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Magnolia (Magnoliaceae) in Honduras: a synopsis with six new taxa

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Abstract

We present a taxonomic synopsis for the ten species of Magnoliaceae from Honduras with a key and distribution map for the recognised species. Five new species and one new subspecies of *Magnolia* sect. *Magnolia* are described and illustrated: *M. celaquensis, M. cusucoensis*, *M. darioi*, *M. pastorcortesii*, *M. picopijolensis,* and *M. sororum* subsp. *oligocarpa*. The rediscovery of *M. atlantida* is confirmed after more than eight decades since its discovery in Atlántida, Honduras. The conservation status of each species is evaluated: one is considered least concern (LC), one vulnerable (VU), two endangered (EN) and six critically endangered (CR).

Keywords: Celaque National Park, Central American flora, Cortés Department, Cusuco National Park, *Talauma*

Resumen

Presentamos una sinopsis taxonómica para diez especies de Magnoliaceae de Honduras, con una clave y mapa de distribución geográfica para las especies reconocidas. Se describen e ilustran cinco especies nuevas y una subespecie nueva de *Magnolia* sect. *Magnolia*: *M. celaquensis, M. cusucoensis*, *M. darioi*, *M. pastorcortesii, M. picopijolensis* y *M. sororum* subsp. *oligocarpa*. Se confirma el redescubrimiento de *M. atlantida* después de más de ocho décadas desde su descubrimiento. Se evalúa el estado de conservación de cada especie: una se considera de menor preocupación (LC), una vulnerable (VU), dos en peligro (EN), y seis en peligro crítico (CR).

Palabras clave: Flora de Centroamérica, Parque Nacional Cusuco, Parque Nacional Montaña de Celaque, Departmento de Cortés, *Talauma*

Introduction

Central American Magnoliaceae Jussieu (1789: 280), currently consisting of 30 species in two sections, display a remarkable pattern of allopatry, with a high species diversity when compared to Mexico and Colombia -each with 40 species but areas roughly four and two times larger, respectively. It is worth noting that north of the Nicaraguan

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Depression, Central American *Magnolia* Linnaeus (1753: 535) sect. *Magnolia* is richer than *M.* sect. *Talauma* Baillon (1866: 3) (10 vs. 4 spp.), whereas south of this boundary the situation is reversed (3 vs. 13 spp.); in Nicaragua there is only one species for each section (Standley & Steyermark 1946, Molina-Rositto 1974, 1975, Vázquez-García 1990, 1994, Balick *et al.* 2000, Linares 2005, Berendsohn *et al.* 2012, Vázquez-García *et al.* 2012a, 2012b, 2013a, 2013b, 2016).

The first Central American species of *Magnolia*, *M. guatemalensis* Donnell Smith (1909: 253) was based on material collected in 1908 at Tactic, Alta Verapaz (Guatemala) by the German lawyer and naturalist von Tuerckheim. The first species of *Magnolia* from Honduras, *M. yoroconte* Dandy (1930: 147), was published two decades later based on material collected by Whitford and Stadtmiller. The number of native species of *Magnolia* published for Central America has now reached 30; following Figlar & Noteboom (2004), 12 of them belong to *Magnolia* sect. *Magnolia* and 18 to *Magnolia* sect. *Talauma.* Sixty percent of the species (15) were described in the decade 2010–2020, a fact perhaps related to the proliferation of virtual databases that have provided a better accessibility to herbaria specimens and have made taxonomic studies more effective (JSTOR: https://www.jstor.org/; Tropicos: http://www.tropicos.org/; The Plant List: http://www.theplantlist.org/, and several online herbaria platforms).

Earlier work reported six species for Honduras (Molina-Rositto 1975): two cultivated species, *M. champaca* (Linnaeus 1753: 536) Baillon in Pierre (1880: pl. 3) and *M. grandiflora* Linnaeus (1759: 1082); and four native species, *M. guatemalensis*, *M. hondurensis* Molina-Rositto (1974: 95), *M. yoroconte* and *Talauma mexicana* (De Candolle 1817: 451) Don (1831: 85). However, the occurrence of *M. guatemalensis sensu stricto* in Honduras has not been confirmed (Vázquez-García *et al*. 2012a, 2013a). Similarly, *Talauma mexicana*, now treated as *M. mexicana* De Candolle (1817: 451), has not been confirmed for Honduras; the record most likely corresponds either to a pair of poorly understood records (*Magnolia* sp.) from western Cusuco (*Kelly CO5/MS/928,* TCD, or *Kelly DA2/MS/334*) or to one of the two species of *Magnolia* sect. *Talauma* recently described from Honduras: *Magnolia atlantida* Vázquez (2012a: 92) or *Magnolia cochranei* Vázquez (2012a: 96). However, without a cited voucher in Molina-Rositto´s catalogue for the EAP herbarium, it is difficult to determine which species of *Magnolia* he treated as *T. mexicana*. Nelson-Sutherland (1986, 2001, 2008) additionally listed *M. sororum* Seibert in Woodson & Seibert (1938: 828); this species is here confirmed from Olancho, Honduras. In this synopsis, we report on ten Honduran native species: *Magnolia atlantida*, *M. cochranei*, *M. hondurensis*, *M. sororum*, *M. yoroconte* and the five additional species and one subspecies proposed here.

Recent fieldwork at Cusuco National Park in the Sierra del Merendón (Cortés department) by the second author and co-workers, allowed us to locate at least five new species of *Magnolia*, four belonging to *M.* sect. *Magnolia* and one from *M.* sect. *Talauma*. After comparing with all other Neotropical species of *Magnolia*, we concluded that we were dealing with at least three undescribed species from this park, one more from Pico Pijol National Park (Yoro department) and another from Montaña de Celaque in Copán department. Fieldwork conducted in October 2021 and July 2022 in Nueva Frontera, municipality of Santa Bárbara, also allowed us to understand the morphological variability and geographical distribution of *M. yoroconte* (Mejía *et al.* 2021).

Fieldwork was carried out in eleven expeditions: six to Cusuco National Park (summer 2004, 2006, 2008, 2011, and 2013, and spring 2016, with some additional 'proxy recording' in summer 2017 and 2019), all under the aegis of the UK-based expedition company Operation Wallacea in collaboration with the Instituto de Conservación Forestal, Áreas Protegidas y Vida Silvestre (ICF), Honduras; two expeditions to Nueva Frontera, Santa Barbara (fall 2021 and summer 2022); one expedition to La Ceiba, Atlántida (fall 2021); one expedition to Montaña de Celaque National Park (summer 2022); and one expedition to Reserva de Río Plátano (summer 2012) in the Gracias a Dios department.

Morphological and geographical descriptions, a distribution map (Fig. 1) and illustrations were based on fresh and herbarium material studied at the following herbaria: BIGUA, BM, C, EAP, ENCB, F, GH, HEH, HJBL, IBUG, INB, MEXU, MICH, MO, NY, TCD, TEFH, US and WIS (Thiers 2017). Images for figures were obtained from fieldwork and the Global Plant JSTOR website. Leaf description and general shapes of reproductive structures follow Lozano-Contreras (1994) and Vázquez-García *et al.* (2016). A detailed examination was undertaken of herbarium type specimens and electronic images available at the Global Plant JSTOR website. For nomenclature, we followed *Plants of the World online* (POWO 2019).

Authors follow the *International plant names index* (IPNI 2019). The conservation status of each species was assessed based on IUCN (2012; Table 1). Many references were located and accessed from Tropicos.org (2019), in connection with the *Biodiversity heritage library* (BHL 2019).

TABLE 1. Conservation assessment of the ten Honduran *Magnolia* species. Supplemented and updated from Vázquez-García *et al*. (2012b, 2013a, 2013d) and Rivers *et al*. (2016). HND= Honduras, GTM= Guatemala, SLV= El Salvador, NIC= Nicaragua, PAN= Panamá.

Species/distribution/ proposed IUCN Red List Category	Red List assessment following IUCN criteria (IUCN 2012)	In situ/ex situ conservation
M. atlantida HND: Atlántida, Mt. Cangrejal Critically endangered (CR) B1ab(iii)	Only known from Atlántida: 1) the type locality at Mt. Cangrejal, in Parque Nacional Pico Bonito, and 2) Parque Nacional Nombre de Dios. Its scattered distribution suggests that it needs protection (Vázquez-García *et al*. 2012b). It is extremely rare; no additional herbarium records had been reported for this species since it was first found in 1938.	The habitat of this species is protected by Nombre de Dios National Park and Parque Nacional Pico Bonito / No records of ex-situ collections.
M. celaquensis HND: Copán, Cuchilla del Águila Critically endangered (CR) B1ab(iii)	Only known from the type locality. Given its extremely narrow distribution, this species should be considered Critically Endangered.	Parque Nacional Montaña de Celaque/ No records of ex situ collections.
M. cochranei HND: Cortés, Yoro, and Comayagua Endangered (EN) B1ab (ii, iii)	This species is only known from a few localities in departments Comayagua, Cortés, and Yoro, it must be a target for conservation and research efforts (Vázquez-García *et al*. 2012b). The estimated known extent of occurrence (EOO) is less than 5000 km, but the deforestation rate along this extent is very high.	Cordillera de Montecillos Biological Reserve, Cusuco National Park, Pico Pijol National Park / No records of ex situ collections.
M. cusucoensis HND: Cortés Critically endangered (CR) B1ab(iii)	The known extent of occurrence is very restricted, *ca.* 16.23 km^2, its area of occupancy is 24 km^2, and the populations are severely fragmented, but it is in a natural protected area, Cusuco National Park in the Cortés Province.	The habitat of this species is protected by Cusuco National Park/ No records of ex-situ collections.
M. darioi HND: Cortés. Critically endangered (CR), B1ab(iii).	This species is known from a very small number of individuals, apparently sparsely scattered across a very restricted geographical area, an extension of occurrence (EOO) of 0.621 km^2, and an area of occupancy (AOO) of 8 km^2.	The habitat of this species is protected by Cusuco National Park/ No records of ex-situ collections.
M. hondurensis HND, GTM & SLV. Least concern (LC) B1	Endemic to Central America, ranging from Guatemala to El Salvador, and Honduras. It is widely distributed in montane cloud forests and mixed forests in Honduras with few populations in El Salvador and one in Guatemala. The estimated known extent of occurrence (EOO, minimum convex polygon) is ca. 25,000 km^2.	Guajiquiro Biological Reserve, Montecillos Biological Reserve, Celaque National Park, Monte Cristo National Park, Reserva de la Biosfera transfronteriza Trifinio-Fraternidad / No records of ex situ collections.
M. pastorcortesii HND: Cortés Critically Endangered (CR) B1ab(iii)	The known extent of occurrence (EOO) is less than 10 km^2; only two trees have been recorded, both at the type locality. One of the trees had an unhealthy appearance.	It is inside a protected area, Parque Nacional Cusuco, but close to the park boundary / No records of ex-situ collections.
M. picopijolensis HND: Yoro Critically Endangered (CR) B1ab(iii)	It is estimated that this species has an extent of occurrence (EOO) < 10 km^2, only known from Valley of Río Pijol, Parque Nacional Pico Pijol.	Pico Pijol National Park / No records of ex-situ collections.
M. sororum subsp. ***sororum*** HND, NIC, PAN Vulnerable (VU) B2ab(ii, iii)	This subspecies inhabits eastern Honduras (Olancho, Colón and Gracias a Dios), western Nicaragua (Jinotega and Atlántico Norte), with disjunct populations in Panamá (Chiriquí, Coclé). The area of occupancy is estimated less than 2,000 km^2, its habitat is severely fragmented, and a continuing decline in the area and quality of its habitat has been observed.	Sierra de Agalta National Park / No records of ex-situ collections.
M. sororum subsp. ***oligocarpa*** HND: Yoro Critically Endangered (CR) B1ab(iii)	This subspecies is only known from two localities in Yoro department. The estimated known extent of occurrence (EOO) is less than 100 km^2, the populations are severely fragmented and there is a continuing decline in the quality of its habitat.	There are not protected areas in the range of this subspecies / No records of ex-situ collections.
M. yoroconte HND: Copán, Yoro, Atlántida, Comayagua, Cortés, Santa Bárbara. GTM: Izabal. Endangered (EN) B2ab(iii)	The known area of occupancy of this species is <500 km^2, their populations are severely fragmented and there is a continuing decline in the quality of its habitat.	Parque Nacional Cusuco. There are records of plantations of this tree species, but the identity is not confirmed. Plantations of confirmed identity include those at El Suspiro and Nueva Frontera in the Santa Bárbara Department.

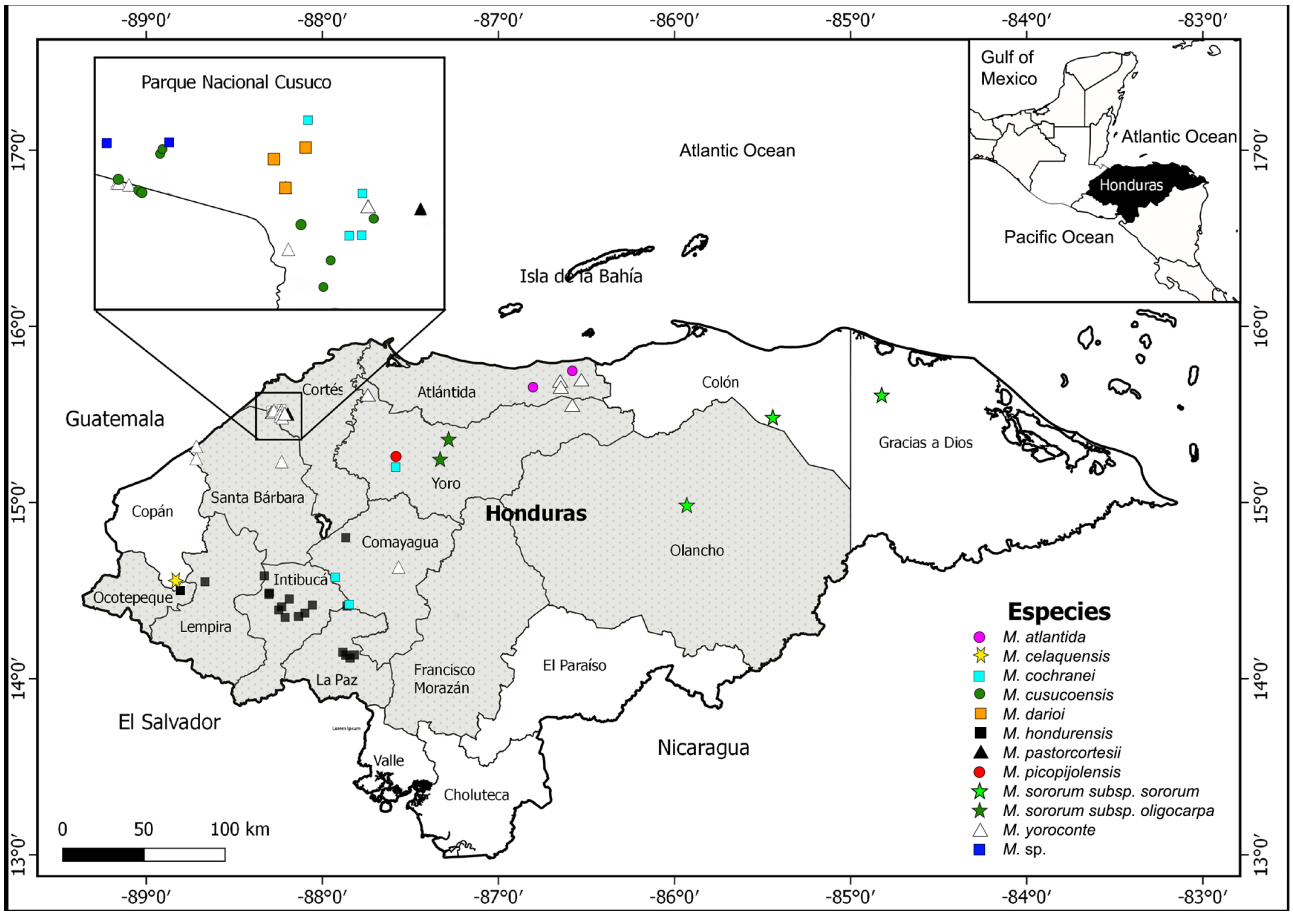

FIGURE 1. Geographic distribution of Honduran Magnoliaceae.

Taxonomic treatment

Magnolia atlantida A.Vázquez, *Recursos Forest. Occid. México* 1: 92–94, f. 1.5.1. 2012. (Figs. 2–3)
Type:—HONDURAS. Depto. Atlántida: Slopes of Mt. Cangrejal, mountain slopes and coastal plains, vicinity of La Ceiba, 600 ft [183 m.], 06 Aug 1938 (immature fr), *Yuncker 8845* (holotype: NY!; isotypes: GH!, MO!).

Trees (4–)6–17(–20) m high; twig internodes 0.7–2 × 0.3–1.1 cm, glabrous, green to yellowish, with elliptic lenticels; stipules adnate to the entire length of the petiole, glabrous. Leaves petiolate, petioles (2–)3–6.2 × 0.3–0.5 cm, glabrous, laminas 17–39 × 9–15 cm, ovate to oblanceolate, acute at the base and apex, glabrous, abaxially glossy, 8–11 secondary veins per side. Flowers not seen, inferred from scars, trimerous, peduncle 1.8–2 cm × 1.7–1.9 cm, glabrous, hypsophylls (inferred from scars) 1–2, sepals 3, petals 6, stamens (counted from staminal scars at the staminophore) ca. 305–310, gynoecium ovoid, glabrous, carpels 90–96, flattened at the stylar tip, stylar tips 1.2–1.3 cm long. Fruits (inferred from gynoecium) ovoid, expected to be larger than 10 cm long; seeds unknown.

Distribution, habitat and phenology:—Endemic to Honduras, a rare tree at 150–650 m in coastal plains and slopes (Fig. 1; Table 2). The habitat of this species includes primary forests in the Department of Atlántida. Flowering February–March, fruiting August–September.

Etymology and ethnobotany:—Refering to the Atlántida Department where the type locality of is located. Known locally in Spanish as *magnolia*. No ethnobotanical information has been recorded.

Notes:—*Magnolia atlantida* belongs to *M.* section *Talauma* subsection *Talauma*; it is unique in having the largest number of stamens (305–310) among species in this subsection. *Magnolia cespedesii* (Triana & Planchon 1862: 23) Frodin & Govaerts (1996: 70) also has a large number of stamens (250–275), but *M. atlantida* differs in having a smaller number of carpels (90–96 vs. 122–137). It has been misidentified as *Talauma mexicana* (*Magnolia mexicana*) and as *M. sambuensis* (Pittier 1918: 105) Frodin & Govaerts (1996: 72). Standley used an unpublished name (no date) for this species, and in 1990 Chin Sung Sang noted that it was a *nomen nudum*. Flowering and fruiting material are still needed to complement its description.

FIGURE 2. *Magnolia atlantida*. A. Leaf, adaxial side. B. Mature gynoecium (the two from *Yuncker et al*. *8845*, NY and F, respectively). Photographs: A by V. Shalisko, 2014, and B by J. A. Vázquez-García, 2017.

Conservation status:—Critically endangered (CR), according to the IUCN criterion B1ab(iii) (IUCN 2012). Extent of occurrence (EOO) < 100 km^2 and area of occupancy is 8 km^2; it is known to exist only in Atlantida Department at two locations: Mt. Cangrejal in Pico Bonito and Nombre de Dios national parks. A continuing decline in extent area

and habitat quality has been observed. Its narrow distribution indicates that this species is facing an extremely high risk of extinction in the wild. It has been recently rediscovered, by Hermes Vega, at Parque Nacional Nombre de Dios, La Ceiba, Atlántida, close to the type locality. This species needs further exploration and urgent protection (Table 1).

FIGURE 3. *Magnolia atlantida.* A. Developing fruit. B. Dehiscing fruit, with seeds still attached. C–D, vegetative branches with leaves. Photographs by Hermes Vega.

TABLE 2 Elevation ranges of Honduran *Magnolia* species.

Species	Elevation (m asl)											
	0-200	**201-400**	**401-600**	**601-800**	**801-1000**	**1001-1200**	**1201-1400**	**1401-1600**	**1601-1800**	**1801-2000**	**2001-2200**	**2201-2400**
Magnolia sect. *Talauma*												
M. atlantida	X	X	X	X								
M. cochranei							X	X	X	X		
Magnolia sect. *Magnolia*												
M. yoroconte				X	X	X	X	X	X			
M. sororum subsp. *oligocarpa*						X						
M. pastorcortesii							X					
M. hondurensis							X	X	X	X	X	X
M. celaquensis								X				
M. picopijolensis								X				
M. cusucoensis								X	X			
M. sororum subsp. *sororum*									X			
M. darioi										X	X	

Additional specimens examined:—HONDURAS. Depto. Atlántida: Jutiapa, Parque Nacional de Dios, Cordillera Nombre de Dios, en la costa norte de Honduras, 624 m, 15°46'02.7"N, 86°36'24.1"W, 22 Oct 2021 (fr), *Vega* (digital images examined on the iNaturalist website: *166287443, 166287420, 166287459, 166287377*).

Magnolia celaquensis A.Vázquez & H.Vega, *sp. nov.* (Figs. 4–6)

Type:—HONDURAS. Depto. COPÁN: Cuchilla del Águila, Corquín, Zona de amortiguamiento [buffer zone] del Parque Nacional Montaña de Celaque, 1544 m, 14°32'32.92" N, 88°48'20.91" O, 25 Jul 2022 (fl), *Vega, Morales & Ventura 2255* (holotype: EAP!: isotypes: MO!, IBUG!, MAPANCE!, TCD!, TEFH!).

Magnolia celaquensis is similar to *M. montebelloensis* in terms of flower shape and size of leaves and flowers, but it differs in having adaxially concave glabrous leaves with straight margins vs. adaxially convex and abaxially pubescent along the midvein with undulate margins; longer peduncles, 3.3–3.9 vs. 1.5–2.0 cm; peduncles fully hidden by dense felty pubescence vs. visible despite pubescence; spathaceous bract fully covered with longer and pale yellowish hairs vs. still visible through dense reddish hairs; gynoecium narrowly ellipsoid vs. ovoid; basal follicles of developing fruit longer than half the gynoecium length vs. shorter than half the gynoecium length; stigmas longer and mostly curled vs. shorter and mostly curved; follicles with longer, curled beaks vs. shorter curved; seeds mostly disk-like vs. ovoid to prismatic.

Trees 15–23 m tall; 77 cm dbh. Perular scale 17.0–19.0 × 4.0–4.3 mm, green, pubescent apically. Stipules 10.0–11.0 × 0.7–0.9 cm, brownish to reddish at maturity, free from petiole, pubescent. Leaves petiolate, 2.0–2.8 × 0.2–0.3 cm, without a stipular scar, stout, pubescent, laminas 12.0–16.9 × 4.9–6.6 cm, oblanceolate, the midvein adaxially sunken and abaxially prominent, densely golden hairy, secondary veins adaxially inconspicuous, peduncles 3.3–3.9 × 0.7–0.8 cm, glabrous. Flower bud broadly ellipsoid 5.9–6.1 × 4.1–4.2 cm, acute apically, truncate basally, spathaceous bracts 2, 2.6–3.9 × 2.0–2.5 cm, broadly ellipsoid, densely covered with reddish brown hairs, sepals 3, creamy white, (5.0–)6.0–6.1 × 2.9–3.0 cm, cochleate, obtuse apically, base truncate, 7.9–8.6 mm wide, outer petals 3, creamy white, 5.7–5.9 × 2.8–3.5 cm, broadly and deeply cochleate, revolute, wider in the upper third, gradually narrowing toward the claw, slightly apiculate apically, base truncate, 5.3–5.6 mm wide, inner petals 3, creamy white, 3.8–4.2 × 1.8–2.5 cm, broadly and deeply cochleate and revolute, wider in the upper third, gradually narrowing toward the claw, slightly apiculate apically, base truncate, 2.5–3.8 mm wide, gynoecium narrowly ellipsoid, yellowish green at first, the stigmas curled, brownish orange, carpels 20–25, glabrous, green, stamens 80–88 on a wine-red staminal axis. Fruit 6.0–6.3 × 3.8–3.9 cm, oblongoid, follicles 2.4–3.0 × 9.0–10.0 cm, broadly open, beaks curled, twisted, dorsally rugose, turning from green to blackish, seeds flattened, disk-like, red-pinkish.

FIGURE 4. *Magnolia montebelloensis* (A–C): A. Wavy leaves. B. Flowers with short peduncle. C. Developing fruit. *Magnolia celaquensis* (D–F): D. concave leaves with a slight translucent margin. E. Flowers with long stalks. F. Developing fruit. Photographs: A–C by A. Vázquez, D–F by S. Morales.

FIGURE 5. *Magnolia montebelloensis* (A–B): A. Fruit with basal carpels shorter than half of the fruit length. B. Spathaceous bract and peduncle fully covered by long whitish hairs. *Magnolia celaquensis* (C–D): Fruit with basal carpels longer than half of the fruit length. D. Spathaceous bract and peduncle are still visible, despite the reddish yellow hairs. Photographs A–B by A. Vázquez, C–D by H. Vega.

FIGURE 6. *Magnolia montebelloensis* (A–B): A. Flower with scarlet-red staminophore. B. Fruit, follicles with curved beaks and seeds. *Magnolia celaquensis* (C–D): C. Flower with wine-red staminophore. D. Fruit, flattened seeds and follicle beaks twisted and curled. Photographs A–B by A. Vázquez, C–D by S. Morales.

Habitat and phenology:—Known from the type locality in mixed tropical montane cloud forests, 1544 m, including *Liquidambar* sp., *Pinus* sp., *Saurauia* sp., *Cupania* sp., *Trichospermum* sp., *Piper* sp., *Inga* sp., *Persea schiedeana*, *Persea americana*, *Clethra* sp. and *Vismia* sp. (Fig. 1; Table 2). Flowering July, fruiting September–October.

Etymology and ethnobotany:—Dedicated to Parque Nacional Montaña de Celaque. The local name is *yaroconte*.

Conservation status:—Known only from two trees at the type locality. Given its narrow distribution, the species should be considered critically endangered (IUCN criterion B1ab(iii)) (Table 1).

Magnolia cochranei A.Vázquez, *Recursos Forest. Occid. México* 1: 96–97, f. 1.5.3. 2012 [as "*cochranii*"]. (Fig. 7).
Type:—HONDURAS. Depto. Cortés: around Visitor Center, 18 km W of San Pedro Sula, Cusuco National Park, 1640 m, 15°30'N, 88°13'W, 21 Mar 1993 (fl bud, fl), *Mejía 356* (holotype: MO!; isotypes: EAP!, HEH!, IBUG!, TEFH!, WIS!).

Trees 4–6 (–20) m tall; 16.0–34.0 cm dbh; bark slightly rough, whitish, aromatic, slash creamy orange, twig internodes 0.3–1.9 × 0.25–0.35 cm, yellowish green, glabrous, stipules adnate to the petiole, covering the entire length of the adaxial surface. Leaves petiolate, petioles 2.40–8.30 × 0.20–0.35 cm, glabrous; laminas 8–24 × 6–15 cm, ovate to broadly elliptic, occasionally lanceolate, obtuse to acute at the apex, usually obtuse at the base, glabrous, 7–10 secondary veins per side, aroma sweetish. Flowers creamy white, fragrant, 10–12.5 cm in diameter, trimerous, multi-whorled, hypsophylls 4–5, broadly ovoid, glabrous, peduncular internodes 4, peduncle 0.3–1.0 × 0.2–0.4 cm, glabrous, flower buds 1.9–3.2 × 1.8–2.5 cm, pale green, becoming dark, sepals 3, creamy white, 6.0–7.0 × 2.4–2.6 cm, spatulate, reflexed in male phase, concave, outer petals 3, creamy white, 6.8–7.0 × 2.5–3.2 cm, spatulate, concave in the upper third of their length, inner petals 3, creamy white, 4.5–5 × 1.8–2 cm, spatulate, concave in the upper third, alternating in arrangement with the outer petals, stamens 72–82; gynoecium ellipsoid, acute at base and apex, with 7–11(–12) carpels, creamy white at anthesis. Fruit ovoid (from the label, not seen) most likely narrowly ellipsoid and acute at the base and apex (inferred from the flower), carpels glabrous, seeds red (from the label, not seen).

Distribution, habitat and phenology:—Endemic to Honduras, frequent at 1300–2000 m (Fig. 1; Table 2), in cloud forest or *Pinus-Liquidambar styraciflua* forest. Flower buds February–May, flowering March possibly through June, fruiting August, possibly through October.

Etymology and ethnobotany:—Honouring Theodore S. Cochrane, a true scholar of botany and long-time, meticulous curator of the University of Wisconsin Herbarium (WIS), who has collaborated with the first author of this paper for many years in many botanical endeavours. *Magnolia cochranei* is locally known as *brotón* [meaning shoot-producer] (*Kelly & Dietzsch BC1/SS7/8482; Dietzsch BA4/SS3/556*), *orquídea de árbol* [orchid tree] (*Kelly 11750*), *aguacatillo amarillo* [little yellow avocado tree] (*Kelly CO5/MS/945*)*, hoja ancha* [broadleaf] (*Fritch GU1/MS/886*) and *amargoso* [very bitter] (*Lennkh et al. 12/292*).

Notes:—*Magnolia cochranei* belongs to *M.* section *Talauma* subsect. *Talauma*. It differs from all other Honduran magnolias in having fewer carpels (7–11). *Magnolia cochranei* is similar to *M. quetzal* Vázquez, Véliz & Tribouillier in Vázquez-García *et al*. (2013b: 1) from Guatemala; however, it differs in having more numerous stamens (72–82 vs. 40–45), and larger flowers (10–12.5 vs. 8–9 cm in diam.). *Magnolia cochranei* was first collected in Depto. Comayagua in 1956 by Molina-Rositto, who thought that this was *M. yoroconte*. Later and independently, Molina-Rositto, Burger and Vázquez annotated unpublished names on herbarium specimens of this species. Molina considered this taxon related to *Talauma gloriensis* Pittier (1910: 94) [*M. gloriensis*], whereas Burger suggested a relationship to *Talauma mexicana* [*M. mexicana*]; however, the two species have more numerous carpels than this taxon (four and five times). Vázquez-García (2012a) formally published this taxon as *M. cochranei* [as *M. cochranii*] from scarce material, including a minute flower that opened from a flower bud, and this mislead the author into treating this species as similar to *M. morii* (Lozano-Contreras 1994: 13) Frodin & Govaerts (1996: 71) (Vázquez-García *et al*. 2012a). Now, with flower material and pictures available, it is clear that *M. cochranei* is more similar to *M. quetzal* than to any other species of *M.* sect. *Talauma* subsect. *Talauma*. This species deserves further study since its mature fruits (either closed or dehiscent) are still unknown. Additionally, differences between populations from Cusuco (broadly ovate to broadly elliptic leaves) and Comayagua and Yoro (lanceolate leaves) may require taxonomic recognition.

Conservation status:—Endangered (EN), IUCN criterion B1ab(ii, iii). As this endemic species to Honduras is only known from a few localities in the Departments of Comayagua, Cortés, and Yoro, it must be a target for conservation and research efforts. The estimated known extent of occurrence (EOO) is 4,134 km^2 (Rivers *et al*. 2016), the deforestation rate is high, its habitat is severely fragmented and there is an ongoing decline in area of occupancy (AOO) and quality of habitat (Table 1).

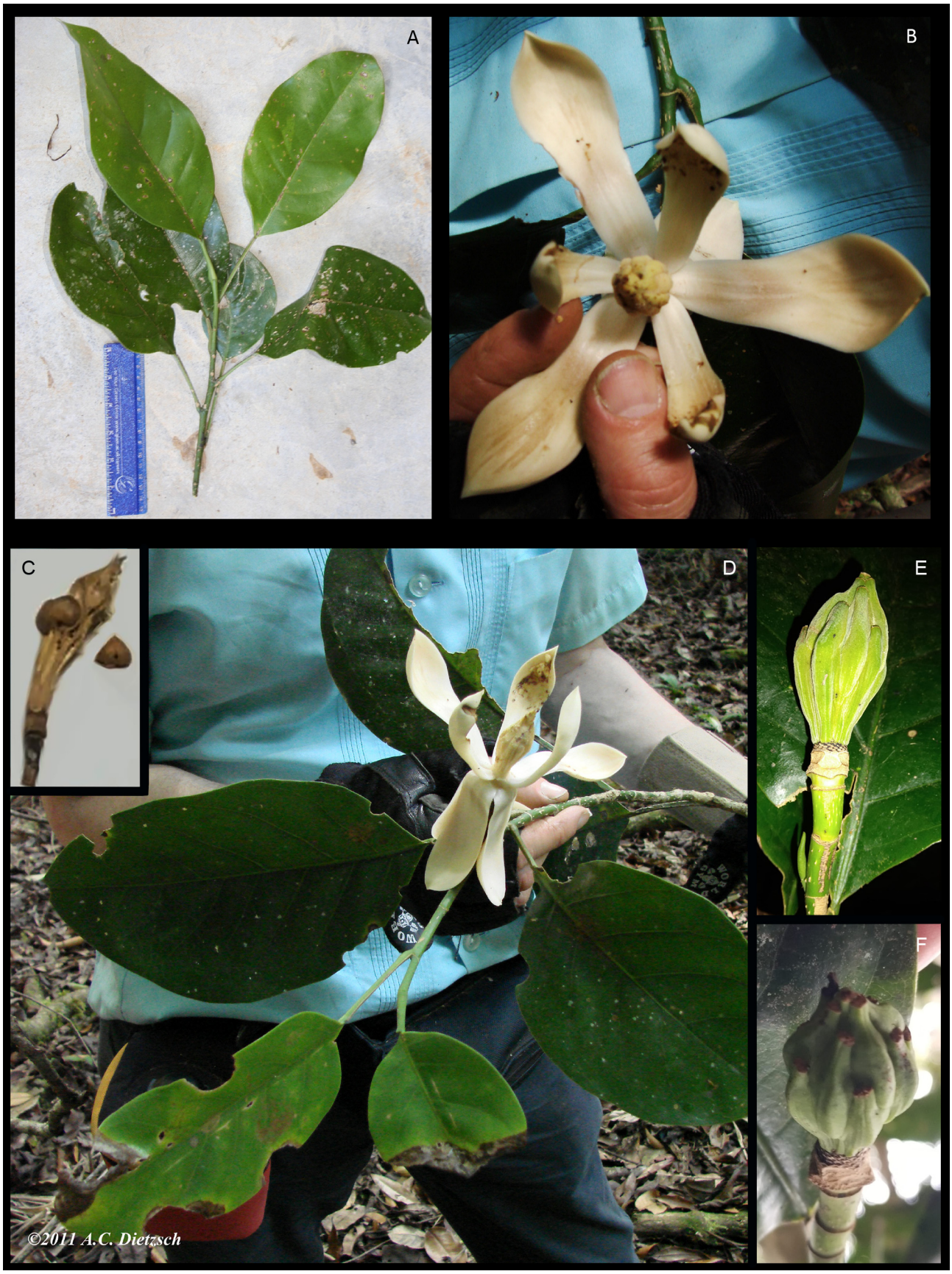

FIGURE 7. *Magnolia cochranei* A. Leaf variation. B. Flower at the male phase of protogyny. C. Fruit axis with seeds, from the type. D. Flower showing reflexed sepals at male phase and mature leaves. E–F. Developing fruits. B and D from *Kelly & Dietzsch BC1/SS7/8482* (TCD). Photograph A by C. Lennkh, B and D by A. C. Dietzsch, 11 June 2011, C by A. Vázquez, E–F by W. Morales, September 2022.

Additional specimens examined:—HONDURAS. Depto. Comayagua: El Cedral, Cordillera Montecillos, 1600 m, 24 May 1956 (fl bud, fl), *Molina-R. 7196* (EAP, F!); Quebrada El Rincón, 15 km S of Siguatepeque, path to Jesus de Otoro, 1500 m, 6 Apr 1957 (fl bud), *Molina-R. 7997* (BIGUA, EAP); Base of south to east slopes of Cerro Cuchilla Alta, Reserva Biológica Cordillera de Montecillos, 11 km straight line SSE of Siguatepeque, 14°30'00"N, 88°52'30"W, 1860 m, 9 Feb 1993 (fl bud), *Evans 1121* (MO, WIS!). Depto. Cortés: Cusuco Mountain, Cordillera de Idalfonso [San Ildefonso], 1500–2000 m, 26 May 1956 (fl bud), *Molina-R. 7268* (fl bud) (BIGUA, EAP); Cusuco, Cordillera de Idalfonso [San Ildefonso], N of Cofradía, 1600 m, 16–17 Apr 1957 (fl bud), *Molina-R. 8194* (BIGUA, EAP); Overhanging trail BC4 (sendero El Jardín), ca. 0.8 km W of Base Camp/ Campamento Parque Nacional Cusuco, Sierra del Merendón, W of San Pedro Sula, 1640 m, 2 Jul 2006 (fl), *Kelly 11750* (TEFH, IBUG, TCD, BM); Plot BC1/ SS7, on low ridge, along La Ines [La Inez] Trail, N of Base Camp/Campamento Parque Nacional Cusuco, Sierra del Merendón, W of San Pedro Sula, 1690 m, 11 Jun 2011 (fl), *Kelly & Dietzsch. BC1/SS7/8482* (EAP, MO, TCD); Trail BC1 River transect near Río de Cusuco, near Base Camp, Campamento Parque Nacional Cusuco, Sierra del Merendón, W of San Pedro Sula, 7 Jul 2019 (fl) *Ward & Mullen CUBC2019-02* (IBUG); La Lupe, Jungle training camp near Base Camp/ Campamento Parque Nacional Cusuco, Sierra del Merendón, W of San Pedro Sula, 1 Jul 2019 (fl) *Ward CUBC2019-01* (IBUG). Depto. Yoro: Around campamento Río Pijol, 6.2 km SE of Nueva Esperanza, Parque Nacional Pico Pijol, 15°12'N, 87°35'W, 1300 m, 28 May 1993 (fl bud), *Mejía-Darío 453* (EAP, HEH, MO, TEFH, WIS!).

Magnolia cusucoensis A.Vázquez & D.L.Kelly, *sp. nov*. **(**Fig. 8)

Type:—HONDURAS. Depto. Cortés: Parque Nacional Cusuco, south of Campamento El Cortecito (75 m along trail CO4), Sierra del Merendón, W of San Pedro Sula, 15°30'43.91"N; 88°17'17.65"W, 1599 m, 16 July 2006 (st.), *Kelly, Hernández & Munguía CO/4/MS/970* (holotype: TCD!; isotypes: TEFH!, IBUG!, BM!).

Magnolia cusucoensis overlaps to some degree with *M. hondurensis* in terms of petiole length and blade size and shape, but it differs in having fewer lateral leaf veins per side, 6–8 vs. 12–19, abaxially glabrous vs. abaxially pubescent leaves, 32–36 vs 61–93 stamens and 2–14 vs. 23–38 carpels.

Trees ca. 20 m tall, (10.0–)13.0–27.0 (–38.0) cm dbh. Bark strongly pustular with prominent crater-like horizontally elongate lenticels, slash yellowish to orange, aromatic, twig internodes 0.5–3 × 0.2 –0.4 cm, glabrous, stipules free from the petiole. Leaves when crushed with cinnamon or cardamom odour, petiolate, petioles 0.6–1.7 cm, glabrous, laminas 4.6–12 × 1.7–5.6 cm, narrowly oblanceolate, acute at the base and apex, glabrous, lateral nerves per side 6–8. Flowers terminal, solitary, colour unknown, peduncular internodes 2–3, 0.4–1.6 × 0.2–0.4 cm, pubescent at the nodes to glabrescent, hypsophylls 1–2, flower bud ovoid-ellipsoid, 1.3 × 0.8 cm, brownish, with shiny pubescence, slightly pubescent at the margins, apex, and base, sepals 3, petals 6, stamens 32–36, gynoecium ellipsoid, with 12–14 carpels, blackish after drying. Fruits ovoid to oblongoid, glabrescent, seeds nigrescent.

Habitat and phenology:—Growing in broadleaved montane rainforest with many tree-fall gaps; the leading canopy species include Lauraceae (*Persea* spp.), Euphorbiaceae (*Hieronyma oblonga*, *Alchornea* spp.) and Fagaceae (*Quercus* spp.), 1408–1736 m (Fig. 1, Table 2). Flowering July, fruiting March.

Etymology and ethnobotany:—Named for the species-rich Cusuco National Park in north-western Honduras. The tree is locally known as *canelillo/canelo* [little cinnamon, cinnamon] (the names are also applied locally to *Aiouea montana*, *Persea* sp. and other Lauraceae and at least to one other *Magnolia* sp.). Crushed leaves have a sweet cinnamon odour. It is also named as *naranjo de montaña* [mountain orange] (*Kelly & Dietzsch CO4/SS2/143).*

Notes:—*Magnolia cusucoensis* belongs to *M.* sect. *Magnolia*. It is easily recognised by having the smallest number of stamens and carpels of all Honduran magnolias in this section (Table 3).

Conservation status:—Critically endangered (CR) with the extent of occurrence (EOO, minimum convex polygon) for *M. cusucoensis* restricted to ca. 16.23 km^2, and its area of occupancy (AOO) 24 km^2. Populations are severely fragmented, and there is a continuing decline in the extent and quality of their habitats. However, it is in a protected area, Cusuco National Park (Table 1).

Additional specimens examined:—HONDURAS. Depto. Cortés: Sierra del Merendón, Parque Nacional Cusuco, Plot 7, near trail from Guanales to Base Camp, W. de San Pedro Sula, 15°29'20.48" N, 88°13'28.15" W, 1660 m, 12 Jul 2004 (fl, and young gynoecium), *Kelly et al. 7/13* (EAP, MO); SE of Campamento El Cortecito, W. of San Pedro Sula, 15°30'34.79" N, 88°16'55.85" W, 1736 m, 19 Jul 2008 (young gynoecium), *Kelly et al. CO4/SS4/320* (IBUG, TEFH); 1025 m from site of Campamento El Danto, W of San Pedro Sula, 15°31'16.46" N, 88°16'31.64" W, 1569 m, 14 Jul 2011 (sterile), *Dietzsch DA0/SS3/5987* (TCD). Plot GU2/SS3, 1800 m by trail SE from Guanales camp-site, Parque Nacional Cusuco, Sierra del Merendón, W of San Pedro Sula, 1408 m, 29 Jun 2013 (sterile), *Kelly & Dietzsch GU2/ SS3/3487* (HEH); Plot C04/SS2, 450 m along trail 4, SE of El Cortecito camp site, Parque Nacional Cusuco, Sierra del Merendón, Cortés Province, W of San Pedro Sula, 1611 m, 6 Jul 2013, (sterile), *Kelly & Dietzsch CO4/SS2/143*

(EAP); Base Camp, Parque Nacional Cusuco, Sierra del Merendon, W of San Pedro Sula, 1595 m, 15°30’11.22” N, 88°12’44.38” W, 25 Jul 2004 (sterile), *Lennkh & Hernández 10/205* (TEFH); Plot DAO/SS3, 1025 m by trail S from El Danto camp site, Parque Nacional Cusuco, W of San Pedro Sula, 1569 m, 15°31’16.46” N, 88°16’31.64” W, 14 Jul 2011 (sterile), *Dietzsch DAO/SS3/5979* (IBUG).

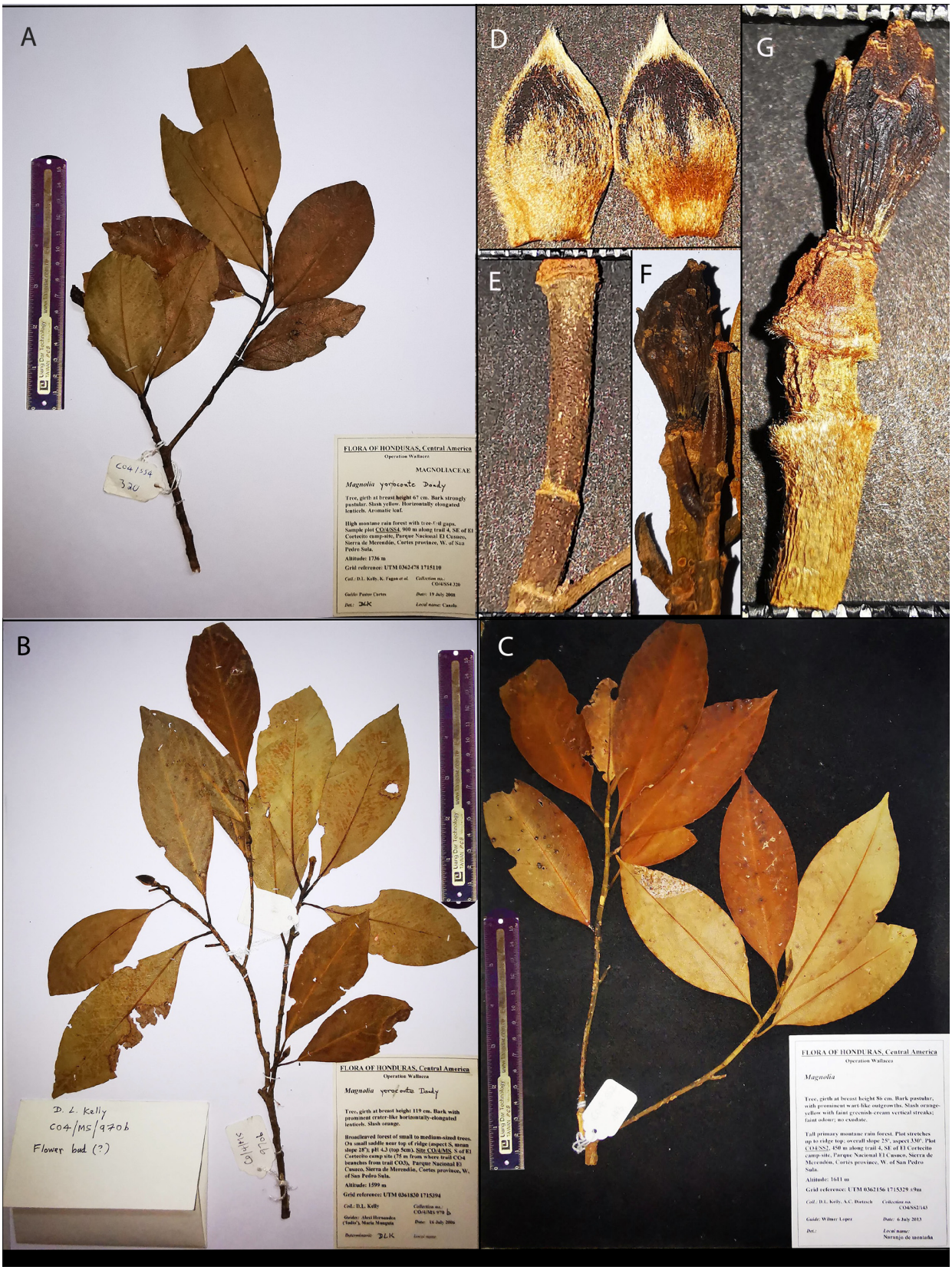

FIGURE 8. *Magnolia cusucoensis.* A–C. Leaf variability in size and shape. A. *Kelly et al. CO/4/SS4/320.* B. *Kelly 970,* and C. *Kelly & Dietzsch CO/4/SS2/143.* D. Hypsophylls. E. Peduncular internodes. F. Developing fruit. G. Gynoecium with broken stigmas, staminal, petal and sepal, and hypsophyll scars. Photographs by A. Vázquez.

FIGURE 9. *Magnolia darioi.* A. Fruit with pubescent follicles. B. Flowering tree branch. C. Bark of upper trunk (showing damage by sapsucker *Sphyrapicus varius,* 'Carpintero de Paso'). D. Top flowering branches. E. Leaves abaxially glaucous with reddish pubescence. Photographs A, B, and E by Tom Martin, C and D by Alan Ward.

Magnolia darioi A.Vázquez & D.L.Kelly, *sp. nov.* (Figs. 9–10)

Type:—HONDURAS. Depto. Cortés: 1150 m from the start of Cantiles transect 2 (trail to Cerro Jilinco), Parque Nacional Cusuco, Sierra del Merendón, W of San Pedro Sula, montane rainforest, 15°30'54.69" N, 88°13'49.61" W,

2150 m, 07 Jul 2019 (fl), *Ward, Rodwell, Haelewaters & Cole CUCA2019* (holotype: IBUG!; isotypes: BIGU!, CR!, EAP!, HEH!, HEM!, MO!, NY, P!, TEFH!, TCD!).

FIGURE 10. *Magnolia darioi.* A. Developing fruit. B. Fruit showing one seed and dorsal dehiscence. C. Vegetative shoots (*Kelly 26/384*). D. Leaves abaxially glaucous (left) and adaxially dark green (right); with a densely hairy spathaceous bract and gynoecium and stamens in between. Photographs by A. Vázquez.

*Magnolia darioi i*s similar to *M. hondurensis* but differs in its adaxially pubescent leaves and pubescent to puberulous fruits, pustular bark and scabrous vs. smooth, leaves narrowly oblanceolate to narrowly elliptic, strongly discolorous and flat vs. elliptic, oblanceolate or lanceolate, non-discolorous and abaxially convex, peduncles longer 2.6–4.3 vs. 0.8–2.3 cm peduncles sparsely pubescent with amber hairs, hairy around stipular ring-scars with a narrow zone of dense hairs just below the flower vs. densely tawny pubescent, carpels felty pubescent vs. glabrous or slightly pilose.

Trees ca. 15.0–28.0 m tall, (19.0–)36.0–46.0 cm dbh (one individual forked at the base); bark pustular, slash yellow, sweetish odour, no exudate; vegetative twig internodes 0.25–0.9(–1.5) × 0.25–0.55 cm, twigs varying from glabrous to having patchy or scattered hairs to being +/- densely hairy (hairs +/- ascendant, amber (i.e. pale orange-brown), twigs proximally blackish in dried material, raised whitish oval vertically-elongated lenticels prominent, stipules free from the petiole to 1.75 cm long in (apparently) resting buds, to 3.7 cm long in actively growing shoot, surface finely rugose and with scattered amber hairs. Stipular ring-scars prominent. Petioles 0.9–2.4 × 0.15–0.2 cm, glabrescent to glabrous, expanded at base, material blackish when dried, irregularly ridged, furrowed. Laminas 4.0–12.4. × 1.1–4.5 cm, narrowly oblanceolate to narrowly elliptic, margins plane or slightly wavy, apex usually obtuse to rounded, rarely subacute, usually acute at the base, glabrescent, abaxially pubescent when young, pubescence of ascending amber hairs, completely concealing the lamina, strongly discolorous when dried, adaxially dark brown, abaxially pale, whitish, midrib abaxially forming a prominent ridge, adaxially marked as a shallow groove. Secondary leaf veins 17–18 per side, adaxially with a sparse indumentum of spreading, translucent hairs, not concealing the lamina, abaxially pilose in the distal shoots of the fully expanded leaves with dense spreading amber hairs on and alongside the midrib, inconspicuous sparsely scattered hairs on the rest of the lamina, adaxial sides with inconspicuous whitish hairs mainly confined to the channel that overlies the midrib. Proximal parts of the shoot with leaves are nearly glabrous on both surfaces with a strong spicy odour. Peduncle 2.6–4.3 × 0.4–0.45 cm, longitudinally ridged, pubescent with amber hairs around stipular ring-scars, with a narrow zone of dense hairs just below the flower, peduncular internodes 2–3. Hypsophylls 2, broadly ovoid, densely goldish pubescent, shed before anthesis. Flower bud 5.3 cm long (hypsophylls shed). Open flower ca. 10–12.5 cm in diam., trimerous, creamy white, with a strong sweet scent ("the aroma was really wonderful": Alan Ward), sepals 3, 5.45–6.00 × 2.10–3.20 cm, slightly obovate, outer petals 3, 5.60–5.95 × 2.40–3.20 cm, broadly obovate, rounded at apex, inner petals 3, 4.6–6.1 × 1.6–2.3 cm, obovate, stamens 70, 0.95–1.4 cm long, acuminate at apex. Gynoecium ellipsoid, 2.6 cm long, carpels 30, lowermost carpel 1.4 cm long. Ovaries initially fused to the axis of the receptacle and one another before dehiscence, pubescent, locules smooth-walled, each containing 2 ovules, style glabrous, stigma curved, the abaxial surface concave and smooth, adaxial surface convex and strongly papillose. Developing fruit woody, ellipsoid, with thickly scattered hairs and scars of broken-off stigmas visible, locules smooth, each containing two developing seeds, thread-like suspensory fibrils visible. Fruit 3.5 × 2.8 cm, ellipsoid to ovoid; carpels felty pubescent, seeds 8.5 × 6.0 mm, round, orange.

Distribution, ecology and phenology:—Endemic to the Sierra del Merendón, Parque Nacional Cusuco, confined to high elevations between Cerro Cantiles and Cerro Jilinco (Cortés Province) in montane rainforest with trunks covered with a lush growth of bryophytes, 1850–2150 m (Fig. 1; Table 2). Companion species include *Podocarpus oleifolius* Don (1824: 20) (Podocarpaceae), *Gentlea micranthera* (Donnell Smith 1893: 205) Lundell (1968: 69) (Primulaceae), *Ilex guianensis* (Aublet 1775: 88) Kuntze (1891: 113) (Aquifoliaceae). *Vaccinium poasanum* Donnell Smith (1897: 395) and *Bejaria aestuans* Mutis in Linnaeus (1771: 242) (both Ericaceae), the last two have been recorded as components of the canopy in ridge-top *bosque enano* (*elfin forest*). Flowering July, fruiting March.

Conservation status:—Critically endangered (CR), IUCN criterion B1ab(iii). This species is known from a small number of individuals, apparently sparsely scattered across a restricted geographical area, an extension of occurrence (EOO) of 0.621 km^2, and an area of occupancy (AOO) of 8 km^2 (Table 1). It is recorded within a narrow elevational range, close to the highest levels of the Sierra del Merendón. Its location and elevation make it relatively safe from illegal logging but vulnerable to the impacts of climatic warming. Upslope shifts in the bird communities of Cusuco National Park have already been reported over the ten-year period 2007–2016 (Neate-Clegg *et al.* 2018).

Etymology:—Honouring Darío Mejía (Darío Alberto Mejía Valdivieso), university professor, forester, independent researcher Celaque Asesores S. De R.L de C.V., general manager, explorer, enthusiastic field guide and collector of valuable specimens of Honduran *Magnolia* (1992, 1993, 1994, 2021), including the discovery of this species in fruit (*Mejía 345)* in March 1993 and the type specimen of *Magnolia cochranei* (*Mejía 356*).

Additional specimens examined:—HONDURAS. Depto. Cortés: Sendero a Cerro Jilinco, filo entre Cerro Cantiles y Cerro Jilinco, 20 km W of San Pedro Sula, Parque Nacional Cusuco, 15°30'N, 88°14'W, 2120 m, 20 Mar 1993 (fr), *Mejía 345* (EAP, HEH, MO, TEFH); SW-facing slope, angle ca. 24°, plot 26, by trail S of Quebrada de Cantiles, Parque Nacional Cusuco, Cordillera Merendón, W. of San Pedro Sula, 1850 m, 15.51090280° N, 88.238113890° W,

30 July 2004 (sterile), *Kelly et al. 26/384* (TCD, TEFH); same tree as type collection, SW-facing slope, angle 28°, plot CA2/SS4, 1150 m along Cantiles transect 2 (trail to Cerro Jilinco), Parque Nacional Cusuco, Sierra del Merendón, 2150 m, 15.515191666° N, 88.230447220° W, 3 Jul 2011 (sterile), *Kelly & Dietzsch CA2/SS4/81* (TEFH)

Magnolia hondurensis Ant.Molina, *Ceiba* 18: 95–97. 1974 (Fig. 11)

Type:—HONDURAS. Depto. La Paz: Cut-over cloud forest of Montaña Verde on Cordillera Guajiquiro, 1900 m, 23 Mar 1969 (fl, fr), *Molina-R. & Molina 24379* (holotype: F!; isotypes: EAP!, ENCB!).

Homotypic synonym: *Magnolia guatemalensis* subsp. *hondurensis* (Ant.Molina) Vázquez (1994: 6).

Trees straight, 3–30 m tall, 0.5 m dbh, bark smooth, greenish grey to brownish grey, twig internodes 0.3–1.7 × 0.4–0.7 cm, hairy to hairless, rough or slightly fissured, nigrescent, stipules free from the petiole. Leaves petiolate, petioles cylindrical, 1.5–2.5 × 0.20–0.25 cm, ferrugineous-pubescent when young, glabrescent, nigrescent, laminas 7.5–19 × 3.5–7.7 cm, elliptic, oblanceolate or lanceolate, slightly rounded, acute or acuminate at the apex, acute or sometimes obtuse at the base, extremely revolute, sometimes the margins convergent, adaxially green to dark green, glossy, rough, glabrous on midvein, abaxially pale green, rusty pilose simple trichomes, glabrescent, central and lateral veins prominent, densely rusty pubescent or glabrescent, 12–19 veins per side. Flowers terminal or axillary, fragrant, peduncle 0.8–2.3 × 0.3–0.5 cm, densely brownish pubescent, hypsophylls densely yellowish to golden-pubescent, sepals 3, seldom 4, white, narrowly-oblong, spatulate, 4.0–5.4 × 1.2–2.0 cm, obtuse or rounded at the apex, inconspicuously gland-dotted on the outside, smooth inside, occasionally one sepal bilobate up to half of the limbus, petals 6–9, usually 6, white, concave, oblique to spatulate, 4.5–6.0 × 1.5–2.5 cm, gland-dotted on the outside, smooth on the inside, aroma sweetish, occasionally bilobate up to half of the limbus, stamens 61–93, arranged helically, filaments, 1–2 mm long, chestnut to coffee-brownish, glabrous; anthers linear to oblanceolate, 11.0–15.0 × 1.5–2.0 mm, glabrous, coffee/yellowish, acute apically, gynoecium l.5–2.2 × 0.8–1.5 cm, carpels 23–38, arranged helicoidally, rhombiform, pilose or yellowish to golden pubescent, styles curly or circinate, brownish, ovules per carpel 2. Fruits oblongoid, woody, brownish or blackish, 3.0–5.7 × 1.2–3.0 cm, glabrescent to slightly hairy, seeds 1–2, brownish to dark red, rhomboid to orbicular, 0.8–1.2 cm in diameter, smooth, shiny, glabrous.

Distribution, habitat and phenology:—El Salvador, Guatemala and Honduras, 1300–2300 m (Fig. 1; Table 2) in cloud forests (*bosque nublado)* and moist mixed forests. Flowering late February–late May, fruits dehiscing September.

Etymology and ethnobotany:—Honouring Honduras. Local names include: *oriconte (Reyna JBL 00654)* in El Salvador and *cucharo* (*Molina-R. 13905*) and *magnolia* (*Molina-R. 6203*) in Honduras. These beautiful trees adorn the misty forests with their brilliant foliage and white fragrant flowers (Antonio Molina-R. preferred the flower of this species as a national symbol for Honduras instead of the orchid *Brassavola digbyana* because there are several countries in America that have chosen an orchid as a national flower). The flowers of *M. hondurensis* when boiled release a fragrance of cinnamon. The seeds also have a pleasant scent. The wood is used in carpententry and tillage implements (Molina-Rositto 1974).

Notes:—*Magnolia hondurensis* belongs to *M.* sect. *Magnolia* and differs from *M. guatemalensis* in only a few characters, namely narrower leaves and petals and smaller fruits (Tables 3, 4). Most specimens from the Trifinio region in the confluence of El Salvador, Guatemala, and Honduras, have smaller leaves with broadly obovate leaves, and this material may represent an undescribed subspecies.

Conservation status:—Least concern (LC), IUCN criterion B1 because it is widely distributed in Honduras and El Salvador. The estimated known extent of occurrence (EOO, minimum convex polygon) is *ca.* 25,000 km^2 (Table 1)

Additional specimens examined:—El SALVADOR. Depto. Santa Ana: Cerro Monte Cristo, 2 Jan 1959 (fl, fr), *Allen & van Severn 7128* (F, MICH, NY); Cerro Monte Cristo, 2300 m, 23 May 1963 (fr), *Molina-R. & Molina 12605* (F); Cordillera Miramundo, Mountain of Montecristo, 2100 m, 27–31 Jan 1966, *Molina-R. et al. 16893* (F); Parque Nacional de Monte Cristo, 14º25'N, 89º22'W, 3 Mar 1988 (fr), *Reyna JBL00654* (BM); San José Ingenio, P. N. Montecristo, El Palo Bonito, 14º 25' N, 89º21' W, 2300 m, 16 Dec 2001, *Martínez 513* (MO); San José Ingenio, P.N. Montecristo, Miramundo, 14°25' N 089°2' W, 2300 m, 11 Apr 2002 (fr), *Martinez 923* (MO); Parque Nacional Montecristo, El Oriconte, near to entry, in front of parqueadero, 14º24' N, 89º22' W, 2171 m, 25 Mar 2003, *Monterrosa JMS00523* (MO). GUATEMALA. Depto. Chiquimula: Esquipulas, Trifinio Biosphere Reserve, 1600–2000 m., 14°30' N, 89°22' W, 4–10 Aug 2005, *Linares 10069* (BIGU). HONDURAS. Depto. Comayagua: Cordillera Montecillos, Barranco El Cedral, Montaña El Cedral, Cordillera Montecillos,1600 m, 24 May 1956 (fl), *Molina-R. 7212* (F). Depto. Intibucá: El Pelón, Pela Naríz, 15 km of La Esperanza, 2000 m, 3 Apr 1956 (fl), *Molina-R. 6203* (F); Calaveras, 6 km NW of La Esperanza, 2000 m, 6 Apr 1957 (fl), *Molina-R. 7981* (F); Between Calaveras y Pela Naríz, 2000 m, 19 Jul

1962 (fr), *Molina-R. 10917* (F); El Duraznillo, 2000 m, 24 May 1964 (fl), *Molina-R. & Molina 14101* (F); Pela Nariz to Calaveras, road to La Esperanza, 2000 m, 3 Sep 1968, *Molina-R. 22612* (F); Pela Nariz to Calaveras, 12 km from La Esperanza, 2000 m, 7 Mar 1969, *Molina-R. 24102* (F, ENCB); La Esperanza, carretera vieja, 1600 m, 30 Jun 1996, *Navarro & Reyes 2008* (HJBL); Cerro Pelanariz, 15 km N of La Esperanza, 2000 m, 26 Feb 1980 (fl), *Nelson & Vargas 5409* (TEFH); same place and date (fl bud), *Nelson & Vargas 5416* (TEFH); On road to Siguatepeque, 15 mi from La Esperanza, 1950 m, 26 Nov 1958, *Hawkes et al. 2078* (BM, C); 8 km from La Esperanza, 14 May 1987 (fl), *Blackmore & Chorley 3946* (BM); Montaña Tabor, 10 km S of Intibucá, carretera Yamaranguila, 1900, 25 Apr 1991(fl), *Fuentes 147* (TEFH); same place, 6 km NE of Intibucá, carretera a Azacualpa, 1600 m, 15 Apr 1991 (fl), *Andino Urbina 213* (TEFH); same place as previous, 25 Apr 1991(fl bud), *Andino-Urbina 216* (TEFH). Depto. La Paz: Cordillera de Opalaca, Calaveras, 1700 m, 10 Apr 1956 (fl), *Molina-R. 6452* (F); Cordillera Guajiquiro, 5 km to Sabaneta, 21 May 1964 (fr), *Molina-R. & Molina 13905* (F, NY); Around Las Tancas, 4.5 km NW of Guajiquiro, in the Reserva Biológica Guajiquiro, 14°08’23” N, 087°52’12” W, 1900–2100 m, 22 May 1993 (gynoecium), *Mejía 409* (EAP, MEXU, MO, TEFH); Las Trancas, 5 km to the north of Guajiquiro, 14°08’ N, 87°52’ W, 2000–2100 m, 23 May, 1993 (fr), *Liesner 26473* (MO); Outskirts of Moguare, Near Guajiquiro-San Isidro Road, ca. 10 road km (ca. 4.5 km straight line) NW of Guajiquiro, Reserva Biológica Guajiquiro. 14°09’00”N, 87°51’30” W, 2060 m, 24 May 1993 (fl, fr), *Evans 1738* (MO); Marcala-Goascorán, Opatoro-Singore 2050 m, 14°6’50.00” N, 87°52’50.00” W, 13 Sep 1986[5](fl), *Felber 51* (EAP); same place, same date, 13 Sep 1985 (fl & fr), *Felber 52* (EAP); Opatoro, 30 km E of Marcala, 1333 m, 30 Apr 1995 (fl), *Martínez 186* (TEFH); Monte Verde de Marcala, 18 km S of Marcala, 1900 m, 17 Feb 1986 (fl, fr), *Keyser 1175* (TEFH). Depto. Lempira: Celaque National Park, Quebrada Naranja, 10 km SE of Gracias, 14°33’ N 088°40’ W, 1900–1950 m, 29 Jan 1992 (fl buds), *Hawkins et al. 138* (MO). Depto. Ocotepeque: Municipio Belén Gualcho, Cordiller de Celaque, 3 mi N of Belen Gualcho along road to Cucucyagua, *Podocarpus-Quercus-Liquidambar* forest remnant among pastures, 1870 m, 14°30’06” N, 88°48’02” W, 24 Jun 1994 (fl bu, fr), *Davidse et. al. 35344* (MO).

TABLE 3. Differences between *M. pastorcortesii* and morphologically similar species from Honduras.

Characters	*M. pastorcortesii*	*M. guatemalensis*	*M. cusucoensis*	*M. hondurensis*
Leaves				
Laminas (cm)	9.4–14.1 × 5.6–8.3	12.0–16.0 × 5.5–11.0	4.6–12.0 × 1.7–5.6	7.5–19.0 × 3.5–7.7
Petiole length (cm)	2.0–2.8	1.5–2.0	0.6–1.7	1.5–2.5
Shape	Broadly obovate	Broadly obovate	Narrowly oblanceolate	Elliptic, oblanceolate or lanceolate
Lateral veins per side	10–11	12–13	6–8	12–19
Pubescence	Abaxially glabrous	Abaxially glabrous to glabrescent	Abaxially glabrous	Abaxially pubescent
Flowers				
Diameter (cm)	5.5–6.5	14.0–16.0	?	9.0–10.0
Stamen number	38–42	61–97	32–36	61–93
Carpel number	20–22	34–48	12–14	23–38
Fruits				
Size (cm)	4.4–4.5 × 2.4–2.5	5.5–6.5 × 2.5–3.0	?	3.0–5.7 × 1.2–3.0
Shape	Oblongoid	Oblongoid	Ovoid to oblongoid	Oblongoid,
Pubescence	Glabrous	Glabrous	Glabrescent	glabrescent to slightly hairy

FIGURE 11. *Magnolia hondurensis*. A–C Fruit variability in Honduras. A. *A. Molina-R. 22612*. B. *A. Molina-R.10917*. C & E. The type, *A. Molina R. & A. R. Molina 24379*. D. *A. Molina-R. 24102*. F. *A. Molina-Rosito 12605*. Photographs by A. Vázquez.

Magnolia pastorcortesii A.Vázquez & D.L. Kelly, *sp. nov.* (Figs 12–15)

Type:—HONDURAS. Depto. Cortés: Parque Nacional Cusuco, Sierra del Merendón, W. of San Pedro Sula, in mid-altitude broadleaved forest ca. 1350 m, 1 Aug 2008 (fl, fr), *Kelly & Cortés 12106* (holotype: TCD!; isotypes: BM!, IBUG!, TEFH!).

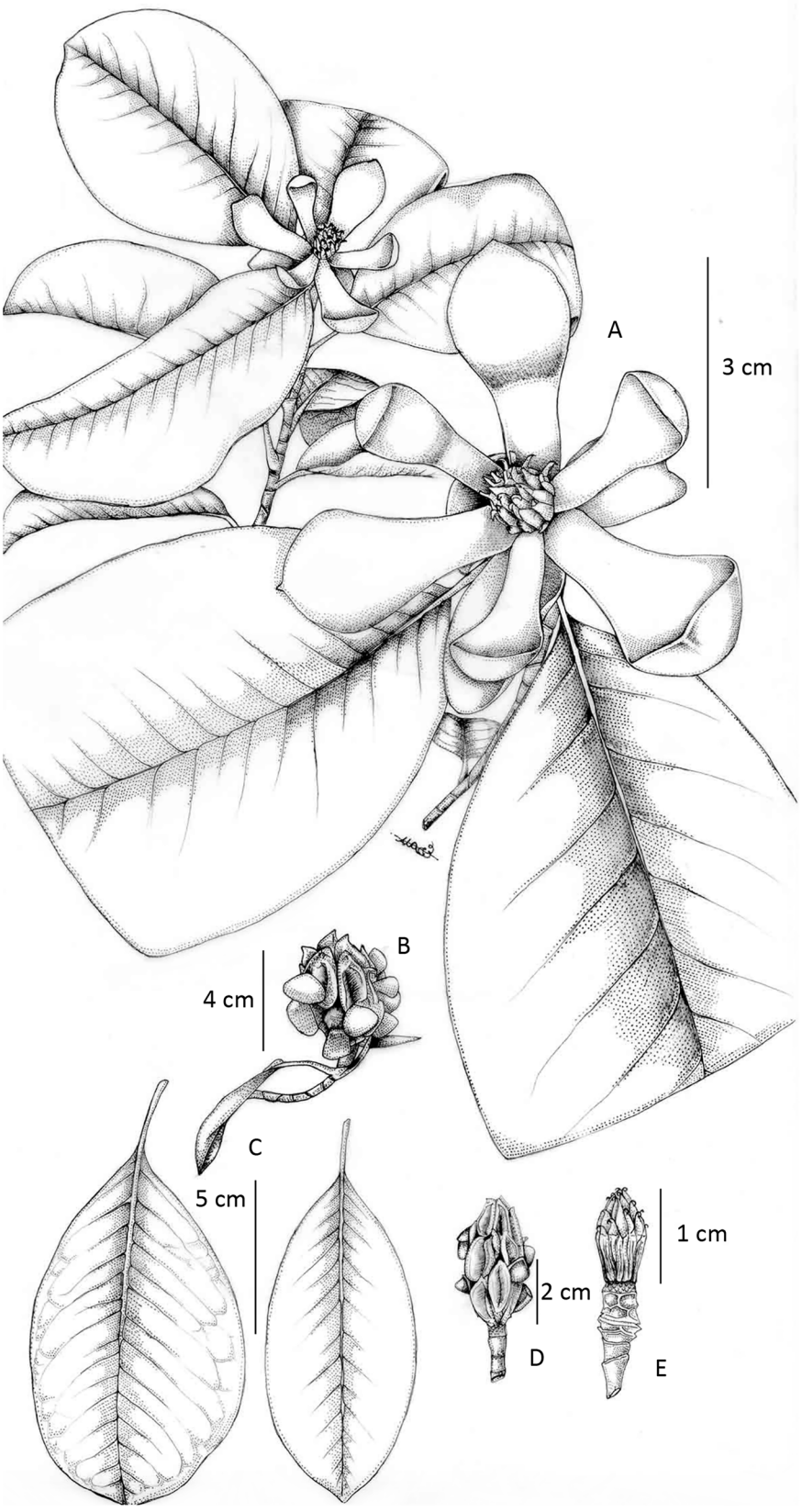

FIGURE 12. *Magnolia pastorcortesii*. A. Flowering branch. B and D. Fruits showing dorsal dehiscence. C Leaves. E. Gynoecium after falling of petals and sepals. Drawings by Esaú Vázquez-Verdejo.

FIGURE 13. *Magnolia pastorcortesii*. A. Flowering branch and fruit. B. Flower. Photographs by Jeanne Sampier.

FIGURE 14. *Magnolia pastorcortesii.* A–C. Tree in habitat, with a red band. D–E. Tree trunks showing bark texture. Photographs by Pierre-Louis Robertson, 2017.

FIGURE 15. *Magnolia pastorcortesii.* A and B. Leaf (upper side and underside, respectively). C. Flower at the female phase of protogyny, with sepals nearly perpendicular to petals. D. Flower decaying after male phase. E. Gynoecium after the fall of sepals and petals. F. Spathaceous bract covering the flower bud. G. Flower bud without spathaceous bract. H. Early, latent, leaf bud. I & J. Flowers after the male phase with heavy insect damage: petal sucking (dots) and eating, respectively. K. Leaf mining, not inhabited. L. Leaf eating. M. Skeletonizing of leaves by microlepidoptera. N. Stem mining. Photographs by Pierre-Louis Robertson, 2017.

Magnolia pastorcortesii shares with *M. guatemalensis* subsp. *guatemalensis* the broadly obovate leaves, but it differs in having smaller and adaxially non-shiny leaves, (9.4–)12.0–14.1 × (5.6–)6.6–8.3 vs. 12.0–16.0 × 5.5–8.5 (–11.0) cm, less numerous lateral veins per side, 10–11 vs. 12–13, smaller flowers, 5.5–6.5 vs. 14.0–16.0 cm in diam., and fewer stamens, 38–42 vs. (61–)78–80(–97) and carpels, 20–22 vs. 34–38.

Trees 14.0–15.0 m tall; bark finely and shallowly fissured, slash yellowish, darkening to orange-brown; twig internodes 0.8–1.5 × 0.3–0.4 cm, glabrous to glabrescent; stipules free from the petiole. Leaves petiolate, petioles 2.0–2.8 × 0.2–0.3 cm, without a stipular scar, glabrous, laminas (9.4–)12.0–14.1 × (5.6–)6.6–8.3 cm, broadly obovate to broadly elliptic, obtuse at the base, obtuse and apiculate at the apex, revolute, glabrous abaxially and adaxially and densely reticulate, 10–11 lateral veins per side. Flowers solitary, fragrant, white, 5.5–6.5 cm diam, flower bud 3.1–2.0 cm, broadly ellipsoid, obtuse at the base, apiculate at the apex, spathaceous bracts 2, mostly glabrous, the margin and outer apex shiny brownish pubescent, peduncular internodes 0.1–0.5 × 0.4–0.6 cm, shiny brownish pubescent, sepals 3, greenish white, 3.3–3.4 × 0.9–1.1 cm, oblong, slightly obovate, glabrous, outer petals creamy white, 3.1–3.2 × 1.5–1.6 cm, narrowly obovate, wider in upper third, inner petals 2.3–2.4 × 0.9–1.1 cm, narrowly obovate, wider in upper third, creamy white, stamens 38–42 (determined from scars), gynoecium sessile, ellipsoid, greenish, carpels 20–22, blackish after drying, glabrous, stigmas 2 mm long, turning rusty brownish, recurved. Fruit 4.4–4.5 × 2.4–2.5 cm, oblongoid, follicles 1.0–2.0 × 0.8–0.9 cm, apiculate, seeds 1–2 per follicle, 0.9–1.0 × 0.6–0.8 cm, prismatic-triangular, orange-red.

Distribution, habitat and phenology:—Endemic to Sierra del Merendón, Cortés Province, (Honduras), in disturbed, mid-elevation broadleaf forest (Fig. 1; Table 2) with low numbers of vines, lichens and epiphytes (ferns and bromeliads) in a disturbed habitat with medium-light competition. Flowering June (flower buds, too).

Etymology and ethnobotany:—In honour of local guide, Pastor Cortés, from Buenos Aires de Bañaderos, Cortés Province (Honduras), who assisted on six field expeditions with the second author from 2004. He is outstanding in his knowledge of local plants, his ability as a plant spotter and collector and his skill, conscientiousness and kindness as a guide. No ethnobotanical information has been recorded for the species.

Notes:—*Magnolia pastorcortesii* belongs to *M.* sect. *Magnolia* and is the only species of *Magnolia* in Honduras with broadly obovate leaves (Table 3).

Conservation status:—Critically endangered (CR), IUCN criterion B1ab(iii). Although found within Parque Nacional Cusuco, the known extent of occurrence (EOO) is less than 10 km^2 and its habitat is disturbed (Table 1). Only two trees have been recorded (their precise location is not given for conservation purposes), both at the type locality. One tree had an unhealthy appearance: there were three cut-off stumps, and the only stem still standing had severe apex damage; new shoots were observed on stumps and low on the standing tree. There was heavy invertebrate damage to the leaves (leaf-mining, possibly by *Agromyzidae* fly larvae as indicated by the double frass line; leaf-eating by undetermined agents; and skeletonizing by micro-Lepidoptera); minor damage from woodboring, stem mining and petal eating were also observed. The taller tree was healthy with a straight and symmetrical trunk (forking at eight metres), with low invertebrate damage to the leaves. To our knowledge, *M. pastorcortesii* is not only extremely rare but also confined to a relatively accessible area. Considering this, we are not publicizing further details of its location.

Additional specimens examined:—HONDURAS. Depto. Cortés: Buenos Aires to Base Camp, west of Buenos Aires, Parque Nacional Cusuco, Sierra del Merendón, west of San Pedro Sula, 25 Jul 2011 (fl bud), *Cortés 14153-I* (IBUG!, MO, TEFH).

Magnolia picopijolensis A.Vázquez, *sp. nov.* (Figs. 16–17)

Type:—HONDURAS. Yoro: Valley of Río Pijol, NW slope above a small stream, ca. 100 m NE of its confluence with Río Pijol, ca. 3 km SE of Cerro Pajarillos, ca. 7 km S of Nueva Esperanza; Parque Nacional Pico Pijol, primary forest, 1600 m, 5°12’ N, 87°35’ W, 28 May 1993, *Evans 1748* (holotype: MO! [two sheets: fl & fr]; isotypes: BM!, EAP!, ENCB!, INB!, MEXU!, TEFH!).

Magnolia picopijolensis differs from *M. poasana* in its narrower petals 1.0–1.1 vs. 2.5–3.6 cm, less numerous stamens, 38–42 vs. 50–54, and carpels 13–14 vs. 24–26, more numerous lateral leaf veins per side and shorter peduncles, 2.0–2.5 vs. 3.0–4.0 cm long (Table 4).

Trees 25 m tall, terminal twig internodes 7.4–11.1× 2.8–4.2 cm, blackish when dried, with lenticels, petioles 1.6–2.1 × 0.2–0.3 cm, laminas elliptic to oblanceolate 11.0–13.5 × 3.3–5.0 cm, acute at the base, apex acute with a drip tip 4.0–5.0 mm long, lateral veins per side 16–17, peduncle 1–2 internodes, 2.0–2.5 cm long. Flower colour unknown,10.0–11.1 cm in diam., sepals 3.9 × 0.6 cm, petals 4.0–4.6 × 1.0–1.1 cm, stamens 38–42, 8.0–9.0 × 1.2–1.5 mm, gynoecium 13.0 × 8.0 mm, stigmas curved outward, fruit 3.4–3.5 × 1.8–1.9 cm, ellipsoid, carpels 13–14, basally 1.7–1.8 × 0.6–0.7 cm, apical carpels 1.2–1.3 × 0.4–0.5 cm, dorsally gibbous, beaked apically, seeds unknown.

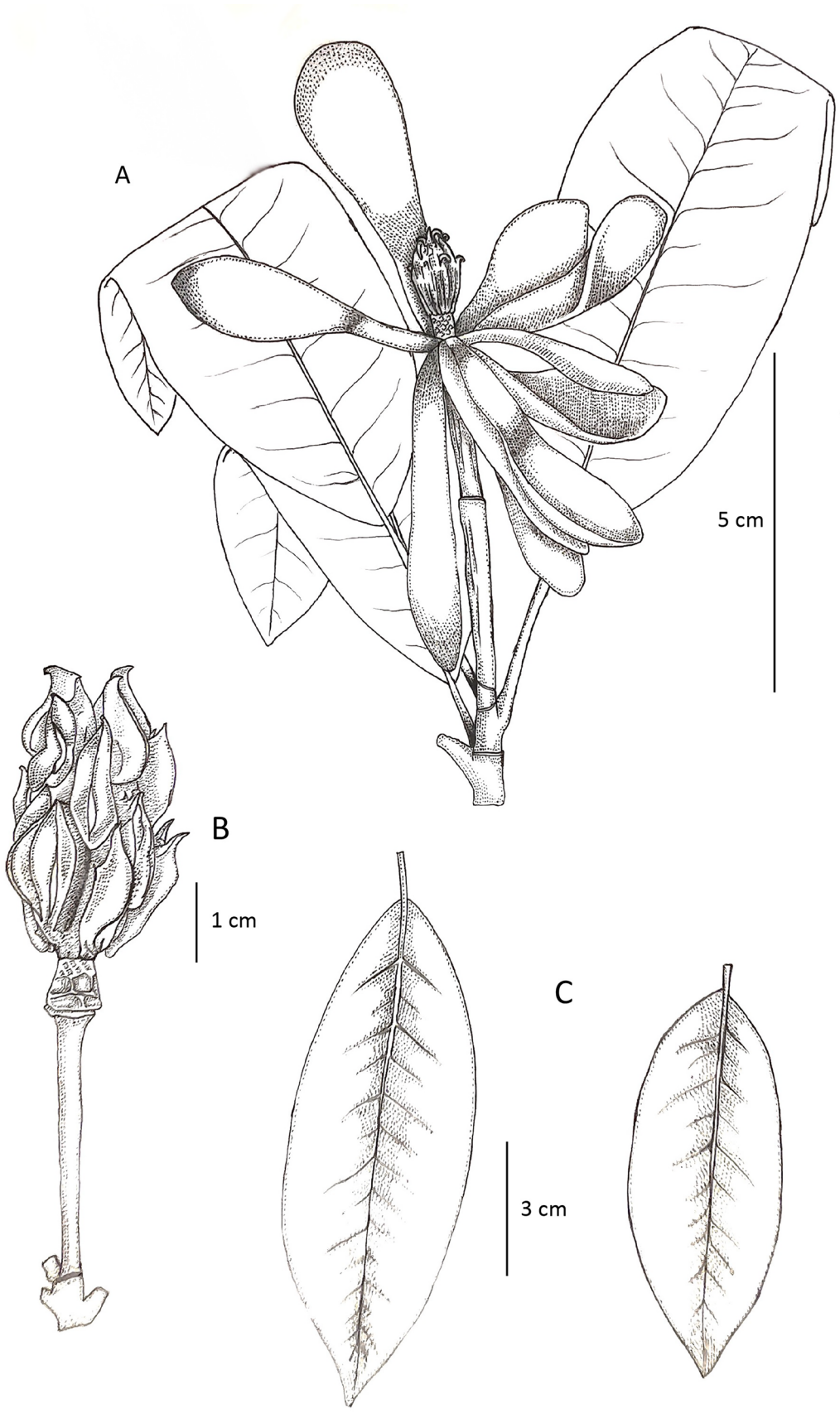

FIGURE 16. *Magnolia picopijolensis*. A. flowering branch. B. Fruit with peduncle. C. Leaf variability. Drawing by Esaú Vázquez-Verdejo.

FIGURE 17. *Magnolia picopijolensis*. A. flowering branch. B. Flower about to open and leaf. C. Fully open flower showing gynoecium and a stamen. D. Fruit with peduncle. All from type material. Photographs by A. Vázquez.

TABLE 4. Differences between *Magnolia picopijolensis* and morphologically similar species.

Characters	*M. picopijolensis*	*M. poasana*	*M. hondurensis*	*M. yoroconte*
Laminas (cm), abaxial pubescence	13.5 × 4.7, glabrous	8.0–12.0 × 4.0–6.0, glabrous	10.0–18.0 × 4.4–8, pubescent	12.0 × 5.0, glabrous
No. of spathaceous bracts	1–2	2	1	2
Lateral veins per side	16–17	14–15	12–19	14–17
Outer petals Size (cm)	4.0–4.6 × 1.0–1.1	5.5–5.7 × 2.5–3.6	4.5–6.0 × 1.5–2.5	6.0 × 3.0
Stamen number	38–42	50–52(–54)	61–93	100–145
Carpel number, pubescence	13–14, glabrous	24–26, glabrous	23–38, pubescent	40–50, basally pubescent
Petiole length (cm)	1.6–2.1	3.0–3.5	1.5–2.5	2.0–2.1
Length of largest peduncular internode in mature polyfollicles (cm)	2.0–2.5	3.0–4.0	2.3–2.5	1.4–2.2

Etymology:—Refers to Pico Pijol in Yoro department, currently protected in a national park.

Distribution, habitat and phenology:—Endemic to Honduras, rare, 1600 m in cloud forest, known only from the valley of Río Pijol, Pico Pijol National Park (Fig. 1; Table 2). Flowering April–May, fruiting May–June.

Ethnobotany:—No ethnobotanical information has been recorded for the species.

Conservation status:—Critically endangered (CR), according to the IUCN criterion B1ab(iii). This species is only known from the original collection nearly three decades ago. In recent explorations by some of the authors, no evidence has been found of the presence of this species in other nearby locations. It is estimated that this species has an extent of occurrence (EOO) < 10 km^2, and a continuing decline in the area, extent, and quality of its habitat has been observed. Its particularly narrow distribution indicates this species requires further exploration and urgent protection (Table 1).

Magnolia sororum Seibert, *Ann. Missouri Bot. Gard*. 25: 828–829. 1938 (Figs. 18–20)
Type:—PANAMA. Chiriqui: Valley of the upper Rio Chiriqui Viejo, 1800 m., Jul 1937 (fl, fr), *G. & P. White 21* (holotype: MO!; isotypes: GH!, MO!).

Magnolia sororum belongs to *M.* sect. *Magnolia* and differs from the other Central American species by being densely and generally fulvous-pubescent. *Magnolia sororum* is perhaps closely related to *M. iltisiana* and *M. grandiflora* in southeastern North America but differs from *M. iltisiana* in its fewer stamens, narrower perianth parts, smaller fruits and seeds and from *M. grandiflora* in its much smaller flowers and fruits and fewer carpels. It is immediately distinguishable from *M. poasana* (Pittier 1910: 93) Dandy (1927: 263) by its pubescence, broader and longer inner perianth segments and a greater number of carpels, and from *M. guatemalensis*, which is nearly glabrous with cuspidate leaves and fewer carpels. It is most similar to *M. yoroconte* based on carpel numbers and the two spathaceous bracts that enclose the flower bud, but it may be easily distinguished by its dense pubescence and larger leaves and flowers. Two specimens from the Yoro Department, *Perry 2664* (HJBL) and *Perry et al. 101* (TEFH) from Cordillera Nombre De Dios and Locomapa, respectively, do not match any of the two subspecies of *M. sororum* and, thus, are here proposed as a new subspecies. The fruits and peduncles have similar yellowish pubescence as that of *M. sororum* subsp. *lutea*, but they possess smaller fruits with less numerous, non-beaked carpels and shorter peduncles. Based on the conspicuous differences in fruit size, number of carpels, pubescence colour and leaf shape, the species may be divided into three geographically disjunct subspecies as follows, only two of them present in Honduras:

Key to the subspecies of *Magnolia sororum*

1. Fruit 2.7–3.4 × 1.7–2.0, carpels 16–18(–20), mature peduncles 1.0-1.5 cm..... *M. sororum* subsp. *oligocarpa*
– Fruit 5.0–6.0 × 2.4–3.2 cm, carpels 32–45, mature peduncles 2.8–4.4 cm.....2
2. Rusty brown pubescence on abaxial leaf surfaces, young branches, peduncles and (usually) polyfollicles, leaves mostly broadly elliptic to obovate (Honduras, Nicaragua, Panamá)..... *M. sororum* subsp. *sororum*
– Pale yellow pubescence on the abaxial leaf surfaces, young branches, peduncles and (usually) polyfollicles, leaves narrowly elliptic to lanceolate (Costa Rica; rare intermediates on Volcán Chiriquí, Panamá).....*M. sororum* subsp. *lutea*

FIGURE 18. *Magnolia sororum*. Variability in specimens from Panamá: A. Leaves showing pubescent adaxial surface and pubescent flower bud, *B. Arauz et al. B2620* (MO). B. Mature Fruit, *S. Knapp. et al. 5981* (F). C. Developing fruit, from the type, *Gene and Peggy White 21* (MO). D. Mature Fruit showing seeds, *S. Knapp. et al. 5981* (MEXU). Photographs by A. Vázquez.

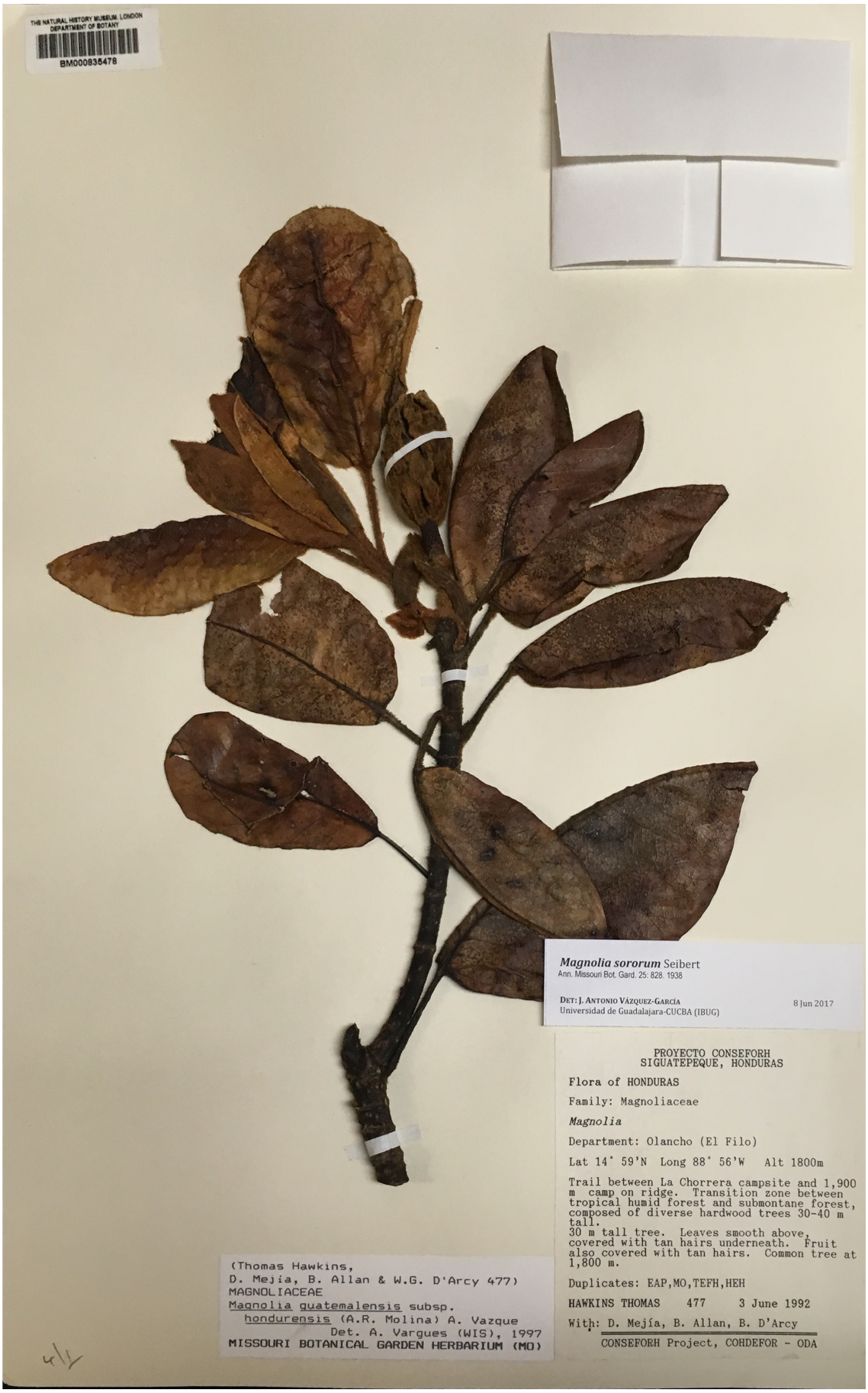

FIGURE 19. *Magnolia sororum* subsp. *sororum* from Olancho, Honduras, showing pubescent young fruit and leaves, *Hawkins et al. 477* (BM). Photograph by A. Vázquez.

FIGURE 20. *Magnolia sororum* subsp. *oligocarpa*, type specimen (TEFH). Scanned by Lilian Ferrufino-Acosta.

Magnolia sororum Seibert subsp. ***sororum*** (Fig. 19)

Trees 25–30 m; 0.3–0.4 m dbh, twig internodes and young branches densely pubescent, with pale yellow or rusty brownish hairs. Leaves petiolate, revolute, stipules free from the petiole, 1–3 cm long, smooth, channelled, densely pubescent, with pale yellow or rusty brownish hairs, laminas 6–20 × 3–10 cm, broadly elliptic to obovate, ovate-elliptic to elliptic or ovate-oblong, blunt or rounded, obtuse or subacute at the apex, abaxially densely pubescent, with pale yellow- or rusty-brownish hairs, 10–14 secondary veins per side. Flowers trimerous, fragrant, creamy white, peduncular internodes 1.5–4.0 cm long, densely pubescent, with pale yellow or rusty brownish hairs, hypsophylls 2–4, abaxially densely pubescent, with pale yellow or rusty brownish hairs, sepals 3, obovate-oblong, (4.0–)5.5–7.0 × 2.5–3.0 cm, glabrous, petals 6, 5.5–8.0 × 2.0–4.5 cm, narrowly obovate, glabrous, staminophore 6–8 mm long, stamens 87–102, 1.3–1.5 cm. long, anthers sessile, gynoecium ovoid, with 32–45 carpels. Fruit 4.5–6.0 × 2.4–3.2 cm, oblongoid, densely pubescent, with pale yellow or rusty brownish hairs, carpels beaked, 0.4–0.6 cm long, seeds 0.5–0.6 cm in diam, prismatic to suborbicular, dark red, nigrescent.

Distribution, habitat and phenology:—Eastern Honduras (Colón, Gracias a Dios and Olancho Departments), western Nicaragua (Jinotega and Atlántico Norte), Costa Rica (Cártago, San José, Punta Arenas) and Panamá (Chiriquí, Coclé). Records from Chiapas (México), Toledo (Belize) and Alta Verapaz (Guatemala; http://www.tropicos.org/Name/19300039?tab=specimens, August 2017) do not correspond with this subspecies. This subspecies grows 850–2120 m but is more abundant at higher elevations, beginning at 1650 m. Flowering February–August, fruiting July–September (Fig. 1; Table 2).

Etymology and ethnobotany:—Named in honour of the two sisters, Gene and Peggy White, who made a special effort to recollect the plant after the Seibert's original specimens were lost to fire. No ethnobotanical information has been recorded.

Conservation status:—The typical subspecies occurs in four countries, but its habitat and area of occupancy are highly disturbed, reduced and fragmented, so it is vulnerable (VU), according to the B2ab(ii, iii) criterion of the IUCN Red List (IUCN 2012, Rivers *et al*. 2016), whereas *M*. *sororum* subsp. *lutea* Vázquez (1994: 18) is vulnerable (VU) according to the B1ab(iii) criterion.

Additional specimens examined:—HONDURAS. Depto. Colón: Camino Real El Carbón-Guayabo, El Carbon, 1135–1500 m, 15°26'30.62" N, 85°28'45.03" W, 31 May 2016, *Romero 463* (EAP). Depto. Gracias a Dios: Cuenca del Río Plátano, Crique Sulawala, 12-30 May 1977(fr), *Erazo s.n.* (TEFH). Depto. Olancho: Catacamas, Sierra de Agalta, 1800 m, 14°59' N, 085°56' W, 3 Jun 1992, *Hawkins et al. 477* (EAP, MO, TEFH); Talgua, Santa Fé, Bosque ralo con café, 1432 m, 14°57'56" N, 85°50'56" W, 21 Mar 2006, *House et al. 3801* (EAP, MEXU, TEFH); Gualaco, Agalta, 1900–2200 m, 28 Mar 2006, *House et al. 4139* (EAP); San Esteban, N de Culmí, 26 Apr 1979, *Nelson & Agudelo 5360* (TEFH).

Magnolia sororum subsp. ***oligocarpa*** A.Vázquez, *subsp. nov*. (Fig. 20)

Type:—HONDURAS. Depto. Yoro: Locomapa, Feb 1978, *Perry, Paulson & Agurcia 101* (holotype: TEFH!).

Magnolia sororum subsp. *oligocarpa* is similar to *M. sororum* subsp. *lutea* in its fruits and peduncles with yellowish pubescence, but it differs in its smaller fruits, 2.7–3.4 × 1.7–2.0 cm vs. 5.0–6.0 × 2.4–3.2 cm, less numerous carpels, 16–18(–20) vs. 32–35, and shorter mature peduncles, 1.0–1.5 vs. 2.8–4.4 cm.

Distribution and phenology:—Endemic to Yoro Department, possibly flowering September–November, fruiting February–March.

Conservation status:—Critically endangered (EN) according to IUCN Red List criterion B1ab(iii). The known extent of occurrence of this subspecies is <100 km^2, the populations are severely fragmented and there is a continuing decline in the quality of its habitat (Table 1).

Additional specimens examined:—HONDURAS. Depto. Yoro: Cordillera Nombre De Dios, 1100 m, 28 Mar 1978, *Perry 2664* (HJBL!).

Magnolia yoroconte Dandy, *J. Bot.* 68: 147. 1930 (Figs. 21–23)

Type:—HONDURAS. Depto. Copán [Santa Bárbara]: Tarros [San José de Tarros], 4000 ft [1225 m], 19 May 1919 (fl bud, fr), *Whitford* & *Stadtmiller 51* (holotype: US!, photo BM!).

Trees to 37.0–40.0 m, to 90.0–150.0 cm dbh, first branches at 20–25 m high, bark rough, yellowish grey, terminal twigs glabrous to partially yellowish pubescent at nodes when young, stipules free from the petiole. Leaves petiolate, 1–2 cm long, without a stipular scar, slender, glabrous, lateral veins 14–17, laminas (8.0–)10.0–13.0(–14.0) × 3.7–5.0(–6.0) cm, narrowly elliptic to oblong-elliptic to narrowly lanceolate, obtuse to round at the base, subacuminate or subacute apically, abaxially and adaxially glabrous, and densely reticulate. Peduncle ca. 1–2 cm. long, terminal

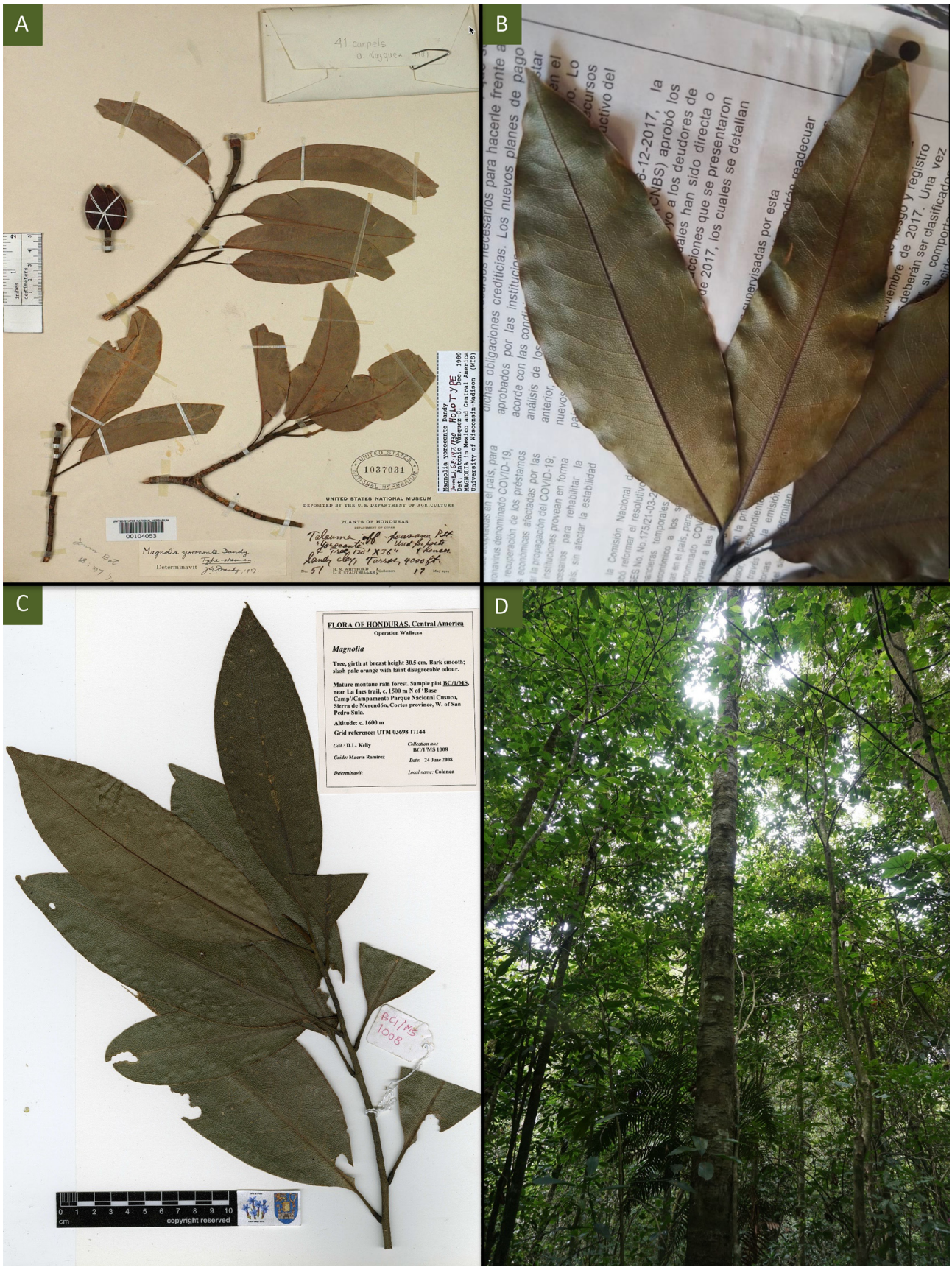

FIGURE 21. *Magnolia yoroconte*. A. Holotype, *Whitford & Stadtmiller 51* (US, Smithsonian Institution). B. Leaves recently collected by *Morales & Mejía 1* (IBUG). C. Leaf size and shape, *Kelly BC/1/MS 1008*. D. Tree in habitat. Photographs: A from JSTOR's Global Plants, B by A. Vázquez, C by D. L. Kelly, and D by D. Haelewaters.

FIGURE 22. *Magnolia yoroconte*. A. Fruiting branch and leaves. B. Fruit s(young) showing ca. 45 carpels. C. Fruit, dehiscing with scarlet red seeds. D. Tree trunk 1.13 m in dbh, Wilson Morales on a side. E. Nurse tree for coffee plantation, Sr. Mejía holding a mature dehiscing fruit. Photographs A–C and E by W. Morales, D by D. Mejía.

FIGURE 23. *Magnolia yoroconte*. Tree ca. 40 m tall, in habitat at Negro Norte, Morales, Izabal, Guatemala, near the border of Honduras, close to and endangered by agricultural expansion. Darío Mejía, Yovany Alvarado-Padilla and Francisco Deras standing at the base of the tree. Photograph by W. Morales.

internodes appressed yellowish pubescent. Hypsophylls 2, the margin and outer apex yellowish pubescent, flower peduncle clearly separate. Flower bud ellipsoid, white. Flowers solitary, white, fragrant, 6–10 cm long, trimerous, sepals 3, obovate-oblong, ca. 3 cm. long, abaxially yellowish pubescent basally, petals 6, similar in size and shape, the inner ones narrower, stamens 100–145 ca. 1.2 cm. long, anthers introrse, connective in a short appendix, acute to subacute, gynoecium sessile, ellipsoid. Fruit 4–6 × 2–4 cm, carpels ca. 40–50, reddish to grey, yellowish pubescent basally, seeds 45–70 per polyfollicle, 1–2 per follicle, 0.7–1.0 cm long, triangular, scarlet.

Distribution, habitat and phenology:—Eastern Guatemala (Negro Norte, Izabal) and north-western to northern Honduras, Departments Atlántida, Comayagua, Cortés, Santa Bárbara and Yoro, at 650–1600 m (Fig. 1; Table 2). Flowering May, fruiting July–September.

Etymology and ethnobotany:—Referring to the Honduran local name of this species, *yoroconte*. It is used for posts of houses.

Notes:—*Magnolia yoroconte* is a member of *M.* to sect. *Magnolia* and is distinguished from *M. poasana* in having larger fruits with more numerous carpels.

Conservation status:—Endangered (EN) according to IUCN Red List criterion B2ab(iii). The known area of occupancy of this species is <500 km^2, their populations are severely fragmented and there is a continuing decline in the quality of its habitat (Table 1). There are some populations protected in Parque Nacional Cusuco.

Additional specimens examined:—GUATEMALA. Depto. Izabal: Finca La Montaña Negro Norte, Municipio Morales, 976 m, UTM 16P 0318809 m E, 1697391 m N, 22 Sep 2021 (fr), *Morales et al. 5* (IBUG, HEH); Finca La Montaña Negro Norte, Municipio Morales, 976 m, UTM 16P 0318809 m E, 1697391 m N, 23 Jul 2022 (fr), *Alvarado-Padilla et al. 1* (IBUG, HEH). HONDURAS. Depto. Atlántida: Sitio, Los Encuentros, Aldea Toncontín, La Ceiba, 650 m, *Reyes s.n.* (HJBL); same place, 22 Apr 1999 (sterile), *Calix-Marín s.n.* (HJBL); Piedras Amarillas, 900 m, 13 Sep1995 (fr), *Álvares s.n.* (HJBL); Depto. Comayagua: Montaña La Choca, cerca de Coyocutena, 1200 m, 22 May 1956 (fl bud), *Molina-R. 7114* (EAP, F); Montaña de Cusuco, Cordillera Idalfonso [San Ildefonso], 1500-2000[1600] m, 26 May 1956 (fl), *Molina-R. 7245* (EAP, F!); Montaña La Choca, Cordillera de Comayagua, cerca de Quebrada El Zope, 1500 m, 15 Apr 1957 (fl bud), *Molina-R. 8174* (EAP, F!). Depto. Cortés: Plot GU/1/MS, 700 m along trail to Cantiles, N from Guanales camp, Parque Nacional Cusuco, W of San Pedro Sula, 1415 m, 16 Jun 2011 (sterile), *Kelly & Dietzsch GU1/MS/5932* (TCD); Site CO4/MS, S of El Cortecito camp-site (75 m from where trail CO4 branches from trail CO3), Parque Nacional Cusuco, Sierra de Merendón, W of San Pedro Sula, 1599 m, 15°30’43.91” N, 88°17’17.65” O, 16 Jul 2006 (sterile), *Kelly, CO4/MS/961* (TEFH); BC/1/MS, near Las Ines [La Inez] trail, ca. 1500 m N of “Base camp”, Parque Nacional Cusuco, W of San Pedro Sula, Sierra de Merendón, UTM 16P 03698 m E, 17144 m N, 1600 m, 24 Jun 2008 (sterile), *Kelly BC/1/MS1008* (EAP); Plot CO3/SS4, 1600 m, by trail S of El Cortecito camp-site, Parque Nacional Cusuco, Sierra de Merendón, W of San Pedro Sula, 1689 m, 15°30’44” N, 88°17’19.6” O, *Kelly,* 7/8 Jul 2011 (sterile), *Kelly & Dietzsch CO3/SS4/63* (HEH). Depto. Santa Bárbara: Aldea El Suspiro, Municipio de Nueva Frontera, 886 m, UTM 16 P 0319906 m E, 1688066 m N, 14 Sep 2021 (fr) *Morales 1* (IBUG, HEH); same place, 719 m, UTM 16P 0317895 m E,1693407 m N, 21 Sep 2021 (fr), *Morales & Mejía 2* (IBUG); same area, 705 m, UTM 16P 0317278 m E, 1693515 m N, 21 Sep 2021 (fr), *Morales & Mejía 3* (IBUG, HEH); same place, 886 m, UTM 16P 0319906 m E, 1688066 m N, 22 Sep 2021 (fr), *Morales & Mejía 4 (*IBUG, HEH); Cerro del Grito del Gallo, vecindad del cerro Piladero, 1000 m, Sep 1952 (sterile), *Shank* s.n. (EAP); Nueva Frontera, El Gualleño, *Henriquez s.n.* (HJBL). Depto. Yoro: Olanchito, bosque comunal Urraco, 19 Oct 1997 (fr), *Vindel s.n.* (HJBL); Olanchito, Cerro Los Violines, Aldea El Urraco, 1000 m, 15°22’35” N, 87°05’08” W, 18 May 1997 (fl bud), *Vindel 311* (MO), *Vindel 30-U1* (TEFH); Olanchito, 24 Sep 1996 (fr), *Álvares s.n.* (HJBL).

Key to species of *Magnolia* of Honduras

1.	Fruit dehiscence circumscissile, stipular scar along the entire abaxial surface of the petiole, *M.* sect. *Talauma* subsect. *Talauma*..2	
–	Fruit dehiscence dorsal, stipular scar free from the petiole, *M.* sect. *Magnolia*.....3	
2.	Carpels 90–96, stamens 305–310	*M. atlantida*
–	Carpels 7–11, stamens 72–82	*M. cochranei*
3.	Leaves abaxially pubescent.....4	
–	Leaves abaxially glabrous 5	
4.	Leaves broadly elliptic to obovate	*M. sororum* subsp. *sororum*
–	Leaves elliptic or narrowly elliptic to oblanceolate or narrowly oblanceolate 6	
6.	Carpels glabrous	*M. celaquensis*
–	Carpels pubescent, puberulous to glabrescent.....7.	
7.	Carpels 16–20, densely yellowish pilose	*M. sororum* subsp. *oligocarpa*
–	Carpels 23–38, brownish adpressed-pubescent to glabrescent.....8	

8. Leaves elliptic, oblanceolate or lanceolate, peduncles 0.8–2.3 cm long with tawny pubescence..... *M. hondurensis*
– Leaves narrowly elliptic to narrowly oblanceolate, peduncles 2.6–4.3 cm long with amber hairs..... *M. darioi*
5. Carpels 12–14.....9
– Carpels 20–50.....10
9. Lateral veins per side 6–8, stamens 32–36..... *M. cusucoensis*
– Lateral veins per side 16–17, stamens 38–42..... *M. picopijolensis*
10. Leaves broadly obovate, carpels 20–22..... *M. pastorcortesii*
– Leaves oblong-elliptic or oblanceolate, carpels 25–50 ..... *M. yoroconte*

Honduran diversity and endemism

Magnolias have now been recorded from over two-thirds of the 18 departments (Fig. 1; Table 2). Cortés department is the richest, with four species of *M.* section *Magnolia*, *M. cusucoensis*, *M. darioi, M. pastorcortesii* and *M. yoroconte*, and two species of *M.*sect. *Talauma, M. cochranei* and an undescribed species. Department Comayagua has three species of *Magnolia*, whereas Yoro and Santa Bárbara Departments have only two species each. Departments Atlántida, Colón, Copán, Gracias a Dios, La Paz, Lempira, Ocotepeque and Olancho have only one species each. Several populations with no fertile material were excluded from this study, but these may eventually contribute to the species diversity of Magnoliaceae. All Honduran *Magnolia* species are endemic to Central America, and seven species (*M. atlantida*, *M. celaquensis*, *M. cochranei*, *M. cusucoensis*, *M. darioi*, *M. pastorcortesii*, *M. picopijolensis*) are endemic to Honduras. Three are shared with neighbouring countries: *M. hondurensis* with Guatemala and El Salvador; *M. yoroconte* with Guatemala and *M. sororum* with Nicaragua, Costa Rica and Panama. So far, no species of *Magnolia* from Honduras has been found to be shared with México, Colombia or the Caribbean islands (Fig. 1). *Magnolia atlantida* is endemic to Parque Nacional Pico Bonito and Parque Nacional Nombre de Dios in Department Atlántida. *Magnolia cochranei* is endemic to Parque Nacional Cusuco, Sierra del Merendón, Municipio de San Pedro Sula, Departamento Cortés; Reserva Biológica de Montecillos, Comayagua Department; and Parque Nacional Pico Pijol, Yoro Department. *M. cusucoensis*, *M. darioi* and *M. pastorcortesii* are endemic to Parque Nacional Cusuco, Sierra del Merendón, Municipio de San Pedro Sula, Cortés Department. This publication adds three species to the number of 'micro-endemic' vascular plant species known solely from the Sierra del Merendón, providing fresh evidence of its outstanding status as a biodiversity hotspot (Martin *et al*. 2021). *Magnolia hondurensis* is endemic to north-western El Salvador, eastern Guatemala and western Honduras; it has been reported in five departments, confined mainly to the Cordillera Central: Comayagua, Intibucá, La Paz, Lempira and Ocotepeque (Fig. 1). *Magnolia sororum* subsp. *sororum* occurs in Honduras, Nicaragua, Costa Rica and Panamá, and in Honduras is reported from Parque Nacional Sierra de Agalta, on the northern slope of the upper Coronado River basin (Catacamas, Olancho Department), Parque Nacional El Carbón (Colón) and Reserva Río Plátano (Gracias a Dios). *Magnolia sororum* subsp. *oligocarpa* is endemic to Yoro Department.

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Numerical List of Honduran *Magnolia* Taxa

01. *Magnolia atlantida* A.Vázquez
02. *Magnolia celaquensis* A.Vázquez & H. Vega
03. *Magnolia cochranei* A.Vázquez
04. *Magnolia cusucoensis* A.Vázquez & D.L. Kelly
05. *Magnolia darioi* A.Vázquez & D.L. Kelly
06. *Magnolia hondurensis* Ant. Molina
07. *Magnolia pastorcortesii* A.Vázquez & D.L. Kelly
08. *Magnolia picopijolensis* A.Vázquez
09. *Magnolia sororum* Seibert
9.1 *Magnolia sororum* subsp. *sororum*
9.2 *Magnolia sororum* subsp. *oligocarpa* A.Vázquez
10. *Magnolia yoroconte* Dandy

List of Exsiccatae

Allen, P. & M. L. van Severn 7128 (06)
Alvarado-Padilla, Y. A. et al. 1 (10)
Álvares, R. s.n. (10)
Andino Urbina. R. 213 (06)
Andino-Urbina. R. 216 (06)
Arauz, B. et al. B2620 (9.1)
Blackmore & Chorley 3946 (06)
Calix-Marín, J. O. s.n. (10)
Cortés, P. 14153-I (07)*
Davidse et. al. 35344 (06)
Dietzsch, A. C. BA4/SS3/556 (03)**
Dietzsch, A. C. CO4/SS3/5987 (04)
Dietzsch, A. C. et al. DAO/SS3/5979 (04)*
Erazo, M. s.n. (9.1)
Evans, R. R. 1121 (03)
Evans, R. R. 1738 (06)
Evans, R. R. 1748 (08)
Felber, R. 52 (06)
Felber, R. 51 (06)
Fritch, R. GU1/MS/886 (03)**
Fuentes, J. A. 147 (06)
Hawkes et al. 2078 (06)
Hawkins, T. et al. 138 (06)
Hawkins, T. et al. 477 (9.1)
Henriquez, H. s.n. (10)
House P. R. et al. 4139 (9.1)
House, P. R. et al. 3801 (9.1)
Kelly, D. L. & A. C. Dietzsch CO3/SS4/63 (10)
Kelly, D. L. & A. C. Dietzsch CO4/SS2/143 (04)
Kelly, D. L. & A. C. Dietzsch GU1/MS/5932 (10)*
Kelly, D. L. & A. C. Dietzsch GU2/SS3/3487 (04)*
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*=Sampled for DNA analysis

***=**Not seen by the first author, not on the map*