

A REEVALUATION OF THE GENUS *PHYLLOSTYLON* (ULMACEAE)

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ABSTRACT

Since its circumscription in 1880, *Phyllostylon* has been attributed with between one and three species. A morphological reevaluation of the genus justifies the recognition of two species, *Phyllostylon brasiliense*, restricted to eastern coastal Brazil, and *P. rhamnoides*, ranging from Mexico to Paraguay and the West Indies. Descriptions of the two species, notes on the type specimens, and a map are included.

RESUMEN

Desde su delimitación en 1880, a *Phyllostylon* se le han asignado entre una y tres especies. La reevaluación morfológica del género permite reconocer dos especies, *Phyllostylon brasiliense* restringida al este de Brazil, y *P. rhamnoides* que abarca desde Mexico hasta Paraguay y las Antillas. Se incluye la descripción de las dos especies, notas sobre los ejemplares tipos y un mapa.

Phyllostylon is a small neotropical genus in the Ulmaceae that has been reported to have between one and three species. The genus ranges from Tamaulipas, Mexico, to Paraguay, as well as Cuba, Haiti, and the Dominican Republic, and is found frequently in dry scrub forest. The genus clearly belongs in the subfamily Ulmoideae by virtue of its bisexual flowers and dry, winged fruits, yet is distinguished from the other five genera in that subfamily (*Hemiptelea*, *Holoptelea*, *Planera*, *Ulmus*, *Zelkova*) by samaras that are elliptic or sickle-shaped in outline, not round. Anatomical studies detailing fruit development and the structure and ontogeny of the anther and ovule of *Phyllostylon* (Dottori 1989, 1991) confirm its position in the Ulmoideae and give further evidence to its uniqueness in the subfamily.

The genus *Phyllostylon* was published by Bentham and Hooker (1880) for G. S. Barao de Capanema, a professor in Rio de Janeiro who corresponded with Hooker between 1850 and 1870. Since the publication of the genus with the type species, *P. brasiliense*, one additional name has been published in that genus and another genus has been transferred into it. In 1888, Poisson published *Samaroceltis*, a new genus in the Ulmaceae. Two years later this new species was correctly transferred into *Phyllostylon* (Taubert 1890). The third and most recent name published in *Phyllostylon* is *P. orthopterum* Hallier.

Confusion concerning the species concepts in *Phyllostylon* became evident when the author was preparing a treatment of the Ulmaceae for the Flora de

Nicaragua. In his synopsis of the genus, Pereira (1971) recognized all three names as distinct species. In a recent flora Nee (1984) recognized only one species, *P. brasiliense*, the other two names being placed in synonymy. Because of these discrepancies in species concepts within *Phyllostylon*, a reevaluation of the genus was undertaken. Morphological examination of type material and over 200 specimens indicate the distinction of a species along coastal Brazil from a wide ranging neotropical entity. A key separating the two species, descriptions and discussion of the species, as well as a map, follow.

Phyllostylon Capanema ex Bentham & J. D. Hooker, Gen. Pl. 3:352. 1880.—

TYPE SPECIES. *Phyllostylon brasiliense* Capanema ex Bentham & J. D. Hooker.

Samaroceltis Poisson, Compt. Rend. Assoc. Franc. avanc. sci. 16ième sess. 2:595. 1888.

Unarmed, andromonoecious trees or shrubs with stiff irregular branches. Leaves alternate, serrate, pinnately nerved, petiolate, with cystoliths; stipules small, lateral, free, caducous. Inflorescences fasciculate in the axils of fallen leaves, lower flowers staminate, upper flowers functionally pistillate. Flowers with a 5-parted perianth, segments imbricate; stamens 5; ovary sessile, compressed, with two unequal style branches. Fruit a compressed samara, terminated by a large membranaceous unequal falciform wing, with another small wing at base, the enlarged seed cavity irregularly ribbed, puberulent; seed with thin testa; endosperm absent; embryo straight.

Distribution. Two species, one in central coastal Brazil and the other wide-ranging from Mexico, Central America and the West Indies to Venezuela, Colombia, Bolivia, Argentina, Paraguay, and central Brazil.

KEY TO THE SPECIES OF *PHYLLOSTYLON*

1. Leaves long acuminate, drying smooth on upper surface; lateral veins flush with lower surface; fruits with the larger wing broadly cuneate, acute at apex, the dorsal edge straight, the smaller wing 3 – 6 mm long; coastal Brazil (Bahia, Minas Gerais, Pernambuco, Rio de Janeiro). 1. *P. brasiliense*
1. Leaves acute, retuse or obtuse, drying scabrous on upper surface; lateral veins raised below; fruits with larger wing elliptic to narrowly cuneate, rounded to acute at apex, the dorsal edge usually curved, sometimes straight, the smaller wing (4-)7 – 10 mm long; West Indies, Mexico, Central America, Venezuela, Colombia, Bolivia, Argentina, Paraguay, central Brazil. 1. *P. rhamnoides*

1. *Phyllostylon brasiliense* Capanema ex Bentham & J. D. Hooker, Gen. Pl. 3: 352. 1880. TYPE: BRAZIL. *Capanema s.n.* (HOLOTYPE: K!) [See discussion below].

Trees 5 – 13 m tall with brittle gray branches; older stems gray becoming lighter with age; younger stems light brown to gray, puberulent. Leaves elliptic 2.2 – 4.1(-7.3) 3 1.2 – 1.9(-3.6) cm, long acuminate at apex, round to subcordate and usually oblique at base, margins serrate with 2 – 10 prominent teeth on each side with teeth beginning 1/2 to 1/3 distance from base of lamina, drying smooth, glabrous or sometimes sparsely puberulent above, midvein puberulent above,

puberulent beneath, the lateral veins flush with lower surface, tertiary venation not drying conspicuously darker beneath; petioles 1 – 2(-3) mm long, puberulent; stipules small, 2 – 4 mm long, puberulent, caducous. Inflorescences fascicles borne in the leaf axils, usually appearing after the leaves have fallen, lower flowers staminate, upper flowers bisexual. Flowers borne on short peduncles 2 – 8(-9) mm long; sepals 5, 1.5 – 2 mm long, lanceolate, sparsely puberulent externally; stamens 5, filaments ca. 1 mm long; staminate flowers mostly without pistillodes, perfect flowers with a compressed sessile ovary, the two style branches unequal. Fruit a samara, 2.8 – 4.0 × 1.0 – 1.5 cm with two membranaceous wings; the enlarged seed cavity irregularly ribbed, puberulent; the larger wing 2 – 2.7 cm long, 1 – 1.5 cm broad, broadly cuneate, the apex acute, the dorsal edge usually straight, the smaller wing 3 – 6 mm long, narrow and curved inward.

Common names. Brazil: carne d'anta, rama branca, vareteiro.

Distribution (Fig. 1) and phenology. Found only on the Atlantic coast of Brazil from the states of Bahia, Minas Gerais, Pernambuco, and Rio de Janeiro. Habitat information not available. Flowering specimens have been recorded from May and July, while fruiting specimens have been collected in September and October.

Representative specimens examined. Brazil. Bahia: km 9 estrada Serra Preta-Ipirá, 205 m, 24 Nov 1970, *Andrade-Lima* 70-6109. Minas Gerais: Figueira, *Directoria Geral do Serviço Florestal do Brasil* 1476 (MO); rd. between Vitória and Figueira, *Kuhlmann* 251 (F, US). Pernambuco: Aguas Belas, propriedade Fazenda Nova, Serra do Cumunati, 29 Nov 1969, *Andrade-Lima* 69-5616 (F-2 sheets). Rio de Janeiro: Rio de Janeiro, *Capanema s.n.* [RB 17991] (MO, US); São Cristovao, 22 May 1885, *Glaziov* 16353 (F, NY, US); São Cristovao, Rio de Janeiro, *Glaziov* 6842 (RB); without locality, *Glaziov* 17223 (K, MO, NY); without locality, *Glaziov* 17243 (F); without locality, *Glaziov* 17273 (US); without locality, *Glaziov* 18509 (G, GH, NY).

Common names. Brazil: Pau branco, vareteiro.

Two sheets at Kew are potential types of *Phyllostylon brasiliense*. One has a small sprig with several leaves and no flowers. Beneath it is written: "*Phyllostylon guanabarensis*. Rio, Brazil, near the Sea. Nov. gen. of Prof. Capanema in Ulmaceae." The handwriting perhaps is that of J. D. Hooker, but does not exactly match the handwriting samples I examined (*Candollea* 30: 397-398. 1975). The other is a full sheet of flowering branches without any leaves. On the lower left of the sheet is written: "(bis) *Phyllostylon brasiliense*, Capa. Comm. for Capanema 1/77." Correspondence from G. S. Capanema to J. D. Hooker not only illuminates the discovery of this new genus but also provides information to determine which specimen is best identified as the type. Excerpts from several letters from Prof. G. S. de Capanema follow.

London, March [?] 1856

Dear Sir,

On my way home to Brazil, I'll take the liberty to call upon you for some moments after tomorrow if you are not very occupied that day. I would be very glad to see the Ulmaceous[?]

tribe in your herbarium. I found in Rio Janeiro a plant believe [?] going to that family, which I suppose new, but remarquable [sic] for growing in the tropics.

Your most faithful and
obedient servant,
Prof. G. S. de Capanema

London March 5th 1856

Herewith I have the pleasure to send you two samples of aromcaria wood, a small portion of Lycanin (?), and a branchlet of the brazilian ulmacea which I called *Phyllostylon guanabarensis* arriving in Brazil I'll procure you better and more complete sample.

London 18th March 1856

If our ulmacea flourishes this year (in August) you shall have complete samples otherwise only leaves till better occasion.

Rio Janeiro, July 12th 1856.

I enclose also two small branches of my *Phyllostylon* with leaves, one I had in my herbarium lost all its flowers...

Rio Janeiro, November 28, 1876

I profit the opportunity of Major Richard Severs going home to send you a specimen of *Phyllostylon brasiliense*. I changed the specific name because I found it very common at Crato [Ceara], where it is called Paobranco—different of the tree bearing the [?] name at the coast—a *Cordia* in the provinces of Rio Janeiro and Espirito Santo. It is an *Ulmus* in habit inflorescence & with [?] fruit—and the only capital difference is radicle nifera—unfortunately I was absent and no fruit was collected, it ripening in a very short time.

It is the above specimen that Capanema refers to that appears to be the holotype. This sheet is annotated in Hooker's handwriting: "(bis) *Phyllostylon brasiliense* Capa. Com. for Capanema 1/77."

Phyllostylon brasiliense is morphologically and geographically distinct from *P. rhamnoides*. In addition to the characters listed in the key, *P. brasiliense* is further distinguished from *P. rhamnoides* by having chartaceous (vs. coriaceous) leaves that are densely puberulent beneath (vs. glabrous to sparsely puberulent) and dry glabrous to sparsely scabrous (vs. leaves drying very scabrous). Furthermore, the teeth usually begin 1/3 the distance from the base of the lamina (vs. 1/2 the distance from the base of the lamina) and have deep sinuses with the lower side of sinus (the apical side of the tooth) convex (vs. concave).

2. *Phyllostylon rhamnoides* (Poisson) Taubert, Oesterr. Bot. Z. 11:409. 1890.

Samaroceltis rhamnoides Poisson, Compt. Rend. Assoc. Franc. avanc. sci. 16ième sess., 2:595. 1888. TYPE. PARAGUAY: Asunción, Oct 1875, *Balansa 2054* (HOLOTYPE: P!; ISOTYPE: K!).
Phyllostylum orthopterum Hallier, Meded. Rijks-Herb. 27:70. 1915. TYPE. BOLIVIA: Häufiger Baum in Wald um Charagua, 800 m, Dec 1910, *Herzog 1208* (HOLOTYPE: L!).

Trees or shrubs 4 – 20 m tall, with stiff irregular branches; bark gray, rough, falling off in small plates; trunk irregular, ribbed; larger stems glabrous, bright

green when fresh, drying gray; younger stems light reddish brown, often puberulent. Leaves elliptic, ovate to broadly ovate, (0.7-)1.2 – 4.3(-5.1) × 0.4 – 2(-3.8) cm, acute, retuse or obtuse at apex, round to subcordate at base, margin entire or serrate with 1 – 10(-15) teeth on each side usually only in the upper 1/2 of lamina, asperous, with dense white dots, puberulent along veins with white hairs beneath, lateral veins raised below, tertiary venation drying dark beneath; petioles 1 – 4(-5) mm long, puberulent; stipules small, lanceolate, 4 – 5 mm long, puberulent, caducous. Inflorescences fascicles borne in the leaf axils, usually appearing after the leaves have fallen, lower flowers staminate, upper flowers bisexual. Flowers borne on short peduncles 3 – 5 mm long; sepals 5 – 6, lanceolate, ca. 3 mm long, densely puberulent; stamens 5, filaments 1 – 1.5 mm long; staminate flowers with or without pistillode; perfect flowers with a compressed sessile ovary, the two style branches unequal. Fruit a samara 2.5 – 4.0 × 7.5 – 13 cm with two membranaceous wings; the enlarged seed cavity irregularly ribbed, puberulent; the larger wing 1.7 – 2.7 cm long, 0.7 – 1.5 cm broad, elliptic to narrowly cuneate, rounded to acute at apex, the dorsal edge usually curved, sometimes straight, the smaller wing (4-)7 – 10 mm long, narrow and curved inward.

Common names. Mexico: cerón, coanextle. Dominican Republic: baitoa. Colombia: varoblanco, sabanemico. Argentina: palo blanco, palo amarillo, palo de Lauza.

Distribution (Fig. 1). Tamaulipas, Mexico to Nicaragua, Cuba, Haiti, the Dominican Republic, Venezuela, Colombia, Bolivia, Paraguay, Argentina, and the planalto of Brazil.

Habitat and phenology. Because *Phyllostylon rhamnoides* is so broadly ranging it occupies a variety of habitat types although all within the dry tropical forest zone. In Mexico, Central America and the West Indies it occurs in scrub forest and thorn scrub forests often on calcereous soils and on brushy, rocky soils. In South America it is noted to occur in moist lowland forest and open savannas and in woods on clay soil. In Mexico and Central America flowering specimens are recorded for May and fruiting specimens have been collected in May, June and July. In the West Indies flowering specimens have been collected in February and fruiting has been recorded in January, February, March, April, and May. In northern South America fruiting occurs in February, March and May. No flowering specimens have been seen from Venezuela or Colombia. In southern South America flowering specimens are recorded in August, September and October with fruiting specimens from September through December.

Representative specimens examined. MEXICO. Jalisco: Mpio. La Huerta, Rancho Cuixmala, along road from Cumbres 1 to Cumbres 2, ca. 200 m below La Cuesta, 19°26'N, 104° 58'W, ca. 100 m, 13 May 1991, *Lott et al.* 3520 (UCR). Puebla: Mpio. de Piaxtla, Rancho de Animas, carretera Puebla-Tlapa, Guerrerro, cerca del pueblo de Piaxtla, 1090 m, 20 Apr 1978, *Huerta et al. s.n.* (NY). Queretaro: Cerca de Conca, 650 m, 8 Apr 1971, *Rzedowski* 28106 (TEX). San Luis



Fig. 1. Map showing distribution of *Phyllostylon brasiliense* and *P. rhamnoides*.

Potosi: Mpio. San Antonio, San Pedro, 26 Oct 1978, *Alcorn 2093* (TEX); 11 mi S of Tamuin on road to San Vicente or Tancuatalab, 1 May 1960, *Johnston & Crutchfield 5299-II*; Rancho "Casas Blancas," Plantaciones de Fibracel S.A., 60 m, 27 Oct 1967, *Pennington & Sarukbán 9308* (K, NY); Las Palmas, 5 Jul 1896, *Pringle 7290* (GH). **Tamaulipas:** 16 mi by road S of Victoria (7 mi N of the Tropic of Cancer, 1000 ft, 15 Nov 1959, *Johnston & Graham 4718* (TEX); 15 mi W of Gonzales toward Mante, 650 ft, 10 Dec 1959, *Johnston 4930C* (TEX); 18 mi S of San Carlos on the road to Padilla, 900 ft, 13 Dec 1959, *Johnston & Crutchfield 4994* (TEX); 2 mi north of Rio Guayalejo crossing on the Mante-Victoria Hwy, 3 May 1960, *Johnston & Crutchfield 5421* (TEX). **Veracruz:** Carretera Panuco-Tampico, 8 km después de Panuco, 13 Aug 1970, *Chiang 59* (GH). **Yucatán:** Ruins of Dzibilchaltun, 12 km N of Mérida, ca. 20 m alt., *Gentry & Zardini 48862* (MO).

GUATEMALA. Zacapa: near divide along road between Zacapa and Chiquimula, 500–660 m, 9 Oct 1940, *Standley 73795* (NY, US); along road between Agua Blanca and Cumbre de Chiquimula, 350–500 m, 15 Oct 1940, *Standley 74433* (US).

HONDURAS. Comayagua: Valle Comayagua entre km 93–96 de Palmerola, 600 m, 27 Jun 1964, *Molina 14352* (NY, US); 5 km NW of Comayagua, 22 May 1972, *Clewell 3088* (MO). **Olancho:** between Juticalpa and El Asilo, 380–400 m, 10 Mar 1949, *Standley 17784* (US).

NICARAGUA. Boaco: Road to Boaquito, Hacienda San Antonio, 200 m, *Moreno & Robleto 22819* (MO). **Carazo:** ca. 7 km SE of La Trinidad, 100–200 m, *Grijalva 2655* (MO); between Amayito and Barranco Bayo, 30–100 m, *Stevens 22768* (MO). **León:** Cerro Montoso, NW de Volcán Momotombo, 300–450 m, *Sandino & Robleto 4425* (MO). **Managua:** Rancho Grande,

N of Río Racora, 80–90 m, *Araquistain* 3512 (MO); along new road from Hwy 1 to San Francisco del Carnicero, 26 Nov 1978, *Stevens* 10987 (MO). **Matagalpa:** Presa Santa Bárbara, San Juan de Dios, 200 m, *Moreno* 21586 (MO); Carretera Panamericana Norte, N of Cuesta del Venado, 450 m, 25 Mar 1984, *Stevens* 22888 (MO, TEX).

CUBA. Oriente: United States Naval Station, Guantanamo Bay, 17–30 Mar 1909, *Britton* 1968 (NY-2 sheets); vic. of Daiquiri, 14–16 Mar 1912, *Britton & Cowell* 12642 (NY); vic. of Daiquiri, *Britton & Cowell* 12653 (NY, US); Ensenada de Mora, 26–29 Mar 1912, *Britton et al.* 12922 (MO, US); Bayate, on the Canto bank, 10 Feb 1915, *Ekman* 4596 (G, NY); Salbis, at the border with prov. Camaguey, 14 Aug 1916, *Ekman* 7446 (NY); Papayo, 2 Feb 1919, *Ekman* 9467 (G, K, NY, US); Sierra Maestra, *López* 2991 (US).

HAITI. Nord-Ouest: Vic. of Port de Paix, *Leonard & Leonard* 11071 (US); Tortue Island, vic. of La Vallée, *Leonard & Leonard* 11517 (US); vic. of Bassin Bleu, banks of Les Trois Rivières, road to Gros Morne, 630–1500 m, 15 Apr 1929, *Leonard & Leonard* 14663 (GH, NY, US). **L'Artibonite:** Vic. of Étroite, Gonave Island, 15–21 Mar 1920, *Leonard* 3358 (NY, US); vic. of Gros Morne, 235 m, 19 Feb 1926, *Leonard* 10004 (NY, US); ca. 5–7 km Oeste de Gonaïves en la carretera costera a Anse Rouge, 19°27' N, 72°49' W, 15 m, 21 Oct 1983, *Zanoni et al.* 27669 (JBSD).

DOMINICAN REPUBLIC. Azua: Loma Vieja, 80 m, 12 Mar 1980, *Mejía* 169 (JBSD, NY); without locality, Mar 1913, *Rose et al.* 3872 (NY, US); *Rose et al.* 4409 (NY, US). **Barahona:** near town of Las Salinas, 16 Aug 1946, *Howard & Howard* 8373 (A, NY). **Monti Cristi:** 1.5 km N of Rincón, 19°50'N, 71°37'W, 50–60 m, 17 Aug 1984, *García & Alba* 182 (JBSD); Reserva Científica "Dr. Orlando Cruz Franco," 8 km N of Villa Elisa, 19°44'N, 71°15.5'W, 120 m, 21 Aug 1985, *Pimentel & García* 506 (JBSD). **Pedernales:** Bahoruco Peninsula, 5 km on road to Las Mercedes from road to Pedernales, 60 m, Jul 1981, *Fisher-Meerow* 573 (JBSD); Recta de Sauson, 16 km NW of Oviedo, 160 m, 12 Apr 1985, *Gentry & Mejía* 50742 (MO); Loma El Guano, 200 m, 12 Apr 1985, *Gentry & Mejía* 50755 (MO).

VENEZUELA. Falcon: Dtto. Buchivacoa, 31 km S of Dabajuro, 200 m, 17 Jun 1978, *Bunting et al.* 6439 (MO). **Lara:** desert between Carora and Barquisimeto, 500 m, 28 May 1944, *Steyermark* 56828 (NY). **Zulia:** Dtto. Maracaibo, carretera Perijá, entre Maracaibo y La Villa del Rosario, en km 24 de la vía, 5 Mar 1978, *Aristeguieta & Ferrer* 12542 (MO); Dtto. Maracaibo, carretera Maracaibo-Machiques, en km 21 al SO de Maracaibo, 100 m, 4 May 1978, *Bunting & Ferrer* 6276A (MO); Dtto. Maracaibo, carretera La Concepción-Cuatro Bocas, en km 13 al norte de La Concepción, o sea 1 km al sur de la encrucijada con la carretera Puerto Caballo-Cachirí, 1 Aug 1978, *Bunting* 6586 (MO); Dtto. Miranda, rd. between the Lara-Zulia and Coro-Maracaibo Hwys, 4 Mar 1979, *Bunting* 7182 (MO); Dtto. Bolívar, Parque Yaguasa, 0–25 m, 24 Sep 1979, *Bunting & Galué* 7938 (MO); espinares a lo largo de la carretera hacia Villa de Rosario, 18–22 km oeste-suroeste de Maracaibo, 100 m, 21 Aug 1967, *Steyermark & Fernández* 99532 (NY).

COLOMBIA. Guajira: 2 leguas al oeste de Villanueva, 20 Feb 1966, *Ferreria* 2 (NY). **Magdalena:** Valle del Río Cesare (parte occidental, cerca del Caño Sagarriga, al oeste de Los Venados) 10°N, 73°45'W, 70 m, 21–22 Jan 1961, *Dugand* 551 (US); same locality, *Dugand* 5588 (US); same locality, 20 Apr 1963, *Dugand* 6287; same locality, 21 Apr 1963, *Dugand* 6291 (NY, US).

BOLIVIA. Santa Cruz: Prov. Andres Ibanez, Jardín Botánico de Santa Cruz, 12 km E of center of Santa Cruz on road to Cotoca, 17°46'S, 63°04'W, 375 m, 27 Sep 1990, *Nee* 38926 (TEX).

BRAZIL. Mato Grosso: Road to Santa Isabel from Jofre, 56°55'W, 17°7'S, 13 Jun 1979, *Prance et al.* 26179 (NY).

PARAGUAY. Central: In the region of lake Ypacaray, Sep 1913, *Hassler* 12302 (A, G, GH, MO, NY, US); *Hassler* 12677 (G, GH, K, MO, NY, US). **Concepción:** Prope Concepción, Aug 1902, *Hassler* 7280 (A, G, K, MO, NY). **Paraguarí:** Costa, Cerro Palacios, 30 Oct 1987, *Besualdo & Zardini* 1317 (TEX).

ARGENTINA. Chaco: Vic. of Barranqueras, 35 – 40 m, 12 Nov-Dec 15, 1913, *Curran* 382 (NY, US); Fontana, Oct 1932, *Meyer* 721 (GH); Colonia Benítez, 3 Aug 1967, *Schulz* 15993 (MO). Corrientes: Dept. Empedrado, Estancia "La Yela," 30 Aug 1954, *Pederson* 2793 (G, MO, NY, US); same locality, 2 Nov 1954, *Pedersen* 2793a (G, K, MO, NY, US); Dept. Capital, camino a Perichón, 11 Oct 1984, *Schinini & Cuadrado* 25012 (G). Formosa: near Formosa, Sep 1918, *Jørgensen* 3044 (MO, US); Dept. Pilocomayo, Paraíso, 8 Oct 1948, *Morel* 6164 (GH, US). Salta: Orán, Río Piedras, 4 Dec 1911, *Rodríguez* 164 (A, GH); Dept. Orán, Tartagal, Picadas de las Cañas, 700 m, 29 Nov 1924, *Schreiter* 3328 (ECON); Orán, 750 m, 12 Nov 1927, *Venturi* 5547 (A, GH, K, MO). Tucuman: Dept. Capital, Capital, 430 m, Oct 1941, *Meyer* 3924 (BRIT/SMU, GH, LL, MO, NY, TEX, US); Dept. Burruyacú, Cañada Larga, 19 Sep 1922, *Venturi* 1907 (A, US).

Phyllostylon rhamnoides is morphologically quite stable throughout its range, even across its wide disjunction from northern Venezuela (10° N latitude) to central Brazil (17° S latitude). Its rounded to acute, retuse or obtuse leaf apices, dentations only in the upper half of the lamina distinguish it from *P. brasiliense*.

In the past *Phyllostylon rhamnoides* has been placed into synonymy under *P. brasiliense*, the earliest name in the genus. However, specimens from coastal Brazil are clearly distinguishable from the populations from the rest of South America, Central America, and the West Indies, by the characters listed in the key and discussed under the latter species.

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REFERENCES

- BENTHAM, P. and J.D. HOOKER. 1880. *Genera plantarum*. Vol. 3. Reeve and Co., London.
- DOTTORI, N. 1989. Anatomía reproductiva en Ulmaceae sensu lato. I. Estructura y desarrollo del fruto de *Phyllostylon rhamnoides*. *Bol. Soc. Argent. Bot.* 26(1-2):85 – 89.
- . 1991. Anatomía reproductiva en Ulmaceae sensu lato. III. Esporangios, esporogénesis y gametogénesis de *Phyllostylon rhamnoides* y *Celtis tala*. *Kurtziana* 21:81 – 110.
- NEE, M. 1984. Ulmaceae. *Flora de Veracruz* 40:1 – 38.
- PEREIRA CARAUTA, J.P. 1971. Notas sobre o gênero *Phyllostylon* Cap. (Ulmaceae). *Rev. Brasil Biol.* 31(4):513 – 518.
- POISSON, J. 1888. Sur un nouveau genre des Celtidées. *Compt. Rend. Assoc. Franc. avanc. sci.* 16ième sess., 2: 593 – 596.
- TAUBERT, P.H.W. 1890. Die Gattung *Phyllostylon* Capan. und ihre Beziehungen zu *Samaroceltis* Poiss. *Oesterr. Bot. Zeit.* 40(11):406 – 410.