M. Codman and a drawing of the fruit by Faxon, both of which are at GOET.

The primary collectors of *Pseudophoenix* were Plumier in the 17th century, Sargent and Northrop in the 19th century, and other in the 20th century, including Shafer, Taylor, Cook, Ekman, and Read. Martius (1845), Sargent (1886), Cook in Northrop (1902), Cook (1923), Burret (1929), and Read (1968) provided the primary accounts of *Pseudophoenix*.

Read (1968) and Zona (2002) published monographs of the genus *Pseudophoenix*.

Here, I attempt to clarify the unusually complex history of *Pseudophoenix* species by reviewing, updating, and annotating the nomenclature and types for all names relating to the genus, primarily to establish Plumier's type specimen and his involvement in the description of *P. vinifera*.

Materials and Methods

I examined the protologues, descriptions, combinations, and status changes of *Pseudophoenix* species in Plumier (1703), Martius (1845 and 1853), Sargent (1866), Kerchove (1878), Northrop (1902), Beccari (1912), Cook (1923), Burret (1929), Read (1968), and Zona (2002). Particular attention was paid to nomenclature and the designation and disposition of type specimens.

I also examined the information and data in Miller (1754), Descourtilz (1821), Curtiss (1887), Drude (1887), Salomon (1887), Sargent (1888), Sprenger (1889), Britton and Millspaugh (1920), Small (1922), Dahlgren (1936), Bailey (1939), Moore (1963), Glassman (1972), Govaerts et al. (2020), Palmweb (2020), and Tropicos (2020).

I found a total of 103 specimens associated with the taxa under study, representing 15 collection numbers in 12 herbaria: A, BH, EHH, F, FTG, GH, GOET, IJ, K, NY, S, and US (acronyms from Thiers 2016). I reviewed four images corresponding to Plumier's collection. All specimens and images cited were examined from high-resolution photographs or digital images. Specimens seen by the author are marked with "!", those not seen with "[n.v.]", and those without marks were seen as digital images.

For authors and publications of botanical names I followed the standard form according to IPNI (2020).

For typification of the names, I followed the recommendations of the International Code of Nomenclature for algae, fungi and plants (The Shenzhen Code, Turland et al. 2018). I gave special emphasis to articles 6.3, 7.8, 8.1, 8.3, 9.1, 9.3, 9.4, 9.17, 38.5, 46.2, 52.1, 52.3, and Recommendation 8A.4 of the Code. The "specified here" marking is used in compliance with

Herrenhausen near Hanover,
30 July, 1886.

Dear Sir,

Many thanks for kindly sending the palm from Elliotts Key. I am greatly pleased with this fine discovery and addition to the palms of the territory of the American Union - I recognized it immediately as a new genus, and allow me to name it provisionally *Pseudophoenix Sargentii*.

It constitutes undoubtedly a new genus which must be nearest allied to the group of *Chamaedorea*, but with quite peculiar character. I am very sorry that there is

2. Wendland's letter to Sargent about naming *Pseudophoenix sargentii*, dated 30 July 1886. © Archives of the Gray Herbarium, Harvard University.

article 9.2 when I determined that a holotype or lectotype designation contains correctable errors.

Results and Discussion

Pseudophoenix H. Wendl. ex Sarg., Bot. Gaz. 11(11): 314 (1886).

Type: *Pseudophoenix sargentii* H. Wendl. ex Sarg.

= *Cyclospathe* O. F. Cook, in Northrop, Mem. Torrey Bot. Club 12: 25 (1902).

Type: *Cyclospathe northropii* O. F. Cook 'northropi'.

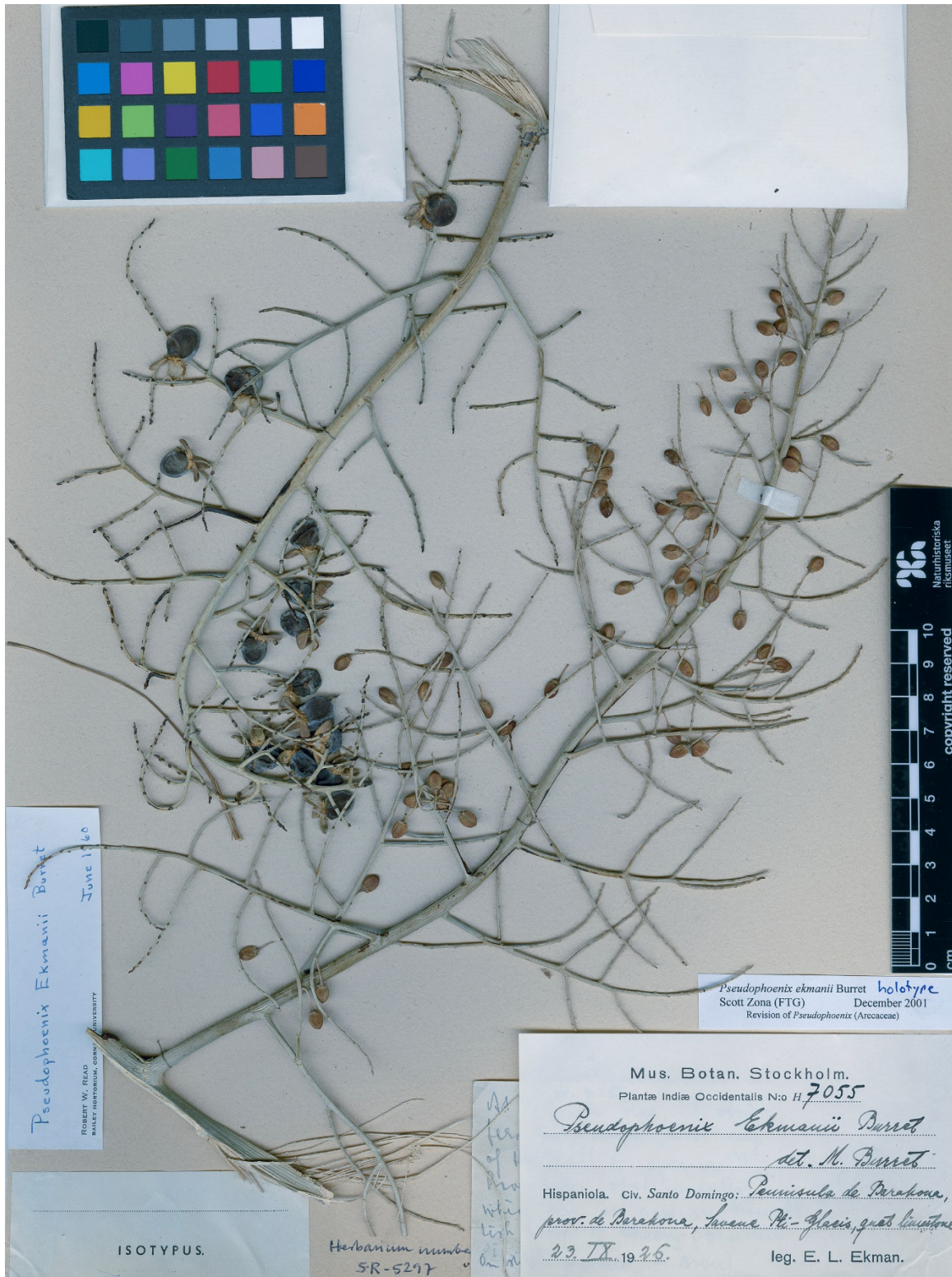
Wendland sent a letter, dated 30 July 1886, to Sargent (Wendland 1886) (**Fig. 2**) explaining that he immediately recognized "the palm from Elliotts Key" as a new genus and provisionally provided the name "*Pseudophoenix sargentii*." Wendland added that that "it constitutes undoubtedly a new genus . . . must be allied to the group of Chamaedoreae." Using the information in Wendland's letter, Sargent (1886) described the genus and the species, ascribing them to Wendland.

The names *Pseudophoenix* H. Wendl. ex Sarg., (in Bot. Gaz. 11(11): 314. 1886) and *Pseudophoenix sargentii* H. Wendl. ex Sarg., the latter designating the single, new species of the new genus, are both validly published although a description was provided only under the specific name (Art. 38.5 [(Turland et al. 2018)]).

Species of *Pseudophoenix* have been included in seven different genera. Martius (1845) described *Euterpe vinifera* Plum. ex Mart., Martius (1853) and later he transferred it to *Cocos vinifera* (Mart.) Mart. Kerchove (1878) transferred *C. vinifera* to *Gaussia vinifera* H. Wendl. Sargent (1886) finally described the genus *Pseudophoenix* and its type species *P. sargentii* H. Wendl. ex Sarg., which Cook in Northrop (1902) transferred to *Cyclospathe northropii* O. F. Cook. Later Beccari (1912) transferred *E. vinifera* to *P. vinifera* (Plum. ex Mart.) Becc. Finally, Cook (1923) transferred *P. vinifera* to *Aeria vinifera* (Plum. ex Mart.) O. F. Cook.

Later I justify the exclusion of some synonyms from the genus *Pseudophoenix*.

Pseudophoenix ekmanii Burret, Kungl. Svenska Vetenskapsakad. Handl. 6(7): 19 (1929). **Figs. 1, 3.**



3. The lectotype of *Pseudophoenix ekmanii*, Ekman H7055. (S-R-5297). © Herbarium of Swedish Museum of Natural History (S).

Type: REPÚBLICA DOMINICANA. [Pedernales province], “*peninsula Barahona, savanna Petit-Glakis, in regione pertristi*,” fl., ft., 23 Sep. 1926, *Ekman H7055* (lectotype, [first-step]: Read 1968: 201, S, [second-step], designated here, S-R-5297; isolectotypes: EHH 1490 [n.v.], IJ [n.v.], K 000209246, NY 00071227, S12-20486, US 00087543).

Burret (1929) designated *Ekman H7055* as the type of *Pseudophoenix ekmanii*. In doing so, he referred to a complete collection, thus creating syntypes but did not note the herbaria where the specimens were deposited. Read (1968) did the same, by citing all duplicates of *Ekman H7055* at S as holotype. Here I consider the designation of Read (1968) as lectotypes [first-step], designate “S-R-5297,” as the lectotype [second-step] (**Fig. 3**), and designate as isolectotypes the six duplicates at EEH, IJ, K, NY, S, and US.

***Pseudophoenix lediniana* Read, Gentes Herbarum 10(2): 189 (1968). Figs. 4–5.**

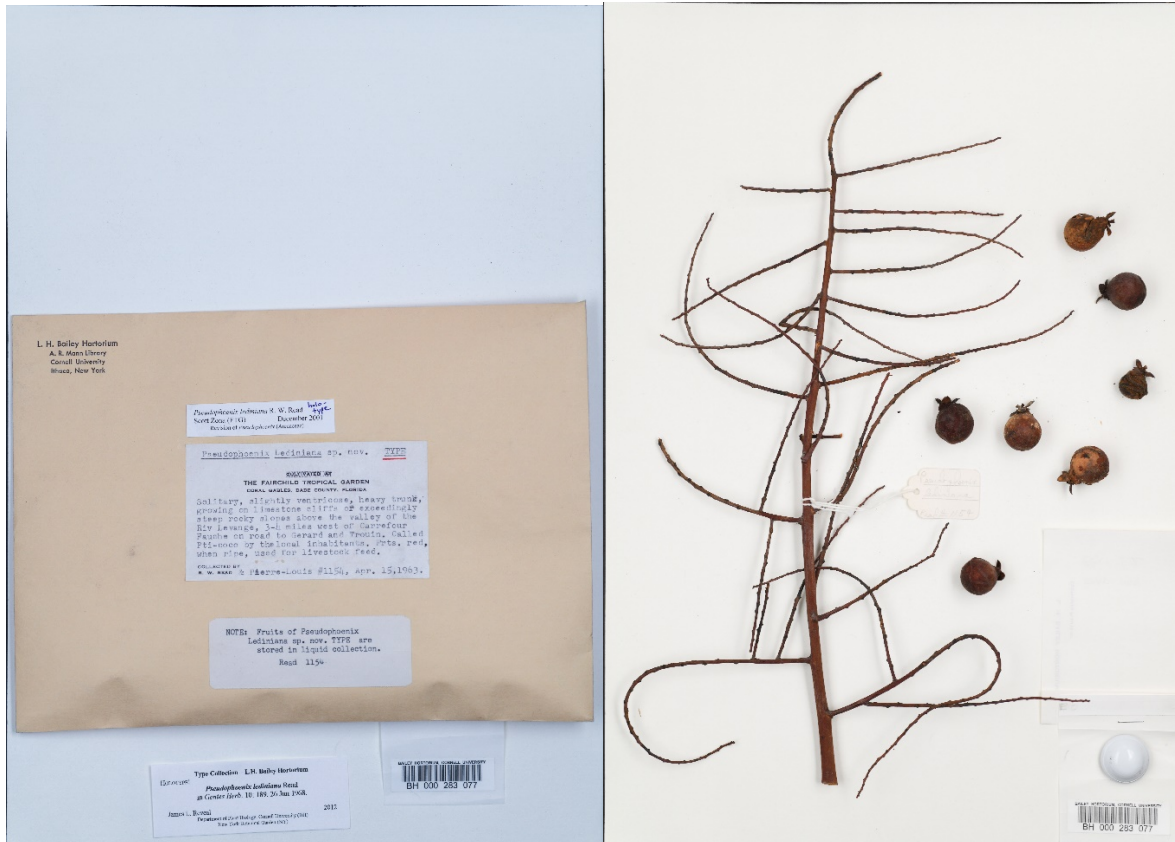
Type: HAÏTI. [Département de l'Ouest, Arrondissement Léogâne]“limestone cliff or ... slopes above valley of Riv. Levange, 3–4 miles west of Carrefour Fauché on road to Gerard and Trouin”, 15 Apr. 1963, *R. W. Read & F. Pierre-Louis 1154* (lectotype, designated here, BH 000283077.1, BH 000283077.2, BH 000283077.3, BH 000283077.4, BH 000283077.5, BH 000283077.6, BH 000283077.7, BH 000283077.8, BH 000283077.9, BH 000283077.10, BH 000283077.11, BH 000283077.12, BH 000283077.13, BH 000283077.14, BH 000283077.15, BH 000283077.16, BH 000283077.17, BH 000283077.18, BH [fruits stored in liquid]; isolectotypes: BH 000283078.1, BH 000283078.2, BH 000283078.3, BH 000283078.4, BH 000283078.5, BH 000283078.6, BH 000283078.7, BH 000283078.8, BH 000283078.9, BH 000283078.10, BH 000283078.11, BH 000283078.12, FTG 10485 [n.v.]).

Paratypes. HAITI. Département de l'Ouest, Arrondissement Léogâne: Trouin, 22 May 1923, *Cook s.n.* (BH [n.v.], US 17936 [n.v.], US 930032 [n.v.]), 22 Jun. 1927, *Cook s.n.* (US [n.v.]); Massif de la Hotte, at Riv. Courte-Oreille, 15 Apr. 1926, *Ekman H5560* (EHH 1483 [n.v.], FTG [n.v.], IJ [n.v.], K 209251 [n.v.], K 209252 [n.v.], NY 1662624, S [n.v.], US [n.v.]); between Grand Goave and Trouin, 26 Apr. 1960, *Read 237* (BH [n.v.]).

Read (1968) designated *Read and Pierre-Louis 1154* at BH as the type of *Pseudophoenix lediniana*. In doing so, he referred to a complete collection, thus creating syntypes. The type specimen at BH consists of 17 herbarium sheets, clearly labelled as being part of that same specimen, and bear a single, original label in common, with leaves, inflorescence and infrutescence in a box, and fruits stored in liquid-preserved material (Art. 8.3 [Turland et al. 2018]). Here I designated BH 000283077.1 (**Fig. 5**) to BH 000283077.18 and the fruits stored in liquid as lectotype. (Art. 9.17 [Turland et al. 2018]). The 13 duplicates at BH and FTG are isolectotypes.



4. *Pseudophoenix lediniana*, cultivated, Fairchild Tropical Botanic Garden, Miami, Florida, U.S.A. (74393 C). © 2012 D. R. Hodel.



5. One of the lectotypes of *Pseudophoenix lediniana*, Read & F. Pierre-Louis 1154. (BH 000283077.1). © Liberty Hyde Bailey Hortorium, Cornell University (BH).

***Pseudophoenix sargentii* H. Wendl. ex Sarg., Bot. Gaz. 11(11): 314 (1886). Figs. 6–13.**

Type: USA. [Florida State, Monroe County], “the eastern end of Elliott’s Key”, 16 Apr. 1886, *Sargent s.n.* (lectotype, designated here, GOET 009348; isolectotypes: A 00076978, A 00076977, BH 380727 [photos of GOET], GH 00028506).

When Sargent (1886) published the name *Pseudophoenix sargentii*, he ascribed it to Wendland, but he did not designate a type. Read (1968) designated an holotype at A but this designation is erroneous because it is superseded by the original material available to Sargent (1886) when he prepared the description validating the name (Art. 9.4, 9.19) and that is still extant at GOET; the specimen at A that Read designated as holotype becomes an isolectotype.

On the specimen GOET 9348 are two printed labels, “Journey to Louisiana and Florida, 1886” and “Coll. C. S. Sargent,” which Sargent had sent to Wendland, handwriting on one “*Pseudophoenix*



6. *Pseudophoenix sargentii*, Playa Santa Lucia, Camagüey, Cuba. © 2017 D. R. Hodel.



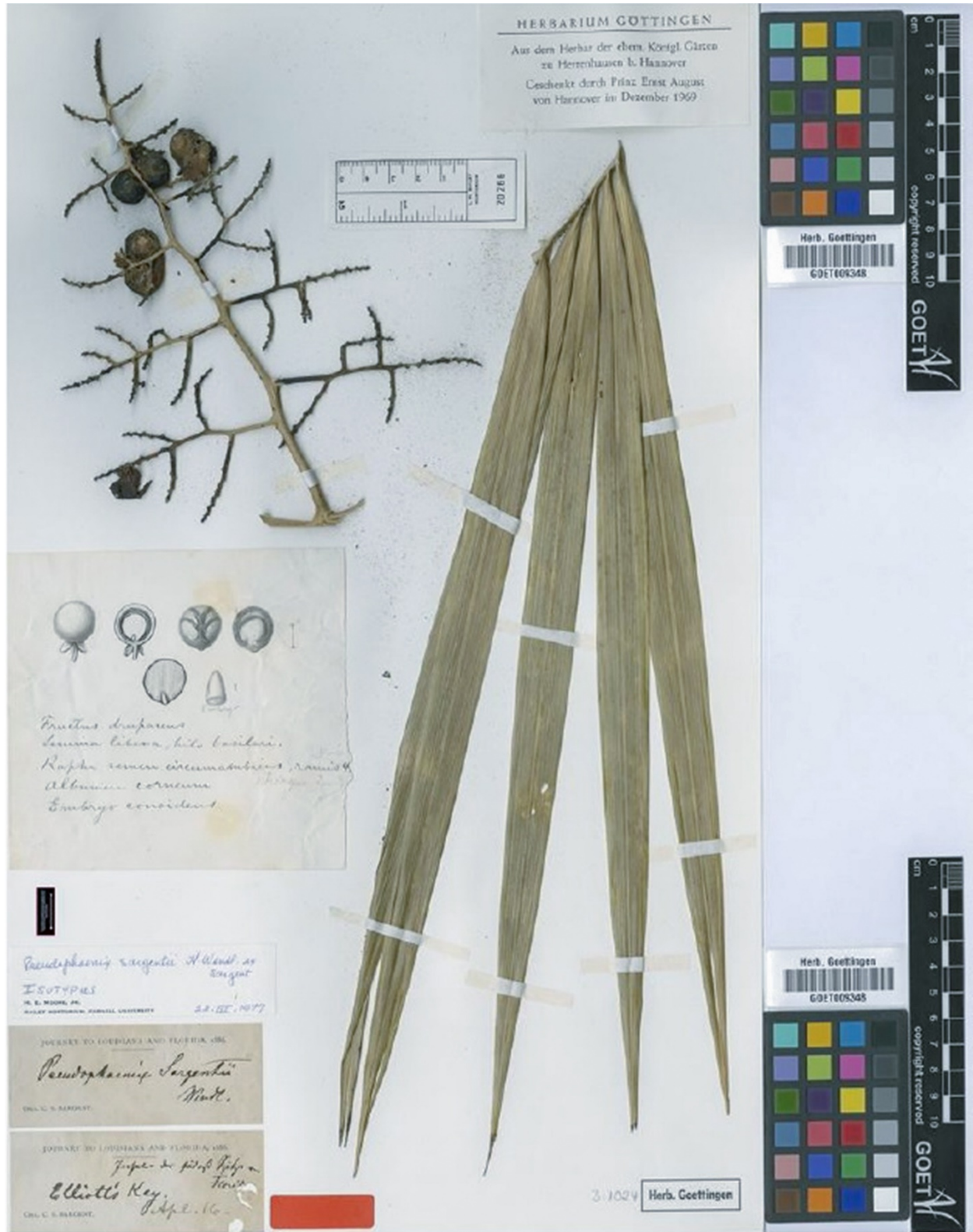
7. Fruits of *Pseudophoenix sargentii* are bright red and showy. © 2017 D. R. Hodel.

sargentii Wendl.” and on the other ““Elliott’s Key. Apl. 16.” These annotations justify it as original material that Wendland used to name the species and that Sargent to described it. Here I designate as lectotype GOET 009348 (**Fig. 8**) and as isolectotypes the four duplicates at A, BH, and GH.

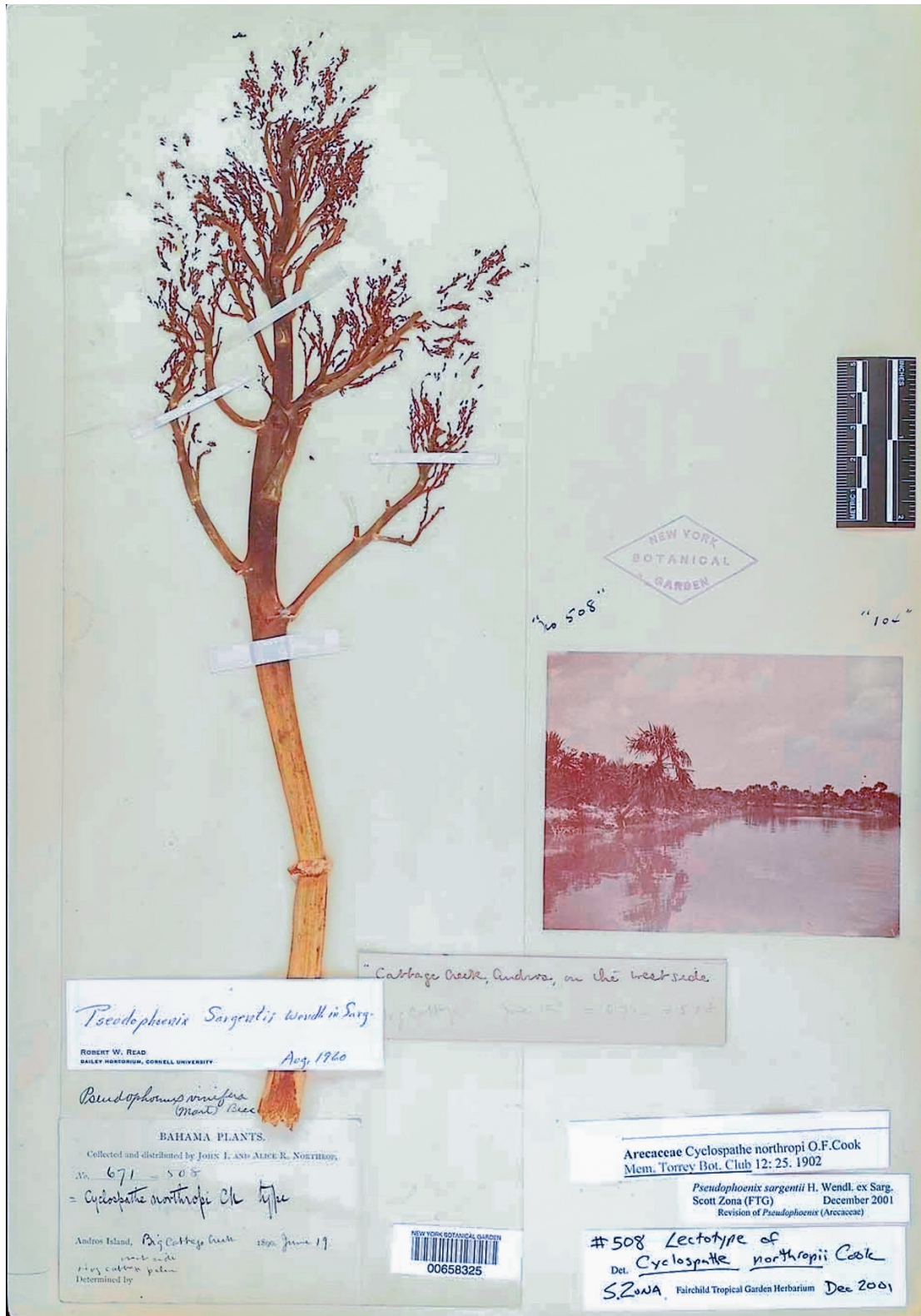
In GOET 9349, which is not part of the type, one can see Sargent's letters to Wendland in 1886 and 1887, the photo he published in 1888, *P. sargentii* fruit fragments and seeds dated March 19, 1888, and Wendland's description of the fruit.

= *Cyclospathe northropii* O. F. Cook, in Northrop, Mem. Torrey Bot. Club 12(1): 25 (1902).
'northropi'.

Type: THE BAHAMAS. [North Andros district], “Andros Island, Big Cabbage Creek, west side,” 19 Jun. 1890, *J. I & A. R. Northrop* 671 (lectotype, designated here, NY 00658325).



8. The lectotype of *Pseudophoenix sargentii*, Sargent s.n. (GOET 009348). © Göttingen University Herbarium (GOET).



9. The lectotype specimen of *Cyclospathe northropii*, J. I. & A. R. Northrop 671. (NY 00658325). © The Steere Herbarium of the New York Botanical Garden (NY).



10. The holotype of *Pseudophoenix linearis*, Shafer 2644. (US 00087552). © Department of Botany, NMNH, Smithsonian Institution (US).

In the protologue of *Cyclospathe northropii*, Cook in Northrop (1902) cited two collections used in the description, the leaves as *Northrop 508* and the inflorescence as *Northrop 671*; thus, he creating syntypes and without identifying the herbaria where the specimens were deposited. Read (1968), Glassman (1972) and Zona (2002) noted that the type was *Northrop 508* at NY, which here is excluded as lectotype because Cook in Northrop (1902) suggested “In the event of doubt . . . the inflorescence should be treated as the type.” For this reason, here I designate as lectotype NY 00658325 of *Northrop 671* (**Fig. 9**). The two specimens of *Northrop 508* are considered syntypes.

Beccari (1912) considered *Cyclospathe northropii* as a synonym of *Pseudophoenix sargentii*. Dahlgren (1936) considered *P. linearis* and *P. saonae* as synonyms of *P. sargentii* and *C. northropii* erroneously as a synonym of *P. vinifera*. Read (1968) considered *P. gracilis* and *P. saonae* as synonyms of *P. sargentii* subsp. *saonae* var. *saonae*. Finally, Zona (2002) explained his reasons for treating *P. navassana*, and *P. saonae* as synonymous of *P. sargentii*.

Syntypes: THE BAHAMAS. North Andros district, “Andros Island, Loggerhead Creek”, Apr. 1890, J. I & A. R. *Northrop 508* (NY 658326, US 87556).

= *Pseudophoenix linearis* O. F. Cook, J. Washington Acad. Sci. 13(18): 407 (1923).

Type: CUBA. [Camagüey province, Esmeralda municipality], “Lomo de Loro, Cayo Romano,” 21 Oct. 1909, *Shafer 2644* (holotype, specified here, US 00087552; isotypes: BH000281610 [frag.], FTG [photo, n.v.], NY 00658328, NY 00658329, NY 00658330, NY 00658331, US 00087553)

Cook (1923) designated as the type the specimen of *Shafer 2644* with the then US Catalogue No. 655,222 (**Fig. 10**), which has the current barcode US 00087552. Here I specify it as a holotype, according to article 9.2 (Turland et al. 2018), and the seven duplicates at BH, FTG, NY and US as isotypes.

Paratype. CUBA. [Camagüey province, Nuevitas municipality], “Cayo Guajaba,” 7–8 Nov. 1909, *Shafer 2815* (NY 1662625, NY 1662634, US 18004).

= *Pseudophoenix saonae* O. F. Cook, J. Washington Acad. Sci. 13(18): 406 (1923).

≡ *Pseudophoenix sargentii* subsp. *saonae* (O. F. Cook) Read, Gentes Herbarum 10(2): 210 (1968).



11. The holotype of *Pseudophoenix saonae*, Taylor 513. (US 00131426). © Department of Botany, NMNH, Smithsonian Institution (US).

Type: REPÚBLICA DOMINICANA. [La Altagracia province], “banks of a salt lake on Saona Island, province of Seibo”, 9 Dec. 1909, *Taylor 513* (holotype, specified here, US 00131426; isotypes: BH000281611 [frag. and photo of US], NY 00071231, NY 00071232, NY 00658324)

Cook (1923) designated as the type the specimen of *Taylor 513* with the then US Catalogue No. 758,263 (**Fig. 11**), which has the current barcode US 00131426. Here I specify it as a holotype, according to article 9.2 (Turland et al. 2018), and the four duplicates at BH and NY as isotypes.

= *Pseudophoenix gracilis* Ekman ex Burret, Kongl. Svenska Vetensk. Acad. Handl., ser. 3, 6(7): 28 (1929).

Type: HAÏTI. [Département de l'Ouest, Arrondissement de La Gonâve], “*Insula La Gonâve, coll supra Pre. à Raquettes*,” 19 Feb. 1928, *Ekman H9622* (lectotype, [first-step]: Read 1968: 210, S, [second-step], designated here, S-R-5298; isolectotypes: A 00028427, EHH 1485 [n.v.], F 0075095, K 000209253, NY 00071228, NY 00071229, S12-20503, US 00087544, US 00087545).

When Burret (1929) published the name *Pseudophoenix gracilis*, he ascribed it to Ekman, and he designated *Ekman H9622* as the type. In doing so, he referred to a complete collection, thus creating syntypes and did not note the herbaria where the specimens were deposited. Read (1968) did the same, by citing all duplicates of *Ekman H9622* at S as holotype. Here, I consider the designation of Read (1968) as lectotype [first-step], designate “S-R-5298,” as the lectotype [second-step] (**Fig. 12**), and designate as isolectotypes the nine duplicates at A, EEH, F, K, NY, S, and US.

= *Pseudophoenix navassana* Ekman ex Burret, Kongl. Svenska Vetensk. Acad. Handl., ser. 3, 6(7): 27 (1929).

≡ *Pseudophoenix sargentii* var. *navassana* (Ekman ex Burret) Read, Gentes Herbarum 10(2): 211 (1968).

Type: HAÏTI. [l'île de la Navasse], “*Insula Navassa, in oriente phari*,” 17 Oct. 1928, *Ekman H10802* (lectotype, [first-step]: Read 1968: 211, S, [second-step], designated here, S12-20535; isolectotypes: EHH 1488 [n.v.], K 000209254, NY 00071230, S-R-5300, US 00087554, US 00087555).

When Burret (1929) published the name *Pseudophoenix navassana*, he ascribed it to Ekman, and he designated *Ekman H10802* as the type. In doing so, he referred to a complete collection, thus



12. The lectotype n of *Pseudophoenix gracilis*, Ekman H9622. (S-R-5298). © Herbarium of Swedish Museum of Natural History (S).



13. The lectotype of *Pseudophoenix navassana*, Ekman H10802. (S12-20535). © Herbarium of Swedish Museum of Natural History (S).

creating syntypes and did not note the herbaria where the specimens were deposited. Read (1968) did the same, by citing all duplicates of *H10802* at S as holotype. Here I consider the designation of Read (1968) as lectotypes [first-step] and designate "S12-20535," as the lectotype [second-step] (**Fig. 13**) because Burret (1929) used the inflorescence to differentiate the new species from *P. sargentii*. I designate as isolectotypes the nine duplicates at EEH, K, NY, S, and US.

Pseudophoenix vinifera (Plum. ex Mart.) Becc., *Pomona Coll. J. Econ. Bot.* 2(3): 268 (1912). **Figs. 14–**

≡ *Euterpe vinifera* Plum. ex Mart., *Hist. Nat. Palm.* 1: 85 (1845).

≡ *Cocos vinifera* (Plum. ex Mart.) Mart., *Hist. Nat. Palm.* 3: 324 (1853) 'Cocos?'

≡ *Gaussia vinifera* (Plum. ex Mart.) H. Wendl., *Kerch., Palmiers [Kerchove]*: 245 (1878).

≡ *Aeria vinifera* (Plum. ex Mart.) O. F. Cook, *J. Washington Acad. Sci.* 13: 399 (1923).

Type: HAÏTI. [Département Nord-Ouest, Arrondissement Port-de-Paix], "*Insulam Sandominicanam*," *Les crepes du Port de Paix vocans*, [1689–1697], fl., ft., Plumier s.n. (lectotype, designated here: icons Z II. f. 18 and 19, in Martius 1845; isolectotypes: icon 29 [MNHN_MS7_0041], illustration 30.a [MNHN_MS7_0042], illustration 30.b [MNHN_MS7_0043]).

Surprisingly, much confusion has surrounded the nomenclature and typification of this amazingly distinct species. Plumier (1703) provided the first name for it when he published the results of his trip to "Insulas Americanas" from 1682 to 1697, naming it "*Palma dactylifera et vinifera*" but not including any illustration. Plumier's illustrations 29 and 30 of *P. vinifera* appeared in his unpublished manuscripts known as "*Botanicum americanum, . . .*," quoted by Burret (1929). According to article 13.1 (Turland et al. 2018), the valid publication of botanical names is treated as beginning on May 1, 1753; therefore, *Palma dactylifera et vinifera* in Plumier (1703) is not validly published.

In the Central Library of the National Museum of Natural History of Paris, France (MNHN), the unpublished drawings or illustrations of Plumier's 17th-century American plants, including those of Haiti, are currently deposited in "*Botanicum americanum, seu historia plantarum in americanis insulis nascentium . . . , ab anno 1689 usque ad annum 1697*," which, because it is unpublished, cannot be considered a valid publication; nevertheless, it does have value as a type because the author indicated the illustrations as the nomenclatural type.

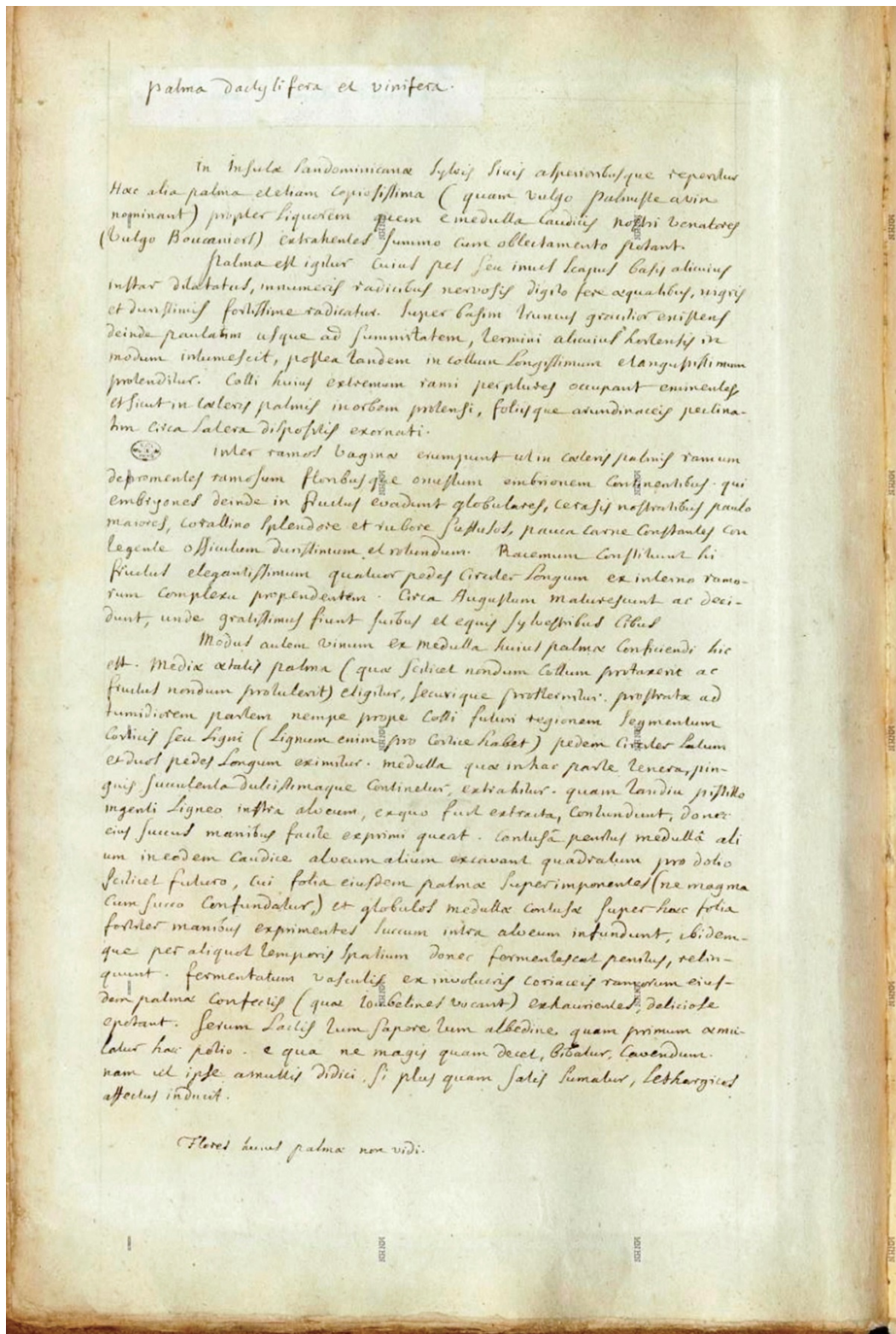
On the illustration MNHN.0040 (**Fig. 16**), Plumier wrote "*Palma dactylifera et vinifera*," "*Insulam Sandominicanam sylvis*," and "*quam vulgo palmiste a vin nominant*," which translated means



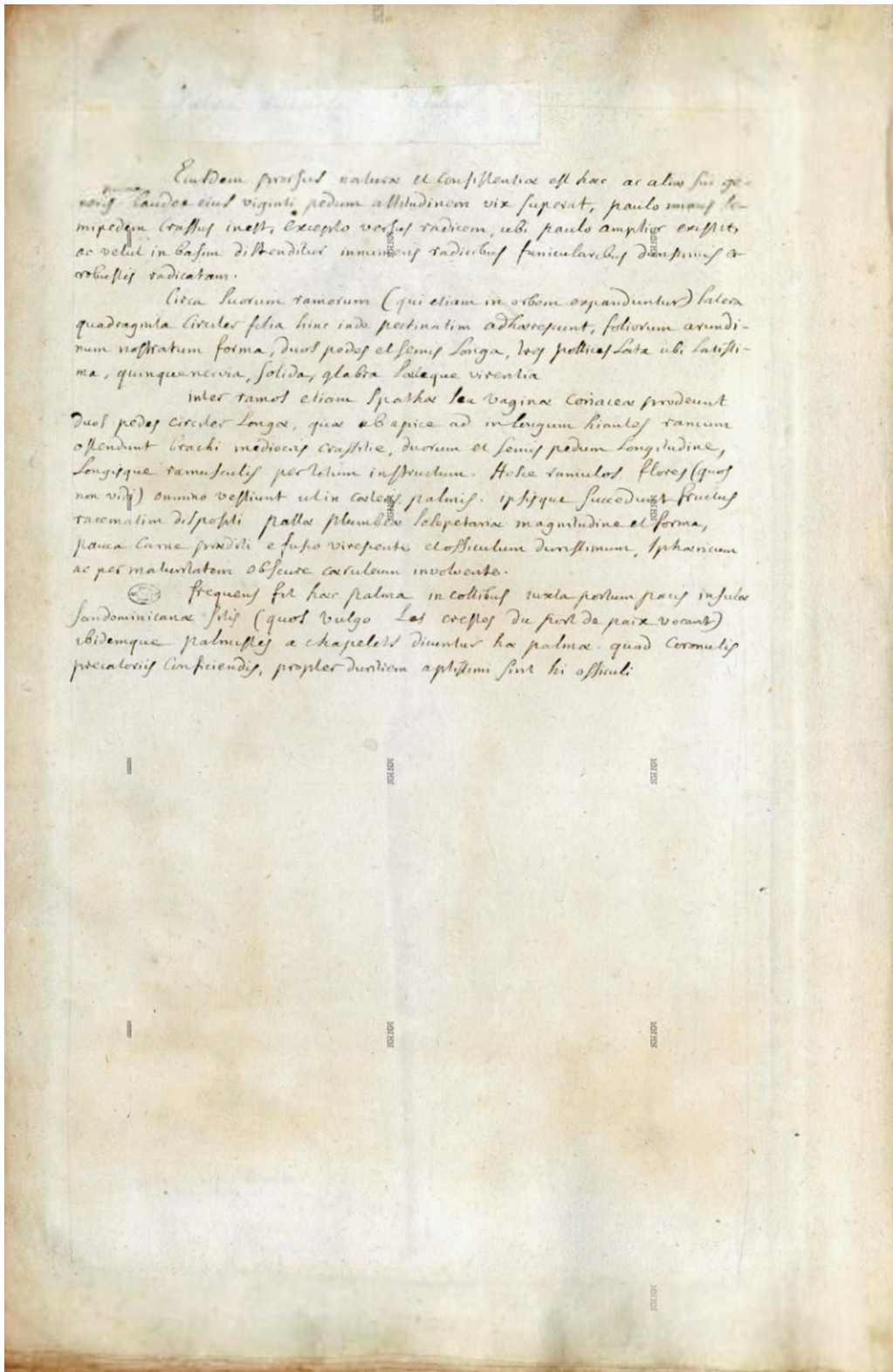
14. *Pseudophoenix vinifera*, near Azua, Dominican Republic. © 2008 D. R. Hodel.



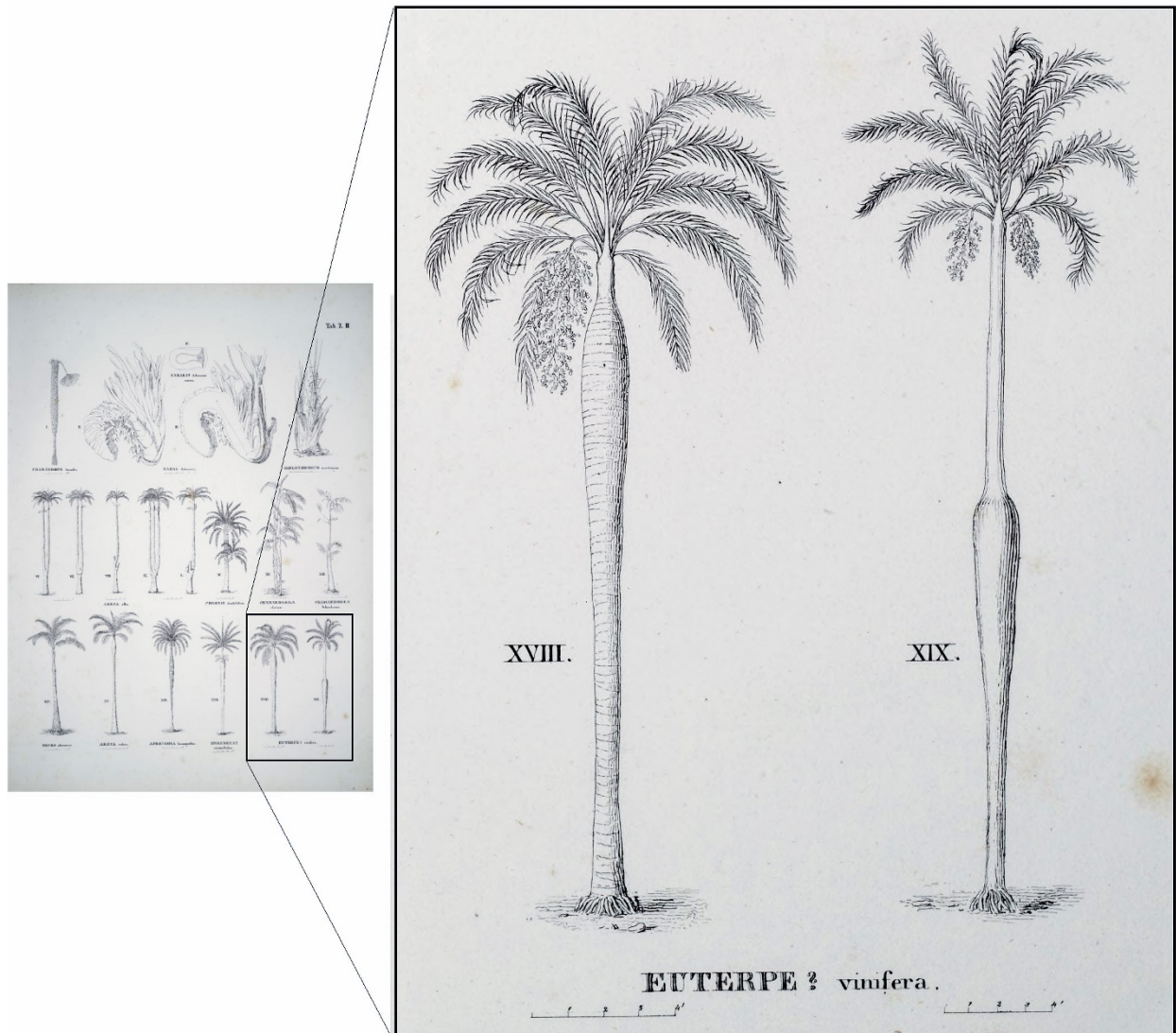
15. *Pseudophoenix vinifera* has long, pendulous infructescences with showy, pinkish red fruits. © 2008 D. R. Hodel.



16. Plumier's description of *Palma dactylifera et vinifera* on the illustration MNHN.0040. © Central Library of the National Museum of Natural History of Paris, France Paris, France.



17. Plumier's description of *Palma dactylifera et vinifera* on the illustration MNHN.0044. © Central Library of the National Museum of Natural History of Paris, France Paris, France.



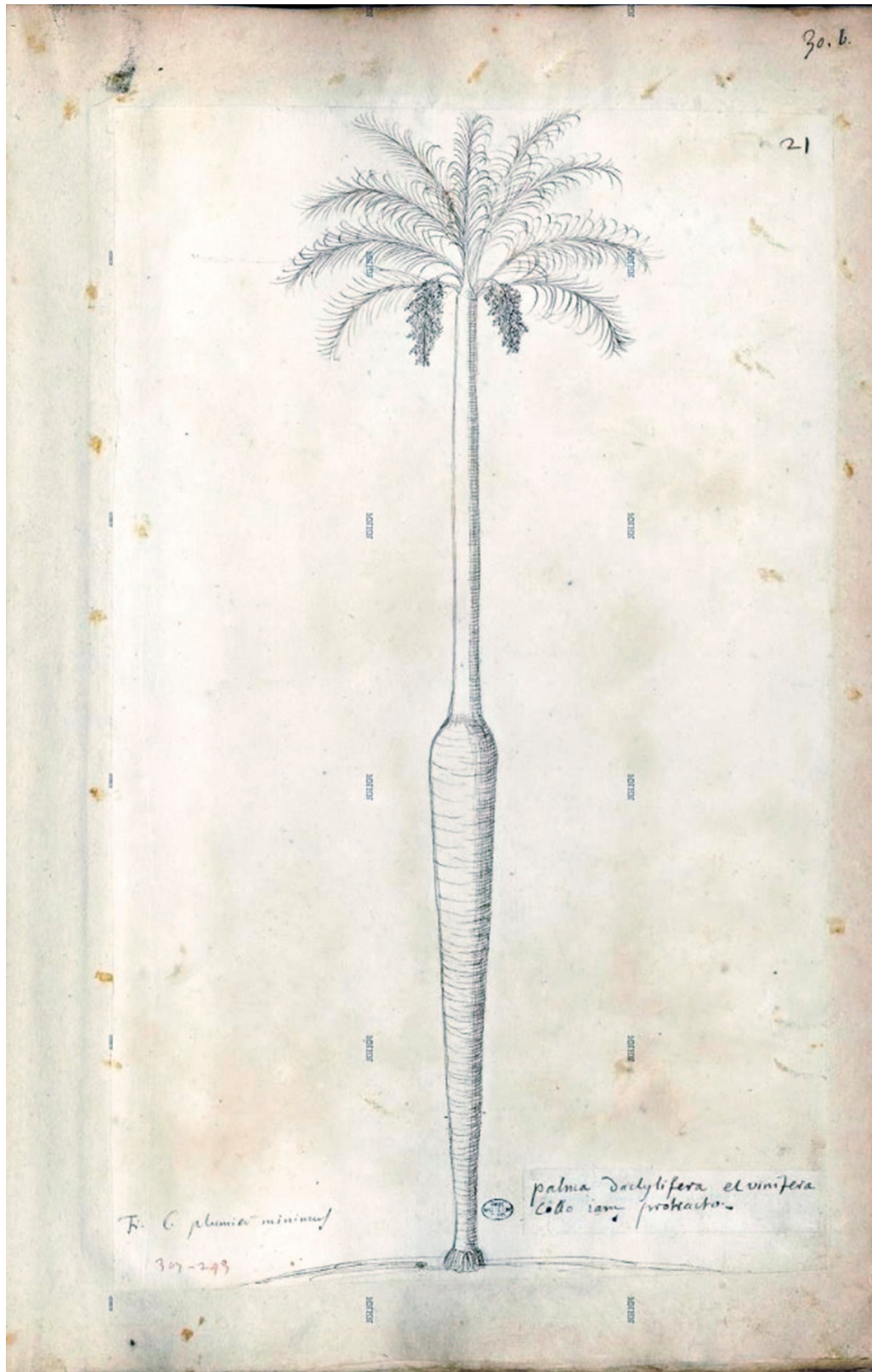
19. The lectotype of *Euterpe vinifera*, illustrations ZII. f. 18 and 19. From Martius (1845).

appellandae, icones in tab. morphol. Z.II. fig. XVIII. XIX . . .” The preceding means that Martius (1845), when he wrote that Plumier named and described in tables 29 and 30 the Antillean palm “*Palmae dactyliferae et viniferae*,” was ascribing the name to Plumier. Also, Martius (1845) identified illustrations 18 and 19 of the tab. Z.II in his 1845 work as *Euterpe vinifera*. Therefore, the name is cited as *Euterpe vinifera* Plum. ex Mart.

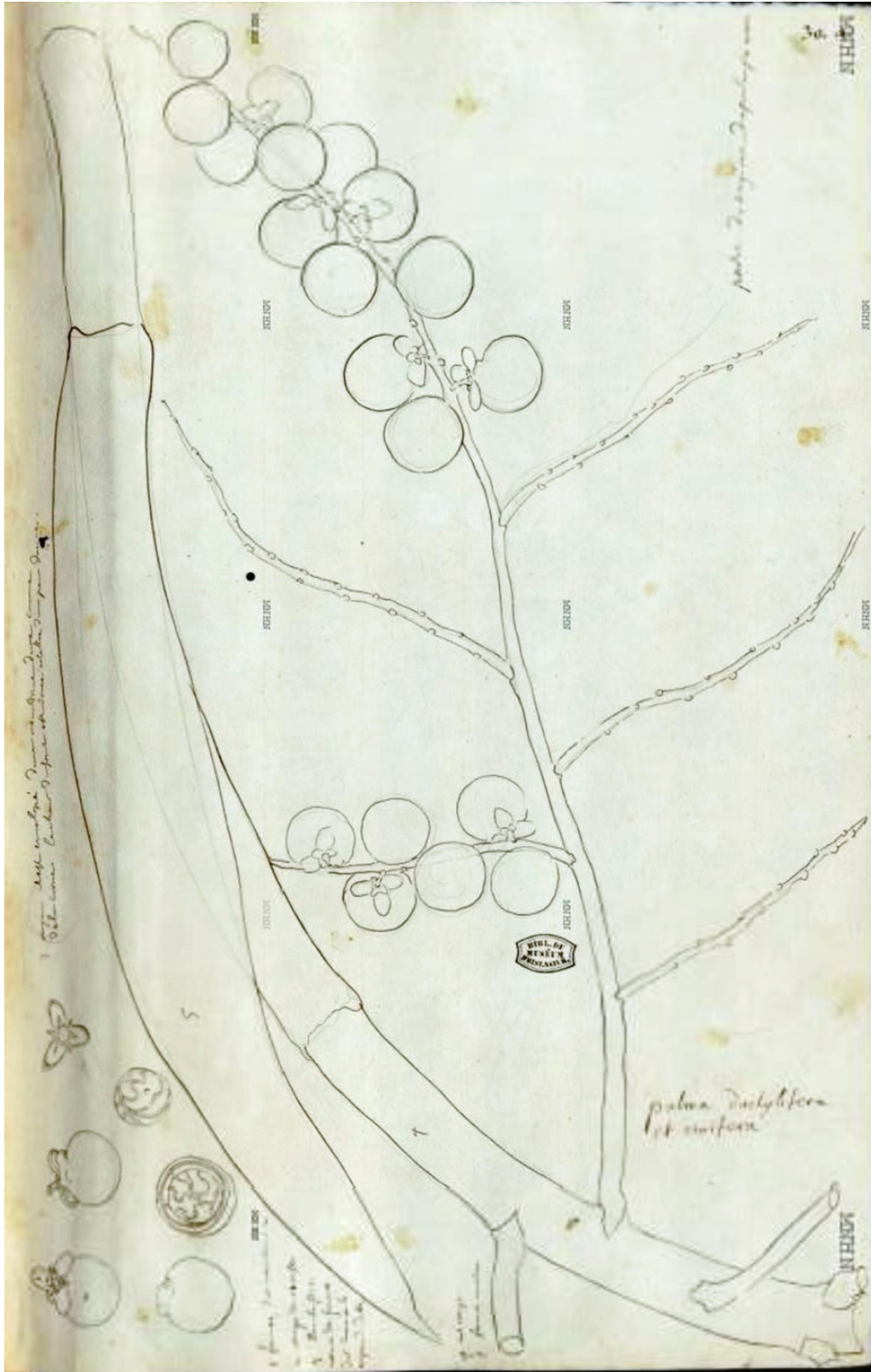
Article 52.3 (Turland et al. 2018) supports the last determination, which notes that a name of a new taxon is ascribed to the author to whom the name was ascribed when the validating description was simultaneously ascribed to or unequivocally associated with the same author, even when authorship of the publication is different (Article 46.2 [Turland et al. 2018]), and that



20. The isolectotype of *Euterpe vinifera*, illustration MNHN.0041. © Central Library of the National Museum of Natural History of Paris, France.



21. The isoelectotype of *Euterpe vinifera*, illustration MNHN.0043. © Central Library of the National Museum of Natural History of Paris, France.



22. The isolectotype of *Euterpe vinifera*, illustration MNHN.0042. © Central Library of the National Museum of Natural History of Paris, France.

the citation of a name can be effected by a direct reference to it, by citation of its exact diagnostic phrase name rather than its epithet.

Stafleu and Cowan (2020) determined that the publication date of *Historia Naturalis Palmarum* Vol. 1, when Martius (1845) described *Euterpe vinifera* on page 85 and associated plates with Plate Z.II, was September 19, 1845. Also, they note that Martius transferred *E. vinifera* to *Cocos? vinifera* on page 324 of Vol. 3, which was published January to July, 1853.

Euterpe vinifera Plum. ex Mart. (Hist. Nat. Palm. 1: 85. 1845) was validly published solely by Martius's reference to the description and associated illustration (but without analysis): "icones in tab. morphol. Z. II. fig. XVIII. XIX." Because Martius did not definitely designate as type the specimen collected by Plumier (tab. 29 and 30 in the MNHN, labelled "*Palma dactylifera et vinifera*"), that specimen is unavailable as type material. In the absence of the material on which the validating description was based, the lectotype can only be the associated illustration (tab. morphol. Z. II. fig. XVIII. XIX), which is considered original material because it was published as part of the protologue; articles 7.8, 7.9, 8.1, 9.3 and 9.4 (Turland et al. 2018) support this determination. Based on the above, I designated here as lectotype "icons ZII. f. 18 and 19, in Martius 1845" (**Fig. 19**); also, I designate as isolectotypes the original illustration 29 [MNHN_MS7_0041] (**Fig. 20**) and illustration 30.b [MNHN_MS7_0043] (**Fig. 21**) in the National Museum of Natural History of Paris, France (MNHN). Also, in Paris is illustration 30.a [MNHN_MS7_0042] (**Fig. 22**), which has drawings of the base of the inflorescence, rachilla, flower, fruit and seed, with written notes by Plumier and used by him in preparing the description; it is also considered an isolectotype.

Beccari (1912) was the first to treat "*Palma dactylifera et vinifera*" of Plumier (Gen. Amer. 3 Ícono t. 29, 30 ms.) as *Pseudophoenix vinifera* when he transferred it from *Euterpe* to *Pseudophoenix*. Read (1968) treated "*Palma dactylifera et vinifera* Plumier, description in ms. et t. 20, 21, *Botanicum Americanum* . . . ined." as a type of *Euterpe vinifera* Martius, in addition to showing the associated illustrations. Nevertheless "*Palma dactylifera et vinifera*" (Plumier, Nov. Pl. Amer. 3. 1703) is a phrase name and not considered a validly published name (Art. 23.6, Turland et al. 2018).

Beccari (1912) treated *Cocos vinifera*, *Euterpe vinifera* (as basonym), and *Gaussia vinifera* as synonyms of *Pseudophoenix vinifera* while Burret (1929) did the same for *Aeria vinifera*.

= *Pseudophoenix insignis* O. F. Cook, J. Washington Acad. Sci. 13(18): 400 (1923).



23. One of the holotype specimens of *Pseudophoenix insignis*, O. F. Cook 28. (US 00087546). © Specimen from Department of Botany, NMNH, Smithsonian Institution (US).

Type: HAÏTI. Département de l'Artibonite, 3 miles from Passe Reine, about 21 km E of Gonaives and 10 km W of Ennery, 28 Jul. 1923, *O. F. Cook* 28 (holotype, US 00087546, US 00087547, US 00087548, US 00087549, US 00087550, US 00087551; isotype, BH 000281000 [frag.]).

Any designation of the type made by the original author, if definitely expressed at the time of the original publication of the name of the taxon, is final, according to Note 1 of article 9.1 and Recommendation 8A.4 (Turland et al. 2018). Cook (1923) in the protologue of *Pseudophoenix insignis*, designated *Cook* 28, a single specimen mounted as multiple preparations, as the type when he wrote “Type in the U.S. National Herbarium, nom. 1,145,487-1,145,492, . . . ,” which correspond to US 87546 to US 87551, specified here as the holotype (**Fig. 23**). I consider it properly labeled because Cook also wrote on the US labels “type and sheet 1 to 5.”

Six years later Burret (1929) explained his reasons for making *P. insignis* synonym of *P. vinifera*.

Excluded names:

“*Chamaephoenix*” (H. Wendl. ex Sarg.) A. H. Curtiss, *Florida Farmer & Fruit Grower* 1(8): 57 (1887), not validly published.

“*Chamaephoenix sargentii*” (H. Wendl. ex Sarg.) Curtiss, *Florida Farmer Fruit Grower* 1(8): 57 (1887), not validly published.

Curtiss did not validly publish the genus name “*Chamaephoenix*” because he merely mentioned the included species but supplied no genus description or diagnosis, which means that the intended new genus and binomial “*Chamaephoenix sargentii*” were not validly published (Art. 35.1 [Turland et al. 2018]).

“*Cocos vinifera*” Mart., *Hist. Nat. Palm.* 1: t. Z.II, f. 18, 19 (1845), an incorrect citation of authors and publication.

“*Euterpe vinifera*” Mart., *Hist. Nat. Palm.* 1: t. Z.II, f. 18, 19 (1831) or (1845), incorrect citations of authors and publications.

“*Euterpe vinifera*” Mart., *Hist. Nat. Palm.* 1: 85, t. Z.II, f. 18, 19 (1845) or (1849), incorrect citations of authors and publications.

“*Gaussia vinifera*” H. Wendl., Palmiers [Kerchove]: 245 (1878), incorrect citation of authors.

“*Gaussia vinifera*” (Mart.) H. Wendl. in Kerchove de Denterghem or O.C.E.de Kerchove de Denterghem, Palmiers: 245 (1878), incorrect citations of authors and publications.

“*Palma americana*” Miller, Gard. Dict. Abr. ed. 4 (1754).

Miller’s description of this species suggests *Pseudophoenix vinifera* but the identification cannot be made with certainty (Moore (1963)).

“*Pseudophoenix*” H. Wendl. & Drude in Drude, in Engler and Prantl, Nat. Pflanzenfam. 2(3): 64. (June 1887), superfluous and illegitimate name.

The name was nomenclaturally superfluous when published because Drude cited the legitimate name *Pseudophoenix sargentii* H. Wendl. ex Sarg. (Bot. Gaz. 11(11): 314. 1886) as a synonym (Art. 6.3 [Turland et al. 2018]).

“*Pseudophoenix vinifera*” (Mart.) Becc., Pomona Coll. J. Econ. Bot. 2(2): 268 (1912), incorrect citation of authors.

To date, everyone after Beccari has cited it this way.

“*Pseudophoenix elata*” Cook ex Burret, Sv. Vet. Akad. Handl. ser. 3: 21 (1929), *nomen nudum*.

“*Pseudophoenix vinifera*” *sensu* Britton & Millsp., Bahamas Fl. 61 (1920), non Mart. (Becc. 1912) = *Pseudophoenix sargentii* (Small 1922).

“*Rahia vinifera*” *sensu* Descourt., Flore Med. Ant. 1: 157 (1821), not *R. vinifera* P. Beauv. (1804), illegitimate name.

The name is illegitimate because it was a superfluous name for *Raphia vinifera* P. Beauv. (1806), which Descourtiz cited as a synonym (Art. 52.1 [Turland et al. 2018]). Read (1968) noted that a palm pictured and described by Descourtiz (1821) under the name “*Raphia vinifera*” and erroneously identified by him as *Raphia vinifera* P. Beauv. (1806), an African palm, is *Pseudophoenix vinifera*.

“*Sargentia*” H. Wendl. & Drude ex Salomon, Palmen 160 (1887), not validly published.

The name is not validly published because it had been previously and validly published based upon the same type (Art. 38.5b [Turland et al. 2018]).

“*Sargentia ariococca*” H. Wendl. & Drude ex Salomon, Palmen 160 (1887), superfluous and illegitimate name.

The name was nomenclaturally superfluous when published because Salomon cited the legitimate name *Pseudophoenix sargentii* H. Wendl. ex Sarg. (Bot. Gaz. 11(11): 314. 1886) as a synonym. (Art. 6.3, Note 2 [Turland et al. 2018]).

“*Sargentia aricocca*” H. Wendl. ex Sprenger, (in Bull. Reale Soc. Tosc. Ort. 14(ser. 2, 4): 341 (1889), superfluous and illegitimate name.

The name *Sargentia aricocca* H. Wendl. ex Sprenger was nomenclaturally superfluous when published because Sprenger cited the legitimate name *Pseudophoenix sargentii* H. Wendl. ex Sarg. (Bot. Gaz. 11(11): 314. 1886) as a synonym (Art. 6.3, Note 2 [Turland et al. 2018]).

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