A New Record of *Coccothrinax readii* for Belize

Rodrigo Duno de Stefano
Herbario CICY,
Unidad de Recursos Naturales,
Centro de Investigación Científica de Yucatán, A. C (CICY)
Calle 43. No. 130.
Col. Chuburná de Hidalgo,
97200 Mérida, Yucatán, México
roduno@cicy.mx

AND

Celio E. Moya
Gemini Botanical Garden,
Celio.Moya@obpllc.com

***Coccothrinax readii* is recorded for Belize for the first time.**

Coccothrinax readii was described by Hermilio J. Quero (1980) following a study of the palms of the Yucatan Peninsula, Mexico, based on thorough collecting throughout the entire region. Among the collected material there was a medium sized solitary palm with palmate leaves that had silver color on the abaxial leaf surface. These individuals had entire petiole bases, and their stems were covered by a fiber layer forming a grid pattern (Fig. 1). This new palm species described by Quero (1980) grows in Mexico along the northern coast of Yucatan from the eastern coast of Quintana Roo to the Chetumal Bay (Fig. 2). Several historical collections from the late 19th and early 20th centuries (*Gaumer 23350*, *Schott 293*, *721*) were originally assigned to *Thrinax argentea* Lodd. ex Schult. & Schult.f. (Millspaugh 1898) or *C. argentea* (Lodd. ex Schult. & Schult.f.) Sarg. ex Becc. (Standley 1930).

In Mexico, *C. readii* grows in dense stands in coastal dune scrub along the Yucatan coast (Fig. 1) and is less abundant in the lowland flooded forest or semi-deciduous forest along Quintana Roo. Quero (1980) considered this species to be taxonomically similar to *C. jamaicensis* Read, and he enumerated a long list of morphological traits that differentiate the two species. However, we believe that *C. readii* is also morphologically similar to *C. argentata* (Jacq.) L.H. Bailey. The goal of our study was to confirm the presence of the genus in Belize and to determine if this country harbors *C. argentata* or *C. readii*.

During a short visit to the Shipstern Nature Reserve (7 and 8 April 2013) (located in northern Belize in the Corozal District) we located nine individuals of *C. readii* (four on the Botanical Trail, three on the Thompson Trail, and two in the Eastern Survey Line). A second report for this species in the Orange Walk District of Belize could not be confirmed, but J. Meerman (pers. comm.) indicated that this is an erroneous record, possibly associated with *Cryosophila stauracantha* (Heynh.) R. Evans, a species that also received the name of *Cryosophila argentea* Bartlett in Belize. Meerman (pers. comm.) confirmed that *C. readii* also grows in northern Ambergris Caye in Bacalar Chico National Park (Corozal District).

Coccothrinax readii *H.J. Quero R., Principes 24: 118. 1980.*

We are certain that the wild populations of *Coccothrinax* located on the Shipstern Nature Reserve belong to the argentata group of the

1. *Coccothrinax readii*. A. Adult individuals of 5 or 6 m in height with their characteristic glaucous undersides of the leaves, in semi-deciduous forest of Quintana Roo, near Caobas. B. Details of the entire petiole bases covered by a fiber forming a grid. C. Detail of the abaxial surface of the sheath. D. Detail of the glaucous abaxial surface of the leaves. E. The palm in the coastal dunes of Yucatan, next to Celio Moya. F. Adult individual two meters high in the semi-deciduous forest of the department of Corozal (Belize), beside it, José Alvarado (left) and Lester Delgado (right), Shipstern Nature Reserve. G. General view of the coastal dune scrub in Yucatan. H. General view of the semi-deciduous forest, note on the right the trunk of a medium size tree of *Manilkara zapota* (Sapodilla) at Shipstern Nature Reserve.

Table 1: Some morphological characters of five species of the *Coccothrinax argentata* group and *C. readii* from Belize.

	C. argentata	*C. jamaicensis*	*C. litoralis*	*C. proctori*	*C. readii* Mexico	*C. readii* Belize
Trunk diameter (cm)	up to 13	(5) 6.4–20	15–20	?	3–5 (5.5)	5–6
Palman length (cm)	4–15 (20)	(15) 19–36	20–40	(15) 18–30	13–30	22–26
Segment length (cm)	30–50 (70)	50–102	70–100	60–100	40–70	45–74
Number of leaf segments	15–44	35–38	40–45	39–48	39–54	33–42
Sheath free strand tips (cm)	?	2–4	4	?	3–6.8 (9.5)	8–11
Hastula apex at maturity	Not bifid	Not bifid	Not bifid	Not bifid	Bifid	Bifid
Hastula length (mm)	?	4.1–15 (18)	2–3	5–10	up to 7.5	10–13
Pedicel length in fruit (mm)	1–3	(1) 2–6.2	1–3	(0.5) 1–4 (5.4)	2–6.5	3–5.5

C. argentata complex (Nauman & Sanders 1991). This group includes eight species from which we discarded three species (i.e., *C. fragrans* Burret, *C. inaguensis* Read and *C. victorini* León) because they have lamina abaxially green or gray-green with indumentum or deciduous or absent. Table 1 provides details pertinent to the morphological traits of the remaining five species of this group (i.e., *C. argentata*, *C. jamaicensis*, *C. litoralis* León, *C. proctorii* Read and *C readii*; for the last we include data from plants from Belize). For *C. argentata*, data are from Nauman and Sanders (1991); for the other species we consulted the original descriptions in León (1939), Quero (1980), Read (1963) and Read (1980). *Coccothrinax readii* is a distinctive species with a very thin trunk (like *C. argentata*), a bifid hastula (a diagnostic character) and with the segment to palman length ratio of 2.8–3.0 (similar to *C. jamaicensis*).

Distribution: In Mexico and Central America the genus is present only in the Yucatan Peninsula (Quero, 1980). It does not occur in Guatemala (Standley & Steyermark 1958), Nicaragua (Steven et al. 2001), Costa Rica (Hammel et al. 2004) or Panama (Correa et al. 2004). Spellman et al. (1975), Balick et al. (2000) and Govaerts and Dransfield (2012) did not include the genus in Belize. However, it seems that these authors were not aware of work by Standley and Record (1936), who reported *C. argentea* for this country, although without locality (probably in the northern plains). Meerman (1993), in his floristic list of the Shipstern Nature Reserve, mentioned that *C. readii* was likely to occur in this area. Five years later, Bijleved (1998) confirmed Meerman's (1993) expectations and reported four individuals of *C. argentata* for Belize (Corozal District). In Honduras, *C. jamaicensis* is also present in Swan Islands, about 250 kilometers northeast of the Honduras mainland (Nelson & Proctor 1994). Summarizing, *C. readii* occurs in Mexico (Quintana Roo and Yucatan States) and Belize (Corozal Department), and *C. argentata sensu stricto* does not occur in either of these two countries.

Material examined: Belize: Distrito Corozal: Carretera Chunox-Sarteneja, 6 km antes de Sarteneja y pasando el centro de visitantes de la Reserva Natural Shipstern, en el límite oriental de la reserva, en el camino llamado "Eastern survey line," 18°19'10.26"N, 88°10'39.42"W, 2 msnm, (fr., pasada), 8 abril 2013, *R. Duno & C. Moya 2541* (CICY).

2. The distribution (shaded) of *Coccothrinax readii* in Belize and Mexico.

Vegetation: The plant community of the Shipstern Nature Reserve corresponds to a deciduous forest with species such as *Beaucarnea pliabilis* (Asparagaceae), *Bursera simaruba* (Burseraceae), *Gliricidia maculata* (Fabaceae), *Thrinax radiata* (Arecaceae) and *Vitex gaumeri* (Lamiaceae) as well as elements of a more evergreen forest like *Manilkara zapota* (Sapotaceae) and also species of the coastal dune scrub like *Bravaisia tubiflora* (Acanthaceae). The flora and vegetation of the whole reserve was assessed by Meerman (1993) and Bijleveld (1998).

Acknowledgments

This work was funded by CICY Initiative project 1039300012. The authors acknowledge Caspar Bijleveld, director Papiliorama Foundation, for all his advice. Thanks are also due to Heron Moreno, director of Corozal Sustainable Future Initiative (CSFI), for logistic support, and to Lester Delgado and José Alvarado, for field assistance. We thank Dr. Javier Francisco-Ortega and Paul Craft, who critically reviewed the manuscript.

Literature Cited

Balick, M.J., M. Nee and D.E. Atha. 2000. A checklist of the flora of Belize, with common names and uses. Memoirs of the New York Botanical Garden 85: 1–246.

Bijleved, C.F.A. 1998. The Vegetation of Shipstern Nature Reserve (Corozal District, Belize, Central America): A Structural and Floristic Approach. International Tropical Conservation Foundation, 136 pp.

Correa, A.M.D., C. Galdames and M. Sánchez de Stapf. 2004. Catálogo de las plantas vasculares de Panamá. Universidad de Panamá, Panamá.

Govaerts, R. and J. Dransfield. 2012. World Checklist of Arecaceae. Facilitated by the Royal Botanic Gardens, Kew. Published on the Internet; http://apps.kew.org/wcsp/ (accessed 02 May 2013)

Hammel, B.E., M.H. Grayum, C. Herrera and N. Zamora (eds.). 2004. Manual de plantas de Costa Rica vol. II. Gimnospermas y monocotiledóneas (Agavaceae–Musaceae). Monographs in Systematic Botany from the Missouri Botanical Garden 92: 1–694.

León, H. 1939. Contribución al estudio de las palmas de Cuba. III Género *Coccothrinax*. Memorias de la Sociedad Cubana de Historia Natural "Felipe Poey" 13: 107–156 + 21 Tabs.

Meerman, J.C. 1993. Provisional annotated checklist of the flora of the Shipstern Nature Reserve. Occasional Papers of the Belize Natural History Society 2(2): 8–36.

Millspaugh, C.F. 1898. Contribution III to the Coastal and Plain Flora of Yucatan. Field Columbian Museum, Botanical Series 1(4): 340–410.

Nauman, C.E. and R.W. Sanders. 1991. Preliminary classificatory studies in *Coccothrinax* (Palmae: Coryphoideae). Selbyana 12: 91–101.

Nelson, C. and G.R. Proctor. 1994. Vascular plants of the Caribbean Swan Islands of Honduras. Brenesia 41–42: 73–80.

Quero R., H.J. 1980. *Coccothrinax readii*, a new species from the Peninsula of Yucatan, Mexico. Principes 24: 118–124.

Read, R.W. 1966. *Coccothrinax jamaicensis*. The Jamaican silver thatch. Principes 10: 133–141.

Read, R.W. 1980. Notes on palmae. 1. [*Coccothrinax proctorii*, Cayman Islands]. Phytologia 46: 285–287.

SPELLMAN, D.L., J.D. DWYER AND G. DAVIDSE. 1975. A list of the Monocotyledonae of Belize – including a historical introduction to plant collecting in Belize. Rhodora 77: 105–140

STANDLEY, P.C. 1930. Flora of Yucatan. Field Museum of Natural History, Botany Series 3: 157–492.

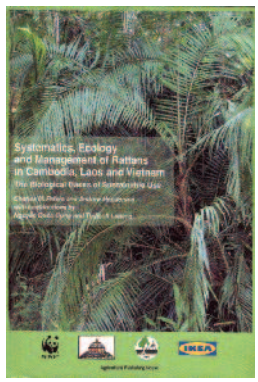
STANDLEY, P.C. AND J.A. STEYERMARK. 1958. Flora of Guatemala. Fieldiana, Botany 24: 196–299.

STANDLEY, P.C. AND S.J. RECORD. 1936. Forest and Flora of British Honduras. Field Museum of Natural History, Botany Series 12, 432 p.

STEVENS, W.D., C. ULLOA, A. POOL AND O.M. MONTIEL (ed.). 2001. Flora de Nicaragua. Monographs in Systematic Botany from the Missouri Botanical Garden 85: 192–229.

PALM LITERATURE

SYSTEMATICS, ECOLOGY AND MANAGEMENT OF RATTANS IN CAMBODIA, LAOS AND VIETNAM. THE BIOLOGICAL BASES OF SUSTAINABLE USE – Charles M. Peters and Andrew Henderson with contributions from Nguyen Quoc Dong and Thibault Ledecq. WWF/IKEA/NYBG. 2014. Pp. 234, numerous maps and color photographs throughout. Agricultural Publishing House. "Not for sale" – available as a free digital download at http://wwf.panda.org/who_we_are/wwf_offices/laos/newsrom/?216070/wwf-launches-first-ever-book-on-mekong-rattan-species



This attractive book, available in English, Khmer, Vietnamese and Lao language versions, aims to help both naturalists and those in the rattan industry to identify rattan species, while providing guidance in maximizing yields and achieving sustainable production of rattan resources. It is really useful to have so much information on Indochinese rattans available in a single volume. The book is divided into five chapters. Chapter I provides a brief description of the region and major biophysical factors that control rattan distribution and abundance, and also a brief outline of rattan trade. Chapter II, the botanical foundation of the work, is a field guide to the rattans of Cambodia, Laos and Vietnam and includes a dichotomous key to 65 different rattan species. Each species is represented by a double page spread with text on the left hand side – local names, brief descriptions, distribution and habitat, flowering and fruiting behavior and uses, and facing it on the right hand page a map and three diagnostic photos, usually illustrating sheathed stem, leaf and some part of reproductive material. Chapter III discusses rattan ecology, presenting data on the density, size-class distribution and annual growth of selected species and conservation assessments. Chapter IV provides data collection protocols and analyses required to define a sustainable harvest of wild rattan, together with a discussion of impact monitoring and periodic harvest adjustments. Chapter V examines the future of the rattan trade in the region. The authors boldly claim that the book is unique in addressing all these aspects of rattan in a single volume.

The press release for the book cited above (and the source of a free digital download) makes a bold statement – "the first ever book on Mekong rattan species" – that invites closer scrutiny. First ever? Surely not! The book is pre-empted by Evans et al. (2001) *Field Guide to the Rattans of Lao PDR* published in English and Lao. Although the Lao book's title suggests it covers just the Lao PDR, it covers the entire area of Lao PDR, Vietnam and Cambodia and neighboring parts of China and Thailand and includes accounts of 51 species. Where the earlier book differs is that it lacks the species that Henderson and his co-workers have described from the region since 2001 and also lacks the material on ecology, data collection protocols and trade and harvest. At one point

continued on p. 86