

A Review of the Nomenclature and Types of the Genus *Acoelorrhaphe* (Arecaceae)

Una Revisión de la Nomenclatura y los Tipos del Género *Acoelorrhaphe* (Arecaceae)

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Abstract

The nomenclature and types for all names in *Acoelorrhaphe* are reviewed and updated. Of the total of 87 types, 5 holotypes and 12 isotypes are identified while 11 lectotypes, 52 isolectotypes, 1 neotype, and 6 isoneotypes are designated.

Resumen

La nomenclatura y los tipos para todos los nombres en *Acoelorrhaphe* se revisan y actualizan. Del total de 87 tipos, se identifican 5 holotipos y 12 isotipos, mientras que se designan 11 lectotipos, 52 isolectotipos, 1 neotipo y 6 isoneotipos.

Introduction

Acoelorrhaphe is a monotypic genus of fan palms with clustered stems, and its sole species, *A. wrightii* (Griseb. & H. Wendl.) H. Wendl. ex Becc., occurs in seasonally wet or flooded conditions, often in brackish water in coastal swamps and marshes or in savanna thickets or pine forests, typically at low elevations, from southern Florida through the northern Bahamas and central and western Cuba (**Fig. 1**) to the Caribbean coasts of southern Mexico, Belize, Guatemala, Honduras, Nicaragua, Costa Rica, and Panama (Dransfield et al. 2008, Henderson et al. 1995, Zona 1997), and Providencia Island of Colombia (Galeano and Bernal 2010). Leaf blades are typically green adaxially and green with a slightly glaucous bloom abaxially although a form with strikingly silvery gray leaf blades has recently been reported from western Cuba (Craft 2017). Dransfield et al. (2008) placed *Acoelorrhaphe* in the Trachycarpeae tribe of the subfamily Coryphoideae.

At least 13 additional names are included in *Acoelorrhaphe wrightii* in the various on-line databases (The International Plant Names Index, the Kew checklist of Selected Plant Families, The



1. *Acoelorrhaphe wrightii*, growing about 115 km west of Havana, Cuba, occurs in seasonally wet situations at low elevations. Here it survives in a pasture and the blackened trunks show that it is subject to periodic burning. (Photo ©Donald R. Hodel).

Plant List, and Tropicos) and recent literature (Grayum 2003; Henderson et al. 1995; Zona 1997, 1999). Also, many inconsistencies exist in the original Wright collections, especially with the precise identification of the locations, the dates of collections, the mixture of multiple species in the same collection number, and/or with the collection numbers themselves. Here I attempt to clarify the unusually complex history of *A. wrightii* by reviewing, updating, and annotating the nomenclature and types for all names relating to *Acoelorrhaphe* and to sort out the inconsistencies in Wright's collections.

Materials and Methods

I examined the protologues and descriptions of all names included in *Acoelorrhaphe* (Bailey 1925, 1940; Bartlett 1935; Beccari 1907, 1913, 1931; Britton and Shafer 1908; Burret 1934, 1935; Cook 1902, 1914; Drude 1908; Grisebach 1866; Hadač 1970; Hooker 1883; Lundell 1961; Moore 1951, 1963; Proschowsky 1925; Sargent 1899; Small 1922; Wendland 1879). Particular attention was paid to matters of nomenclature and the designation and disposition of type specimens.

I reviewed the primary publications of floristic accounts of the countries where *Acoelorrhaphe* has been reported (Bahamas: Britton and Millspaugh 1920, Correll and Correll 1996; Belize: Goodwin et al. 2013, Standley and Record 1936; Colombia: Galeano and Bernal 2010; Costa Rica: Grayum 2003; Cuba: León 1946, Moya and Leiva 2000, Muñiz and Borhidi 1982; Guatemala: Standley and Steyermark 1958; Honduras: Nelson 2008; México: Quero 1994, Quero and Salvador 2004; Nicaragua: Read 2001; USA: Britton and Shafer 1908, Small 1922, Zona 1997, 1999; the Americas: Henderson et al. 1995.

I found a total of 87 specimens of *Acoelorrhaphe wrightii* with some category of type designation in 21 herbaria: A, B, BH, CM, FI, G, GH, GOET, HAC, K, LE, M, MICH, MO, MPU, NY, P, PR, S, US, and VT. I also reviewed additional specimens that have no type category in 14 herbaria: BRU, F, FI, G, GH, HAC, LE, MA, MO, NY, P, S, UC, and YU (all herbaria acronyms from Thiers 2016). I also reviewed all pertinent material in the National Herbarium of Cuba "Onaney Muñiz" of the Institute of Ecology and Systematics (HAC). All specimens cited were examined from high-resolution photographs except for those at HAC, which I examined in person.

For the 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). Article 9.1 of the Code states that the holotype is “the one specimen or illustration (*a*) indicated by the author(s) as the nomenclatural type or (*b*) used by the author(s) when no type was indicated; the holotype does not need to be explicitly designated, but article 8.3 explains that a specimen may be mounted as more than one preparation, as long as the parts are clearly labelled as being part of that same specimen, or bear a single, original label in common. Article 9.6 of the Code states that a syntype is “any specimen cited in the protologue when there is no holotype, or any one of two or more specimens simultaneously designated in the protologue as type.”

Results and Discussion

Griesebach and Wendland (1866) named and described *Copernicia wrightii*, basing it on a Wright collection (3217) from western Cuba. Several years later, Wendland (1879) established the new genus *Acoelorrhaphe* when he listed it with a few-word description in a key to numerous fan-palm genera although Wendland did so without validating any species in this new genus. Later, Beccari (1907), who indicated that Wendland had used the name *Acoelorrhaphe* in the Berlin herbarium, transferred *Copernicia wrightii* to *Acoelorrhaphe*, making the new combination *A. wrightii*.

The spelling of *Acoelorrhaphe* is somewhat contentious. When Wendland (1879) established the genus, he spelled it *Acoelorrhaphe*, which Hooker f. (1883) later amended to *Acoelorrhaphe* and Beccari (1907) to *Acoelorhapse*. The name *Acoelorrhaphe* is Greek in origin, and spelling rules require that an additional “r” be added when the root, such as “*raphe*” or “*rhiza*,” is preceded by a

vowel. Also, a general rule among plant taxonomists is typically to accept the original spelling in the protologue. More importantly, article 60.1 of Turland et al. (2018) states that the original spelling of a name in the protologue must be maintained. Thus, *Acoelorrhaphe*, as Wendland originally spelled it, is currently the accepted spelling.

The original name *Copernicia wrightii* appeared in Sauvalle (1871, 1873), Kerchove (1878), and Gómez de la Maza (1889, 1893), while Siebert and Voss (1896) and Cook (1902) ignored it. Cook (1902) named and described the genus *Paurotis*, which Britton and Shafer (1908) accepted when they transferred *A. wrightii* to *Paurotis* to make the new combination *P. wrightii*. Also accepting *Paurotis* were Cook (1914), when he transferred *Serenoa arborescens* to make *P. arborescens*, Burret (1935), when he named and described *Paurotis schippii*, and Lundell (1961), when he transferred *Brahea psilocalyx* to make *P. psilocalyx*. Drude (1908), Britton and Millspaugh (1920), Small (1922), Bailey (1940), Moore (1951,) and Standley & Steyermark (1958) accepted *Paurotis*.

Beccari (1907) transferred *Serenoa arborescens* Sarg. to *Acoelorrhaphe arborescens* (Sarg.) Becc. and named and described a new variety *Acoelorrhaphe wrightii* var. *novo-geronensis*. Proschowsky (1925) described the genus *Acanthosabal*, which Bailey (1925) accepted.

Finally, Moore (1963) concluded that Beccari worked from the specimen Wendland annotated, confirming that the type was *Acoelorrhaphe wrightii*, and gave a complete description, validating the genus *Acoelorrhaphe* under the rules of the International Code of Botanical Nomenclature then in force. Beccari (1913, 1931), Urban (1920), Burret (1929), Dahlgren (1936), Standley and Record (1936), León (1946), Glassman (1972), Read (2001), Quero (1994), Henderson, Galeano and Bernal (1995), Zona (1997 and 1999), Grayum (2003), Quero and Salvador (2004), Nelson (2008), Galeano and Bernal (2010,) and Goodwin et al. (2013) accepted *Acoelorrhaphe*.

Taxonomic Treatment

ACOELORRAPHE H. Wendl., Bot. Zeitung (Berlin) 37: 148. 1879. Type Species: *Acoelorrhaphe wrightii* (Griseb. & H. Wendl.) H. Wendl. ex Becc. (*'Acoelorrhaphe'*, *'Acoelorrhaphe'*).

Etymology: *Acoelorrhaphe* is derived from the Greek words *a* (without), *coelo* (hollow or cavity), and *raphe* (scar that occurs in the seeds), and refers to the absence of a sunken scar in the seeds of this species (Galeano and Bernal 2010).

Paurotis O. F. Cook, Mem. Torrey Bot. Club 12(1): 21. 1902. Type Species: *Paurotis androsana* O. F. Cook.

Etymology: *Paurotis* is derived from Greek and refers to the inflorescence with few bracts (Britton 1920).

Acanthosabal Prosch. Gard. Chron., ser. 3, 77: 91. 1925. Type Species: *Acanthosabal caespitosa* Prosch.

Etymology: *Acanthosabal* is derived from the Greek *acantho*, meaning spiny, and *Sabal*, a genus of non-spiny fan palms, and means looks like a spiny *Sabal*.

Acoelorrhaphe wrightii (Griseb. & H. Wendl.) H. Wendl. ex Becc. Webbia 2: 109. 1907. ('*Acoelorrhaphe*').

Copernicia wrightii Griseb. & H. Wendl., Cat. Pl. Cub.: 220. 1866.

Paurotis wrightii (Griseb. & H. Wendl.) Britton in N. L. Britton & J. A. Shafer, N. Amer. Trees: 141. 1908.

Type: CUBA. Matanzas Province, Calimete Municipality, Hanábana, 13 Mar. 1862, fl., *Wright 3217 p. p., emend. Moya*, lectotype, designated here, GOET 009313, GOET 009316, GOET 009317; isolectotype GH 00028340.

Etymology: the epithet honors Charles Wright (October 29, 1811 – August 11, 1885), American botanist and collector of the type.

Grisebach (1866) cited *Wright 3217* as the type of *Copernicia wrightii*. In doing so he referred to 40 specimens, thus creating syntypes, but did not note herbaria where specimens were deposited. The collections distributed as *Wright 3217* include a mixture of species from at least three localities. I determined which parts of the mixed specimens could be applied and accepted as type material. The Shenzhen code (Turland et al. 2018), in recommendation 47A.1, states that this action is indicated by adding “*emendavit*” (*emend.*) followed by the name of the author responsible for the change, and “*pro parte*” (*p. p.*); thus, in this case, the type material becomes “*Wright 3217 p. p., emend. Moya.*”

I located specimens of *Wright 3217* in 15 different herbaria, of which one specimen at GOET and one at GH were collected in Hanábana and, thus, are considered type material, which I designated “*Wright 3217 p. p., emend. Moya.*” The specimen at GOET, which Grisebach and Wendl. used to describe *Copernicia wrightii* Griseb. & H. Wendl., consists of a single specimen mounted on three herbarium sheets, each handwritten as follows: 1/3 GOET 9313 (reproductive part) (**Fig. 2**); 2/3 GOET 9316 (leaf sheath) (**Fig. 3**); and 3/3 GOET 9317 (leaf) (**Fig. 4**). According to The Shenzhen code (Turland et al. 2018), in its article 8.3, explained earlier, these three sheets at GOET collectively constitute the type material. Thus, I select these three sheets at GOET as the lectotype because Grisebach noted that they were used for the description of the species while another one at GH is an isolectotype. All other specimens excluded as type material are listed at the end of the article to allow the respective herbaria to know their status.



2. Sheet 1 of 3 of the lectotype of *Acoelorrhaphe* (*Copernicia*) *wrightii* at GOET (Wright 3217 p. p., emend. Moya).



3. Sheet 2 of 3 of the lectotype of *Acoelorrhaphe* (*Copernicia*) *wrightii* at GOET (Wright 3217 p. p., emend. Moya).



4. Sheet 3 of 3 of the lectotype of *Acoelorrhaphe* (*Copernicia*) *wrightii* at GOET (Wright 3217 p. p., emend. Moya).

Wright handwrote “Hanabana Mar 12” on *GH28340* (*Wright 3217*) but Howard (1988) noted that Wright visited Hanábana on 3/13 of 1862. Thus, the exact collection date was likely March 13, 1862 in the vicinity of Hanábana, to the north in the Zapata marsh, which is in the municipality of Calimete in Matanzas Province.

Acoelorrhaphe arborescens (Sarg.) Becc. *Webbia* 2: 113. 1907. (“*Acoelorhaphe*”).

Serenoa arborescens Sarg., *Bot. Gaz.* 27: 90 (1899).

Paurotis arborescens (Sarg.) O. F. Cook, *Amer. Nat.* 48: 314 (1914).

Type: UNITED STATE OF AMERICA. Florida State, Collier County, Margins of swamps adjacent to the Chokoloskee river, Nov. 1898, *Corbitt s. n.*, lectotype, designated here, A 00571979; isolectotypes A 00571980, A 00571981, A 00571982, FI (*n. v.*), NY 1662268.

Etymology: *arborescens* means becoming tree-like and refers to an arborescent palm known since 1887 near the Chokoloskee River in Florida from which the type was collected (Sargent 1899).

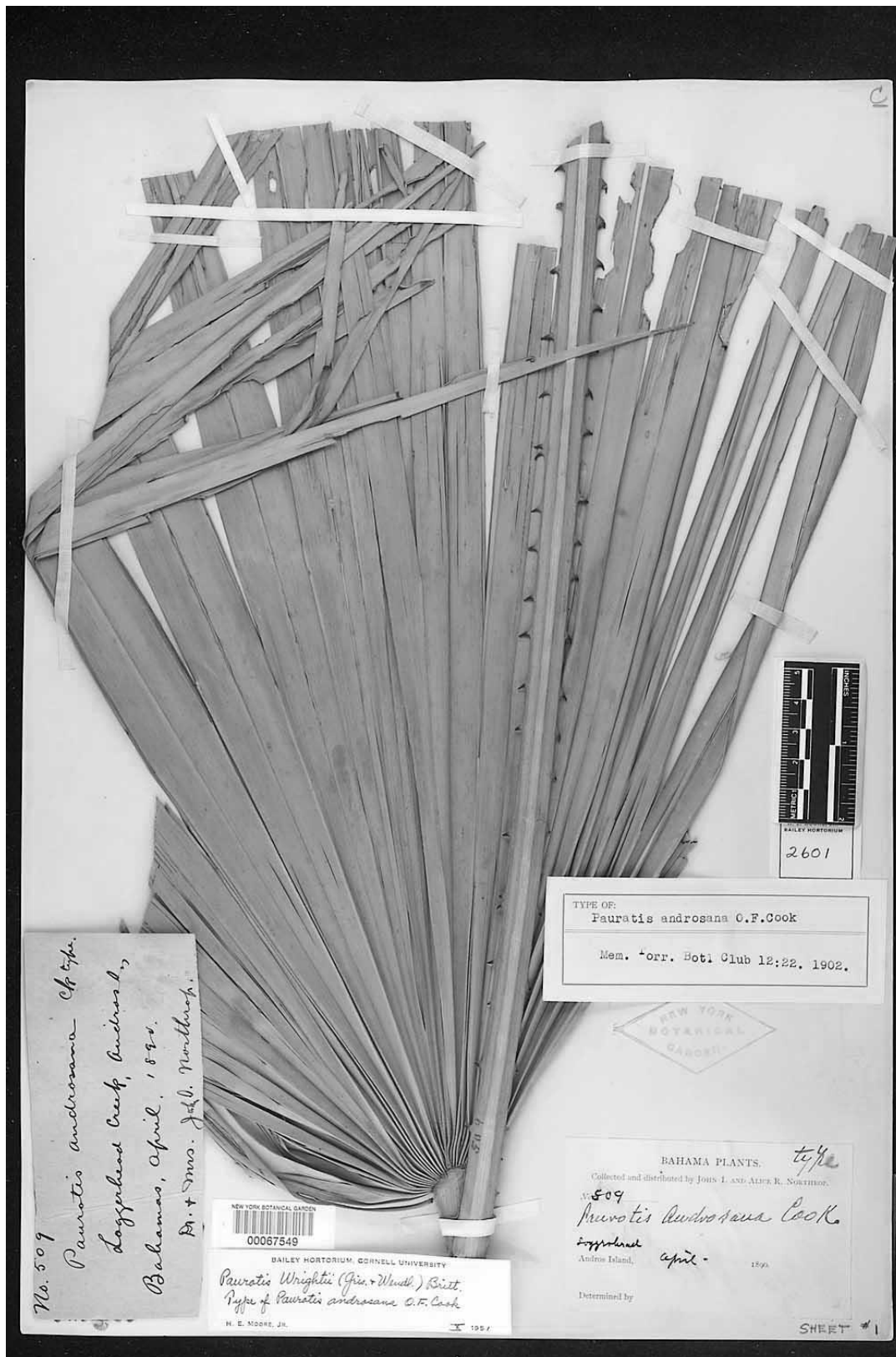
When naming and describing *Serenoa arborescens*, Sargent (1899) cited *Corbitt s. n.* as the type but did so referring to six specimens as an entire gathering, thus creating syntypes, and without identifying an herbarium where the specimens were located. I located four of *Corbitt s. n.* at A, one of which I designate here as the lectotype and the other three as isolectotypes because Becari left notes on them stating his intention to transfer this taxon to *Acoelorhaphe*. I located another *Corbitt s. n.* at NY, which is also an isolectotype.

Paurotis androsana O.F. Cook, *Mem. Torrey Bot. Club* 12: 22–23. 1902.

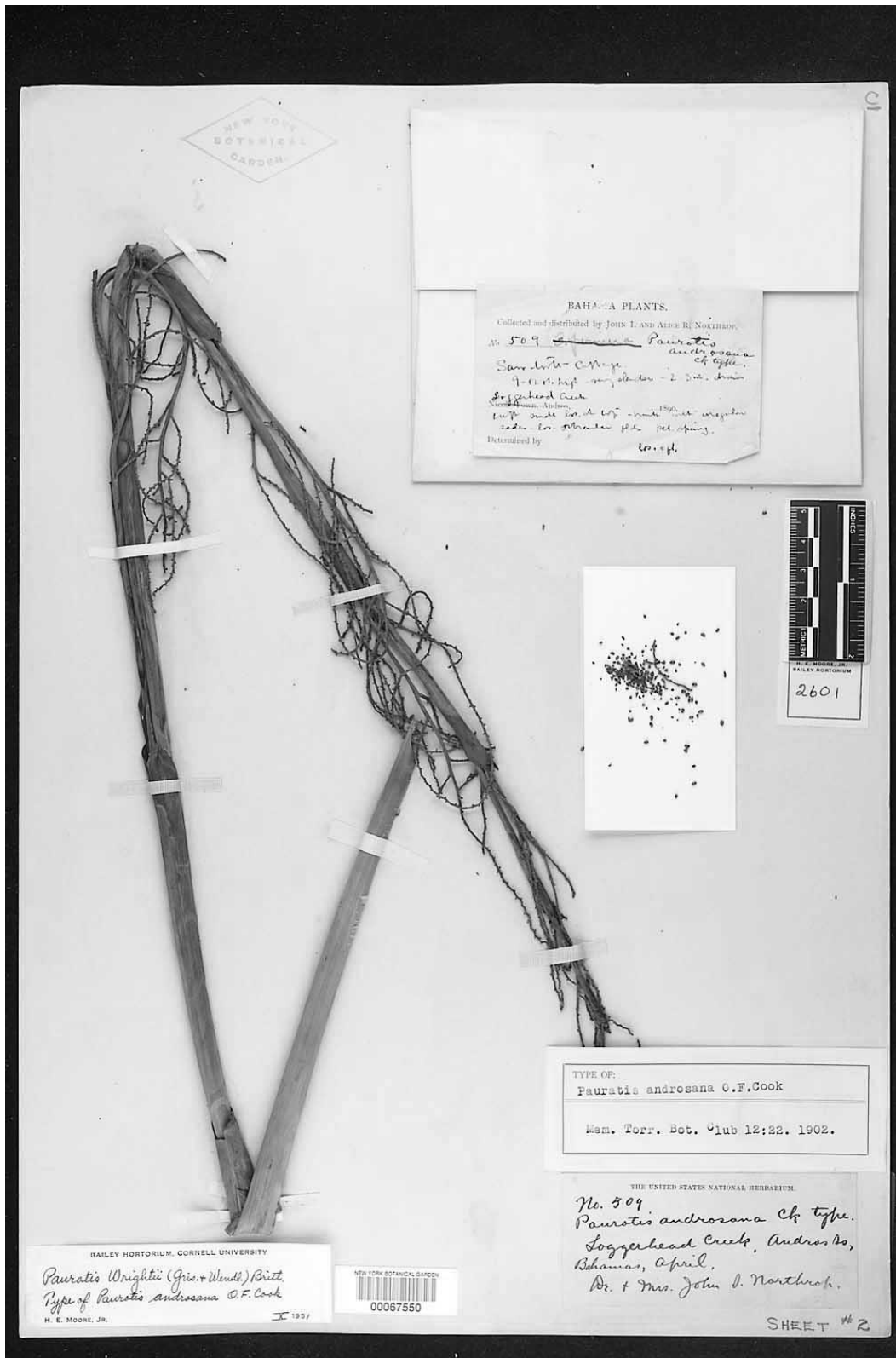
Type: THE BAHAMAS. North Andros District, Loggerhead Creek, Andros, 22 Apr. 1890, *Northrop 509*, lectotype, designated here, NY 00067549; isolectotypes NY 00067550, US 00087427, US 00087428, B (destroyed), G (*n. v.*), GH (*n. v.*), K (*n. v.*).

Etymology: *androsana* refers to the island Andros in the Bahamas where the American botanist Alice Belle (Rich) Northrop (March 6, 1863 – May 6, 1922) first collected this species.

When naming and describing *Paurotis androsana*, Cook (1902) cited *Northrop 509* as the type but did so referring to four specimens as an entire gathering, thus creating syntypes, and without identifying an herbarium where the specimens were located. I located *Northrop 509* at NY where it consisted of a single specimen mounted on two herbarium sheets labelled “sheet #1” (00067549 [vegetative part]) (**Fig. 5**) and “sheet #2” (NY 00067550 [reproductive part]) (**Fig. 6**),



5. Sheet 1 of 2 of the lectotype of *Paurotis androsana* (*Acoelorrhaphe wrightii*) at NY (Northrop 509).



6. Sheet 2 of 2 of the lectotype of *Paurotis androsana* (*Acoelorrhaphe wrightii*) at NY (Northrop 509).

which Cook (1902) used to describe the species. I designate here the two sheets as the lectotype according to The Shenzhen code (Turland et al. 2018), in its article 8.3. Also, Vincent and Rickey (2014) wrote that Northrop stated that the specimens of this new species were deposited in NY and upon which Northrop left notes defining them as types. The two remaining specimens at US are also isoelectotypes.

According to Tropicos (<http://www.tropicos.org/Name/50153834>) isotypes (isoelectotypes) are at B, G, GH, and K but I was unable to verify their existence.

Acoelorrhaphe wrightii var. *novo-geronensis* Becc., Webbia 2: 113. 1907. (“*Acoelorrhaphe*”).

Acoelorrhaphe wrightii var. *geronensis* Becc., Ann. Roy. Bot. Gard. (Calcutta) 13: 307. 1931. (“*Acoelorrhaphe*”).

Type: CUBA. Isla de la Juventud municipality, near Nueva Gerona, Isla de Pinos, fl., 17 Apr. 1904, *Curtiss 449*, lectotype, designated here, M 0157947; isoelectotypes CM 421986 (*n. v.*), FI 052575 (frag.) ex M, GH 00028148, HAC, LE 00000796, MO 104337, MO 104338, NY 1652557, US 00087439, US 00087440, VT 115377.

Etymology: *novo-geronensis* refers to Nueva Gerona, the capital of the municipality Isla de la Juventud, Cuba, where American botanist Allen Hiram Curtiss (1845 – 1907) first collected this species.

When naming and describing *Acoelorrhaphe wrightii* var. *geronensis*, Beccari (1907) cited *Curtiss 449* as the type but did so referring to 12 specimens as an entire gathering, thus creating syntypes, and without identifying an herbarium where the specimens were located. I located one specimen of *Curtiss 449* at M (**Fig. 7**), which I designate here as the lectotype because Beccari made a note on the specimen labeling it as the type. The remaining 11 duplicates are isoelectotypes.

Acanthosabal caespitosa Prosch., Gard. Chron., ser. 3, 77: 92. 1925.

Type: BRASIL (cultivated). Porto Alegre, Rio Grande do Sul, (no date), *Francisco d'Aquino s. n.*, neotype, designated here, P 01794269; isoneotypes P 01794266, P 01794269, P 01868023, P 01868024 P 01868025 P 01868026.

Etymology: *caespitosa* means caespitose, growing in tufts, or with clustering stems and refers to the habit of this species.



7. The lectotype of *Acoelorrhaphe wrightii* var. *novo-geronensis* (*Acoelorrhaphe wrightii*) at M (Curtiss 449).

Brazilian archbishop, poet, and writer Francisco d’Aquino Correia (April 2, 1885 – March 22, 1956) collected the type specimen from a cultivated plant in Brazil. Aquino sent the specimen to French doctor and naturalist Dr. Axel Robertson Proschowsky (1857–1944), who was also director of the Acclimatization Garden Les Tropiques at Nice, France.

Proschowsky (1925) provided a diagnosis of the genus *Acanthosabal* and of the species *A. caespitosa*, contrasting them with *Sabal* species and with *Chamaerops humilis*. Proschowsky based the new genus and species on three drawings his son drew, one each of the sheath, petiole, and part of the inflorescence, which clearly show the characters of *Acoelorrhaphe wrightii*; however, he did not cite any specimens, including drawings, in the protologue. Based on article 9.8 of the Shenzhen code (Turland et al. 2018), I designate seven specimens at P as type material, one neotype (**Fig. 8**) and six isoneotypes. Proschowsky’s son likely used these specimens when making the three drawings for his father’s diagnosis.

Acoelorrhaphe pinetorum Bartlett, Publ. Carnegie Inst. Wash. 461: 33. 1935. (*‘Acoelorrhaphe’*).

Type. BELIZE. Belize District, pine ridge north of aviation field, 28 Jan. 1931, *Bartlett 11201*, holotype, MICH 1002561A (**Fig. 9**), MICH 1002561B (**Fig. 10**); isotypes BH 000211918, BH 000211919, BH 000211920, NY 00067279, NY 00067280, S 05-5549, S R-47, US 00015879, US 00015880, US 00087437, US 00087438.

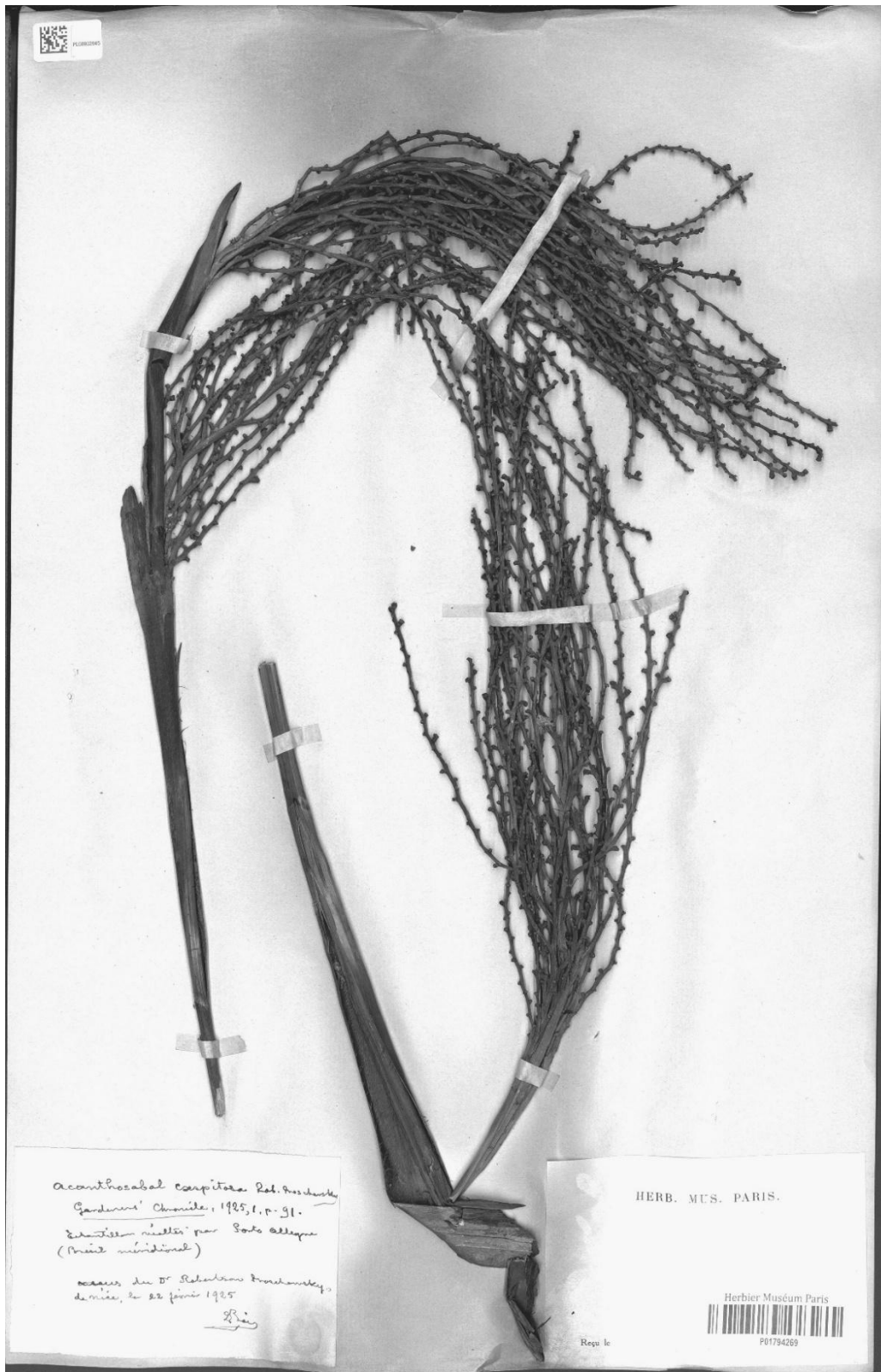
Etymology: *pinetorum* means of the pines and refers to the habitat where American botanist and biochemist Harley Harris Bartlett (March 9, 1886 – February 21, 1960) first collected this species.

Type material of *Acoelorrhaphe pinetorum* is rather easy to identify. When Bartlett (1935) named and described this species (1935), he indicated in the protologue that *Bartlett 11201* was the type and that it was at MICH. It consists of a single specimen mounted on two herbarium sheets labelled “sheet 1” and “sheet 2.” According to The Shenzhen code (Turland et al. 2018), in its article 8.3, both are the holotype. Isotypes are at several other herbaria.

Paurotis psilocalyx (Burret) Lundell, *Wrightia* 2: 116. 1961.

Brahea psilocalyx Burret, *Notizbl. Bot. Gart. Berlin-Dahlem* 11: 1037. 1934.

Type: BELIZE. Belize District, pine ridge, near Manatee Lagoon, fl., 19 Dec. 1905, *Peck 241*, lectotype, designated here, GH 00028188; isoelectotypes K 000462848, K 000462849. American botanist Morton Eaton Peck (1871 – 1959) collected the type.



8. Neotype of *Acanthosabal caespitosa* (*Acoelorrhaphe wrightii*) at P (Francisco d'Aquino s. n.).



9. Sheet 1 of 2 of the lectotype of *Acoelorrhaphe pinetorum* (*Acoelorrhaphe wrightii*) at MICH (Bartlett 11201).



10. Sheet 2 of 2 of the lectotype of *Acoelorrhaphe pinetorum* (*Acoelorrhaphe wrightii*) at MICH (Bartlett 11201).

Etymology: *psilocalyx* is from the Greek *psilo*, meaning glabrous, and *calyx*, meaning calyx, and refers to the glabrous calyx of this species.

When naming and describing *Brahea psilocalyx*, Burret (1934) cited *Peck 241* as the type but did so referring to three specimens as an entire gathering, thus creating syntypes, and without identifying an herbarium where the specimens were located. Glassman (1972) doubted that *Peck 241* was extant at B. I designate here the specimen deposited at GH as the lectotype because it is the most complete (**Fig. 11**); the remaining two duplicates are isoelectotypes. Dahlgren (1936) treated *B. psilocalyx* as a synonym of *Acoelorrhaphe wrightii* while Lundell (1961) transferred it to *Paurotis psilocalyx*.

Acoelorrhaphe wrightii f. *inermis* Hadač, Folia Geobot. 5: 432. ('*Acoelorrhaphe*').

Type: CUBA. Pinar del Río Province, Sandino Municipality, Laguna Santa Bárbara, Guane, 14 Mar. 1968, *Hadač 1947*, holotype PR 925359, PR 925360; isotype HAC EEAB26892.

The epithet *inermis* is from the Latin and means without thorns. Czech botanist Emil Hadač (May 10, 1914 – April 23, 2003), first collected this apparently thornless form in 1968.

When naming and describing *Acoelorrhaphe wrightii* f. *inermis*, Hadač (1970) compared it to *A. wrightii* and cited *Hadač 1947* at PR as the type, which consists of a single specimen mounted on two herbarium sheets that share a single original label. Although the two sheets have separate herbarium accession numbers, I identified both as the holotype according to The Shenzhen code (Turland et al. 2018), in its article 8.3. An additional isotype is at HAC.

Excluded Names

Acoelorrhaphe cookii Bartlett, Publ. Carnegie Inst. Wash. 461: 32. 1935. [= *Brahea salvadorensis* H. Wendl. ex Becc. Webbia 2: 105. 1907.]

Type. GUATEMALA. Alta Verapaz Department, between Santa Rosa and Salama, fl. ft., 29 May 1904, *O. F. Cook & C. B. Doyle 275*, lectotype, designated here, US 00087429; isoelectotypes BH 000211921, BH 000211922, BH 000211923, MICH 1050265A, MICH 1050265B, MICH 1050265C, MICH 1050265D, MICH 1050265E, US 00087430, US 00087431, US 00087432, US 00087433, US 00087434, US 00087435, US 00087436.

Etymology: the epithet honors American botanist, entomologist, and agronomist Orator F. Cook (1867–1949) co-collector of the type.



11. Lectotype of *Brahea psilocalyx* (*Acoelorrhaphe wrightii*) at GH (Peck 241).

When naming and describing *Acoelorrhaphe cookii*, Bartlett (1935) cited *Cook & Doyle 275* as the type but did so referring to 16 specimens as an entire gathering, thus creating syntypes. I located four specimens of *Cook & Doyle 275* at US, one of which I designate here as the lectotype (**Fig. 12**) and the others as isolectotype because they are not clearly labelled as being part of a single specimen and, therefore, they are duplicates according to the Shenzhen code (Turland et al. 2018) article 8.3. In addition to the three isolectotypes at US, an additional 12 others are at several other herbaria.

Acoelorrhaphe salvadorensis (H. Wendl. ex Becc.) Bartlett, Publ. Carnegie Inst. Wash. 461: 32. 1935. ('*Acoelorrhaphe*'). [= ***Brahea salvadorensis*** H. Wendl. ex Becc. Webbia 2: 105. 1907.]

Erythea salvadorensis (H. Wendl. ex Becc.) H. E. Moore, Gentes Herbarum 8: 217. 1951.

Type. EL SALVADOR. Municipio Conchagua, Contshagna (Conchagua), Golfo de Fonseca, Dec. 1900, *Dammer s. n.*, holotype B (destroyed); lectotype, designated here, FI 054549; isolectotype B 180001193.

Etymology: the epithet refers to El Salvador, the country where the type was collected.

When naming and describing *Brahea salvadorensis*, Beccari (1907) cited *Wendland s. n.* as the type, noting that the specimen was at B and Wendland had annotated it with the name "*Brahea salvadorensis*." However, Cuccuini and Nepi (2006) provided a drawing of *B. salvadorensis* present in FI and annotated as "*Wendland, ex Wendland*" (**Fig. 13**) which made me carefully review the FI material. In the drawing of the flower of *B. salvadorensis* at FI, Beccari ascribed the authorship to Wendland and wrote "San Salvador: Contschagna, frammenti di spadice dato a Dammer di Wendland 1900." This phrase means that the inflorescence fragment that Beccari used for the description was actually collected by German botanist Udo Dammer near the volcano Conchagua in 1900 in El Salvador when he was collecting *Chamaedorea* species in Central America (Dammer 1904). This notion is confirmed on the specimen at B, which contains only fruits and is annotated "Leg. H. Wendland s. n. 12.1900 com. Dammer." Thus, here I designate the specimen at FI that Beccari used to describe the flower as the lectotype and the specimen present at B as an isolectotype.

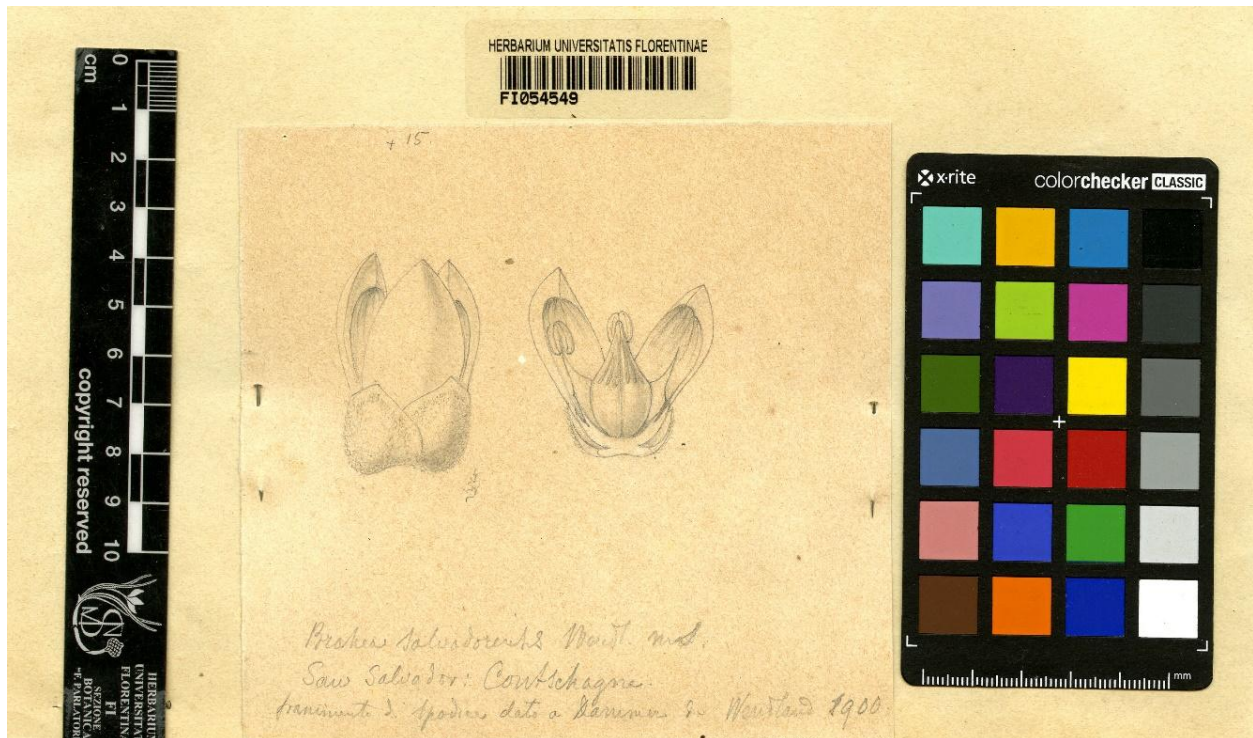
Glassman (1972) considered *Acoelorrhaphe salvadorensis* to be synonymous with *Erythea salvadorensis*.

Acoelorrhaphe pimo (Becc.) Bartlett, Publ. Carnegie Inst. Wash. 461: 32. 1935. ('*Acoelorrhaphe*'). [= ***Brahea pimo*** Becc., Webbia 2: 103. 1907.]

Erythea pimo (Becc.) H. E. Moore, Gentes Herbarum 8: 216. 1951.



12. Lectotype of *Acoelorrhaphe cookii* (*Brahea salvadorensis*) at US (Cook & Doyle 275).



13. Beccari's drawing of flower of *Brahea salvadorensis* at FI with handwritten note stating that Dammer made the collection upon which the drawing is based in El Salvador.

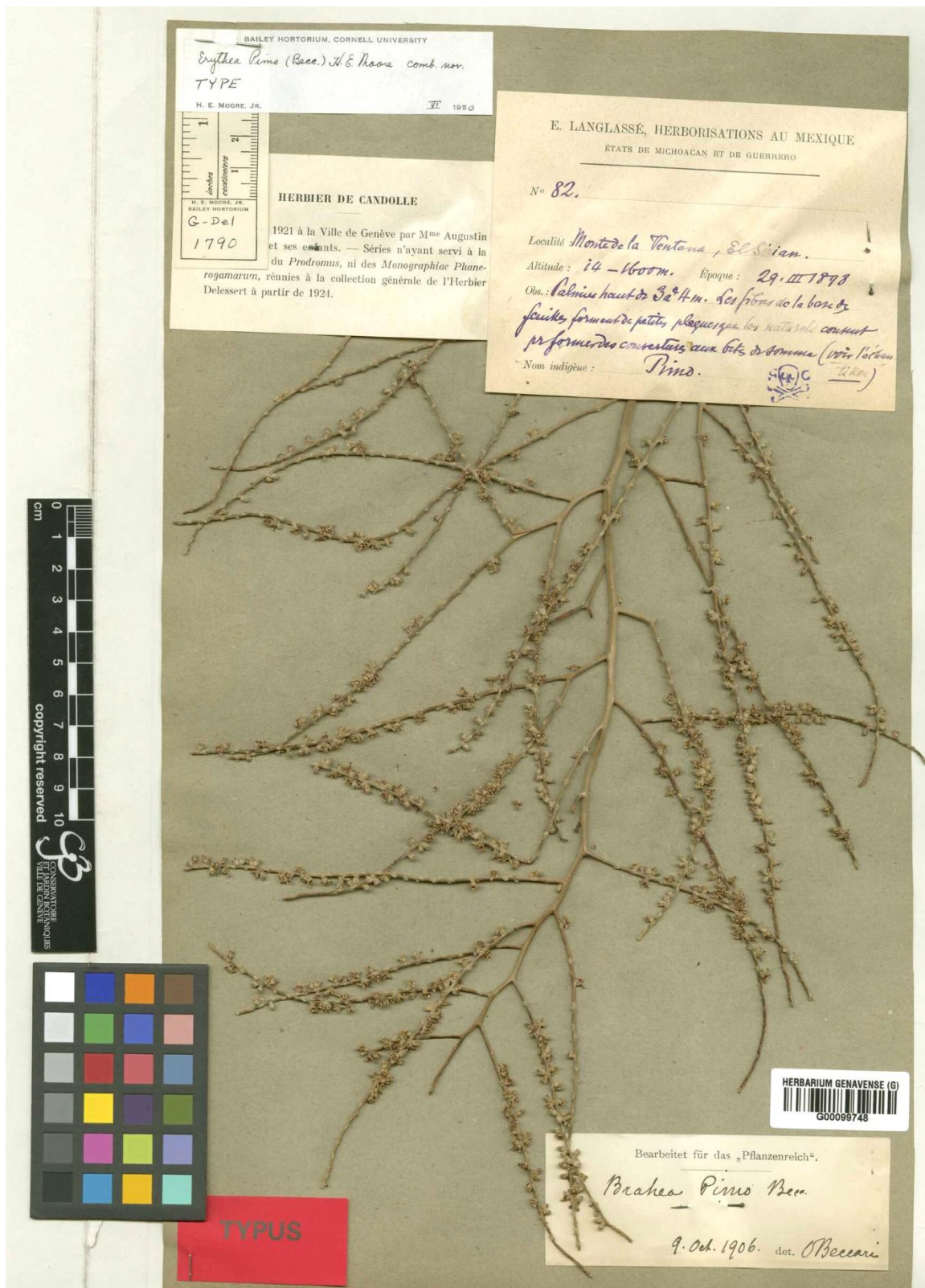
Type. MÉXICO. Guerrero or Michoacán State, Monte de la Ventana, el Sirian (Cirián), 1400–1600 m elev., fl., 29 Mar. 1898, *Langlassé* 82, lectotype, designated here, G 00099748; isolecotypes FI 18383 ex G-DC, G 00024754, G 00099747, GH 00028357, GH 00028358, MPU 018923, MPU 018924, P 00725568, P00 00725569, P 00725570, P 00725571.

When naming and describing *Brahea pimo*, Beccari (1907) cited *Langlassé* 82 as the type and noted it was at G-DC but in doing so he referred to three specimens as an entire gathering, thus creating syntypes. Here I designate G 99748 as the lectotype because Beccari annotated the label in 1906, which shows he used it in writing up the description (**Fig. 14**). The remaining eight specimens are isolecotypes.

Acoelorrhaphe schippii (Burret) Dahlgren, Field Mus. Nat. Hist. Bot. Ser. 14: 9. 1936. ('*Acoelorrhaphe*'). [= *Brahea dulcis* (Kunth) Mart., Hist. Nat. Palm. 3: 244. 1838.]

Paurotis schippii Burret, Notizbl. Bot. Gart. Berlin-Dahlem 12: 303. 1935.

Brahea schippii Burret, Notizbl. Bot. Gart. Berlin-Dahlem 12: 304. 1935.



14. Lectotype of *Acoelorrhaphe pimo* (*Brahea pimo*) at G (Langlassé 82).

Acoelorrhaphe wrightii Urban, Symb. Ant. 8: 75. 1920. ('*Acoelorrhaphe*'). [Not (Griseb. & H. Wendl.) H. Wendl. ex Becc.]. [= *Copernicia berteriana* Becc. Webbia 2: 150. 1907.]

When naming and describing *Acoelorrhaphe wrightii*, Urban (1920) cited as the type *Buch 2*, which was collected in Haiti in 1898. Glassman (1972) recognized that this species was inappropriate in *Acoelorrhaphe* and listed it as a synonym of *Copernicia berteriana* Becc.

Excluded Specimens

The following specimens of *Wright 3217 (pro parte)* are not isolectotypes of *Acoelorrhaphe wrightii* because they were not collected at the type locality in Cuba, the place of collection is unknown, or they are mixed.

Specimens not from the type locality:

GH 28339—Wright annotated this specimen with “Dayanigua,” which is in the Municipality Los Palacios in Pinar del Río Province;

F 78917.1 and F 78917.2—Wright annotated these specimens with “El Salado,” which is in the Municipality Mantua in Pinar del Río Province.

Specimens lacking locality information:

B (destroyed); BRU 54981; BRU 54982; BRU 54983; FI 52576 (frag.) ex G-DC; FI 52577 (frag.) ex G-DC; FI 52578 (frag.) ex G-Boiss.; G 5835; G 5835a; G 5835b; G 420227; HAC ex HABA.1; HAC ex HABA.2; LE 803; MO 104336; NY 1662257; NY 1662258; P 725613; P 725630; P 725631; S 06-2457; S 06-2458; UC 937005; and YU 34580.

Mixed specimens:

LE 804, MA 607607, MO 104335, P 725614, and YU 34581 contain elements of *Copernicia glabrescens* H. Wendl. ex Becc. which is not reported from the type locality.

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Literature Cited

- Bailey, L. H. 1925. *Acanthosabal*. Gard. Chron. n. s. 3(77): 396. figs. 180, 181.
- Bailey, L. H. 1940. Several palm problems. 33. *Acoelorrhaphe* vs. *Paurotis*. Silver Saw Palms. Gen-tes Herbarum 4: 361–365.
- Bartlett, H. H. 1935. Botany of the Maya Area: miscellaneous papers. 2. Various *Coryphea*e of Central America and Mexico. Publ. Carnegie Inst. Wash. 461: 29–41, pl. 1–12.
- Beccari, O. 1907. Le Palme Americane della Tribu delle *Coryphea*e. Webbia. 2: 1–343.
- Beccari, O. 1913. The palms indigenous to Cuba III. Pomona Coll. J. Econ. Bot. 3 (1): 391–417.
- Beccari, O. 1931. Asiatic palms—*Coryphea*e. (ed. U. Martelli). Ann. Roy. Bot. Gard. (Calcutta) 13: 1–344.
- Britton, N. L. and C. F. Millspaugh. 1920. The Bahama Flora. The authors, New York.
- Britton, N. L. and J. A. Shafer. 1908. North American Trees. Henry Holt and Co., New York.
- Burret, M. 1929. *Palmae Cubenses et Domingenses a Cl. E. L. Ekman 1914–1923 lectae*. K. Sven. Vetensk.akad. Handl. Stockholm III. 6(7): 3–28.
- Burret, M. 1934. *Palmae Neogae* V. Notizbl. Bot. Gart. Berlin-Dahlem 11: 1037–1050.
- Burret, M. 1935. *Palmae Neogae*. VIII. Notizbl. Bot. Gart. Berlin-Dahlem 12: 302–305.
- Cook, O.F. 1902. Palms from The Bahamas, pp. 19–27 in: A. R. Northrop, Flora of New Providence and Andros (Bahama Islands). Mem. Torrey Bot. Club 12: 1–98.
- Cook, O.F. 1914. Terms relating to generic types. Amer. Nat. 48: 308–314.
- Correll, D. S. and H. B. Correl. 1996. Flora of the Bahama Archipelago. A. R. G. Ganter Verlag KG., Vaduz.

- Craft, P. 2017. The Palms of Cuba. Palm Nut Pages, Inc. Sebastian, Florida.
- Cuccuini, P. and C. Nepi. 2006. The Palms of Odoardo Beccari. *Quad. Bot. Amb. Appl.* 17: 1–251.
- Dahlgren, B. 1936. Index of American Palms. *Field. Mus. Nat. Hist., Bot. Ser.* 14: 1–456.
- Dransfield, J., N. W. Uhl, C. B. Asmussen, W. J. Baker, M. M. Harley, and C. E. Lewis. 2008. *Genera Palmarum: The Evolution and Classification of Palms*. Royal Botanic Gardens, Kew.
- Drude, O. 1889. *Palmae*, pp. 1–93 *in*: Engler, A. and K. Prantl (eds.), *Die natürlichen Pflanzenfamilien*, vol. 2(3). Wilhelm Englemann, Leipzig.
- Galeano, G. and R. Bernal. 2010. *Palmas de Colombia. Guía de Campo*. Universidad Nacional de Colombia-Instituto de Ciencias Naturales, Bogotá.
- Glassman, F. 1972. A revision of B. E. Dahlgren's Index of American palms. *Phanerogamarum Monographiae* 6. Verlag von J. Cramer, Lehre.
- 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. Álvarez y Co., Habana.
- Goodwin, Z. A., G. N. Lopez, N. Stuart, S. G. M Bridgewater, E. M. Haston, I. D. Cameron, D. Michelakis, J. A. Ratter, P. A. Furley, E. Kay, C. Whitefoord, J. Solomon, A. J. Lloyd, and D. J. Harris. 2013. A checklist of the vascular plants of the lowland savannas of Belize, Central America. *Phytotaxa* 101(1): 1–119.
- Grayum, M. H. 2003. *Arecaceae*, pp. 201–293 *in*: B. E. Hammel, M. H. Grayum, C. Herrera, and N. Zamora, *Manual de Plantas de Costa Rica, II. Gimnospermas y Monocotiledóneas (Agavaceae-Musaceae)*. Monographs in Systematic Botany from the Missouri botanical Garden (St. Louis). Vol. 92.
- Grisebach, A. 1866. *Catalogus Plantarum Cubensium*. Wilhelm Englemann, Leipzig.
- Hadač, E. 1970. *Novitates florae Cubanae*. *Folia Geobot.* 5(3/4): 429–433.
- Henderson, A., G. Galeano, and R. Bernal. 1995. *Field Guide to the Palms of the Americas*. Princeton University Press, Princeton, New Jersey.
- Hooker, J. D. 1883. *Palmae*, pp. 870–948 *in*: G. Bentham and J. D. Hooker JD. (eds.), *Genera Plantarum*. Vol. 3, Pt. 2. L. Reeve & Co. and Williams & Norgate, London.

- Howard, R. A. 1988. Charles Wright in Cuba, 1856–1867. Chadwyck-Healy, Cambridge.
- Kerchove de Denterghem, O. 1878. Les Palmiers. J. Rothschilds, Paris.
- León, H. 1946. Flora de Cuba I. Gimnospermas, Monocotiledoneas. Contrib. Ocas. Museo Hist. Nat. Col. La Salle 8: 236–269.
- Lundell, C. L. 1961. Plantae Mayanae II. Collections from Peten and Belice. Wrightia 2(3): 111–126.
- Moore, H. E. Jr. 1951. Critical studies. 5. Some American Corypheae. Gentes Herbarum 8: 209–222.
- Moore, H. E. Jr. 1963. The types and lectotypes of some palm genera. Gentes Herbarum 9: 245–274.
- Muñiz, O. and A. Borhidi. 1982. Catálogo de las palmas de Cuba. Acta Bot. Hung. 28: 309–345.
- Moya, C. and A. Leiva. 2000. Checklist of the Palm of Cuba. With notes on their Ecology, Distribution and Conservation. Palms 44: 69–84.
- Nelson, C. H. 2008. Catálogo de las plantas vasculares de Honduras. Espermatofitas. Editorial Guaymuras, Tegucigalpa, Honduras.
- Proschowsky, A. R. 1925. Acanthosabal, Nov. Gen. Gard. Chron., n. s. 3(77): 91–92.
- Quero, H. and J. Salvador. 2004. Arecaceae de la Península de Yucatán. Etnoflora Yucatense, Fas. 23. Universidad Autónoma de Yucatán.
- Quero, H. 1994. Palmae, in Flora de Veracruz 81: 1–118.
- Read, R. W., A. Henderson, C. U. Ulloa, and E. J. Evans. 2001. Arecaceae, pp. 192–228 in: W. D. Stevens, C. U. Ulloa, A. Pool, and O. M. Montiel (eds.), Flora de Nicaragua. Monographs in Systematic Botany from the Missouri Botanical Garden (St. Louis). Vol. 85.
- Sargent, C. S. 1889. New or little known North American trees. Bot. Gaz. (Chicago) 27: 81–94.
- Sauvalle, F. A. 1871. Revisio catalogi Grisebachiana vel index plantarum Cubensium. Ann. Acad. Cien. Méd. Fís. Nat. (Havana) 7: 562–563.
- Sauvalle, F. A. 1873. Flora Cubana. Havana.

- Siebert, U. and U. Voss. 1896. Vilmorin's Blumengärtn. I. Berlin.
- Small, J. K. 1922. The saw-cabbage palm. The history and distribution of *Paurotis wrightii*. J. New York Bot. Gard. 23: 61–70.
- Standley, P. C. & J. A. Steyermark. 1958. Palmae, in Flora of Guatemala. I. Fieldiana Bot. 24: 196–299.
- Standley, P. C. & S. J. Record. 1936. The forests and flora of British Honduras I. Field Mus. Nat. Hist. Bot. Ser. 12: 1–456.
- 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: 1 December 2016.
- 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 Nineteenth International Botanical Congress Shenzhen, China, July 2017. Reg. Veg. 159. Glashütten: Koeltz Botanical Books. DOI: <https://doi.org/10.12705/Code.2018>
- Urban, I. 1920. Symb. Antill. Vol. 8. Borntrager Bros., Leipzig; Paul Klincksieck, Paris; Williams & Norgate, London.
- Vincent M. A. and R. J. Hickey. 2014. Systematics, taxonomy, and the new flora of the Bahamian Archipelago. Bot. Rev. 80: 245–261.
- Wendland H. 1879. Die habituellen Merkmale der Palmen mit fächerförmigem Blatt, des sogenannten Sabalartigen Palmen. Bot. Zeitung (Berlin) 37: 148.
- Zona, S. 1997. The genera of *Palmae* (*Arecaceae*) in the southeastern United States. Harvard Pap. Bot. 2: 71–107.
- Zona, S. 1999. Arecaceae, pp. 95–123 in: Flora of North America Editorial Committee, (eds.). Flora of North America North of Mexico. Vol. 22. <http://beta.floranorthamerica.org/Arecaceae>

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