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THE TYPE SPECIMENS OF BROMELIACEAE IN THE HERBARIUM ACADEMIA DE CIENCIAS "ONANEY MUÑIZ" (HAC), CUBA

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ABSTRACT. An annotated account of the type specimens of Bromeliaceae at the Herbario de la Academia de Ciencias de Cuba "Onaney Muñiz" (HAC) is presented including the description of a new species: *Tillandsia rangelensis* L.Hechavarria. The erroneous citation of type locality and date for *T. capitata* Griseb. is corrected. Lectotypification, current nomenclature and the exact locality for the type specimen of *T. fasciculata* var. *uncispica* Mez is given.

Key words: Cuba, Bromeliaceae, nomenclatural types, HAC, nomenclature, taxonomy

INTRODUCTION

The Herbarium Academia de Ciencias de Cuba "Onaney Muñiz" (HAC) which belongs to the Institute of Ecology and Systematics, is considered the biggest collection in Cuba (more than 450,000 specimens) and one of the most important herbaria in the Greater Antilles. More than 3000 specimens are nomenclatural types of taxa from Cuba and other Caribbean regions. HAC stores the oldest Cuban collections. Founded in 1961, it was nurtured by the botanical collections of the Agronomic Central Station (SV), of the Herbarium Colegio de La Salle (LS), the former herbaria of the Institute of Segunda Enseñanza de La Havana (IH) and Matanzas (IM), of the Eastern University Herbarium (UO), and of other donations. The most important collections are those of Francisco Sauvalle and Jimeno, based on the recollections made by Charles Wright (1811–1885), in their three trips to Cuba between 1856–1867 (Underwood 1905; Haffrichter 1977; Howard 1988).

The family Bromeliaceae is represented in HAC with more than 300 Cuban and Caribbean plants, autochthonous and cultivated, belonging to the genera *Aechmea, Ananas, Bilbergia, Bromelia, Catopsis, Guzmania, Hechtia, Hohenbergia, Mezobromelia, Pitcairnia, Quesnelia, Racinaea, Tillandsia, Vriesea* and *Werauhia.*

MATERIALS AND METHODS

The revision and update of the Bromeliaceae type specimens in the Herbarium HAC was carried out based on the revision of the protologues, which are according to Stafleu and Cowan (1976–1988), Stafleu and Mennega (1992–2000), Lawrence et al. (1968), and Bridson and Smith (1991). The author name abbreviations follow Brummitt and Powell (1992). The acronyms of the herbaria follow Holmgren et al. (1990). The new species description follows the requirements of the International Code of Botanical Nomenclature (Vienna Code; McNeill et al. 2006).

The data are organized alphabetically in subfamilies; genera, and species, reference of the protologue, original type information, and other determinations are in chronological order. When necessary a correction or explanation of the original notes, were included in brackets. The currently accepted name of the species is given. Additional information considered important by the author is annotated.

RESULTS AND DISCUSSION

Subfamily Bromelioideae

Hohenbergia antillana Mez, in C. DC. Monogr. phan. 9: 137. 1896. TYPE: Puerto Rico: prope Cayey in arboribus, 27 Oct. 1885, *P. Sintenis "2000" 3000.* (Lectotype: B photo! (Röpert 2000), Isolectotype: HAC!). Determined by Carl Mez, 1894.

Note. Plant fructified. The lectotypification having been made by Cedeño-Maldonado (2005) is illegitimate as the earlier choice by Smith and Downs (1979) has to be followed (ICBN Art. 9.17) despite it had been termed holotype (Art. 9.8).

Subfamily Pitcairnioideae

Pitcairnia latifolia Sol. ex Aiton **var. cubensis** Mez, in C. DC. Monogr. phan. 9: 396. 1896. TYPE: Cuba: Farallones La Catalina, eastern Cuba, 1856–1857, *C. Wright 689.* (Lectotype: BM n. v.; Isotypes: GOET n. v., HAC! 4 sheets, K n. v., NY? n. v.). Determined

by F. Sauvalle 2523 as *Pitcairnia bromelifolia* L'Her var. *platyphylla* Schldl. [Schltdl.].

Pitcairnia cubensis (Mez) L.B.Sm., Contr. Gray Herb. 117: 24. 1937.

Note. Specimens are in flower and in fruit. According to Howard (1988), the type locality is referred to Finca Nouvelle Sophie and La Catalina, both in eastern Cuba. No written note is given.

Subfamily Tillandsioideae

Guzmania wrightii L.B.Sm., Contr. Gray Herb. 117: 11. 1937. Type: Cuba: Monte Verde, Oriente, May 1865, *C. Wright 1523* p. p. (Holotype: GH!; Isotype: HAC!). Determined by F. Sauvalle[1] 2544 as *Tillandsia platynema* [Gris.] Griseb.

Vriesea platynema var. *wrightii* (L.B. Sm.) L.B. Sm. Phytologia 7: 174. 1960.

Note. Handwritten note "Fl. light yellow." Plant fructified.

Tillandsia capitata Griseb., Cat. pl. Cub. 255. 1866. TYPE: Cuba: Mogote de Mono, near Valestina, in crevices of limestone cliffs, 8 Oct. 1865, *C. Wright 3274* (Holotype: GOET!; Isotypes: GH!, HAC!, NY!, US (photo)!). Determined by F. Sauvalle 2546 as *Tillandsia capitata* [Gris.] Griseb

Note. Plant fructified.

Comments. The type locality given by Grisebach (1866) in the protologue, eastern Cuba, is wrong. The date given on the label from GOET and GH are also wrong. The number 3274, was assigned by Asa Gray and corresponds with Wright's third travel to the island between 1865 and 1867. In this trip he concentrated on the western part of Cuba and did not begin his journey toward Eastern Cuba before February 1867 (Haffrichter 1977). I infer that specimen 3274 was gathered in the first stage of the trip, but it had not been processed in time by Grisebach to include it in his work, "Catalogus plantarum Cubensium" (1866) if we imagine the many vicissitudes that passed part of these materials on its trips crossing the Atlantic (Underwood 1905). This inference is supported by the HAC specimen label information. The property Valestina, referenced by A. Gray in comments like "Balestena, a cattle farm at the southern bases of the mountains opposite Bahía Honda, Pinar del Río," was visited by Wright from September 21, 1865, until February 17, 1866 (Underwood 1905). The town San André [San Andrés] of the specimen of GH could correspond to several towns of Cuba, four of them in Eastern Cuba, two in the center, four in the western part of the island, three of them in Matanzas, and one in Pinar del Río (Ibarra Martín 1978). The last one is the correct one and corresponds with Sierra de San Andrés, a chain of karstic heights near Sierra de Viñales where *Tillandsia capitata* is growing stuck to the naked calcareous rocks. Howard (1988) continues the type locality error because he followed the information printed on the label of the isotype deposited at GH.

The specimens deposited in NY and US correspond to the species, but they do not present any information on their labels.

Tillandsia capituligera Griseb., Cat. pl. Cub. 254. 1866. TYPE: Cuba: Loma del Gato, 5 Dec. 1860, *C. Wright 3275.* (Holotype: GOET n. v.; Isotypes: GH n. v., HAC!). Determined by F. Sauvalle 2539 as *Tillandsia capituligera* [Gris.] Griseb

Mezobromelia capituligera (Griseb.) J.R.Grant, Phytologia 74: 428. 1993.

Note. Plant fructified.

Tillandsia cubensis Gand., Bull. Soc. Bot. France 66: 290. "1920" (1919). TYPE: Cuba: Habana, Santiago de Las Vegas, 2 Jul. 1904, *Baker & Wilson 591.* (Holotype: LY n. v.; Isotype: HAC!, POM n. v.).

Tillandsia balbisiana Schult. & Schult. f., in Roem. & Schult., Syst. veg. 7(2): 1212. 1830.

Note. Plant fructified.

Tillandsia fasciculata var. **uncispica** Mez, in C. DC., Monogr. phan. 9: 684. 1896. TYPE: Cuba: Prov. Pinar del Río, Rangel, 27 Jan. 1859, *C.Wright, 1516a.* Lectotype (hic designatus): GOET!; Isolectotypes: GOET!, S! (2 sheets), GH! (2 sheets), HAC!, NY! (3 sheets), US (photo)!, WU!. Determined by F. Sauvalle 2525 as *Tillandsia fasciculata* Sw.

Tillandsia fasciculata var. *laxispica* Mez, in C. DC., Monogr. phan. 9: 684. 1896. syn. nov.

Note. A hand written note describes the flower of the plant as: 'Cor. [Corolla] violet exerted half its length. Stamen exerted ⅙ their length and the style a little more. Anterior sepal free nearly in [to] the base, inner two united ⅔ of their length. Petals and stam. [stamen] free, vi-

[1] This is the exsiccate number in the Sauvalle herbarium and which corresponds to the number cited in Sauvalle Flora Cubana (1873). Sauvalle, was one of the owners of a Charles Wright collection in Cuba. He renumbered all the Wright specimens which had already been numbered by Asa Gray.

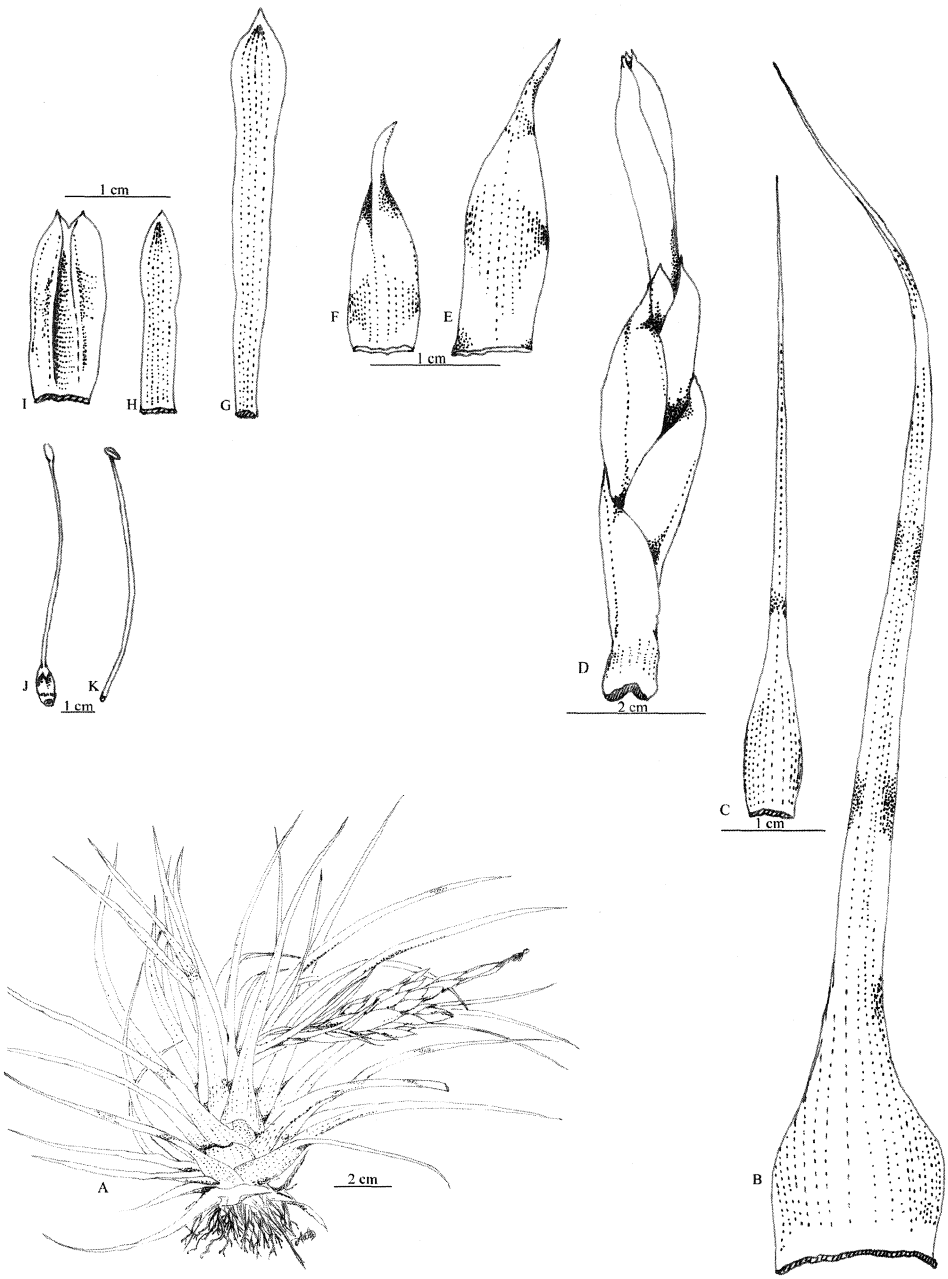

FIGURE 1. *Tillandsia rangelensis.* **A.** Plant. **B.** Leaf. **C.** Upper scape bract. **D.** Spike. **E.** Primary bract. **F.** Floral bract. **G.** Petal. **H.** Anterior sepal. **I.** Posterior sepals. **J.** Stigma. **K.** Stamen.

olet, the latter thickened above the middle. Stigmas diffused, complicate [conduplicate], twisted in the three (over twisted together) [three twisted together]. Stone [rough] on the edges.' Plant fructified. The type locality is not Cuba orientali but Cuba occidentali, according to label information of the specimen at HAC.

Tillandsia ingens Mez, Symb. antill. 2: 256. 1900. TYPE: *W. Harris s.n.* in herb. Bot.

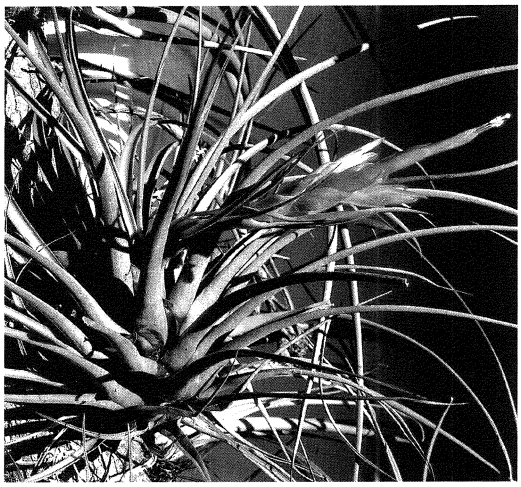

FIGURE 2. *Tillandsia rangelensis* plant. Photo by Lucia Hechavarría.

Dept. 5565. March 3, 1895. Inter Lancaster et Moody's Gap, Middlesex, Jamaica (Holotype: B!; Isotypes: G n. v, HAC!, Z n. v.).

Werauhia sanguinolenta (Linden ex Cogn. & Marchal) J.R.Grant, Trop. Subtrop. Pflanzenwelt 91: 35.

Note. Leaves and inflorescence infrutescence.

Tillandsia rangelensis L.Hechavarria, sp. nov. TYPE: Cuba—Pinar del Rio: San Cristóbal, Paredón de Bartolito, Rangel, 22°44′38,6″N, 83°11′32,7″W, 540 m, 3 Oct. 2005, *L.Hechavarria, M.Cañizares & B.Sidoti HAC-SV 44492.* (Holotype: HAC; Isotype: HAC). FIGURE 1.

A *T. moscosoi* L.B.Sm. & J.Jiménez foliis coriaceis, scapo curvato et sepalis posticis carinatis, connatis usque ad ¾ longitudinem calycis differt.

Plant epiphytic, growing in groups, 15–24 cm high when in bloom. ***Leaves*** ashy green forming an infundibuliform rosette, coriaceous, completely covered with small and adpressed cinereous scales; leaf sheaths elliptic, 4 × 3 cm, castaneous; leaf blades triangular, canaliculate, the apex acuminate, 15–20 × 1 cm. ***Scape*** curved, covered by the leaves, 15 cm long, 0.8 cm in diameter, covered with cinereous scales, light green; scape bracts imbricate, narrowly triangular, long acuminate, 5–7 cm long, longer than the internodes. ***Inflorescence*** bipinnate, ellipsoid, 3–6 cm long, 2.5–3 cm in diameter, light red, covered with whitish scales; primary bracts 2.5 × 1 cm, reduced to sheaths, apiculate, red; spikes 4–6, erect, 2–6 cm long, 3–6 flowered, not stipitate; floral bracts densely imbricate, triangular, strongly keeled, the apex mucronulate, 2 × 0.8 cm wide, coriaceous; flowers 5 cm long, subsessile, corolla violet; sepals light green, 2 cm long, equaling the floral bracts, narrowly triangular, the posterior ones strongly connate to about ¾ of their length and keeled, the anterior membranaceous, free, not keeled; petals spathulate, 4 cm long; base white, apex violet, scarcely opening at anthesis; stamens 4.5 cm long, exceeding the petals, base violet, apex pale lilac; anthers linear, 0.4 cm long, dark yellow, versatile; stigma slightly exceeding the stamens, spirally twisted, creamy yellow; ovary 0.5 cm long, whitish.

Etymology. Named in allusion to the type locality, Rangel, San Cristóbal, Province Pinar del Río, Cuba. Rangel is considered a classic recollection locality where the Brothers of La Salle had a country property where Bros. Leon and Alain, who wrote La Flora de Cuba (León 1946; León & Alain 1951; Alain 1953, 1957, 1964, 1969), collected a lot of plants.

Comments. The species flowers in the dry season, in November (FIGURE 2). It appears to be endemic to Rangel and inhabits a semideciduous forest on limestone hills with abundance of *Oxandra lanceolata* Baill. (Annonaceae), the phorophyte where *T. rangelensis* was growing. Other bromeliads found in the area were *T. fasciculata* var. *uncispica* Mez, *T. fasciculata* var. *clavispica* Mez, *T. variabilis* Schltdl., *T. pruinosa* Sw., *Guzmania monostachia* var. *monostachia* (L.) Rusby ex Mez, *Hohenbergia penduliflora* (A. Rich.) Mez and *Aechmea nudicaulis* (L.) Griseb.

Paratypes. Cuba—Pinar del Río: Paredón de la Jutía, Rangel, Dic.1957, *Hno. Alain 6217* (HAC); Pinar del Río: En la cumbre del de la Jutía, Rangel, 550 m, Dic.1957, *Hno. Alain 6544* (HAC); Pinar del Río: Paredón de Bartolito, Rangel, 22°44′38,6″N, 83°11′32,7″W, 540 m, 23 April 2005, *L.Hechavarria, M.Cañizares & R.Alonso, HAC-SV 42494* (HAC).

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