WEBBIA Journal of Plant Taxonomy and Geography

Firenze University Press
https://oaj.fupress.net/index.php/webbia

OPEN ACCESS

Citation: Ledesma-Hernández P., Ortiz-Díaz J.J., Ancona J.J. (2025). Taxonomic novelties and nomenclatural notes on *Coccoloba* sect. *Coccoloba* (Polygonaceae) from Mexico and Central America. *Webbia. Journal of Plant Taxonomy and Geography* 80(2): 253-265. doi: 10.36253/jopt-17684

Received: April 3, 2025

Accepted: June 20, 2025

Published: July 18, 2025

Data Availability Statement: All relevant data are within the paper and its Supporting Information files.

Competing Interests: The Author(s) declare(s) no conflict of interest.

Editor: Flores Olvera M.H.

ORCID
PH-L: 0000-0002-0071-4201
JJO-D: 0000-0002-8007-8427
JJA: 0000-0003-1060-0969

Taxonomic novelties and nomenclatural notes on *Coccoloba* sect. *Coccoloba* (Polygonaceae) from Mexico and Central America

Patricia Hernández-Ledesma[1], Juan Javier Ortiz-Díaz[2], Juan José Ancona[1,*]

[1] *Red de Diversidad Biológica del Occidente Mexicano, Instituto de Ecología A.C., Centro Regional del Bajío, Av. Lázaro Cárdenas 253, 61600, Pátzcuaro, Michoacán, México*
[2] *Herbario UADY, Departamento de Botánica, Campus de Ciencias Biológicas y Agropecuarias, Universidad Autónoma de Yucatán, carretera Mérida-Xmatkuil km 15.5, 97100, Mérida, Yucatán, México*
*Corrisponding author. Email: juanjo.ancona@gmail.com

Abstract. *Coccoloba* is one of the richest tropical tree genera of Polygonaceae. Since the last taxonomic treatment of the genus in 1959, new species and new nomenclatural arrangements have been published in the last decade. In this work, *Coccoloba ruizii* and *Coccoloba queretaroensis* are described and illustrated as two new endemic species from Mexico. The names *Coccoloba browniana*, *Coccoloba petenensis* and *Coccoloba wercklei* are resurrected based on morphological characters. In addition, to stabilize the taxonomy in *Coccoloba barbadensis*, neotypes are proposed for the names *Coccoloba barbadensis* var. *mexicana* and *Coccoloba leptostachya*.

Keywords: Central America, *Coccoloba*, Mexico, Polygonaceae, Taxonomy.

INTRODUCTION

Coccoloba P.Browne is the richest genus of tropical trees and shrubs within the Polygonaceae (Howard 1959a, b, 1961; Melo 2004; Burke and Sanchez 2011; Ortiz-Díaz and Ancona 2023). The presence of an ochrea, small flowers with 5 tepals, 8–10 stamens and achene embedded in the tepals, and/or the expanded hypanthium are the diagnostic characteristics of *Coccoloba* (Melo 2004; Burke et al. 2010; Ortiz-Díaz and Ancona 2025). The genus is native and widely distributed in the Neotropics, recognizing four regions with high species richness and endemisms (Koenemann and Burke 2020): Mesoamerica, The Antilles, Amazonia and Southestern Brazil. Recent phylogenetic analyzes of the subfamily Eriogonoideae have shown the monophyly of the *Coccoloba* and *Neomillspaughia* Blake placed as a sister to the genus, which together with *Podopterus* Bonpl. form the Coccolobeae tribe (Burke et al. 2010; Burke and Sanchez 2011; Koenemann and Burke 2020). However, infrageneric classification of the sections remain untested. The only monographic study of *Coccoloba* was carried out by Lindau in 1891, who

recognized 125 species, but more recent studies estimate the number of species from 120 to 150 (Howard 1961; Melo 2004; Acevedo-Rodríguez and Strong 2012; Hernández-Ledesma et al. 2015; Koenemann and Burke 2020).

In Lindau's treatment of *Coccoloba* (1891), the genus was classified into four sections, which are still recognized by morphology: *Coccoloba* sect. *Rhigia*, *C.* sect. *Paniculatae*, *C.* sect. *Campderia* and *C.* sect. *Coccoloba*, estimating 80 % of all species are including in the last one. The section *Coccoloba* includes species with racemiform and spiciform inflorescences; absence or reduction of ochreoles and acrosarcum fruit, meaning that the achene is covered by a fleshy or succulent accrescent exocarp derived from the perianth receptacle.

As part of the taxonomic study of *Coccoloba* species from Mexico and Central America, some specimens were observed that do not correspond to the previously described species within the section *Coccoloba* and are here proposed as two new species. In addition, the review of specimens of *Coccoloba acapulcensis* Standl. and *C. barbadensis* Jacq. throughout their distribution area allowed us to recognize and resurrect three names that were previously considered synonyms of these two species. Therefore, the objective of this work is to describe, illustrate and map the distribution of two new *Coccoloba* species for Mexico and to resurrect the names *C. browniana* Standl., *C. werkclei* Standl. and *C. petenensis* Lundell as species. The morphological characters of these resurrected species are compared with *C. acapulcensis* and *C. barbadensis*, that were previously considered synonyms.

MATERIALS AND METHODS

The study was conducted at Herbarium UADY of the Universidad Autónoma de Yucatán. During the review of herbarium specimens for the taxonomic treatment of the genus *Coccoloba* for Mexico and Central America, more than 550 specimens deposited in the BM, CICY, IEB, MEXU, MO, NY, UADY and XAL herbaria (acronyms follow Thiers 2025) determined as *Coccoloba acapulcensis* and *C. barbadensis,* were examined. All type specimens of the species listed above and their synonyms were consulted, as well as the general collections housed in virtual herbaria, including those maintained by JSTOR Global Plants (plants.jstor.org), Red de Herbarios del Noreste de México (herbanwmex.net), speciesLink (specieslink.net) and National Autonomous University of Mexico (MEXU; datosabiertos.unam.mx/biodiversidad). Specialized taxonomic literature on *Coccoloba* was consulted; in particular, Howard (1959a, b), Lindau (1891), Melo (2004) and Ortiz-Díaz and Ancona (2025). Additionally, the International Plant Names Index (www.ipni.org), and Tropicos (tropicos.org) were consulted to update the current nomenclature and geographical information.

The distribution map was created in QGIS 3.4 using the geographic coordinates of the herbarium labels recorded in the field by the collectors. The conservation status of the new species was assessed using the International Union for Conservation of Nature (IUCN) Red List Criteria (IUCN 2012; IUCN Standards and Petitions Committee 2024). We relied on criterion B, geographical distribution assessed both as B1/EOO (extent of occurrence) or B2/AOO (area of occupancy), as implemented in GeoCAT software (Bachman et al. 2011). The GeoCAT tool estimated the extent of occurrence (EOO) and its area of occupancy (AOO) of the new species based on 2 × 2 km cells.

TAXONOMIC TREATMENT

Coccoloba acapulcensis and allies

Coccoloba acapulcensis was described by Standley (1920: 66) with the specimen *Palmer 399*, collected in Acapulco, Guerrero. Standley mentioned that this species is markedly different from other *Coccoloba* species from Mexico and Central America by its peltate leaves. Standley (1927: 4) described later *Coccoloba browniana* with the specimen *S.J. Record & H. Kuylen 54* (US) collected in Honduras. In the protologue Standley remarked that it is an unusually well-marked *Coccoloba*, easily recognized among the Central American species by its broad cordate leaves, short racemes, and very large fruit. In 1929, Standley described *Coccoloba wercklei* with the specimen *C. Werckle s.n.* (US) collected in Costa Rica. Standley compares this new species with *C. browniana* and mentions that differs from *C. wercklei* by having shorter pedicels, less than 5 mm (vs. pedicels >10 mm). Finally, Standley describes *Coccoloba cardiophylla* and mentions that it is a very different species from other *Coccoloba* species from Mexico, but does not compare it with previously described species.

Almost a decade after the publication of *C. cardiophylla*, Lundell (1939) placed this name as a synonym of *C. browniana* and mentioned the affinities of this species with *C. acapulcencis* and *C. wercklei* such as the short raceme, long pedicels and large fruits, characteristics that differentiate them from other species of *Coccoloba* from Mesoamerica. Later, Howard (1959) in the study of Mexican and Central American species of *Coccoloba*

Table 1. Character comparison between *Coccoloba acapulcensis* and allies.

Character	State of character	*C. acapulcensis*	*C. browniana*	*C. werkclei*
Leaf blade	Shape	Orbicular, rounded or broadly ovate	Ovate, elliptic or oblanceolate	Ovate, elliptic or oblanceolate
	Texture	Chartaceous	Membranaceaous	Membranaceaous
	Base	Peltate (strictly)	Cordate	Cordate
	Apex	Rounded to slightly emarginate	Apiculate or acuminate	Apiculate or acuminate
Pedicel	Length (mm)	11–14	5–7	12–17
	Diameter (mm)	1.8–2.1	1–1.4	1.8–2.1
	Texture	Lignified	Herbaceous	Lignified
Fruit	Length (cm)	>2	1–1.5	>2
	Shape	Ovoid	Globose	Ovoid
	Base	Rounded	Rounded	Abruptly contracted

placed *C. browniana, C. cardiophylla* and *C. wercklei* as synonyms of *C. acapulcensis*. In this work we do not agree with Howard's conclusions (1959), but we do agree with Lundell's conclusion in recognizing three species: C. *acapulcensis*, C. *browniana* and C. *werkclei*. Table 1 and Figure 1 present the comparison among the diagnosable characters to delimit the three species.

Taxonomy

Coccoloba acapulcensis Standl. Proc. Biol. Soc. Washington 33(12): 66–67. 1920. (Figures 1A-C).

Type: MEXICO. Guerrero: vicinity of Acapulco, Oct 1894-Mar 1895, *Palmer 399* (holotype US!).

Distribution

This species is endemic to Mexico, distributed in the states of Guerrero and Michoacán (Fig. 2).

Coccoloba browniana Standl**.** Trop. Woods 10: 4–5. 1927. (Figs. 1D-F).

Type: HONDURAS. Collected in the dry region of Olanchito, 14 Feb 1927, S. *J. Record & H. Kuylen 54* (holotype US!).

(=) *Coccoloba cardiophylla* Standl. Publ. Field Mus. Nat. Hist., Bot. Ser. 8(1): 8. 1930.

Type: MEXICO. Yucatán [without locality], 1917-1921, *G. F. Gaumer 24013* (holotype F!).

Distribution

This species is distributed in Mexico (Campeche, Chiapas, Guerrero, Oaxaca, Puebla, Quintana Roo and Yucatan), Belize, El Salvador, Guatemala and Honduras (Fig. 2).

Coccoloba wercklei Standl. Publ. Field Mus. Nat. Hist., Bot. Ser. 4(8): 304. 1929. 1932[1930]. (Figures 1G-I).

Type: COSTA RICA. El Coyolar, 150 m, Jan 1912, *C. Werckle s.n.* (holotype US!).

Distribution

This species is endemic to Costa Rica (Fig. 2).

Coccoloba petenensis and allies

The synonymy of *Coccoloba barbadensis* Jacq. has already been discussed by Howard in several papers (1956, 1959b, 1992), we agree with all the proposed synonyms except for the name *Coccoloba petenensis* Lundell. *Coccoloba petenensis* was described by Lundell and he discussed its morphological affinity with *C. barbadensis*: the close affinity of *C. petenensis* with *C. barbadensis* is obvious, *C. petenensis* can be distinguished by its racemose inflorescences, pedicels up to 3 mm long, substipitate fruits that are narrow rather than rounded at the base, and obtuse apically (Fig. 3). In his revision of *Coccoloba* species from Mexico and Central America, Howard (1959b) assigned the specimens collected by Steyermark (*Steyermark 44899, 46040, 46160,* and *46224*) from Petén and Alta Verapaza, Guatemala, to *C. barbadensis*, with the following statement: they probably represent a hybrid complex. In this work, we observed these specimens and recognized them as *C. petenensis*. Later, Howard (1992) mentioned that he was able to observe authentic *C. petenensis* material and concluded that it belongs to the morphological variation of *C. barbadensis* and recognized the name as a synonym. However, in this work, we agree with Lundell in considering *C. petenensis* as an independent species.

Coccoloba barbadensis var. *mexicana* was described by Meisner (1856: 153) from the specimen *Schiede 1151*

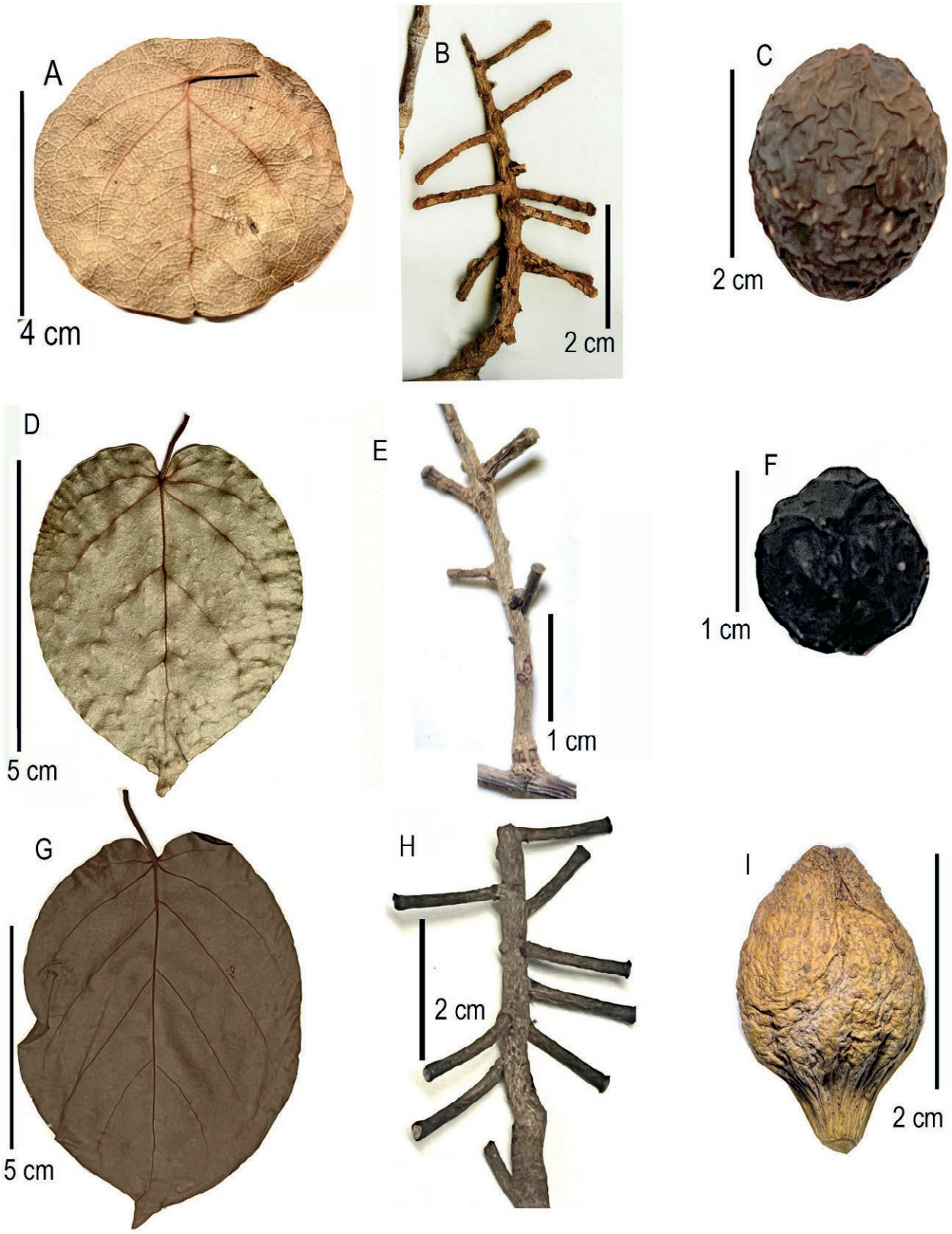

Figure 1. Morphological comparison between *Coccoloba acapulcensis* (A-C), *Coccoloba browniana* (D-F) and *Coccoloba werkclei* (G-I): A, D and G) abaxial surface of the blade; B, E and H) Pedicel; C, F and I) Fruit acrosarcum.

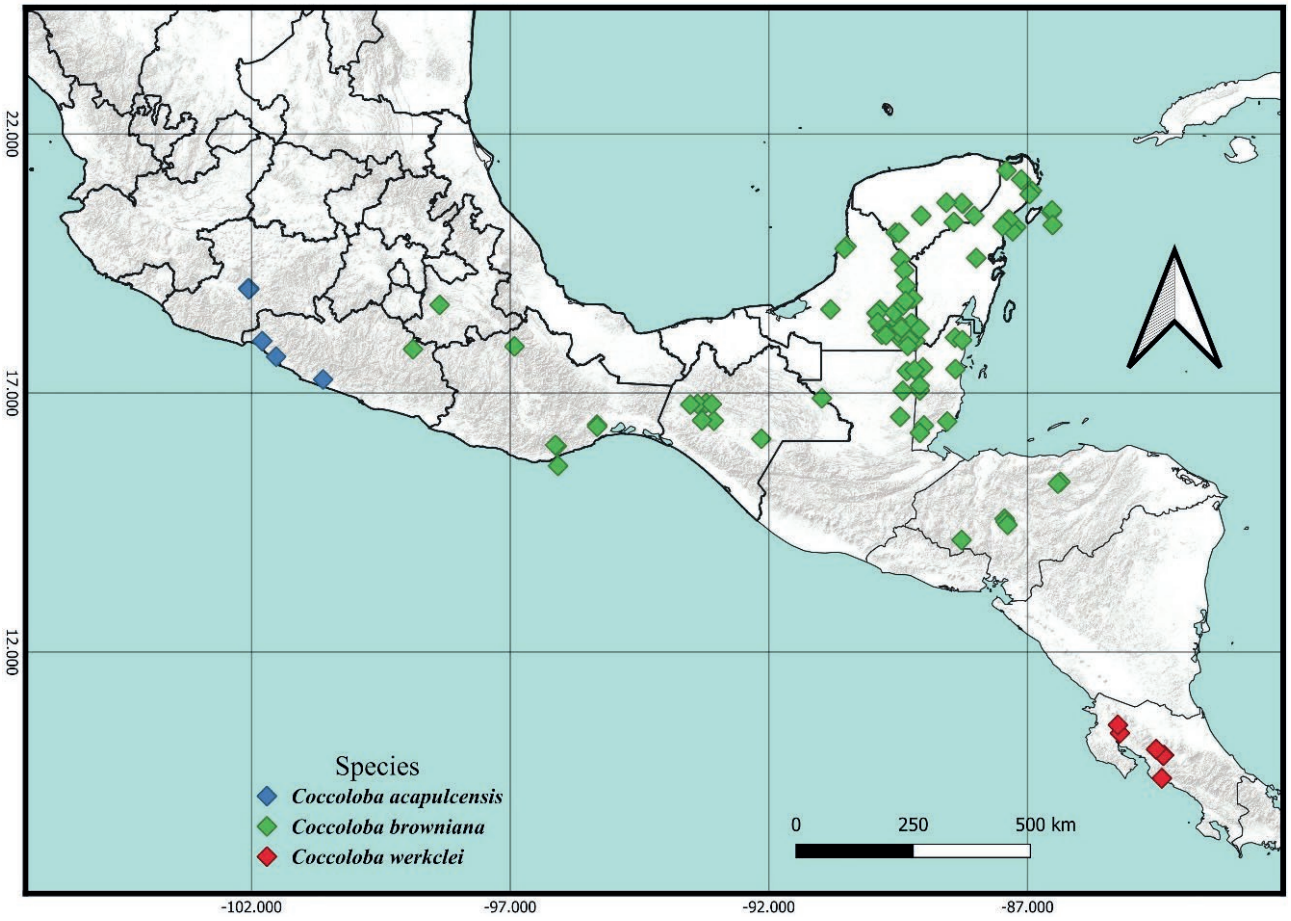

Figure 2. Distribution map of *Coccoloba acapulcensis*, *Coccoloba browniana* and *Coccoloba werkclei*.

deposited in the herbarium ZE Botanischer Garten und Botanisches Museum, Freie Universität Berlin (B). However, this specimen was not located. Later Lindau (1891) described the new species *C. schiedeana*, citing the Meisner variety as a synonym and the specimens *Schiede 1151, Liebmann sn., Karwinsky 734,735, 735b, Galeotti 7218* and *Wawra 44* without designating the holotype. In Herbarium B, there is another Schiede specimen without a collection number (*Schiede s/n*, barcode B10 0248247), with annotations by Lindau, which Howard (1959) later selected as the lectotype of the name. It is possible that the collection number has been lost, or that it is another specimen that Lindau did not mention in his species description. Therefore, since this specimen is not listed among the syntypes, we propose it in this work as the neotype of the name *C. barbadensis* var. *mexicana* and its synonym *C. schiedeana*.

Coccoloba leptostachya was described by Bentham (17846: 159) without reference to any specimen or illustration. Richard Howard (1959a) found the specimen *Barclay s/n* (K!) claiming that it is the original material observed by Bentham. He also confirmed that it is indeed the same as *C. barbadensis*, thus making the name *C. leptostachya* a synonym of *C. barbadensis*. In the NY herbarium, Michael Nee located another Barclay specimen (*Barclay 1125*) noting on the label that it is probably an isotype of *C. leptostachya*. Another problem associated with *C. leptostachya* is the origin of the observed material; the protologue mentions it as a species from La Libertad, Colombia, but this is an error. Currently, *C. barbadensis* is known to be a Mesoamerican species. Although the *Barclay s/n* label only indicates the locality "La Libertad", the *Barclay 1125* label describes the locality as "La Libertad, El Salvador", so we assume that these specimens were collected in El Salvador. Considering that Bentham did not mention any specimen in the protologue, we propose specimen *Barclay s/n* (K) as the neotype of the name *C. leptostachya* according to Art. 9.10 of ICN (Turland et al. 2018).

Taxonomy

Coccoloba petenensis Lundell Wrightia 3(7): 117. 1965. (Figs. 3A-D).

Type: Guatemala. Petén: Río Petexbatun, between Sayaxche and Laguna Petexbatun along riverbank, 4 Feb 1964, *C.L. Lundell 17669* (holotype LL).

Distribution

This species is distributed in Guatemala and Chiapas (Fig. 4).

Coccoloba barbadensis Jacq., Enum. Syst. Pl. 37. 1760. (Figure 3E-H).

Type: Mexico. Yucatán: Champotón, km 15 carretera Uayamon-Seybaplaya, 4 Jun 2003, *M.E. Magaña 950* (Neotype designated by Ortiz-Díaz & Ancona 2025: UADY!).

(=) *Coccoloba barbadensis* var. *mexicana* Meisn. Prodr. 14(1):153. 1856.

(=) *Coccoloba schiedeana* Lindau, Bot. Jahrb. Syst. 13(2): 187. 1890.

Type: Mexico. Veracruz: Papantla, *Schiede s/n* (designated by Howard 1959a as "holotype", here corrected to neotype according to the Art. 9.10 of ICN: B100248247!).

(=) *Coccoloba leptostachya* Benth., Bot. Voy. Sulphur. 159. 1846.

Type: El Salvador. La Libertad, *G. W. Barclay 1125* (designated by Howard 1959a as "holotype", here corrected to neotype according to the Art. 9.10 of ICN: NY00285686!).

(=) *Coccoloba jurgenseni* Lindau, Bot. Jahrb. 13: 188. 1890.

Type: Mexico. Oaxaca: *C. Jürgensen 157* (holotype G!, isotypes, F!, K!).

(=) *Coccoloba oaxacensis* H. Gross, Repert. Spec. Nov. Regni Veg. 12(322-324): 219-220. 1913.

Type: Mexico. Oaxaca: in der Umgebung von Rincón San Antonio auf dem Isthmus von Tehuantepec, 09 October 1906, *R. Endlich 1370* (holotype B!).

(=) *Coccoloba mayana* Lundell, Bull. Torrey Bot. Club 64 (8): 547-548. 1937.

Type; Guatemala. Departament of Peten: collected on the bank of the Rio San Pedro de Martir above El Paso, April 17, 1932, *C. L. Lundell 1498* (holotype MICH; isotypes CAS, GH, LL, NY, U, US).

(=) *Coccoloba masonii* Lundell, Lloydia 2(2): 84. 1939.

Type: Mexico. Collected on Maria Magdalena Island, in the Tres Marias Islands, 21 May 1925, *H.L. Mason 1806* (holotype F!, isotypes MICH!, NY!).

(=) *Cocoloba fluviatilis* Lundell, Contr. Univ. Michigan Herb. 7: 8. 1942.

Type: Mexico. Chiapas: Malpaso, near Siltepec, Elevatione 1000 m, Riverside, July 21 1941, *E. Matuda 4517* (holotype MICH!).

Distribution

Coccoloba barbadensis has wide distribution in Mexico, Belize, Guatemala, El Salvador and Honduras.

New species

Coccoloba queretaroensis J.J. Ancona, P.Hern.-Led. & J.J. Ortiz-Díaz, **sp. nov.** (Figure 5).

Type: Mexico. Querétaro: municipio Landa de Matamoros, cañón del río Estórax cerca de las adjuntas del río Moctezuma, elev. 700 m, 18 Nov. 2000, *E. Pérez-Calix et al. 4112* (holotype IEB!; isotype MEXU!).

Diagnosis

Coccoloba queretaroensis is similar to *Coccoloba burkeae* J.J. Ancona, J.J. Ortiz-Díaz & J. Tun, distinguished by shorter petioles, 7–9 (–11) mm, oblanceolate to lanceolate blades (vs petioles 12–15 mm, lanceolate to lanceolate-elliptic blades), racemiform inflorescence, acrosarcum 8–9 mm long, ovoid (vs spiciform inflorescence, acrosarcum 6–6.5 mm long, globose.

Description

Shurbs or trees hermaphrodites, 2–8 m tall; branches striate, glabrous; ochrea tubular, 3–5 mm, glabrous or puberulent. Leaves simple, alternate; petioles 7–9 (–11) mm long, 1.3–1.45 mm diameter, glabrous, arising at the base of the ochrea; leaf-blades 5–13 cm long, 2–5 cm wide, oblanceolate to lanceolate, coriaceous,

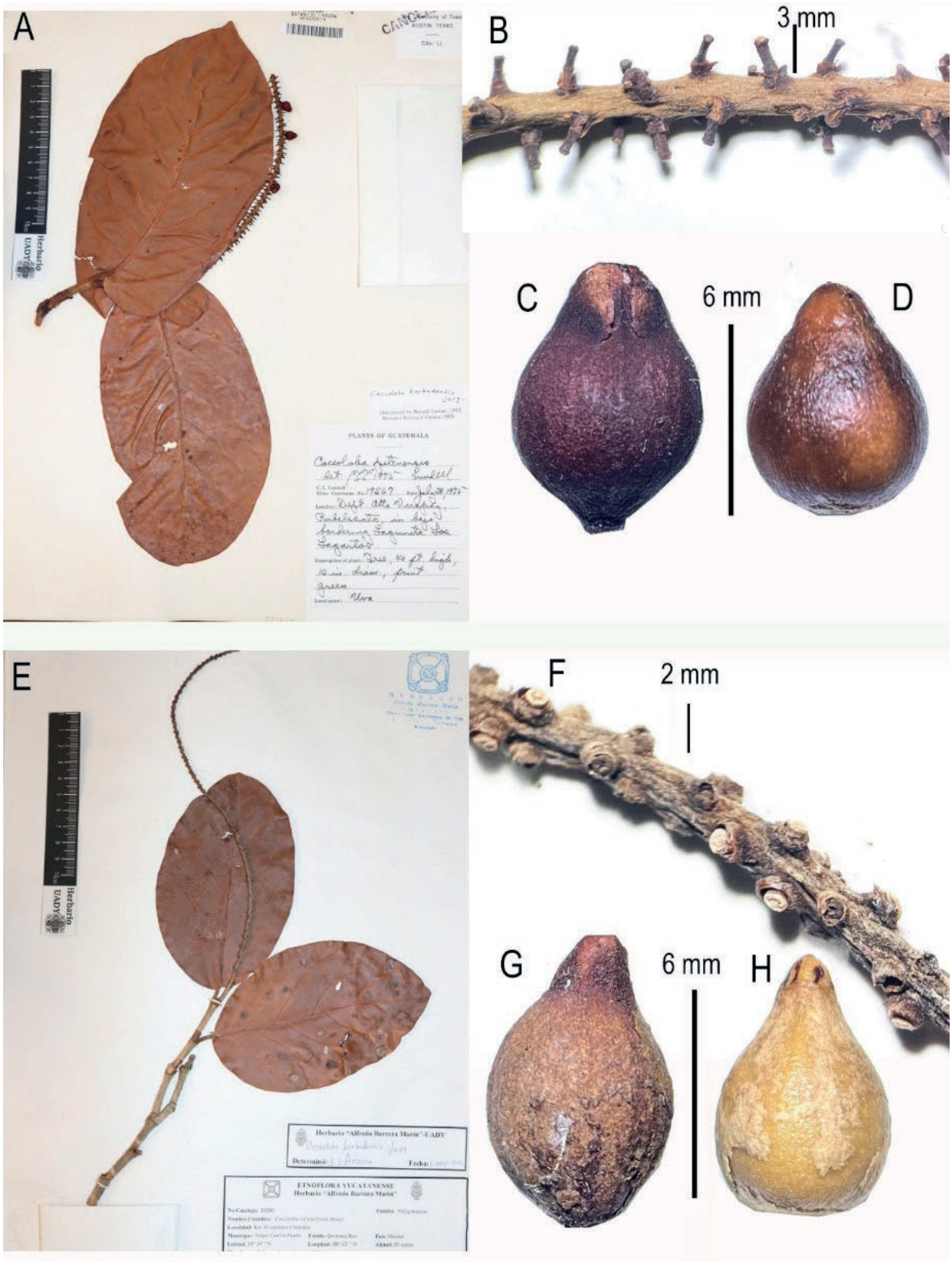

Figure 3. Morphological comparison between *Coccoloba petenensis* (A-D) and *Coccoloba barbadensis* (E-H): A and E) branch and inflorescence; B and F) details of the pedicels; C and G) acrosarcum fruit; D and H) achene.

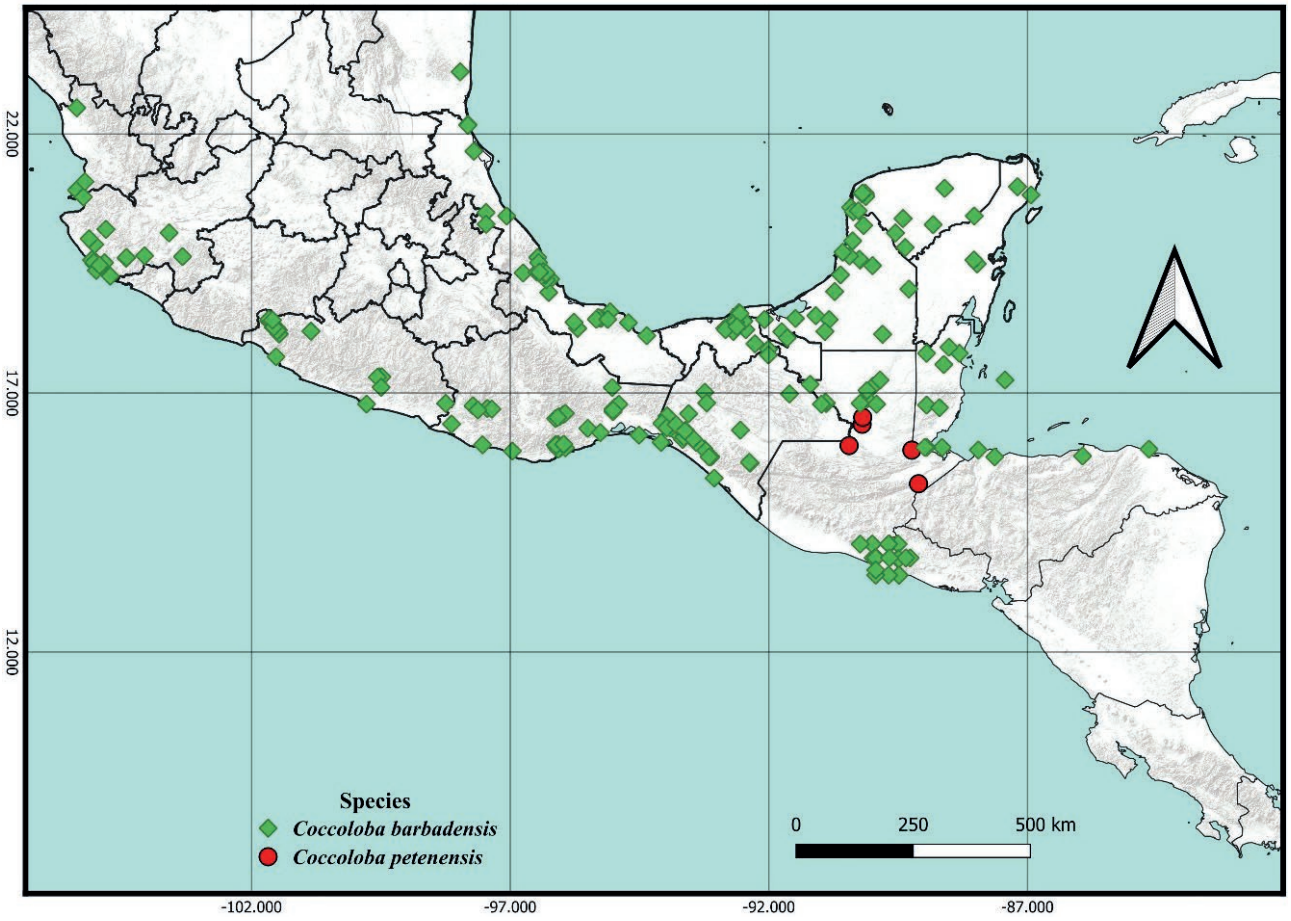

Figure 4. Distribution of *Coccoloba barbadensis* and *Coccoloba petenensis*.

glabrous on both surface, margin entire or undulate, base attenuate to cuneate, apex acute to short acuminate; venation brochidodromous and reticulate, 8–10 pairs of primary nerves. Inflorescence terminal, racemiform, 10-15 cm long, rachis striated, strongly rib-sided, puberulent; bracteole 0.2-0.5 mm long, cymbiform, membranaceous; ochreolae tubular, apex irregular, 1 mm long, membraneous, glabrous, yellowish; pedicels in flower 1.5–2 mm, pedicels in fruit 1.5–3 mm, thicker, glabrous or puberulent and pulverulent. Flowers in quincuncial aestivation, a single whorl, tepals imbricate, coriaceous; functionally male flowers 2–3 × fascicle, 2–2.5 mm; hypanthium 0.7–1 mm long, glabrous; tepals 1.2–1.5 mm long, glabrous; stamens 8, 2 mm long, filaments filiform 1.5 mm long, anthers 5 mm long; ovary 1 mm long, trigonous, glabrous, style 3, 0.5 mm long; flowers functionally female not seen. Fruit acrosarcum, 8–9 mm long, 6–7 mm diameter, ovoid, glabrous, base rounded, abruptly contracted at junction with pedicel, apex rounded to obtuse; hypanthium expanded, almost completely covering the achene, tepals persistent, coriaceous, appressed, covering the apex of the achene. Achene 6–7 mm long, 5–5.5 mm diameter, ovoid, base rounded or truncate, dark brown or black, apex tuberculate, depressed–galeate, slightly prominent.

Etymology

The specific epithet of this species refers to the state of Querétaro, the place where it lives and where it was collected.

Distribution and habitat

Coccoloba queretaroensis is endemic to Querétaro, Mexico. (Fig. 6). It inhabits seasonally dry forests, oak forests, and transition zones between oak forest and seasonally dry forest, at elevations of 250 to 850 m.

Phenology

Fruit collected from August to November; flowers collected from March to June.

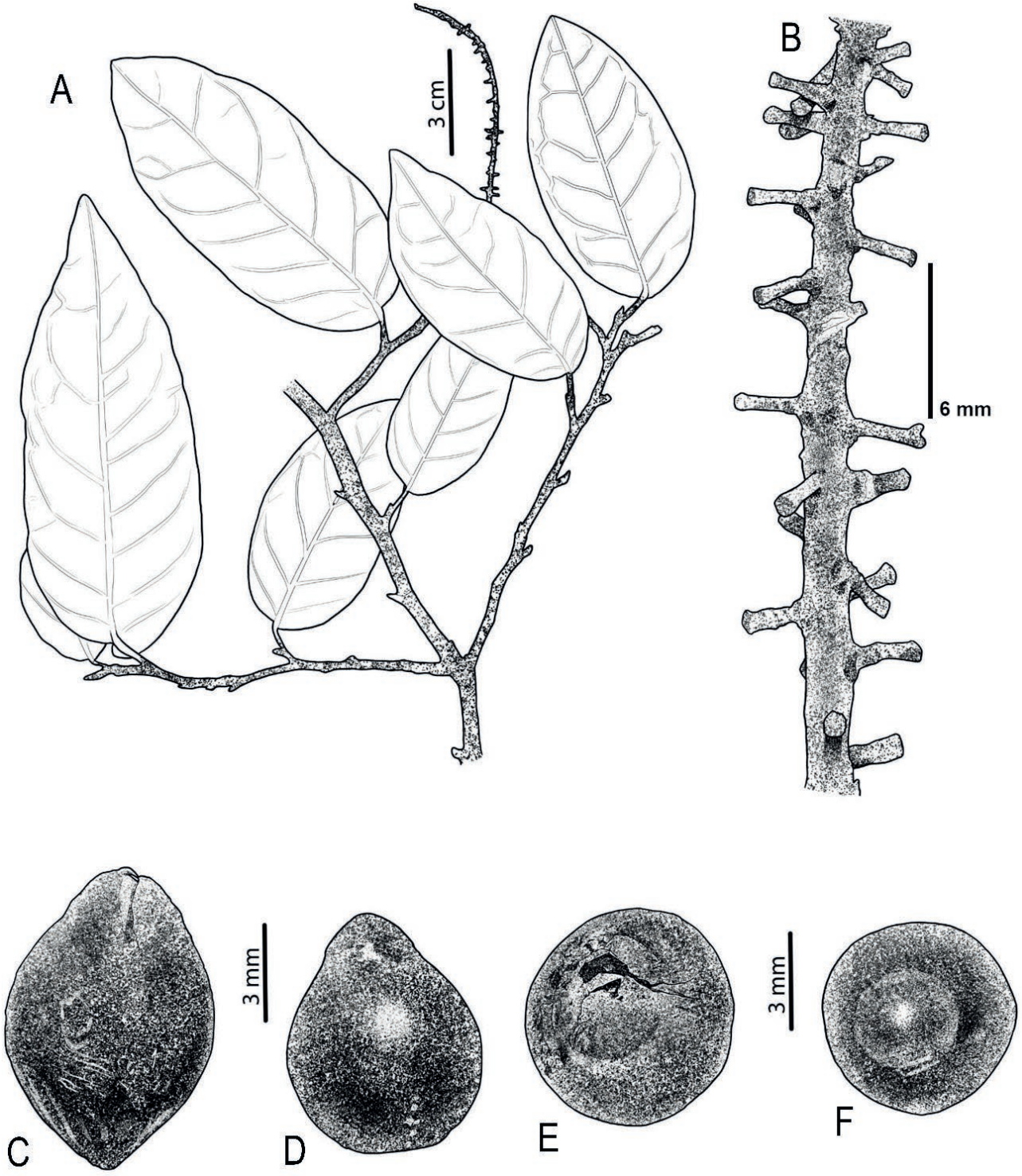

Figure 5. *Coccoloba queretaroensis* J.J. Ancona, P.Hern.-Led. & J.J. Ortiz-Díaz. A. Branch showing leaves and inflorescence. B. Inflorescence and pedicel. C. Acrosarcum lateral view. D. Achene lateral view. E. Acrosarcum polar view. F. Achene polar view. Illustrations by Eduardo Velázquez Echeverría.

Figure 6. Distribution maps of *Coccoloba queretaroensis* and *Coccoloba ruizii*.

Status of conservation

Coccoloba queretaroensis has an EOO of 128 km^2 and an AOO of 24 km^2, both values being below the thresholds of the Endangered (EN) category under criteria B1 and B2, respectively. Therefore, considering its small area of occupancy corresponding to 24 km^2, its presence extension of 128 km^2, six collection and one or two locations, it is established that *C. queretaroensis* is in a preliminary category of EN B1ab(iii)+2ab(iii) following the IUCN criteria.

Specimens examined

MEXICO. **Querétaro**: Mpio. de Landa, 8 km al sureste de Agua Zarca, sobre el camino a Pisaflores, 800 m, 13 Apr 1988, *Rzedowski 46362* (IEB); Mpio. de Landa, 8 km al sureste de Agua Zarca, camino al río Moctezuma, 600 m, 30 Oct 1990, *H. Rubio 2008* (IEB); Mpio. de Landa, a 2 km al sureste de San Juan, Los Tubos, 200 m, 12 Jun 1990, *H. Rubio 1806* (IEB, MEXU); Mpio. de Jalpan, 2-3 km al E de La Boquilla, S. L. P. junto al río Santa María 270-320 m, 10 Mar 1993, *E. Carranza y Cols. 4574* (IEB); Mpio. de Jalpan, 1-2 km al SW de El Embarcadero, 850 m, 16 Aug 1990, *E. Carranza 2655* (holotype IEB).

Coccoloba ruizii J.J.Ancona, P.Hern.-Led. & J.J.Ortiz-Díaz, **sp. nov.** (Figure 7).

Type: Mexico. Veracruz: Puente Nacional, El Hato, orilla del arroyo, elev. 450, 7 Apr 1973, *F. Ventura 8125* (IEB!).

Diagnosis

Coccoloba ruizii is similar to *C. tunii* Ortiz-Díaz & Arnelas, it is differentiated for narrow elliptic, coriaceous, abaxially glabrous, adaxially sparsely puberulous (vs elliptic to elliptic oblong or narrowly ovate, chartaceous, adaxially scarce to sparsely pubescent), acrosarcum ovoid, 6–6.5 × 5 mm, not glandular puntiform (vs globose 7–10 × 7–10 mm, glandular puntiform); achene globose, brown with apex yellowish (vs globose, brown or black).

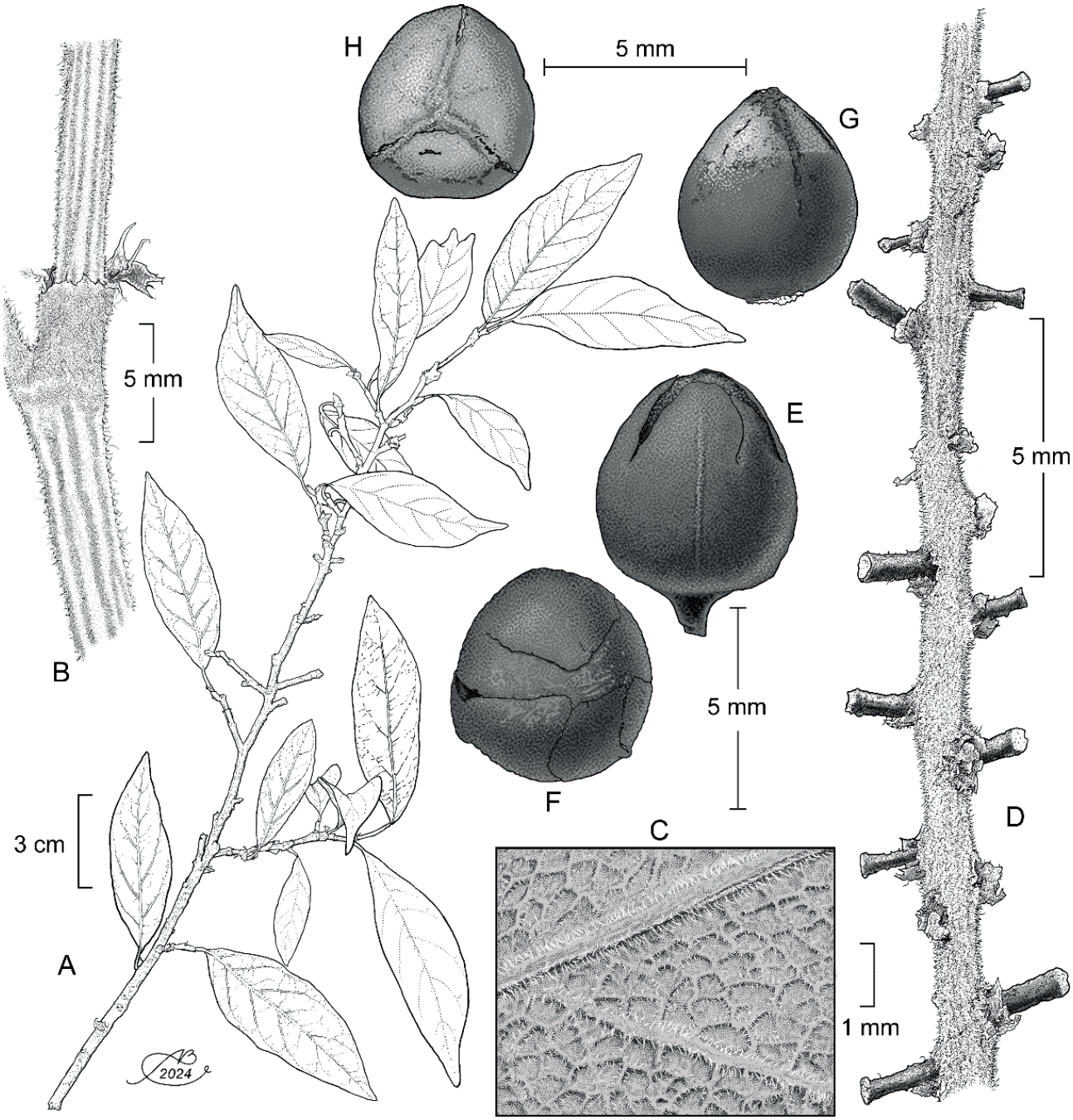

Figure 7. *Coccoloba ruizii* J.J. Ancona, P.Hern.-Led. & J.J. Ortiz-Díaz. A. Branch showing leaves and inflorescence. B. Ochrea. C. Abaxial surface of the blade. D. Details of the inflorescence . E. Acrosarcum lateral view. F. Acrosarcum polar view. G. Achene lateral view. H. Achene polar view. Illustrations by Alfonso Barbosa.

Description

Shurbs or trees hermaphrodites, 3–7 m tall; branches striate, glabrous; ochrea tubular, 3–5 mm, pubescent to densely hirsute, with yellowish trichomes. Leaves simple, alternate; petioles 5–9 (13) mm long, 1.3–1.79 mm diameter, pubescent to densely hirsute mainly in the adaxial part, with yellowish trichomes, arising at the base of the ochrea; leaf-blades 6–9(11) cm long, 2.5–3.5(4) cm wide, narrow elliptic, coriaceous, abaxially glabrous, adaxially sparsely puberulous, with yellowish trichomes, margin

entire, sparsely ciliate, apex acute to short acuminate, base attenuate to cuneate; venation brochidodromous and reticulate, 7–9 pairs of primary nerves, primary nerve densely pilose or pubescent, with yellowish trichomes. Inflorescence racemiform, terminal or axillar, laxiflorous, solitary, 3–6 cm long; rachis terete to angular, not ribbed, up to 1 mm diameter, striate, sparsely to densely puberulent and pulverulent, with yellowish trichomes; bracteole 0.5 mm long, cymbiform, black or dark brown, puberulent and pulverulent, apex acute; ochreola membranaceous, light brown, breaking irregularly, surrounding the pedicel, 0.5 mm long; pedicels in flower not seen, pedicels in fruit 1.2–1.5 mm, glabrous or puberulent and pulverulent. Flowers not seen. Fruit acrosarcum, 6–6.5 mm long, 5 mm diameter, ovoid to subglobose, glabrous, base rounded, abruptly contracted at junction with pedicel, apex rounded to obtuse; hypanthium expanded, almost completely covering the achene, tepals persistent, membranaceous, appressed, covering the apex of the achene. Achene 5 mm long, 4.5–5 mm diameter, globose, slightly 3-lobed, base rounded or truncate, brown, apex obtuse, yellowish, smooth, glossy.

Etymology

The specific epithet is in honor of Dr. Eduardo Ruiz Sánchez, Mexican botanist specialized in the taxonomy and systematics of Poaceae, especially the genus of Bamboo.

Distribution and habitat

Coccoloba ruizii is only known from the type locality (Figure 6). Habiting in high evergreen forest.

Phenology

Fruit collected in April.

Status of conservation

Currently, only the type locality of the new species is known, the specimen was collected in 1995 and there are no recent collections in herbaria. According to the IUCN red list criteria, the conservation status of the new species should best be classified as "Data Deficient (DD)". Of course, more research and broader field work is needed to locate new populations and establish some Red List category.

REFERENCES

Acevedo-Rodríguez P, Strong MT. 2012. Catalogue of Seed Plants of the West Indies. Smithsonian Contributions to Botany. 98: 1-1192. https://doi.org/10.5479/si.0081024X.98.1

Bachman S, Moat J, Hill A, de la Torre J, Scott B. 2011. Supporting Red List threat assessments with GeoCAT: Geospatial conservation assessment tool. ZooKeys. 150: 117–126. https://doi.org/10.3897/zookeys.150.2109

Bentham G. 1844. The Botany of the Voyage of H.M.S. Sulphur. Published by Smith, Elder and Co. 65 Cornhill. London. Pp. 183

Burke JM, Sánchez A. 2011. Revised subfamily classification for Polygonaceae, with a tribal classification for Eriogonoideae. Brittonia. 63: 510–520. http://doi.org/10.1007/s12228-011-9197-x

Burke JM, Sánchez S, Kron K, Luckow M. 2010. Placing the woody tropical genera of Polygonaceae: a hypothesis of character evolution and phylogeny. American Journal of Botany. 97(8): 1377–1390. http://doi.org/10.3732/ajb.1000022

Hernández-Ledesma P, Berendsohn WG, Borsch Th, von Mering S, Akhani H, Arias S, Castañeda-Noa I, Eggli U, Eriksson R, Flores-Olvera H, Fuentes-Bazán S, Kadereit G, Klak C, Korotkova N, Nyffeler R, Ocampo G, Ochoterena H, Oxelman G, Rabeler RK, Sanchez A, Schlumpberger BO, Uotila P. 2015. A taxonomic backbone for the global synthesis of species diversity in the angiosperm order *Caryophyllales*. Willdenowia. 45(3): 281–383. https://doi.org/10.3372/wi.45.45301

Howard RA. 1956. Studies in the genus *Coccoloba*, II. The identification of *Coccoloba swartzii* Meisner and *Coccoloba barbadensis* Jacquin and their relatives. Journal of the Arnold Arborertum. 37(4): 317–339.

Howard RA. 1959a. Studies in the genus *Coccoloba*, VII. A synopsis and key to the species in Mexico and Central America. Journal of the Arnold Arborertum. 40(2): 176–203.

Howard RA. 1959b. Studies in the genus *Coccoloba* VII. A synopsis and key to the species in Mexico and Central America. Journal of the Arnold Arborertum. 40(3): 205–220.

Howard RA. 1961 Studies in the genus *Coccoloba*, X. New species and a summary of distribution in South America. Journal of the Arnold Arborertum. 42(1): 87–95. http://doi.org/10.5962/bhl.part.19012

Howard RA. 1992. Collected notes on *Coccoloba* L. (Polygonaceae). Brittonia. 44: 356-367. https://doi.org/10.2307/2806940

IUCN. 2012. The IUCN Red List categories and criteria. Ver. 3.1. 2nd ed. IUCN.

IUCN Standards and Petitions Committee. 2024. Guidelines for Using the IUCN Red List Categories and

Criteria. Version 16. Prepared by the Standards and Petitions Committee. [https://www.iucnredlist.org/documents/RedListGuidelines.pdf]

Koenemann DM, Burke JM. 2020. A Molecular Phylogeny for the Genus *Coccoloba* (Polygonaceae) with an Assessment of Biogeographic Patterns. Systematic Botany. 45(3): 567–575. https://doi.org/10.1600/036364420X15935294613536

Lindau G. 1890. Monographia Generis *Coccolobae*. Botanische Jahrbücherfür Systematik. 13: 106–229.

Lundell CL. 1939. Studies of Mexican and Central American plants VII. Lloydia. 2(2): 73-108.

Lundell CL. 1965. Studies of the tropical American plants II. Wrightia. 3(7): 117–125.

Meisner CF. 1856. Ordo CLXI: Polygonaceae. In: de Candolle A.L. (Ed.). Prodromus Systematis Naturalis Regni Vegetabilis 14. Paris, France.

Melo E. 2004. As espécies de *Coccoloba* P. Browne (Polygonaceae) da Amazônia Brasileira. Acta Amazónica. 34(4): 525‑551. https://doi.org/10.1590/S0044-59672004000400006

Ortiz-Díaz JJ, Ancona JJ. 2025. *Coccoloba*. In: Ulloa-Ulloa, C., H. M. Hernández, F. R. Barrie & S. Knapp. (Eds.). Cycadaceae a Connaraceae 2(1) Flora Mesoamericana. Missouri Botanical Garden, St. Louis. (ined., in progress).

Standley PC. 1927. New or otherwise interesting trees and shurbs collected in Guatemala and Honduras in 1927 by Samuel J. record and Henrry Kuylen. Tropical Woods. 10: 4-7.

Thiers B. 2025 [continuously updated]. 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: 22 September 2025).

Turland NJ, Wiersema JH, Barrie FR, Greuter W, Hawksworth DL, Herendeen PS, Knapp S, Kusber W-H, Li D-Z, Marhold K, May TW, McNeill J, Monro AM, Prado J, Price MJ, Smith GF. 2018. International Code of Nomenclature for algae, fungi, and plants (Shenzhen Code). Regnum Vegetabile. 159. Koeltz Botanical Books, Glashütten, Germany.