

Distribution of the Endemic Cuban Genus *Hemithrinax* (Arecaceae)

Distribución del Género Endémico Cubano *Hemithrinax* (Arecaceae)

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Abstract

Based on 121 herbarium specimens and the authors' field observations for more than 25 years of *Hemithrinax* in Cuba, we document its distribution by provinces or municipalities and its biogeographic distribution by sub-provinces, sectors, and districts.

Resumen

Basado en el reporte de 121 especímenes de herbario y de las observaciones de campo de los autores durante más de 25 años de *Hemithrinax* en Cuba, documentamos su distribución por provincias o municipios y su distribución biogeográfica por subprovincias, sectores y distritos.

Introduction

The Arecaceae (Palmae) family is represented in Cuba by 15 genera and 98 infrageneric taxa: 80 species; 10 infraspecific taxa; and 8 hybrids. Of the total, 85 infrageneric taxa are endemic (86.7 %), one of the highest proportions among the plant families in the country (Moya and Leiva 2000, Moya 2020 unpublished).

Dransfield et al. (2008) placed *Hemithrinax* in the Cryosophileae tribe of the subfamily Coryphoideae. The genus *Hemithrinax* is closely related to *Leucothrinax* and for some time the two were even included in *Thrinax*; however, molecular studies showed that the three genera originated from different phylogenetic lineages and should be separated (Lewis and Zona 2008). Although Borhidi and Muñiz (1985) had transferred *Hemithrinax* to *Thrinax*, we follow Lewis and Zona (2008) and treat them separately.

Hemithrinax, represented by three species and a recognized variety, is the only Cuban endemic palm genus. One, *H. ekmaniana*, is restricted to the west-central region while *H. compacta* and *H. rivularis* var. *rivularis* and *H. rivularis* var. *savannarum* are restricted to the east (**Fig. 1**). It is easily differentiated from the *Coccothrinax* in its leaf bases, which open in an inverted V, like those of *Thrinax* and *Leucothrinax*; however, it differs from these latter two genera in its faint (rather than conspicuous) transverse veinlets (Lewis and Zona 2008).



1. Map of Cuba showing distribution of *Hemithrinax*. *H. compacta*: brown star = herbarium specimen data, brown circle = observation; *H. ekmaniana* = green star (north of Santa Clara); *H. rivularis* var. *rivularis* = red star; *H. rivularis* var. *savannarum* = blue star.

Moya (2019) updated the taxonomy and nomenclature of *Hemithrinax* as well as distribution by provinces only. The purpose of this paper is to update the geographical and biogeographic distribution of *Hemithrinax*.

Materials and Methods

We gathered information about the distribution of *Hemithrinax* from herbarium specimens, locations cited in the literature (bibliographic references), our field observations, and personal communications with other knowledgeable colleagues.

We examined and obtained location data from 121 specimens of *Hemithrinax* at the following herbaria: AJBC, B, BH, BRU, FI, FTG, G, GB, GH, GOET, HAC, HAJB, HMC, K, LE, MICH, MO, MT, NY, P, PAL, S, ULV, US, and YU (acronyms follow Thiers 2016). We 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 AJBC, HAC, and ULV, which we examined in person. Specimens seen by the



2. *Hemithrinax compacta* on limestone rocks, Santiago de Cuba, San Luis, Piloto, Rodríguez et al. MR1715. © 2017 Donald R Hodel.

authors are marked with “!”, those not seen with “[n.v.]”, and those without marks were digital images.

Literature accounts of Burret (1929), León (1941), Saakov (1970), Morici (2000), Castañeda et al (2006), Falcón et al. (2004), Reveal and Nixon (2013), and Rodríguez et al. (2017) provided additional distribution and general information.

We have maintained field observation records for the last 26 years, from 1994 to 2020. Locations generally refer to the nearest place of habitation in instances where locations are unnamed. Rodríguez’s field observation number system is in this format: *MRXX.XX*. Moya’s field observation number system is in this format: *Serie Moya XXXX*. We also obtained location information from colleagues (personal communications).

Borhidi (1985), who considered *Hemithrinax* a subgenus of *Thrinax*, provided a distribution map of *Hemithrinax* that apparently dates to 1973, and later used the map again (Borhidi 1996). In this 1996 account, Borhidi discussed and outlined the biogeography of Cuba, which we follow here, and that Moya (2019) updated for *Hemithrinax*.

The geographical information includes the country in capital letters, followed in alphabetical order by the province with the municipalities in parentheses. The biogeographic information includes the province in capital letters, followed by the subprovince and the corresponding sector, with the districts in parentheses. The origin of the information used for each municipality or district is marked by adding (^H) for herbarium specimen, (^R) for bibliographic reference, (^A) for authors’ observations, and (^P) for personal communication. We have no updated information for omitted municipalities or districts.

Results and Discussion

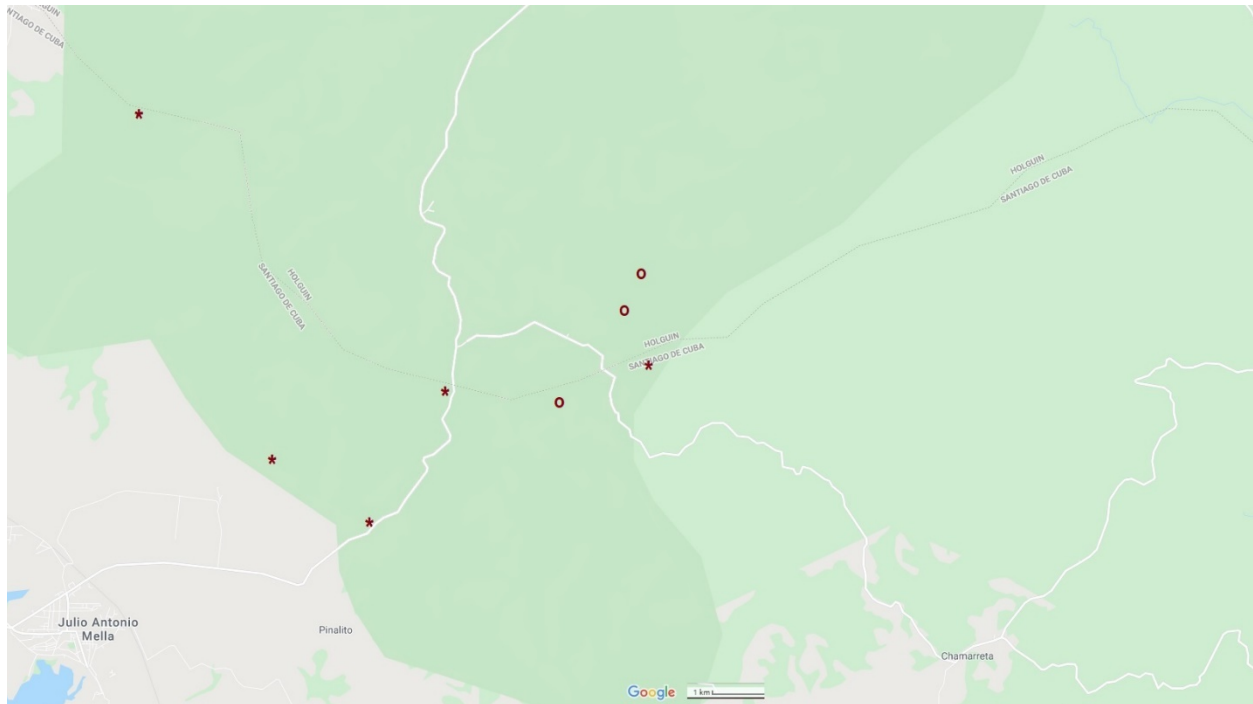
Hemithrinax compacta (Griseb. & H. Wendl.) Hook. f. ex Salomon, *Palmen* 158. 1887. **Figs. 1, 2–3.**

≡ *Trithrinax compacta* Griseb. & H. Wendl., *Cat. Pl. Cub.*: 221.1866.

≡ *Thrinax compacta* (Griseb. & H. Wendl.) Borhidi & O. Muñiz, *Acta Bot. Hung.* 31: 226. 1985.

Specimens Examined. CUBA. PROVINCE Santiago de Cuba, municipality Mella: farallón Cayo del Rey, 1 Sep. 1860, *Wright 3222* (lectotype: G [3 sheets]; isolectotypes: B [n.v.], BH [n.v.], BRU, FI [2 sheets], GH, GOET [4 sheets], HAC!, K [2 sheets], LE, MO [2 sheets], NY, P, YU); May 1940,

Carabia 4031 (HAC! [3 sheets]); Feb. 1941, *León* 19542 (HAC!); Nov. 1942, *Clemente* 2491 (HAC!); Picote, Bayate, 16 Jun. 1916, *Ekman* 7402 (G [n.v.], NY); Mogote N Miranda, Jul. 1944, *Clemente* 22384 (HAC!); loma de la Cantera, 8 Jan. 1941, *León & Clemente* 20422 (HAC! [2 sheets], US [2 sheets, n.v.]); 12 mar. 2016, *Verdecia & Verdecia* RV16.a (HMC [n.v.]); subida a Pinalito, 29 Sep. 1996 *Morici* 3.25 (HAC [2 sheets]); 25 Jan. 2002, *Verdecia* s.n. HMC [2 sheets]; 13 Oct. 2015, *Verdecia* RV15/17 (HMC [n.v.]); municipality San Luis: Piloto, S La Chivera, 10 Apr. 2017, *Rodríguez et al.* MR1715 (ULV!). PROVINCE Holguín, municipality Mayarí: Alto de Estrella, 10 Apr. 2017, *Rodríguez et al.* MR1716 (ULV!).



3. Map showing distribution of *Hemithrinax compacta*: brown star = herbarium specimen data, brown circle = observation.

Rodríguez field observations. CUBA. Holguín province. Mayarí municipality, Cerro, 10 Apr. 2017, *Rodríguez* MR17.50; Alto de la Estrella, 10 Apr. 2017, *Rodríguez* MR17.51; Caridad, 10 Apr. 2017, *Rodríguez* MR17.52; Farallones del Naranjo, 10 Apr. 2017, *Rodríguez* MR17.53.

Santiago de Cuba province, Mella municipality, Bayate, 11 May 2010, *Rodríguez* MR10.14; Cayo Rey, 11 May 2010, *Rodríguez* MR10.15; Loma de Cantera, 11 May 2010, *Rodríguez* MR10.16; N Canapu, 11 May 2010, *Rodríguez* MR10.17; Pinalito, 11 May 2010, *Rodríguez* MR10.18; San Luis municipality Pinar Redondo, 10 Apr. 2017, *Rodríguez* MR17.4.

Suárez field observations. CUBA. Holguín province. Mayarí municipality, Alto de la Estrella, 19 Nov. 2018.

Moya field observations. CUBA. Santiago de Cuba province. Mella municipality: climbing Pinalito, 13 Oct. 2015, *Serie Moya 1512*; hill of the La Cantera, 16 Oct. 2015, *Serie Moya 1519*.

Locations from Personal Communications. José Luis Gómez Hechavarría (5 Apr. 2016): CUBA. **Holguín PROVINCE.** Mayarí municipality: mogote El Cerrado y La Chivera.

Geographical Distribution. CUBA. Provinces Santiago de Cuba (Mella^H and San Luis^H), Holguín (Mayarí^H).

Biogeographical Distribution. Province **CUBA**, subprovince Eastern Cuba, sector Moanicum (Yaterense^H) (Borhidi 1996).

Hemithrinax ekmaniana Burret, Kongl. Svenska Vetensk. Acad. Handl., n. s., 6(7): 9. 1929. **Figs. 1, 4–5.**

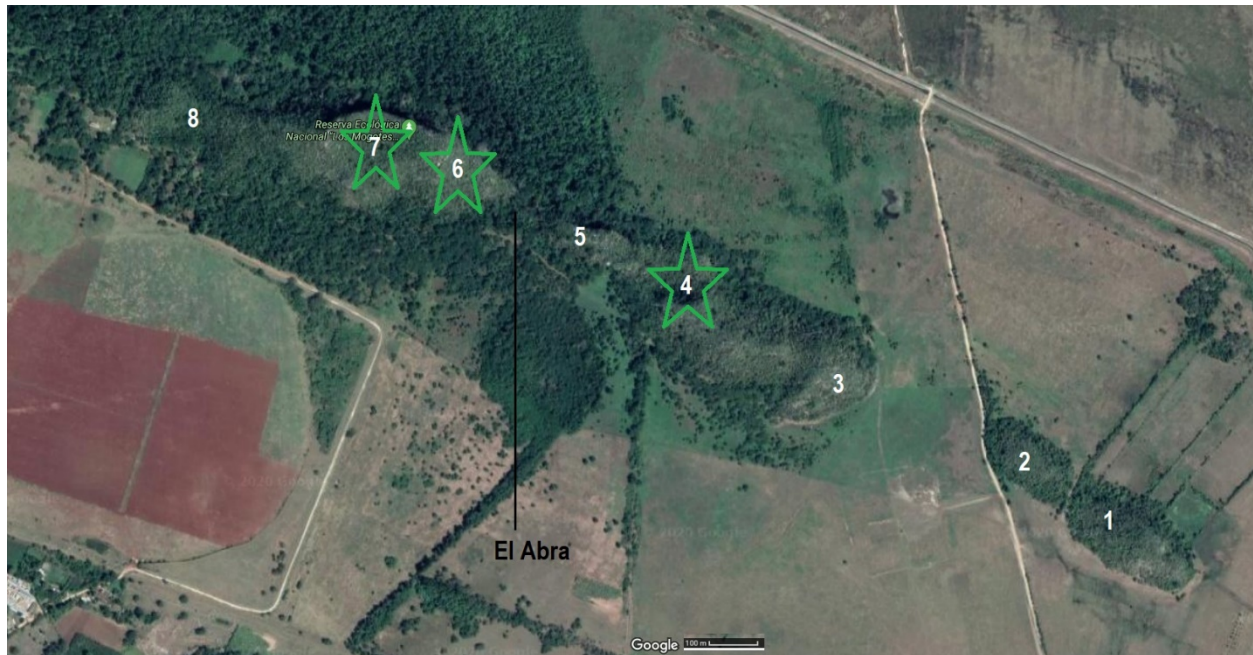
≡ *Thrinax ekmaniana* (Burret) Borhidi and O. Muñiz, Acta Bot. Hung. 31: 227. 1985.

Specimens Examined. CUBA. PROVINCE Villa Clara. Municipality Sagua la Grande, Ecological Reserve Mogotes de Jumagua, 20 Feb. 1924, *Ekman 18536* (lectotype; isolectotypes GB, NY, S [3 sheets]); 5 Apr. 1940, *León et al. 17637* (HAC! [6 sheets], MICH [n.v.], MT [n.v.], S [n.v.]); 26 Mar. 1992, *Castañeda 4567* (ULV!); Jun. 1992, *Henderson & Galeano s.n.* (NY); 11 Feb. 1994 (VER 2 Nov. 1994), *Castañeda 5188* (ULV! [2 sheets]); *Morici 3.50*, 5 Oct. 1996 (HAC!, [2 sheets]); 12 Oct. 1998, *Castañeda 1914* (ULV!); 12 Oct. 2007, *Verdecia RV07/67* (HMC [3 sheets]); 27–28 Feb. 2012, *Borsch et al. 5196* (B, HAJB [n.v.], PAL [n.v.], ULV!); 18 Jan. 2013, *Rodríguez & Suárez 42764* (AJBC!); 12 Oct. 2013, *Pérez 10701* (ULV!); 26 Sep. 2015, *Rodríguez 10991* (ULV!).

Rodríguez field observations. CUBA. Villa Clara province. Sagua la Grande municipality, Reserva Ecológica Mogotes de Jumagua, 26 Jan. 1994, *Rodríguez MR94.01*; 31 Jun. 1994, *Rodríguez MR94.03*; 8 Aug. 1994, *Rodríguez MR94.04*; 6 Nov. 1994, *Rodríguez MR94.05*; 28 Jan. 1995, *Rodríguez MR95.02*; 14 Apr. 1995, *Rodríguez MR95.03*; 14 Dec. 1995, *Rodríguez MR95.04*; 29 Aug. 1996, *Rodríguez MR96.03*; 25 Dec. 1996, *Rodríguez MR96.04*; 14 Jun. 1997, *Rodríguez MR97.02*; 12 May. 1995, *Rodríguez MR98.04*; 25 Aug. 1999, *Rodríguez MR99.01*; 21 Sep. 1999, *Rodríguez MR99.02*; 28 Jun. 2000, *Rodríguez MR00.01*; 25 Sep. 2000, *Rodríguez MR00.02*; 28 Dec. 2000, *Rodríguez MR00.03*; 29 Apr. 2001, *Rodríguez MR01.01*; 14 Jul. 2001, *Rodríguez MR01.02*; 3 Nov. 2001, *Rodríguez MR01.03*; 18 Nov. 2001, *Rodríguez MR01.04*; 14 Feb. 2002, *Rodríguez MR02.02*; 17 Jun. 2002, *Rodríguez MR02.03*; 21 Sep. 2002, *Rodríguez MR02.04*; 24 Dec. 2002, *Rodríguez MR02.05*; 3 Feb. 2003, *Rodríguez MR03.01*; 14 Feb. 2003,



4. *Hemithrinax ekmaniana* on a limestone hill, Villa Clara, Sagua la Grande, Reserva Ecológica Mogotes de Jumagua. © 2016 Donald R Hodel.



5. Map showing distribution of *Hemithrinax ekmaniana* (green stars) on the linear series of eight limestone hills, Villa Clara, Sagua la Grande, Reserva Ecológica Mogotes de Jumagua.

Rodríguez MR03.02; 9 Jun. 2003, *Rodríguez MR03.03*; 21 Jan. 2004, *Rodríguez MR04.01*; 20 Feb. 2004, *Rodríguez MR04.02*; 21 Mar. 2004, *Rodríguez MR04.03*; 19 Apr. 2004, *Rodríguez MR04.04*; 21 May 2004, *Rodríguez MR04.05*; 24 Jun. 2004, *Rodríguez MR04.06*; 17 Jul. 2004, *Rodríguez MR04.07*; 19 Aug. 2004, *Rodríguez MR04.08*; 18 Sep. 2004, *Rodríguez MR04.09*; 22 Oct. 2004, *Rodríguez MR04.10*; 18 Nov. 2004, *Rodríguez MR04.11*; 19 Dec. 2004, *Rodríguez MR04.12*; 22 Jan. 2005, *Rodríguez MR05.01*; 14 Feb. 2005, *Rodríguez MR05.02*; 21 Mar. 2005, *Rodríguez MR05.03*; 22 Apr. 2005, *Rodríguez MR05.04*; 22 May 2005, *Rodríguez MR05.05*; 18 Jun. 2005, *Rodríguez MR05.06*; 19 Jul. 2005, *Rodríguez MR05.07*; 21 Aug. 2005, *Rodríguez MR05.08*; 20 Sep. 2005, *Rodríguez MR05.09*; 19 Oct. 2005, *Rodríguez MR05.10*; 16 Nov. 2005, *Rodríguez MR05.11*; 23 Dec. 2005, *Rodríguez MR05.12*; 21 Jan. 2006, *Rodríguez MR06.02*; 14 Feb. 2006, *Rodríguez MR06.03*; 23 Mar. 2006, *Rodríguez MR06.04*; 26 Apr. 2006, *Rodríguez MR06.05*; 19 May 2006, *Rodríguez MR06.06*; 25 Jun. 2006, *Rodríguez MR06.07*; 18 Jul. 2006, *Rodríguez MR06.08*; 22 Aug. 2006, *Rodríguez MR06.09*; 22 Sep. 2006, *Rodríguez MR06.10*; 16 Oct. 2006, *Rodríguez MR06.11*; 19 Nov. 2006, *Rodríguez MR06.12*; 21 Dec. 2006, *Rodríguez MR06.13*; 4 Jan. 2008, *Rodríguez MR08.02*; 21 Feb. 2008, *Rodríguez MR08.03*; 19 Apr. 2008, *Rodríguez MR08.04*; 25 May 2008, *Rodríguez MR08.05*; 17 Jun. 2008, *Rodríguez MR08.06*; 17 Jul. 2008, *Rodríguez MR08.07*; 22 Aug. 2008, *Rodríguez MR08.08*; 19 Sep. 2008, *Rodríguez MR08.09*; 18 Oct. 2008, *Rodríguez MR08.10*; 18 Nov. 2008, *Rodríguez MR08.11*; 16 Dec. 2008, *Rodríguez MR08.12*; 19 Jan. 2009, *Rodríguez MR09.04*; 17 Feb. 2009, *Rodríguez MR09.05*; 21 Mar. 2009, *Rodríguez MR09.06*; 16 Apr. 2009, *Rodríguez MR09.07*; 13 May 2009, *Rodríguez*

MR09.08; 22 Jun. 2009, Rodríguez MR09.09; 15 Jul. 2009, Rodríguez MR09.10; 19 Aug. 2009, Rodríguez MR09.11; 17 Sep. 2009, Rodríguez MR09.12; 21 Oct. 2009, Rodríguez MR09.13; 21 Nov. 2009, Rodríguez MR09.14; 20 Dec. 2009, Rodríguez MR09.15; 15 Jan. 2010, Rodríguez MR10.01; 21 Feb. 2010, Rodríguez MR10.02; 19 Mar. 2010, Rodríguez MR10.03; 14 Apr. 2010, Rodríguez MR10.04; 22 May 2010, Rodríguez MR10.05; 9 Jun. 2010, Rodríguez and Suárez MR10.06; 20 Jun. 2010, Rodríguez MR10.07; 23 Jul. 2010, Rodríguez MR10.08; 21 Aug. 2010, Rodríguez MR10.09; 18 Sep. 2010, Rodríguez MR10.10; 8 Oct. 2010, Rodríguez MR10.11; 19 Nov. 2010, Rodríguez MR10.12; 24 Dec. 2010, Rodríguez MR10.13; 18 Jan. 2011, Rodríguez MR11.05; 21 Feb. 2011, Rodríguez MR11.06; 14 Mar. 2011, Rodríguez MR11.07; 16 Apr. 2011, Rodríguez MR11.08; 21 May 2011, Rodríguez and Suárez MR11.09; 19 Jun. 2011, Rodríguez MR11.10; 20 Jul. 2011, Rodríguez MR11.11; 22 Aug. 2011, Rodríguez MR11.12; 24 Sep. 2011, Rodríguez MR11.13; 20 Oct. 2011, Rodríguez MR11.14; 25 Nov. 2011, Rodríguez MR11.15; 24 Dec. 2011, Rodríguez MR11.16; 14 Jan. 2012, Rodríguez MR12.06; 19 Feb. 2012, Rodríguez MR12.07; 29 Mar. 2012, Rodríguez MR12.08; 18 Apr. 2012, Rodríguez MR12.09; 21 May 2012, Rodríguez and Suárez MR12.10; 20 Jun. 2012, Rodríguez MR12.11; 18 Jul. 2012, Rodríguez MR12.12; 22 Aug. 2012, Rodríguez MR12.13; 23 Sep. 2012, Rodríguez MR12.14; 24 Oct. 2012, Rodríguez MR12.15; 18 Nov. 2012, Rodríguez MR12.16; 19 Dec. 2012, Rodríguez MR12.17; 18 Jan. 2013, Rodríguez and Suárez MR13.04; 2 Feb. 2013, Rodríguez MR13.05; 21 Feb. 2013, Rodríguez MR13.06; 9 Mar. 2013, Rodríguez MR13.07; 14 Apr. 2013, Rodríguez MR13.08; 16 May 2013, Rodríguez MR13.09; 19 Jun. 2013, Rodríguez MR13.10; 7 Jul. 2013, Rodríguez MR13.11; 21 Jul. 2013, Rodríguez MR13.12; 23 Aug. 2013, Rodríguez MR13.13; 21 Sep. 2013, Rodríguez MR13.14; 14 Oct. 2013, Rodríguez MR13.15; 16 Nov. 2013, Rodríguez MR13.16; 20 Dec. 2013, Rodríguez MR13.17; 14 Jan. 2014, Rodríguez MR14.01; 17 Feb. 2014, Rodríguez MR14.02; 16 Mar. 2014, Rodríguez MR14.03; 21 Apr. 2014, Rodríguez MR14.04; 18 May 2014, Rodríguez MR14.05; 22 Jun. 2014, Rodríguez MR14.06; 20 Jul. 2014, Rodríguez MR14.07; 19 Aug. 2014, Rodríguez MR14.08; 22 Sep. 2014, Rodríguez MR14.09; 21 Oct. 2014, Rodríguez MR14.10; 18 Nov. 2014, Rodríguez MR14.11; 14 Dec. 2014, Rodríguez MR14.12; 16 Mar. 2015, Rodríguez MR15.04; 6 Apr. 2015, Rodríguez MR15.05; 26 Sep. 2015, Rodríguez MR15.06; 14 Dec. 2015, Rodríguez and Suárez MR15.07; 25 Jan. 2016, Rodríguez MR16.07; 9 Mar. 2016, Rodríguez and Suárez MR16.08; 8 Apr. 2016, Rodríguez et al. MR16.09; 21 Jul. 2016, Rodríguez MR16.10; 14 Sep. 2016, Rodríguez MR16.11; 18 Nov. 2016, Rodríguez and Suárez MR16.12; 28 Jan. 2017, Rodríguez MR17.30; 4 Feb. 2017, Rodríguez MR17.31; 4 Jun. 2017, Rodríguez MR17.32; 25 Jun. 2017, Rodríguez MR17.33; 8 Jul. 2017, Rodríguez MR17.34; 12 Jul. 2017, Rodríguez MR17.35; 16 Jul. 2017, Rodríguez MR17.36; 21 Jul. 2017, Rodríguez MR17.37; 14 Aug. 2017, Rodríguez MR17.38; 28 Aug. 2017, Rodríguez MR17.39; 4 Sep. 2017, Rodríguez MR17.40; 21 Sep. 2017, Rodríguez MR17.41; 2 Oct. 2017, Rodríguez MR17.42; 14 Oct. 2017, Rodríguez MR17.43; 21 Oct. 2017, Rodríguez MR17.44; 18 Nov. 2017, Rodríguez MR17.45; 29 Nov. 2017, Rodríguez MR17.46; 14 Dec. 2017, Rodríguez MR17.47; 25 Dec. 2017, Rodríguez MR17.48; 6

Jan. 2018, *Rodríguez MR18.07*; 18 Jan. 2018, *Rodríguez MR18.08*; 26 Jan. 2018, *Rodríguez MR18.09*; 28 Jan. 2018, *Rodríguez MR18.10*; 11 Feb. 2018, *Rodríguez MR18.11*; 28 Apr. 2018, *Rodríguez MR18.12*; 14 Sep. 2018, *Rodríguez MR18.13*; 18 Nov. 2018, *Rodríguez MR18.14*; 18 Jan. 2019, *Rodríguez MR19.01*; 21 Mar. 2019, *Rodríguez MR19.02*; 16 May 2019, *Rodríguez MR19.03*; 15 Jun. 2019, *Rodríguez MR19.04*; 18 Nov. 2019, *Rodríguez MR19.05*; 17 Feb 2020, *Rodríguez MR20.01*; 14 Mar 2020, *Rodríguez MR20.02*; 10 Jun. 2020, *Rodríguez MR20.03*.

Geographical Distribution. CUBA. Province Villa Clara (Sagua la Grande^H: Mogotes de Jumagua).

Biogeographical Distribution. Province CUBA, subprovince Central Cuba, sector Camagüeyicum (Sagüense^H) (Borhidi 1996).

Hemithrinax rivularis León, Mem. Soc. Cub. Hist. Nat. "Felipe Poey" 15: 380. 1941.

When León (1941) named and described *Hemithrinax rivularis* and *H. savannarum*, he noted that the former differed from the latter in its habitat (moist areas in woodlands vs. drier areas in low scrublands); habit (trunk to 8 m tall vs. acaulescent or very short); petiole (exceeding the apical free part of the leaf base vs. shorter than the apical free part of the leaf base); fruit (subglobose vs. globose); and the seed (hilum elliptic, embryo subapical, and seed coat intrusion broadly columnar vs. hilum linear or narrowly lanceolate, embryo lateral, and seed coat intrusion narrowly columnar). Later, Muñiz (in Muñiz and Borhidi 1982) reduce the latter to a variety of the former. Here, we recognize these two varieties but admit that rigorous, likely molecular work will be needed to confirm our interpretation.

Hemithrinax rivularis* var. *rivularis León, Mem. Soc. Cub. Hist. Nat. "Felipe Poey" 15: 380. 1941. **Figs. 1, 6–7.**

≡ *Thrinax rivularis* (León) Borhidi & O. Muñiz var. *rivularis*, Acta Bot. Hung. 31: 226. 1985.

Specimens Examined. CUBA. PROVINCE Holguín, municipality Moa: en las orillas del arroyo de Centeno, cerca de Moa, 23 Jul. 1941, *León & Clemente 20426* (holotype, HAC! [2 sheets]; isotypes, US); Yaguaneque Cananova, 25 Mar. 1942, *León 20787* (HAC!); Charrascal Coco, Aug. 1945, *León 22688* (HAC!); Arroyo junto a casas, Moa, Jul. 1945, *León 22692* (HAC! [2 sheets]); Yamanigüey, 12 Feb. 2000, *Zona 839* (FTG, HMC); 17 Aug. 2007, *Urquiola s.n.* (HMC [2 sheets]); 25 Apr. 2016, *Rodríguez MR1606* (AJBC!); Cayo Grande, 26 Apr. 2016, *Rodríguez MR1607*



6. *Hemithrinax rivularis* var. *rivularis* on serpentine soil, Holguín, Moa. © 2017 Donald R Hodel.

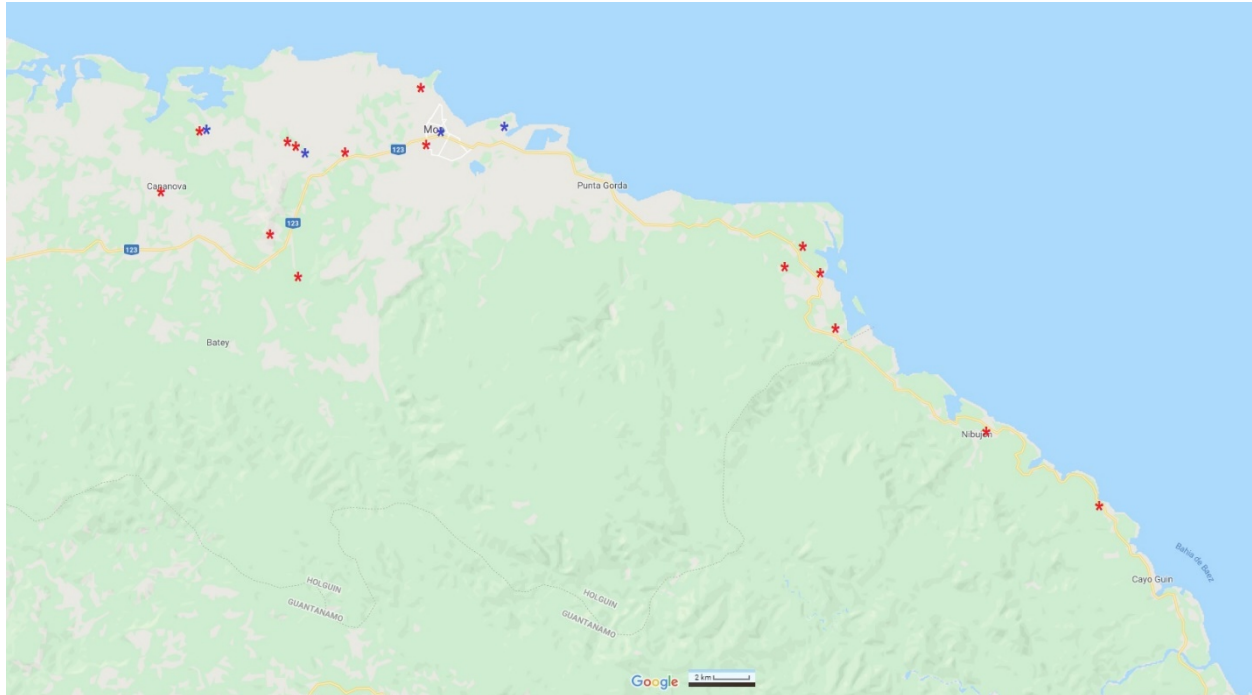
(AJBC!); Cañete, 26 Apr. 2016, *Rodríguez MR1608* (AJBC!); La Checa, 26 Apr. 2016, *Rodríguez MR1609* (AJBC! [2 sheets]); acceso farallones de Moa, 26 Apr. 2016, *Rodríguez MR1610* (AJBC!); arroyo Centeno, 26 Apr. 2016, *Rodríguez MR1611* (AJBC!); cerro Miraflores, 25 Oct. 2009, *Bonet s.n.* (HMC [2 sheets]); 26 Apr. 2016, *Rodríguez MR1612* (AJBC!); Camino a Juracal, 11 May 2012, *Verdecia RV12/06* (HMC [5 sheets]), 11 May 2012, *Verdecia RV12/07* (HMC [5 sheets]); 12 Oct. 2015, *Verdecia & Moya RV15/15* (HMC [n.v.]). PROVINCE Guantánamo, municipality Baracoa: Maguana, 1 Jun. 2003, *Morici 756* (HMC [2 sheets]); 25 Apr. 2016, *Rodríguez MR1603* (AJBC!); Santa María, 25 Apr. 2016, *Rodríguez MR1604* (AJBC!); Jaguaní, 25 Apr. 2016, *Rodríguez MR1605* (AJBC!).

Rodríguez field observations. CUBA. Holguín province. Moa municipality, Miraflores, 27 Jan. 2007, *Rodríguez MR07.14*; Jucaral Verde, 27 Jan. 2007, *Rodríguez MR07.15*; Punta Gorda, 27 Jan. 2007, *Rodríguez MR07.16*; Jucaral Verde, 2 Dec. 2012, *Rodríguez MR12.18*; Yaguaneque, 2 Dec. 2012, *Rodríguez MR12.19*; Miraflores, 2 Dec. 2012, *Rodríguez MR12.20*; Cananova, 2 Dec. 2012, *Rodríguez MR12.28*; Centeno, 2 Dec. 2012, *Rodríguez MR12.22*; Farallones de Moa, 14 Dec. 2013, *Rodríguez MR13.18*; E Moa, 14 Dec. 2013, *Rodríguez MR13.19*; Yamanigüey, 14 Dec. 2013, *Rodríguez MR13.20*; Jucaral Verde, 17 Mar. 2014, *Rodríguez MR14.14*; S Jucaral Verde, 17 Mar. 2014, *Rodríguez MR14.15*; Cañete, 17 Mar. 2014, *Rodríguez MR14.16*; W mouth Jaguaní river, 17 Mar. 2014, *Rodríguez MR14.17*; Miraflores, 8 Apr. 2017, *Rodríguez MR17.54*; S Jucaral Verde, 8 Apr. 2017, *Rodríguez MR17.55*. **Guantánamo province.** Baracoa municipality, E mouth Jaguaní river, 18 Mar. 2014, *Rodríguez MR14.18*; Santa María, 18 Mar. 2014, *Rodríguez MR14.19*; S Nibujón, 18 Mar. 2014, *Rodríguez MR14.20*; S Nava, 18 Mar. 2014, *Rodríguez MR14.21*; Maguana, 18 Mar. 2014, *Rodríguez MR14.22*; Maguana, 8 Apr. 2017, *Rodríguez et al. MR17.56*; S Nava, 8 Apr. 2017, *Rodríguez et al. MR17.57*; S Nibujón, 8 Apr. 2017, *Rodríguez et al. MR17.58*; S Taco, 8 Apr. 2017, *Rodríguez et al. MR17.59*; Santa María, 8 Apr. 2017, *Rodríguez et al. MR17.60*; E mouth Jaguaní river, 8 Apr. 2017, *Rodríguez et al. MR17.61*.

Suárez field observations. CUBA. Holguín province. Moa municipality, Jiguaní river, 27 Jan. 2007; 8 Apr. 2017; 24 May 2017; 1 Dec. 2018; Yaguaneque, 9 Dec. 2012; 21 May. 2016; 19 Jan. 2017; Cañete, 19 Jun. 2017; 1 Dec. 2018; Los Checos, 26 Sep. 2019.

Moya field observations. CUBA. Holguín province, Moa municipality: road to Juracal to the left, 12 Oct. 2015, *Serie Moya 1506*.

Geographical Distribution. CUBA. Provinces Holguín (Moa^h) and Guantánamo (Baracoa^h). Updated by Moya (2019).



7. Map showing distribution of *Hemithrinax rivularis* var. *rivularis* = red star; *H. rivularis* var. *savannarum* = blue star.

Biogeographical Distribution. Province **CUBA**, subprovincia Eastern Cuba, sector Moanicum (Moaëns^H). (Borhidi 1996).

Hemithrinax rivularis* var. *savannarum (León) O. Muñiz, Acta Bot. Acad. Sci. Hung. 28: 312. 1982. **Figs. 1, 7–8.**

≡ *Hemithrinax savannarum* León, Mem. Soc. Cub. Hist. Nat. "Felipe Poey" 15: 381. 1941.

≡ *Thrinax rivularis* var. *savannarum* (León) Borhidi & O. Muñiz, Acta Bot. Hung. 31: 226. 1985.

Specimens Examined. **CUBA.** PROVINCE Holguín, municipality Moa: Sabanas algo húmedas, Moa, 21 Jul. 1941, *León* 20101 (holotype, HAC! [2 sheets]; isotypes, US [3 sheets]); Cerro de Miraflores, Cananova, Jul. 1942, *León* 21069 (HAC!); Playa de Moa, 27 May 1943, *Ma. Victorin* 21707 (HAC!, MT); Cayo Coco, Moa, 15 Apr. 1945, *Acuña* 12376 (HAC!, US [n.v.]); Camino a Juracal, 12 Oct. 1015, *Verdecia & Moya* RV15/16 (HMC [n.v.]).

Rodríguez field observations. **CUBA.** Holguín province. Moa municipality, Yaguaneque, 2 Dec. 2012, *Rodríguez* MR12.23.



8. *Hemithrinax rivularis* var. *savannarum* growing in serpentine soil, Holguín, Moa, Yaguaneque. © 2018 Duanny Suárez Oropesa.

Suárez field observations. CUBA. Holguín province. Moa municipality, Yaguaneque, 29 Sep. 2019.

Moya field observations. CUBA. Holguín province, Moa municipality: road to Juracal to the right, 12 Oct. 2015, *Serie Moya 1507*.

Geographical Distribution. CUBA. Provinces Holguín (Moa^H).

Biogeographical Distribution. Province CUBA, subprovincia Eastern Cuba, sector Moanicum (Moaense^H). (Borhidi 1996).

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