**REVISION OF SPATHIPHYLLUM FOR CENTRAL AMERICA**

**Thomas B. Croat, P. A. Schulze Curator of Botany, Missouri Botanical Garden**

History of classification

The genus was described in 1932 by H.W. Schott based on *S. lanceifolium* Schott from the Cordillera Central in Venezuela. That species was originally described as *Dracontium lanceaefolium* Jacquin in 1791 (Collectanea 4: 118. 1791). Schott published an additional species, S. sagittiflolium Schott in the same publication (Melet. Bot. 22. 1832) but it proved to belong to a radically different genus, Dracontium.

The next species described in the genus Spathiphyllum were published by Peoppig from Peru, *S. caudatum* Poepp. and *S. candicans* Poepp., both published in Nova Genera ac Species Plantarum 3: 85 in 1845. The former also proved to be a Dracontium, D. caudatum (Poepp.) Schott. The latter proved to be a synonym of S. cannifolium (Dryander ex Sims) Schott with the transfer published in 1832 (Schott, Aroideae 1:1. 1853). Also in 1853 Schott published several additional species S. heliconiaefolium Schott (later synonymized with S. cochlearispathum (Liebm.) Engl., S. humboldtii Schott, S. friedrichsthalii Schott and S. gardneri Schott but he also transferred Pothos cannifolum Dryander ex. Sims to Spathiphyllum and transferred Hyndostachyum Liebm. to Spathiphyllum.

In 1857 Schott published seven species in volume 7 of the Oesterreichisches Botanisches Wochenblatt (Schott, 1857), namely S. phryniifolium Schott, S. schomburgkii Schott, S. commutatum Schott (from Asia), S. cuspidatum Schott, S. fendleri Schott (now =S. friedrichsthalii Schott), S. blandum Schott and S. bonplandii Schott (now =S. cannifolium). Also in 1857 Karl Koch published A. lanceolatum (K. Koch) K. Koch but the latter soon proved to be the same as S. coclearispathum .

In 1958 Schott published three Central American species, S. atrovirens Schott, S. fulvovirens Schott and S. wendlandii Schott in the Oesterreichische Botanische Zeitschrift (Schott, 1858). In 1860 two additional names were published, S. lechlerianum Schott from Peru (Schott, 1860) and S. candolleanum Schott but the latter proved to be a synonym of S. humboldtii Schott.

In 1870 Regel published S. minahassae (Tiejsm. & Binn.) Regel and S. ortgiesi W. Bull. (Regel, 1870). The former proved to be a synonym of S. commutatum Schott. [Find basionym of S. minahassae].

In 1874 the name S. pictum W. Bull appeared but it proved to be a Dieffenbachia and in 1877 Spathiphyllum wallisii Regel from Colombia was published (Regel, 1874). N. E. Brown published three species in The Gardeners' Chronicle & Agricultural Gazette in 1878 (S. patinii (Masters) N.E. Br., S. floribundum (Linden & André) N.E. Br. and S. candidum (W. Bull) N.E. Br. But the latter proved to be synonymous with S. cannifolium (Dryander ex Sims) Schott.

In 1879 Engler published S. cochlearispathum (Liebm.) Engl. and S. cochlearispathum var. longirostre (Liebm.) Engl. both with the basionymm Hydnostachuyon Liebm. but the variety longirostre is no longer recognized at the species level. In the same year the name S. amazonicum Spruce ex Engl. was introduced but this proved to be Urospatha sagittifolia (Rudge) Schott and S. beccari Engl. was published but became Holochlamys beccari (Engl.) Engl.

In 1980 Spathiphyllum glaziovii Engl. was published but it proved to be synonymous with S. humboldtii Schott.

Aside from an additional 5 varieties no longer recognized the turn of the century left us with 18 species, 17 of which were Neotropical. Most of the subsequent work with Spathiphyllum in the early part of the 20th Century was by A. Engler who described S. grandifolium Engl., S. huberi Engl., S. laeve Engl. friedrichsthalii Engl., S. quindiuesnse Engl. and S. tenerum Engl. in a single issue of Das Pflanzenreich (Engler, 1905). The following year Huber published an herbarium name of Engler, namely S. huberi Engl. ex Huber (Huber, 1906) but the specis proved to be a synonym of S. humboldtii Schott. The name S. dechardii (Andrews) Gentil was introduced in 1907 but proved to be a synonym of S. cannifolium.

By the middle of the 20th Century there were several botanists describing species of Spathiphyllum. Karl Krause, now working alone described S. juninense Kr. From Peru (Krause, 1932). In Asia the Japanese botanist Hatsus. [Full name?] introduced the name S. micronesicum Hatsus in 1939 but it became synonymous with the widespread S. commutatum. Paul Standley described S. zetekianum Stand. (Standley, 1940). Another Japanese botanist Tuyama described S. funerum Tuyama, yet another synonym of S. cannifolium. Cyrus Lundell describe S. lacustre Lundell which proved to be synonymous with S. coclearispathum.

In 1960 the first modern revision of Spathiphyllum was prepared by George S. Bunting. The genus was well researched but Bunting but he relied heavily on the number of ovules per locule in his key (a tedious character to check) and provided almost no illustrations. This work published the greatest number of species ever with 11 species newly described. These were S. gracile Bunting, S. jejunum Bunting, S. kalbreyeri Bunting, S. maguirei Bunting, S. matudae Bunting, S. minus Bunting and S. monachinoi Bunting, S. neblinae, S. patulinervium Bunting and S. sipapoanum Bunting. Bunting went on to describe S. perezii Bunting (Bunting, 1975) and later still S. bariense Bunting, S. mawarinumae Bunting, and S. monachinoi Bunting (Bunting, 1988).

Bunting’s colleague Dan Nicolson, working on Aglaonema in Asia also described S. solomonense Nicolson, and published a new combination S. schlechteri (Engl. & Kr) Nicolson, two of the three Asian species in the genus. At the Smithsonian Lyman Smith described S. grazielae L. B. Smith in honor of Brazilian aroider Graziela Barroso (Smith, 1968). In Mexico Japanese botanist Eizi Matuda described S. uxpanapense (uspanapensis) (Matuda, 1976).

Richard A. Baker, working at the Field Museum in Chicago worked extensively with Araceae (see Croat & Baker, ???) and, along with William Burger, revised the genus Spathiphylum in Costa Rica (Baker & Burger, 1976). This work resulted in two new taxa, R. silvicola R. A. Baker and S. wendlandii Schott ssp. montanum R. A. Baker. The latter proved to be recognizable at the species level and was elevated by Michael H. Grayum in his treatment of the Araceae of Costa Rica (Grayum, 1997).

Robert Dressler, working with the Smithsonian Tropical Research Institute in Panama for many years had a keen interest in Spathiphyllum and routinely collected and cultivated the most interesting species he found in Panama. His work is honored in part by the publication of S. dressleri Croat & F. Cardona (Croat & Cardona, 2004). Yet another species S. bobdressleri Croat & O. Ortiz was collected by Dressler and published in this revision.

Work in norther Peru in Amazonas Department by Rodolfo Vasquez and his colleagues on the Flora of the Río Cenepa [Confirm title and site date] enabled the discovery of several new species. These were S. brent-berlinii Croat, (named in honor of Brent Berlin who made many of the collections making the Flora of Cenepa possible), S. diazii Croat and S. buntingianum Croat, honoring the extensive work done by George Bunting on the genus (Croat & A. Swart, 2005).

Recently described species include S. abelianum A. Rojas & J. M. Chaves (Rojas & Chaves, 2011) from Costa Rica and S. pygmaeum Bogner from Ecuador (Bogner, 2011).

This revision will include 7 additional new species, including S. bobdressleri Croat & O. Ortiz, S. cardonanum Croat & Grayum, S. cerrosantiagoense Croat & O. Ortiz, S. dukei Croat, S. folsomii Croat & O. Ortiz, S. morii Croat & O. Ortiz and S. ortizii Croat.

This brings the total number of know species in the Neotropics 60 while there are 3 species in Asia. Central America, with the publication of this revisioni will have a total of 26 [recount] species occur in Central America

TAXONOMY

**Spathiphyllum** Schott, in Schott & Endlicher, Melet. Bot. 22. 1832.

TYPE: *S. lanceifolium* (Jacquin) Schott in H.W. Schott & S. L. Endlicher Melet Bot. 22. 1832. (“*lancaefolium*”; *Dracontium lanceaefolium* Jacquin Collectanea 4: 118 1791. Massowia lanceifolia (Jacq.) K. Koch, Bonplandia 4: 11. 1856.

*Hydnostachyon* Liebmann in Vidensk. Meddel. Dansk Naturhist. Foren. Kjøbenhavn 1849: 23 (1849); *Massowia* K. Koch en Bot. Zeitung (Berlin) 10: 277 (1852); *Spathiphyllopsis* J. E. Teysmann & S. Binnendijk, Natuurk. Tijdschr. Ned.-Indiё 25: 400 (1863); *Amomophyllum* Engler en Gard. Chron., ser. 2, 7: 139 (1877, non Watelet 1866); [*Massovia* Bentham & J. D. Hooker, Gen. Pl. 3: 998 (1883), *orth. var*.]

Terrestrial herb; rhizome creeping, often just below the surface of the ground, the plant appearing to be acaulescent; internodes short; roots emerging through the petiole bases; leaves several, mostly erect to erect-spreading; petioles often fully sheathed, with apical geniculum; blades oblong to elliptic to narowly elliptic, acuminate at apex; midrib sunken above, narrowly raised below; primary lateral veins moderately numerous, extending to the margins; interprimary veins and minor veins nearly always present, usually alternating with descending order of size; higher order veins transverse-reticulate. Inflorescence solitary; peduncles as long or longer than leaves; spathe oblong-elliptic to elliptic or obovate, acuminate at apex, acute to obtuse or rounded and sometimes conspicuously decurrent at base, midrib and primary lateral veins, white or green but turning green in fruit; spadix cylindric, erect, shorter than spathe, stipitate, rarely sessile, stipe often adnate in part to the spathe; flowers bisexual, perigonate; tepals 4-6, arching over pistil and rarely fused into a ring; stamens 4-6, free, filaments short, flattened; connective slender; thecae oblong-ellipsoid to ovoid, dehiscing by longitudinal slit; pollen inaperturate, inaperturate, ellipsoid to ellipsoid-oblong; gynoecium ovoid, subcylindric, obovoid or flask-shaped; ovary 3-locular, rarely 2-4-locular, ovules 2, 4, 6 or 8 per locule, anatropous to hemianatropous; placentation axile; style conic and sometimes prominently exserted, sometimes truncate; stigma 2-3-lobed or subcapitate. Berries 1-8 seeded, greenish; seeds oblong, elliptic to ovate or reniform, pale yellow to brown, striate-verrucose; embryo axile, elongate, slightly curved; endosperm copious.

Distribution: Central America from central Mexico along both coasts to Panama and throughout the northern third of South America; Eastern Malay Archipelago, New Guinea to the Pacific Islands (Melanesia, Moluccas, Palau Is, Sulawesi, New Britain, New Ireland); absent from the West Indies [confirm].

60 species in the Neotropics; 3 species in Asia; 26 [recount] species occur in Central America

Key to Spathiphyllum of Central America

Flower with the pistil prominently exserted, protruding significantly above the level of the tepal (usually 2–5 mm above tepals), usually pointed at apex.

Spathe white at anthesis,

Species from Mexico; petioles not sheathed throughout; sheath margins not undulate.

Plants less than 60 cm tall; spathe less than 10 cm long, less than 3.5 cm wide; primary lateral veins arising at 25–45° angle.

**S. uxpanapaense** Matuda

Plants generally more than 60 cm tall ; spathe more than 10 cm long, more than 4 cm wide; primary lateral veins arising at 45-75° angle.

**S. matudae** Bunting

Species from Costa Rica; petioles sheathed throughout; sheath margins often minutely undulate.

**S. wendlandii**  Schott

Spathe green to greenish

Species from Mexico and Middle America (Mexico to Honduras).

Spadix white at anthesis [keys S. blandum, S. coclearispathum, S. matudae]

Petiole with geniculum to ca. 5 cm long.

Leaf blades mostly 50-65 cm long; Mexico, predominating on the eastern slopes of the Gulf of Mexico…… **S. coclearispathum** (Liebm.) Engl.

Leaf blades mostly 35-45 cm long; Mexico & Guatemala & El Salvador, western slope……..…**S. matudae** G. S. Bunting.

Petiole with geniculum to 2 cm long; blades usually elliptic………………**S. blandum** Schott

Spadix green at anthesis [keys S. matudae, S. montanum, S. phryniifolium]

Species from Mexico

Leaf blade with geniculum ca. 5 cm long……………**S. matudae** G. S. Bunting

Species from Costa Rica, Panama and Colombia [keys to S. ayalae, S. cardonanum, cerrosantiagoense, S. phryniifolium (also ranges from Belize), S. bobdressleri, S. friedrichsthalii (also from Nicaragua)]

Usually growing in swampy areas; spathe and spadix white at anthesis…………….………….**S. friedrichsthalii** Schott

Growing in forested areas; spathe green at anthesis.

Spathe pale green with darker green veins; spadix cream; Panama (Cerro Campana & Cerro Jefe); 700 m…………..……….**S. bobdressleri** Croat & O. Ortiz

Spathe solid medium green; spadix green; Panama or Belize to Colombian and Ecuador,

Leaf blades narrowly ovate, 1.4–1.9(2.1) times longer than broad, mostly broadly rounded and weakly attenuated at base; primary lateral veins many and closely spaced, mostly 5-10 mm, apart, 25-30 pairs …..….….**S. cardonanum**Croat & Ortizii

Leaf blades ovate-elliptic to lanceolate or broadly oblanceolate, (2.0)2.6-3.1(3.5) times longer than wide (blades only 1.3-1.9 times longer than wide but with many close veins in *S. dressleri*) , narrowly rounded to acute or weakly attenuate at base; primary lateral veins widely spaced, usually fewer than 20 pairs.

Key here S. cerrosantiagoense - Some characters go both ways.

Leaf blades often more than 32 cm long and 8.5 cm wide; spathe usually more than 14 cm long (to 33 cm long); pistils green throughout; tepals free from one another; berries greenish at maturiy;

Leaf blades mostly oblanceolate with the base narrowly acute; primary lateral 15-30 pairs and very closely spaced…………….**S. luteynii** Croat & O. Ortiz.

Leaf blades mostly lanceolate to oblong-lanceolate or oblong, rounded, trunccate to obtuse at base (acute in *S. zetekianum* but the primary lateral veins not not close and numerous)

Blades lanceolate, acute or sometimes obtuse at base; the stylar region of the pistil obtuse; Panama (Canal Zone) to Colombia (Chocó, 40-400 m)…………**S. zetekianum** Standley

Blades oblong-lanceolate or oblong, rounded, trunccate to obtuse at base; Panama ( Belize to Ecuador, 50-1500 m, mostly in Tropical moist forest, Premontane wet forest and Tropical wet forest in Mesoamerica………… **S. phryniifolium** Schott

Leaf blades less than 30 cm long and 8.5 cm wide; spathe less than 15 cm long,; pistils green at apex, whitish at base; tepals free from one another; berries white at maturity; Panama (Comarca Ngäbe-Buglé at 1688 m in a *Lower montane rain forest* life zone.…………. **S. cerrosantiagoense** Croat & O. Ortiz

Flowers with the pistils barely exserted or only weakly exserted, not protruding significane level of the tepals, usually bluntly pointed at apex.

**Species from Mexico** [keys S. brevirostre & S. uxpanapense]

Leaf blades small and narrow, [Add sizes] ?? times longer than broad; plants less than 60 cm tall; spathe less than 10 cm long, less than 3.5 cm wide; primary lateral veins with the primary lateral veins arising at 25–45° angle; Mexico, ELEVATION?................. **S. uxpanapense** Matuda

Leaf blades elliptic to ovate-ellipic, (7.5) 20-41(65) cm long, 12-21(24.7) cm wide; spathe (12.8-)17-26.5 cm long, 5-9.5(11.3) cm wide; spathe more than 12 cm long, typically more than 4 cm wide; primary lateral veins arising at typically 45° angle on larger blades; Mexico to Belize, Guatemala & El Salvador 330-1700 m………………………… **S. brevirostre** (Liebm.) Schott

**Species from Nicaragua to Colombia and other parts of S. America.**

**Spadix white or creamy.** [Keys S. floribundum, S. patinii, S. quindiuense, S. silvicola]]

**Spathe white, at least on inner surface.** [keys S. patinii, S. fulvovirens, S. kalbreyeri, S. quinduiense]

Leaf blades mostly 17-­20 cm wide [keys S. fulvovirens]

S**. fulvovirens** Schott

Leaf blades less than 12.5 cm wide.

Leaf blades 2.5-3.5 times longer than wide

Spathe markedly narrowed, usually acute and only weakly attached at base, usually spreading; Panama (Colon, Kunayala & Panama Provinces), 250–800 m. **S. patinii** G. S. Bunting

Spathe acute to rounded but tightly affixed to peduncle, usually suberect; Panama (Coclé, Colón, Kunayala), 35-200 m. **S. kalbreyeri**  Bunting

Leaf blade 6–7.5 times longer than wide.

**S. quininduiense Engl.**

**Spathe green on both surfaces**

Leaf blades 9-12.5 cm wide…**S. floribundum** (Linden & André) [This material might be S. patinii in Central America.]

Leaf blades (9.5)14-17 cm wide.

Leaf blades 2.5-2.9 times longer than wide; Costa Rica to Panama and Colombia; 40–800 m ……………… **S. silvicola** R. A. Baker

Leaf blades 6.5-7.5 times longer than wide **S. quininduiense** Engl.

**Spadix green or greenish**. [Keys S. atrovirens, S. brevirostre, S. dressleri, S. fulvovirens, S. kalbreyeri, S. laeve, S. morii, S. ortegesii, S. ortizii, S. schomburgkii & S. uxpanapaense]

Species from Mexico [keys S. ortgesii & S. uxpanapense]

Petioles sheathed to apex; Mexico; Mexico & Honduras; 10-635 m [one record for 1530 m should be confirmed]…**S. ortgiesii** Regel

Petioles sheathed only about 2/3 their length; ; Mexico to Belize, Guatemala & El Salvador 330-1700 m…………………………..**S. brevirostre** (Liebm.) Schott

Species from Nicaragua, Costa Rica, Panama & Colombia [keys S. atrovirens, S. dressleri, S. fulvovirens, S. kalbreyeri, S. laeve, S. morii, S. ortizii & S. schomburgkii]

**Spathe green** [keys S. atrovirens, S. dressleri, S. fulvovirens, S. kalbreyeri, S. laeve, S. morii, S. ortizii & S. schomburgkii

Leave blades less than 14 cm wide. [keys S. dressleri, S. dukei, S. kalbreyeri, S. laeve, S. ortizii & S. schomburgkii]

Spathe usually more than 3 cm wide (sometimes to only 2.5 cm wide in *S. dressleri*); central Panama to northern Colombia at elevations of near sea level to 700 m in areas of premontane wet forest and tropical wet forest.

Spadix more than 6 times longer than broad; primary lateral veins ca. 25 pairs; pistils scarcely elongated, the apex of the ovary conspicuously sunken on drying; Panama (Darién, less than 300 m. …………………. **S. dukei** Croat & Ortiz

Spadix less than 5 times longer than wide; primary latera l veins 12–14 pairs; pistils often sharply projecting above tepals ca. 1 mm; the apex of the ovary never sunken on drying.

**S. dressleri** Croat & Cardona

Spathe usually less than 3 cm wide (sometimes to only 2.7 cm wide in S. leave). [keys S. floribundum, S. kalbreyeri, S. laeve, S. ortizii, S. schombergkii]

Leaf blades typically less than 6 cm wide.

Leaf blades less than 18 cm long, less than 3.5 cm wide; Nicaragua (Zelaya, 120 m)………….**S. schomburgkii** Schott

Leaf blades more than than 20 cm long, more than 5.5 cm wide; Panama (Darién; FIND ELEV………..**S. ortizii** Croat

Leaf blades typically more than 6 cm wide.[keys S. floribundum, S. kalbreyeri, S. leave]

Leaf blades less than 26 cm long; spadix less than 5.5 cm long…..…**S. floribundum** (Linden & André) N.E. Br.

Leaf blades more than 33 cm long; spadix usually more than 6 cm long

Leaf blades usually less than 10.5 cm wide; tepals free, not fused into a complete circle around pistil……s…………………**S. kalbreyeri** G. S. Bunting

Leaf blades more than 10 cm wide; petioles frequently densely covered with minute stellate scale-like trichomes; tepals fused into a complete circle around pistil………………………**S. laeve** Engl.

Leaf blades usually more than 15 cm wide. [keys S. atrovirens , S. fulvovirens & S. morii]

Leaf blades markedly decurrent at base with the geniculum of the petiole seemingly 3-5 cm below the end of the blade proper; petioles glabrous; Atlantic slope of Cordillera in east central Costa Rica [check Fl. CR for range].

**S. atrovirens** Schott

Leaf blades acute to rounded at base with the geniculum of the petiole directly at base if the blade;

Plants usually less than 1 m tall, to 1.25 m; petioles often densely covered with scale-like stellate trichomes, sheathed 0.25–0.73 their length; spathe scarcely or not at all decurrent at base; Costa Rica, Panama, Colombia; sea level to 700(1550 m) [confirm elevation]

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**S. fulvovirens** Schott

Plants to 2 m tall, to 1.25 m; petioles glabrous, sheathed 0.7-0.8 their length; spathe prominently decurrent; Panama (Veraguas, Sante Fe; 580 m.

**S. morii** Croat O. Ortiz

**Spathiphyllum atrovirens** Schott, Oesterr. Bot. Z. 8: 179. 1858. NEOTYPE: Costa Rica: San José: San Francisco de Guadalupe, 9°57’N, 84°W, Oct. 1894, *H. Pittier 9053* (isoneotype, CR-9035).

Terrestrial; rather tall plants to ca. 1.5 m tall; **internodes** short, 3-4 cm diam.; sheath dark green, weakly glossy, subterete, slightly thicker than broad. **petioles** terete, to 22-42(111) cm long, sheathed from less than ½ way to the lower 2/3; less than 8 mm diam.; sheath margin slightly paler, weakly wrinkled; geniculum 3- 7 cm long but seemingly 3-5 cm below the end of the blades proper, sharply sulcate in apical ½; **blades** subcoriaceous, lanceolate or oblong-lanceolate or broadly elliptic, (27)40-61 cm long, (9.5)15-22(25.5) cm wide, acuminate at apex, obtuse to rounded or subtruncate and also usually somewhat attenuated onto petiole at base, dark green and weakly to semi-glossy above, moderately paler and weakly glossy below; **midrib** sunken and paler above, thicker than broad, paler and weakly glossy below; **primary lateral veins** 17-38, arising at 60-70° angle, weakly quilted-sunken above, weakly convex to convex and paler below; tertiary veins obscurely visible below. INFLORESCENCE erect, shorter than to about as high as leaves; **peduncle** terete, 33 to 100 cm; **spathe** pale green at anthesis, weakly glossy, somewhat hooding spadix, cucullate, elongate-elliptic to oblanceolate,(11-) 21-26(-38) cm long, (4.3)6.7-7.5(12) cm wide, strongly apiculate, fused with peduncle to ca. halfway, attenuate-acuminate at apex, acute and decurrent 3-16 cm at base; **spadix** (2.9-)3.5-6 cm long, on a stipe 0.5-1(-2.3\_ cm long, white-cream to greenish white, weakly glossy, 9 mm diam., inclined forward, pistils weakly exserted, obpyramidal, slightly constricted between the annular style and the ovary, apically subtruncate, only the elevated stigma exceeding the perianth; ovary 3-locular, truncate at apex, style not visible or up to 0.5 mm long, the ovules superposed, varying from 4 to 3(-2) in each of the 3 locules, totally 12-9(-8) ovules per ovary. INFRUCTESCENCE pale green, 2.7 cm diam.; pistils green, acute, rounded at apex, held slightly above tepals.

*Spathiphyllum atrovirens* ranges from in east central Costa Rica to western Panama on the Atlantic slope of Cordillera Costa Rica at 600-1700 m in Tropical wet forest life zones

The species is characterized by its blades which are prominently attenuated at the base so that the geniculum appears to be well below the end of the blade proper as well as by its typically hooding pale green spathe white-cream to greenish white prominently stipitate spadix with only weakly exserted pistils which are slightly constricted between the annular style and the ovary and apically subtruncate with only the elevated stigma exceeding the perianth (M. Grayum, pers. Comm).

*Additional specimens seen:* COSTA RICA. *H. Pittier 7995* (BR, MO); Pedregal., 10°07'48"N, 083°12'36"W, 8 Oct 1957, *H. Wendland 1264* (GOET, MO). **Alajuela**: Reserva Biológica Monteverde Río Peñas Blancas. Finca de Jesús Rojas., 10°16'48"N, 084°43'48"W, 850–900 m, 4 December 1989, *Erick Bello 1557* (MO); Forest along Río Sarapiquí upstream from crossing of road to Colonia Virgen del Socorro. 10°5.5'N, 84°10.5'W. Elev. ca. 740 m., 10°05'24"N, 084°10'12"W, 740 m, 3 Jul 1985, *Michael Grayum & Barry Hammel 5520* (MO); Several kms before Monte- verde Cloud Forest Reserve. Elevation 930 m; 10°17'N; 84°48'W., 10°16'48"N, 084°48'00"W, 930 m, 1 Mar 1986, *Scott Hoover 1354* (MO); Reserva Monteverde Río Peñas Blancas, Vertiente Atlántica. Finca de Klaus Stein., 10°18'00"N, 084°45'00"W, 900 m, 4 Jul 1988, *Erick Bello 147* (MO); Along road betwen San Ramon and Bajo Rodriguez, vicinity of Km markers 11-12, ca. 7 km NW of Los Angelus, 11-12 km NW of San Ramon., 10°10'40"N, 84°34'10"W, 1025–1100 m, 3 September 1996, *Thomas B. Croat 78861* (); 2.7 km N of La Balsa de San Ramon., 10°11'24"N, 084°30'00"W, 1000–1100 m, 9 Apr 1976, *John Utley & Kathy Utley 4592* (DUKE, MO); 2 km N of Angeles Norte de San Ramon, 10°09'36"N, 084°28'48"W, 4000 f, 20 May 1973, *Utley, J. 3696* (DUKE); Collected along road for a distance of 4 km beyond Los Angeles about 11 km N of San Ramon., 10°10'48"N, 084°27'36"W, 1200 m, 27 Jun 1972, *James L. Luteyn 3271* (DUKE, MO); Pastureland and low area next to stream, 2 km north of Angeles Norte de San Ramon., 4000 f, 20 May 1973, *James L. Luteyn 3696* (MO). San Ramon. Below the cataract of San Ramón, 3.5-4 mi W of center of San Ramón. 10°04'48"N, 084°31'12"W, 800 m, 2 Feb 1979, *Thomas B. Croat 46776* (MO). **Heredia**: Río Sarapiquí. Río Sarapiquí, about ca. 10 km from Cariblanco, upstream from bridge on road to la Virgen del Socorro., 10°10'12"N, 084°07'48"W, 10 Jun 1982, *B. Hammel et al. 12827* (MO). **Puntarenas**: 9 km West Monteverde on road to Inter American Hyway. 9 km West Monteverde on road to Inter American Hyway. 10.16N 84.50W 900 m 12 June 1989 William Haber & Willow Zuchowski, 10°15'36"N, 084°49'48"W, 900 m, 12 Jun 1989, *William Haber & Willow Zuchowski 9250* (MO); Parque I. La Amistad San Vito Coto Brus, Finca Cafrosa, Quebrada Pizote., 08°54'36"N, 082°46'48"W, 1200 m, 22 September 1990, *Marvin Ramírez en el curso II de Parataxónomos 95* (MO). **Puntarenas**: Cordillera de Tilarán. Monteverde, 6 km south of Santa Elena on road to highway, Los Cerros, ridge between Río Guacimal and Río Lagarto., 10°16'48"N, 084°48'36"W, 900–1080 m, 19 July 1991, *William Haber & Willow Zuchowski 10768* (CR); Cordillera de Tilarán. San Luis; INVU. Monteverde., 10°16'12"N, 084°47'24"W, 1100 m, 13 Jan 1994, *Zobeida Fuentes 624* (CR, INB, MO). **San Jose**: Guadalupe. Near San José., 09°32'24"N, 083°55'48"W, 3 Feb 1922, *J.M. Greenman & M.T. Greenman 5422* (EAP, MO).

PANAMA. **Chiriqui:** Gualaca-Chiriquí Grande, vicinity Lago Fortuna, along trail to meteorological station on Río Hornito departing from highway N side, ca.5 km S of Centro de Cientificos., 08°45'N, 82°18'W, 1000 m, 24 July 1994, *Thomas B. Croat & Guanghua Zhu 76418* (HUA, LE, MO, USB, US, WU); Vicinity of Barriles, 6-16 km south of Volcán., 1000–1300 m, 25 Apr 1971, *Robert L. Dressler & Norris H. Williams 3985* (MO). **Veraguas**: Vicinity of Santa Fé, along road between Alto Piedra and Calovebora, 0.5 mi N of Alto Piedra, on slopes of Cerro Tute, Parque Nacional Cerro Tute., 800–1030 m, 15 July 1994, *Thomas B. Croat & Guanghua Zhu 76898* (MO).

**Spathiphyllum blandum** Schott, Oesterr. Bot. Wochenbl. 7: 159. 1857. TYPE: Type lost: Neotype designated here: Guatemala, *J.D. Smith 1534* (G, GH, US) . [designate holoneotype and isoneotypes] [Find details and add here. Also find the image of Glaziou collection to see if it represents S. blandumBrazil, 1907, *Glaziou 10126* (P).

Terrestrial 1.5 m; **internodes** short to 1.7-4 cm diam; **petioles** 27-37(-70) cm long, subterete to terete, slightly thicker than broad, sheathed 0.4–0.6 its length or sometimes nearly to the geniculum, geniculate, sharply sulcate toward apex, petiole shorter than the blade or only slightly longer than the blades; the sheath inrolled, thin, pale and finely undulate, minutely pale-green-speckled; geniculum (1.5-)4-5 cm long; the apex sulcate with the minutely undulate leaf base margins decurrent; **blades** elliptic to oblong- or lanceolate-elliptic, 30-49(-65) cm long and (8-)11-19(-25) cm wide, 1.9-2.6 times longer than wide, commonly widest at the middle and narrowed equally toward either ends, acute-acuminate at apex, acute and attenuate at base, undulate, thinly coriaceous, dark green and semiglossy above, moderately paler and matte below; **midrib** concolorous and concave above, thicker than broad and whitish below; **primary lateral veins** 15-20, sunken above, convex and whitish and raised below; interprimary veins slightly darker than surface; minor veins moderately distinct to obscure. INFLORESCENCE held slightly above leaves; **peduncle** commonly 1 ½-2 times as long as the petiole, 45-70(-90) cm long; **spathe** medium green, typically elliptic, 12-22(-27) cm long, (3.6-)4.5-8(-9.8) cm wide, acuminate at each end, base acute or obtuse and finally attenuate, decurrent on the peduncle (often obliquely) 2-5.5(-8.5) cm; medium green, erect to erect-spreading weakly backwards; more or less hooded, semiglossy inside; slightly paler and almost matte outside; **spadix** (3-) 4.5-11(-14) cm long, sessile or on a stipe 1(-2) cm long; darker green, white at anthesis, becoming green; pistils elongate-conic, exserted 4-5 mm, acute at apex, prominently protruded before anthesis; ovary (2-)3-locular, collateral, varying from 3 to 1 in each of the 3 locules. INFRUCTESCENCE fruiting spadix tuberculate, fruit to 10.5 mm long, obovoid, rostrate; seeds 3-7, oblique-reniform-ovoid to oblong in profile, inner faces flat and smooth, outer face rounded, smooth to slightly verruculose between verticle rows of foveola.

*Spathiphyllum blandum* ranges from Belize and Guatemala to Honduras along the Caribbean coast of Central America, occurring at 130-1350 m in Tropical wet forest and Tropical moist forest life zones. A fertile collection (Stevens 6312) may also be this species but the plant is much smaller than normal and the spadix has only weakly exserted pistils. A sterile collection from the Fortuna Dam Area in Panama also resembles S. blandum but must be collected in fertile condition to be certain.

The species is characterized by its petioles being shorter than or only slightly longer than the blades and having a short geniculum (ca. 2 cm long), sheathed 0.4–0.6 its length or sometimes nearly to the geniculum with the sheath inrolled, thin, pale and finely undulate and minutely pale-green-speckled, more or less elliptic blades. a medium green spathe which is decurrent on the peduncle, often often obliquely so 2-5.5(-8.5) cm and a spadix that is white at anthesis with conical exserted pistils.

*Spathiphyllum blandum* is most easily confused with *S. cochlerispathum* (Liebm.) Engl. which is common along to Caribbean slope of Mexico but that species differs by having petioles with a much longer geniculum.

Schott (1857) published *S. blandum* from a cultivated collection without specific origen. The Prodromus Systematis Aroiderum (Schott, 1860) had not corrected this matter. When Bunting published his Revision of *Spathiphyllum* a hundred years later (Bunting, 1969) he cited as the type, the original description, citing Article 10 of the 1956 International Code of Botanical Nomenclature but indicated that *J.D. Smith 1534* could appropriately represent this species. Tropicos lists *Glaziou 10126* (P) as the type but there is no evidence that this collection was ever seen or designated by either Schott or the last monographer, George Bunting. Therefore as Bunting’s suggestion the the *J.D. Smith 1534* collection will be designated as a neotype.

Stevems 6310 is questionably also S. blandum but has brown-drying leaf blades with both the spathe and spadix white, similar to S. friedrichstahalii Schott but matches neither species well. It is possible that this collection will prove to be a new species.

*Additional specimens seen:* BELIZE. **Cayo**: Hummingbird Highway. Forest along highway at mile 28.5 on Hummingbird Highway, south of Belmopan, 17°04'N, 088°36'W, 200–300 f, 14 Jun 1973 - 21 Jun 1973, *Thomas B. Croat 24569* (MO); Ca 15 km N from main road to Belmopan; Spanish Lookout; Aguacate Lagoon., 17°16'N, 089°00'W, 15 Nov 1987, *M.J. Balick, G. Shropshire & D. Friesen 1800* (MO); Barton Creek: Barton Creek. High bush on limestone hill, 17°12'N, 088°57'W, 25 Apr 1981, *Caroline Whitefoord 2636* (MO); Blue Hole Camp: Vaca Plateau. Blue Hole Camp, 16°47'26"N, 088°56'01"W, 600 m, 8 May 1980, *Caroline Whitefoord 2032* (MO); Hummingbird Highway: Hummingbird Highway, Miles 28, 17°04'N, 088°36'W, 300 f, 14 Jun 1973, *Al Gentry 8255* (MO); St. Herman: Caves Branch, St. Herman's Hill, east of Hummingbird Highway, 17°07'53"N, 088°41'50"W, 240 m, 29 Jul 1976, *Caroline Whitefoord 1169* (MO). **Stann Creek**: Cockscomb Basin, Jaguar Preserve, 10 km W of Maya Center, off Southern Highway. Gibnut Loop Trail., 16°45'N, 88°35'W, 400 m, 20 May 1990, *Michael J. Balick et al. 2602* (MO); Cockscomb Mountains: high ridges above Mares Nest Camp, 16°43'N, 88°40'W, 15 June 1990, *Arvigo et al. 456* (NY); Cocoa Branch: Cockscomb Mountains; tributary of Cocoa Branch of Sittee River, 2 km due N of Victoria Peak. Premontane wet forest, 16°49'47"N, 088°37'17"W, 300–500 f, 5 Jun 1973 - 6 Jun 1973, *Al Gentry 8017* (MO); Humming Bird Highway: High ridge, base of hill, Humming Bird Highway, 17°03'N, 088°34'W, 100–200 m, 26 Jul 1954, *Percy H. Gentle 8259* (LL); Middlesex: Middlesex, 17°01'25"N, 088°30'34"W, 200 f, 15 May 1929, *William A. Schipp 252* (MO); Waha Leaf Creek: Waha Leaf Creek, 16°37'27"N, 088°22'22"W, 5–80 m, Mar 1954, *Molina 288* (EAP). **Toledo**: San Jose. 1.5 mi S of Mayan village of San Jose, ca. 5 mi W of Columbia Forest Station. Along river banks on limestone, 16°15'N, 089°04'W, 12 Jun 1973, *Thomas B. Croat 24332* (MO); San Jose, 6.7 miles north of Columbia Forest Station, 16°16'07"N, 089°06'11"W, 13 Jun 1973, *John D. Dwyer 11162* (MO); Union Camp: Maya Mountains, Union Camp., 16°23'N, 089°08'W, 2800 f, 23 Mar 1977, *Boutin & Schlosser 5126* (MO); Big Fall Estate, ca. 3 airline km NE of village of Big Fall, just E of Southern Highway. Tall, mostly evergreen forest remnant in area converted to orange plantations, along streamlet with Terminalia common trees., 16°16'23"N, 88°52'27"W, 40 m, 4 May 1996, *Gerrit Davidse, Bruce K. Holst & Alan Whittemore 35586* (MO, SEL); Southern Maya Mountains, Bladen Nature Reserve, large sinkhole just S of the upper Bladen Branch and 1.3 airline km SE of "AC Camp". Forested limestone sinkhole with steep slopes and clay soils and surrounding forest leading up from river., 16°28'17"N, 88°55'04"W, 210–330 m, 13 May 1996, *Gerrit Davidse, Martin Meadows & Alan Whittemore 35856* (BRH, MO); Bladen Nature Reserve, Bladen River at the point where the river passes between the Eastern-most hills, just before river bends to the south. Margins and alluvium of Bladen River and limestone bluffs., 16°32'N, 088°41'W, 100 m, 18 Jul 1995, *D.E. Atha & Steven W. Brewer 1169* (MO); Bladen: Southern Maya Mountains, Bladen Nature Reserve, West Snake Creek. Along Snake Creek through tall evergreen forest. GPS coordinates., 16°27'54"N, 089°01'04"W, 580 m, 29 May 1997, *D.L. Holland 35* (BRH, MO); Columbia Forest Reserve: Southwestern Maya Mountains, Columbia River Forest Reserve. Trail between Union and Gloria Camps. Moist evergreen forest, canopy 25-30 m, on slightly undulating limestone hills; emergents to 40 m (Terminalia amazonia); understory Chamaedorea palms common; common herbs along trail: Calathea micans, Hoffmannia bullata, and many pteridophytes., 16°23'22"N, 89°08'10"W, 700–750 m, 13 Apr 1992, *Bruce K. Holst 4366* (MO); Columbia River Forest Reserve: Little Quartz Ridge, SW slopes, NE of Camp 1. Shady, rocky creek bed among tall, moist, mostly evergreen forest on border between limestone and volcanic soils. MAP coordinates., 16°23'25"N, 89°06'40"W, 800–850 m, 21 Feb 1997, *Bruce K. Holst 5904* (MO); Columbia Forestry Station: Columbia Forestry Station., 16°16'N, 089°06'W, 12 Jun 1973, *Al Gentry 8147* (MO); Dolores Estate: Ca. 40 km SW of Punta Gorda, Dolores Estate. Growing along trail. Primary forest., 15°59'20"N, 089°12'34"W, 1 Feb 1990, *Michael J. Balick, S. Cal, S. Cucul & S. Matola 2537* (MO); Esperanza: Along trail to Esperanza beginning 1 mile north of Columbia Forest Station. Disturbed forest., 16°18'N, 089°02'W, 500–1100 f, 12 Jun 1973, *Thomas B. Croat 24226* (MO); Jacinto Hills: Jacinto Hills, 16°09'N, 088°55'W, 6 Apr 1946, *Percy H. Gentle 5542* (LL); Monkey River: Rancho Chico - Cockscomb , Monkey River., 14 Apr 1943, *Percy H. Gentle 4407* (LL); San Jose. Vicinity of San Jose , Mayan Indian Village, 6.7 miles north of Columbia Forest Station. Disturbed forest, 16°16'N, 089°06'W, 13 Jun 1973, *Thomas B. Croat 24450* (MO).

BRAZIL. *Schott s.n.* (MO). [Find image. This is probably not the type. See Schott’s illustrations]

GUATEMALA. **Alta Verapaz**: El Estor. Along road to El Estor (Lago Izabal), 2 miles E of highway CA-14 to Cobán. Steep road bank at edge of disturbed forest, 15°18'54"N, 090°17'38"W, 1300 m, 18 Jul 1977, *Thomas B. Croat 41437* (MO); Oxec: 9 miles up road to Oxec along gravel road which turns N off Highway 7E between Tucurú and El Estor, ca. 6 km NE of Panzós, 15°29'25"N, 089°40'27"W, 800 m, 20 Jul 1977, *Thomas B.Croat 41682* (MO); Sebol: 3 km NWW of Sebol off old road to Petén, 15°49'44"N, 089°57'25"W, 14 Apr 1964, *Elias Contreras 4305* (LL); Oxec: 7 miles up road to Oxec along road which turns off Highway 7E between Tucurú and El Estor, ca. 6 km NE of Panzós, 15°30'21"N, 089°40'23"W, 700 m, 20 Jul 1977, *Thomas B. Croat 41655* (MO); Sacte: Sacté, 15°33'49"N, 090°26'47"W, 1974, *Kunkel 601* (BR). Panzos: 8 km al N de crucero a Taguinco, Hidrochulac, camino Tactic-Cahabón. Veg. Selva alta perennifolia., 800 m, 2 Sep 1988, *Esteban M. Martínez S., W.D. Stevens, A.N. Díaz & H. Droege 23435* (MO). **Izabal**: Santo Tomas de Castilla. Montañas del Mico, 7-8 km W of Santo Tomás de Castilla on road to microwave tower. Tall forest on limestone, some areas with thin, black soil, 15°40'54"N, 088°40'42"W, 600–650 m, 19 Aug 1988, *W.D. Stevens, E. Martínez S., H. Droege & A.N. Díaz 25548* (MEXU, MO); Selempim: Selempim - Bocancha, Oberhalb von Selempim entlang des Weges nach Bocancha am Fuss der Sierra de Las Minas. Viehweide mit Schattenbäumen und Waldränder des primären tropischen Tieflandregenwaldes, 15°19'10"N, 089°24'42"W, 20–80 m, 17 Apr 1998, *H. Förther et al. 10211* (MO, MSB). Puerto Barrios. GUATEL: En la torre de GUATEL, Sierra del Mico. Bosque mesófilo, 15°40'18"N, 088°41'33"W, 940 m, 8 Sep 1988, *Esteban M. Martínez S., W.D. Stevens, A.N. Díaz & H. Droege 23557* (MO). **Peten**: Modesto Mendez: 20 km north of Modesto Méndez. From thickets along stream in wet tropical forest, low limestone hills, 180 m, 17 Jun 1971, *W.E. Harmon & J.A. Fuentes 5721* (UMO 99897). Dolores: 3.5 km east of Dolores, 20 Apr 1961, *Elias Contreras 2194* (LL); Santa Toribio Road: [Dolores] Km 77/78 of the Santa Toribio road, 3 km WNW of the village. [In hgh forest], 20 Apr 1961, *Elias Contreras 2145* (LL). San Luis, 10 Jul 1959, *C.L. Lundell 16285* (LL). **Quetzaltenango**: Colomba. Coatepeque - Retalhuleu, Hwy. CA-2, 3 mi S of turnoff to Colomba, between Coatepeque and Retalhuleu. Coffee plantation, 14°39'30"N, 091°46'36"W, 600 m, 22 Jan 1987, *Thomas B. Croat & Dylan P. Hannon 63413* (MO); Santa Maria. Along Highway Cito N of jct. with CA2, toward Quezaltenango, in watershed reserve INDE (Inst. Nac. de Electrificación, Guatemala) "Santa María" (Central Hidroeléctrica), Km 199. Loose gray soil, steep slopes W of highway, 14°43'35"N, 091°42'31"W, 1200–1300 m, 22 Jan 1987, *Thomas B. Croat & Dylan P. Hannon 63426* (WU, MO, MEXU, PMA, IMB, F ); Volcan Zunil: SW slope of Volcán Zunil, 14°41'59"N, 091°25'56"W, 1900 m, 9 May 1990, *Juan José Castillo Mont & D.R. Hodel 1063* (MO). San Marcos. Africa: 1 mile above Africa, ca. 3.3 miles above Finca Armenia above San Rafael. Steep forested slopes, 1600 m, 13 Jul 1977, *Thomas B. Croat 40951* (MO); La Trinidad: La Trinidad, ca. 2 km from Finca Armenia above San Rafael. Forest above coffee finca, 1100–1250 m, 12 Jul 1977, *Thomas B. Croat 40869* (MO).

HONDURAS. **Atlántida**: Campamento Quebrada Grande ca. 10 km south west of La Ceiba. At base of north slope of Pico Bonito, from camp to 2 km east of camp, upland forest., 15°42'N, 86°51'W, 80–150 m, 09 May 1993, *Ronald L. Liesner 26093* (MO, TEFH); Lancetilla. Along road for municipal water supply of Tela, Lancetilla Botanical Gardens, on road ca. 2 mi WSW of Tela and S of main hwy., 15°44'N, 87°27'W, 70–90 m, 9 Feb. 1987, *Thomas B. Croat & Dylan P. Hannon 64631* (CR, HNMN, INB, MO). Esparta. Rio Lean: San Jose de Texiguat - Suyapa de Lean, Valley of the Río Leán, vicinity of Las Lomas, between San José de Texíguat and Suyapa de Leán (Matarras). Lowland, evergreen rainforest remnants among pastures, 15°33'N, 087°26'W, 80 m, 16 May 1991, *Gerrit Davidse, Ramón Zúniga & Paul R. House 34448* (K, MO). La Ceiba. La Ceiba: *T.G. Yuncker, J.M. Koepper & K.A. Wagner 8225* (MO). Tela. Lancetilla: Jardín Botánico de Lancetilla, 3 km al sur de Tela. Selva alta perennifolia con zonas de cultivo y plantas introducidas., 15°43'38"N, 087°26'57"W, 100–150 m, 8 Jun 1985, *Oswaldo Téllez & Esteban Martínez S. 8786* (MO); Hills above Lancetilla, 15°44'N, 087°27'W, 200 f, 23 Jul 1934, *T.G. Yuncker 4729* (MO, NY); Lancetilla Valley ca. 10 miles southeast of Tela; along Río Lancetilla, on trail to water reservoir., 15°44'N, 087°27'W, 10–150 m, 3 Aug 1977, *Thomas B. Croat 42635* (MO); Lancetilla, 10 km SO de Tela, Clima lluvioso tropical., 15°44'N, 087°27'W, 30 m, 18 Aug 1979, *Carlos Soto 14* (MO); Valley above Lancetilla, 15°43'N, 087°27'W, 90–100 f, 17 Jul 1934, *T.G. Yuncker 4631* (MO); Near Lancetilla, 15°44'N, 087°27'W, 100–150 f, 12 Aug 1934, *T.G. Yuncker 5007* (MO). **Comayagua**: Siguatepeque. El Achiote. Near El Achote [Achiote], hills above the plains of Siguatepeque, 14°32'39"N, 087°51'47"W, 1350 m, 13 Jul 1936, *T.G. Yuncker, R.F. Dawson & H.R. Youse 5845* (F, MO, NY). Taulabé. El Carrizal: Mixed forest El Carrizal 14 kms NW of Siguatepeque, 14°40'22"N, 087°56'55"W, 900 m, 27 Jun 1971, *Antonio Molina R. & Albertina R. Molina 26059* (F); Yojoa: Lago de Yojoa, 14°48'N, 087°59'W, *R. Zuniga 585* (TEFH). **Copán**: Copán Ruinas. Los Zapotes: Montaña Los Zapotes, mountain to the west of Los Zapotes, 18 km north of Copán Ruinas on the road to Agua Caliente from Copán Ruinas and 2-3 km west of Los Zapotes school. Moist disturbed primary forest of hardwood trees 30 to 40 m tall with an understory growing in dense shade., 14°58'N, 089°10'W, 950–1050 m, 30 April 1996, *Thomas Hawkins 980* (EAP, MO). Nueva Arcadia. Nueva Arcadia: 6 km south of Nueva Arcadia. Collection from wet fields and thickets in draw, with pine forests on higher ground, 15°00'N, 088°46'W, 560 m, 14 Jul 1971, *William E. Harmon & J.A. Fuentes 6438* (MO, UMO, UMO 99989).Santa Rita. Santa Rita de Copan: 24 km E of Santa Rita de Copan. Deep very mesic draw, surrounded by hills mostly devoid of natural vegetation., 14°56'N, 088°55'W, 18 Aug 1970, *W.E. Harmon & John D. Dwyer 4029* (MO). Cortés. Omoa. Corinto: Aldea de Corinto y alrededores frontera con Guatemala. 55 km al O de Puerto Cortés. Clima lluvioso tropical, campos abiertos, 15°34'53"N, 088°22'21"W, 30 m, 9 Aug 1975 - 11 Aug 1975, *Cirilo Nelson, Ernesto Vargas, Marcial Erazo, Marta García & Mercedes Sierra 2900* (MO). Puerto Cortés. La Pita: Aldea La Pita; 5 km SO de Puerto Cortés. Clima lluvioso tropical., 15°46'18"N, 087°57'08"W, 50 m, 26 Nov 1975 - 30 Nov 1975, *Cirilo Nelson, Ernesto Vargas & Marcial Erazo 3082* (MO). **Gracias a Dios**. Brus Laguna. rio Platano: Alrededores el Río Plátano, dentro de 10 km de la costa atlántica, La Mosquitia, Longitud 84° 40' a 85°00' latitud 15° 30-55'. Bosque patanoso, 15°30'N, 084°43'W, 17 May 1973 - 23 May 1973, *Andre F. Clewell & Gustavo Cruz 4060* (MO). **Yoro**: Río Pijol Valley. 7 km south east of Nueva Esperanza. Along forested Quebrada that flows into Río Pijol, and adjacent slopes., 15°12'N, 87°35'W, 1300–1500 m, 29 May 1993, *Ronald L. Liesner 26677* (MO); Pasture trail into forest begins 1 km SW of San Jose de Texiguat. Along the Texiguat river SSE into forest., 15°30'N, 87°26'W, 100–400 m, 18 April 1994, *D.L. Hazlett & A.E. Brant 8056* (MO).

MEXICO. Escuela de Centro de Orientación Lomas., Feb 1956, *E. Matuda s.n.* (MEXU). **Chiapas**: Ocozocoautla, 16°42'36"N, 093°31'12"W, May 1949, *Carlson 2126* (EAP); San Cristobal de las Casas; road between San Cristobal and Palenque, 97 km NE of San Cristobal., 17°27'00"N, 092°03'36"W, 1130 m, 10 Oct 1986, *B. Hammel, E. Martinez & M. Merello 15621* (MO); W side toll bridge, Rio Usumacinta Mex. 186., 22 Jul 1971, *J. Vaughan, J. Dwyer, D. Spellman & R. Wunderlin 215* (MO); Ixhatan. Bochil - Pichucalco, Along road between Bochil and Pichucalco, near shrine along road at 430 m, 1.7 km S of Ixhatan, 3.5 mi N of Ignacio Zaragosa, 17°15'36"N, 093°00'36"W, 430 m, 24 Aug 1996, *Thomas B. Croat 78598* (L, LE, KRAM, MO, Z); Mpo. Angel Albino Corzocas: above Finca Cuxtepec, 15°43'48"N, 092°57'36"W, *Breedlove & Strother 46726* (CAS); Mpo. Cintalapa: Colonia Francisco I. Madero - Colonia A. Lopez Mateos , 1250 m, *Breedlove 49050* (CAS); Mpo. Ocosingo: 70 km SW of Palenque, rd. to Ocosingo along the Jol Uk'um, 17°10'12"N, 092°06'36"W, 550 m, *Breedlove & Almeda 48302* (CAS); *Breedlove 47175* (CAS); Mpo. Palenque: near Agua Azul, 17°32'24"N, 092°11'24"W, 600 m, *Breedlove & Keller 49576* (CAS); Mpo. Trintaria: 10 km ENE of Dos Lagos, above Sta. Elena, 16°06'00"N, 091°33'00"W, 1170 m, *Breedlove 56513* (CAS). Angel Albino Corzo: Steep heavily wooded slope near the Rancho Viejo of the Finca Prusia., 2400 f, 23 Jan 1968, *Alush Shilom Ton 3585* (F). Berriozábal: Limestone fissured ridge, Lower Montane Rain Forest, Quercus, Billia, Persea, Nectandra, Mirandaceltis, Turpinia and Calatola, 13 km north of Berriozábal near Pozo Turipache and Finca El Suspiro, 900 m, 25 Dec 1972, *D.E. Breedlove & R.F. Thorne 30814* (MO, RSA). Cintalapa: Montane Rain Forest, with scattered Pinus and Liquidambar, at crest of ridge 3 km east of Francisco Madero, northeast of cintalpa., 1250 m, 4 Oct 1974, *D.E. Breedlove 38042* (MO). **Escuintla**: El Triunfo: Escuintla - Finca Tres de Mayo, About 14 miles N of Escuintla, along gravel road to Finca Tres de Mayo, ca. 4 miles NE of El Triunfo, 15°24'36"N, 092°49'48"W, 400 m, 21 Aug 1977, *Thomas B. Croat 43895* (MO); Escuintla: Escuintla - El Triunfo, Along road from Escuintla to El Triunfo, ca. 1 miles N of Escuintla, 15°19'12"N, 092°38'24"W, 100 m, 21 Aug 1977, *Thomas B. Croat 43814* (MO). **Juárez**: En el volcán Tacaná, camino entre Talquián y Chiquihuite. Veg. Bosque mesófilo de montaña., 15°06'00"N, 092°06'00"W, 1800 m, 28 Apr 1987, *E. Martinez & A. Reyes 20414* (MEXU, MO). Mapastepec. Sierra de Soconusco: Highway 200 - Tuxtla Gutierrez, Sierra de Soconusco. New unfinished road to Tuxtla Gutierrez from Hwy. 200 (5.5 mi NW of turnoff to Mapastepec), 6.5-8.5 mi up road. Veg. type: "selva alta perennifolia", 15.31.48N 092.48W, 20 Jan 1987, *Thomas B. Croat & Dylan P. Hannon 63350* (MO). Palenque. Bonampak: Along gravel road between Palenque and Bonampak, 88-90 miles SE of Palenque. Disturbed forest over limestone, 16°52'30"N, 091°12'03"W, 350–370 m, 5 Jul 1977, *Thomas B. Croat 40204* (MO); Disturbed forest along gravel road from Palenque to Bonampak, 60 miles SE of Palenque, 16°48'36"N, 092°16'12"W, 400 m, 5 Jul 1977, *Thomas B. Croat 40174* (MO); Palenque: Palenque - Ocosingo, Along Highway 199 from Palenque to Ocosingo, 27 miles SW of Palenque, 17°20'24"N, 092°04'12"W, 210 m, 6 Jul 1977, *Thomas B. Croat 40305* (MO); 5 miles SW of Palenque, on road to Chancala, Ocosingo and San Cristóbal de las Casas, 17°28'12"N, 091°57'36"W, 200 m, 4 Jul 1977, *Thomas B. Croat 40149* (MO). **Oaxaca**: Dtro. de Tuxtepec, Mpio. de Acatlán; Rincón del Tigre, 2 km from Acatlán on road to Capilla, at edge of riparian woodland with Brosimum alicastrum near sugar cane fields. ca. 18°31'N, 96°36'W, ca. 100 m elev., 18°31'12"N, 096°34'12"W, 19 May 1986, *Roy E. Gereau, M. Sousa S., R. Torres C. & L. Cortés A. 2192* (MO, NY, RSA); Valle Nacional: Valle Nacional - Oaxaca, Along Highway 175 between Valle Nacional and Oaxaca, 6 mi above bridge at Valle Nacional, area near shrine. Virgin forest on steep, rocky slopes, 17°43'48"N, 096°18'36"W, 660 m, 26 Aug 1996, *Thomas B. Croat 78710* (ENCB, MO). Ixtlan: Mpio. Santiago Comaltepec: La Esperanza., 17°45'N, 096°30'W, 1600 m, 25 May 1988, *Ricardo Lopez Luna 279* (MO). Mixe: Mpio. de Totontepec: Totontepec. Bosque mesófilo de montaña., 17°15'N, 096°02'W, 1900 m, 21 May 1990, *Jose Rivera Reyes & Gary J. Martin 1484* (MO). Tuxtepec. Tuxtepec: Tuxtepec - Matias Romero, Along Highway 147 between Tuxtepec and Matias Romero (Hwy. 185), 15 km S of Highway 175. Along stream, 17.49.48N 096.06W, <100 m, 26 Aug 1996, *Thomas B. Croat 78725* (ENCB, MO). **Tabasco**: Rancho La Ceiba, 32 km al SE de Emiliano Zapata, sobre camino a Tenosique. Orilla de arroyo, Bosque Tropical Subperennifolio. Perturbación media., 60 m, 5 Mar 1983, *R. Fernández N. Guadarrama-Zamudio 1380* (MO). Tacotalpa. Dispersa en un arroyo húmedo inundable con Oryza, Costus, Heliconia, Piper, semi-sombra. Modulo del C.S.A.T., Ejido Lázaro Cárdenas acahual de 7 años atras de la milpa., 12 May 1980, *C. Cowan 2989* (MO). **Veracruz**: Hills between Playa Escondida and Estación Biologica Los Tuxtlas., 18°34'48"N, 095°03'00"W, 50–100 m, 27 May 1981, *A. Gentry, E. Lott & UNAM tropical botany class 32354* (MO). Coatzacoalcos. 6 miles E of Coatzacoalcos along Highway 180. Disturbed hillside and surrounding marsh, 18°04'48"N, 094°21'36"W, 10 m, 3 Jul 1977, *Thomas B. Croat 40063* (MO). **Yucatan**: Sotuta - Tixcacaltuyub, Sotuta-Tixcacaltuyub. Cenote Xmucuy. Selva baja caducifolia en transcición hacia selva mediana caducifolia en las cercanías de un cenote., 20°33'00"N, 088°59'24"W, 20 m, 24 Sep 1966, *Carnevali, G. et al. 4282* (MO, SEL).

NICARAGUA. **Zelaya**: near Rama, 12°10'N, 084°13'W, 50 m, 22 Sept 1972, *M.T. Madison 720* (SEL); Along road to Colonia Yolaina, Colonia La Esperanza, etc., ca. 1.3 km SE of intersection with road between Nueva Guinea and Colonia Verdún, immediately upriver from bridge over Caño Sardina; disturbed evergreen forest and river banks, 11°40'N, 84°26'W, 180–200 m, 11 Feb 1978 - 12 Feb 1978, *W.D. Stevens 6312* (MO). **Atlántico Norte**: Río Leicus [Likus], región de Tronquera, SO de Waspan, Comarca del Cabo; matorrales húmedos, 14°36'N, 084°06'W, 60 m, 19 Aug 1965, *A. Molina R. 14928* (F).

PANAMA. **Chiriqui**: Along road between Gualaca and Fortuna dam site, 10.1 mi NW of Los Planes de Hornito., 08°45'N, 082°17'W, 1260 m, 10 April 1980, *Thomas B. Croat 50023* (MO). **Panama**: Trails near top of Cerro Campana. Wet forest. Elev. ca. 850 m. 8.42'N, 79.56'W., 8°42'N, 79°56'W, 850 m, 23 Jul 1983, *J.S. Miller, L. Miller, C. Hamilton & K. Kraeger 742* (MO).

UNITED STATES. **Florida**. **Dade**. Miami: Coconut Grove, the Kampong, 4013 Douglas Rd., 25°40'N, 80°15'W, 1–6 m, 31 May 1990, *Hans T. Beck & L. Jackson Beck 1129* (MO, NY). **Missouri**. **Saint Louis City**: Missouri Botanical Garden: In Research Greenhouses on Garden grounds, cultivated collection., 38°36'N, 090°15'W, 160 m, 29 June 1999, *H.H. Schmidt 3625* ().

1833, *Bonpland 4477* (P); cultivated at Phipps Conservatory, 20 Apr 1990, *E. York 2446* (MO); Received from Ellen York **(**2446), Botanical Garden, Pittsburgh; exact origin unknown., 17 Mar 1997, *Thomas B. Croat 79541* (MO).

**Spathiphyllum bobdressleri**  Croat & O. Ortiz, sp. nov. Type: Panama. Panamá: Cerro Campana, 24 June, 1969, *Robert L. Dressler 3639* (MO).

Herb to 1.3 m tall; **internodes** short, 3 cm diam.; **petioles** 55–77.5 cm long, sheath 40.5–42 cm long, drying dark brown, semiglossy, sheathed 0.54–0.75 percent its length, sheath turning brown, persisting intact; **blades** 51.5–55.7 cm long**,** 13.5–19 cm wide,2.7–3.9 times longer than wide,0.9–1.2 times longer than petioles,narrowly long-acuminate at apex, attenuate at base, thinly coriaceous, dark green and semiglossy above, slightly paler and semiglossy below, drying grayish green and semiglossy above, moderately paler and greenish below; **midrib** broadly convex and concolorous above, narrowly rounded and short pale-lineate below, drying finely ribbed and darker than surface; **primary lateral veins** 14–19 pairs, arising at a steep angle then spreading at 30-55° angle, flattened and concolorous above, weakly raised and darker below; interprimary veins alternating with even more reduced veins; **minor veins** weakly and closely and weakly on both surfaces, often short pale-lineate above. INFRUCTESCENCES erect, **peduncle** 41–90 cm long; **spathe** 25–35.5 cm long, 6.6–9.7 cm wide, narrowly long-acuminate, light green, drying light brown to greenish brown, short pale-lineate on inner surface; **spadix** cream-colored,6.3–8 cm long, 1.1–1.3 cm diam.(without pistils exserted), 1.2–1.7 cm wide with exserted pistils included), stipitate 1.5–2.2 cm, drying yellowish brown; **flowers** 6–7 visible per spiral, flowers 2.3–3 mm wide; tepals free, 2 mm wide, broadly rounded on both margins, matte with punctiform cellular inclusions; pistils 3 mm long, 1 mm diam.; ovary ca. ½ as long as entire pistil, 3-locular; style 1.2–1.3 long, conical drying brownish; ovules 1 per locule, 0.9 mm long; stamens 1 mm long, 1 mm wide, thecae oblong, parallel.

*Spathiphyllum bobdresslerii* is endemic to Panama, known only from the Province of Panamá on Cerro Jefe and Cerro Campana at about 700 m elevation in a Premontane wet forest life zone.

The species is characterized by its moderately large size, broad sheath that is rounded at apex, ovate-lanceolate gradually long-acuminate blades leaves which are attenuated at base, dark gray-green above, grayish yellow-green below, 16–19 pairs of primary lateral veins,long-pedunculate inflorescence, large long-decurrent green spathe and cream-colored long-stipitate spadix with long protruding styles.

*Spathiphyllum bobdressleri* Croat & O. Ortiz is found in similar habitats and has similarly stubby stipitate inflorescences but differs in having proportionately narrrow more long-acuminate blades with closer primary lateral veins and a green spadix. Spathiphyllum phryniifolium has blades of a simalar size and shape but has a green spadix at anthesis.

*Dressler 3660* a collection from the Santa Rita Ridge road east of Colón has similar leaves and inflorescence but the spadix is green. Perhaps it simply represents a plant which is post-anthesis.

*Paratype*: Panama. Panamá: Cerro Jefe, forest near river, ca. 700 m, ca. 09°13’N, 79°21’W, 17 July, 1969, *Robert L. Dressler 3676* (MO).

**Spathiphyllum brevirostre** (Liebm.) Schott, *Aroideae* 1: 2, f. 8. 1853. TYPE: Mexico,June 1842, *Liebmann s.n.* (C).

Terrestrial , 50–100 cm tall; **internodes** short, 2–3 cm diam.; **petiole (-**41)49-119 cm long (averaging 81.5), usually longer than the blades, sheathed 27-62 cm, rarely to the geniculum, free part 24-57 cm, 3-4 mm diam., subterete, slightly thicker than broad, minutely speckled, rounded abaxially; sheath erect, undulate, the margin crisped, inrolled, in part sometimes becoming free; geniculum 2.3-4.5 cm long; **blades** elliptic to narrowly ovate-elliptic to lanceolate or ovate-elliptic, scarcely inequilateral, (7.5) 20-41(65) cm long, 10-21(24.7) cm wide, (1.9) 2.5-2.7(3.8) times wider than long, widest below the middle, 0.49-0.83 times as long as petioles, briefly acuminate at apex, obtuse at base, weakly decurrent onto the petiole, subcoriaceous to moderately thin, matte, moderately bicolorous, dark green and semiglossy above, much paler and matte below; **midrib** convex and paler to concolorous above, thicker than broad and slightly paler below; **primary lateral veins (**9-**)**13-14 pares, acutely sunken to quilted-sunken and concolorous above, convex and darker below, arising from midrib at (40-)45-50(-55)° angle; minor veins few, moderately obscure. INFLORESCENCE **peduncle** o 63-142 cm long, 1.5 or more times al long as blade slightly above the level of the leaves;; **spathe** elliptic, (12.8-)17-26.5 cm long, (4-)5-9.5(11.5) cm wide, acuminate or subcaudate at apex (acumin 1.5-4 cm long), acute at base and decurrent on the peduncle 2.5-4.5 cm, drying dark brown; **spadix** 3.2-7(-4.7) cm long, on a stipe 0.6-1.8 cm long, 1.7 cm diam.,(stipes 2.5 mm diam.); pistil shortly exceeding the perianth, constricted between the ovary and the inflated, +/- annular style, crowned by the stigma; tepals to 6.8 mm long, free throughout most of their length, drying thin and light brown, subtriangular and thickened at apex; pistils rounded at apex and scarcely exceeding tepals; ovary 3-locular, ovules superposed or collateral, totally 12-9 ovules per ovary, ovary usually 1 sometimes 2 per locule;. INFRUCTESCENCE 10.7-12.8 cm long, 1.8-2 cm diam.; fruit obovoid, rostellate. seeds 2.5-4.0 mm long, 1.8-2.5 mm diam., rounded on both ends, sometimes flattened on one side, drying brownish, semiglossy, irregularly striate and weakly warty.

*Spathiphyllum brevirostre* is endemic to Mexico, known only from Chiapas, Oaxaca and Veracruz) at 1100 to 1500 m in a Premontane wet forest life zone.[ See collections from Belize, Guatemala and El Salvador to determine them]

Th especies is characterized by its relaticvely small size, its scarcely inequilateral elliptic blades, the greenish white decurrent spathe and the stipitate white to greenish white stipitate spadix with the pistils scarcely or not at all protruding.

Tom – the Belize specimen is listed in Tropicos and is In the Herbarium – does it belong here?

*Additional specimens seen:* BELIZE. **Toledo:** Bladen. Doyle's Delight - , In forest, slopes of ridge in narrow stream valley near Helicopter pad, vic. Doyle's Delight. Southern Maya Mountains <15428-15486>., 16°29'N, 89°02'W, 1000 m, 12 Dec 1993, *Allen, B. 15437* (MO).

EL SALVADOR. **Ahuachapán:** San Francisco Menendez - Tacuba, Along road from San Francisco Menéndez to Tacuba, 1-3 miles above intersection with road to Río Cara Sucia. Roadsides and steep slopes in cultivated area, 13°52'01"N, 089°57'24"W, 1000–1250 m, 28 Jul 1977, *Thomas B. Croat 42137*(MO).

GUATEMALA. **San Marcos:** Finca Armenia near La Trinidad above San Rafael, 1100–1250 m, 12 Jul 1977, *Thomas B. Croat 40787* (MO).

MEXICO. *Anonymous s.n.* (GH); *Liebmann s.n.* (GH); Finca Hamburgo., 900 m, 6 Feb 1911, *L.H. Quarles & Ufford 186* (MO); *Liebmann s.n.* (MO). **Chiapas:** Cuadrante 60-A. Asoc. secundaria de 3 años con Trema micrantha-Acacia cornigera-Heliconia bihai. Derivado de una selva alta perenn. de Guatteria anomala., 380 m, Jul 1965, *Chavelas, J. et al. 1316* (MEXU); Ojo de Agua: Lagos de Montebello - Dos Lagunas, Region E of Lagos de Montebello, along road Dos Lagunas and Ojo de Agua, 1.6 km beyond Ojo de Agua at ca. Km 16. Disturbed forest, 1330 m, 28 Jan 1979, *Thomas B. Croat 46682* (MO); San Fernando – Maravillas. Along dirt road between San Fernando and Maravillas (near Lago Malpaso), 4-66 mi NW of San Fernando. Mesic area, in part with steep cliffs. Veg. type- "selva alta perennifolia", 16°52'48"N, 093°15'36"W, 840–940 m, 15 Feb 1987, *Thomas B. Croat & Dylan P. Hannon 65001* (ENCB, G, MEXU, MO). Ishuatan. 2.5 mi N of Ishuatán. In deep high walled ravine along stream, 17.19.12N 093.00W, 360 m, 17 Feb 1979, *Thomas B. Croat 47861* (MO). La Trinitaria: Montane Rain Forest at km 21-23 along road from Lago Tzicao to Santa Elena., 1230 m, 7 Nov 1988, *D.E. Breedlove & T.F. Daniel 71214* (CAS); Slope with Montane Rain Forest 21-23 km along road from Lago Tzicao to Santa Elena., 1230 m, 25 May 1988, *D.E. Breedlove 68713* (CAS); Slope with Pinus, Quercus, and Liquidambar at Cinco Lagunas, Lagos de Montebello National Park., 1600 m, 24 May 1988, *D.E. Breedlove 68630* (CAS); Montane Rain Forest, 10 km ENE of Dos Lagos above Santa Elena., 1170 m, 15 Aug 1981, *D.E. Breedlove 52315* (CAS, MO). Unión Juárez: En el volcán Tacaná, 500 m al E de Talquián. Veg. bosque mesófilo de montaña., 15°04'48"N, 092°04'48"W, 1700 m, 7 Feb 1987, *E. Martínez S., A. Márquez, G. Urquijo, & M. Ramírez 19717* (MEXU, MO). **Oaxaca**: Finca Nubes, Barranca del Nus o Chiri., 19 Feb 1957, *Miranda, F. 8467* (MEXU); Mountain slopes between 6 and 14 miles from bridge at Valle Nacional on road to Oaxaca., 580 m, 23 Sep 1961, *H.E. Moore, Jr. & G.S. Bunting 8899* (BH, MO); *H.E. Moore, Jr. & G.S. Bunting 8897* (BH, MO); Cerca de Metates, 21 km al S de Valle Nacional, sobre la carretera a Oaxaca. Bosque perennifolio con abundantes trepadoras y epifitas., 1100 m, 28 May 1973, *Rzedowski 30656* (MO); In sylvis umbrosis montanis, Cuesta de Teotálcingo., Jun 1842, *Liebmann s.n.* (MO); Huatla de Jimenez: Teotitlan del Camino - Chilchotla, [Mun. Santa María Chilchotla]. Along road between Teotilán del Camino and Chilchotla, 3 mi past turn-off to Huatla de Jiménez. Steep slopes covered with large stones insterspersed with some nature plants and coffee trees, 18°10'48"N, 096°50'24"W, 1265 m, 23 Feb 1979, *Thomas B. Croat 48368* (MO); Metates: Tuxtepec - Oaxaca, [Mun. Santiago Comaltepec]. Along Highway 175 through Sierra Juarez between Tuxtepec and Oaxaca, 13.9 mi S of bridge at Valle National, 2.6 mi S of Metates, near Km 152.5. Cloud forest on steep slopes, 17°39'36"N, 092°19'12"W, 1165 m, 19 Feb 1979, *Thomas B. Croat 47934* (MO); Mpio. San Miguel Chimalapa: Cerro de la División, ca. 5 km al E de Benito Juárez, ca. 39 km en línea recta al NNE de San Pedro Tapanatepec. Al SO de la cima del cerro, bosque de encino con pino, y Liquidambar, Calophyllum en las cañadas y muchas epífitas. Pendientes con suelos perturbados., 16°42'00"N, 094°04'48"W, 1300 m, 22 Mar 1985, *Maya, S.J. 1415* (MEXU); Valle Nacional: Valle Nacional - Oaxaca, Along highway 175 between Valle Nacional and Oaxaca, 17-19 miles above bridge at Valle Nacional. Roadside vegetation and disturbed virgin forest on slopes above highway. Vegetation type: selva mediana subperenifolia, 17.36.36N 096.21W, 1430–1970 m, 21 Feb 1987, *Thomas B. Croat 65577* (CAS, MEXU, MO); Tuxtepec - Oaxaca, [Mun. San Juan Bautista Valle Nacional]. Along Highway 175 through Sierra de Juarez between Tuxtepec and Oaxaca, 18.4 mi S of bridge at Valle Nacional at ca. Km 140. Cloud forest, 17°37'48"N, 096°20'24"W, 1500 m, 19 Feb 1979, *Thomas B. Croat 48035* (MO); [Mun. San Juan Bautista Valle Nacional]. 6 miles SW [west] of Valle Nacional on Highway 175 between Tuxtepec and Oaxaca. Steep forested ravine, 17°43'12"N, 096°19'12"W, 660 m, 29 Jun 1977, *Thomas B. Croat 39748* (MO); Valle Nacional - Oaxaca, [Mun. San Juan Bautista Valle Nacional]. Sierra de Juárez, along Highway 175, between Valle Nacional and Oaxaca, 20 miles SW [above/west] of Valle Nacional, 17.37.12N 096.21W, 1540 m, 30 Jun 1977, *Thomas B. Croat 39821* (MO); [Mun. San Juan Bautista Valle Nacional]. Sierra de Juárez, along Highway 175, between Valle Nacional and Oaxaca, 14 miles SW [above/west] of Valle Nacional. Forested slopes, 17°39'36"N, 096°19'12"W, 1210 m, 30 Jun 1977, *Thomas B. Croat 39772* (MO); Tuxtepec - Oaxaca, [Mun. San Juan Bautista Valle Nacional]. Along Highway 175 through Sierra de Juarez between Tuxtepec and Oaxaca, 18.4 mi S of bridge at Valle Nacional at ca. Km 140. Cloud forest, 17°37'48"N, 096°20'24"W, 1500 m, 19 Feb 1979, *Thomas B. Croat 48062* (MO); Valle Nacional - Oaxaca, [Mun. San Juan Bautista Valle Nacional]. Sierra de Juárez, along Highway 175, between Valle Nacional and Oaxaca, 10 miles SW [above/west] of Valle Nacional. Disturbed primary forest, 17.42N 096.18.36W, 700 m, 30 Jun 1977, *Thomas B. Croat 39807* (MO); [Mun. San Jaun Bautista Valle Nacional]. Sierra de Juárez, along Highway 175, between Valle Nacional and Oaxaca, 26 miles SW [above/west] of Valle Nacional. Primary forest on steep slopes, 17°34'48"N, 096°23'24"W, 1900 m, 30 Jun 1977, *Thomas B. Croat 39885* (MO); Tuxtepec - Oaxaca, [Mun. San Juan Bautista Valle Nacional]. Along Highway 175 through Sierra de Juarez between Tuxtepec and Oaxaca, Valle Nacional. Roadside and forest on steep slopes, 17°37'48"N, 096°20'24"W, 1450 m, 19 Feb 1979, *Thomas B. Croat 47969* (MO); [Mun. San Juan Bautista Valle Nacional]. Along Highway 175 through Sierra de Juarez between Tuxtepec and Oaxaca, 18.4 mi S of bridge at Valle Nacional at ca. Km 140. Cloud forest, 17°37'48"N, 096°20'24"W, 1500 m, 19 Feb 1979, *Thomas B. Croat 48081* (MO**).** Ixtlan: Oaxaca - Tuxtepec, 5 km al N de Vista Hermosa, km 175 carr. Oaxaca-Tuxtepec. Veg. sec. de bosque mesófilo con elementos de selva alta perennifolia., 1260 m, 14 Apr 1982, *R. Torres C. & D. Lorence 296* (MEXU, MO). Mixe: Municipio Totontepec, camino a Rancho Río Colorado, la entrada se encuentra 1 km al N de Amatepec hacia Choapan. Bosque mesófilo perturbado., 18 Sept 1988, *Rafael Torres C. & C. Martinez R. 12458* (MEXU). Tehuantepec. Mpio. Guevea de Humboldt: Cerro Picacho, 8.1 km al N de Guevea de Humboldt, Mpio. Guevea de Humboldt. Veg. Bosque mesófilo, con Pinus, Quercus., 16°50'24"N, 095°22'12"W, 1800 m, 30 Aug 1986, *Torres C., R. & L. Cortes A. 8864* (MEXU).

**Spathiphyllum cardonanum** Croat & Grayum, sp. nov. Type: Costa Rica. Limón: Talamanca. Parque Nacional La Amistad. Cuenca del Sixaola. Parque Internacional La Amistad: Camp 1, Río Lori, 17 Feb., 2007, *A. K. Monro & D. Santamaría 5458* (holotype, MO-6176155-56; isotype, INB).

Terrrestrial herb, 1-1.5 m tall; **internodes** short, 3-4 cm diam.; **petioles** 53-112 cm long (averaging 73 cm), drying light yellow-brown to yellowish green, matte, prominently ribbed abaxially, free portion of petiole oval in cross-section; geniculum sulcate, 2-3.5 cm long, drying blackened, 3-5 mm diam.; **blades** narrowly ovate, 37.5-47 cm long, 16.7-25.7 cm wide (averaging 42.3 x 22.6) , 1.5-2.2 times longer than wide, 0.41-0.70 times as long as petioles, gradually acuminate at apex, rounded and briefly short attenuate at base, thinly coriaceous, moderately bicolorous, dark green and matte to semiglossy above, moderately paler and matte below; major veins sunken above; midrib thicker than broad and paler below; primary lateral veins, 25–30 pairs, arising at an acute angle then spreading at 70-80° angle near the base, to 65-70° angle midway, 25-50° angle toward apex, narrowly raised below, spaced 4-10(15) mm apart. INFLORESCENCE held well above the leaves; **peduncle** 53-112 cm long (averaging 86.3 cm); **spathe** 17.5-24.7 cm long, 6.7-11.7 cm wide, green to greenish yellow; **spadix** green, 11.7-14 cm long, 1.3-2.2 cm diam.; pistils acute, green, prominently exserted above the tepals 2-4 mm above tepals, drying narrowly and sharply acute, blackened; ovary 3-locular, 3 m long, 3.5 mm diam., 3-locular; ovules 2 per locule; seeds smooth, obtusely 3-sided, 2.4-2.6 mm diam.

*Spathiphyllum cardonanum* ranges eastern Costa Rica to western Panama at (460)1040-1810 m in a Tropical wet forest or *Premontane rain forest* life zones.

The species is usually a montane species and is characterized by its short thick internodes, petioles sheathed about 2/3 of their length drying with adaxial ribs, narrowly ovate acuminate blades which are rounded at base and weakly attenuated at base, numerous mostly closely spaced broadly spreading primary lateral veins as well as by the long-pedunculate inflorescence with a broad green naviculiform spathe as well as by short-stipitate green spadix with prominently protruding actute green pistils.

The species has been been confused with *S. phryniifolium* Schott but that species differs by having leaf blades typically lanceolate, 2.5-4 times as long as wide with the primary lateral veins more widely spaced, typically 1.5-2 cm apart.

The species is named in honor of Colombian botanist Felipe Cardona, Curator of the HUA Herbarium at the Universidad de Antioquia in Medellín who is working on a revision of the genus Spathiphyllum and is a specialist on the genus in Colombia. Felipe is also one of the leaders in a group of Colombian aroid taxonomists who are tackling the taxonomic problems in this aroid-rich country.

Additional specimens seen:COSTA RICA. **Limon:** Talamanca. Along S side of Río Lori (tributary of Río Coén), between Quebrada Kuisa and crossing of Ujarrás-San José Cabécar trail, Cordillera de Talamanca., 09°21'00"N, 083°13'12"W, 1810 m, 19 Mar 1993, *Michael Grayum 10375* (MO).

**Spathiphyllum cerrosantiagoense** Croat & O. Ortiz, sp. nov. Type: Panama. Comarca Ngäbe-Buglé: Kanintú, Quebrada Hacha, slopes of Cerro Santiago, mature montane forest, 08°30’28.3”n, 81°45’26.3”W (UTM E416647, N940523), 1688 m, 4 Sept. 2012, *Melisa Ayala, Alicia Ibañez, Ángela Celis, Rodolfo Flores 1571MA* (holotype, PMA- 106401).

Terrestrial; **internodes** short, ca. 1.5 cm diam.; **petioles** 34–49 cm long, sheathed about 2/2 their length, 0.59–0.65 their length, drying light brown, sheath mostly persisting intact; **blades** ovate-elliptic, 26.2–30.5 cm long, 7.3–8.5 cm wide, gradually acuminate at apex, attenuate and markedly decurrent on petiole at base, ?? ca. 3.5 times longer than broad, shorter than petioles, 0.62–0.77 times as long as petioles, moderately thin, moderately bicolorous, drying dark gray-green above, grayish yellow-green below; **midrib** drying weakly raised and slightly darker above, narrowly raised and darker below; **primary lateral veins** 9–11 pairs,scarcely discernable above, weakly raised and drying darker below; **minor veins** weakly visible, interspersed with dense pale subcircular dots throughout below. INFLORESCENCE about as long as leaves; **peduncle** 70.5 cm long; **spathe** 14.5 cm long, 6.6 cm wide, green, held erect, decurrent 3.5 cm on peduncle; **spadix color?** stipitate 2–3 mm, short-cylindroid-tapered, protruded forward from spathe, 6 cm long, 1.8 cm diam. at base, 1.2 cm diam. near apex; **flowers** 5–6 visible per spiral, 1.2–2.2 mm wide, tepals connate except for the 5–6 short lobes; **pistils** prominently exserted beyond tepals 2–3 mm, green at apex, white at base; **ovaries** 2–3 locular; ovules 2–3 locular. INFRUCTESCENCE with **berries** maturing white; seeds 5–7 per berry; 2–3 per locule, 3.2–4 mm long, 1.6–1.8 mm diam., oblong-elliptic, smooth, black, glossy after being dried.

*Spathiphyllum cerrosantiagoense* is endemic to Panama, known only from the type locality in the Comarca Ngäbe-Buglé at 1688 m in a *Lower montane rain forest* life zone.

The species is characterized by its mediocre size, petioles sheathed about 2/3 their length, ovate-elliptic blades that are shorter than petioles and markedly decurrent at base, drying dark gray-green above, grayish yellow-green below as well as by prominently decurrent green spathe, green short-cylindroid-tapered spadix with connate tepals and prominently exserted, pistils which are green at apex, white at base.

The species is similar to *S. silvicola* R. A. Baker but that species differs by having leaves that are not decurrent on the petiole at base, lacking protruded styles, having the spathe proportionately narrower and less decurrent at base (to 1.4 cm) and has the spathe reflexed, not erect; *S. phryniifolium* Schott, differing by having a tepals free and berries that mature green; S. montanum (R. A. Baker) M. Grayum which differs by having blades that dry typically brown, have a white spathe and free tepals free rather than coalesced tepals.

The species is named for the type locality near Cerro Santiago in Veraguas Department.

*Paratypes*: Panama. O. Ortiz 2014 [Where is collection information]

**Spathiphyllum clewellii** Croat – name not in tropicos, not published yet?

**Spathiphyllum cochlearispathum** (Liebm.) Engl.Monogr. Phan. 2: 221. 1879. TYPE: *Liebmann s.n.*, no date, Mexico (C). LECTOTYPE: Mexico: Veracruz, in sylvis umbrosis circa Hda. de Mirador, ca. 10-1, Nov. 1841, *F. Liebmann s.n.* (photo, C). Lectotype designated by Bunting, 1960.

*Hydnostachyon cochlearispathum* Liebm. Vid. Meddel. 1-2: 24. 1849-50.

*Hydnostachyon largoirostre* Liebm. Vid. Meddel. 1-2: 24. 1849-50.

*Spathiphyllum largoirostre* (Liebm.) Schott, Aroideae 1: 2. 1853.

*Spathiphyllum liebmannii* Schott, Aroideae 1: 2. 1853.

*Spathiphyllum heliconiaefolium* Schott, Aroideae 1: 2. *pl*. 5,6. 1853.

*Massowia lanceolata* C. Koch, Bonplandia 4: 12. 1856.

*Spathiphyllum lanceolatum* C. Koch, Berl. Allg. Gart. 25: 174. 1857.

*Spathiphyllum cochlearispathum* (Liebm.) Engl. var. *largoirostre* (Liebm.) Engl. in DC. Monogr. Phan. 2: 221. 1879.

*Spathiphyllum lacustre* Lund. Contr. Univ. Mich. Herb. 6: 4. 1941.

Terrestrial; understory herb, 0.5–1.8 m tall; **internodes** short, to 3–4 cm diam.; **petioles** 40-80(-104) cm long, sheathed (0.24)0.38-0.67 its length, 1.8-5.4 times longer than wide, 0.6-1.1 times longer than petioles the sheath margins finely mottled with white and often crinkled-crisped along margins; densely pale-speckled, slightly thicker than broad; petiole sheath minutely speckled, inrolled; geniculum (3-5)6-7 cm long; **blades** oblong or oblong-lanceolate to narrowly elliptic, widest at or just below middle, 43-65(-80) cm long, 15-23(-28) cm wide, apex acuminate or cuspidate, base subrounded or rarely obtuse or subcordate; subcoriaceous to sometimes +/- leathery, dark green and semiglossy above, much paler and weakly glossy to matte below, weakly quilted; **midrib** sunken and weakly paler above, thicker than broad and concolorous to dark green and pale-speckled below; **primary lateral veins**, 20-25 pairs , separated 1–1.7(2) cm, arising at 60-75° angle, sunken to quilted sunken above, convex and slightly paler below; minor veins few, visible to moderately obscure; INFLORESCENCE erect, held above leaves; peduncle 50-90(-139) cm long, **spathe** cucullate, oblanceolate or elliptic, 18-33 cm long, 6-10 cm wide, acuminate apex, subcuneate or attenuate base, light green to green; **spadix** 5.5-11.5 cm long, sessile or on a stipe to 1 (-1.8) cm long, light green, creamy white at anthesis, dark green in fruit, the pistils sharply emergent; ovary 3-locular, superposed, 6-16 ovules per ovary. INFRUCTESCENCE obovoid, rostrate, ca. 1 cm long; seeds ca. as many as ovules, irregularly oblique-ovoid to oblong in profile, ca. 4 mm long, surface smooth and shiny. Nv: chil de gatos (Veracruz), hoja de piedra (Oaxaca)

*Spathiphyllum cochlearispathum* Distribution: Caribbean coast of Mexico, in Veracruz, eastern Oaxaca and Chiapas, Tabsco, and Yucatán.

The species is characterized by it generally large size, petioles sheathed yup to 2/3 their length with the sheath margins finely mottled with white and often crinkled-crisped along margins and with an elongated geniculum (3-5)6-7 cm long, leaf blades usually with the base subrounded, 20-25 pairs, a broad cuculate light green to green spathe and a stubby stipitate light green to creamy white spadix with sharply emergent pistils.

*Spathiphyllum cochlearispathum* is most easily confused with S. matudae Bunting which has petioles with a similarly long geniculum but has proportionately smaller blades and appears to be restricted to western Mexico and the Pacific slope of Guatemala and El Salvador.

*Additional specimens seen*:MEXICO. 1841-42, *Karwinsky, W. 837* (MW); Originally collected as York 2606., *Thomas B. Croat 73887* (MO); *Liebmann s.n.* (MO); *Anonymous s.n.* (MO); *Karwinski s.n.* (GH, MO); *Liebmann s.n.* (GH). **Chiapas**: Cuadrante 63-A, 410 m, *Chavelas , J. et al. 1808* (MEXU). Ixtacomitán: Hwy 195, S of Pichucalco., 23 Jul 1984, *Schwartz, Owen 14* (DUKE); Ixtacomitan: Bochil - Pichucalco, Along road between Bochil and Pichucalco; 17.1 km SW of Pichucalco, 6.6 km above Ixtacomitán [Ixtacomotan], 17.2 km above Villa Hernández. Along road and steep rocky stream, 17.25.48N 093.05W, 430 m, 24 Aug 1996, *Thomas B. Croat 78675* (MO); *Thomas B. Croat 78676* (MO). Las Margaritas: A 12 km al E del Lago Tziscao camino a Ixcan. Veg. selva alta perennifolia., 16°06'00"N, 091°34'12"W, 1250 m, 16 Nov. 1984, *E. Martínez S., O. Tellez, M. Sousa, & G. & J. Davidse 8628* (MO); Tziscao. 12 km E of Tziscao, along carretera fronteriza. Semi-evergreen montane forest, 16°10'12"N, 092°04'48"W, 1200–1300 m, 16 Nov 1984, *Gerrit Davidse, Mario Sousa, O. Téllez, E. Martínez & J. Davidse 29882* (MEXU, MO). Ocozocoautla de Espinosa. Ocozocoautla: Ocozocouatla - Apitpac, 13 miles north of Ocozocoautla on gravel road to Apitpac, near Km 21 marker., 16°54'N, 093°27'W, 900 m, 9 Jul 1977, *Thomas B. Croat 40630* (MO). Tenejapa: Río Seco Cruz Pilal., 900 m, 25 Aug 1982, *Alush Méndez Ton 4515* (MO). Tila: Ejido Tiontipac, camino de Terracería Tila-Salto de Agua. Bosque caducifolio. Secundaria. Suelo rojo arcilloso con rocas aflorantes. Cafetal., 1100 m, 15 Aug 1977, *Juan I. Calzada, W. Márquez, & S. Avendaño 3317* (MO). **Oaxaca**: Along the dirt road to Chayuco 12 km from Mex. Hwy 200. Secondary growth of Selva mediana. Elev. 220 m., 16°22'12"N, 097°48'00"W, 220 m, 29 Jan 1983, *James S. Miller & Pedro Tenorio L. 526* (MO); Tuxtepec to Oaxaca; 55 km S of Tuxtepec; on forested slopes along small draw along road; secondary & much disturbed primary forest; limestone common., 17°36'36"N, 096°19'48"W, 630 m, 26 Sep 1986, *B. Hammel & M. Merello 15483* (MO); Uspanapas Road from Highway 185 at Sarabia, 52 km E of highway along small stream by road., 17°09'36"N, 094°31'48"W, 100 m, 08 Oct 1986, *B. Hammel & M. Merello 15580* (MO); Puerto Eligio Mun. Comaltepec, carr. Tuxtepec a Oaxaca, Sierra Juárez km 149. Veg.: bosque prim., suelo profundo. Textura: arcilloso., 800 m, 17 Jun 1966, *G. Martínez Calderón 885* (MO); Mpio. Santa María Chimalapa: Arroyo Margo, ca. 5 km al E de Santa María; cañada con selva perturbada (rodeada por encinar) con Apeiba, Guazuma, Brosimum, Vochysia; suelo negro., 16°55'N, 094°39'W, 250 m, 5 Sep 1984, *H. Hernández G. 392* (CHAPA); Esmeralda: Esmeralda - Rio Verde, Uxpanapa Region, along gravel road from Esmeralda (17 km E of Sarabia) to Río Verde, 1.1 mi S of Esmeralda. Edge of pasture and in forest on karst limestone formation on steep slopes with cliffs. Veg. type: "selva alta perennifolia", 17.09.36N 094.45W, 100 m, 18 Jan 1987, *Thomas B. Croat & Dylan P. Hannon 63235* (MEXU, MO, USM); Rio Corte: Sarabia - Uxpanapa, Along road to Uxpanapa from Sarabia, 1.5 mi W of Río Corte, 9.7 mi E of Sarabia. Disturbed virgin forest just south of road on slope. Veg. type: "selva alta perennifolia", 17.06N 094.55.48W, 220 m, 20 Feb 1987, *Thomas B. Croat & Dylan P. Hannon 65445* (MO); Valle Nacional: Valle Nacional - Oaxaca, Along Highway 175 between Valle Nacional and Oaxaca, 4.3-6 mi. above the bridge at Valle Nacional. Roadside vegetation. Veg. type: selva mediana subperennifolia, 17°43'48"N, 096°18'36"W, 625–785 m, 21 Feb 1987, *Thomas B. Croat and Dylan P. Hannon 65545* (MEXU, MO). Choapan. Dtto. Choapam, Cerro de Lalana: In rain forests, Cerro de Lalana. Northeastern Oaxaca., 17°25'48"N, 095°54'00"W, 1500 m, 11 May 1939, *Richard Evans Schultes & Blas Pablo Reko 868* (ECON, MO). Ixtlan: Mpio. de Comaltepec: R. Acahual Grande. Bosque mesófilo de montaña., 17°37'N, 096°21'W, 1200 m, 30 Aug 1990, *Ricardo López Luna & Gary J. Martin 680* (MO); Mpio. de Santiago Comaltepec: Puerto Eligio. Bosque mesofilo/Selva Perennifolia., 17°45'N, 096°30'W, 700 m, 10 Jul 1988, *Eusebio Lopez Garcia 137* (MO). Juquila: Municipio Juquila. 3 km al O de Juquila, vereda a El Portillo, rumbo a Cerro Pelon. Bosque de pino alterado., 16°15'N, 097°19'W, 1350 m, 9 Jul 1992, *Alvaro Campos V. 4711* (MO). Putla. Putla de Guerrero: Pinotepa Nacional - Tlaxiaco, Along Highway 125 between Pinotepa Nacional and Tlaxiaco, 5.8 mi N of Putla de Guerrero, 17°02'24"N, 097°52'48"W, 1000 m, 17 Jan 1979, *Thomas B. Croat 45887* (K, MO). Tehuantepec: "La Cueva del capitán salvaje", 31.4 km al NW de la Chiviza carr. a Santiago Lachiguirí. Veg. Bosque mesófilo., 16°43'48"N, 095°31'12"W, 1260 m, 24 Aug 1984, *Rafael Torres C. & Cipriano Martínez 5936* (MEXU, MO); Mun. Santiago Lachiguiri, cerro selva del aserradero, al E de crucero Guadalupe, el cual se encuentra 12.5 km al NE de Santiago Lachiguiri. Bosque mesófilo perturbado., 16°43'N, 095°30'W, 1400–1700 m, 9 May 1991, *Rafael Torres C. & A. Campos 13937* (MO). **Tabasco**: In wet gallery forest, savanna WSW of Huimanguillo., 21 May 1963, *F.D. Barlow 30/16* (US); Mpo. Tacotalpa: .2 km NW of Tapijulapa, 17°27'36"N, 092°46'12"W, *Cowan et al. 3531* (CSAT). Huimanguillo. Km 10.4 de la desviación de Huimanguillo hacia Fco. Rueda, sabana., 23 Sep 1979, *C. Cowan 2514* (MO). Município Teapa, 7 km SE of Teapa on road to Tacotalpa; Rancho San Eneas; Sierra Madrugal woods on steep limestone hills., 17°34'48"N, 092°49'48"W, 70 m, 30 Sept 1986, *B. Hammel & M. Merello 15522* (MO); Cerro del Madrigal, arriba del Centro Puyacatengo, Chapingo, al lado del río Puyacatengo. 3 km de la carr. Teapa-Tacotalpa. Selva (s.a.p.) sobre calizas, bien conservada., 18 Jun 1983, *Clark P. Cowan, Sergio Zamudio, & Angeles Guadarrama 3968* (MO); Teapa - Tacotalpa, Vicinity of Teapa, along road between Teapa and Tacotalpa, 3.1 m E of Teapa, ca. 0.25 mi S of Highway. Along stream and limestone cliffs. Veg. type: "selva alta perennifolia", 17.33N 092.58.48W, 150 m, 19 Feb 1987, *Thomas B. Croat & Dylan P. Hannon 65372* (MO). **Veracruz**: In shallow water of pool, Sontecomapan, on road from Catemaco to Montepio., 18°30'00"N, 095°01'48"W, 10 m, 11 Apr 1952, *H.E. Moore, Jr. 6269* (BH, GH, MO); Las Cruces. MAPA 38.0 29.0. Veg. Primaria. Selva Alta Perennifolia. Suelo en suelo con agua estancada., 14 Jul 1970, *L. Nevling & A. Gomez-Pompa 1507* (F); Trail to Ejido Laguna Escondida near Estación Biología Los Tuxtlas., 170–200 m, 28 May 1981, *A. Gentry, E. Lott, UNAM tropical botany class 32390* (MO); Cerro de Chicahuaxtla-Cuauhtlapan, D-3-51. "chile de gato"., 18°51'36"N, 097°00'36"W, 1600 m, 22 Jan 1968, *M. Rosas R. 1028* (A); Los Tuxtlas: Catemaco - Montepio, Along road between Catemaco and Montepio, 4.7 km S of Los Tuxtlas Field Station, 7.4 km beyond end of asphalt highway, 17.5 km N of Catemaco, 18°36'36"N, 095°03'36"W, 50 m, 25 Aug 1996, *Thomas B. Croat 78688* (K, MO, NY, US). Actopan: Playa Paraiso, 2 km NW of La Boca, near La Laguna de la Mancha. Hidrofita emergente, primaria, suelo inundado, asoc. Pontederia y Acrostichum., 19°36'00"N, 096°23'24"W, 0 m, 11 Jul 1977, *A. Novelo 423* (MO, XALU). Catemaco: Laguna Escondida, Estacion Biologica Los Tuxtlas, Sontecomapan. Acuatica, suelo fangoso, asoc. piper., 18°21'00"N, 095°10'12"W, 160 m, 25 Sep 1971, *R. Hernández M. & R. Cedillo T. 1258* (XALU). Coatzacoalcos: Coatzacoalcos cerca de Nanchital. Asociacion de Vochysia hondurensis., 18°04'12"N, 094°24'00"W, Jul 1962, *Cazares, J.M. Leon 121* (MEXU). Hidalgotitlan: La Laguna, Uxpanapa., 17°15'36"N, 094°30'00"W, 28 May 1974, *Gomez-Pompa & Nevling GP-5191* (XALU); Brecha La Laguna - el Elefante. Arcilloso amarillento. "Jimbal" (S.A.P.). Primaria., 17°16'48"N, 094°30'00"W, 150 m, 26 Jul 1974, *Mario Vazquez et al. V-852* (XALU); En El Ejido Agustin Melgar, a 2 km from Campomento Hermanos Cedillo. Acahual derivado de selva alta perennifolia, secundaria, suelo negro arcilloso, calido humedo., 17°12'36"N, 094°34'48"W, 31 m, 1 Jul 1981, *J.I. Calzada 7516* (CHAPA). Huatusco. Huatusco: Huatusco - Puente Nacional, "El Mirador", 21 km E of Huatusco at Km 45 along Hwy. to Puente National. Small patches of virgin forest and trees remaining in pasture with numerous epiphytes, 19°12'36"N, 096°52'12"W, 1200 m, 23 Aug 1977, *Thomas B. Croat 43979* (MO). Ixtaczoquitlan: Cerro de Cuauhtlapan (entre Cuauhtlapan y Tuxpango)., 18°51'36"N, 097°01'48"W, 1250 m, 30 Apr 1967, *M. Rosas R. 326* (A). Minatitlan: 13.7 km E of La Laguna, near Uxpanapa, luego 6.5 km al N sobre camino nuevo no completo (brecha 93) a Belisario Domínguez; afloramientos cársticos con selva de Dialium, Brosimum, Bursera, Spondias radlkoferi, Robinsonella, Poulsenia, etc., 17°19'48"N, 094°22'48"W, 130 m, 10 Oct 1984, *Tom Wendt & S. Plettman 4475* (CHAPA). Playa Vicente: Cerca de Galeana rumbo a Santa Teresa, Playa Vicente. Riparia, secundaria., 150 m, 18 Dec 1970, *A. Lot 1138* (XALU). Puente Nacional: Barranca de Pachuquilla. Vegetación riparia., 19°13'48"N, 096°36'36"W, 5 May 1991, *M. Chazaro B., H. Oliva R., & A. Flores M. 6626* (MO). San Andrés Tuxtla: Road from Estación Biológica Los Tuxtlas to Playa Montepio; ca. 7.8 km N of Estación Los Tuxtlas. In forest along stream west of road., 18°34'48"N, 095°09'36"W, 120 m, 29 Sept 1986, *B. Hammel, M. Merello & S. Sinaca 15506* (MO); 1.5 km NE de la Estación de Biología Tropical Los Tuxtlas. Veg. pastizal., 18°33'36"N, 095°03'36"W, 45 m, 19 July 1994, *Renée González Montagut 13* (MEXU, MO); Floor of tropical forest, San Andres Tuxtla., 3 Apr 1939, *Richard Evans Schultes et al. 29* (ECON); cumbres del Bastonal, 11 km S de Tebanca, 15 km NE de Catemaco, 18°19'48"N, 094°59'24"W, 900 m, 26 apr 1982, *G. Ibarra M. et al. 1983* (MEX); Salto de Eyipantla. Selva alta subperennifolia., 18°22'48"N, 095°12'00"W, 300 m, 19 Jul 1967, *L. Nevling & Gomez-Pompa 119* (GH); Estacion Biologia Tropical Los Tuxtlas. El Vigia, Lote 67. Veg. selva alta perennifolia., 18°34'48"N, 095°03'36"W, 250 m, 2 Jun 1983, *Guillermo Ibarra Manriquez 649* (MO); Estacion de Biologia Tropical Los Tuxtlas. Lote 67. Veg. selva alta perennifolia., 18°33'36"N, 095°03'36"W, 200 m, 19 Sept 1983, *Guillermo Ibarra Manriquez 874* (MO); Salto de Eyipantla a 8 km de Sihuapan., 18°24'N, 095°12'W, 200 m, 11 Jan 1980, *M.G.G. 295* (MO); Estacion de Biologia Tropical Los Tuxtlas: Sontecomapan - Estacion de Biologia Tropical Los Tuxtlas, Along road between Sontecomapan and Estación de Biología Tropical Los Tuxtlas, N of San Andrés Tuxtla, S of Montepio, 5 mi and 2 km E of Estación Biología Tropica Los Tuxtlas. Roadside with water-filled ditches, 18°34'48"N, 095°03'36"W, 50–150 m, 16 Jan 1987, *Thomas B. Croat & Dylan P. Hannon 63108* (MO). Totutla: Moist woods and slopes of barranca de Santa Maria across highway from Hda. El Mirador, km 45 on highway between Conejo (near Puente Nacional) and Huatusco., 19°12'00"N, 096°45'36"W, 21 Sept 1961, *H.E. Moore, Jr. & G.S. Bunting 8866* (BH, MO).

Cultivated plants: COSTA RICA. **Puntarenas:** Las Cruces Botanical Garden, along Rio Jaba. Lower montane rainforest., 08°47'24"N, 082°57'00"W, 1200 m, 8 May 1980, *A. Meerow, L. Besse, & K. Tan 2015* (SEL).

EL SALVADOR. Jardin Botanico, Zona 23W., 13°40'N, 089°15'W, 800 m, 18 Jul 1989, *R. Villacorta & S. Martínez 299* (MO).

UNITED STATES. **Missouri**. **Saint Louis**. St. Louis: Plants collected at Missouri Botanical Garden., 07 jul 1962, *Dunn, David B. & class UMO 51122* (UMO 51122);[Get Details] *Thomas B. Croat 73887* ().

9 Oct 1892, *MBG s.n.* (MO); Cultivated at Missouri Botanical Garden., 26 Apr 1905, *G.E. McClure s.n.* (MO); *Engler 17* (MO).

**Spathiphyllum dressleri** Croat & F. Cardona, Aroideana 27: 139-141. 2004. TYPE: Panama. Navy Reservation (Pipeline Rd.), ca. 14 km N of Gamboa, 30 Sep. 1971, *Dressler 4100* (holotype, MO, isotypes, B, COL, HUA, K, PMA, US).

Terrestrial to epipetric, 45 cm tall; stems rhizomatous, to 20 cm long, 1–2 cm diam.; **internodes** short. LEAVES spreading, with up to 10 present; **petiole** 11.5–15(54) cm long, matte, about as long as to 1.5 times longer than the blades, finely ridged on unwinged portion (abaxially and on sides), sheathed (1)2.5–4 cm from blade, rounded to 3-ribbed adaxially; sheath erect-spreading, intact; free portion terete to ovate in cross-section, usually not at all sulcate, occasionally sharply sulcate; **blades** obovate-elliptic, (13)15–20(40) cm long, (4.4)5.5–11(15.2) cm wide, 2.2–4.2 times longer than wide, abruptly to gradually long-acuminate at apex, acute to weakly attenuate or rounded and briefly decurrent onto petiole at base, thinly coriaceous, matte, dark green above, much paler below, drying dark brown to gray-green above, grayish yellow to pale yellow-brown below; **midrib** obtusely sunken and concolorous to slightly paler above, thicker than broad, acutely several-ribbed and concolorous to slightly paler below; **primary lateral veins** (5)11–15 pairs, departing midrib at (20)35–40° angle, quilted-sunken above, pleated-raised below, decurrent at midrib, concolorous on both surfaces; interprimary lateral veins almost as prominent as primary lateral veins; minor veins obscure. INFLORESCENCE erect; **peduncle** (8)15–23(40) cm long, much shorter than the leaves; **spathe** 6.5–13 cm long, 2.5–6 cm wide, 2.2–3.3(4) times longer than wide, parabolic, light green, semi-glossy within, matte outside, with nearly 15 veins, these sunken on outer surface; stipe 77–15 mm long, 3 mm diam.; **spadix** cylindrical, 1.5–2.2 mm long, 8–10 mm diam., 1.6–4.7 times longer than wide, light green, matte; **pistils** darker green, often sharply acute, projecting above tepals ca. 1 mm, **ovules** 3-locular, 1 ovule per locule; pollen white.

*Spathiphyllum dressleri* ranges from central Panama to northern Colombia at elevations of near sea level to 700 m in areas of premontane wet forest and tropical wet forest.

*Additional specimens seen:* COLOMBIA. **Chocó**: Nuquí. Costa del Pacifico, correg. Termales, bosques entre quebrada Piedra-Piedra, y río Terco, 20 min., de camino S de hotel Pijibá (SO de Nuqui)., 05°37'N, 076°15'W, 0–50 m, 9 Sep 1994, *Ricardo Callejas et al. 11244* (HUA, MO).

PANAMA. **Bocas del Toro**: Valle del Silencio, along Río Changuinola, ca. 1 km above mouth of Río Teribe, vicinity Teribe Indian population; disturbed forest among cacao plantations., 09°21'40"N, 82°31'40"W, < 100 m, 25 June 1994, *Thomas B. Croat & Guanghua Zhu 76424* (MO); Chiriqui Grande: Chiriqui Grande - Fortuna, Along road between Chiriquí Grande and Fortuna, 3 mi W of Chiriquí Grande, 8°47'N, 82°09'W, 10 m, 9 Mar 1985, *Thomas B. Croat & Michael H. Grayum 60148* (MO, UB). **Coclé**: Cerro Gaitel above El Valle. Semi-cloud forest near end of dirt road., 8°37'N, 80°07'W, 1100 m, 24 July 1983, *J.S. Miller, L. Miller, C. Hamilton & K. Kraeger 798* (MO); Vicinity of El Valle de Antón; at La Mesa, 0.2 mi from jct. of Finca Macarenitas and Finca Adela at Finca Gabriella, along water lines to reservoir, 08°38'N, 80°09'W, 7 July 1994, *Thomas B. Croat & Guanghua Zhu 76744A* (MO,NY); El Copé. Forest on continental dvd above town, 0 8°38'N, 80°38'W, 700–900 m, Apr/27-29/1985, *B. Hammel 13672* (MO); El Copé. Sendero desde la casa de los guardaparques hasta la quebrada., 7 Julio 1996, *J. Aranda et al. 2844* (MO); La Mesa: above El Valle de Anton, ca 2 km W of Cerro Pilon on slopes of steep hill, 860–900 m, 21 July 1976, *Croat T.B. 37355* (MO). **Colón**: Along Río Guanche, 3-5 km above bridge on Colon-Portobello Road, 09°30'N, 79°30'W, 30–100 m, 22 September 1996, *Thomas B. Croat 79349* (MO). **Panama**: Panama to San Blas Trail from end of rd past Los Altos de Pacora region of Cerro Jefé. On to Cerro Brewster, 9°17'N, 79°17'W, 600–800 m, Apr/20-25/1985, *B. Hammel & G. deNevers 13618* (MO); Cerro Campana, trail leading to cross, cloud forest, 792-853 m, 3 January 1981, *Kenneth J. Sytsma 2908* (MO); Cerro Campana, trail to summit, 31 August 1975, *Robert L. Dressler 5140* (MO); Woods around La Eneida, 1000 m, 5 August 1970, *James L. Luteyn & Helen Kennedy 1742* (DUKE, MO); Cerro Jefe, near La Eneida (Alto de Pacora), 13 Sept 1970, *Helen Kennedy 502* (DUKE, MO); Cerro Campana cloud forest, 8 August 1970, *James L. Luteyn & Helen Kennedy 1828* (DUKE, MO); Serrania de Majé, ridge south of Choco village of Ipetí. Río Ipetí drainage system. 08°47'N, 78°27'W, 500–600 m, 11 December 1981, *S. Knapp & K. Sytsma 2361* (MO); Cerro Campana; cloud forest., 26 July 1969, *Robert L. Dressler 3695* (MO); Cerro Jefe: La Eneida, region of Cerro Jefe, 8 July 1969, *Robert L. Dressler 3652* (MO, PMA, US); Santa Rita: 28 October 1973, *Kennedy H. & K. Meyer 3309* (SEL). **San Blas**: Comarca de San Blas, Cordillera de San Blas, límite San Blas/provincia de Panamá; caminando hacia en lado Pacifico de la Cordillera entre el campamento Ilegandi y tributario del Río Piriati. Tierra centinental de Playón Chico, 09°13'N, 78°16'W, 50–200 m, 8 noviembre 1991, *Heraclio Herrera, Jimmy Mojica y Johny Morris 1124* (MO); Nusagandi: Nusagandi, 09°18'N, 078°58'W, 400 m, 26 Jul 1986, *J.F. McDonagh, B.A. Lewis, N.J. Gumpel & A.J. Plumptre 672* (BM, DUKE). **Veraguas**: Valley of Rio Dos Bocas, 11 km from Escuela Agricola Alta Piedra (above Santa Fe) on road to Calovebora; primary forest along river, 450 m, 30 Aug 1974, *Thomas B. Croat 27520* (MO); Trail to "Buenos Aires," north slope of ridge east of Cerro Tute, NW of Santa Fe, 22 Dec 1975, *Dressler 5237* (MO); Trail to "Buenos Aires", north slope of ridge east of Cerro Tute, NW of Santa Fe, 22 Dec 1975, *Robert L. Dressler 5257* (MO); Vicinity of Continental Divide, third branch of Río Santa Maria to dropoff to lowlands, 12-15 km NW of Santa Fe, 650–750 m, 16 Nov 1974 - 17 Nov 1974, *Robert L. Dressler 4851* (MO, PMA, UB).

**Spathiphyllum dukei** Croat, sp. nov. Type: Panama. Darién: Quebrada Bido (Peccary Creek) off Río Areti, 26 July, 1967, J. A. Duke 13593 (holotype, MO-5397796).

To about 75 cm tall; **internodes** drying 1.5 cm diam; petioles 23 cm long, sheathed to ca. 0.79 its length, sheath turning reddish brown, persisting intact, acute at apex, free portion of petiole subterete, 4 cm long; geniculum, 8 mm long, drying darker, 1.5 mm diam.; **blades** 18 cm long, 6 cm wide,3 timeslonger than wide, 0.78 times as long as petioles, elliptic, acute at apex, narrowly acute at base, drying gray-brown and matte above, slightly paler and weakly glossy below; **midrib** broadly rounded on drying and concolorous above, narrowly rounded and darker below; **primary lateral veins** 20–25 pairs, 2.5–3 mm apart, weakly raised above, narrowly rounded below; **upper surface** densely granular, lacking short pale lineations; **lower surface** closely striate, lacking short pale lineationis, the intervening area of the surface closely intermittently dark and light mottled on magnification. INFLORESCENCE held well above the leaves; **peduncle** 62 cm long; **spathe** green, 9 cm long, 3 cm wide elliptic, green, drying matte inside; **spadix** green, narrowly cylindroid; **flowers** ca. 3 visible per spiral, ca. 3 mm diam.; pistls about as long or slightly longer than the tepals; pistils drying deeply sunken

medially at apex, the surrounding border broadly rounded; style sub 3-lobed, only weakly raised; tepals free at apex, fused in lower 2/3rd ; ovary 3-locular; ovules ?? per locule

*Spathiphyllum dukei* is known only from the type locality in lowland Darién Province at 100 m elevation in a Tropical moist forest life zone. [Confirm with Jim Duke]

The species is characterized by its small size, wealy sheathed petioles, elliptic blades which are acute at the apex and with many close indistinct primary lateral veins as well as by the green elliptic spathe and green cylindroid spadix with the pistils sunke at the apex and with an inconspicuous style

*Spathiphyllum dukei* keys to *S. dressleri* but that species differs by having the spadix proportionately shorter and more broadly cylindric, ca. 2.5 times longer than broad with the pistils at least weakly protruding at the apex and drying more or less rounded at apex. In contrast S. dukei has a more narrowly cylindroid spadix that is 6.3 times longer than wide with the style very short and sunke into a deep depression on drying.

The species is named in honor of the famous explorer of the Darién, Dr. James A. Duke. Duke so thoroughly explored the Darién that even today, nearly 50 years later he is remembered by the older folk in nearly every village. During part of his career in the Darién Duke worked for the Battele Institute which was studying the feasibility of a sea level canal. He later went on to be a writer of books on ethnobotany.

DECIDE IF THIS MATERIAL IS REALLY S. FLORIBUNDUM OR S. PATINII Not yet edited.

**Spathiphyllum floribundum** (Linden & André) N.E. Br.,Gard. Chron. 2: 783. 1878. TYPE: *pl. 159*, L’Illustration Horticole 21: 24. 1874.

Terrestrial; **petiole** terete, (6.5-)10-22(-28) cm long, often sheathed nearly to the geniculum, vaginate below or the sheath margins expanded and free; geniculum 0.5-1.3 cm long; **blade** conspicuously oblique, elliptic to oblong or oblanceolate, widest at or just above middle, 13-20(-26) cm long, 5.5-9(-10.5) cm wide, the apex cuspidate, base obtuse or acute, marginally undulate, dark green above with a velvety lustre; **primary lateral veins** ca. 9 per side, arising at 65-75° angle. INFLORESCENCE peduncle (16-)20-37 cm long; **spathe** white to greenish-white, reflexed, lanceolate to oblong-elliptic, 4-8(-9.8) cm long, 1.2-3 cm wide, apex attenuate to cuspidate, base acute to subtruncate and clasping the peduncle; **spadix** 2.5-5.5 cm long, on a stipe 0.3-0.8 cm long, greenish-white; perianth green, segments separate or sometimes conglutinate in age; pistil white, obpyramidal, apically truncate, stigma elevated and shortly exceeding the perianth; ovary 3-locular, 4-6(-7) ovules per ovary; fruiting spadix smooth; fruit spheroid, apex truncate; seeds 1 or 2 per locule, surface vertically furrowed and foveolate between verrucose ridges.

Distribution: Bunting says this is only from Colombia…tropicos has about 5 specimens from Central America listed

*Additional specimens seen:* COLOMBIA. Cultivated in the Climatron at MO., Mar 1988, *M.B.G. 773296* (MO); cultivated at Selby as SEL 84-52, 25 Jan 1986, *Christenson 1122* (SEL). **Antioquia:** Rio Nuz, 600–1000 m, *Lehmann 7758* (F, US); Sabaleta, 200–600 m, *F.C. Lehmann 7757* (F); Amalfi: Amalfi - Fraguas, Mpio. de Amalfi: road between Amalfi and Fraguas, near Salazar, 17.5-19.8 km from centro of Amalfi, bosque húmedo premontaño. Specimen treated with ethanol, 06°57'N, 75°02'W, 1480–1560 m, 14 February 1988, *J.M. MacDougal, J. Betancur, W.J. Kress & B. Echeverry 3994* (MO); Mpo. San Francisco: Corregimiento de Aquitania, Alto del Venado (Tierra Linda)., 1200–1350 m, 2 Apr 1992, *R. Fonnegra & Curso Tax.Plan.Vasc. 4023* (CAS, CK, HUA, M, MO, PMA); Rio Guatape: along Quebrada Negra, tributary to Punchina Res.; cultivated as Selby 86-0772, 770–820 m, 20 Apr. 1992, *Ingram 1411* (SEL). Amalfi: Mpio. de Amalfi: road between Amalfi and Fraguas, near Salazar, 17.5-19.8 km from centro of Amalfi, bosque húmedo premontaño. Specimen treated with ethanol., 06°57'N, 75°02'W, 1480–1560 m, 14 Feb 1988, *J.M. MacDougal, J. Betancur, W.J. Kress & B. Echeverry 3992* (MO); Km 15 de Amalfi a Vetilla., 6°59'40"N, 75°00'35"W, 1420–1515 m, 5 Feb 1995, *J. Betancur et al. 6124* (HUA, MO); 8-27 km NE of Amalfi, highway between Vetilla and Fraguas, near Salazar and Marengo, 06°56'N, 75°04'W, 1150–1450 m, 7 Dec 1989, *R. Callejas et al. 9146* (HUA, MO, NY). Anorí: 200–300 m, 17 April 1977, *J. Santa, R. Fonnegra & C.H. Torres 116* (COL, HUA); Sitios El Río and Bramadero, Kms 1-9 on the hwy. between Anorí and Dos Bocas, NE from Pueblo de Anorí, 07°05'N, 075°10'W, 1290–1510 m, 16 Nov 1989, *R. Callejas et al. 8715* (HUA, MO, NY); Corr. de Providencia, 400–700 m, 12 Dec 1972, *Soejarto & Renteria 3626* (HUA); Corr. de Providencia, Los Popales, 700 m, 25 Oct. 1972, *Soejarto et al. 3514a* (HUA); Vereda Santa Gertrudis. Finca La Estrella, 07°08'N, 075°09'W, 1450–1500 m, 6 Aug 2002, *Tatiana Arias Garzón et al. 140* (MO). Medellín-Bogotá: Sector Río Samaná-Rio Claro, San Luis-Antioquia, 370 m, 22 Mar 1982, *Juan J. Hernandez et al. 329* (HUA). **Nariño:** Vereda Puente Linda, margen izquiereda del río samana, 05°34'N, 75°03'W, 700 m, 11 Sep 1994, *Ramiro Fonnegra et al. 5014* (HUA, MO, US); vereda Puente Linda, 800 m, Dec 1995, *Alzate & Posada 36* (HUA). San Carlos: Remnants of recently cut forest along creek affluent to Río Guatapé, ca. 1.5 km from Presa Punchiná along road to Alto Samaná, Río Magdalena valley, 06°15'N, 75°05'W, 870 m, 5 Jul 1986, *M.H. Grayum, B. Hammel, J. Kress, L.C. García & C. Santiago 7613* (MO); Along creeks leading into ISA hydro- electric dam reservoir; collected with P. Velásques, A. V. Ayala, and J. Restrepo., 06°00'N, 75°00'W, 775 m, 30 Nov 1988, *Gordon McPherson 13336* (MO); 47.5 km E of San Carlos; Lake Punchina; secondary forest along streams feeding the lake. (Quebradas La Villa y El Macho)., 06°14'N, 74°52'W, 650 m, 5 Nov 1987, *Alan E. Brant, Julio Betanacur & Ana Victoria Ayala 1660* (HUA, MO, US); Corregimiento Alto de Samana, Vereda Miraflores, Quebrada La Miranda, 820–900 m, 13 Jun 1989, *R. Fonnegra et al. 2976* (HUA, MO, NY); Corregimiento El Jordán, Vereda Juanes, entre el Campamento de ISA y el Río Samaná, Borde Río Narices, 230 m, 11 Mar 1988, *L.A. de Escobar et al. 8324* (NT:HUA ; IsoNT: MO, NY); Corregimiento El Jordán, vereda Juanes, entre el campamento de ISA y el Río Samaná, borde Río Narices, 230 m, 11 Mar 1988, *Linda A. de Escobar et al. 8322* (HUA, MO); corregimiento Alto Samana, camino Jardin-Miraflores, Quebrada La Miranda, 06°05'N, 075°52'W, 700–800 m, 24 Oct. 1989, *Callejas et al. 8538* (HUA, NY). San Luis: Medellin - Bogota, Carretera hacia Aquitania, a 12 km de la Autopista Medellín-Bogotá, 5°53'N, 74°56'W, 850 m, 24 Nov 1988, *Alvaro Cogollo et al. 3744* (JAUM, MO); Finca las Confusas, vereda las Confusas, 06°3'N, 74°48'W, 350–500 m, 10 Apr 1990, *D. Cardenas et al. 2669* (JAUM, MO); Cañon del Río Clara, Sector nor-occidental margen izquierda, 05°53'N, 74°39'W, 330–450 m, 26 Dec 1983, *Alvaro Cogollo 1142* (JAUM, MO); Cañon del Río Claro, margen derecha, sector nor - oriental., 325–475 m, 28 Oct 1983, *Alvaro Cogollo 867* (JAUM, MO); 600, 12 Sep 1982, *Enrique Rentería & A. Cogollo 2654* (JAUM, MO); Autopista Medellin - Bogotá. Vereda La Josefina, camino a Palmita, 800 m, 28 Nov 1983 - 10 Dec 1983, *Saulo Hoyos & Juan Hernandez 469* (JAUM, MO); Piedra de Castrillón, 3-4 hr. (on foot) S of town. Lower montane forest, 06°01'N, 75°01'W, 1500–1700 m, 8 May 1989, *D.C. Daly & J. Betancur 5887* (COL, HUA, IBE, JAUM, MO, NY); vereda Manizales, finca de Ramon Jaramillo, 1460–1760 m, 11 Oct 1981, *C.I Orozco et al. 555* (COL); Autopista Medillín - Bogotá, Sector Rio Samaná - Rio Claro San Luis - Antioquia, 400–1000 m, 7 Dec 1981, *Juan Jose Hernandez & S.E. Hoyos 187* (HUA, NY); "La Cristalina", 06N 074.45W, 550–690 m, 25 Aug 1987, *Juan G. Ramirez & D. Cardenas L. 1525* (HUA, JUAM); *Juan G. Ramirez & D. Cardenas L. 271* (HUA, JAUM); 800 m, 3 July 1982, *Juan J. Hernandez & S.E. Hoyos 625* (HUA); Quebrada "La Cristalina"., 06N 074.45W, 470–700 m, 22 Feb 1987, *Juan G. Ramírez & D. Cárdenas López 600* (HUA, MO); Quebrada "La Cristalina". Orilla oriental de la quebrada., 06°N 074.45W, 550 m, 29 Oct 1987, *J.G. Ramírez & D. Cárdenas López 1926* (HUA, MO); Rio Samana norte, margen izquierda del rio, sobre la via Medellín-Bogota., 06°00'N, 074°50'W, 700–780 m, 23 Jun 1987, *R. Callejas et al. 4083* (HUA, MO); Sector Rio Samaná-Rio Claro, 600 m, 19 Mar 1982, *J.J. Hernandez et al. 220* (HUA); Rio Samaná-Rio Claro, 550 m, 19 Mar 1982, *J.J.Hernandez et al. 225* (HUA); via Medellín-Bogotá rd., quebrada La Tebaida, 06°08'N, 075°10'W, 1010–1060 m, 22 Jun 1987, *Callejas et al. 4019* (HUA); Rio Samaná-Rio Claro, 600 m, 19 Mar 1982, *J.J. Hernandez et al. 223* (HUA). Santo Domingo: en selvas húmedas en la Fuentes Termales de Santo Domingo, 1200 m, 7 Mayo 1949, *Rosa Scolnik, Molina & Barkley 19An495* (US). Sonsón: region de Rioverde a orillas de la quebrada "curubital", 22 Jan 1947, *G. Gutiérrez 35519* (F); Región de Rioverde a orillas de la quebrada "Curubital". En lugares sombreados, en cuevas formadas por piedras., 22 Jan 1947, *G. Gutiérrez 35519* (MO). Zaragoza: Corr. El Bagre, secondary forest along Villa creek, vic. of town water reservoir, 100 m, 10 Feb. 1972, *Soejarto et al. 3318* (HUA). Tarazá: Corr. El 12, via El 12-Barroblanco, Hac. Las Mercedes, potrero San Juan, 07°30'N, 075°20'W, 180–310 m, 7 Nov 1987, *Callejas et al. 5411* (HUA, MO); Corr. El Doce. 201 km NE of Medellín, 300 m, 18 Aug 1986, *Callejas et al. 2411* (HUA, MO); Corregimieno "El 12". 200 km NO de Medellin, 6 km del camino "EL 12"-Barroblanco., 456 m, 3 Jul 1980, *Callejas R. 1173* (MO). Boyaca: High forested fronts. N of Bogota., 4300 f, 22 Mar 1933, *Alexander E. Lawrance 696* (F, GH, MO, US). **Caldas**: Barancas, Rio Samana, 600 m, 26 Jul 1965, *Barkley & Gutierrez V. 35352* (US). Cordoba: Mun. de Tierralta, quebrada afluente del Río Simí en la margen derecha, en la confluencia con el río Esmeralda. Bosque disturbado., 150 m, 27 Jul 1986, *Rodrigo Bernal 1191* (COL, MO). Cundinamarca. Paime: *Ariste-Joseph A924* (NY, US). Santander: Campo Capote (Carare Opón Santander)., 230 m, 8 Jun 1979, *E. Renteria A. et al. 1498* (COL, HUA,, MO); Magadalena Valley, Campo Capote, 30 km E of Carare; mature forest. (With Curso Nacional Taxonomia Avanzado)., 300 m, 29 Sep 1977, *A. Gentry & E. Renteria 20037* (MO). Barrancabermeja: Magdalena Valley, between Sogamoso and Colorado Rivers, 100–500 m, 10 Oct 1934, *O. Haught 1386* (US).

ECUADOR. **Morona-Santiago**: Along new road Mendez-Morona, km 15. Forest remnant., 02°50'S, 78°10'W, 800 m, 20 Aug 1989, *Henk van der Werff & Edgar Gudiño 11278* (MO); Centro Shuar Yukutais: 02°30'S, 078°08'W, 900 m, 12 March 1990, *B.C.Bennett et.al. 4068* (MO). **Zamora-Chinchipe**. Nangaritza. Cordillera del Condor: Miazi, flood plain forest along Rio Nangaritza., 04°18'S, 78°40'W, 850 m, 29 Jul 1993, *Al Gentry 80730* (MO).EL SALVADOR. **La Libertad**: Antiguo Cuscatlán, Jardín Botánico La Laguna, Zona 22., 27 May 1994, *E.A. Montalvo 6262* (MO).

FRENCH GUIANA.. Crique Kapiri: Bassin de l'Approuague, 4°7'N, 52°5'W, 12 Jan. 1991, *Cremers 11521* (B, US).

PANAMA. **Darien**: Quebrada Bidoto (Peccary Creek) off Rio Areti., 26 July 1967, *James A. Duke 13593* (MO). **Panama:** Río Tapia, 1924, *Standley 28125* (K, US). **San Blas**: El Llano-Cartí Road, Km 26; elev. 200 m. 9°19'N, 78°55'W. Premontane wet forest., 9°19'N, 78°55'W, 200 m , 9 March 1985, *Greg de Nevers, H. Herrera & S. Charnley 5060* (MO); Isla Nargana: Cordillera frente a Isla Narganá. Ribera de Río Diablo., 09°22'N, 78°34'W, 65 m, 9 Aug 1994, *C. Galdames, E. Montenegro, C. Chung, & H. Herrera 1503* (MO); *C. Galdames, E. Montenegro, C. Chung, & H. Herrera 1476* (MO).

PERU. **Amazonas**. Bagua. Rio Cenepa. Disitrito Imaza. Rio Cenepa region. Region nor oriental del Marañon. Communidad Samaria. Riverbank., 04°51'S, 78°18'W, 300 m, January 1995, *Vandi Hodges & Jeff Gorham 250* (MO).

UNITED STATES. **Missouri**. **Saint Louis City**: 9 July 1986, *George Rogers 174* (MO).

VENEZUELA. **Zulia**: Perijá, alrededores de laestación hidrologica de Aricuaisá, margen del rio Aricuaisá. Bosque húmedo tropical., 09°13530"'N, 72°15355"'W, 100–250 m, 20 Jun 1982, *G. Morillo et. al 9228* (MO, VEN); Ca 55 km SW of Machiques by air, Aricuaisa (Ariguaisa) - pie de Monte on Río Aricuaisa (Ariguaisa)., 09°36'N, 72°54'W, 100–250 m, 24 Mar 1982 - 25 Mar 1982, *Ronald Liesner & Angel González 13174* (MO, VEN).

**Spathiphyllum friedrichsthalii** Schott, Aroideae 1: 2, t. 4. 1853. NEOTYPE: Costa Rica, 27 July 1930, *Dodge & Goerger 9414* (F; isoneotype, MO).

Herbaceous, 1-3 m tall; **internodes** short, 3-5 cm diam.; **petiole** equalling or to 1.5 times as long as blade, 24-50(-87) cm long, priminently winged to middle or above, sometimes nearly to geniculum; the free part terete; geniculum (1.2-)1.7-2.7 cm long; **blades** oblique, typically narrowly elliptic to oblanceolate, varying to broadly elliptic, widest at or just above the middle, 25-48(-70) cm long, usually drying somewhat blackened (but see discussion), 8-17(-22) cm wide, acuminate-cuspidate at apex, cuneate or acute at base; **primary lateral veins** 12-20 pairs, arising at 60-75° angle. INFLORESCENCE held about as high as leaves; **peduncle** mostly 2-3 times as long as blade, 50-90(-127) cm long; **spathe** strongly naviculate, broadly oblanceolate to elliptic, 12-14(-33) cm long and (3.5-)4.5-8(-9.2) cm wide, typeically broadest above middle, apex long-acuminate-cuspidate, base cuneate and decurrent on peduncle 2.5-4.5(-6) cm; white or green; **spadix** 3-7(-9.8) cm long, stout, densely flowered, sessile or on stipe to 0.5(-1.0) cm long; perianth of separate segments; pistil greatly exceeding perianth; styple subcylindric, fluted, apically blunt, stigmantic area prominent; ovary (2-)3-locular, ovules superposed, varying from 8 to 5(-3) in each of the 3 locules, fruiting spadix roughened by the persistent styles; fruit obovoid, rostrate; seeds as many as the ovules or fewer, oblique-reniform to oblong in profile, the surface commonly smoothe or occasionally verruculose between the vertical rows of foveola, white at anthesis, later green in fruit; strongly fragrant, sweetly aromatic.

*Spathiphyllum friedrichsthalii* ranges from Honduras to Nicaragua, Costa Rica, Panama and Colombia growing usually at or near sea level but ranging to about 100 m, rarely to as much as 240 m. There are doubtful determinations of collections of this species from as far north as Mexico and Chiapas. Perret et al. 353 and Ibarra et al. 3895 from Mexico in Oaxaca both are reported to have both the spathe and spadix white, a combination which would make it appear to be S. friedrichstahlii but both have leaf blades which dry blackened with the leaf base markedly rounded. They perhaps represent a new species.

The species is characterized by its usually swampy habit with petioles equal to longer than leaf blades and sheathed from the middle of the blade to near the geniculum, the mostly greenish-drying blade which are narrowly acute at the base as well as by the prominently aromatic inflorescence with a white broad erect spathe and a cylindroid white spadix with prominently exserted pistils.

*Spathiphyllum friedrichsthalii* is most easiy confused with *S. phryniifolium* Schott which has a simar habit and similary shaped inflorescence. That species differs by occurring in the forest understory and by having a green spathe and spadix.

Some collections of the collections currently deemed to be S. friedrichsthahlii in Nicaragua differ by drying brown to yellow-brown in contrast to the blackish drying specimens from Costa Rica and Panama. See for example Nee &Vega 27876A, Rueda et al. 10160, Stevens 7569 & Stevens 8113. Alternatively Moreno 12348, Robleto 556, Téllez et al. 50149 all from the same Department of Zelaya dry the more traditional blackened color.

Villalobos 156 from Costa Rica in the Cantón Los Chiles is quite diminutive and is purported to have a yellow spathe and white spadix. It is unusually small for S. friedrichsthalii (50 cm tall) and bears futher investigation.

*Additional specimens seen:* COLOMBIA. Chocó?: Sheet is mixed; non-Aroid on left hand side. - , northern Colombia, Rio Truandó, 1858, *Schott, A.C.V. s.n.* (NY); *Wagner 275* (M). **Antioquia:** 18 km al sur de Chigorodo., 40 m, 3 Oct 1986, *Mercedes Palacio et al. 104* (HUA, MO, NY); Urabá, entre Mutatá y Pavarandocito, 80–90 m, Jan 1950, *L. Uribe U. 2038* (NY); Arteaga, 200 m, 13 Aug 1948, *Brahe et al. 18C701* (US); near Guapá, 53 km S of Turbo, 40 m, 24 Apr 1945, *Haught 4598* (US); Estación "Camilo Restrepo", 11 Apr 1955, *H. Daniel 4947* (US); Municipio Chigorodo, 07°37'N, 076°42'W, 50 m, 17 Dec 1990, *R.Callejas, et. al. 9712* (HUA). **Cauca:** Pacific coast, Rio Micay, Noanamito, 5 m, 26 Feb 1943, *Cuatrecasas 14217* (US); Margen izquierda del río Guapi. Departamento del Cauca. Estación del INCORA. Suelos arcilloso pesados y malos para agricultura. Zona de potreros (deforestada)., 8–15 m, 6 Jan 1976, *Cabrera.I R. 3823* (MO). Chocó: Weeds near power station at La Vuelta, Río Andaguedá. 5°29'N, 76°33'W. Alt. ca. 70 m., 5°29'N, 76°33'W, 70 m, 10 Dec 1983, *Adrian Juncosa 1586* (MO); Across river from Yuto, ca. 26 km S of Quibdo, swamp beside road., 40 m, 7 January 1979, *A. Gentry & E. Renteria A. 23750* (HUA, MO); Jurubida - Choco, Playa Peñas blancas, queb. Aguas Calientes., 05°03'N, 77°21'W, 0–75 m, 23 Dec 1991, *A. Gómez et al. 316* (HUA, MO); Docordó, Nothern mouth of Río San Juan. Just above tidal influence, swampy forest at edge of town., 04°15'N, 77°25'W, 20 m, 31 Mar 1986, *Al Gentry, E. Zardini, M. Monsalve & J.D. Caicedo 53846* (MO); Docordo, 10 m Potrero, 7 Sept. 1988, *Estrada, J. & E. Serrano 508* (COL); Along road between Playas de Oro and Tadó, Pueblorico (Risaralda to Quibdó Highway), 4.4 km W of Playa de Oro, 9.7 km E of Tapón, 16.5 km of Tadó. GPS coordinates., 05°18'18"N, 076°27'09"W, 240 m, 13 Aug 1997, *Thomas B. Croat & John F. Gaskin 80763* (AMAZ, HUA, M, JUAM, MO); Carretera Istmina-Yuto (Taló), unos 10 KM antes de llegar a Yuto, 5 Mayo 1977, *J. Santa & O. Arboleda 278* (COL, HUA); Hoya del Rio Atrato, Tagachí, 40–50 m, 9 Abril 1982, *E. Forero et al. 9074* (COL); *E. Forero et al. 9028* (COL); near Rio Atrato in the area of Quibdó, 400 m, 22 Jan 1949, *J. Araque Molina & Barkley 19Ch049* (US); Andagoya, 70–100 m, 20 Apr 1939 - 30 Apr 1939, *Killip 35076* (US); Area of Baudó, on right bank of river Baudó, about 22 km upstream of estuary, about opposite estuary of Quebrada Majagual. In wet, muddy soil immediately at water's edge, influenced by salt water during high tide., 5 m, 8 Feb 1967, *H.P. Fuchs & L. Zanella 21832* (COL, MO, US); *giraldo 316* (); Hoya del Rio San Juan. Río Bicordó, afluente del Rio San Juan. Alrededores de Noanamá., 04°42'N, 076°55'W, 20 m, 5 Apr 1979, *E. Forero et al. 4650* (MO, COL, HUA); Pacific coast, trail from Utria to Valle, 8 Jun 1950, *A. Fernandez 273* (COL, US); Río Atrato, 2-5 hours below Río Sucio, above Loma Teguerre., 16 May 1967, *James A. Duke 11003* (MO, US); Río Serrano, afluente del río Atrato, 4-6 km arriba de Guayabal., 50 m, 30 Apr 1975, *E. Forero 1388* (COL, MO); Zona de Urabá. Cerros del Cuchillo. Piedemonte Cuchillo Negro. Bosque primario perturbado., 100 m, 16 May 1988, *D. Cardenas 1895* (JAUM, MO); Zona de Urabá. Cerros del Cuchillo. Sector Camino de Corregimiento de Macondo al Cerro. Bosque primario perturbado., 19 Mar 1988, *Dayron Cárdenas 1386* (JAUM, MO); Upper Río Truandó, La Teresita., 500 f, 18 January 1974, *A. Gentry 9346* (); Río San Juan just above Istmina., 100 m, 14 Aug 1976, *A. Gentry & M. Fallen 17660* (MO); Hoya del Rio San Juan. Alrededores de Noanamá., 04°42'N, 076°55'W, 20 m, 4 Apr 1979, *E. Forero et al. 4511* (COL); Hoya del Rio San Juan. Río Tamaná, afluente del Río San Juan. Entre Primavera y Santa Rosa., 05°00'N, 076°44'W, 10 Apr 1979, *E. Forero et al. 4896* (MO); Municipio de Pizarro: Municipio de Pizarro, carretera Pié de Pepé-Berrecul. Km. 21-24., 17 Nov 1985, *J. Espina 1937* (COL, MO). Nuquí: Corregimiento Arusí: Along Río Arusí, vic. of village of Arusí., 05°35'47"N, 077°28'31"W, 0 m, 27 June 2000, *Thomas B. Croat & M.M. Mora 83770 (=Mora 387)* (MO, COL); Corregimiento de Arusí, Estación Biológica El Amargal., 05°34'N, 077°30'W, 50 m, Jul 1998 - Sep 1998, *M. Marcela Mora 25* (MO). Quibdo: corregimiento de Bebará, sector La Calle en el Rio Barbará, 12 Abril 1984, *W.A. Cordoba 424* (COL); Quibdo-Itsmina - , Carretera Quibdo-Itsmina, adelante de Yuto., 70 m, 9 Sep 1976, *E. Forero & R. Jaramillo 2746* (COL, HUA, MO). Narino: Hwy. Tumaco-El Diviso at Ichimura, 90 m, 8 April 1963, *M.L. Bristol 743* (GH); Isla de Gallo Pacifico, Causitta (sp.?), "Garza", 170 m, Feb 1942, *Dryander 2589* (US); Rio Mira: 20 m, 1899, *Langlasse 2* (P, US). Tumaco. Llorente: 8 Sept 1976, *O. de Benavides 594* (COL). Valle del Cauca: Vicinity of Bahia Málaga, Base Naval Málaga; Río Bongito., 04°00'44"N, 077°20'04"W, 40 m, 29 Jul 1997, *Thomas B. Croat & John F. Gaskin 80570* (COL, HUA, MO); **Cordoba:** Dagua Valley, 80–100 m, 6 May 1922 - 8 May 1922, *Killip 5034* (NY, US); Rio Calima (región del Chocó), La Trojita, 5–50 m, 19 Feb 1944 - 10 Mar 1944, *Cuatrecasas 16366* (US); Rio Raposo, Raposo Field Station, 0 m, 27 Mar 1963, *Bristol 700* (US); Córdoba., 50–100 m, 17 Feb 1939, *E.P. Killip & H. Garcia 33397* (F, MO, US); Sabaletas, km 29 on hwy. between Buenaventura and Cali, near Rio Sabaletas, 25 m, 4 Jun 1944 - 6 Jun 1944, *Killip & Cuatrecasas 38859* (US). Buenaventura: Corregimiento San Francisco, Vereda Calle Larga, Río Naya, Región Fitogeográfica del Chocó., 20 m, 3 Feb 1990, *W. Devia A., R. Bernal & E. Linares 2880* (MO, NY); Rio Dagua, 1844, *Lehmann 5361* (NY); Bajo Calima Region: Bajo Calima Region; Municipio Buenaventura along banks of Río Calima at end of road from Buenaventura, near village of Río Calima., 3°59'N, 76°58'W, 170 m, 4 Feb 1990, *Thomas B. Croat 70160* (MO); Mpo. Buenaventura: Community of San Isidro. In and around camp of INDERENA - FAO, vegetation on waste land and highly disturbed remnants of forest., 3°59'N, 76°57'W, 236 m, 15 Nov 1979 - 6 Dec 1979, *J. van Rooden et al. 353* (MO).

COSTA RICA. Cahuita park, road S of the information house in old cativo forest., 09°42'00"N, 082°48'00"W, 4 May 1983, *Gomez, L. et al. 20508* (CR, GH, MISSA, MO, WIS). **Alajuela:** Cantón de Los Chiles Ca. 40 km South of Los Chiles, just S of El Parque. Ca. 40 km South of Los Chiles, just S of El Parque. 10.55N 84.39W 40 m 24 August 1990 Garrett Crow & Dora Ingrid Rivera, 10°54'36"N, 084°39'00"W, 40 m, 24 August 1990, *Garrett Crow & Dora Ingrid Rivera 7621* (MO); 22 km NE of Quesada by air. 4 km W of Muelle San Carlos. Disturbed, seasonally dry primary forest. 10°28'N, 84°30'W., 10°27'36"N, 084°30'00"W, 9 Apr 1983, *Ronald Liesner 14148* (MO); Open swampy sites, cacao plantations and rice fields between Upala and San Antonio, just north of the Rio Zapote., 10°54'N, 085°00'W, 75 m, 14 Feb 1982, *Wm. Burger, Kerry Barringer & Jorge Gomez-L. 11793* (MO); rio Zapote: Canas - Upala, Along road between Cañas (Guanacaste) and Upala, near Río Zapote, 1.8-2.7 km south of Río Canalete. Disturbed margins of primary forest, 10°44'24"N, 085°04'12"W, 100 m, 25 Jun 1976, *Thomas B. Croat 36385* (MO). Los Chiles. R.N.V.S. Caño Negro: R.N.V.S. Caño Negro. Llanura de Guatuso., 10°53'24"N, 084°46'48"W, 40 m, 4 Apr 1995, *Villalobos, R. 157* (INB); R.N.V.S. Caño Negro; Llanura de Guatuso: R.N.V.S. Caño Negro; Llanura de Guatuso., 10°52'48"N, 084°46'48"W, 30 m, 8 Jul 1987, *Nelson Zamora & I. Chacón 1368* (CR, MO); R.N.V.S. Caño Negro; Llanura de Guatuso; Playuelas, camino a Los Chiles sobre carretera., 10°54'36"N, 084°45'36"W, 50 m, 21 March 1994, *Kattia Martinez & J.P. Martínez 315* (CR,INB,K,MEXU,MO,NY,USJ). **Heredia:** La Selva. Finca La Selva. OTS Field Station on Río Puerto Viejo just E of its junction with Río Sarapiqui, 10°25'12"N, 084°00'36"W, 100 m, *Wilbur 38839* (DUKE); La Selva., 10°25'12"N, 084°01'12"W, *Hammel 7834* (DUKE); La Selva. OTS Field Station on Río Puerto Viejo, just E of jct with Río Sarapiqui Holdridge Trail at 2100 m line, 10°24'36"N, 084°00'00"W, 100 m, *Wilbur 37403* (DUKE); Par. Nac. Braulio Carrillo. Estación Magsasay. Bosque primario., 10°24'00"N, 084°03'00"W, 200 m, 5 Jul 1990, *Gerardo Carballo 198* (CR, MO); La Selva Biological Station., 10°25'53"N, 084°00'13"W, 100 m, 27 May 1995, *R.L. Wilbur 64216* (); La Selva Biological Station., 10°25'53"N, 084°00'13"W, 100 m, 4 June 1995, *R.L. Wilbur & T. Mowbray 64376* (); Finca La Selva, the OTS field station on the Río Puerto Viejo just E of its junction with the Río Sarapiquí., 10°25'53"N, 084°00'13"W, 100 m, 26 July 1979, *M. H. Grayum 2089* (MO); Finca La Selva, the OTS field station on the Río Puerto Viejo just E of its junction with the Río Sarapiquí., 10°25'53"N, 084°00'13"W, 100 m, 22 September 1982, *Tim McDowell 188* (MO); La Selva, Puerto Viejo de Sarapiqui; voucher for pollination observation (insects collected) Visited by numerous Trigona bees and a large weevil. Sent to H. Stockwell., 26 Jul 1979, *Francisco Jimenez III* (MO); Finca La Selva, the OTS field station on the Río Puerto Viejo just E of its junction with the Río Sarapiquí., 10°25'53"N, 084°00'13"W, 100 m, 27 November 1982, *Tim McDowell 953* (MO(2)); Finca La Selva. Puerto Viejo. Swamp., 3 Apr 1969, *G.W. Frankie 77A* (MO). Sarapiqui. Puerto Viejo: Near Puerto Viejo along road near the Río Sucio., 10°27'36"N, 083°59'24"W, 20 m, 27 May 1976, *Thomas B. Croat 35690* (MO). **Limon:** Limon - Westfalia Road , Limón to Westfalia road., 10°07'48"N, 083°12'36"W, 0–5 m, 22 Feb 1984, *Khan et al. 1223* (BM, MO); Bribri: Ca. 1 mile NE of Bribri, ca. 40 miles SW of Limón, steep ravine above Río Catarata, 09°37'48"N, 082°48'36"W, 50–100 m, 12 Aug 1977, *Thomas B. Croat 43246* (MO); Barra del Colorado, N side, between town and ocean beach; 10°47'N, 83°35'W, elev 0-2 m; swamp forest; collected with O.M. Montiel, 10°46'48"N, 083°34'48"W, 0–2 m, 12 Sep 1986, *Warren Douglas Stevens 24217* (MO); Cantón de Limón 4 km S of city of Limón at aeropuerto; 4 km S of city of Limón at aeropuerto. Marsh with Typha and Cyperaceae (with a floating mat of vegetation). 9.57.00N 83.01.05W 1 m 7 August 1990 Garrett Crow & Dora Ingrid Rivera, 09°57'00"N, 083°00'36"W, 1 m, 7 Aug 1990, *Garrett Crow & Dora Ingrid Rivera 7501* (MO); Parque Nacional Tortuguero Estación Aguas Frías. Colecta en Sendero Real, en potrero y orillas de calle., 10°27'00"N, 083°34'48"W, 0 m, 30 November 1990, *José Solano 239* (MO); Sea shore vegetation and swampy forest behind the shore at Cahuita and along the new road between Cahuita and Limon., 09°57'N, 083°02'W, 0–10 m, 27 Nov 1975 - 30 Nov 1975, *Richard Baker & William Burger 9* (MO); Sea shore vegetation, swamp forest, cacao plantations and secondary growth along the Caribbean Coast between the Río Bananito and Cahuita., 09°53'N, 082°59'W, 0–10 m, 9 Feb 1977 - 14 Feb 1977, *Wm. Burger, Gary Visconti & Johnnie Gentry 10484* (MO); Forest near farmhouse at Finca Castilla., 30 m, 29 Jul 1936, *C.W. Dodge & V.F. Goerger 9499* (MO); La Bomba-Cahuita., 20 m, Mar 1983, *L.D. Gómez & R. Hampshire 20121* (MO); Camino a la Estrella., 0–5 m, 28 Feb 1958, *José J. Córdoba 457* (MO); Parque Nacional Tortuguero: Parque Nacional Tortuguero Estación Sierpe. 5 Km N de La Aurora, Guápiles. Límite sur del parque, junto al Río Sierpe. Bosque primario., 10°21'36"N, 083°30'36"W, 30 m, 12 Apr 1990, *Abelardo Chacón 826* (MO); Parque Nacional Tortuguero. Estación Aguas Frias. Colecta en Sendero Real, en potrero y orillas de calle., 10°27'00"N, 083°34'48"W, 0 m, 30 Nov 1990, *José Solano 239* (MO); Río Reventazón: Along Río Reventazón, below farmhouse. Finca Castilla. In Gynaerium sagittatum thickets, 10°13'12"N, 083°28'48"W, 30 m, 27 July 1936, *C.W. Dodge & V.F. Goerger 9414* (MO). Limon: H.P. Limoncito. Cuenca del Banano. A orilla de la carretera, frente al aeropuerto., 09°57'00"N, 083°01'05"W, 1 m, 8 Oct 1997, *Alex. Rodriguez & L.D. Vargas 2547* (MO). Talamanca: No protegida. Cuenca del Sixaola. Sixaola. Finca de la Asociación campesina ASACODE; sobre senderos aleños al albergue. Bosques intervenidos., 09°33'36"N, 082°38'12"W, 10 m, 4 Mar 1999, *Alex. Rodriguez & L.D. Vargas 4530* (MO); R.I. Talamanca; Valle de Talamanca: R.I. Talamanca. Valle de Talamanca. Amubri; Katsi., 09°30'36"N, 082°55'48"W, 100 m, 16 Jun 1994, *G. Gallardo 218* (INB, MO). **Puntarenas:** Reserva de la Biosfera de la Amistad: Reserva de la Biosfera de la Amistad. Cerca de Estación Biológica Las Alturas de Coton., 08°56'24"N, 082°49'48"W, 1455–2100 m, 4 July 1994, *Kress & Di Stilio 94-4129* (US).

ECUADOR. **Esmeraldas:** Capapa River. Near Playa Grande., 01 Aug 1967, *Játiva, C. & C. Epling 2067* (NY).

EL SALVADOR. **Ahuachapán:** San Francisco Menéndez, al pie de la quebrada Acosta., 13°49'N, 089°56'W, 450 m, 13 Dec 1995, *M. Sandoval & E. Sandoval 268* (MO). La Libertad. Municipio Antiguo Cuscatlán. Jardín Botánico La Laguna., 13°40'N, 089°15'W, 795–810 m, 21 Jul 1997, *M. Renderos 246* (MO).

HONDURAS. **Gracias a Dios:** Puerto Lempira. Rus-Rus. La Mosquitia, Caserío de Rus-Rus; vaguada del río Rus-Rus. Llanos de pinares y gramíneas. Nivel del mar, 14°42'N, 084°57'W, 0–5 m, 17 Jul 1977 - 21 Jul 1977, *Cirilo Nelson & Efraín Romero 4093* (MO).

MEXICO. **Chiapas:** Cintalapa. 10 km N of Cintalapa., 16°39'36"N, 093°00'00"W, 1150 m, 30 Jan 1990, *Stafford P.J. et al. 118* (MEXU). **Oaxaca.** Tuxtepec: Selva de Lonchocarpus., 14 Sep 1961, *Sousa, M. 906* (MEXU). Veracruz. Coatzacoalcos: Coatzacoalcos camino a Cardonas Tab. Asociacion de Vochysia hondurensis., 21°31'48"N, 101°41'24"W, Jul 1962, *J.M. Leon Cazares 116* (MEXU).

NICARAGUA. **Jinotega:** Reserva Natural Kilambé. Muncipio de Bocay, Comunidad Santa Teresa de Kilambé., 13°34'N, 085°39'W, 900–1100 m, 8 Enero 2001, *R. Rueda, D. Paguaga, H. Mendoza, A. Rivera, N. Toval y M. Garmendia 15543* ().Río San Juan. El Castillo: "El Castillo", lowland disturbed forest on sandy clay soils., 11°02'N, 84°24'W, 4 Sep 1990, *Salick, J. 7831* (MO); Río Indio, Caño Negro; bosque tropical muy húmedo, 11°02'N, 083°54'W, 0–5 m, 4 Dec 1982, *M. Araquistain 3420* (MO); "Buenos Aires" en la ribera del Río Sábalos; 11°02'N, 84°28'W, elev. aprox. 50 m., 11°02'N, 84°28'W, 50 m, 17 Feb 1984, *Pedro P. Moreno 22967* (MO); A lo largo del Río Indio, entre San Juan del Norte Nuevo y Viejo incluyendo el área de San Juan Viejo, 11°00'N, 84°05'W, 3 Jul 1994, *Ricardo Rueda, Edith Palma & Blas Hernández 1656* (MO, US); Reserva Indio-Maíz, a lo largo del caño el Tambor, ramal del río San Juan., 10°48'N, 083°58'W, 20–80 m, 11 Febrero 1996, *Ricardo Rueda, Alfredo Grijalva, Rolando Dolmus y Milton Castrillo 4063* (); Reserva Indio-Maíz, Municipio de San Juan del Norte, caño Negro, ramal del Río Indio., 11°02'N, 083°54'W, 30 Jul 1996, *Ricardo Rueda, Indiana Coronado & Norlan Tercero 4729* (GH, MO); Reserva Indio-Maiz, Municipio de San Juan del Norte, a lo largo de la ribera del Río Indio., 11°06'N, 083°58'W, 5–20 m, 19 Sep 1998, *Ricardo Rueda, Indiana Coronado, Walter Velásquez & Yader Rubi 8818* (MO); Municipio de San Juan del Norte, Reserva Indio-Maíz, entre San Juan del Norte y la Finca de Chepelión., 11°04'N, 083°54'W, 50 m, 8 Mar 2002, *R. Rueda, D. Paguaga, N. Toval & J. Masis 16871* (MO); Municipio San Juan del Norte: Municipio de San Juan del Norte, del delta 1 km al este y despues 2 km al norte en el bosque., 10°48'N, 083°46'W, 40–80 m, 8 Jul 1995, *Ricardo Rueda, Blas Hernández & Edith Palma 2700* (MO). **Zelaya:** Ca 13 km above Kururia; on road to San Jerónimo; evergreen forest., 14°40'N, 84°07'W, 200 m, 2 Mar 1979, *Pipoly, J. 3813* (MO); Bluefields: 10 km north of Bluefields. Alluvial forest along Río Escondido, 12°02'N, 083°46'W, 3 m, 9 Dec 1970, *W.E. Harmon & J.A. Fuentes 5094* (UMO 91750); Kururia: Colonia Kururia; tall evergreen rainforest and along careterra., 14°41'N, 84°04'W, 50 m, 3 Mar 1979, *Pipoly, J. 3913* (MO); Nueva Guinea, 11.46N 084.26.30W, 200 m, 11 Aug 1982, *M. Araquistain 3021* (MO); Punta Gorda, 11°30'N, 083°46'W, 0–2 m, 12 Feb 1982, *P.P. Moreno & J.C. Sandino 15213* (MO); Estación Experimental El Recreo, sureste de Río Mico, suroeste del campamento, sur de plantaciones de Hevea brasilensis, 12°09'N, 084°19'W, 20–30 m, 4 Dec 1981, *J.C. Sandino 1650* (MO); Río Punta Gorda, Atlanta, al SE de "La Richard"; 11°32'N, 84°05'W, elev. aprox. 30 m., 11°32'N, 84°05'W, 30 m, 14 Nov 1981, *P.P. Moreno & J.C. Sandino 13079* (MO); Caño Monte Cristo, "La Grupera"; 11°33'N, 87°48'W, elev. aprox. 10 m., 11°33'N, 83°48'W, 10 m, 4 Feb 1982, *P.P. Moreno & J.C. Sandino 14656* (MO); Monkey Point, 2 km al S sobre la costa, 11°36'N, 83°40'W, 1–5 m, 24 Oct 1981, *P.P. Moreno 12348* (MO); Experiment Station El Recreo on the Río Mico., 12°10'N, 84°18'W, 30 m, 1 Jun 1985, *Gerrit Davidse, A. Grijalva & M. Sousa 30735* (MO); Ciudad Rama, localidad de "San Agustín", al SE de Rama. Bosque húmedo tropical., 12°09'N, 84°12'W, 60 m, 22 May 1984, *Walter Robleto 556* (MO); A lo largo del río Punta Gorda, entre el poblado de Nueva Atlanta y la desembocadura del mismo, incluyendo el caño Masayon., 11°34'N, 84°28'W, 16 Feb 1994, *Ricardo Rueda, Blas Hernández, Indiana Coronado & Francisco Collantes 3098* (CM, MO); Río Punta Gorda, al este del la Corriente la Guitarrona., 11°31'N, 84°19'W, 24 Feb 1994, *Ricardo Rueda, Blas Hernández & Indiana Coronado 3413* (MO); 8.1-12.2 km beyond (above) Kururia on road to San Jerónimo; moderately tall evergreen forest on low hills., 14°39N'", 84°04W'", 50–150 m, 17 Apr 1978, *W.D. Stevens 7569* (MO); Bridge over (Caño) Shilam Wasito, ca. 6.0 km E of first suspension bridge E of Rosita on road to Bonanza; thicket along stream., 14°00'N, 84°31'W, 75 m, 24 Apr 1978, *W.D. Stevens 8113* (MO); Between 0.3 and 1.9 km N of Limbaika; swamps and dense swamp forest near Río Prinzapolka., 13°29'N, 84°13'W, 8–10 m, 26 Apr 1978, *W.D. Stevens 8213* (MO); Municipio de Nueva Guinea, Reserva Indio-Maiz, Río Pijibaye entre el caño Bijagua y el cerro Chiripa., 11°22'N, 084°01'W, 200–350 m, 15 Jan 1999, *Ricardo Rueda, Indiana Coronado, Oscar Caballero & Luis Ruiz 10160* (MO); Santa Marta; along small stream at NW edge of town., 14°18'N, 083°37'W, 5 m, 10 Mar 1981, *W.D. Stevens & P.P. Moreno 19633* (MO); SW of Bluefields, from cemetery along road to new airstrip; shrubby savanna to disturbed tall evergreen forest., 11°59'N, 083°46'W, 10–40 m, 2 Apr 1981, *W.D. Stevens 19746* (MO); West of Bluefields to Jackson Farm; forest,pasture and along brook [Seymour series], 12°00'N, 083°45'W, 0–100 m, 3 Mar 1971, *F.C. Seymour 4131* (MO); Monkey Point [Seymour series], 11°37'N, 083°40'W, 0 m, 5 Mar. 1971, *J.T. Atwood 4226* (MO); Swamp near Bilwaskarma [Seymour series], 14°44'N, 083°46'W, 0–30 m, 14 Mar. 1971, *J.T. Atwood 4676* (MO); Swamp near Bilwaskarma [Seymour series], 14°44'N, 083°46'W, 0–30 m, 14 Mar 1971, *E.B. Nelson 4682* (MO); Swamp near Bilwaskarma [Seymour series], 14°44'N, 083°58'W, 0–30 m, 14 Mar 1971, *F.C. Seymour 4701* (MO); Francia Sipri of France ya Sirpi, between Waspán and Puerto Cabezas; rainforest [Seymour series], 14°20'N, 083°39'W, 0–50 m, 15 Mar 1971, *E.B. Nelson 4823* (MO, ENAG, GH, SMU); El Bluff, Bluefields harbor [Seymour series], 12°00'N, 083°41'W, 10 m, 14 Nov 1973, *S.A. Marshall & D.A. Neill 6504a* (MO); Common in wet areas beside road to Rama near turn to El Recreo., 17 Jul 1975, *J.T. Atwood & D.A. Neill AN217* (MO); Municipio Rosita: Municipio Rosita: 15 km al NE del Poblado de Sahsa. (Bloque Kukalaya)., 14°12'N, 84°09'W, 50–100 m, 23 May 1994, *Ricardo Rueda & Alfredo Grijalva 1473* (MO, WU); Rio Punta Gorda: En barranca Punta Gorda, costa del Atlantico, Río Punta Gorda. Veg. Pantano de Manicaria saccifera, Acoelorrhaphe wrightii, Dalberia brownei y dunas costeras de Ipomoea pes-caprae., 16 Nov 1981, *O. Téllez, R. Riviere, J.C. Sandino, P.P. Moreno & L.C. Roth 5069* (MEXU, MO); En la Richard, Río Punta Gorda, El Diamante., 14 Nov 1981, *O. Téllez, R. Riviere, J.C. Sandino, P.P. Moreno & L.C. Roth 5019* (MEXU, MO). Atlántico Norte: Municipio de Bonanza, reserva de Bosawas, Comunidad de Musawas, suroeste de Musawas., 14°06'59"N, 084°43'49"W, 50–200 m, 20 Septiembre 2003, *I. Coronado & C. Gurdian 319* (HULE, MO); 10 km S of Rosita; open pasture, 13°50'N, 084°25'W, 50 m, 15 Jun 1978, *D.A. Neill 4483* (MO). Atlántico Sur: 0.5 km E of San Antonio on trail to and nearly reaching San Miguel; devastated tropical rain forest, now mostly pasture with scattered trees formerly of the forest, 11°45'N, 084°21'W, 180 m, 7 Sep 1983, *M. Nee & S. Vega 27876A* (MO); Estación Experimental "El Recreo", ca 1.5 km al SE de la estación; bosque húmedo tropical, 12°11'N, 084°18'W, 100 m, 10 enero 1985, *D. Soza, A. Grijalva & D. Ríos 367* (MO); Bluefields, S end of airport; tropical wet forest, second growth, 12°00'N, 083°46'W, 0–5 m, 13 Sep 1977, *D.A. Neill 2613* (MO); Panamerican, 12 km NE of La Cruz de Río Grande; tropical wet forest, 13°09'N, 084°06'W, 10 m, 10 Jun 1978, *D.A. Neill 4369* (MO); A lo largo del Río Yanten, Bahía de Bluefields; breñas pantanosas [WAG], 12°03'N, 083°48'W, 0–2 m, 2 Apr 1949, *A. Molina R. 2083* (); Tumarín, Río Grande; bosque guamil, 13°00'N, 084°22'W, 15 m, 25 Apr 1949, *A. Molina R. 2412* ().

PANAMA. Provincia de comarca Kunayala. Aligandi., 20 May 1989, *FLORPAN, Ana Jones, & Efrain Tejada 236* (MO). **Bocas del Toro:** Chiriqui Grande - Rambala, Along highway between Chiriqui Grande and Rambala., 10–100 m, 24 Jun 1986, *W.J. Kress et al. 86-2013* (MO, SEL); cultivated as Selby 91-0140, 25 June 1991, *Ingram 987* (SEL); Fortuna Lake - Chiriqui Grande , 8 km N of Continental Divide, 8°47'N, 82°12'W, 12 Mar. 1985, *Hampshire & Whitefoord 489* (BM); Along road between Gualaca and Chiriquí Grande; 3 km N of Punta Peña, 4.2 mi S of Chiriquí Grande; near sea level., 8°55'N, 82°09'W, 25 June 1987, *Thomas B. Croat 66809* (MO); Cerro Brujo. N of Cerro Brujo and E of Bahia de Green on the mainland. Moist tropical forest interspersed with Theobroma cacao and Musa sapientum, 5–80 m, 27 Feb 1989, *P.M. Peterson & C.R. Annable 7194* (MO, US); ca. 1 mi. S of Changuinola on the Changuinola River, banana plantation edge of river under Piper scrub, 19 April 1969, *Lazor, Tyson, Loftin 2662* (IBE); Isla San Cristobal. Bocatorito. In wet marsh with Araceae., 30 m, 3 Feb 1989, *P.M. Peterson & C.R. Annable 6569* (MO); Isla San Cristobal. E side of island just S of Pigeon Creek. Moist tropical swamp., 1–2 m, 12 Feb 1989, *P.M. Peterson & C.R. Annable 6802* (MO); Isla San Cristobal. 2 km NE of Bocatorito. Moist tropical swamp forest., 5 m, 6 Feb 1989, *P.M. Peterson & C.R. Annable 6671* (MO); Isla Colon. 1.5 km N of La Gruta. In or near wet meadow, open grassland (man-made)., 40 m, 29 Jan 1989, *P.M. Peterson 6420* (MO); Rambala and vicinity. Low muddy area., 08°53'N, 082°10'W, 50 m, 24 Apr 1988, *Sue A. Thompson 4920* (MO); Out along the road to the Bomba Almirante., 15 Oct 1965, *Kurt E. Blum 1351* (MO); Rio Cricamola, between Finca St. Louis and Konkintoë., 10–50 m, 12 Aug 1938 - 16 Aug 1938, *R.E. Woodson, Jr., P.H. Allen & R.J. Seibert 1912* (MO); Vicinity of Chiriqui Lagoon., 5 Nov 1940, *H. von Wedel 1506* (MO); *H. von Wedel 2979* (MO); Water Valley., 17 Sep 1940, *H. von Wedel 820* (MO); Vicinity of Chiriqui Lagoon., 4 Nov 1940, *H. von Wedel 1360* (MO); In moist swampy area along roadside in Bocas, Island of Bocas Del Toro., 23 Mar 1971, *L.H. Durkee 71-143* (MO); Along RR track near station at Milla 5., 27 Jul 1971, *Thomas B. Croat & Duncan M. Porter 16484* (MO); Chiriqui Grande: Chiriqui Grande, near road., 08°57'N, 082°07'W, 0 m, 16 Mar 1985, *R.J. Hampshire & C. Whitefoord 672* (LL, MO). Canal Area. Barro Clorado Island: Barro Clorado Island: Forest along shore of Gatun Lake, east of Laboratories, 09°09'49"N, 079°50'11"W, 0–10 m, 24 Nov 1948, *Ellsworth P. Killip 40037* (MO); Barro Colorado Island: Barro Colorado Island. Gross Point, 09°10'41"N, 079°50'37"W, 0–5 m, 2 Jul 1970, *Thomas B. Croat 11101* (MO); Barro Colorado Island. Western side of Gross point peninsula from point to S edge of central deep cove, 09°10'15"N, 079°50'40"W, 0–10 m, 25 Apr 1968, *Thomas B. Croat 5097* (MO); Barro Colorado Island, Gross Peninsula, 09°10'41"N, 079°50'37"W, 0–5 m, 10 Aug 1970, *Thomas B. Croat 11802* (MO); Barro Colorado Island, 09°09'N, 079°51'W, 10–100 m, 25 Nov 1938, *James Zetek 4320* (MO); Barro Colorado Islandi. Fred Miller Trail near light, 09°10'07"N, 079°51'07"W, 50 m, 13 Dec 1931, *Otis E. Shattuck 581* (MO); Orchid Island: Barro Colorado Island. Orchid Island, 09°10'12"N, 079°50'24"W, 0–10 m, 10 Aug 1970, *Thomas B. Croat 11807* (MO); Barro Colorado Island. Hidden Cove north of B.C.I., 12 Dec 1981, *Robert J. Schmalzel 226* (MO); Barro Colorado Island. Shore near lighthouses., 22 Feb 1932, *R.H. Woodworth & P.A. Vestal 656* (MO); Barro Colorado Island. Sand and silt deposit at end of Fuertes Cove to 2 m., 1 May 1968, *Thomas B. Croat 5258* (MO); Barro Colorado Island. Shoreline S of Colorado Point., 11 Feb 1969, *Thomas B. Croat 7860* (MO); Barro Colorado Island. Shoreline south of Gross Point., 11 Jun 1970, *Thomas B. Croat 10837* (MO); Northwestern part of Canal Zone (area west of Limon Bay, Gatun Locks and Gatun Lake)., 11 Nov 1955, *Ivan M. Johnston 1651* (MO); Mojinga Swamp near mouth of R. Chagres., 0–1 m, 11 Mar 1935, *P.H. Allen 861* (MO); Vicinity of Juan Mina: hill at Canal Zone boundary., 27 Jul 1940, *H.H. Bartlett & T. Lasser 16583* (MO); Barro Colorado Island: Barro Colorado Island. Hydrilla Cove, 09°09'00"N, 079°50'24"W, 0–10 m, 21 Nov 1981, *Robert J. Schmalzel & T.M. Aide 103* (MO); Barro Colorado Island. Fuertes Cove, 09°10'02"N, 079°51'11"W, 0–10 m, 24 Sep 1968, *Thomas B. Croat 6405* (MO); Barro Colorado Island. Shoreline of large cove leading to Fuertes House, 09°10'02"N, 079°51'11"W, 0–10 m, 10 Oct 1968, *Thomas B. Croat 6827* (MO); Shoreline from edge of 8 rear light clearing to front light; along south side of island opposite 8 front light., 09°10'10"N, 079°51'15"W, 0–5 m, 19 Apr 1968, *Thomas B. Croat 4951* (MO); Barro Colorado Island, cove at Fuertes House, 09°09'17"N, 079°50'53"W, 0–5 m, 1 May 1968, *Thomas B. Croat 5233* (MO); Barro Colorado Island. Edge of cove near Fuertes House., 09°09'17"N, 079°50'53"W, 0–5 m, 30 Apr 1968, *Thomas B. Croat 5224* (MO); Orchid Island: Barro Colorado Island. Orchid Island, 09°10'12"N, 079°50'24"W, 0–10 m, 7 Aug 1970, *Thomas B. Croat 11766* (MO). **Chiriqui;** 0.5 mi. N of Nueva California, rocky swampy area, 1350 m, 23 Jan. 1968, *McDaniel 10238* (IBE); Chagres, Isthmus of Panama., Mar 1850, *A. Fendler 426* (MO); **Colon**: Portobelo/distrito de Santa Isabel, Costa Arriba., 2 Febrero 1995, *FLORPAN, A. Espinosa, P. Solís, & F. Santamaria 1780* (MO); Lago Gatún, caño Ciricito., 09°00'56"N, 080°05'03"W, 40 m, 20 Aug 2001 - 21 Aug 2001, *Jorge Mendieta 6-18* (MO); Costa Arriba, San Antonio., 14 Noviembre 1990, *Florpan et al. 531* (MO); La Macha., 08°59'04"N, 080°32'35"W, 20 m, 18 Agosto 2001, *Jorge Mendieta 10-84* (MO); Portobelo - Nombre de Dios, Forest along Portobelo-Nombre de Díos road, 10 km W of Nombre de Díos. Tropical wet forest., 09°32'N, 079°32'W, 0–20 m, 24 June 1982, *Sandra Knapp & J. Mallet 5680* (MO); Near Portobello at bridge over Rio Buenaventura., 27 Aug 1970, *Helen Kennedy 465* (MO); María Chiquita, E of Río Piedras toward Portobelo. Thickets near beach., 9 Aug 1967, *J.D. Dwyer & J.H. Kirkbride, Jr. 7809* (MO); Mosquera, forest., 15–50 m, 17 Sep 1974, *P.J.M. Maas & S. Mori 1750* (MO); Vicinity of Rio Indio on road from Portobelo to Nombre de Dios., 50 m, 23 Mar 1976, *Thomas B. Croat 33645* (MO); Thickets and pasture along Rio Viejo, between the Portobelo road and Quebrada Ruiz, 4 km NE of Puerto Pilon., 5 m, 29 Sep 1973, *M. Nee 7180* (MO); Strand vegetation along beach ca 3 mi. SW of Colon; growing in sandy area., 7 Apr 1971, *Thomas B. Croat 14165* (MO); Swamp Forest and bordering tierra firma, ca 0.5 km from the Rio Buenaventura, near Potobelo., 30 Jan 1973, *Helen Kennedy & Sally Gra 2223* (MO); 6 miles south of Portobello., 17 Jul 1970, *Thomas B. Croat 11404* (MO); Near Puerto Pilón; swampy pastures., 27 Jul 1969, *Robert L. Dressler 3696* (MO); Cocle del Norte, forest on hills along river., 0–100 m, 23 Aug 1978, *Barry Hammel 4450* (MO). **Darien**: Rio Cocalito. Up river and side stream on left hand side. High forest., 19 Feb 1982, *C. Whitefoord & A. Eddy 252* (MO); El Real: Tuira - Alconorqui, Alconorqui swamp on Río Tuira, ca. 3 mi NW of El Real, 08°05'N, 077°45'W, 15 Jun 1962, *James A. Duke 4819* (MO). **San Blas**: Lower Cangandi River from the ocean to the village of Cangandí. 9°27'N, 79°8'W; elev. 20 m. Collected with S. Charnley, H. Herrera & R. Paredes., 9°27'N, 79°08'W, 20 m , 25 Jan. 1985, *Greg de Nevers 4629* (MO); Rio Cangandi, pueblo Cangandi, camino hacia Mandi Yala., 09°27'N, 079°07'W, 30 m, 15 Jun 1987, *Heraclio Herrera 183* (MO); Playon Chico: Camino de Suedi a Kariadi, tierra firme frente a Playón Chico, subiendo por Río Ailingandi, 9°20'N, 78°13'O, 0–50 m, 10 Dec 1989, *H. Herrera & Ovidio Guillen 662* (MO). Puerto Obaldia: Vicinity of Puerto Obaldia., 24 Jun 1975, *S. Mori 6872* (MO).

CARIBBEAN. **Cuba**. Santa Clara Province: Soledad, Aug 1940, *Gunckel s.n.* (MU).

Cultivated plants: Coto Brus. Las Cruces Biological Station. Wilson Botanical Garden, San Vito Java., 08°47'24"N, 082°57'00"W, 1275 m, 26 June 1994, *Kress & Alverson 94-3753* (US);

**Spathiphyllum fulvovirens** Schott, Oesterr. Bot. Z. 8: 179. 1858. TYPE: Panama, 9 Apr. 1941, *von* *Wedel 2198* (F).

Terrestrial, 0.7-1.25 m tall; **internodes** short, 1.5-(1)3–4 cm diam.; **petioles** to 74 cm long, sheathed (0.14)0.25-0.61 its length, free part more or less terete, slightly thicker than broad, sheath 8-35.5 cm long, soon brown and dried but mostly persisting; free part subterete, thicker than broad, weakly glossy; geniculum sulcate, (1-)1.5-3 cm long, flat; **blades** oblique, typically ovate to ovate-elliptic, (22.5-) 35-45 cm long, (9.7-)17-20 cm wide, 1.9-2.7 times longer than wide, 0.55-0.93 times as long as petioles, acuminate at apex, (acumen 1.5-3.5 cm long), obtuse to subrotunded at base, thin to subcoriaceous, dark green and weakly glossy above, much paler and matte below; major veins deeply sunken above; **midrib** sunken and slightly paler above, thicker than broad at base below, convex toward apex; **primary lateral veins** (13)20–30 pairs, arising at 60-70° angle, narrowly quilted-sunken above, convex-pleated, darker, and prominent below; minor veins distinct below. INFLORESCENCE held above leaves; peduncle 41-77 cm or more long; **spathe** 9.2-14(-20) cm long, 2-3(-5.5) cm wide, +/- oblong to lanceolate or oblanceolate , narrowly long-acuminate at apex, clasping and not decurrent at base, erect-spreading to spreading, yellow-green to white and matte inside, pale to medium green and weakly glossy outside, erect, then sometimes recurled downward becoming pale green in fruit; **spadix** 6.8-11.5 cm long, smooth on short stipe 0.3-0.8 cm long; perianth of separate segments;dark green to purplish-violet to brownish purple, yellowish-white in fruit; mammiliform at anthesis becoming truncate in fruit with the stigma dark, stigma protruding; pistils obpyramidal, white to pale green, acute, truncate, flat at apex, becoming dark green and raised; ovary 3-locular; style barely exserted. INFRUCTESCENCE purplish violet with whitish pistils. Berries white, at least at base.

*Spathiphyllum fulvovirens* ranges from Costa Rica to Panama and Colombia at sea level to 700(1550 m) [confirm elevation]

The species is characterized by its typically weakly sheathed yellow-brown-drying petioles, narrowly ovate prominently long-acuminate blades which dry typically grayish above and yellow-green below as well as by the narrow green spreading clasping spathe and the stipitate narrow green spadix with white pistils with a barely exserted style.

It is not easily confused with other species but would be closest to *S. kalbreyeri* Bunting and *S. patinii* Bunting, both of which differ in having the spathe usually white on the inner surface. Spathiphyllum kalbreyeri also differes by having typically smaller and proportionately narrower leaf blades while *S. patinii* also differs in having the spathe markedly narrowed at base and only weakly attached to the peduncle.

*Additional specimens seen:* COLOMBIA. **Antioquia**: cerca de Porcesito en el valle del Rio Medellín, 1100 m, 19 May 1946, *Hodge 6870* (US); Vic Planta Providencia, 07°13'N, 075°03'W, 400–700 m, 10 July 1976, *John D. Shepherd 479* (HUA); Vic. of Planta Providencia, 28 km SW of Zaragoza. Valle of Río Anorí in areas surrounding the confluence of Quebrada La Tirana and Río Anorí, App. 3 km upriver from Planta Providencia, 400–700 m, 3 Apr 1977, *Alverson W.S. et al. 335* (COL). Amalfi: 8-15 Kms. de Amalfi a Rumazon, sitios "Salazar" y "La Playa", 06°56'N, 075°04'W, 1550 m, 28 Sept 1988, *Betancur, R. Roldan, O. Escobar 787* (HUA). Puerto Berrío: Límites con la vereda el Prodigio (Mpio. San Luis). Vereda Serranías. Bosque primario perturbado., 6°6'N, 74°48'W, 300–500 m, 27 Sep 1990, *D. Cardenas et al. 3018* (JAUM, MO). San Luis: Ecoparque El Castellón., 1300–1500 m, 9 Nov 1995, *R. Fonnegra et al. 5704* (HUA, MO, NY); vereda La Estrella, 12 km NE of San Luis on road to Granada, 1550 m, 7 May 1989, *D.C.Daly & J. Betancur 5829* (HUA); 10 km S. of the entry to San Luis, on the way to Medellín-Bogotá, a 300 m., margen derecha de la carretera Quebradas-Naranjales y la Cristalina., 05°55'N, 074°50'W, 420–460 m, 24 Jun 1987, *R. Callejas et al. 4162* (HUA, MO); Parque ecologico El Castellon, 06.02N 075W, 1300 m, May 1999, *F.Alzate y Estudiantes IAA San Luis 702* (HUA); Vereda Manizales, 06.05N 075W, 1440 m, 26 June 1987, *R. Callejas, et. al. 4315* (HUA, NY). Turbo: Carretera Tapón del Darien. Sector Río Leon-Lomas Aisladas, km 36. bosque primario perturbado, suelo muy húmedo., 20 m, 28 Dec 1983, *J. Brand & M. Escobar 795* (JAUM, MO). Tarazá: Corregimiento El 12, Vereda Barroblanco, Quebrada Purí. Km N.O. de Medellín., 07°25'N, 075°20'W, 450 m, 17 May 1987, *Ricardo Callejas, J. Betancur & F.J. Roldán 3627* (HUA, NY). **Chocó**: Río Mecana, ca 10 km E of Mecana. Mature forest on lateritic soil on ridge top., 06°15'N, 77°25'W, 100 m, 7 Mar 1983, *Al Gentry & Adrian Juncosa 41079* (COL, MO); Mecana. Quebrada Resaquita. Primary forest. Elev. 50 m. 6°16'N, 77°21'W., 6°16'N, 77°21'W, 50 m, 13 Jan 1984, *Adrian Juncosa 1895* (MO); Along highway 60 between Quibdó and Bolívar, 9 km W of bridge at Tutunendo. GPS coordinates., 05°43'52"N, 076°36'19"W, 50 m, 16 Aug 1997, *Thomas B. Croat & John F. Gaskin 80918* (MO); rain forest on hill N of Alto Curiche, 300 m, 19 May 1967, *James A. Duke & J. Idrobo 11219* (NY); hills behind logging camp below first rapids on Río Truandó, 40–200 m, 15 June 1967, *James A. Duke 13307* (NY). Nuquí: Corregimiento de Arusi, Estación Biológlica EL AMARGAL, 05°34'N, 077°31'W, January 1999 - April 1999, *Jorge Jácome 422* (COL). San Jose del Palmar. Rio Torito: 630–730 m, 13 March 1980, *Forero E. et al. 7235* (COL). Putumayo: Pto Porvenir, Nov 1940, *Cuatrecasas 10665* (COL). Santander. Barrancabermeja: Magdalena Valley, between Sogamoso and Carare Rivers, Amorilla creek, 150 m, 1 Jul 1936, *Oscar Haught 1895* (US). **Valle del Cauca**: Along road from Queremal to Buenaventura, 15.3 km W of junction to Queremal. Along Río Ningaño. GPS coordinates., 03°32'00"N, 076°45'00"W, 730 m, 12 Jul 1997, *Thomas B. Croat & John F. Gaskin 79724* (CUVC, MO). **Buenaventura**. Bajo Anchicaya: Bajo Anchicayá, Levantamiento. Parcela, 03°45'N, 76°50'W, 300 m, 19 Oct 1989, *A. Gentry, O. Rangel & Curso Postgrado-Botánico 68501* (COL, MO).

COSTA RICA. **Alajuela**: San Carlos. Cuenca del San Carlos. Boca Tapada. Finca San Jorge., 10°43'12"N, 084°11'24"W, 100 m, 10 Feb 1996, *Alex Rodríguez Estrada 1069* (MO). San Ramon. R.F. San Ramón; Cordillera de Tilarán. Camino al Volcán Muerto, Bosque Primario., 10°12'36"N, 084°36'00"W, 1100–1200 m, 11 May 1993, *Flor Araya, Morales, Guzmán, Segura & Gutiérrez 292* (CR, INB, MO). **Heredia:** Tirimbina, in tropical wet forest., 10°24'00"N, 084°06'00"W, 700 f, 29 May 1971, *George R. Proctor 32119* (LL, MO); N of Puerto Viejo 10 km down road, then 7-8 km W in forest, 10°31'12"N, 084°05'24"W, 2 Feb 1983, *Garwood et al. 915* (BM); La Selva: Finca La Selva. OTS Field Station on Río Puerto Viejo just E of its junction with Río Sarapiqui, 10°25'12"N, 084°00'36"W, 100 m, *Wilbur 37992* (DUKE); *Wilbur 37406* (DUKE); *Wilbur 37389* (DUKE); La Selva., 10°25'12"N, 084°01'12"W, *Folsom 10034* (DUKE); Río Sarapiquí: Río Sarapiquí. W of San Jose across Río Sardinal, edge of Lomas Sardinal, 10°29'24"N, 084°03'00"W, 100 m, 4 Feb 1983, *Garwood et al. 1051* (BM); *Garwood et al. 1052* (BM); N base of hills to the S of the Río Sarapiquí, opposite Chilamate. 10°27'N, 84°04'W. Elev. 60-100 m., 10°27'00"N, 084°03'36"W, 60–100 m, 1 June 1985, *Michael H. Grayum, Tom Ray & Brian Jacobs 5310* (MO); Parque Nacional Braulio Carrillo Estación Magsasay, bosque secundario., 10°24'00"N, 084°03'00"W, 200 m, 5 July 1990, *Daniel Acevedo en el curso II de Parataxónomos 106* (MO); Near La Selva Biological Station., 100 m, 1 June 1985, *Brian Jacobs, M. H. Grayum & Tom Ray 3210* (DUKE); La Selva Biological Station., 10°26'00"N, 84°01'00"W, 50 m, 30 August 1996, *Thomas B. Croat 78729* (AAU, CAS, CM, COL, INB, K, MEXU, MO, NY, SEL); Zona Protectora. Northern slopes Volcan Barba, between Río Peje and Río Guacimo. Along Quebrada Cantarana, downstream from base camp located at abandoned sawmill. Associated with Heliconia pogonantha, Piper auritum, Colubrina and Myriocarpa. In forest along creek., 190 m, 13 Jan 1983, *M.H. Grayum & G. Schatz 3095* (DUKE); El Uno Farm in remnant woods. La Virgen de Sarapiquí., 220 m, 8 May 1970, *Roy W. Lent 1939* (MO); Chilamonte: San Jose - Puerto Viejo, Along road between San José and Puerto Viejo, vicinity of Chilamante, 11.6 mi N of Cariblanco. Disturbed virgin forest west of road, along steep slopes and flat, marshy creek bed, 10°27'N, 84°05'W, 100 m, 1 Oct 1987, *Thomas B. Croat 68378* (MO); La Selva: O.T.S. La Selva Reserve, 10°26'N, 84°01'W, 15 Apr 1986, *Thomas B. Croat 61223* (MO); La Selva Biological Station., 10°25'53"N, 084°00'13"W, 100 m, 28 June 1984, *Brian Jacobs 2620* (DUKE); La Selva Biological Station., 10°25'53"N, 084°00'13"W, 100 m, 16 May 1985, *R. L. Wilbur 36922* (DUKE); La Selva Biological Station., 10°25'53"N, 084°00'13"W, 100 m, 20 May 1985, *R. L. Wilbur 37141* (DUKE); La Selva Biological Station., 10°25'53"N, 084°00'13"W, 100 m, 10 February 1981, *James P. Folsom 8856* (DUKE); La Selva Biological Station., 10°25'53"N, 084°00'13"W, 100 m, 4 December 1979, *R.L. Wilbur 28164* (DUKE); L.R. Holdridge's Finca La Selva, Rio Puerto Viejo at Quebrada El Sura and Quebrada El Salto, ca. 1 mi. above junction with Rio Sarapiqui, 10°25'12"N, 084°00'00"W, 350 f, 1961, *Rossbach, G. 3716* (GH); La Selva Biological Station. The bank of the Río Salto on the CCL near the new metal bridge., 10°25'12"N, 084°00'36"W, 100 m, 11 February 1998, *R.L. Wilbur & Gerry Moore 70035* (DUKE); Finca La Selva, the OTS field station on the Río Puerto Viejo just E of its junction with the Río Sarapiquí., 10°25'53"N, 084°00'13"W, 100 m, 28 June 1981, *B. Hammel 10927* (); Finca La Selva, the OTS field station on the Río Puerto Viejo just E of its junction with the Río Sarapiquí., 10°25'53"N, 084°00'13"W, 100 m, 9 April 1982, *B. Hammel 11632* (LSCR); Finca La Selva, the OTS field station on the Río Puerto Viejo just E of its junction with the Río Sarapiquí., 10°25'53"N, 084°00'13"W, 100 m, 18 September 1982, *Tim McDowell 141* (MO); Finca La Selva, the OTS field station on the Río Puerto Viejo just E of its junction with the Río Sarapiquí., 10°25'53"N, 084°00'13"W, 100 m, 18 October 1982, *Tim McDowell 504* (MO); Finca La Selva., 27 Feb 1986, *F. Almeda, B. Anderson & N.J. Friedman 5102* (MO); Finca La Selva, the OTS Field Station on the Río Puerto Viejo just E of its junction with the Río Sarapiquí., 100 m, 21 March 1983, *Isidro A. Chacón G. 527* (MO); Finca La Selva., 21 March 1983, *I.A. Chacón G. 527* (MO); Finca La Selva, the OTS field station on the Río Puerto Viejo just E of its junction with the Río Sarapiquí., 10°25'53"N, 084°00'13"W, 100 m, 20 November 1982, *Tim McDowell 837* (MO); Finca La Selva (field station of the Organization for Tropical Studies)., 1 July 1978, *K.F. Grove 4* (MO). Sarapiqui: Finca La Selva, OTS Field station on Rio Puerto Viejo, just E of its junction with Rio Sarapiquí., 10°25'12"N, 084°00'36"W, 100 m, 22 Jun 1995, *Whitson, M.K. 235* (DUKE); La Selva Field Station, Puerte Viejo de Sarapiquí, 10°25'12"N, 084°00'36"W, 100 m, 3 Jan 1978, *Thomas B. Croat 44222* (MO); P.N. Braulio Carrillo; Llanura de San Carlos: P.N. Braulio Carrillo; Llanura de San Carlos. Río Peje; Estación Magsasay., 10°24'00"N, 084°03'00"W, 200 m, 14 January 1994, *Ricardo Rueda, B. Hammel, Q. Jiménez & E. Lépiz 1396* (CR, MO). **Limon**: Hills 2 airline km SSE of Islas Buena Vista in the Río Colorado, 14 airline km SW of Barra del Colorado; Premontane wet forest on low hills., 10°39'36"N, 083°39'36"W, 10–120 m, 13 Sep 1986 - 14 Sep 1986, *Gerrit Davidse & Gerardo Herrera 31033* (MO); Parque Nacional Tortuguero Estación Agua Fría: 8 Km al Sureste. Lomas de Sierpe. Bosque primario., 10°27'00"N, 083°33'36"W, 70 m, 3 February 1988, *Rafael Robles 1614* (CR, MO); Hacienda Tapezco-Hacienda La Suerte, 29 air km W of Tortuguero. Primary rainforest in an area being selectively logged. Area of low hills and mounds, a few small streams., 10°30'N, 083°47'W, 40 m, 15 Aug 1979, *Christopher Davidson & Julian Donahue 8331* (MO); Hacienda Tapezco-Hacienda La Suerte, 29 air km W of Tortuguero. Primary rainforest in an area being selectively logged. Area of low hills and mounds, a few small streams., 10°30'N, 083°47'W, 40 m, 7 Mar 1978, *Christopher Davidson, Amy Kaminer, L. Middleton, & B. Rasnow 6774* (MO). Pococi: Cantón de Pococí Lomas de Sierpe. Aprox. 20 km al noreste de Guácimo; bosque al lado del camino., 10°21'00"N, 083°34'48"W, 50 m, 3 June 1989, *Barry Hammel, Randy Evans & Michael Grayum 17429* (MO); R.N.F.S. Barra del Colorado. Llanura de Tortuguero. Sector Cororí., 10°35'24"N, 083°48'00"W, 100 m, 21 Nov 1990, *Elías Rojas 169* (MO).

NICARAGUA. **Río San Juan:** Sobre el Río San Juan, a lo largo del Río Bartola., 10°58'N, 084°40'W, 50–200 m, 12 Julio 1994, *Ricardo Rueda, Blas Hernández y Edith Palma 1950* (MO); Reserva Indio-Maiz, Municipio de el Castillo, a lo largo del caño el Pavon, a 3 km de sa desembocadura en el Río Bartola., 11°01'N, 084°16'W, 1 Enero 1997, *Ricardo Rueda, Indiana Coronado, Oscar Aráuz y Franklin Flores 5220* (MO); Reserva Indio-Maíz, Municipio de San Juan del Norte, sendero de cazadores, al lado sur de la Laguna de Silico., 10°51'N, 083°46'W, 2 Agosto 1996, *Ricardo Rueda, Indiana Coronado y Norlan Tercero 4878* (MO); *Ricardo Rueda, Indiana Coronado y Norlan Tercero 4879* (MO); Reserva Indio-Maíz, Municipio de el Castillo, 3 km al norte de la desembocadura del Caño Chontaleño., 11°05'N, 084°15'W, 13 Febrero 1997, *Ricardo Rueda, Indiana Coronado, Oscar Aráruz & Franklin Flores 5742* (MO); Reserva Indio-Maíz, Municipio de el Castillo, Cerro el Diablo., 11°01'N, 084°12'W, 400–609 m, 6 Enero 1997, *Ricardo Rueda, Indiana Coronado, Oscar Aráuz & Franklin Flores 5454* (MO); Municipio del Castillo. Estación Biológica Bartola, Sobre el rio Bartola a 3 kilometre de le desembocodura., 10°58'00"N, 084°19'50"W, 50–100 m, 27 julio 1998, *Ricardo Rueda, Indiana Coronado & Walter Velasquez 8213* (MO); Reserva Indio-Maiz, Municipio de San Juan del Norte, Río Indio, Cerro Canta Gallo., 11°04'N, 083°51'W, 150–200 m, 15 septiembre 1998, *Ricardo Rueda, Indiana Coronado, Walter Velásquez y Yader Rubi 8612* (); Reserva Indio-Maiz, Municipio de San Juan del Norte, Río Indio, Cerro Canta Gallo., 11°04'N, 083°51'W, 150–200 m, 16 septiembre 1998, *Ricardo Rueda, Indiana Coronado, Walter Velásquez y Yader Rubi 8642* (); Reserva Indio-Maiz, Municipio de San Juan del Norte, Río Indio, Cerro Canta Gallo., 11°04'N, 083°51'W, 150–200 m, 17 septiembre 1998, *Ricardo Rueda, Indiana Coronado, Walter Velásquez y Yader Rubi 8714* (); Municipio el Castillo, Reserva Indio-Maiz, Cerro Bolivar., 10°51'N, 084°10'W, 150–280 m, 30 noviembre 1998, *Ricardo Rueda, Franklin Flores, Walter Velásquez y Oscar Caballero 9306* (); Municipio de San Juan del Norte, Reserva Indio-Maíz, entre San Juan del Norte y la Finca de Chepelión., 11°04'N, 086°54'W, 50 m, 8 Marzo 2002, *R. Rueda, D. Paguaga, N. Toval & J. Masis 16885* (MO). **Zelaya**: Caño Montecristo, orillas del caño en Las Benitas y las faldas del Cerro Las Nubes, 11°37'N, 083°52'W, 10–60 m, 6 febrero 1982, *P.P. Moreno & J.C. Sandino 14993* (MO); *P.P. Moreno & J.C. Sandino 14996* (MO); Municipio de Nueva Guinea, Reserva Indio-Maiz, Río Pijibaye entre el caño Bijagua y el cerro Chiripa., 11°22'N, 084°01'W, 50–200 m, 13 enero 1999, *Ricardo Rueda, Indiana Coronado, Oscar Caballero y Luis Ruiz 10010* (); Municipio de Nueva Guinea, Reserva Indio-Maiz, Río Pijibaye entre el caño Bijagua y el cerro Chiripa., 11°22'N, 084°01'W, 200–350 m, 15 enero 1999, *Ricardo Rueda, Indiana Coronado, Oscar Caballero y Luis Ruiz 10224* ().

PANAMA. **Bocas del Toro**: Fortuna Dam region. Forested slope, near Chiriquí Grand., 8°45'N, 82°15'W, 200 m , 18 Jan. 1986, *Gordon McPherson 8075* (MO); Road from Fortuna Dam to Chiriquí Grande. Forested slopes., 8°50'N, 82°10'W, 400 m, 25 April 1986, *Gordon McPherson 9022* (MO); East 1.5 mi off road from divide to Chiriquí Grande, 250-300 m, forest and roadside., 250–300 m, 24 June 1986, *W.G. D'Arcy 16390* (MO); Apr 1941, *H. von Wedel*  (GOET, MO); Mar 1986, *McPherson 8584* (MO); Fish Creek, vicinity of Chiriqui Lagoon., 9 Apr 1941, *H. von Wedel 2198* (MO); Punta Peña, vicinity of Chiriquicito. Rain forest., 1000 f, 7 Jun 1967, *W.H. Lewis, N. Escobar, B. MacBryde, R.L. Oliver & J.E. Ridgway 2156* (MO); *W.H. Lewis, N. Escobar, B. MacBryde, R.L. Oliver & J.E. Ridgway 2157* (MO); Entre sitio de presa y Valle La Esperanza., 30 Mar 1980, *Luis Carrasquilla & R. Mendoza 1376* (MO); Chiriqui Grande: Chiriqui Grande - Fortuna, Along road between Chiriquí Grande and Fortuna, 13.2 mi W of Chiriquí Grande, 8°45'N, 82°10'W, 310 m, 9 March 1985, *Thomas B. Croat & Michael H. Grayum 60143* (MO); Fortuna Dam: Along road from Fortuna Dam towards Chiriquí Grande 10 miles from continental divide, 1 mile along side road. Slopes c. 120 m, 8°55'N, 82°10'W, 120 m, 5 Mar 1986, *Gordon McPherson 8584* (MO); Punta Pena: Punta Peña, vicinity of Chiriquicito. Rain forest., 1000 f, 7 June 1967, *W.H. Lewis, N. Escobar, B. MacBryde, R.L. Oliver & J.E. Ridgway 2160* (GH). **Cocle**: Penonomé-Coclecito, 5.6 mi N of Llano Grande, along Río Cascajál 5.6 mi N of Llano Grande, 1.4 mi N of Continental Divide., 8°46'N, 80°27'W, 150 m, 11 Sept. 1987, *Thomas B. Croat 67486* (MO); Alto Calvario Region, vicinity of old saw mill works, 4.5 mi N of El Copé; 2.5 mi N of Escuela Barrigón., 8°38'N, 80°36'W, 580–740 m, 12 Sept. 1987, *Thomas B. Croat 67492* (MO); Alto Calvario above El Copé, ca 6 km N of El Copé; atlantic slope, along trail through forest W off old lumber trail which leads down to Las Ricas, Limón and San Juan., 08°39'N, 080°36'W, 23 June 1988, *Thomas B. Croat 68799* (MO); Along Llano Grande to Coclesito road, above Cascajal, near divide, c. 8°42'N, 80°28'W. Forest. c. 500 m., 8°42'N, 80°28'W, 500 m , 12 Jan. 1986, *Gordon McPherson 7975* (MO); Road to Coclesito, logging camp 12 mi from Llano Grande. Alt. 200 m. 8°47'N, 80°28'W., 8°47'N, 80°28'W, 200 m, 16 Dec. 1983, *H.W. Churchill, A. Lier, W.S. Armbruster & A. Herzig 4115* (MO); Road to Coclosito. Logging camp 12 mi from Llano Grande., 8°47'N, 80°28'W, 200 m, 9 Dec. 1983, *H.W. Churchill, A. Lier, W.S. Armbruster & A. Herzig 3983* (MO); Coclecito Road, trail along continental divide, tropical wet forest, cloud forest. Assoc: Hyospathe, Geonoma epetiolata, Colpothrinax cookii, Welfia georgii, Euterpe 8°42'N, 80°28'N, Elev. 500 m., 8°42'N, 80°28'W, 500 m , 11 Jan. 1986, *Greg de Nevers, G. McPherson & S. Armbruster 6729* (MO); Alto Calvario, summit, montane ridge-type forest., 900 m, 9 Apr 1977, *J.P. Folsom 2492* (MO); El Jordanal, Río Indio Arriba., 08°40'10"N, 080°07'01"W, 570–840 m, 23 Jul 2001 - 25 Jul 2001, *Jorge Mendieta 5-116* (PMA); Along the Atlantic slope of the Continental Divide near sawmill (Whiskey) above El Copé. Premontane or montane wet forest., 08°40'N, 080°16'W, 750–800 m, 13 February 1982, *S. Knapp & R. Dressler 3424* (MO); 5-5.5 mi N of El Copé: trail along Continental Divide., 08°38'N, 080°35'W, 850 m, 7 Apr 1988, *Sue A. Thompson 4730* (MO); 6 mi N of El Copé: on Atlantic side of Continental Divide., 08°38'N, 080°35'W, 750–800 m, 8 Apr 1988, *Sue A. Thompson 4745* (MO); 7 km N of El Cope; near Rivera Sawmill, at Alto Calvario; Forgotten Hill., 700–850 m, 2 July 1977, *J.P. Folsom 4093* (MO); 4 mi past Llano Grande on road to Cascajal, rocky faced cliff ca. 2 km W along continental divide, low cloud forest., 600 m, 6 May 1981, *K. Sytsma, L. Andersson, & D. Brenner 4420* (MO); La Mesa road N of El Valle, along stream gorge, low cloud forest., 2700 f, 6 May 1981, *K. Sytsma, L. Andersson, & D. Brenner 4342* (MO); Above El Potroso sawmill at Continental Divide, N of El Cope. Low cloud forest., 1200–1300 m, 13 May 1981, *K. Sytsma & L. Andersson 4558* (MO); Ca 5 mi past Llano Grande on road to Cascajal, NW of Penónome, disturbed riparian forest., 400–450 m, 9 Apr 1981, *Kenneth J. Sytsma 3856* (MO); Continental divide N of Penonome on road to Coclesito; small patch of forest at roadside., 1600 f, 25 Jul 1978 - 26 Jul 1978, *Barry Hammel 4050* (MO); 4 mi past Llano Grande on road to Cascajal, rocky faced cliff ca. 2 km W along continental divide, low cloud forest., 600 m, 6 May 1981, *K. Sytsma, L. Andersson, & D. Brenner 4417* (MO); Near continental divide along lumbering road 8.4 km above El Cope (1 km beyond sawmill)., 900 m, 19 Jan 1978, *Barry Hammel 956* (MO); Trail from Río San Juan to Rio Tife Falls., 1200–2500 f, 10 Jun 1978, *Barry Hammel 3362* (MO); Alto Calvario: Vicinity of El Cope, N slope of Cordillera ca. 0.5 mi N of Continental Divide at Alto Calvario, ca. 5.6 mi N of El Cope, 08°39'N, 80°36'W, 800 m, 31 Mar 1993, *Thomas B. Croat 75063* (IBE, MO); El Cope: Caribbean side of divide at El Copé. Wet forest, 08°45'N, 080°35'W, 200–400 m, 3 Feb 1983, *Clem Hamilton & Gerrit Davidse 2669* (MO). **Colon**: Santa Rita Ridge road, c. 8 miles E of Transisthmian highway. along trail N of road, c. 9°20'N, 79°45'W. Forest 350-440 m., 9°20'N, 79°45'W, 350–440 m, 2 Feb. 1986, *Gordon McPherson & M. Merello 8243* (MO); Along Río Guanche ca. 3-5 mi inland., 10–100 m, 3 Aug 1974, *Thomas B. Croat 26138* (MO); Santa Rita lumber road, east of Colón., 28 Jan 1968, *Robert L. Dressler 3355* (MO); Santa Rita Ridge, in wet forest, ca. 12 km from Trans-Isthmian Highway., 28 June 1978, *Barry Hammel 3676* (MO); Cocle Del Norte, in forest east of town., 100 m, 24 Aug 1978, *Barry Hammel 4488* (MO); Ca 2-3 miles up the Rio Guanche. Lowland rain forest., 10–20 m, 19 Jan 1973, *Helen Kennedy & Robin Foster 2160* (MO). **Darien**: Nique. Alturas de Nique - Coasi, Lower slopes of Alturas de Nique along Río Coasí, 07°36'N, 077°47'W, 26 Dec 1980, *Ronald L. Hartman 12245* (MO); Tres Bocas: Cuasi - Cana, Cuasí-Cana Trail on Cerro Campamiento east of Tres Bocas, headwater of Río Cuasi. Cloud forest, 07°51'N, 077°45'W, 29 Apr 1968, *JosepH.H Kirkbride Jr. & James A. Duke 1235* (MO); Trail between Paya & Pucro; wet, forested area., 12 June 1959, *W.L. Stern, K.L. Chambers, J.D. Dwyer, & J.E. Ebinger 404* (GH, MO); Vicinity of upper gold mining camp of Tyler Kittredge on headwaters of Río Tuquesa ca. 2 air km from Continental Divide; recently cleared primary forest., 26 Aug 1974, *Thomas B. Croat 27261* (MO); Vicinity of upper gold mining camp of Tyler Kittredge on headwaters of Río Tuquesa ca. 2 air km from Continental Divide; recently cleared primary forest., 26 Aug 1974, *Thomas B. Croat 27229* (MO); Campamento: Pirre - Cerro Pirre, Cerro Campamento, south of Cerro Pirre. Elfin forest, 07°47'N, 077°43'W, 20 Mar 1968 - 22 Mar 1968, *James A. Duke 15695* (); Pirre: Summit of Cerro Pirre. Cloud forest, 07°51'N, 077°43'W, 1000–1400 m, 29 Dec 1972, *Al Gentry & Andre Clewell 7011* (MO). **Panama**: Cerro Campana along trail to summit. High windswept ridge. Cloud forest. Elev. 850 m. 8.42'N, 79.56'W., 8°42'N, 79°56'W, 850 m, 3 Aug 1983, *James S. Miller & Leslie Miller 964* (MO); Cerro Jefe Region; 0.8 mi beyond turn-off to Altos de Pacora (near branch in road to antennas to Cerro Jefe)., 09°15'N, 79°29'W, 770 m, 4 July 1994, *Thomas B. Croat & Guanghua Zhu 76619* (MO); Cerro Campana, 6.1 miles above Pan-American Hwy., 3.2 miles beyond park entrance and Guarda Bosque Station., 08°41'N, 79°56'W, 800 m, 23 March 1993, *Thomas B. Croat 74766* (CM, MO); Parque Nacional Cerro Campana, 2 km N of Hwy 707. Cloud Forest. Elev. c. 850 m. 79°55'W, 8°42'N., 8°43'N, 79°55'W, 850 m, 31 Dec 1982, *Bruce A. Stein Clement W. Hamilton 1097* (MO); Sendero de Interpretación, 1 km al este del Campamento de los guardabosques de INRENARE. Bosque húmedo tropical premontano., 08°40'N, 79°55'W, 800–900 m, 15 Apr 1994, *M.D. Correrra A., E. Montenegro 9436* (MO); Waimea 86216. El Llano-Carti Road, 10 km., *Thomas B. Croat 76169* (MO); Cerro Campana., 30 Sep 1967, *Robert L. Dressler 3044* (MO); Cerro Campana cloud forest., 8 Aug 1970, *James L. Luteyn & Helen Kennedy 1832* (DUKE, MO); Near top of Cerro Campana above Florida State cabin., 3 September 1972, *Al Gentry 5787* (MO); Trail to top of Cerro Pelado., 1000 m, 16 Jun 1979, *Thomas M. Antonio 1092* (MO); Along trail to top of Cerro Campana., 13 Oct 1974, *S. Mori & J. Kallunki 2492* (MO); Cerro Campana cloud forest., 850 m, 6 June 1973, *James L. Luteyn 3984* (DUKE); Cerro Campana cloud forest. Along trail to summit. Lowland cloud forest., 1000 m, 19 June 1972, *James L. Luteyn 3198* (DUKE); Woods around La Eneida., 1000 m, 5 Aug 1970, *James L. Luteyn & Helen Kennedy 1763* (DUKE); Cerro Campana: along trail to top., 08°40'N, 079°50'W, 850 m, 26 Mar 1988, *Sue A. Thompson 4597* (MO); Cerro Campana along trail to Summit., 22 Jun 1972, *Thomas B. Croat 17171* (MO); La Eneida, region of Cerro Jefe., 8 Jul 1969, *Robert L. Dressler 3647* (MO); El Llano - Cartí highway, 8-10 km north of El Llano., 31 Aug 1974, *Robert L. Dressler 4705* (MO); Cerro Campana, trail leading to cross, cloud forest., 2800–3000 f, 3 Jan 1981, *Kenneth J. Sytsma 2940* (MO); Beyond La Eneida., 8 Mar 1968, *Mireya D. Correa A. 806* (MO); Cerro Campana; lower slopes above FSU cabin., 11 Mar 1973, *Thomas B. Croat 22798* (MO); Cerro Campana, trail leading to cross, cloud forest., 2700–2900 f, 14 Feb 1981, *Kenneth J. Sytsma 3544* (MO); Cerro Campana, tropical moist forest, trail leading to cross., 08°42'N, 079°55'W, 2700 f, 18 Sep 1980, *Kenneth J. Sytsma 1213* (MO); Llano-Carti Road, 1 mi past sawmill on dirt road., 1200 f, 29 Mar 1980, *T. Antonio 3930* (MO); Summit of Cerro Campana. Rain forest., 31 Mar 1969, *D.M. Porter, L.H. Durkee, M.R. Crosby & R.K. Baker 4930* (MO); El Llano - Cartí highway, 12-17 km north of El Llano., 3 Jan 1974, *Robert L. Dressler 4530* (MO); Middle slopes of Cerro Campana ca 1 mile from Interamerican Highway., 150 m, 15 Jun 1976, *Thomas B. Croat 35976* (MO); Primary forest; along El Llano Carti-Tupile road; 12 mi above Pan-Am Hwy., 200–500 m, 26 Mar 1973 - 27 Mar 1973, *R.L. Liesner 1133* (MO); Cerro Campana in forest along trail from 2700 ft. to top (ca 3200 ft)., 2 Jul 1978, *Barry Hammel 3786* (MO); Area surrounding Rancho Chorro, mountains above Torti Arriba. Canazas mountain chain., 400–700 m, 3 Dec 1977, *J.P. Folsom, Leo Collins & Gregorio Alonzo 6616* (MO); La Eneida: La Eneida, 760 m, 15 Jan 1973, *D. Sucre, R.L. Dressler, T. Soderstron & P.I.S. Braga 165547* (KEW). Panama: 15 January 1973, *D. Sucre, R.L. Dressler, T. Soderstron, P.I.S. Braga 9864* (KEW). **San Blas**: caminando por el Rio Diablo Antes de llegar a las cascadas del Sitio Sorgog, 9°23'N, 78°34'W, 50–70 m, 9 Dec. 1993, *Herrera, H. et al. 1450* (CM, MO, PMA); Comarca de San Blas, Playón Chico, Río Ukupseni, caminando por el Río Ukupseni; desde el campamento Neba Dummat hasta la cascada., 09°15'N, 78°15'W, 50–100 m, 30 octubre 1991, *Heraclio Herrera, Johny Morris y Jimmy Mojica 1031* (MO); Comarca de San Blas, Cordillera de San Blas, límite San Blas/provincia de Panamá; caminando hacia en lado Pacifico de la Cordillera entre el campamento Ilegandi y tributario del Río Piriati. Tierra centinental de Playón Chico., 09°13'N, 78°16'W, 50–200 m, 8 noviembre 1991, *Heraclio Herrera, Jimmy Mojica y Johny Morris 1112* (MO); Caminando por el Río Diablo Antes de llegar a las cascadas del Sitio Sorgog., 09°23'N, 78°34'W, 50–70 m, 9 Diciembre 1993, *Heraclio Herrera, R. Paredes y B. Obaldia 1450* (MO); El Llano-Cartí Road, Km 19.1 . 9°19'N, 78°55'W. Elev. 350 m. Tropical wet forest. Steep, rocky stream banks. Assoc: Catoblastus radiatus, Iriartia, Socratea, Cespedizia macrophylla, Blakea wilburiana., 9°19'N, 78°55'W, 350 m , 4 Nov. 1985, *Greg de Nevers, H. Herrera & S. Charnley 6211* (MO); Headwaters of Río Nergala along continental divide. Elev. 350 m., 350 m , 11 Jan. 1985, *Greg de Nevers & H. Herrera 4505* (MO); Yar Bired (Cerro San Jose), continental divide between Cangandi and San Jose. Tropical wet forest. 9°20'N, 79°8'W. Elev. 400-500 m., 9°20'N, 79°08'W, 400–500 m, 5 Feb. 1986, *Greg de Nevers & H. Herrera 6947* (MO); Comarca de San Blas. Vecindad del Río Diablo, 8-9 km de la costa., 09°23'N, 78°34'W, 50 m, 10 Agosto 1994, *Heraclio Herrera, C. Galdames, E. Montenegro y C. Chung 1730* (GB, MO, PMA, STRI, US); Trail from El Llano to Carti-Tupile., 200 m, 23 Feb 1973, *Helen Kennedy 2601* (MO); continental divide: Trail along continental divide, 09°20'N, 078°56'W, 400 m, 23 Jul 1986, *J.F. McDonagh, B.A. Lewis, N.J. Gumpel & A.J. Plumptre 330* (BM); Isla de Nargana: Vecindad de Yannuadi; tierra firme frente a la Isla de Narganá; a 5 km de la costa; con Bejamin Obaldia y Demetrio Escobar., 9°22'N, 78°35'W, 50–100 m, 23 Oct 1992, *Herrera, H. et al. 1237* (MO, PMA); Rio Playon Chico: Río Planyon Chico, Campamento argicola NEBA DUMMAT, caminando por el filo de Suroeste; con Horacio Arosemena, José Grimaldo y Fidel Chiari., 9°15'N, 78°15'W, 90–200 m, 15 Oct 1993, *Herrera, H. et al. 1389* (MO, PMA). **Veraguas**: Along the Santa Fe to Calovebora road beyond Escuela Agricola Alto Piedra, along first major stream ca. 3 mi from fork in the road at the school., 700 m, 1 December 1979, *Thomas B. Croat 48996* (MO); Valley of Río Dos Bocas, 11 km from Escuela Agricola Alto Piedra (above Santa Fé) on road to Calovebora; primary forest along river., 450 m, 30 Aug 1974, *Thomas B. Croat 27498* (MO); Ca. 10 km NW of Santa Fé, on road to Calovebora (Panama Hwy 35), at first branch of Río Santa Maria., 4 Aug 1975, *S. Mori & A. Bolten 7643* (MO); Atlantic slope, Río Concepción to Río Barrera; forest along stream., 200 f, 16 Oct 1978, *B. Hammel 5167* (MO); Forest at base of Cerro Tute, 6.5 km outside Santa Fé., 6 May 1977, *J.P. Folsom 3038* (MO); Primary forest; on Carribbean slope above Rio Primaro Brazo 5 mi NW of Santa Fe., 700–1200 m, 18 Mar 1973 - 19 Mar 1973, *Thomas B. Croat 23199* (MO); Vicinity of Escuela Agricola Alto Piedra near Santa Fé. 0.3 mi beyond fork in road near the school toward Atlantic coast. Near trail to top of Cerro Tute, along stream., 2200–2400 f, 26 Jan 1980, *T. Antonio 3553* (MO). Santa Fe - Rio San Luis, Vicinity of Sante Fé, along dirt road from Santa Fé to Río San Luis, past Escuela Circlo Alto de Piedra, at Río Segundo Brazo (2nd stream below school on Atlantic Coast), 8°33'N, 81°08'W, 480 m, 28 Jun 1987, *Thomas B. Croat 66893* (MO, SCZ).

**Spathiphyllum fulvovirens** Schott var. **schatzii** Croat & Grayum – name not in tropicos, not published yet? No specimens of this subspecies in herbarium, nor in Tropicos.

**Spathiphyllum kalbreyeri** G. S. Bunting, Mem. New York Bot. Gard. No. 3, 21, f. 5. 1960. TYPE: Colombia. *Kalbreyer 1413* (holotype, K).

Terrestrial, 40-75 cm tall. LEAVES erect, subrosulate; **petioles** 32-43 cm long, sheathed 0.5-0.86 their length, free part sulcate; sheath ofte somewhat loosened at least near apex; geniculum 1-2 cm long, drying darker than petiole shaft; **blades** oblong or lanceolate-elliptic, (22.5)33-40 cm long, 9-11.7 cm wide (averaging 28.3 x 9.3), 2.2-3.6(4.5) times longer than wide, 0.6-1.4 times as long as petioles, narrowly acuminate at apex, acute at base, dark green and semiglossy above, thinly subcoriaceous, moderately paler and weakly glossy below; **midrib** sunken and marginally discolored above, narrowly rounded and slightly paler below; **primary lateral veins** 12–15 pairs, arising at 35-45° angle, weakly sunken above, narrowly raised and slightly paler below. INFLORESCENCE subequalling or greatly exceeding leaves; **peduncle** 40-69 cm long; **spathe** narrowly ovate tooblong-ovate, green outside, white to cream and somewhat veined with green inside, sometimes white on both surfaces with green veins, (9.5-)13.5-15 cm long, (1.7-)2.5-3 cm wide, attenuate-acuminate at apex, acute at base; **spadix** 5**-**12.2 cm longbent, greenish or yellowish; perianth tan to yellow or green; pistils obpyramid, cream-colored, truncate at apex; stigma weakly protruding; ovary 3-locular; fruits white, truncate at apex.

*Spathiphyllum kalbreyeri* ranges from Panama to Colombia at 100-1050 m in *Tropical wet* and *Premontane wet forest* life zones, less frequent in wetter parts of *Tropical moist forest*.

The species is characterized by its small stature, slender poorly sheathed yellowish brown stems, prominently dark-drying geniculum, slender narrowly acuminate blades with only 12-15 pairs of primary lateral veins as well as by the slender long-acuminate clasping spathe which is oven whitish with green veins on the inner surface and the stipitate green spadix with prominent truncate whitish pistils and a barely protruding style.

*Spathiphyllum kalbreyeri* is most closely easily confused with *S. fulvovirens* Schott owing to their similarly drying blade color and general blades shape as well as by its similar inflorescence. That species differs in being more robust (to 1.25 m), in having substancially larger leaf blades and spathes that are green on both surfaces.

*Additional specimens seen:* COLOMBIA. **Antioquia**. Gómez Plata: 10-15 km en la vía Barbosa-Porce-Amalfi, N de Barbosa, 1010-1130 mts., en límites con el Municipio de Yolombó a orillas del Río Medellín., 06°40'N, 075°12'W, 1010–1030 m, 4 Dec 1989, *R. Callejas et al. 8920* (HUA, MO, NY). San Rafael: Vereda de Quebrada Honda. 4 km en aval de la desembocadura de la Quebrada Churimo en la desembocadura del Rio Guatepé., 15 Oct 1981, *Orozco C.I. et al. 925* (COL). Tarazá: 7°20'N, 75°20'W, 150 m, 31 Enero 2001, *F. Cardona et al 1049* (HUA). **Caldas**. La Dorada. Rio de la Miel: 1963, *Hutchison 3194* (US). Santander. Magdalena Valley: Sogamoso - Carare Rivers, Amariela Creek. Vicinity of Barranca, Magdalena Valley, between Sogamoso and Carare Rivers., 100–500 m, 1 Jul 1936, *Oscar Haught 1894* (US).

PANAMA. **Canal Area:** Rio Paraiso, above East Paraiso, 07 Jan. 1924, *Standley 29846* (US); Rio Pedro Miguel. Along the Río Pedro Miguel, Madden Road forest preserve, 2 Dec 1967, *Robert L. Dressler 3208* (MO, US). **Cocle**: Río Tucué above Tucué., 12 July 1972, *Robert L. Dressler 4196* (MO). **Colon**: Along tributary between Caño Rey and San Lucas, south of Coclé del Norte., 19 Aug 1972, *Robert L. Dressler 4213* (MO); Río San Lucas, south of Coclé del Norte., 19 Aug 1972, *Robert L. Dressler 4215* (MO). Donoso: Campamento Botija, camino a Canoa, desde Coclecito, al norte., 11 July 1996, *J. Polanco, A. Zapata, D. Mosquera, & W. Martínez 1992* (MO). **San Blas**: Río Kwadi, about 6 air miles SW of Mulatupu., 100 m, 20 September 1967, *James A. Duke 14226* (MO).

PERU. **San Martín**. Mariscal Caceres: Distrito Tocache. Near Collegio Agrapecuario de Tochache, zona boscasa; Swamp forest., 8°13'S, 76°32'W, 400 m, 7 Apr 1984, *Thomas B. Croat 57993* (CM, COL, MO, USM).

UNITED STATES. **Hawaii**. Lyon Arboretum: cultivated, *Thomas B. Croat 73962* (MO).

THIS SPECIES IS SUPPOSED TO BE SYNONYMOUS WITH S. COCHLEARISPATHUM SO THE COLLECTIONS IN THE EXSICCATAE BELOW SHOULD BE IN THAT SPECIES IN TROPICOS. VERIFY AND MOVE.

**Spathiphyllum lacustre** Lund.Contr. Univ. Mich. Herb. 6: 4-5. 1941. TYPE: Mexico. Tabasco: lakeside at Ojo de Agua near Balacan, 9–14 May 1939, *E. Matuda 3136* (holotype, MICH; isotypes, F, MEXU-85803).

No description in tropicos – **In Bunting, this name is a synonym of *S. cochlearispathum*, has this changed?[Emily: I assume that Bunting is correct on this one. I really don’t know why it is in the list. Put it into synonoym under S. cochlearispathum if it is not there already. But, why are all these specimens listed below under S. lacustre?]**

*Additional specimens seen:* MEXICO. **Tabasco:** Balancán. Lakeside at Ojo de Agua, 9 May 1939 - 14 May 1939, *E. Matuda 3136* (MEXU, MO). **Veracruz**: Camino de Agustin Melgar a 2 km del Campto. Hnos. Cedillo. Suelo de color cafe claro, orilla del rio., 17°15'00"N, 094°35'24"W, 150 m, 9 Apr 1975, *B. Ortiz 99* (F). Hidalgotitlan: Río Solosuchil, SW del Campamento Hnos. Cedillo. Selva alta perennifolia, primaria, suelo arcilloso arenoso con rocas calizas aflorantes., 17°15'36"N, 094°36'36"W, 152 m, 2 Apr 1974, *Brigada Vazquez 281* (F, XALU); Rio Solosuchil, SW del Campamento Cedillo. Rupicola, primaria., 17°22'12"N, 094°43'48"W, 2 Apr 1974, *F. Ponce C. 244* (MO, XALU); Brecha hnos. Cedillo-Agustin Melgar. Selva alta perennifolia, primaria, suelo cafe arcilloso con humus abundante, margenes del rio., 17°15'36"N, 094°36'36"W, 152 m, 30 Apr 1974, *Brigada Vazquez 515* (XALU); Río Solosuchil, +/- 1.5-2 horas a pie al SE de Ejido Agustín Melgar, cerca del potrero de Ejido Pancho Villa; pendientes y crestas cerca del río con selva alta perennifolia perturbada dominado por Dialium; suelos profundos., 17°13'48"N, 094°34'48"W, 150 m, 24 Mar 1982, *Tom Wendt, Vázquez, Reviere, Méndez, Lorence, y Navarrete 3735* (MO); 1.5 km al W de Campo Hermanos Cedillo por El Río Soloxuchil. Selva alta perennifolia, primaria, suelo arcilloso amarillento rocas aflorantes (casstico)., 17°15'36"N, 094°36'00"W, 150 m, 11 Jan 1975, *M. Vazquez et al. 1620* (MO).

**Spathiphyllum laeve** Engl., Bot. Jahrb. Syst. 37: 120. 1905. TYPE: Costa Rica: Isla del Cocos, Valle Gissler Pacifíco, *H. Pittier 12370* (holotype, B; isotype, CR-12370, US).

Terrestrial, 0.6-1 m tall; **internodes** short to 1.5 cm , to 0.5-3 cm diam.; **petioles** 20- 65 cm long, sheathed in lower ½ to 2/3, medium to dark green, reddish to pinkish-brown at base of petioles, semiglossy; sheath persisting semi-intact, pale red-brown, erect then scarious; free part more or less terete; geniculum 1.2-2.5 cm long, reddish, sharply flattened-sulcate, drying dark brown. LEAVES erect-spreading; **blades** inequilateral, oblong-elliptic, (15-)29-41 cm long, (5.4)8.5-14 cm wide, 2.4-3.8 times longer than wide, acuminate at apex, acute at base, marginally undulate, subcoriaceous, dark green and semiglossy above, moderately paler and weakly glossy below; **midrib** more or less flat and slightly paler above, thicker than broad and paler below; **primary lateral veins** 12-15 pairs, arising at 55-65° angle, quilted to weakly quilted-sunken above, pleated-raised below; minor veins few, distinct. INFLORESCENCE as long as or moderately longer than leaves, **peduncle** 71-92(-103) cm long; **spathe** oblong 16-20 cm long, (2.1)2.7-3.8(-5) cm wide, marginally undulate, attenuate-acuminate at apex, base acute and decurrent on peduncle 0.5-2.4 cm, pale green or greenish yellow, erect to spreading, the margins rolled under, sometimes medium green above, paler below; **spadix** (4-)8.4-12(16.5) cm long, on stipe (0.5-)1-1.8(-3) cm long; perianth fuse to form a membranous, 4-6-sided cup, yellow-green to pale green to green or olive-green, sometimes cream-colored; pistils obpyramidal, apex truncate, only the elevated stigma exceeding the perianth, white; style short; ovary 3-locular. INFRUCTESCENCE with spadix smooth, fruit subcylindric or with a constriction near center, maturing succulent, white with green apex; seeds located above the constriction, maturing with 1 per locule, reniform-rotund in profile, slightly furrowed and foveolate, +/- evenly verrucose on surface. Nv: bijauillo, N.

*Spathiphyllum laeve* ranges from El Salvador and Nicaragua to Costa Rica, Panama and Colombia (Chocó) at 100 to 1200 m (mostly below 200 m) in areas of *Tropical wet forest* and *Premontane wet forest* life zones. In Costa Rica the species occurs on the entire Caribbean slope and on the Pacific slope in the area of the Osa Peninsula.

The species is characterized by its mediocre size, slender poorly sheathed brownish-drying petioles with some loosening of the sheath and frequently also with the surface densely covered with appressed stellate scales, the oblong-elliptic mostly brownish green-drying short-acuminate leaf blades with weak, moderately close primary lateral veins and acute leaf bases as well as by usually narrow, moderately decurrent green spathe and especially by the greenish to cream-colored spadix with the tepals fully fused into a distinct ring around the pistils.

*Spathiphyllum laeve* is probably most easily confused with *S. kalbreyeri* Bunting which differs by having petioles that lacks appressed stellate scales on the petioles, has narrower leaf blades and has tepals that are free from one another, not fused into a ring around the pistil. *Spathiphyllum laeve* is also similar to *S. fulvovirens* and also *S. silvicola*. Both of the latter species differ in having glabrous petiolesand briefly decurrent spathes.

*Additional specimens seen:* COLOMBIA. **Chocó**: East side, Serrania del Darien, approached from Acandi. Along Guati River. Disturbed forest but with many large trees., 8°30'N, 77°20'W, 200 m, 10 Jan 1983, *Adrian Juncosa 607* (MO); Trail from Río Tigre base camp up Serranía del Darién W of Unguía., 300–600 m, 17 Jul 1975, *A. Gentry & L.E. Aguirre 15239* (COL, MO). Nuquí: Corregimiento Arusí; Estación Biológica El Amargal; along trail to Arusí., 05°34'15"N, 077°30'00"W, 20–50 m, 19 June 2000, *Thomas B. Croat & M.M. Mora 83692 (=Mora 311)* (MO, COL); Corregimiento de Arusí, Estación Biológica El Amargal., 05°34'N, 077°30'W, 50 m, Jul 1998 - Sep 1998, *M. Marcela Mora 5* (MO).

COSTA RICA. Isla del Coco. Near Wafer Bay., 14 Aug 1973, *Robert L. Dressler 4465* (MO); Coco's Island. Shady forest floor of Upper Wafer Valley., 200–400 m, Mar 1970, *Luis D. Gómez P. 3286* (MO). **Alajuela:** Reserva Forestal San Ramón, sendero Miramar., 10°12'36"N, 084°36'00"W, 2 Nov 1986, *Gerardo Herrera Ch., Victor Mora & Daniel Hernández 173* (MO); Reserva Biológica Monteverde San Ramón, Río Peñas Blancas, Quebrada El Murciélago, Campo 3., 10°19'48"N, 084°40'48"W, 1000 m, 7 November 1989, *Erick Bello 1480* (MO); Disturbed primary forest on hilltop, ca. 1 km SE of La Balsa de San Ramón. 10°10'N 84°29.5'W 1140-1190 m, 10°09'36"N, 084°29'24"W, 1140–1190 m, 3 Feb 1986, *M.H. Grayum, A. Carvajal, J. Dickie, A.R. Smith & T. Belíz 6352* (MO); Reserva Monteverde, Poco Sol 13 km South Fortuna. 13 km South Fortuna. 10.21N 84.41W 700- 900 m 20 August 1989 William Haber & Willow Zuchowski, 10°21'00"N, 084°40'48"W, 700–900 m, 20 August 1989, *William Haber & Willow Zuchowski 9349* (CR, MO); *William Haber & Willow Zuchowski 9439* (MO); Monteverde Cloud Forest Reserve; Peñas Blancas river valley, Atlantic slope, premontane rain forest., 10°19'48"N, 084°39'36"W, 840 m, 24 Jul 1986, *William A. Haber ex E. Bello C. & April Clagget 5430* (MO); Reserva Biológica Monteverde Río Peñas Blancas. Parcela de los enanos, 10°18'N, 84°44'W, 850 m, 2 Sep 1988, *Erick Bello 333* (MO); 15 km NW of Arenal by air. 2 km NW of Nuevo Arenal on road to Tilarán, then 3 km NE on road to San Rafael de Guatuso, then 2 km W on road to Finca Cote. Primary forest on N side of road., 10°33'36"N, 084°54'00"W, 700 m, 30 Apr 1983, *Ronald Liesner, E. Judziewicz & B. Pérez G. 15110* (MO); 15 km WNW of Quesada by air 1 km W of Jabillos. Disturbed primary forest. 150-200 m alt. 10°23'N, 84°33'W., 10°22'48"N, 084°33'00"W, 150–200 m, 29 Apr 1983, *Ronald Liesner, E. Judziewicz & B. Pérez G. 15163* (MO); Along road betwen San Ramon and Bajo Rodriguez, vicinity of Km 19.5 NW of San Ramon., 10°11'N, 84°30'W, 925 m, 3 September 1996, *Thomas B. Croat 78840* (INB, MO); Pasturelands at edge of forest, about 17 kilometers north of San Ramon, beyond Los Angeles., 2900 f, 10 Jul 1972, *James L. Luteyn 3375* (MO); Remnant evergreen forest and forest edge in the tropical wet forest formation about 5 km south of Canalete near the Rio Zapate and along the new road to Upala., 10°48'N, 085°02'W, 100–200 m, 12 Nov 1975, *William Burger & Richard Burger 9953* (MO); Primary forest, 2 km NE of La Balsa de San Ramón., 10°11'N, 084°29'W, 900 m, 26 Sep 1976, *Roy W. Lent 3895* (MO); Finca Los Ensayos: Finca Los Ensayos, ca. 11 mi NW of Zarcero. Primary forest and perimeter, 10°15'36"N, 084°27'00"W, 850 m, 15 Aug 1977, *Thomas B. Croat 43596* (MO); Reserva Biológica Monteverde: Reserva Biológica Monteverde. Estación Eladio's., 10°18'00"N, 084°42'36"W, 820 m, 2 Oct 1990, *Obando, N. et al. 179* (MO); San Ramon: San Ramon - Bajo Rodriguez, Cordillera de Tilarán. Along road between San Ramón and Bajo Rodríguez, 36-37 km NW of San Ramón, 10°15'N, 84°34'W, 500–515 m, 27 Sep 1987, *Thomas B. Croat 68197* (MO). San Ramon. Bosque Eterno De Los Niños; Cordillera de Tilarán: Bosque Eterno De Los Niños; Cordillera de Tilarán. Río Peñas Blancas. Campo 3., 10°19'12"N, 084°41'24"W, 900 m, 28 June 1991, *Erick Bello & Eladio Cruz 2851* (CR); R.B. Monteverde; Cordillera de Tilarán: R.B. Monteverde; Cordillera de Tilarán. Estación Eladio's., 10°18'36"N, 084°42'36"W, 820 m, 2 October 1990, *Erick Bello 2447* (CR). **Cartago**: Cantón de Turrialba 6 km W of La Suiza on the road to Pacayitas, small wet forest remnant!, 09°53'24"N, 083°40'12"W, 1200 m, 8 Sep 1990, *Helen Kennedy & James Solomon 4630* (MO). **Heredia:** N of Puerto Viejo, 10 km down the road then 7-8 km W in forest, 10°31'12"N, 084°05'24"W, 2 Feb 1983, *Garwood et al. 845* (BM); N of Puerto Viejo, 12 km to ferry, then 6 km along road, 10°27'00"N, 084°00'00"W, 100 m, 3 Feb 1983, *Garwood et al. 996* (BM); *Garwood et al. 965* (BM); S of Puerto Viejo, 2 km S of Magsasay Penal Colony, 10°22'48"N, 084°03'36"W, 200 m, 3 Feb 1983, *Garwood et al. 1153* (BM); Río Sarapiquí: Río Sarapiquí. W of San Jose, across Río Sardinal., 10°29'24"N, 084°03'00"W, 100 m, 4 Feb 1983, *Garwood et al. 1053* (BM); N base of hills to the S of the Río Sarapiquí, opposite Chilamate. 10°27'N, 84°04'W. Elev. 60-100 m., 10°27'00"N, 084°03'36"W, 60–100 m, 1 Jun 1985, *Michael H. Grayum, Tom Ray & Brian Jacobs 5314* (MO); La Selva Biological Station., 10°26'00"N, 84°01'00"W, 50 m, 30 August 1996, *Thomas B. Croat 78735* (INB,MBM,MO,OOMOTO,TEX,WU,Z); "Starkey's woods," across river from Puerto Viejo., 15 Aug 1974, *Robert L. Dressler 4679* (MO); La Selva: Finca La Selva, the OTS field station on the Río Puerto Viejo just E of its junction with the Río Sarapiquí., 10°25'53"N, 084°00'13"W, 100 m, 2 December 1982, *Tim McDowell 1024* (MO); Finca La Selva (field station of the Organization for Tropical Studies)., 18 Aug 1978, *K.F. Grove 18* (MO). **Limon:** Cerro Coronel, E of Río Zapote, along and above near road; 10°40'N, 83°40'W, elev 10-100 m; disturbed roadside and tall evergreen forest on gentle slopes, 10°39'36"N, 083°39'36"W, 10–100 m, 24 Jan 1986, *Warren Douglas Stevens 23972* (MO); Cerro Coronel, E of Río Zapote, from E of new road to Raphia swamp, within 1 km of Río Colorado; tall evergreen forest and edge of Raphia swamp, on gentle to moderate slopes, 10°39'36"N, 083°39'36"W, 10–40 m, 12 March 1987, *W.D. Stevens, G. Herrera & O.M. Montiel 24700* (MO); Reserva Biol. Hitoy Cerere Valle de la Estrella. Bosque primario, Bosque secundario., 09°40'12"N, 083°01'12"W, 100 m, 25 Jul 1991, *Gerardo Carballo 409A* (MO); Cerro Coronel, E of Río Zapote, along and above new road within 1 km of Río Colorado; 10°40'N, 83°40'W, elev 10-40 m; tall evergreen forest and edge of Raphia swamp on gentle to moderate slopes; collected with O.M. Montiel, 10°39'36"N, 083°39'36"W, 10–40 m, 13 Sep 1986 - 14 Sep 1986, *Warren Douglas Stevens 24251* (MO); Parque Internac. La Amistad Subiendo por la Quebrada Chaho, Croriña., 09°20'24"N, 082°58'48"W, 700 m, 24 July 1989, *Abelardo Chacón 270* (MO); South end of Lomas de Sierpe, NE of terminus of road from Villa Franca. 10°19'N, 83°34'W. Collected with Brian Jacobs, George Schatz and Pam Sleeper, 10°18'36"N, 083°33'36"W, 40 m, 18 July 1984, *Michael H. Grayum 3522* (MO); In and around large swamp at Manzanillo de Talamanca. Elev. ca. 5 m. 9°38'N, 82°39'W. Northwestern end of swamp., 09°37'48"N, 082°39'00"W, 5 m, 2 Nov 1984, *Michael Grayum & Willie Burton 4344* (CR, MO); hills 3 1/2 airline km S of Islas Buena Vista in the Río Colorado, 16 airline km SW of Barra del Colorado. Premontane wet forest on low hills., 10°39'00"N, 083°40'12"W, 10–120 m, 15 Sep 1986 - 16 Sep 1986, *Gerrit Davidse & Gerardo Herrera 31256* (MO); Parque Nacional Tortuguero Estación Agua Fría: Aproximadamente 12 Km al Noreste, pasando el Río Pueblo Nuevo, sobre las Lomas de Sierpe. Bosque primario con pendientes pronunciadas., 10°25'48"N, 083°31'48"W, 80–100 m, 2 March 1988, *Rafael Robles 1673* (CR, MO); Parque Tortuguero Estación Agua Fría, 600 m al Sureste de la casa-estación. Bosque primario., 10°24'36"N, 083°33'36"W, 40 m, 3 November 1987, *Rafael Robles 1212* (MO); Parque Nacional Tortuguero Estación Agua Fría: 8 Km al Sureste. Lomas de Sierpe. Bosque primario., 10°27'00"N, 083°33'36"W, 70 m, 3 February 1988, *Rafael Robles 1608* (MO); Parque Tortuguero Estación Agua Fría, de la casa-estación, 600 m sobre el Sendero Real, 1 Km al Este,aproximadamente, por otro Sendero. Bosque primario., 10°24'36"N, 083°33'36"W, 40 m, 4 November 1987, *Rafael Robles 1232* (MO); Parque Nacional Tortuguero Estación Agua Fría: segunda loma aproximadamente 7 Km al Sureste. Cerros Azules., 10°27'00"N, 083°33'36"W, 70 m, 21 January 1988, *Rafael Robles 1562* (MO); *Rafael Robles 1568* (MO); Suretka, 09°34'12"N, 082°56'24"W, 200 m, 18 June 1982, *Gomez, J. 8783* (F); 7 km SW of Bribri., 100–250 m, 4 May 1983, *L.D. Gómez, R. Liesner, & E. Judziewicz 20480* (MO); Hacienda Tapezco-Hacienda La Suerte, 29 air km W of Tortuguero. Primary rainforest in an area being selectively logged. Area of low hills and mounds, a few small streams., 10°30'N, 083°47'W, 40 m, 15 Aug 1979, *Christopher Davidson & Julian Donahue 8302* (MO); 3.2 km east of Finca Waldeck (Milla 28)., 25 Feb 1972, *Robert L. Dressler, Robin Andrews, & Helen Kennedy 4157* (MO); 7 km SW of Bribri., 100–250 m, 4 May 1983, *L.D. Gómez 20384* (MO). Pococi: Cuenca del Sarapiquí. Guápiles. Reserva Biológica Bosque Lluvioso. INBio, alrededores de las installciones., 10°11'52"N, 083°51'24"W, 500 m, 30 Oct 1998, *Luis Diego Vargas, Alex. Rodriguez & V.H. Ramírez 239* (MO). Siquirres: Forests near river., 1 Mar 1972, *Robert L. Dressler, Robin Andrews, & Helen Kennedy 4162* (MO). **Puntarenas**: Foothills of the Cordillera de Talamanca, lower montane forest along the Río Bella Vista, NW of Las Alturas., 08°57'00"N, 082°51'00"W, 1450–1600 m, 30 Aug 1983, *Gerrit Davidse 24251* (MO); Esquinos., 13 Oct 1982, *Barry Hammel 10928* (MO); Osa Peninsula: Along abandoned "high road" W of Rincón de Osa., 8°42'N, 83°31'W, 200–400 m, 4 March 1985, *T.B. Croat & M.H. Grayum 59840* (MO). Osa: Agua Buena, Rincón. Sector del tanque de agua del pueblo, al Norte de BOSCOSA., 08°40'48"N, 083°30'36"W, 50–75 m, 3 Sept. 1990, *Carlos Morales 130* (MO). P.N. Isla del Coco: P.N. Isla del Coco; Isla del Coco. Cascada., 05°32'24"N, 087°03'00"W, 1–100 m, 16 Jun 1994, *Eduardo Lépiz 380* (CR, INB, MO, US); P.N. Isla del Coco; Isla del Coco: P.N. Isla del Coco; Isla del Coco. Mirador., 05°32'24"N, 087°03'00"W, 1–100 m, 13 June 1994, *Eduardo Lépiz 352* (CR); Parque Nacional Isla del Coco: P.N. Isla del Coco. Isla del Coco. Parque Nacional Isla del Coco. Sendero a Cerro Iglesias, entre la base y la punta de Cerro Pelon., 05°31'48"N, 087°04'12"W, 530 m, 20 Jun 1997, *Rojas, A. 3632* (INB, MO). **San Jose**. Vazquez de Coronado: Braulio Carrillo National Park, along Hwy. San José to Siquerres Hwy., along trail to Río Sucio, site of the Old Carillo Station., 10°09'50"N, 83°57'10"W, 600–700 m, 30 August 1996, *Thomas B. Croat 78773* (CAS, CM, CR, ENCB, INB, MEXU, MO, SEL).

EL SALVADOR. **La Libertad:** Antiguo Cuscatlán, JBLL zona 31., 13°49'N, 089°56'W, 23 Oct 1995, *Edy A. Montalvo 6391* (LAGU, MO).

NICARAGUA. **Río San Juan**: Orillas del Río Santa Cruz, afluente del Río San Juan; 11°02'N, 84°24'W. Elev. aprox. 42 m., 11°02'N, 84°24'W, 42 m, 22 Mar 1985, *Pedro P. Moreno 25548* (MO); Reserva Indio-Maíz, Municipio de el Castillo, a 5 km de la cabecera del Río Bartola, en dirección hacia el Cerro el Diablo., 11°01'N, 084°14'W, 100 m, 2 Enero 1997, *Ricardo Rueda, Indiana Coronado, Oscar Aráuz & Franklin Flores 5237* (); "Los Filos" near Loma Los Filos, Rio Santa Cruz, recently logged lowland moist forest on clay soils., 11°08'N, 084°20'W, 6 Sep 1993, *Salick 8121* (MO); Municipio el Castillo, Reserva Indio-Maiz, Cerro Bolivar., 10°51'N, 084°10'W, 150–280 m, 29 noviembre 1998, *Ricardo Rueda, Franklin Flores, Walter Velásquez y Oscar Caballero 9234* (); Municipio el Castillo, Reserva Indio-Maiz; Cerro el Diablo., 11°01'N, 084°13'W, 100–200 m, 7 diciembre 1998, *Ricardo Rueda, Indiana Coronado, Franklin Flores, Walter Velásquez y Oscar Caballero 9481* ().**Rivas**: Slopes of Volcán Maderas above coffee plantations above Balgüe, Isla de Ometepe; cloud forest-rain forest, 11°28'N, 085°31'W, 600–800 m, 14 Sep 1983, *M. Nee & W. Robleto T. 28073* (MO); Isla Ometepe - Volcán Maderas. Bosque muy humedo., 11°27'N, 85°29'W, 900–1200 m, 5 Jun 1985, *Walter Robleto 2118* (MO). **Zelaya**: Along Río Sucio, ca. 0.5 km E of first suspension bridge E of Bonanza; gravel bars and gallery forest., 14°01'N, 84°34'W, 140 m, 24 Apr 1978, *W.D. Stevens 8045* (MO); Reserva Bosawas, Municipio de Bonanza, Cerro Cola Blanca., 14°06'N, 084°31'W, 700–880 m, 2 Jun 1997, *Ricardo Rueda & Indiana Coronado 6521* (MO); 7 km W of Bonanza [Seymour series], 14°00'N, 084°38'W, 260 m, 7 Jan 1974, *J.T. Atwood et al. 6993* (MO).

PANAMA. **Chiriqui**: Slope NW of confluence of Río Hornito and Río Chiriquí; cloud forest., 08°44'00"N, 082°13'00"W, 1050–1100 m, 11 November 1980, *W.D. Stevens 18313* (MO); Along the road to the Fortuna Dam site, N of Gualaca, 22.7 mi beyond the bridge over the Río Estí, 11.8 mi N of Los Planes de Hornito, 10.7 mi N of jct. to tunnel., 1400 m, 26 November 1979, *Thomas B. Croat 48666* (MO); Camp Hornito, Fortuna dam site; camino a Finca Landau., 08°44'N, 082°18'W, 1000–1200 m, 13 Aug 1976, *Robert L. Dressler 5353* (MO, US). **Cocle**: Vicinity el Valle de Antón, at forested flat area near Finca Macarenita at La Mesa., 08°36'N, 80°07'W, 800 m, 6 July 1994, *Thomas B. Croat & Guanghua Zhu 76668* (MEXU, MO); Cloud Forest. Cerro Pilon, El Valle., 3000 f, 04 Jan. 1968, *James A. Duke 14973* (MO); Foothills and summit of Cerro Caracoral, near La Mesa, N. of El Valle de Anton. Cloud forest and elfin forest., 800–1100 m, 10 September 1981, *S. Knapp 1074* (MO); Along the trail from Continental Divide near the sawmill above El Copé to Río Blanco del Norte. Premontane wet forest., 08°40'N, 080°36'W, 350–700 m, 20 February 1982, *S. Knapp, J. Mallet & R. Dressler 3648* (MO); Between Continental Divide above El Copé and El Petroso sawmill and the Río Blanco to the north, a 5 hour hike., 08°38'N, 080°36'W, 900 f, 13 Dec 1980, *K. Sytsma, W. Hahn, & T. Antonio 2421* (MO); Tropical wet forest. La Mesa, 4 km N of El Valle., 875 m, 12 Feb 1974, *M. Nee & M. Hale 9631* (MO); La Mesa: El Valle de Antón Region, at La Mesa, 3.2 mi above El Valle. Small patch of cloud forest on flat area, 0.1 km E of Finca Macarenita, 08°36'N, 80°07'W, 775 m, 25 Mar 1993, *Thomas B. Croat 74798* (MO). **Darien**: Río Cocalito. High forest on steep hillside., 15 Feb 1982, *C. Whitefoord & A. Eddy 199* (MO); Pirre: Cerro Pirre - Rancho Frio, Parque Nacional Darién, caminando entre Campamento Rancho Frío No. 2 hacia la cima de Cerro Pirre., 08°00'N, 77°45'W, 700–1000 m, 7 Feb 1991, *Heraclio Herrera, L. Rojas y N. Bristán Jr. 871* (MO). **Panama**: Cerro Campana, ca. 10 km SW of Capira. Tropical Wet Forest (cloud forest). On trail to summit., 870–1000 m, 7 Dec 1974, *S. Mori & J. Kallunki 3573* (MO); Cerro Campana, moist forest on steep slope near FSU building., 10 Sep 1970, *Thomas B. Croat 12160* (MO); Cerro Campana, along trail to summit., 780–875 m, 20 July 1974, *Thomas B. Croat 25201* (MO); Cerro Campana., 25 Oct 1968, *Norris H. Williams s.n.* (MO); Cerro Campana; cloud forest., 26 July 1969, *Robert L. Dressler 3693* (MO); Cerro Campana; N slope., 850 m, 15 Sep 1974, *S. Mori, J. Kallunki, R. Dressler, & P.J. Maas 1918* (MO); 5-9 mi N of Pan-American Highway on El Llano-Carti Road., 09°15'N, 078°59'W, 200–250 m, 30 Mar 1988, *Sue A. Thompson 4645* (MO). **San Blas**: El Llano-Carti Road, 17.4 km from Interamerican Hwy., 9°19'N, 78°55'W, elev. 325 m., 9°19'N, 78°55'W, 325 m , 27 Aug. 1984, *Greg de Nevers 3776* (MO, NY). **Veraguas**: Vicinity of Escuela Agricultura, Alto Piedra near Santa Fé, 0.3 mi beyond the fork in the road near the school, toward Atlantic slope along trail to top of Cerro Tute., 3200–3400 f, 26 Jan 1980, *T. Antonio 3489* (MO); Traditional campsite, 1 km past Agricultural School, forested slope to the rear., 1000–1200 m, 5 Feb 1977, *J.P. Folsom & L. Collins 1622* (MO); Valley of Río Dos Bocas along road between Escuela Agricola Alto Piedra and Calovebora, 15.6 km northwest of Santa Fé; primary forest; along trail to Santa Fé, steep forested hill east of river., 450–550 m, 31 Aug 1974, *Thomas B. Croat 27578* (MO); Ca. 15 km NW of Santa Fé, on road to Calovebora (Panama Hwy. 35), near continental divide., 5 Aug 1975, *S. Mori & A. Bolten 7671* (MO); Vicinity of Continental Divide, third branch of Río Santa Maria to drop-off to lowlands, 12-15 km NW of Santa Fé., 650–750 m, 16 Nov 1974 - 17 Nov 1974, *Robert L. Dressler 4822* (MO).

UNITED STATES. **Missouri**. **Saint Louis City**: Missouri Botanical Garden: In Research Greenhouses on Garden grounds, cultivated collection., 38°36'N, 090°15'W, 160 m, 29 June 1999, *H.H. Schmidt 3628* ().

**Spathiphyllum luteynii** Croat & O. Ortiz, sp. nov. Type: Panama.

Province of Panamá: Cerro Campana cloud forest, trail lealding to cross, 792–853 m, 3 Jan.1981, *K.J. Sytsma 2908* (holotype, MO-2914034) [study number of duplicates of all possible types]

Terrestrial to 75 cm tall; **internodes** short, 2–3 cm diam.; **cataphylls** 7–12 cm long, persisting intact or as fibers. LEAVES semi-erect; **petioles** 11.8–36.5 cm long (averaging 23.6 cm), sheathed to 10–25 cm, 0.45–0.82 its length, 1.3-1.9 times longer than peduncle, terete, sometimes weakly ribbed, matte; **blades** obovate-elliptic to broadly oblanceolate, 25.5–52.8 cm long, 7.6–17 cm wide, broadest above middle, 1.1–2.7 times longer than petioles, gradually acuminate at apex, narrowly acute at base, matte moderately bicolorous, inequilateral, one side 6–11 mm wider; **midrib** drying broadly convex, conspicuously pale-dotted above, thicker than broad, drying finely ridged, densely and minutely granular below; **primary lateral veins** 15–30 pairs, closely spaced, mostly less than 1 cm apart, arising at a steep angle, then spreading at 25–30° angle, deeply impressed above, with interprimary veins almost as prominent, sometimes with 1-2 interprimary veins branching from near the base; **upper surface** smooth; **lower surface** finely ribbed-pale-speckled. INFLORESCENCE erect; peduncle 24.5–57 cm long;

**spathe** green, narrowly elliptic, 13.5–21.5 cm long, 3.1–8.5 cm wide, prominently decurrent, (3.3)4–6(8) cm below the pointe of fusion of the peduncle; **spadix** 4.6–8.6 cm long, stipitate 1–3.7 cm, matte, green, cylindroid, 3–5.7 cm long, 8–12 (20) mm diam.; **flowers** 6–7 flowers visible per spiral, 3–4 mm long and broad; tepals free, matte, minutely granular; lateral tepals 1.3–1.5 mm wide, inner margin straight to concave, outer margin 3-sided; pistils 3 mm long with a prominently exserted slender style, to 1–2 mm long; ovary 3-locular; locules each with one ovule; ovules 1.2­–2 mm long, 0.6–0.8 mm diam.; stamens 1 mm long, 0.5 mm wide, thecae oblong, parallel; pollen white. INFRUCTESCENCE 5–6 mm long, 2.5–3.5 mm diam. on drying ; seeds 3–5 per berry, 2.6–2.7 mm long, 1.4–2 mm diam., drying brownish with prominent pale circular cellular inclusions.

*Spathiphyllum luteynii* is endemic to Panama, known only from 108–1100 m in *Tropical wet forest* and *Premontane wet forest* life zone.

The species is characterized by its modest size, petioles sheathed to near or above the middle, terete free portion, oblanceolate to oblanceolate-elliptic, prominently veined narrowly acuminate blades which are attenuate at the base, closely spaced prominently ascending primary lateral veins with prominent interprimary veins as well as by the green, prominently decurrent narrowly elliptic spathe and prominently long-stipitate green cylindroid spadix with free tepals.

*Spathiphyllum luteynii* is mostly related to *S. dressleri* Croat & Cardona but that species differs by having usually smaller ovate-elliptic paler-drying leaves with many fewer pairs of primary lateral veins, a more ovate spathe and a proportionately broader spadix.

*Paratypes*: Panama. Colón: Donoso, afuera del área de la conc essión de Minera Panama, N de heliopad, 08°48’15”N, 80°47’16”W, 26 Aug. , 2012, *O. Ortiz 840* MO, PMA); 08°48’15”N, 80°47’16”W, 28 Aug. , 2012, *O. Ortiz 873* MO, PMA) Panamá: Cerro Campana cloud forest, 8 August, 1970, *James L. Luteyn & Helen Kennedy 1828* (DUKE);

**Spathiphyllum matudae** Bunting,Mem. New York Bot. Gard. 10(3): 38-40, f. 8. 1960.

TYPE: Mexico. Chiapas: Cacaluta, escuintla, 29 Mar. 1948, *E. Matuda 17645* (holotype, NY; isotype, F).

Terrestrial, 1-2.5m tall; **internodes** short, 3–4 cm diam.; **petioles** 35-50 (-78) cm long, usually much longer than blades, sheathed 3/5-2/3 of length, dark green matte, minutely pale-speckled, sheath deciduous to ca. middle, oval above sheath, erect-incurled conspicuously and mintuely undulate; geniculum 2.5-4.5 (-5.5) cm long, sulcate; **blade** lanceolate or elliptic-lanceolate, 36-48(-62) cm long, 13-25.7 cm wide, 1.8–3.7 time longer than wide, inequilateral (one side 1-2 cm broader, marginally undulate, acute-acuminate at apex, obtuse-subrotunded to acute and usually weakly attenuated, moderately thin, matte, conspicuously bicolorous, dark green and semiglossy above, moderately paler and matte below; **midrib** deeply sunken above, thicker than broad and paler below, dark green with the upper edge paler below; all veins sunken; **primary lateral veins** departing midrib at 60-70°, all conspicuously sunken above, convex and slightly paler below; interprimary veins thick and pale only near base; minor veins fine. INFLORESCENCE erect, long-pedunculate; **peduncle** 50-70(-105) cm long, **spathe** whitish to yellowish or greenish white, cucullate, elliptic to oblong-elliptic, (13-)15-27(-33) cm long, 5-8(-10) cm wide, apex attenuate-acuminate (acumen 3-5 cm long), base decurrent on peduncle 2.5-5.5(-9) cm; **spadix** 4.5-9.5 (-11.5) cm long, green, cream to greenish yellow; stipe 0.6-2(-2.5) cm long; pistils acute, green; ovary (2-)3-locular; locules 2-5 ovulae; fruits obovoid or ellipsoid, short to long-rostrate. Nv: bushna (Mexico); gusnay, bushnay, huisnay, güisnay (Guatemala), huisnay (El Salvador).

*Spathiphyllum matudae* ranges from southern Mexico (Chiapas & Oaxaca) to Guatemala and El Salvador at 100-1180(1800)m in a *Tropical moist* *forest* to *Premontane dry forest* life zone.

The species is characterized by it petioles sheathed 2/3 to ¾ their length with a long geniculum usually to ca. 5 cm long, narrowly ovate to ovate-elliptic acuminate frequently grayish drying leaf blades which are briefly attenuated at base with the primary lateral veins spaced 1.5-2 cm apart as well as by the whitish to greenish white spathe which is long-decurrennt on the peduncle and whitish to yellowish white spathe with long-protruding styles.

The species is most closely related to *S. coclearispathum* Schott and may be only a dry land ecotome of the same species. Both share the very long geniulum but the blades of *S. cochlearispathum* are larger and typically proportionatly narrower.

[MODIFY EXSICCATAE AFTER ENTERING INTO TROPICOS]

*Additional specimens seen* GUATEMALA. **Escuintla**: Rio Aceituno. Near bridge over río Aceituno on CA-2. Muddy banks of the río Aceituno, 14°16'03"N, 090°52'11"W, 300 m, 27 May 1970, *W.E. Harmon 2409* (MO). **Guatemala**: Amatitlan. Barranca de Eminencia, 1400 f, Feb 1892, *John Donnell Smith 2790* (US). **Sacatepequez:** Alotenango. 6 miles SW of Alotenango on road to Escuintla. Deep gorge with steep sides, 14°25'22"N, 090°49'16"W, 1000 m, 27 Jul 1977, *Thomas B. Croat 42033* (MO). **Suchitepequez**: Pueblo Nuevo. Near Pueblo Nuevo, 14°38'51"N, 091°32'25"W, 750 m, 1 Mar 1939, *Paul C. Standley 66857* (F).

MEXICO. Cacaluta, Escuintla, Chis., 29 March 1948, *Matuda E. 17645* (NY). **Chiapas**: Arriag. Cañada al Espadañal, Rancho Bonito. Veg. Selva mediana subcaducifolia., 16°20'16"N, 093°52'21"W, 342 m, 23 May 2002, *Emerit Meléndez L., Cristian Chavarria, Ma. Nerey da Moreno 237* (MO); Sobre la carr. Arriaga-Tuxtla Gutiérrez, el el puente Toronjal. Veg. Selva mediana perennifolia, riparia., 16°19'07"N, 093°52'16"W, 400 m, 24 Feb 2002, *A. Reyes-García 4002-b* (MO). Escuintla: Esperanza., 160 m, 16 May 1947, *E. Matuda 16561* (F); Turquia: Escuintla - Monte Ovando, Along road between Escuintla and Monte Ovando, 2.8 km NW of Turquia, 15°21'N, 092°39'W, 100 m, 13 Feb 1979, *Thomas B. Croat 47478* (MEXU, MO). Tapachula: Finca Experimental "La Novia" Quinta Calle Poniente 9., 26 Feb 1964, *Ross, Gordon B. s.n.* (BH, MO). Unión Juárez. Puente Monte Perla. Tapachula - Union Juarez, Along highway between Tapachula and Unión Juaréz, 1 mi N of Puente Monte Perla. Along ravine below waterfall, 15°02'24"N, 092°04'48"W, 1100 m, 10 Feb 1979, *Thomas B. Croat 47203* (MO, WU). **Oaxaca**: Mpio. Sta. María Chimalapa: Cerro de la Fortuna, un cerro de 1000 m en el SO de la Sa. Tres Picos, allado N de la cabecera del Río Verde, ca. 15 km en linea recta al NE de Sta. Maía; cima,17°01'12"N, 094°36'36"W, 1000 m, 28 Apr 1987, *T. Wendt et al. 5678* (CHAPA, MO). Tuxtepec [This is well on the Atlantic slope. Find Specimen]: 4 km SE of Metates, bajada de la Casita Tuxtepec-Oaxaca. Veg. Bosque Mesófilo., 17°39'36"N, 096°19'12"W, 9 Dec 1985, *R. Torres C. et al. 7810* (MEXU, MO).

FIND OUT WHAT THESE ARE:

PANAMA. **Bocas del Toro**: Gualaca-Chiriquí Grande, 8.1 mi S of Punta Peña., 08°49'N, 82°13'W, 460 m, 29 March 1993, *Thomas B. Croat 74951* (K, MO). **Chiriqui**: Along highway between Gualaca and Chiriquí Grande, along boundary trail between Bocas del Toro Province and Chiriquí Province, beginning from gravel road which leads W off main pavement just S of Continental Divide., 8°45'N, 82°18'W, 1170–1250 m, 26 June 1987, *Thomas B. Croat 66846* (MO); La Fortuna hydroelectric project, in clearing forest; and along river near camp as indicated., 1040 m, 19 Mar 1978, *Barry Hammel 1993* (MO).

UNITED STATES. **Missouri**. **Saint Louis City**: Climatron, bed 8., 2,16,23, July 1986, *George Rogers 167* (MO)..: April 1996, *Thomas B. Croat 78313* ().

Cultivated at Phipps Conservatory., 13 Jun 1990, *E. York 2606* (MO).

**Spathiphyllum montanum** (R. A. Baker) Grayum,Phytologia 82(1): 50. 1997. TYPE: Costa Rica, BASIONYM: *Spathiphyllum wendlandii* subsp. *montanum* R.A. Baker, Phytologia 33(7): 450. 1976.

Terrestrial, 60–70(100) cm tall; **internodes** short to 1–2 cm diam.; **petioles** 22-52 cm long, oval to terete in cross-section, sometimes finely ribbed, medium green, weakly glossy, sheathed (3/8–)3/5–4/5 its length, sheath margins erect midway, spreading toward apex; sheath thinly margined, intact, persistent; geniculum sharply sulcate; **blades** 22–35(–53) cm long, 8.5–16(–25) cm wide, elliptic to oblong-lanceolate or lanceolate-ovate, usually acute to weakly attenuate, sometimes subtruncate at base, moderately bicolorous, dark green and matte above, moderately paler and weakly glossy below, subcoriaceous; **midrib** sunken and slightly paler to concolorous above, 3-ribbed to narrow-raised and paler below; **primary lateral veins** 12–25(–28) pairs, sunken above, pleated-raised below; minor veins obscure. INFLORESCENCE held above leaves, erect; peduncles ca. 15.5–61.5(–119) cm long; **spathe** white becoming green, finally dark green outside, paler within, erect, more or less hooded, 12–24 cm long, 4–8 cm wide, elliptic to narrowly ovate or obovate, white with a green midib at anthesis, becoming green; **spadix** ca. 2.4–9 cm long, 0.7–1.5 cm diam., green to white, cylindroid; pistils acute and prominently protruding, white; ovary white becoming green; tepals free; style narrowly acute and prominently exserted 2.5 or more mm.

*Spathiphyllum montanum* ranges from Costa Rica to Western Panama (Bocas del Toro & Chiriquí) at 1100-2000 m in *Tropical wet forest* life zones. In Costa Rica it is known from both slopes of the Continental Divide near the summit.

The species is known for its small size and its occurance in cloud forests at elevations above 1300 m as well as by the numerous close primary lateral veins the broad erect white decurrent spathe with sharply emergent pistils.

This species was initially considered to be a subspecies of S. wendlandii Schott by Richard Baker during his studies of the Costa Rican Araceae (Baker & Burger, 1976) but was elevated to the species level by Grayum ( ) for his treatment of the Araceae for the Costa Rican Manual. *Spathiphyllum wendlandii* differs by having the petioles fully winged to the apex with the winged margins undulate

*Additional specimens seen:* COSTA RICA. **Alajuela**: 15 km NW of San Ramón by air. Cerro Azahar, headwaters of Río San Pedro. By road, 9 km NW of San Ramón to Piedades Norte, then 3 more km NW to La Paz, then left on jeep road 1.7 km to cluster of houses, then left again on jeep road 4-5 km to top of ridge, 10°09'00"N, 084°34'48"W, 1400–1500 m, 14 May 1983, *Ronald Liesner et al 15584* (MO). **Limon**; Talamanca. P.N. Cordillera de Talamanca; Cordillera de Talamanca: P.N. Cordillera de Talamanca; Cordillera de Talamanca. Río Coén, 800 m aguas abajo unión Queb. Kirigú. De Ujarrás a San José Cabécar., 09°23'40"N, 83°12'50"W, 1600 m, 31 March 1993, *Alvaro Fernandez 948* (CR). **San Jose;** Tarrazu. San Marcos de Tarrazu between Cerro Toro and Cerro Hormiguero along the road between Basuero de Tarrazu and Esquipulas, vicinity of Cerro Hormiquero., 09°33'30"N, 84°03'15"W, 1100–1200 m, 5 Sep 1996, *Thomas B. Croat 78898* (CR, INB, MO).

PANAMA. **Bocas del Toro**: Chami Copper Mines camp, below Cerro Colorado, 15 km from camp., 1600 m, 20 Jun 1986, *W.J. Kress, H. Luther, L. Besse & J. Halton 86-1934* (MO, SEL). **Chiriqui:** Cerro Colorado, along road to old copper mine development N of San Felix, 18.6 mi N of bridge over river near San Felix, 6.6 mi beyond Chame and road to Escopeta., 08°30'N, 81°46'W, 1475–1485 m, 30 March 1993, *Thomas B. Croat 75006* (B, K, MO, US); Camp Hornito, Fortuna dam site., 08°44'N, 082°18'W, 1000–1200 m, 26 Sep 1976, *R.L. Dressler 5493* (MO); Los Planes de Hornito: Gualaca-Chiriquí Grande, 7.2 mi beyond Los Planes de Hornito., 8°44'N, 82°14'W, 1165–1200 m, 19 Sept. 1987, *Thomas B. Croat 67812* (MO).

**Spathiphyllum morii** Croat & O. Ortiz, sp. nov. Type: Panama. Veraguas: NW of Santa Fé, 8.8 km from Escuela Agrícola Alto de Piedra, on road to Calovebora, 580 m, 17 June, 1975, *S. Mori 6664* (holotype, MO-2275339).

Terrestrial, to 2 m tall; **internodes** short, drying 2.5–3.5 cm diam.; **cataphylls**  to 12 cm long, persisting more or less intact; **petioles** 61.5–76.5 cm, much longer than the blades, sheathed (45)70–83% its length, drying matte, finely ridged, yellowish brown; sheath thin, brown-drying, persisting intact; **blades** narrowly ovate, 35.5–48.5 cm long, 21.5–31.5 cm wide (averaging 42.6 x 27.1 cm), 1.5–1.6 times longer than wide, 0.53–0.68 times as long as petioles, gradually acuminate at apex, rounded and attenuate at base, thinly coriaceous, dark green and matte above, moderately paler and weakly glossy below, drying brownish green above, yellowish brown to grayish green below; **midrib** sunken and concolorous above, narrowly rounded and paler below; **primary lateral veins** 22–28 pairs, arising at a steep angle then spreading at 45–60° angle, scarcely more prominent than interprimary veins, drying weakly raised and concolorous above, narrowly raised and darker below; **minor veins** fine, finely pale-speckled on magnification. INFLORESCENCEerect, 78.5–112 cm long, almost as long as leaves; **peduncle** 61–89.5 cm long; **spathe** green, narrowly ovate,17.5–26.5 cm long, 6.5–10.5 cm wide; **spadix** green, cylindroid,7–8.5 cm long,1.3–2 cm diam.; **flowers** 8–10 visible per spiral, 2–3 mm wide; tepals fused into a ring around pistil; **pistil** short-emergent, narrowly pointed to 3 mm long; stamens held at level of tepals; 1.4 mm long, 1.2 mm diam., tan on drying; thecae more or less parallel.

*Spathiphyllum morii* is endemic to Panama, known only from the type locality in Veraguas Province at 1150–1900 m in a *Lower montane rain forest* or *Premontane rain forest* life zone.

The species is characterized by its robust habit to 2 m tall, matte-drying finely ridged yellowish brown-drying petioles which are much longer than the blades and sheathed (45)70–83% its length, narrowly ovate acuminate blades which are attenuate at the base, drying brownish green above, yellowish brown to grayish green below with numerous close veins as well as by the inflorescence which is nearly as long as the leaves with a narrowly ovate, long-acuminate green spathe which is markedly decurrent at the base, and the green stipitate cylindroid spadix which is much shorter than the spathe with narrowly pointed protruding pistils.

The species has been confused with *S. wendlandii* Schott but that species differs by having petioles which are shorter than the blades and petioles that are winged to the geniculum and also to *S. montanum* (R. A. Baker) Grayum which differs by having smaller blades, shorter petioles and a white spathe.

The species is named in honor of American botanist and old friend Dr. Scott Mori who spent most of his career at the New York Botanical Garden. Scott was responsible for collecting all the specimens of this species while he worked as collector for the Flora of Panama during 1975.

*Paratypes*: Panama. Veraguas: 14 km NW of Santa Fé on road to Calovebora, Panama Hwy 35, 4 Aug., 1975, *S. Mori & A.Bolton 7655* ( MO); ca. 10 km NW of Santa Fé on road to Calovebora, 4 Aug., 1975, *S. Mori & A.Bolton 7615* ( MO); NW of Santa Fé, 2 km NW of Escuela Agricola Alto de Piedra, ridge below Cerro Tute, 1070–1150 m, 19 May, 1975, *S. Mori & J. Kallunki 6250* ( MO).

**Spathiphyllum ortgiesii** Regel, Gartenflora 39. 1870. TYPE: Mexico. Without exact locality, *B. Roezl s.n.*, LECTOTYPE, designated by Bunting, Gartenflora 21: t. 738. 1960.

Terrestrial, forming a tight rosette 0.5- 1 m tall; **internodes** short, 2-4 cm diam.; **petiole** (20-)32-48(-92) cm long (averaging 44 cm), sheathed throughout; sheath erect, spreading slightly near base of blade, undulate below blade, matte, medium green and faintly striate outside; geniculum usually winged, 1.5-3 cm long, 1-2.4 cm wide; **blades** elliptic-oblanceolate to broadly elliptic,usually moderately inequilateral, 31-60(-70) cm long, 15-26 cm wide (averaging 47 x 17 cm), bruptly to gradually acuminate at apex, attenuate at base and finally decurrent onto geniculum forming a crinkled wing continuous with the wing of the petiole, subcoriaceous, dark green and semiglossy above, much paler and matte below concolorous to slightly paler; **midrib** broadly sunken and slightly paler above, thicker than broad, much paler and faintly striate below, **primary lateral veins** 16-20 pairs, arising from midrib at 45-60°, weakly quilted-sunken above, pleated-raised below; minor veins few, visible but not distinct. INFLORESCENCE erect-spreading, held at the level of the leaves or well above the leaves; peduncle to (35-)55-68(-105) cm long; **spathe** oblanceolate or oblong-elliptic, 12-33.5 cm long and 5-9 cm wide, apex short-acuminate, base cuneate and decurrent on the peduncle (3-)5-8(10) cm, spreading, green, light green pre-anthesis, becoming dark green, matte, somewhat hooded, slightly darker inside; **spadix** 5-10(16.3) (averaging 8.2 cm) cm long, on stipe 0.5-1.8 cm long; tepals separate, entire at apex, apical portion erect and forming a collar around pistil, medium green to greenish white; pistils often constricted between the style and ovary, green, early emergent, turning pale green, exserted and sharp; ovary 3-locular[ovules per locule?]; fruit with seeds more or less reniform, 3.2 cm long, 2.1 cm side, moderately wartly, blacked in reconstituted material.

*Spathiphyllum ortgiesii* is known from Mexico and Honduras at 20-1500 m in regions of Tropical wet forest life zones. It is certainly to be expected in Guatemala.

The species is charcterized by its rosulate habit, fully winged petioles which have the wing usually extending across the geniculum, the mostly elliptic-oblanceolate blades with moderately few primary lateral veins as well as by the green decurrent spathe and the stipitate greenish white spadix with prominently protruding green pistils which are constricted between the style and ovary.

The only other species with fully winged petioles is *S. wendlandii* Schott from Costa Rica. That species differs by having a white spathe.

*Additional specimens seen:* HONDURAS. **Copán**; San Antonio. Cerro Azul. On south slopes of Cerro Azul, 12 Km NE of Florida, Cerro Azul National Park. Dense mixed hardwood forest approx. 35 years old, 15°06'N, 088°55'W, 1530 m, 11 Feb 1992, *Thomas Hawkins & Darío Mejía 238* (MO). **Olancho:** Rio Olancho. Francisco de la Paz - Gualaco, Along Río Olancho, on road between San Francisco de la Paz and Gualaco, 13.6 mi SW of Gualaco, in disturbed virgin forest on steep slope ca 1/2 mi E of main road, along gravel road into private property., 15°00'N, 86°07'W, 1300 m, 6 Feb 1987, *Thomas B. Croat & Dylan P. Hannon 64294* (ENCB, MEXU, MO, NY, VDB, WU); San Esteban: San Esteban - Bonito Oriental, Along Río Olancho, on road between San Estéban and Bonito Oriental, 14.8 mi NE of San Estéban; primary forest remnants in ravine., 15°25'N, 85°47'W, 635 m, 7 Feb. 1987, *Thomas B. Croat & Dylan P. Hannon 64397* (ENCB, MO). **Yoro**; Cordillera Nombre de Dios: Cordillera Nombre de Dios, hills S of San José de Texíguat. Evergreen rainforest on steep slopes., 15°29'N, 087°27'W, 300–400 m, 17 May 1991, *Gerrit Davidse, Ramón Zúniga & Paul R. House 34473* (MO).

MEXICO. *A. Engler 79* (US). **Chiapas**: Ocosingo. Lago Lacanjá a 15 km de la comm. Lacandona Lacanjá Chanjayab, 16°49'48"N, 091°49'48"W, 278 m, 25 October 1985, *Ramirez P. 187* (MEXU). **Distrito Federal**. Ixtapalapa: cultivated, 9 May 1969, *Cerda L., M. de la 109* (MEXU). **Oaxaca**: Ixtlan - Valle Nacional, 16 mi above Valle Nacional, 17°39'36"N, 096°24'36"W, 1530 m, 20 June 1969, *Webster & Breckon 15367* (DAV). **Veracruz**: vic. Playa Escondida, 12 air mi NNW of Sontecomapan, 18°33'36"N, 095°06'00"W, 20 m, 13 Sept 1975, *Holstein & Armbruster 20426* (DAV); Los Tuxtlas: Catemaco - Montepio, Along road between Catemaco and Montepio, 2.6 km S of Los Tuxtlas Field Station, 9.3 beyond end of asphalt highway, 19.4 km N of Catemaco, 18°36'36"N, 095°03'36"W, 50 m, 25 Aug 1996, *Thomas B. Croat 78696* (CF, ENCB, F, MEXU, MO, NY). Catemaco: Near Playa Escondida, 10 km N of Sontecomapan. Selva alta perennifolia. Tropical evergreen forest on slopes above the Gulf of Mexico., 18°35'24"N, 095°03'00"W, 50 m, 22 Apr 1983, *M. Nee & K. Taylor 26711* (F, NY, XAL); West E facing slopes 5.7-6 miles from Catemaco on road to Sontecomapan., 18°26'24"N, 095°02'24"W, 380 m, 27 Sep 1961, *H.E. Moore, Jr. & Bunting 8932* (BH, MO); Barra de Sontecomapan. Selva alta perennifolia., 18°33'00"N, 094°58'48"W, 10 m, 19 Jul 1967, *L. Nevling & A. Gómez-Pompa 178* (XALU); At highest point on road from Catemaco to Sontecomapan, 5 km N of junction with road around Laguna Catemaco, 8 km (by air) NE of Catemaco. Selva alta perennifolia. Forest on slopes., 18°28'48"N, 095°03'36"W, 500–550 m, 31 Oct 1981, *M. Nee & J.I. Calzada 22550* (F); Entre Bastonal y arroyo Claro, 14 km E of Lago Catemaco. Selva alta perennifolia. Veg. Primaria. MAPA 21.0 58.5., 18°22'48"N, 094°54'36"W, 900 m, 10 Jun 1972, *J.H. Beaman 6122* (F). Mecayapan: Base of Volcan Santa Marta; above Tatahuicapan; primary forest selectively logged during last 10 years; now being opened to subsistence farming., 18°14'24"N, 094°45'36"W, 250 m, 15 May 1986, *J.V. LaFrankie 1248* (GH); Las Tuxlas Range; very steep river gorges dissecting the slopes of Volcan Santa Marta., 400 m, 16 May 1986, *J.V. LaFrankie 1261* (GH). San Andrés Tuxtla: Road from Estación Biológica Los Tuxtlas to Playa Montepio; ca. 7.8 km N of Estación Los Tuxtlas. In forest along stream west of road., 18°34'48"N, 095°09'36"W, 120 m, 29 Sept 1986, *B. Hammel, M. Merello & S. Sinaca 15505* (MO); Estación Biologica de los Tuxtlas. Selva alta perennifolia. Primaria. Suelo-arcilloso., 18°34'48"N, 095°03'36"W, *Juan I. Calzada 389* (F, XALU); Estacion Biological, Los Tuxtlas. MAPA 24.0 56.5. Selva Alta Perennifolia. Veg. Secundaria., 18°34'48"N, 095°03'36"W, 140 m, 26 May 1969, *G. Martinez C. 1908* (A, F); Playa Escondida, 28 km NE of Catemaco., 18°34'12"N, 095°03'36"W, 27 Sep 1974, *Michael T. Madison 1731* (GH); Estación de Biologia Tropical "Los Tuxtlas", Vigía 5, Lote 67. Selva alta perennifolia., 18°34'N, 095°04'W, 450 m, 19 Apr 2005, *T. Krömer, A. Acebey, & E. Velasco Sinaca 1964* (MO). Santiago Tuxtla: Steep wet ravine slopes 1.5 miles below Santiago Tuxtla., 18°27'36"N, 095°17'24"W, 240 m, 11 Apr 1952, *H.E. Moore, Jr. 6270* (BH, MO, NY).

UNITED STATES. **Missouri**. **Saint Louis City**: Missouri Botanical Garden: In Research Greenhouses on Garden grounds, cultivated collection., 38°36'N, 090°15'W, 160 m, 29 June 1999, *H.H. Schmidt 3626* ().

Cultivated at Phipps Conservatory, Pennsylvania. Orchid Room., 7 Apr 1989, *Sue A. Thompson 6375* (MO).

**Spathiphyllum ortizii** Croat & O. Ortiz, sp. nov, Type: Panama. Darién: Distrito dde Chepigan, Parqu Nacional Darién, camino hacia cima de Cerro Sapo, 14 Abril, 2014, Orlando O. Ortiz 2313 (holotype, MO-6576191; isotype, PMA). [Add details and description from Ortiz folder]

**Spathiphyllum patinii** (Hogg) N.E. Brown, Gard. Chron. 2: 783. 1878.

Basionym: *Anthurium patini* Mast., Gard. Chron. 3: 524-525, f. 109. 1875.

Terrestrial, 35–50 cm tall, sometimes rupicolous; **internodes** short, 1-1.5 cm diam.; cataphylls 1-ribbed, persisting. Leaves clustered at apex of stem, erect to spreading; **petioles** slender and flexible, subequaling the blade, terete, 13-38 cm long (averaging 22.2 cm), 2.5–2.9(3.5) times longer than broad, sheathed 0.35-0.77 its length, 0.6-2.3 times longer than the petioles; geniculum ca. 0.5-1 cm long; **blades** lanceolate-elliptic or oblong-elliptic, moderately inequilateral,15.7-26.7 cm long, 4-8.9 cm wide (averaging 19.7 x 6.2), 2.5-5.3 times longer than wide, 0.57-1.6 times longer than petioles, gradually acuminate at apex, acute to cuneate, sometimes attenuate at base, marginally undulate, dark green and matte slightly velvetyabove; **primary lateral veins** ca. (4-)6-11 pairs, arising at 45-60° from the midrib. INFLORESCENCE erect, held among the leaves or slightly above the leaves; **peduncle** (13.5-)27-45 cm long; **spathe** reflexed, lanceolate to oblong-elliptic, 4-8.3 cm long, 0.6-1.8 cm wide, narrowly acuminate at apex, obtuse and clasping and weakly affixed at its narrow base, white inside, creamy-white below with green midrib; **spadix** white or green with white pistils, 2.5-5.7 cm long, stipitate 0.3-1 cm long; perianth segments green, speckled with purple-violet, separate or sometimes conglutinate in age; pistil white, obpyramidal, apically truncate, only the nipple-like stigma exceeding the perianth; ovary cream-colored, 3-locular, fruiting spadix smooth, orange-brown to maroon; fruits white, angular-spheroid, apically truncate; seeds 1 or 2 per locule, ovoid, surface verruculos, ridged and furrowed.

*Spathiphyllum patinii* ranges from Panama to Colombia at 780-800 m in Panama and to 1000 m in Colombia where is occurs in Antioquia, Santander and Valle Departments.

The species is characterized by its small size, slender flexible weakly sheathed brownish drying petioles, small more or less elliptic brownish drying leaves with few primary lateral veins as well as by the slender peduncle, the spreading whitish spathe which is weakly clasping and very narrow at base and the narrowly cylindroid stipitate white cylindroid spadix with truncate cream-colored pistils and white berries.

*Spathiphyllum patinii* is most similar to *S. floribundum* (Linden & André) N. E. Br. from Colombia. That species differs by having petioles 2-3 times longer than the blades.

*Additional specimens seen:* COLOMBIA. Patria; Nova Granata, *A. Engler 229* (MO, NY, US); 1769 - 1808, *J. Celestino Mutis 1123* (MA, US); Calima-Valle., 50 m, 2 Aug 1975, *Fernando Castro 26* (CUVC). **Antioquia**: Rio Claro, along hwy. between Pto. Triumfo and Medellin, along rocky cliffs and banks near the river S of the hwy., ca. 1 Km., 5°54'N, 74°51'W, 8 May 1983, *Thomas B. Croat 56547* (MO); Primary forest along Quebrada Negra, tributary to Punchiná reservoir, Río Guatapé (Río Magdalena valley)., 6°15'N, 75°05'W, 770–820 m, 6 Jul 1986, *M.H. Grayum, B. Hammel, J. Kress, L.C. García & C. Santiago 7627* (MO); Margen izquierda del Rio Guatepé entre San Rafael y la Holanda, 950 m, 13 Oct 1981, *Orozco et al 720* (COL); 1.5 km from Presa Punchina, along road to Alto Samana, remnant forest along creek to Rio Guatape., 870 m, *Selby 86-771* (MO); Presa Punchina: 1.5km from Presa Punchina, along road to alto Semana, 870 m, 7 March 1991, *S.W.Ingram (M.Grayum 7612; Selby Access.86-0771) 869* (SEL). Gómez Plata: Cuenca del rio Porce, hacienda Vegas de La Clara., 06°37'N, 075°15'W, 950 m, Aug 2003, *F. Cardona, R. Callejas et al. 117* (NT=HUA, INT=MO). Maceo: 6°35'N, 74°38'W, 500–900 m, Abril 2001, *Felipe Cardona & Carlos Lopez 1085* (HUA). San Carlos: Remnants of recently cut forest along creek affluent to Río Guatapé, ca. 1.5 km from Presa Punchiná along road to Alto Samaná, Río Magdalena valley., 6°15'N, 75°05'W, 870 m, 5 Jul 1986, *M.H. Grayum, B. Hammel, J. Kress, L.C. García & C. Santiago 7612* (MO). SanLuis: Corregimiento de el Prodigio, cano el Tigre., 6°6'N, 74°48'W, 350 m, 26 Jun 1990, *D. Cardenas et al. 2886* (JAUM, MO); vereda Manizales, a orillas del Rio Dormilón, 1400 m, 12 oct 1981, *Orozco et al. 614* (COL); Parque ecológico: Parque ecológico, Cañón del río Claro, sector norte, margen derecha., 325–400 m, 17 Aug 1983, *Alvaro Cogollo 706* (JAUM, MO). Tarazá: Corr. "El 12", via el 12 Barroblanco, 3 km S Barroblanco a lo largo de quebrada Purí, 07°28'N, 075°24'W, 410 m, 11 Oct 1986, *Callejas & Jangoux 2581* (HUA). **Santander:** 12 leguas al SE de Barranca Bermeja, 5 km de la margen derecha del Río Opón., 200 m, 20 Sep 1954, *R. Romero-Castañeda 4860* (MO, US). **Valle del Cauca**: Bajo Calima., 50 m, 16 Aug 1975, *H. Ramírez 28* (CUVC); *Carlos A. Giraldo 19* (CUVC). Cali: 1000 m, October 1968, *Sor Mercedes Giraldo sn* ().

PANAMA. **Cocle:** Along road between Llano Grande and Coclecito (N of La Pintada), 4.0 mi N of stream at Llano Grande; disturbed edge of forest along stream., 330 m, 7 December 1979, *Thomas B. Croat 49226* (MO). **Colon**: Santa Rita lumber road, upper Río Mango Indio, north of Agua Clara weather station., 11 Mar 1970, *Robert L. Dressler 3855* (MO); Near Mina no. 2, Río Escandaloso (tributary of Río Boquerón)., 130–150 m, 20 May 1978, *Robert L. Dressler 5816* (MO); Along Río Escandaloso near Mina Boqueron Numero 2., 250 m, 14 July 1979, *T. Antonio 1324* (MO); Upper Río Piedras headwaters, along trail from end of Santa Rita Ridge Road, ca. 11 km SW of Cerro Bruja, tropical wet forest., 09°25'N, 079°35'W, 600–700 m, 2 May 1981, *K. Sytsma, L. Andersson, & R. Dressler 4254* (MO). **Darien**: W side of SW ridge leading to Alturas de Nique, headwaters of Río Coasi., 350 m, 27 Dec 1980, *Ronald L. Hartman 12297* (MO); Puerto Saint Catherine., July 1962, *John D. Dwyer 2257* (MO); Darien: Topalisa - Pucuro, Parque Nacional del Darién, ridge between Río Topalisa and Río Pucuro; ca. 9-17 km E of Pucuro, 08°03'N, 077°19'W, 450–900 m, 29 Oct 1987, *B. Hammel, G. de Nevers & H. Herrera 16581* (MO). **Panama**: 8 km. N of El Llano on El Llano-Carti Road. In forest and pasture edges E of Río Terable. Tropical moist forest., 09°15'N, 078°50'W, 450 m, 19 August 1981, *S. Knapp 967* (MO); El Llano-Carti road, 6.8 mi from the highway; primary forest along road., 350 m, 5 December 1979, *Thomas B. Croat 49101* (MO); El Llano-Carti highway, about 12 km N of El Llano., 12 Dec 1973, *Robert L. Dressler 4510* (MO); El Llano-Cartí Road, tropical moist forest., 09°16'N, 078°58'W, 1000 f, 6 Sep 1980, *Kenneth J. Sytsma 981* (MO); *Kenneth J. Sytsma 957* (MO); El Llano to Carti Road, 13.8 km N of the Pan-American Highway., 5 Oct 1977, *J.P. Folsom, R. Dressler, Dr. Raul (Univ. of Heidleburg) & Elaine Spear 5781* (MO); El Llano-Carti Road in vicinity of Gorgas Lao Mosquito Control Project Site at km 12., 1 Aug 1974, *Thomas B. Croat 26070* (MO); Premontane wet forest along new El Llano-Carti road, 8-12 km N of El Llano., 400–450 m, 12 Dec 1973, *M. Nee, Al Gentry, & R. Dressler 8756* (MO); El Llano-Carti Road, 10.8 km from Interamerican Hwy. Wet forest., 1100–1200 f, 27 Dec 1974, *S. Mori, J. Kallunki, & B. Hansen 4139* (MO); El Llano-Carti Road, 10 km from Interamerican Hwy., 5 Oct 1974, *S. Mori & J. Kallunki 2334* (MO); El Llano-Carti Road; 10 km from Interamerican Hwy., 4 Oct 1974, *S. Mori & J. Kallunki 2257* (MO); El Llano-Carti Road, 23.4 km from Interamerican Hwy. Wet forest., 13 Apr 1975, *S. Mori & J. Kallunki 5572* (MO). **San Blas**: El Llano-Carti Road, 20 km from Interamerican Hwy: 9°19'N, 78°55'W, elev. 100-350 m., 9°19'N, 78°55'W, 100–350 m, 30 Sept. 1984, reg de Nevers, J. Vespuc

**Spathiphyllum phryniifolium** Schott, Oesterr. Bot. Wochenbl. 7(20): 159. 1857. TYPE: Panama. Isthmus Panamae, Chagres, Jan. 1850, *Fendler 425* (holotype, K, unicate, presumably.

Terrestrial in low, damp forest near river; **internodes** short, 1–4 cm diam.; **petiole** subequaling the blade, 69-90(105) cm long, sheathed 0.28-0.95 its length, sometimes to just below the geniculum, tinged brownish-pink; sheath greenish white, weakly and narrowly crinkled, thin and undulate, sometimes oval and narrow-ribbed adaxially, free part terete, medium green, weakly glossy; geniculum 1-3 cm long, sharply sulcate in apical 2/3; **blades** typically lanceolate, 2.5-4 times as long as wide, varying to oblong-elliptic, 25-68 cm long, (5-)8-16(-20) cm wide, 2.6-3.1(3.4) times longer than wide, conspicuously inequilateral, gradually acuminate at apex, obtuse to subtruncate at base, subcoriaceous to thinly coriaceous, dark green and semiglossy above, moderately paler and weakly glossy below; **midrib** sunken and slightly paler above, thicker than broad and paler below (minutely speckled); **primary lateral veins** 20-25 pairs, arising at (40)55-70° from midrib, narrow and weakly sunken above, convex and slightly paler below; minor veins few, weakly visible; blade margins minutely crinkled. INFLORESCENCE slightly shorter than leaves; **peduncle** 1.5 times to twice as long as blade, 35-90(-103) cm long, tinged brownish-pink; **spathe** cucullate, typically lanceolate, varying to oblong-elliptic, 10-26(-33) cm long, 3-9(-11) cm wide, apex attenuate, base oblique, subtruncate to cuneate and decurrent on peduncle 2-4.5(-7) cm, medium green to dark green outside, yellow-green inside, tinged brownish-pink toward margin, erect, slightly hooding; **spadix** 2.5-8(-11.5) cm long on a stipe 0.4-1.3(-2) cm long; tepals free, yellow-green to green; pistils elongate-conic, medium green to pale green, acutely protruding; ovary (2-)3-locular, ovules affixed near base of locules; fruiting spadix rough; **fruit** obovoid, green at maturity, rostellate; seeds as many as ovules, oblique-ovoid or reniform to oblong in profile, surface smooth or somewhat foveolate.

*Spathiphyllum phryniifolium* ranges for certain from Belize and S. Mexico to Nicaragua, Costa Rica, Panama and northern Colombia at ?? m elevation. Unverified collections are cited from Belize and southern Mexico. Specimens from Belize and areas to the north of Nicaragua are often confused with *S. blandum* Schott. That species differs by having a white rather than a green spadix. SEE COLLLECTIONS FROM southeastern U. S., Belize, El Salvador, Honduras and Mexico.

The species is characterized by its large size, narrowly ovate greenish drying blades which are often obtuse or rounded at the base sheathed with a sheath greenish white, weakly and narrowly crinkled, thin and undulate, typically lanceolate blades 2.5-4 times as long as wide and obtuse to subtruncate at base, as well as by its large boat-shaped green spathe and green spadix with berries maturing green.

The especies is most easily confused with *S. blandum* Schott which occurs along the coast of Central America between Nicaragua and Mexico. That species differs by having a white spadix.

*Monro 5458* from Amistad Park has ovate leaves 1.9 times longer than wide and are out of the ordinary for the species but seems otherwise to match the species. Ortiz 1877 from the Fortuna área also has broader blades to 2.2 times longer than broad but this specimen all dried parts more yellow-brown than of typical material but otherwise fits the key characters of the species.

*Additional specimens seen:* BELIZE. **Cayo:** Guacomallo bridge: 1.5 Miles S Guacomallo bridge. Edge of track through jungle, 16°50'47"N, 089°02'37"W, 550 m, 28 Aug 1980, *Sutton, Tebbs, Whitefoord & Williams 289* (BM). **Toledo:** Solomon Camp, vicinity of the junction of Richardson Creek and Bladen Branch, foothills of the Maya Mountains., 16°32'N, 088°45'W, 80–420 m, 5,7,9,12 Mar 1987, *Gerrit Davidse & Alan E. Brant 32084* (MO); Maya Mountains, canyon along Bladen Branch from Richardson Creek to Quebrada de Oro., 16°31'N, 088°46'W, 100–200 m, 12 March 1987, *Gerrit Davidse & Alan E.Brant 32368* (MO); Southern Maya Mountains, Bladen Nature Reserve, Ridge just south of the Main Divide of the Maya Mountains, "Augusta Divide Camp". Ridgetop, evergreen, montane forest dominated by Randia matudae, Quercus sp., Euterpe, Myrtaceae sp., Hedyosum mexicanum, Colpothrinax etc., with a herbaceous understory dominated by one species of fern; soils derived from volcanic rocks. GPS coordinates., 16°29'22"N, 088°59'33"W, 920 m, 22 May 1997, *Gerrit Davidse & D.L. Holland 36716* (BRH, MO).

COLOMBIA. **Antioquia:**. Salgar - El Dauro, Along road from Salgar to El Dauro (Chocó) near border with Chocó; montane wet forest., 5°59'N, 76°07'W, 1830 m, 24 Jan 1990, *Thomas B. Croat 69892* (MO). Carepa: Tulenapa, 7°48'N, 76°40'W, 100 m, 9 Diciembre 2002, *F. Cardona et al 1120* (HUA). **Chocó.** Acandi: Unguía, 100 m, 9 June 1976, *Forero et al. 1986* (COL, MO). Nuquí: Corregimiento Arusí; Estación Biológica El Amargal; trail from station to Arusí, along side trail to Río Arusicito., 05°34'15"N, 077°30'01"W, 50–60 m, 22 June 2000, *Thomas B. Croat & M.M. Mora 83710 (=Mora 328)* (MO, COL).

COSTA RICA. **Alajuela:** Cultivated at the Missouri Botanical Garden., *Selby 92-3* (MO); Bijagua: Canas - Upala, Along road between Cañas and Upala, 8 km north of Bijagua. Primary forest, 10°48'00"N, 085°03'00"W, 300 m, 26 Jun 1976, *Thomas B. Croat 36497* (MO). **Cartago:** Forest along RiRío Reventazón behind main building, CATIE, Turrialba; elev. ca. 600 m. 9°54'N, 83°39'W. Collected with Héctor, Hernández, Alina Chacón & Pam Sleeper, 09°54'00"N, 083°39'00"W, 600 m, 15 Aug 1984, *Michael H. Grayum 3819* (MO). **Guanacaste:** Parque Nacional Guanacaste Estación Mengo. Sendero al potrero, lado sur., 10°54'36"N, 085°27'36"W, 1100 m, 15 Jul 1989, *II INBio 184* (MO); Parque Nacional Rincón de la Vieja, the SE slopes of Volcán Santa María, above Estación Hacienda Santa María. Evergreen montane forest., 10°46'48"N, 085°18'36"W, 900–1200 m, 27 January 1983 - 28 January 1983, *G. Davidse, L.D. Gomez, M. Sousa, C.J. Humphries, N. Garwood, R. Hampshire & M. Gibby 23393* (MO); Parque Nacional Guanacaste Estación Maritza. Trail from Maritza to Cerro Cacao. Tropical dry forest transitional to moist forest., 10°57'00"N, 085°28'48"W, 600 m, 31 Aug 1990, *James C. Solomon 19100* (INB, MO); Secondary forest northwest of Lake Arenal., 13 Jul 1965, *Thomas B. Croat 258* (MO); Parque Nacional Guanacaste: Parque Nacional Guanacaste La Cruz - 9 Km al sur de Santa Cecília Estación Pitilla., 10°59'24"N, 085°25'12"W, 700 m, 28 September 1990, *Carlos Chávez en el curso II de Parataxónomos 211* (CR, MO); Parque Nacional Guanacaste. Estación Mengo, sendero al potrero., 10°54'36"N, 085°27'36"W, 1100 m, 15 July 1989, *INBio 184* (MO). **Heredia:** La Selva Biological Station., 10°26'00"N, 84°01'00"W, 50 m, 30 August 1996, *Thomas B. Croat 78728* (CM, INB, MO, NY); La Selva: Finca La Selva, the OTS field station on the Río Puerto Viejo just E of its junction with the Río Sarapiquí., 10°25'53"N, 084°00'13"W, 100 m, 31 May 1981, *B. Hammel & J. Trainer 10773* (); Finca La Selva, the OTS field station on the Río Puerto Viejo just E of its junction with the Río Sarapiquí., 10°25'53"N, 084°00'13"W, 100 m, 28 June 1981, *B. Hammel 10929* (); Finca La Selva, the OTS field station on the Río Puerto Viejo just E of its junction with the Río Sarapiquí., 10°25'53"N, 084°00'13"W, 100 m, 1 July 1981, *Barry E. Hammel 10937* (); Finca La Selva, the OTS field station on the Río Puerto Viejo just E of its junction with the Río Sarapiquí., 10°25'53"N, 084°00'13"W, 100 m, 6 August 1981, *B. Hammel & J. Fraser 11105* (); Finca La Selva, the OTS field station on the Río Puerto Viejo just E of its junction with the Río Sarapiquí., 10°25'53"N, 084°00'13"W, 100 m, 22 September 1980, *Barry E. Hammel 9812* ().**Limon:** Parque Nacional Tortuguero Estación Cuatro Esquinas. Cerro Tortuguero. Bosque primario y secundario., 10°34'48"N, 083°30'36"W, 119 m, 3 July 1990, *Ulises Chavarría en el curso II de Parataxónomos. 113* (MO); South end of Lomas de Sierpe, NE of terminus of road from Villa Franca. 10°19'N, 83°34'W. Collected with Brian Jacobs, George Schatz and Pam Sleeper, 10°18'36"N, 083°33'36"W, 40 m, 18 Jul 1984, *Michael H. Grayum 3521* (MO); In and around large swamp at Manzanillo de Talamanca. Elev. ca. 5 m. 9°38'N, 82°39'W. Northwestern end of swamp., 09°37'48"N, 082°39'00"W, 5 m, 2 Nov 1984, *Michael Grayum & Willie Burton 4350* (MO); 7 km SW of Bribrí., 09°35'24"N, 082°52'12"W, 100–250 m, 4 May 1983, *Gómez, L. et al. 20403* (INB, MO). **Puntarenas:** Along Quebrada Benjamín, ca. 2 km NW of Palmar Norte. 8°58.5'N 83°28'W 100-300 m, 08°58'12"N, 083°27'36"W, 100–300 m, 24 May 1986, *Michael H. Grayum, Barry Hammel & Greg de Nevers 7544* (MO); Along N Fork (known locally as "Quebrada Mona") of Quebrada Bonita, Carara reserve., 09°46'48"N, 084°36'00"W, 35–40 m, 11 Jun 1986, *Michael H. Grayum, Pam Sleeper & Roy Sleeper 7596* (MO); Parque Nacional Corcovado Sirena Rio claro trail., 08°27'36"N, 083°34'48"W, 0–200 m, 3 July 1991, *Piero Delprete 5155* (MO); Parque Nacional Corcovado Lower Lookout Trail., 08°27'00"N, 083°33'00"W, 10 m, 31 Jul 1988, *C. Kernan 734* (MO); Parque Nacional Corcovado Sirena. Monkey Woods, 08°27'00"N, 083°33'00"W, 0 m, 7 Apr 1988, *C. Kernan 378* (MO); Parque Nacional Corcovado. Sirena station; in primary forest on ridge E of station (Olla trail) and secondary woods N of station (Anacardium trail)., 08°28'48"N, 083°33'36"W, 5 m, 5 April 1988, *Barry Hammel & C. Kernan 16658* (MO); Interamerican Highway km marker 122; patch of forest west of road., 10°03'N, 84°45'W, 100 m, 4 Aug 1985, *B. Hammel & J. Trainer 14366* (MO); 2-4 km N of Sta. Elena, near Monteverde Reserve., 10°20'24"N, 084°49'12"W, 1500–1600 m, 5 May 1984, *Murphy, H & Whetstone, D. 873* (DUKE); Las Cruces Tropical Garden: Las Cruces Tropical Garden. San Vito de Java; cultivated at Waimea as 89-p179., 08°47'24"N, 082°57'00"W, *Thomas B. Croat 75200* (MO); Parque Nacional Corcovado; Sirena: Parque Nacional Corcovado; Sirena. Pavo trail to old airstrip., 08°27'36"N, 083°34'48"W, 1–50 m, 21 Jun 1989, *C. Kernan & P. Phillips 1171* (CR, MO). Coto Brus. Reserva de la Biosfera de la Amistad: Reserva de la Biosfera de la Amistad. Cerca Estación Biológica Las Alturas de Coton., 08°55'48"N, 082°49'48"W, 1900 m, 8 July 1994, *Kress & Dew 94-4065* (US). **San Jose:** Zona Protectora La Cangreja Slopes on W side of Quebrada Grande, ca. 1.5 km NNE of Mastatal de Puriscal., 09°41'24"N, 084°21'36"W, 400 m, 23 July 1988, *Michael Grayum, María Marta Chavarría & Nelson Zamora 8647* (MO); Cantón de Pérez Zeledón Along Carretera Interamericana between KM 122 and KM 123, vicinity of La Ese., 09°26'24"N, 083°42'36"W, 1200–1300 m, 19 August 1990, *Michael Grayum, Helen Kennedy & Noriaki Murakami 9948* (MO). Puriscal. Z.P. La Cangreja; Cerros de Puriscal: Z.P. La Cangreja; Cerros de Puriscal. Santa Rosa de Puriscal. Bosque primario en las faldas de Fila La Cangreja., 09°41'24"N, 084°22'48"W, 500 m, 27 August 1992, *J.F. Morales 540* (CR).

ECUADOR. **Pichincha.** Rio Palenque: Cultivated at Selby Gardens SEL account 77-2213, 16 August 1985, *Plowman T. 14112* (F).

EL SALVADOR. **Ahuachapán:** El Imposible, bosque el pacayal, quebrada el pacayal., 13°52'N, 89°59'W, 400 m, 11 Dec 1990, *Berendsohn et al. 1323* (MO); P.N. El Imposible, San Benito, río Aguachapío al E del nac., 13°49'N, 89°56'W, 3 Feb 1993, *Sandoval & M. Sandoval s.n.* (B, LAGU, MO).

GUATEMALA. **Izabal:** Modesto Mendez. 1 km N of Modesto Méndez. Rainforest along N side of Río Gracias a Dios, 15°54'13"N, 089°13'48"W, 10 m, 26 Jun 1970, *W.E. Harmon & John D. Dwyer 2674* (UMO 97791).

HONDURAS. **Colón:** Trujillo. Puerto Arturo. Pat O'Mara's property, lower slopes of [Cerro de] Puerto Arturo., 15°54'27"N, 085°56'51"W, 18 Jan 1981, *Janice Saunders 897* (MO). **Copán;** Dulce Nombre de Copan. 3 km south of Dulce Nombre de Copán. Mixed secondary forest in ravine, 1000 m, 30 Dec 1973, *Louis O. Williams, Antonio Molina R., Terua P. Williams & Albertina de Molina 42980* (MO).

MEXICO. **Chiapas:** Berriozábal. Limestone fissured ridge, Lower Montane Rain Forest, Quercus, Billia, Persea, Nectandra, Mirandaceltis, Turpinia and Calatola, 13 km north of Berriozábal near Pozo Turipache and Finca El Suspiro., 900 m, 21 Apr 1972, *D.E. Breedlove 24790* (MO). Venustiano Carranza: Wooded slope at Rancho Nacimiento along the road between Chiapilla and San Lucas, 16°34'48"N, 092°43'12"W, 2000 f, 25 February 1966, *Laughlin R.M. 286* (DS). Villa Corzo: Steep slopes with Pinus, Quercus and Liquidambar and Montane Rain Forest at the east base of Cerro Tres Picos near Cerro Bola along a logging road southwest of Colonia Agronomos Mexicanos., 1500 m, 9 Feb 1972, *D.E. Breedlove 24072* (MO). Oaxaca. Putla. Putla de Guerrero: Pinotepa Nacional - Tlaxiaco, Along Highway 125 between Pinotepa Nacional and Tlaxiaco ca. 8.4 mi S of Putla de Guerrero. [Originally reported from State of Guerrero], 16.57N 097.55.12W, 1000 m, 16 Jan 1979, *Thomas B. Croat 45806* (MO). Veracruz: Mangroves and adjacent freshwater swamp, Sontecomapan., 18°30'00"N, 095°01'48"W, 0 m, 23 May 1981, *A. Gentry, E. Lott & UNAM tropical botany class 32280* (MO).

NICARAGUA. **Chontales:** 4 km NNW of Cuapa, ridgetops and summits of Cerro Oluma; cloud forest, 12°18'00"N, 085°23'30"W, 700–775 m, 23 Sep 1983, *M. Nee 28434* (MO); Cerro Oluma. remnant wet premontane forest near top of Cordillera Amerisque., 12°18'N, 85°24'W, 840 m, 3 Jan 1984, *Al Gentry, W.D. Stevens, A. Grijalva & P.P. Moreno 43911* (MO); 5 km N of Cuapa, Cerro Buenavista; premontane moist forest, cloud forest like in appearance [Seymour series (], 12°17'N, 085°22'W, 700 m, 14 Jul 1976, *D.A. Neill 653 (7480)* (MO, UCA). **Jinotega:** Municipio de Wiwili. Reserva Cerro Kilambé., 13°33'N, 085°41'W, 1100–1200 m, 29 Agosto 2000, *R. Rueda, M. Garmendia y N. Toval 14665* ();*R. Rueda, M. Garmendia & N. Toval 14768* (MO); Municipio de Bocay. Reserva Natural Kilambé., 13°34'N, 085°39'W, 1200–1700 m, 12 Jan 2001, *R. Rueda, D. Paguaga, H. Mendoza, A. Rivera, N. Toval & M. Garmendia 15669* (MO). **Nueva Segovia:** Along Río Solonlí (or Río Arriba de Jalapa), ca 5 km N of Jalapa; gallery forest and riverine vegetation, 13°57'N, 086°08'W, 700–950 m, 5 Apr 1977, *D.A. Neill 1650* (MO). **Río San Juan:** 1.5 km W of (above) and 0.5 km N of Delta, Río San Juan., 10°47'N, 083°47'W, 0–20 m, 13 Sep 1982, *Riviere, R. 319* (MO). **Zelaya:** Cerro Baká, ca 6.5 km E of Río Coperna; lower mountain slopes and secondary areas., 13°40'N, 84°30'W, 200–320 m, 19 Mar 1979, *Pipoly, J. 4953* (MO); Along the road ca 2 km W of Nueva Guinea. Elev. ca. 200 m. 11.42'N, 84.26-27'W. Tropical wet forest., 11°42'N, 84°27'W, 200 m, 21 Aug 1983, *James S. Miller & Juan Carlos Sandino 1229* (MO); "Kurinwacito"; 13°08'N, 84°55'W, elev. aprox. 80 m., 13°08'N, 84°55'W, 80 m, 30 Apr 1984, *Pedro P. Moreno 23971* (MO, US); Municipio de Rositas. Cerro Banacruz., 13°48'N, 084°24'W, 200–350 m, 10 julio 1997, *Ricardo Rueda & Indiana Coronado 6652* (MO). Atlántico Norte: Camino a Limbaika, ca 5 km al SE de El Empalme; bosque húmedo tropical, 13°30'30"N, 84°15'35"W, 100 m, 27 Octubre 1982, *A. Grijalva & F. Bustos 1625* (MO).

PANAMA. Ca 5 km N of Fortuna Dam, trail along Continental Divide., 08°45'N, 082°15'W, 1200–1300 m, 25 Apr 1988, *Sue A. Thompson 4956* (MO); Azuero Peninsula: Mountains of southern Azuero Peninsula, near proposed route of road from El Cortezo (Prov. Los Santos) to Arenas (Prov. Veraguas) Azuero (Veraguas Prov.), "El Pavo" ridge above river Los Changuales, ca 10 km SW of El Cortezo, Los Santos., 1500–2000 f, 28 Oct 1978, *Barry Hammel 5448* (MO). **Bocas del Toro:** Along road to Chiriquí Grande, c. 8°48'N, 82°10'W. Forested slopes c. 700 m., 8°48'N, 82°10'W, 700 m , 30 April 1986, *Gordon McPherson 9150* (MO); Along pipeline road in area of Fortuna Dam, c. 8°48'N, 82°15'W. Forested slopes 900-950 m near end of road., 8°48'N, 82°15'W, 900–950 m, 8 March 1986, *Gordon McPherson 8693* (MO); Fortuna Dam area. Oleoducto Road near Continental Divide. Forest near road. Alt. 1000 m. 8°48'N, 82°12'W., 8°48'N, 82°12'W, 1000 m, 7 Feb. 1984, *H.W. Churchill, G. de Nevers & H. Stockwell 4702* (MO); Bocas & Chiriqui. Cerro Colorado mine area; in elfin woods on divide road, along trail into Bocas and in woods on Pacific slope; from Chami station to ca. 9 miles along road., 8°35'N, 81°54'W, 1100–1750 m, Mar/27-31/1986, *Barry Hammel & J. Trainer 14973* (CM, MO); *Barry Hammel & J. Trainer 14931* (MO); Shepherd Island, vicinity of Chiriqui Lagoon., 17 Sept 1941, *H. von Wedel 2690* (MO); Forest on hill above RR station at Milla 7.5., 27 Jul 1971, *Thomas B. Croat & Duncan M. Porter 16386* (MO); Forest above RR stop at Milla 7.5., 26 Jul 1971, *Thomas B. Croat & Duncan M. Porter 16248* (MO); Vicinity of Chiriqui Lagoon. Old Bank Isl., 11 Feb 1941, *H. von Wedel 2068* (MO); Vicinity of Chiriqui Lagoon., 17 Sep 1941, *H. von Wedel 2688* (MO); Chiriqui Grande: Chiriqui Grande - Fortuna, Along road between Chiriquí Grande and Fortuna, 13.2 mi W of Chiriquí Grande, 8°45'N, 82°10'W, 310 m, 9 March 1985, *Thomas B. Croat & Michael H. Grayum 60144* (MO); Isla Escudo de Veraguas: North coast of Escudo de Veraguas Island., 09°06'N, 081°33'W, 5 m, 8 August 1987, *Gordon McPherson 11432* (MO). Canal Area. Barro Colorado Island: Barro Colorado Island, 09°09'N, 079°51'W, 10–100 m, 3 Aug 1940 - 20 Aug 0940, *R.E. Woodson Jr. & R.W. Schery 968* (MO); Barro Colorado Island, Thomas Barbour Trail, 09°09'30"N, 079°49'20"W, 10–100 m, 25 Jun 1971, *Thomas B. Croat 15113* (MO); Barro Colorado Island. Allison Armour Trail, 09°09'10"N, 079°51'30"W, 10–100 m, 24 Jul 1971, *Thomas B. Croat 16217* (MO); Barro Colorado Island, 09°09'47"N, 079°50'14"W, 20 m, 30 Apr 1970, *Thomas B. Croat 10118* (MO); Gatun Locks - Ft. Sherman, Along road between Gatun Locks and Ft. Sherman, 1.4 mi E of Ft. Sherman, elevation less than 30 m. Lowland forest with elevated ridges., 9°18'N, 79°38'W, 20 January 1990, *Thomas B. Croat 69862* (MO); Vicinity of Curundu Housing area of Albrook Air Force base, Parque Metroplitano., 08°58'00"N, 79°32'55"W, 17 June 1994, *Thomas B. Croat & Guanghua Zhu 76201* (MO, HUA); Along road between Gatun Locks and Fort Sherman, ca 1 mi E of Fort Sherman., 09°19'00"N, 79°57'30"W, < 25 m, 20 June 1994, *Thomas B. Croat & Guanghua Zhu 76273* (MO); Navy Pipeline Road, 11 km from gate at Gamboa; secondary forest; tropical moist forest., 300 f, 5 Mar 1976, *Thomas B. Croat 32980* (MO); Barro Colorado Island. Nemesia Trail 400. At edge of trail., 7 Dec 1967, *Thomas B. Croat 4152* (MO); Low forested area near Summit Hills Golf Course., 20 June 1970, *Thomas B. Croat 10967* (MO); Vicinity of Ft. Sherman Front Gate; strand vegetation; collected with Botany 432 Class from Washington University., 8 Apr 1971, *Thomas B. Croat 14152A* (MO); Barro Colorado Island: Barbour Trail 9-10., 22 July 1970, *Robert L. Dressler 3876* (MO); Barro Colorado Island. B-L Trail 100., 25 May 1968, *Thomas B. Croat 5870* (MO); Barro Colorado Island, Gatún Lake. Along William Morton Wheeler Trail, 09°09'25"N, 079°51'30"W, 0–170 m, 08 Aug 1940 - 10 Aug 1940, *H.H. Bartlett & Tobias Lasser 16726* (MO); Barro Colorado Island. James Zetek Trail, 09°09'31"N, 079°52'05"W, 10–100 m, 12 Jun 1971, *Thomas B. Croat 14976* (MO); Barro Colorado Island. William Morton Wheeler Trail, 09°09'20"N, 079°51'10"W, 10–170 m, 29 Jul 1970, *Thomas B. Croat 11657* (MO); Barro Colorado Island: David Fairchild Trail, 09°09'50"N, 079°50'15"W, 10–100 m, 24 Jun 1960, *John E. Ebinger 163* (MO); Barro Colorado Island. Barbour-Lathrop Trail, 09°09'30"N, 079°49'25"W, 10–100 m, 30 Jun 1971, *Thomas B. Croat 15174* (MO); Barro Colorado Island. William Morton Wheeler Trail, 09°09'20"N, 079°51'10"W, 10–170 m, 27 Aug 1971, *Thomas B. Croat 17050* (MO); Barro Colorado Island. William Morton Wheeler Trail near Tower Clearing, 09°09'22"N, 079°50'55"W, 160 m, 19 Jun 1970, *Thomas B. Croat 10930* (MO); Barro Colorado Island. Barbour-Lathrop Trail, 09°09'30"N, 079°49'25"W, 10–100 m, Jul 1931, *D.E. Starry 326* (MO). Chiriqui. Boquete: Boquete, along shaded brook., 1170–1270 m, 21 May 1971, *George R. Proctor 32000* (LL, MO); Al norte del sitio de presa de Fortuna, en el bosque al frente del campamento a la otra orilla del río Chiriquí., 08°45'N, 082°15'W, 1000–1200 m, 24 Sep 1976, *M.D. Correa A., R. Dressler, N. Salazar, J. Mendieta, C. Garibaldi, F. Farnum, & T. Béliz 2664* (MO, PMA); Fortuna Dam Area. Stream to W of road near Quebrada Bonito. Alt. 1100 m. 8°45'N, 82°13'W., 8°45'N, 82°13'W, 1100 m, 2 April 1984, *H.W. Churchill 5005* (MO); Fortuna Dam area; N of reservoir, ridge along Continental Divide and southward from Quebrada de Arena., 1100–1500 m, Aug 1984, *W.G. D'Arcy & C. Todzia 15965* (MO); Boquete area, ca. 18 km NW of Boquete; in woods along Río Caldera and slopes above; on road past Horqueta., 8°51'N, 82°29'W, 1600–1700 m, Feb/08/1986, *Barry Hammel, M. Grayum, G. McPherson & A. Smith 14413* (MO); Top of the mountain above and S of the Fortuna Dam site., 1700 m, 11 Sep 1977, *J.P. Folsom, R. Dressler & K. Dressler 5262* (MO); Along road from Gualaca to Fortuna dam site, 5.9 mi NW of Los Planes de Hornito., 08°43'N, 082°15'W, 1370 m, 9 April 1980, *Thomas B. Croat 49882* (B, CAS, K, MO); Forest behind Vivero Forestal, 9 miles N of Los Planes de Hornito. IRHE Fortuna Hydroelectric Project. Premontante rainforest., 08°45'N, 082°12'W, 1000 m, 13 March 1982, *S. Knapp, W.J. Kress & B. Hammel 4095* (MO); Near site of dam, lower slopes of Cerro Fortuna. IRHE Fortuna Hydroelectric Project. Premontane rainforest., 1150 m, 18 June 1982, *S. Knapp & M. Vodicka 5587* (MO); Along road between Gualaca and the Fortuna Dam site, at 10.1 m; NW of Los Planes de Hornito., 1300 m, 8 Apr 1980, *T. Antonio 4064* (MO); Disturbed cloud forest at Monte Rey above Boguete., 21 Jul 1971, *Thomas B. Croat & Duncan M. Porter 15688* (MO); Camp Hornito: Camp Hornito, Fortuna Dam site., 08°44'N, 082°18'W, 1000–1200 m, 13 Aug 1976, *R.L. Dressler 5352* (MO); Camino hacia la finca Landau, N.E. del camp. de Fortuna, 1100 m, 13 August 1976, *Correa M.D. et al. 2361* (PMA); Fortuna Dam: Vicinity of Fortuna Dam in valley of Río Chiriquí; along aquaduct to water source for IRHE facilities at dam, 8°45'N, 82°18'W, 1200–1300 m, 20 Jun 1987, *Thomas B. Croat 66534* (MO). Boquete. Chiqueio: Rain forest., 5500 f, 11 Apr 1938, *D.E. Davidson 565* (MO, US). **Cocle:** Vicinity of El Cope, 4.1 mi N of village in vicinity along road which leads down into lowlands, straight ahead of the end of the saw mill grounds., 08°39'N, 80°36'W, 680–770 m, 25 March 1993, *Thomas B. Croat 74841* (B, MO, VDB); Alto Calvario above El Copé, ca 6 km N of El Copé; atlantic slope, along trail which leads W off old lumber trail which leads down to Las Ricas, Limón and San Juan., 08°39'N, 080°36'W, 710–800 m, 22 June 1988, *Thomas B. Croat 68729* (MO); Vicinity el Valle de Antón, at forested flat area near Finca Macarenita at La Mesa., 08°36'N, 80°07'W, 800 m, 6 July 1994, *Thomas B. Croat & Guanghua Zhu 76698* (MO); El Potroso, Summit of Mt. Mist Forest, along mountain ridge, trees fairly short on the ridge top, but not slopes, forgotten works, Alto Calvario., 1 Feb 1977, *J.P. Folsom & L. Collins 1547* (MO); Eastern slopes of Caracoral, ca. 3 km NE of El Valle on road to Mata Ahogada., 700 m, 15 Jun 1975, *Scott Mori, K. Dumont, S.E. & S.M. Carpenter 6645* (MO); North rim of El Valle., 4 Jun 1939, *A.H.G. Alston & P.H. Allen 1850* (MO). **Colon:** Río Guanche, between Puerto Pilón and Portobello; ca. 1.5 mi S of road., 09°27'N, 79°40'W, < 100 m., 19 June 1994, *Thomas B. Croat & Guanghua Zhu 76227* (MO, HUA); Santa Rita ridge; 8 miles from trans- istmian highway; in primary forest along small stream, slopes N of rd., 9°25'N, 79°40'W, 420 m, Feb/02/1986, *Barry Hammel, G. McPherson & M. Merello 14385* (MO); Santa Rita ridge road; ca. 22 km from transistmian highway; in forest on ridges, slopes and draws near end of road., 9°25'N, 79°40'W, 500 m, Feb/17-18/1986, *Barry Hammel, G. McPherson & D. Roubik 14481* (MO); Along Río Guanche, 3-5 km above bridge on Colon-Portobello Road., 09°30'N, 79°30'W, 30–100 m, 22 September 1996, *Thomas B. Croat 79323* (B, F, K, MO, PMA, TEX, VDB, US, WU); Rio Boqueron - Rio Escandaloso, Trail from head waters of Rio Boqueron back to fork with Rio Escandaloso, area route of abandoned railroad, wet forest., 250–500 f, 21 Jul 1978, *Barry Hammel 3985* (MO); Distrito de Donoso: Campamento Botija, camino a río Medio, al 60° SE de Botija., 10 Julio 1996, *J. Polanco et al. 1929* (MO); Portobelo - Nombre de Dios, Along road between Portobelo and Nombre de Dios, 1.2 mi. beyond the junction of the road to Isla Grande. Virgin forest on slopes above the road., 09°36'N, 079°35'W, 5 Apr 1980, *Thomas B. Croat 49789* (MO); Guanche, 14 Mar 1996, *FLORPAN: C. Guerra & D. Luque 2493* (MO, PMA); Santa Rita lumber road, east of Colón., 10 July 1969, *Robert L. Dressler 3660* (MO); Along Río Guanche about 1-2 km from Portobelo Highway toward Cerro Bruja. Tropical wet forest., 0–50 m, 11 Apr 1982, *M. Huft & S. Knapp 1797* (MO). **Darien.** Alturas de Nique: Nique - Coasi, W side of SW ridge leading to Alturas de Nique, headwaters of Río Coasí, 07°37'N, 077°45'W, 500 m, 27 Dec 1980, *Ronald L. Hartman 12272* (MO); 110 mi. from Bayano Dam Bridge. Vicinity of Canglon. Trail to the south from road to good forest., 50 f, 14 May 1980, *Thomas M. Antonio 4603* (MO); Near Rompío, about 1 hour walk up Rio Sambú from Puerto Indio., 29 Apr 1976 - 30 Apr 1976, *R.L. Dressler 5305* (MO); North slope of Cerro Pirre, S of El Real; flowered in cultivation 10 April 1978., 375 m, *Robert L. Dressler s.n.* (MO); Ensenada El Guayabo: El Guayabo - Jacque, Ridge to the NE of Ensenada El Guayabo, along trail to Río Jaqué. Tropical wet forest, 07°27'N, 078°03'W, 0–300 m, 23 Jan 1982, *Sandra Knapp & Jim Mallet 3046* (MO); Pirre: Rancho Frio.Cerro Pirre - , Vicinity Cerro Pirre, along trail from base camp to Rancho Frío on slopes of Cerro Pirre, 07°58'N, 77°43'W, 200–450 m, 27 July 1994, *Thomas B. Croat & Guanghua Zhu 77153* (CAS, MO, WU). **Los Santos:** Loma Prieta, Cerro Grande. Cloud forest and disturbed margins., 2400–2800 f, 8 Jun 1967, *W.H. Lewis, R.K. Baker, B. MacBryde & R.L. Oliver 2206* (MO). **Panama:** Carti Road, 15 km from main road, 1000 f, *Hammel & Kress 13394* (DUKE); Kunayala (formerly San Blas) Nusigandi, along El Llano-Carti Road, 0.7 mi beyond Cuna Headquarters, located 10.9 mi N of Pan-American Highway, 11.6 mi N of Pan-American Highway., 09°18'N, 79°59'W, 450 m, 3 April 1993, *Thomas B. Croat 75133* (CM, MO); Cerro Jefe Region; 0.8 mi beyond turn-off to Altos de Pacora (near branch in road to antennas to Cerro Jefe)., 09°15'N, 79°29'W, 770 m, 4 July 1994, *Thomas B. Croat & Guanghua Zhu 76643* (MO); Trail behind Peluca meterological station. Old secondary forest, mature., 25 Mar 1973, *Helen Kennedy & R.L. Dressler 2985* (MO); Piria-Cañasas trail near Piria, elev. ca. 100 m., 100 m, 22 September 1967, *James A. Duke 14353* (MO); From Torti to the Pilota del Toro, the Mt. overlooking Torti Arriba, 27 Aug 1977, *J.P. Folsom, Gregorio Alonzo & relatives 5117* (MO); Vicinity of Cerro Campana, along trail near tower., 3000 f, 29 May 1980, *Thomas M. Antonio 4853* (MO); Tocumen Marsh, SE of Aeropuerto Omar Torrijos H. Marshes and second growth., 09°05'N, 078°27'W, 0 m, 3 May 1982, *S. Knapp 4938* (MO); About 3-4 miles upstream on Río Pasiga, semideciduous forest., 28 Oct 1971, *Helen Kennedy 1196* (MO); Cerro Azul. Roadside woods and thickets., 24 Mar 1969, *D.M. Porter, J.D. Dwyer, L.H. Durkee, M.R. Crosby, T.B. Croat, J.R. Castillon, & R.K. Baker 4095* (MO); Cerro Azul., 2000 f, 1 Sep 1963, *John D. Dwyer 3112* (MO); Cerro Campana, montane rain forest., 08°40'N, 079°55'W, 2700–2800 f, 11 Jun 1971 - 12 Jun 1971, *Grady L. Webster & Gary Breckon 16495* (MO); Road from El Llano to Carti, the deep ditch; 12.4 km north of Pan- American Highway., 300–400 m, 31 Oct 1977, *J.P. Folsom, Gordon Small, & Kim (ABCI student) 6181* (MO); Cerro Campana at end of road beyond Su Lin Hotel; growing in open area., 9 Apr 1971, *Thomas B. Croat 14215* (MO); Cerro Campana., 31 Dec 1939, *P.H. Allen 2090* (MO); Near Chimán; flowered in cultivation 8 June 1976., *Robert L. Dressler s.n.* (MO); Cerro Jefe, forest near river., 700 m, 17 July 1969, *Robert L. Dressler 3676* (MO); Cerro Campana., 24 June 1969, *Robert L. Dressler 3639* (MO); 22 Feb 1969, *Robert L. Dressler s.n.* (MO); La Eneida, region of Cerro Jefe., 3 Mar 1973, *Robert L. Dressler 4289* (MO); El Llano-Cartí highway, 8-10 km north of El Llano., 31 Aug 1974, *Robert L. Dressler 4706* (MO); Tocumen, 26 June 1963, *John D. Dwyer 4014A* (MO). Capira: Orillas del Río Perequeté, Región conocida como La Pita., 24 May 1970, *R. Villamil 10* (MO). Chepo: El Cantar, hacia el norte, Cerro Azul, P.N. Chagres. Sendero del Tube PVC, lateral al sendero., 21 Mayo 1992, *L. Carrasquilla & V. Moreno 3392* (MO). **San Blas:** Playon Chico, road to Isisukun, 9°20'N, 78°13'W, 0–10 m, 26 Nov. 1989, *Herrera 588* (MO); (Comarca de Kunayala); Nusigandí, El Llano-Cartí Road, between Nusigandí and 1 mi N of Nusigandí., 09°20'N, 79°00'W, 275–300 m, 2 July 1994, *Thomas B. Croat & Guanghua Zhu 76589* (MO); Mainland opposite Playon Chico, 0-3 mi from Caribbean., 0–200 m, 4 October 1972, *Al Gentry 6375* (MO); Rio Cangandi, camino entre el pueblo Cangandi y el aeropuerto de Mandinga., 09°27'N, 079°07'W, 0–20 m, 7 Sep 1987, *Heraclio Herrera 356* (MO); Forest southeast of Puerto Obaldia., 18 Aug 1971, *Thomas B. Croat 16787* (MO); Playon Chico: Tierra firme frente a Playón Chico, camino a Isisukun, 9°20'N, 78°13'O, 0–10 m, 26 Nov 1989, *H. Herrera 588* (MO). **Veraguas:** Cerro Tute; E slopes; 1 km beyond Escuela Agricola Alto Piedra above Santa Fé; low cloud forest., 900–1200 m, 14 May 1981, *K. Sytsma & L. Andersson 4712* (MO); Trail between Cañazas and the foot of the Cordillera Central, headwaters of Río Cañazas., 300–600 m, 8 Feb 1937, *P.H. Allen 203* (MO); Alto de Piedra: ALto de Piedra - Rio San Luis, Alto de Piedra, vicinity of Santa Fé, along ridge which extends to summit. Trail begins from edge of a plantation along the road less than 1 km from the Escuela Circlo Alto de Piedra, on road to north going to Rí San Luis, 8°33'N, 81°08'W, 800–950 m, 29 Jun 1987, *Thomas B. Croat 66990* (MO).

UNITED STATES. Florida. Sarasota. Selby Botanical Gardens: Cultivated. Received from Selby Botanical Gardens, Sarasota., 26 Jun 1992, *Thomas B. Croat 73916* (MO)..: *Thomas B. Croat 75201* (MO).

Cultivated at MO: Climatron U850 - , 29 September 1975, *Smith J. 55* (MO).

**Spathiphyllum** **quindiuense** Engl., Bot. Jahrb. Syst. 37(1): 120. 1905. TYPE:Colombia. Quindio Province, 1000 m, *Triana 693* (holotype, BM).

Terrestrial along river courses or epipetric on rocks in river; **internodes** short 7-12 mm diam.; **petioles** equaling or shorter than blade, 8-25(30) cm long, sheathed 0.50-0.75 its length, the sheath ending almost imperceptibly on petiole; dark green and semiglossy, oval; geniculum 1-1.8 cm long, positioned 1-2 cm below where the blade appears to end, drying only slightly darker than the petiole shaft; **blades** narrowly ellitic-oblong or lanceolate-oblong, widest at the middle and narrowed euqally toward either end, 12-40 cm long, 2-5.2(6.5) cm wide, 6-7.5 times longer than wide, weakly inequilateral, narrowly long-acuminate at apex, acute at base, subcoriaceous dark green and semiglossy above, moderately paler and weakly glossy below; **midrib** barely sunken and concolorous above, 3-ribbed and convex below; **primary lateral veins** 4-5 pairs, arising from midrib at ca. 20-35°, barely sunken above, convex and darker below. INFLORESCENCE erect, usually held among the leaves or sometimes slightly overtopping the leaves; peduncle 16-50(64.5) cm long; **spathe** elongate-lanceolate to narrowly oblong-elliptic, (4-)7.5-14(-16) cm long , 1-3 cm wide, apex attenuate, base acute, somewhat clasping or decurrent to 1 cm, white to greenish white within, light green outside,greenish-white at anthesis; **spadix** cream-colored to whitish,2-7.3 cm long on a stipe 0.5-2 cm long; perianth of separate segments; pistil obpyramidal, angular, white, apically turncate, slightly constricted between the annular style and the ovary, only the coronate stigma exceeding the perianth, ovary 3-locular, fruiting spadix smooth, green; **fruit** subglobose, ca. 3 mm high, apically truncate, white, the style drying dark brown; seeds fewer than ovules, oblique-ovoid, surface slightly roughened or verruculose, somewhat furrowed and foveolate.

*Spathiphyllum quinduiense* is known only from Colombia and Panama, ranging from 100-1180 m in *Tropical moist forest*, *Tropical wet forest* and *Premontane wet forest* life zones.

The species is recognized by its small size, more or less aquatic habitate, narrow and graceful leaves with the geniculum seemingly remote from the base of the blade, few and only weakly visible primary lateral veins and moderately short inflorescence with a bicolored lanceolate spathe, green outside and white inside.

The species is not easily confused with any other species though there are other riparian species in South America.

*Additional specimens seen:* COLOMBIA. **Antioquia**: Camino de San Luis al Rio Dormilón, charco La cascada, 1000 m, 20 Aug 1981, *Saulo E. Hoyas Marín 93* (HUA); Rio Pocune (Puente Machuca, El Bagre), 100 m, 9 May 1992, *Efrain H. Rondón R. ODC-M-062* (HUA); Mpio. San Franciso: corregimiento Aquitania, Rio Venado, 1150 m, 4 Apr. 1992, *Fonnegra et al. 4225* (HUA). Amalfi: Vereda Chorritos, La María, Montebello, km 15-25 en la vía a Chorritos-Los Monos, SNE de Amalfí, 06°40'N, 074°52'W, 1550–1180 m, 6 Dec 1989, *R. Callejas et al. 9040* (HUA, MO). Cáceres: Cabecerea municipal El Doce, Bajo Cauca, 200–400 m, 30 April 1977, *R. Callejas 227* (HUA); Cabecera municipal El Doce, Bajo Cauca, 200–400 m, 25 March 2978, *R.Callejas 466* (HUA). **Nariño**: Rio San Pedro: 800–1400 m, Dec 1891, *Lehmann, F.C. 7590* (GH, US). Puerto Berrío: vereda Alicante, finca Penjamo, en la via de San Juan de Bedout-La Cabana, 1 km S de la finca, 06°39'N, 074°32'W, 500 m, 2 Mar. 1990, *Callejas et al. 9278* (HUA, NY); vereda Alicante, 06°39'N, 074°32'W, 380–410 m, 1 March 1990, *Callejas et al. 9246* (HUA, NY); vereda Alicante, finca Penjamo en la via que conduce de San Juan de Bedout La Cabana, 06°39'N, 074°32'W, 380–410 m, 1 Mar 1990, *R. Callejas, E. Roldán & V. Maza 9247* (HUA); verda Bodegas, sitios San Juan de Bedout, quebrada de San Juan, 300 m, 04 Mar. 1990, *Callejas et al. 9341* (HUA); Carretera Cisneros Puerto Berrio, Sitio La Carlota, Quebrada El Vapor., 06°37'00"N, 074°27'00"W, 150 m, 4 Feb 2001, *F. Cardona, A. Idarrga & J. Benavides 1066* (MO). Remedios. Rio Tucupe: 14-17 km NW of Remedios, region of Cerro Cabeza, 07°20'N, 074°30'W, 250–350 m, 15 Sept. 1987, *Callejas et al. 5159* (HUA). San Carlos: Corregimiento Alto Samaná, Verdas El Silencio-Jardín, camino de Samana a Miraflores, 06°10'N, 074°50'W, 600–800 m, 24 Oct 1989, *Ricardo Callejas et al. 8523* (HUA, MO, NY); Quebrada La Miranda: Corregimiento Alto de Samaná, Vereda Miraflores, Quebrada La Miranda., 820–900 m, 13 Jun 1989, *R. Fonnegra et al. 2991* (HUA, MO). San Luis: vereda Manizales, a orillas del Rio Dormilón, 1400 m, 12 Oct 1981, *C.I. Orozco et al. 616* (COL, HUA); 1000 m, 20 Aug. 1981, *Marin 93* (HUA). Zaragoza: trayecto del Rio Tigui a Zaragoza, 07°35'N, 074°50'W, 130–140 m, 12 July 1987, *Callejas et al. 4621* (HUA). Tarazá: Corregimiento El Doce, carretera entre El Doce y Barroblanco, quebrada Puri., 07°25'00"N, 075°20'00"W, 3 Nov 2000, *F. Cardona, R. Callejas, F. Alzate, F. Roldan & C. Trujillo 1048* (MO). **Quindio:** Mariquita: 05°12'N, 074°54'W, 1851 - 1857, *Triana J. 693* (P).

PANAMA: Provincia de Comarca Kuna Yala. Proyecto financiado por la Organización de los Estados Americanos (DEA). Aligandí., 30 May 1989, *Florpan, Ana Jones & Efrain Tejada 272* (PMA). **Bocas del Toro:** Chiriquicito to 5 miles S along Río Guarumo. Rain forest by river., 5 Jun 1967 - 7 Jun 1967, *W.H. Lewis, N. Escobar, B. MacBryde, R.L. Oliver & J.E. Ridgway 2057* (MO); 10-15 miles inland (S) from mouth of Changuinola River. Banks of river and adjacent rain forest., 18 Dec 1966, *W.H. Lewis, J.D. Dwyer, T.S. Elias & K.R. Robertson 870* (MO). **Canal Area**: Parque Nacional Soberanía, Pipeline Road N of Gamboa, 6 mi N of Gamboa, Río Mendoza., 09°11'N, 79°46'W, 23 July 1994, *Thomas B. Croat & Guanghua Zhu 77081* (MO); Waimea 77p762, *Croat 76168* (MO); Pipeline Road, vicinity of Río Mendoca. Premontane wet forest., 100–200 m, 17 May 1973, *Al Gentry 7472* (MO); Gamboa, 8 km N on pipeline road., 21 Aug 1971, *Helen Kennedy & R. Dressler 1131* (DUKE); Navy Reservation, north of Gamboa, along Río Mendosa., 12 Jul 1969, *Robert L. Dressler 3669* (MO); Navy Reservation, north of Gamboa; upper Río Mendosa., 7 Feb 1969, *Robert L. Dressler 3602* (MO). **Cocle**: On the Atlantic, ca 5 hr. walk from sawmill at El Cope. All plants collected along the river., 450 f, 2 Feb 1980, *T. Antonio 3622* (MO); Western slope and summit of C. Valle Chiquito., 700–800 m, 25 Jul 1935, *R.J. Seibert 507* (MO); 29 km N of Penonome on road to Coclesito, (9 km N of turnoff of Llano Grande), along small stream west of road., 500 f, 22 Feb 1978, *Barry Hammel 1737* (MO); Quebrada Amarillo, N of El Valle., 17 Oct 1975, *J.T. & F. Witherspoon 8760* (MO); Along river leading up mountain to Alto Calvario and trout stream from La Junta near Limon., 800–1000 m, 12 Oct 1977, *J.P. Folsom 5887* (MO); Rio Tucué, above Tucué., 12 Jul 1972, *Robert L. Dressler 4195* (MO). **Colon**: Rio San Lucas, south of Coclé del Norte., 19 Aug 1972, *Robert L. Dressler 4216* (MO); Rio Indio/Madden Dam., *Robert L. Dressler s.n.* (MO); 9 km W of Llano Grande in forest along sawmill stream just S of Cascajal. On rocks in stream., 800 f, 11 Oct 1978, *B. Hammel & W.G. D'Arcy 5102* (MO). **Darien**: Vicinity of upper gold mining camp of Tyler Kittredge on headwaters of Rio Tuquesa ca 2 air km from Continental Divide; recently cleared primary forest., 26 Aug 1974, *Thomas B. Croat 27222* (MO). **Panama:** Pipeline road, N of Gamboa, upstream of the tenth bridge (Río Guacharo), beyond the big water- fall; 9°10'N, 79°45'W, elev. 100 m., 9°10'N, 79°45'W, 100 m , 4 Aug. 1984, *G. de Nevers & Diana Hews 3630* (MO); Vertiente Pacifica de la Cordillera de San Blas., 09.11.5N 78.16W, 150–200 m, 12 Junio 1994, *Heraclio Herrera 1616* (CAS, MEXU, MO, PMA, STRI, US); Rio Espave - Agua Clara, E of Cañitas, between Rio Espavé and Agua Clara., 6 Mar 1973, *Robert L. Dressler 4295* (MO); Tributary of Rio Terable, about 8-10 km from Pan-American Highway (by El Llano-Cartí road)., 1 Aug 1974, *Robert L. Dressler 4678* (MO); Gallery along Rio Terable, near Pan Am Highway & El Llano., 21 Sep 1962, *James A. Duke 5677* (MO). **San Blas**: Comarca de San Blas, Playón Chico, Río Ukupseni, caminando por el Río Ukupseni; desde el campamento Neba Dummat hasta la cascada., 09°15'N, 78°15'W, 50–100 m, 30 octubre 1991, *Heraclio Herrera, Johny Morris y Jimmy Mojica 1037* (MO); *Heraclio Herrera, Johny Morris y Jimmy Mojica 1038* (MO); *Heraclio Herrera, Johny Morris y Jimmy Mojica 1040* (MO); *Heraclio Herrera, Johny Morris y Jimmy Mojica 1041* (MO); Trail from mouth of Río Irgandí to a tributary of Río Cartí Senni. Two hours through second growth, one hour through forest. 9°25'N, 78°51'W., 9°25'N, 78°51'W, 20 Dec. 1985, *Greg de Nevers & H. Herrera 6588* (MO); El Llano-Cartí Rd. 19.1 km from Interamerican Hwy. Elev. 350 m. 9°19'N, 78°55'W. Tropical wet forest., 9°19'N, 78°55'W, 350 m , 12 February 1985, *Greg de Nevers with D.Cavagnaro, H.Herrera & S.Charnley 4844* (MO); Headwaters of Río Cuadí Diablo (Drill Site 22), N. 82.2, E. 87.8. Seasonal evergreen forest along river., 243.4 f, 18 Dec 1967, *James A. Duke, A.G. Robyns & S.E. Verhoek 3633* (MO); Ailigandi area along trail from ocean to water fall on river., 0–200 f, 7 Oct 1978, *B. Hammel & W.G. D'Arcy 4985* (MO); Isla Nargana: Isla Nargana. Quebrada afluente de Río Diablo., 09°22'N, 78°34'W, 65 m, 10 Aug 1994, *Galdames, C. et al. 1526* (MO)

.UNITED STATES. **Hawaii**. Wahiawa Botanic Garden: Oahu, 14 Apr. 1986, *Lau & Cory 2235* (MO).

**Spathiphyllum schomburgkii**  Schott, Oesterr. Wochenbl. 7:159. 1857. Type: British Guiana. Schombergk s.n. (K).

Spathiphyllum candolleanum var. Schomburgkii (Schott) Engl.in A.L.P. de Candolle & A.L.P. de Candolle, Monogr. Phan. 2: 225. 1879.

THIS IS POSSIBLYAN ERROR IN LABEL DATE FROM A BAD LABEL. IT MAY ACTUALLY BE FROM COLOMBIA.

**Spathiphyllum** **silvicola** R. Baker, Phytologia 33(7): 448-449. 1976. TYPE: Costa Rica. Puntarenas: Osa Peninsula and the adjacent Golfo Dulce region, to 100 m, *Allen 5538* (holotype, F-1741645; isotypes, CR-61628, EAP, K, NY, US).

Terrestrial, 0.5-1 m tall; rhizome erect or spreading; **internodes** short, to 1.7-2 cm diam.; rhizome erect or spreading; **petiole** (13)19-76 cm long, terete to elliptical (laterally compressed , sheathed 0.2-0.57 their length; sheath 7.5-25 cm long, turned inward; geniculum 1-2.2 cm long, paler and narrowly sulcate, drying darker; **blades** ovate-elliptic, 16.8-38.1 cm long, 5.1-15.5 cm wide (averaging 27.6 x 9.8 cm), 0.43-0.9 times as long as petioles, weakly to moderately inequilateral, narrowly acuminate to long-acuiminate, weakly coriaceous, bicolorous; dark green and semiglossy to glossy above, matte to weakly glossy and moderately pale below; **midrib** sulcate broadly sunken above, thicker than broad, narrowly convex to to round-raised below; **primary lateral veins** 12-22 pairs, arising at (50)60-75° angle, weakly quilted-sunken above, pleated-raised below, darker than surface; interprimary veins weakly raised; minor veins visible. INFLORESCENCE erect, held above leaves; peduncle (35)40.5-88(96) cm long; **spathe** 9.8-14.5 cm long, 2.0-3.8 cm wide, long-acuminate at apex, usually decurrent 1-1.5 cm at base, erect to erect-spreading, finally recurved, pale green to yellow-green, rarely cream-colored with green veins; **spadix** 5.3-10 cm long, 5-8 mm diam., stipitate 0.7-1.6(3.7) cm, creamy white, green post-anthesis; the pistils weakly exserted, area between the styles pale green; tepal fused in lower ½, otherwise free; style very short. INFRUCTESCENCE with spadix 5.7-12.5 cm long; **berries** white or white at base, yellow at apex, broadly obovoid, exserted above tepals at maturity, caviform or truncate at apex.

*Spathiphyllum silvicola* ranges from Costa Rica to Panama (Veraguas, Coclé, Darién) and Colombia (Antioquia, Chocó) at 0-500 m in areas of [But see what Felipe had for Colombia. Tropicos has material cited for Panama and Colombia]characterized by it moderately small size, petioles sheathed from the middle to the distal 2/3 with a weak sheath, moderately small ovate-elliptic brownish-drying marked acuminate leaf blades with moderately few primary lateral veins as well as by its long inflorescence with a slender mostly reflexed mostly pale green spathe and the stipitate slender creamy white narrowly cylindroid spadix with truncate pistils and white berries topped with yellow.

It is similar to *S. fulvovirens* Schott which occurs on the Caribbean slope and differs by having scale-like stellate trichomes on the petioles, longer and much broader leaf blades with more primary lateral veins, a spathe that is usually not decurrent at the base, a much longer spadix with the tepals completely separated.

*Additional specimens seen:* COLOMBIA. **Antioquia**: Turbo. Correg. Lomas aisladas. Loma mediana., 50 m, 5 Feb 1985, *E. Renteria, A. Cogollo & J. Brand 3500* (JAUM, MO). Tarazá. correg. El Doce: Correg. El Doce. 201 km NE de Medellín. En camino a Barroblanco. Bosque húmedo tropical., 300 m, 18 Aug 1986, *Callejas R. et al. 2401* (NY). **Chocó**: Serrania de Baudo, along road between Las Animas and Pato on Rio Pato, ca 4 km SW of Pato on property of Sr. Guttierez., 5°30'N, 76°46'W, 150 m, 18 Apr 1983, *Thomas B. Croat 56129* (CHOCO, COL, MO); Along road between San Jose del Palmar and Novita, between La Italica and San Jose del Palmar, ca 3 km W of San Jose del Palmar. 4 56'N, 76 29'W; elev. 930 m., 4°56'N, 76°29'W, 930 m, 11 May 1983, *Thomas B. Croat 56646* (CUVC, MO).

COSTA RICA. **Puntarenas:** old Paul Allen property, NW of Piedras Blancas, 08°48'36"N, 083°16'48"W, 2 m, 26 July 1977, *Webster 22064* (DAV); Osa Península: Osa Península. Marenco Biological Station, along foot trail in SE sector of Sendero Camino Publico and W to coast via Río Claro., 08°40'12"N, 083°42'00"W, 60–120 m, 14 Mar 1986, *Almeda et al. 5560* (CAS); Osa Península. Marenco Biological Station, behind Punta San Jose, 08°40'48"N, 083°42'00"W, 50–100 m, 16-20 Feb 1988, *Burger et al. 12365* (F); Rincón de Osa: Rincón de Osa, area north of airport; secondary growth and remains of virgin forest., 08°41'24"N, 083°30'00"W, 40–80 m, 22 July 1974, *John & Kathy Utley 1181* (DUKE, MO); Parque Nacional Corcovado Jiménez, Dos Brazos de Río Tigre. Cerro Rincón. Fila Matajambre., 08°31'12"N, 083°27'36"W, 744 m, 4 August 1990, *Abelardo Chacón 965* (MO); Along new road from Piedras Blancas to Rincón de Osa; elev. ca. 200 m. 8°45'N, 83°21'W. Collected with Brian Jacobs, George Schatz, John Kress and Pam Sleeper., 08°45'00"N, 083°21'00"W, 200 m, 2 July 1984, *Michael H. Grayum 3406* (MO); Slightly disturbed primary forest at N side of Carretera Interamericana, KM 287 (ca. 3 km NW of Chacarita and 30 km S of Palmar Sur)., 08°48'00"N, 083°16'48"W, 20–40 m, 25 May 1986, *Michael H. Grayum, Barry Hammel & Greg de Nevers 7548* (CR, MO); Rincón de Osa; along ridge between Quebrada Aparicio and Quebrada Aguabuena. Elev. 200-400 m. 8°42'N, 83°31'W., 08°42'00"N, 083°30'36"W, 200–400 m, 7 Oct 1984, *M. Grayum, G. Herrera, G. Schatz & F. Chavarría 3984* (MO); Along road between Chacarita and Rincón de Osa, ca. 6 km W of Interamerican Highway at Chacarita; elev. ca. 160 m. Disturbed primary forest and along road through forest. ca. 8°45'N, 83°18'W., 8°45'N, 83°18'W, 160 m, 2 March 1985, *T.B. Croat & M.H. Grayum 59736* (CM, CR, MO); Reserva Forestal Golfo Dulce, 37 km from bridge over Río Rincón toward junction with Pan Am Highway, forest on steep slope., 08°45'00"N, 083°18'00"W, 115 m, 14 Aug 1990, *Helen Kennedy 4565* (MO); Parque Nacional Corcovado Llorona Forest, 08°35'24"N, 083°42'36"W, 0 m, 29 May 1988, *C. Kernan P. Phillips, D. Cornejo & M. Bonness 551* (MO); Parque Nacional Corcovado Llorona to Los Planes., 08°36'00"N, 083°43'48"W, 100 m, 25 March 1989, *C. Kernan & Pamela Phillips 1017* (MO); Along highway from Interamerican Highway to Rincón, 10 km W of Interamerican Highway., 08°45'08"N, 83°18'00"W, 200 m, 10 September 1996, *Thomas B. Croat & Dylan Hannon 79168* (CM, MO); Vicinity of Boscosa, at Quebrada Aguabuena., 08°42'01"N, 83°30'48"W, 50 m, 11 September 1996, *Thomas B. Croat & Dylan Hannon 79242* (AAU, INB,JBGP,KRAM,LE,MO,VDB,Z); Parque Nacional. Sector Esquinas, vicinity of Fila Gamba hills behind Esquinas Rain Forest Lodge, along Quebrada Negra, at end of side road off of Villa Bricena to Golfito Road., 08°42'00"N, 83°12'30"W, 200–300 m, 12 September 1996, *Thomas B. Croat & Dylan Hannon 79289* (INB, MO); Along road between Palmar Norte and Panamerican Border, 3 km N of turn-off to Rincón., 08°48'39"N, 83°16'18"W, 110 m, 10 September 1996, *Thomas B. Croat & Dylan Hannon 79187* (INB, K, MEXU,MO,US); About 6 miles from Golfito in forest along highway to Río Claro., 100 f, 22 July 1978, *W. John Kress 78-1006* (MO); Forested foothills of the mountains east of Quepos, Pacific Slope of the Talamanca Range. Evergreen tropical wet forest formations with a dry period from December to April. Unusually dry at this time with very little flowering in the forest understory., 09°29'N, 084°03'W, 150–250 m, 19 Feb 1977, *Wm. Burger, Gary Visconti & Johnnie Gentry 10580* (F); La Llanora, Corcovado National Park, Osa Peninsula., 08°36'N, 083°42'W, 0–200 m, 12 Aug 1978 - 17 Aug 1978, *Daniel H. Janzen 11093* (MO); Golfito: Golfito - Villa Briceno, Along road between Golfito and Villa Briceño, 3.1 mi NW of center of Golfito, 08°39'N, 083°11'W, 30 m, 15 Sep 1987, *Thomas B. Croat 67641* (MO); Parque Nacional Corcovado: Parque Nacional Corcovado; Estación Sirena. Los Patos: trail to Río Pavon., 08°27'36"N, 083°34'48"W, 1–50 m, 26 Jun 1989, *C. Kernan 1179* (CR, MO); Parque Nacional Corcovado; Sirena: Parque Nacional Corcovado; Sirena. Los Patos Forest., 08°27'36"N, 083°34'48"W, 1–50 m, 27 May 1989, *C. Kernan & P. Phillips 1141* (CR, MO); Reserva Forestal Golfo Dulce: Reserva Forestal Golfo Dulce. Península de Osa, Cantón de Sierpe, near Rancho Quemado, high forest along the way to Quebrada Quebradon., 08°39'36"N, 083°33'36"W, 140–180 m, 6 Feb 1991, *P.J.M. Maas, H. Maas, B.E. Hammel, & M.M. Chavarría 7854* (MO, U); Rio Claro: Rio Claro - Golfito, Along highway to Golfito from Panamerican Hwy. at Río Claro, 2.5 mi SE of Golfito, 08°36'00"N, 083°03'36"W, 60 m, 14 Sep 1987, *Thomas B. Croat 67593* (MO); Río Terraba: Between Golfo Dulce and Río Terraba., 08°46'48"N, 083°24'36"W, 20 m, 27 Nov 1947, *Alexander F. Skutch 5257* (MO). Golfito: Jiménez. Cercanías de Río Piro; aguas arriba a partir del camino que va a Playa Carate., 08°24'00"N, 083°19'48"W, 10–50 m, 31 August 1990, *Carlos Morales, C. Kernan, R. Soto & A. Chacón 106* (MO); P.N. Corcovado; Península de Osa: P.N. Corcovado; Península de Osa. Estación Los Patos, alrededores., 08°33'36"N, 083°30'36"W, 200 m, 1 September 1993, *Reinaldo Aguilar 2144* (CR); P.N. Corcovado; Valle de Coto Colorado: P.N. Corcovado; Valle de Coto Colorado. Estación Esquinas, sendero a la Calathea, 08°45'36"N, 083°15'00"W, 100 m, 27 June 1993, *M. Segura & F. Quesada 95* (CR); R.F. Golfo Dulce, Oso Peninsula: Península de Osa. Estacion Agujas, Sendero Sapo., 08°31'48"N, 083°25'12"W, 300 m, 15 Jul 1996, *Azofeifa, A. 209* (INB, MO). Osa: Cantón de Osa Los Mogos., 08°45'00"N, 083°22'48"W, 20 m, 10 January 1991, *Vanessa Ramírez 29* (CR,MO); Osa Peninsula, Rincon area, ca. 300 m past the bridge near end of runway on road to gravel pits. Along a stream., 08°41'24"N, 083°28'48"W, 4 Sept. 1971, *Helen Kennedy 1140* (MO); Quebrada Aparicio, 08°42'36"N, 083°30'00"W, 220 m, 25 June 1995, *Madrigal, M. 83* (INB); Rincón de Osa. Streams and slopes adjacent to airfield, disturbed primary forest, 08°42'00"N, 083°30'36"W, 20–200 m, 6 Feb 1974, *Ronald L. Liesner 1775* (MO); Corcovado National Park. Trail from base of hills to Los Chiles., 08°30'36"N, 083°30'36"W, 20–400 m, 9 Jul 1977, *Ronald Liesner 3110* (MO); Forest near Esquinas Experiment Station, area between Río Esquinas and Palmar Sur de Osa., 200 f, 22 May 1950, *Paul H. Allen 5538* (MO, NY); Primary forest and forest margins along the Camino al Pacifico, west of Rincon de Osa, Osa Peninsula., 100 f, 7 Aug 1967, *Peter H. Raven 21586* (F); Palmar Norte: Palmar Norte - Jalisco, Hillls north of Palmar Norte, along trail to Jalisco, 08°58'48"N, 083°25'12"W, 50–700 m, 21 May 1976, *Thomas B. Croat 35185* (MO). **San Jose**: Western part of Montañas Jamaica, ca. 3 km NE of Bijagual de Turrubares, Carara reserve. 9°45.5'N, 84°33'W. Elev. 500-600 m., 09°45'00"N, 084°33'00"W, 500–600 m, 7 Aug 1985, *Michael H. Grayum, R. Warner, J.C. French & P. Sleeper 5881* (MO); ZP La Cangreja Forests along Río Negro, ca. 1.5 km E of Santa Rosa de Puriscal., 09°42'00"N, 084°23'24"W, 320 m, 14 May 1987, *Michael Grayum, G. Herrera, G. Umaña & N. Zamora 8347* (MO); Zona Protectora La Cangreja Along Quebrada Grande and on adjacent ridges, ca. 2 km N of Mastatal de Puriscal., 09°42'00"N, 084°22'12"W, 340 m, 22 Jul 1988, *Michael Grayum, B. Hammel, N. Zamora & M.M. Chavarría 8616* (MO); Tarrazú Faldas del Cerro Nara, ca. Esquipulas, límite Quepos (Puntarenas) y Tarrazú, 09°28'48"N, 084°03'00"W, 350 m, 11 July 1987, *Jorge Gómez-Laurito, J. López & H. Gómez 11603* (MO); Z. P. La Cangreja. Santa Rosa de Puriscal. Bosque primario y secundario en las márgenes del río Negro., 09°42'00"N, 084°23'24"W, 350 m, 29 July 1992, *J.F. Morales 285* (MO); Reserva Biológica Carara Sector Carara. Sitio Sendero Lalo Barboza., 09°45'36"N, 084°34'48"W, 300 m, 17 September 1991, *Rodolfo Zúñiga 445* (INB, MO); Reserva Biológica Carara: Reserva Biológica Carara. Sitio Sendero Lalo Barboza., 09°45'36"N, 084°31'48"W, 300 m, 2 Oct 1990, *Rodolfo Zúñiga & Gerardo Varela 295* (MO).

PANAMA. **Cocle**: Along road between La Pintada and Coclecito, 5.2 mi N of stream at Llano Grande, Atlantic slope, along edge of stream., 513 m, 7 December 1979, *Thomas B. Croat 49244* (MO); South of Cascajal along Continental Divide. Tropical wet forest-premontane forest., 08°45'N, 080°25'W, 800–900 m, 7 November 1981, *S. Knapp 1947* (MO); Continental divide ridge, Coclesito rd., 20 April 1978, *Barry Hammel 2557* (MO); Continental divide on road to Coclesito in patch of forest near road., 1500 f, 20 June 1978, *Barry Hammel 3501* (MO); Road from Penonome to Coclecito, 9 km N of Llano Grande, streamside forest on tributary of Río Caseaja, 11 October 1978, *W.G. D'Arcy & B. Hammel 12275* (MO); 7 km from Llano Grande on road to Coclesito near continental divide, 1200 f, July 1979, *Thomas M. Antonio 1377* (MO); 27 km N of Penonome on road to Coclesito in forest reserve at continental divide, 1500 f, 20 February 1978, *Barry Hammel 1636* (MO). **Darien:** Nique. Alturas de Nique - Coasi, Lower slopes of Alturas de Nique along Río Coasí, 07°36'N, 077°47'W, 26 Dec 1980, *Ronald L. Hartman 12266* (MO); Vicinity of airstrip at Cana gold mine; disturbed forest; Tropical Wet Forest (Holdridge Life Zone System)., 480 m, 29 Jul 1976, *Thomas B. Croat 38059* (B, K, MO); Cocalito: Cocalito, 13 August 1961, *J. Dwyer s.n.* (MO); Rio Balsa. Balsa - Areti, Peak ca. 300 ft high between Río Balsa and Río Areti at their confluence, 07°34'N, 077°48'W, 300 f, 13 Sep 1966, *James A. Duke 8755* (GH, MO). **Veraguas**: Dos Bocas del Rio Caloveborita, 16-17 km NW of Santa Fe, 500 m, 3 June 1976, *Robert L. Dressler 5317* (MO); Vicinity of continental Divide, 3rd branch of Rio Santa Maria to drop-off to lowlands, 12-15 km NW of Santa Fe, 650–750 m, 17 May 1975, *Robert L. Dressler 5029* (MO); Guabal (Río Dos Bocas), about 16 km NW of Santa Fé., 500 m, 15 November 1974 - 16 November 1974, *Robert L. Dressler 4782* (MO).

General distribution: Costa Rica, Panama, Colombia

**SPATHIPHYLLUM UXPANAPAENSE** **Matuda**, Cact. Suc. Mex. 21: 74. 1976. Tipo: México, Veracruz: Municipio Minatitlán, orillas del Río Uxpanapa, campamento Hidalgotitlan, sobre rocas calcáreas, 75 m, *E. Matuda 38660* (Holotipo: MEXU 184916; MEXU 180734).

Terrestrial or rupícolous, occurring along steams or on limestone, 30- 60 cm tall; stem repent to erect; **internodes** very short, 1-1.5 cm diam. LEAVES erect; **petioles** 9.5-27 cm long, (averaging 15.1 cm long) ), sheathed 6-22 cm (averaging 11.7 cm), free portion 2.5-5 cm long; **blades** narrowly lanceolate, wider below middle, 14-23 cm long, 3.3-5.5 cm wide (averaging 17.2 x 4.7 cm), somewhat inequilateral (one side 2-8 mm side wider), 0.8-1.4 longer than petioles, narrowly acuminate at the apex, acute and attenuate at base, drying more or less matte, gray to grayish green above, weakly glossy and yellowish gray-green on the lower surface; **midrib** sunken and weakly concolorous above, drying weakly raised and closely striate beneath, paler than the surface; **primary lateral veins** 3-5 pairs, arising at an angle of 25-45 °; interprimarios nerves usually one between each pair of primary lateral veins; upper suface smooth; lower surface with raphide cells between the minor veins. INFLORESCENCE held above the leaves; **peduncle** 27-46.2 cm long (averaging 32.7 cm), 3.4-4.6 times longer than the spathe; **spathe** white, 6.3-10 cm long, 2.5-3.2 cm wide (averaging 4.1 x 2.8 cm); **spadix** green, 2.5-3.2 cm long (averaging 2.8 cm long), 6-10 mm wide; pistils emerging prominently, narrowly rounded at the apex; estipe 0.5-1.8 long or rarely absent; **fruits** green with persistent styles prominently protruding above the tepals 4-5 m diam .; seeds 6 per berry, ca. 3 mm long, light brown with an indistinct dark brown reticulation, prominently pointed at the apex.

Endemic to Mexico (Veracruz) at 75-150 m in a *Tropical moist forest* life zone , **Distribución.** Es endémico para México (Veracruz).

The species is characterized by its very small size, semiaquatic habit, weakly sheathed petioles, narrowly lanceolate acuminate with few primary lateral veins as well as by the long-pedunculate inflorescence, slender white spathe and slender green spadix.

The species closely resembles *S. wallisii* Regel, a species from Antioquia Department in Colombia. Bunting used that name on the collection C.D. Mell collected at Dos Rios in March of 1930.

**Specimens seen:** Mexico. Veracruz: Mun. Hidalgotitlan, SW del Campamento Hermanos Cedillo, Río Solosuchil, *F. Ponce C. 244* (MEXU, XAL); Mun. Hidalgotitlan, camino a Agustin Melgar a 2 km del campamento Hermanos Cedillo, *B. Ortíz 99* (XAL); Mun. Hidalgotitlan, SW del Campamento Hermanos Cedillo, Río Solosuchil, *B. Vazquez 281* (MEXU, XAL); Mun. Hidalgotitlan, Camino Campamento Hermanos Cedillo-Agustín Melgar, *O. Téllez V. & G. Flores F. 515* (MEXU, XAL); Mun. Hidalgotitlan, SW del Campamento Hermanos Cedillo, Río Solosuchil, *M. Vazquez T. et al. 1620* (XAL), Mun. Hidalgotitlán, Río Solosuchil, +/- 1.5-2 horas a pie al SE de Ejido Agustín Melgar, cerca del potrero de Ejido Pancho Villa, *T. Wendt et al. 3735* (MO); Mun. Jesús Carranza, ribera del Río Chalchijapan, entre el Poblado El Nopal y Francisco Villa Viejo, *D. Jimeno S. 1046* (MEXU, XAL, MO).

**Spathiphyllum** **wendlandii** Schott, Oesterr. Bot. Z. 8(6): 179. 1858, as *S. wendlandii* Schott. TYPE: Costa Rica, 1 June 1946, *Pacheco 93* (type: F); Costa Rica, no date, *Wendland s.n.* (type: W).

Herbaceous to 75 cm; **petiole** 18-45(-61) cm long, sheated usually to the geniculum and often prominently alate throughout its length, the wing continuous with the decurrent base of the blade; geniculum 1.2-2 cm long, alate, to 3 cm or more wide and marginally involute and minutely undulate; **blades** oblanceolate to elliptic, 24-74 cm long, 8.5-17(28) cm wide, 3.0- 3.2 times longer than wide, short-acuminate at apex, attenuate and decurrent onto the geniculum at base 3.2-8 cm, dark green and matte above, medium green and paler below, drying dark gray-brown to greenish brown and matte to semiglossy above, yellowish brown and semiglossy below; **primary lateral veins** 19-42, arising from midrib at 45-60°. INFLORESCENCE usually overtopping leaves; **peduncle** (35-)45-82 cm long; **spathe** 14-23(29) cm long, 5-9.8 cm wide, elliptic to oblong-oblanceolate, acuminate at apex, attenuate at base and decurrent on the peduncle 3-6(-9) cm, white with green midrib; **spadix** (2.5)3.5-7.5(-11.5) cm long, 1.2-1.6 cm diam., sessile or on stipe 0.4-1.8 cm long; tepals green, free to apex, sometimes partially conglutinate at the base (at least in age), apex fimbriate or erose and often deeply notched in the center; pistils white, narrowly elongate, moderately exerted beyond the perianth, eventually green; ovary (2-)3-locular, ovules affixed near the top of locules, superposed, varying from 4-2(-1) in each of the 3 locultes; fruits whitish in lower 2/3, green at apex.

*Spathiphyllum wendlandii* ranges from Costa Rica to Panama and Colombia at 0-1150 m in *Tropical wet forest*, *Premontane wet forest* and *Premontane rain* forest life zones.

The species is characterized by its moderately small stature in wet areas, the moderately long fully sheathed petioles, its many veined short-acuminate blades with long-pedunculate inflorescence with a white prominently decurrent spathe with a green midrib and a stipitate more or less cylindroid spadix with white prominently protruding pistils.

Grayum ( ) reported that populations of this species on the Pacific slope differ from those populations on the Caribbean slope by consistently differing in having proportionately and thicker spadices, tepals which are subentire instead of being fibriate as well as shorter and thicker styles. These populations are also in primary forest rather than in areas of secondary forest as is the case in the populations on the Caribbean slope. Grayum also reported that *Spathiphyllum wendlandii* has been collected at elevations above 650 m only in the Fila Costeña on the Pacific slope.

*Additional specimens seen:* BRAZIL. **Rio de Janeiro**: Sitio Burle-Marx, Barra de Guaratiba; Araceae cultivated by Roberto Burle-Marx; About 15 km South of Campo Grande; About 21 km Southeast of Santa Cruz., 5 Aug 1986, *Thomas B. Croat 62006* (MO).

COLOMBIA. **Chocó**: Quibdo. barrio Bahia Solano, 4 Nov. 1985, *Moreno, R. et al. 27* (COL).

COSTA RICA. Cultivated, from Honolulu, Hawaii., August 1992, *T. Croat 74079* (MO). **Heredia:**. La Selva. Finca La Selva. OTS Field Station on Río Puerto Viejo just E of its junction with Río Sarapiqui, 10°25'12"N, 084°00'36"W, 100 m, *Wilbur 38021* (DUKE); *Wilbur 37323* (DUKE); Puerto Viejo, 10°27'00"N, 084°00'00"W, 06 Mar 1965, *Blaisdell 253* (FSU); O.T.S. La Selva Reserve, 10°26'N, 84°01'W, 15 Apr 1986, *Thomas B. Croat 61219* (MO); La Selva Biological Station., 10°25'53"N, 084°00'13"W, 100 m, 20 May 1985, *R. L. Wilbur 37151* (DUKE); La Selva Biological Station., 10°25'53"N, 084°00'13"W, 100 m, 24 May 1984, *R.L. Wilbur & B. Jacobs 34908* (DUKE). **Limon**: Hacienda Tapezco-Hacienda La Suerte, 29 air km W of Tortuguero, 10°30'00"N, 083°46'48"W, 40 m, *Davidson & Donahue 8308* (LAM); Cordillera de Talamanca Along ridge descending to main fork of Quebrada Cañabral from divide between basin of Río Madre de Dios and that of Río Barbilla., 10°01'48"N, 083°24'36"W, 280 m, 6 September 1988, *Michael Grayum, Gerardo Herrera & Rafael Robles 8841* (MO); Res. Biológica Hitoy-Cerere Alrededores de la Estación. Valle de la Estrella. Bosque primario, 09°40'12"N, 083°01'12"W, 100 m, 17 January 1992, *Alberth Moreno 94* (MO); 7 km SW of Bribri, 09°35'24"N, 082°52'12"W, 100–250 m, 4 May 1983, *L.D. Gómez, R. Liesner, & E. Judziewicz 20403A* (MO, WIS). **Puntarenas**: Parque Nacional Corcovado Sirena, Look out Trail, 08°27'36"N, 083°34'48"W, 100–250 m, 26 April 1989, *C. Kernan 1051* (MO); Parque Nacional Corcovado Sirena, Pavo Trail to old airstrip., 08°27'36"N, 083°34'48"W, 1–50 m, 21 June 1989, *C. Kernan & P. Phillips 1171A* (MO); Parque Nacional Corcovado. Sirena station; lower Olla trail (just NE from station; on slopes and ridge in undisturbed primary forest., 08°28'48"N, 083°33'36"W, 25 m, 4 April 1988, *Barry Hammel C. Kernan & P. Phillips 16652* (MO). Golfito: P.N. Corcovado. Península de Osa. Sendero Naranjo., 08°28'50"N, 083°35'30"W, 10 m, 9 Dec 1998, *R. Aguilar 5536* (MO); R.F. Golfo Dulce; Península de Osa: R.F. Golfo Dulce; Península de Osa. La Torre, cabeceras del Río Agujas. Finca de los Azofeifa. Puerto Jiménez., 08°31'48"N, 083°25'48"W, 300–400 m, 6 May 1993, *Reinaldo Aguilar 1847* (CR). Osa: Corcovado National Park. Collected by G. Vega along trail and in forest between headquarters at Sirena and Pavo., 08°30'00"N, 083°36'00"W, 0–10 m, 5 July 1977, *Ronald Liesner 2895* (CR, MO). **Puntarenas**. R.B. Monteverde; Cordillera de Tilarán: R.B. Monteverde; Cordillera de Tilarán. Río Veracruz., 10°20'24"N, 084°43'12"W, 1300 m, 4 May 1991, *Erick Bello, Eladio & Roy Cruz 2725* (CR, MO). **San Jose:** Perez Zeledon Canton, along road between San Isidro General and Domincal; Fila Tinamastes., 09°18'24"N, 83°46'11"W, 990–1100 m, 9 September 1996, *Thomas B. Croat & Dylan Hannon 79098* (CM, INB, MO, SEL, WU); rio Pacuare: San Isidro del General - Dominical, Along road between San Isidro del General and coastal town of Dominical, SW of San Isidro, 4.8 mi from the Río Pacuare. Remnants of virgin forest along road, 09°18'00"N, 083°46'12"W, 1000 m, 22 May 1976, *Thomas B. Croat 35252* (MO). Acosta: Along Río Parritilla, ca. 1 km E of Zoncuano., 09°41'24"N, 084°13'48"W, 580 m, 28 January 1997, *M. H. Grayum, B. Hammel & F. Morales 11177* (); Fila Bustamante: Fila Bustamante. Fila San Jerónimo, bosque primaRío en el camino al bajo del río cabeceras Quebrada San Jerónimo., 09°42'36"N, 084°16'48"W, 900–1000 m, 24 June 1995, *J.F. Morales 4482* (CR). Turrubares. R.B. Carara; Valle del Tárcoles: R.B. Carara; Valle del Tárcoles. Puesto Carara, Río Carara abajo de la unión con Río del Sur., 09°46'12"N, 084°31'48"W, 100–200 m, 5 April 1993, *Barry Hammel & M. Grayum 18954* (CR).

MEXICO. **Veracruz**: San Andrés Tuxtla. Estacion de Biologia Tropical Los Tuxtlas: Sontecomapan - Montepio, Estación de Biología Tropical Los Tuxtlas, N of San Andrés Tuxtla between Sontecomapan and Montepio. Along broad trail and new border road through virgin forest. Veg. type: "selva alta perennifolia", 18°34'48"N, 095°03'36"W, 150–200 m, 17 Jan 1987, *Thomas B. Croat & Dylan P. Hannon 63156* (B, ENCB, LE, MEXU, MO). [SEE THIS COLLECTION!]

PANAMA. **Bocas del Toro**: Along road between Gualaca and Chiriquí Grande, 6.6 mi N of middle of bridge over Fortuna Lake, steep slope in forest above highway., 8°45'N, 82°18'W, 780 m, 24 June 1987, *Thomas B. Croat 66731* (MO); Hills behind Almirante, 1st ridge., 16 Nov 1971, *Helen Kennedy & R. Dressler 1264* (F); Changinola, forest near Luzon. Swamp forest and secondary vegetation on tierra firma., 20 Jun 1973, *Helen Kennedy 3251* (MO); Hills behind Almirante, first ridge., 15 Nov 1971, *Helen Kennedy 1242* (MO). **Veraguas**: Vicinity of Santa Fé, along road between Alto Piedra and Calovebora, 0.5 mi N of Alto Piedra, on slopes of Cerro Tute, Parque Nacional Cerro Tute., 800–1030 m, 15 July 1994, *Thomas B. Croat & Guanghua Zhu 76866* (MO); NW of Santa Fe. 2 km from Escuela Agricola Alto de Piedra. Ridge below Cerro Tute. Cloud forest., 1070–1150 m, 19 May 1975, *S. Mori & J. Kallunki 6250* (MO); Valley of Rio dos Bocas on road between Alto Piedra (above Santa Fe) and Calovebora; primary forest along road., 350–400 m, 29 Aug 1974, *Thomas B. Croat 27416* (MO); Cerro Tute; ca 10 km NW of Santa Fe. On ridgetop in cloud forest (Lower Montane Rain Forest)., 1000 m, 19 Jun 1975, *S. Mori 6773* (MO); Ca 10 km NW of Santa Fe, on road to Calovebora (Panama Hwy. 35), at first branch of Rio Santa Maria., 4 Aug 1975, *S. Mori & A. Bolten 7615* (MO); NW of Santa Fe. 8.8 km from Escuela Agricola Alto de Piedra, on road to Calovebora., 1900 f, 17 Jun 1975, *S. Mori 6664* (MO); 14 km NW of Santa Fe, on road to Calovebora (Panama Hwy. 35)., 4 Aug 1975, *S. Mori & A. Bolten 7655* (MO); Valley of Rio Dos Bocas along road between Escuela Agricola Alto Piedra and Calovebora, 15.6 km northwest of Santa Fe; primary forest; along trail to Santa Fe, steep forested hill east of river., 450–550 m, 31 Aug 1974, *Thomas B. Croat 27693* (MO); Vicinity of Escuela Agricultra Alto Piedra, near Santa Fe along trail to top of Cerro Tute., 2800–3200 f, 3 Apr 1980, *T. Antonio 4020* (MO); Rio Dos Bocas: Gubal (Rio Dos Bocas), about 16 km NW of Santa Fe., 500 m, 16 May 1975 - 17 May 1975, *Robert L. Dressler 5028* (MO).

**Spathiphyllum** **wendlandii** Schott ssp. **wendlandii, Need Description!!**

COSTA RICA. **Alajuela**: Peñas Blancas; a orilla del camino., 10°17'24"N, 084°46'12"W, 18 junio 1985, *William A. Haber & Eric Bello C. 1783A* (MO). **Heredia**. La Selva: Finca La Selva, the OTS Field Station on the Río Puerto Viejo just E of its junction with the Río Sarapiquí., 10°25'12"N, 084°00'36"W, 100 m, 23 Mar 1983, *I.A. Chacón G. 544* (MO); Finca La Selva., 10°33'36"N, 083°57'00"W, 100 m, 7 May 1980, *Barry Hammel 8611* (MO); Finca La Selva, Puerto Viejo de Sarapiquí, 10°25'12"N, 084°00'36"W, 100 m, 5 Jan 1978, *Thomas B. Croat 44301* (MO). Sarapiqui. Puerto Viejo: Near Puerto Viejo along road near the Río Sucio., 10°27'36"N, 083°59'24"W, 20 m, 27 May 1976, *Thomas B. Croat 35699* (MO). **Limon**. Bambu: Limon - Shiroles, Along road between Limón and Shiroles, along Río Sixaola, 0.9 mi SW of Bambu, 6.5 mi SW of Bribri. Along stream on steep slope, 09°33'00"N, 082°53'24"W, 50 m, 12 Aug 1977, *Thomas B. Croat 22236* (MO); Asuncion: Río Segundo, Asunción., 09°53'24"N, 083°09'36"W, 300–400 m, 26 abril 1985, *L.D. Gómez 23453* (CR, MO); Río Sixaola: Evergreen premontane wet and tropical moist forest formations, secondary formations, and cocoa plantations 1 to 3 km N of Bribri, Río Sixaola drainage., 09°37'12"N, 082°49'48"W, 20–200 m, 9 Sep 1978 - 10 Sep 1978, *William Burger & Thomas Antonio 10958* (MO); *Thomas M. Antonio 750* (MO); Siquirres: Turrialba - Limon, Along Hwy. 32 from Turrialba to Limón, ca. 11 miles south of Siquirres. Pasture with remnants of primary vegetation in ravines, 10°00'00"N, 083°34'12"W, 650 m, 13 Aug 1977, *Thomas B. Croat 43337* (MO). Talamanca: Colline de Sikurbeta., Feb 1895, *A. Tonduz 9398* (BR). **Puntarenas**: Forest at eastern base of Fila Barriganes. Ca. 1 km S and 3 km W of Clañasas, (ca. 12 km S of Rincón de Osa)., 8°34'N, 83°25'W, 60 m, 4 March 1985, *T.B. Croat & M.H. Grayum 59822* (CM, CR, MO); Along short cut-road to Golfito from Villa Briceño on Interamerican Hwy., W side of Fila Gamba, ca. 6 km from Golfito airport; elev. less than 100 m. 8°41' 30"N, 83°12'W., 8°41'N, 83°12'W, 100 m, 6 March 1985, *T.B. Croat & M.H. Grayum 59928* (MO); San Vito de Coto Brus to Ciudad Neily; northeastern slopes of Fila de Cal; forest on limestone ridge. 8°41'N, 82°56.5'W, 08°40'48"N, 082°56'24"W, 500–620 m, 12 Jul 1985, *B. Hammel & M. Grayum 14170* (MO); Finca Loma Linda, Cañas Gordas. Rich forest., 08°44'24"N, 082°55'48"W, 1140 m, 26 Feb. 1973, *P. Busey 647* (MO); Osa Peninsula: Corcovado National Park. Primary forest on hills 0-2 km W of the park headquarters at Sirena., 08°30'00"N, 083°36'36"W, 0–200 m, 5 July 1977, *Ronald Liesner 2949* (CR, MO). **San Jose**: Western part of Montañas Jamaica, ca. 3 km NE of Bijagual de Turrubares, Carara reserve. 9°45.5'N, 84°33'W. Elev. 500-600 m., 09°45'00"N, 084°33'00"W, 500–600 m, 7 August 1985, *Michael H. Grayum, R. Warner, J. C. French & P. Sleeper 5856* (MO); ZP La Cangreja Forests along Río Negro, ca. 1.5 km E of Santa Rosa de Puriscal., 09°42'00"N, 084°23'24"W, 320 m, 14 May 1987, *Michael Grayum, G. Herrera, G. Umaña & N. Zamora 8328* (CR, MO); Dominical: San Isidro del General - Dominical, About 1 mi beyond divide between San Isidro del General and coastal town of Dominical, 09°16'12"N, 083°51'36"W, 900 m, 22 May 1976, *Thomas B. Croat 35291* (MO).

PANAMA. **Chiriqui**: Along road from Puerto Armuelles to San Bartolo Limite, 7 miles west of Puerto Armuelles. Disturbed primary forest and roadside., 120 m, 19 May 1976, *Thomas B. Croat 35060* (MO). **Veraguas**: along base of Cerro Tute, just past Escuela Agrícola up from Santa Fe; 81°07'W, 8°32'N, elev. ca. 1200 m., 8°32'N, 81°07'W, 1200 m, 10 September 1982, *Clem Hamilton, W. D'Arcy & D. Roubik 1303* (MO); Vicinity of Escuela Agricola Alto Piedra near Santa Fe, 0.3 mi beyond the fork in the road near the agricultural school toward Atlantic coast, along trail to top of Cerro Tute., 1050–1150 m, 29 November 1979, *Thomas B. Croat 48910* (MO); 5 mi W of Santa Fe on road past Escuela Agricola Alto Piedra on Pacific side of divide., 800–1200 m, 18 Mar 1973, *Thomas B. Croat 23044* (MO); N of Santa Fe, on property of Escuela Agricola Alto de Piedra. Forest and forest edge near recently cleared area., 17 Oct 1974, *S. Mori & J. Kallunki 2532* (MO); Above Santa Fe beyond Escuela Agricola Inter-americana, 1.8 miles beyond fork in road on Pacific slope; steep forested slopes above rocky ravine on side of Cerro Tute., 5 Apr 1976, *Thomas B. Croat & J.P. Folsom 34178* (MO); 6.4 km outside of Santa Fe on the road that passes the agricultura school, headed toward the cordillera., 5 May 1977, *J.P. Folsom 2953* (MO); Lower slopes of Cerro Tute, Escuela Agricola Alto Piedra, 7-8 km NW of Santa Fe; very wet forest., 750–850 m, 2 Aug 1975, *Robert L. Dressler 5041* (MO); Cerro Tute, 8-10 km northwest of Santa Fe., 1200 m, 3 Aug 1975, *Robert L. Dressler 5062* (MO); "Los Girasoles", Escuela Agrícola Alto Piedra, aprox. 5 m NW Santa Fe., 800 m, 7 Sep 1974, *Robert L. Dressler 4715* (MO).

**Spathiphyllum wendlandii** Schott ssp. **morii** Croat – this name is not in Tropicos…not published yet?? (The herbarium specimen folder is labeled as wendlandii morii.) There are no entries in Tropicos for ssp morii.

**Panama** Veraguas: 500 m, 16-17 May 1975, Robert L. Dressler 5028 (MO).

However, there are specimens listed for **Spathiphyllum wendlandii** Schott ssp. **montanum.** Here they are:

COSTA RICA. Boundary between Puntarenas and Prov. Alajuela. Monte Verde Reserve, Cordillera de Tilarán, Cerros Centinelas; elev. 1550-1600 m. 10°18'N, 84°47'W., 10°18'00"N, 084°46'48"W, 1550–1600 m, 19 Aug 1984, *Michael H. Grayum & Pam Sleeper 3835* (MO); **Alajuela:** Cañón del Río Grande de Orosí y aluvión, 09°43'48"N, 083°46'48"W, 23 Oct. 1983, *I.A. Chacón, G. Herrera, & A. Boren 1491* (MO). **Cartago**: Along tributary of Quebrada Casa Blanca Tapantí; elev. ca. 1350 m. 9°47'N, 83°48'W., 09°46'48"N, 083°48'00"W, 1350 m, 6 Aug 1984, *Michael H. Grayum & Pam Sleeper 3684* (MO); Along trail leading eastward into mountains from road into Tapantí reserve, ca. 1 km S of jct. of Quebrada Salto and Río Grande de Orosi., 09°42'36"N, 083°46'48"W, 1500–1800 m, 1 Feb 1986, *M. H. Grayum, P. Sleeper, J. Dickie, A. R. Smith & T. Béliz 6298* (MO). **Guanacaste**: Las Nubes 1 km N Las Nubes village, 8 km NW Monteverde, premontane rain forest. 1 km N Las Nubes village, 8 km NW Monteverde, premontane rain forest. 10.22N 84.51W 1200 m 31 August 1989 William Haber & Willow Zuchowski, 10°21'36"N, 084°51'00"W, 1200 m, 31 August 1989, *William Haber & Willow Zuchowski 9480* (MO); Parque Rincón de La Vieja Liberia. Cabeceras de Quebrada Provisión y Quebrada Rancho Grande, Meseta Aguacatales., 10°47'24"N, 085°19'12"W, 1350 m, 1 December 1987, *Gerardo Herrera 1462* (MO). **Heredia**: Just upstream from bridge over Río Sarapiqui, road to La Virgen de Socorro., 10°15'00"N, 084°09'36"W, 4500 f, *Hammel 13305* (DUKE); Parque Nac. Braulio Carrillo Forest between Río Peje and Río Sardinal, Atlantic slope of Volcán Barva., 10°15'00"N, 084°04'48"W, 1200–1400 m, 13 Nov 1986, *Michael Grayum & Gerardo Herrera 7847* (MO). **Puntarenas**: Monteverde Cloud Forest Reserve; Sendero Pantanoso; swampy area on continental divide, lower montane rain forest., 10°20'N, 84°50'W, 1500–1600 m, 25 Jun 1986, *William A. Haber ex Eric Bello C. 5201* (MO); Reserva Biológica Monteverde, 10°18'00"N, 084°48'00"W, 1500 m, 13 June 1987, *William Haber & Erick Bello 7505* (MO); Cordillera de Talamanca; area around Río Canasta, 9.5 airline km NW of Agua Caliente, between Cerro Frantzius and Cerro Pittier. Lower montane wet forest with a few pasture clearings., 09°01'48"N, 082°58'48"W, 1500–1600 m, 6 Sep 1984, *G. Davidse, G. Herrera Ch. & M.H. Grayum 28444* (MO); Pastures, forest edges, and montane evergreen cloud forest (lower montane wet forest and lower montane rain forest zones) about 2 km southeast of Monteverde on the Pacific watershed., 10°18'N, 084°48'W, 1500–1550 m, 31 Oct 1975, *William Burger & Richard Baker 9688* (US); Monteverde: Monteverde Reserve, 10°17'N, 84°18'W, 1500 m, 11 April 1986, *Thomas B. Croat 61197* (MO); Río Buru: Upper Río Buru., 09°00'36"N, 082°50'24"W, 2010 m, 19 Aug 1983, *L.D. Gómez, I. & R. Chacón, & G. Herrera 21411* (MO). **Puntarenas**. Cordillera de Tilarán: Cordillera de Tilarán. Monteverde, canyon of Río Guacimal below cheese factory, lower montane moist forest., 10°18'00"N, 084°48'00"W, 1350 m, 21 March 1992, *William Haber 11088* (CR, MO). **San Jose**: Primary forest along Río Zurquí, Cordillera Central., 10°03'00"N, 084°00'36"W, 1500–1600 m, 18 Jan 1986, *Michael H. Grayum & Pam Sleeper 6136* (MO); Vicinity of El General., 1160 m, Dec 1936, *Alexander F. Skutch 3033* (US); Vicinity of Santa María de Dota., 1500–1800 m, 26 Dec 1925 - 3 Jan 1926, *Paul C. Standley & Juvenal Valerio 44088* (US); Braulio Carrilo: Braulio Carrilo National Park, less than 1 km. North of north end of tunnel; virgin forest on steep slopes in mossy cloud forest, 10°05'N, 83°57'W, 1000–1500 m, 15 Apr 1986, *Thomas B. Croat 61225* (MO). Turrubares. Z.P. Cerros de Turrubares; Cuenca del Río Grande de Tárcoles. SW spur of Cerro Turrubares, ridge bet. N and S forks of Río Carara., 09°46'48"N, 084°28'48"W, 850–1100 m, 6 April 1993, *Michael Grayum, Barry Hammel & Rodolfo Zúñiga 10538* (CR, MO).

PANAMA. **Bocas del Toro**: Region of Cerro Colorado, on trails from continental divide, 7 miles from Chami Camp, c. 8°35'N, 81°45'W. Cloud forest c. 1500 m., 8°35'N, 81°45'W, 1500 m , 12 April 1986, *Gordon McPherson 8794* (MO); Fortuna Dam area, Pipeline road off Chiriquí Grande road at Continental Divide, 2-8 road miles from divide point., 25 June 1986, *W.G. D'Arcy 16399* (MO); Cerro Colorado mine area; in forest on steep slope along small draw; along major trail from divide down to Bocas lowlands., 8°35'N, 81°54'W, 1400–1500 m, Mar/27/1986, *Barry Hammel & J. Trainer 14898* (MO); Vicinity of Cerro Colorado, c. 8°35'N, 81°45'W. On trail along creek 8.6 miles from Camp Chami. Forest c. 1400 m., 8°35'N, 81°45'W, 1400 m , 14 April 1986, *Gordon McPherson 8898* (MO); Trocha 3 de Noviembre, near Paso de la Zorra shelter., 1300–1350 m, 8 Jan 1977, *Robert L. Dressler 5568* (MO); Fortuna: Chiriqui Grande - Fortuna, Along highway, between Fortuna and Chiriqui|í Grande, 2.2 mi N of Continental Divide, 6.3 mi N of bridge over Fortuna Lake, 8°45'N, 82°16'W, 820 m, 12 Mar 1985, *Thomas B. Croat & Michael H. Grayum 60398* (MO). **Chiriqui**: Road from Boquete to Finca Lérida, 2000 m, 26 Apr. 1971, *Robert L. Dressler & Norris H. Williams 4013* (MO); Cerro Colorado, ca. 50 km NW of San Félix, 1300–1450 m, 15 Feb 1977 - 16 Feb 1977, *Robert L. Dressler 5609* (MO); Cerro Colorado, ca. 50 km N of San Felix; cloud forest., 1400 m, 17 Aug. 1975, *Robert L. Dressler 5119* (MO); Cerro Colorado Mine, near higher elevation camp, 1500 m, 30 May 1980, *Thomas M. Antonio 4895* (MO); *Thomas M. Antonio 4896* (MO); Cerro Horqueta., 7000 f, 24 Jul 1966, *K.E. Blum & J.D. Dwyer 2616* (MO, SCZ); La Fortuna hydroelectric project; in cloud forest on ridge behind camp., 1300–1400 m, 23 Mar 1978, *Barry Hammel 2224* (MO); La Fortuna hydroelectric project; in forest along ridge top north side of river., 1200 m, 22 Mar 1978, *Barry Hammel 2213* (MO); Cerro Colorado; top; Bocas Road., 1500 m, 17 Feb 1977 - 18 Feb 1977, *J.P. Folsom & L. Collins 1812* (MO); Cloud forest along continental divide on Cerro Colorado, on upper mining road 20 to 28 miles from San Felix., 1200–1500 m, 14 Mar 1976, *Thomas B. Croat 33336* (MO); Cerro Colorado; top; Bocas Road., 1500 m, 17 Feb 1977 - 18 Feb 1977, *J.P. Folsom & Leo Collins 1795B* (MO); Cerro Colorado, about 50 km north of San Félix, cloud forest., 1400 m, 17 Aug 1975, *Robert L. Dressler 5118* (MO); Alto de Guayabo, Trocha 3 de noviembre, north of Cerro Pinola., 08°46'N, 082°15'W, 1500–1900 m, 25 Sep 1976, *Robert L. Dressler 5474* (MO); Cerro Colorado, along road to copper mine 34.1 km beyond bridge over Rio San Felix near town of San Felix, (13.1 beyond turnoff to Escopeta)., 1390 m, 15 Jul 1976, *Thomas B. Croat 37272* (MO); Cerro Horqueta, cloud forest., 5000–7000 f, 8 Aug 1967, *Joseph H. Kirkbride, Jr. 142* (MO). **Cocle**: El Cope. Collections made on the Atlantic side, 1800 f, 22 June 1979, *Thomas M. Antonio 1150* (MO); Alto Calvario, cloud forest., 800–900 m, 20 Apr 1977, *J.P. Folsom & A. Jaslon 2690* (MO); Near continental divide along lumbering road 8.4 km above El Cope. (1 km beyond sawmill)., 900 m, 19 Jan 1978, *Barry Hammel 963* (MO); Along road between Llano Grande and Coclesito (N of Pintada), 4 mi N of Llano Grande., 600 m, 28 Jan 1980, *T. Antonio 3571* (MO); Continental divide on road to Coclesito, in patch of forest near road., 1500 f, 20 June 1978, *Barry Hammel 3500* (MO). **Veraguas**: Northeastern slopes of Cerro Delgadito just NW of Cerro Tuté, south of town of Santa Fé. Dry, deciduous forest., 1000 m, 8 June 1973, *James L. Luteyn 4030* (DUKE); "Buenos Aires", north slope of ridge east of Cerro Tute, NW of Santa Fé., 24 Dec 1976, *Robert L. Dressler 5551* (MO); Forested mountains W of Alto de Piedras W of Santa Fé., 3200–5600 f, 8 Sep 1978, *Barry Hammel 4628* (MO); Shoulder of Cerro Tute., 25 May 1977, *J.P. Folsom & B. & A. Edwards 3353* (MO); Cerro Tute; ca 10 km NW of Santa Fe. On ridgetop in cloud forest (Lower Montane Rain Forest)., 1000 m, 19 Jun 1975, *S. Mori 6752* (MO).

Spathiphyllum uxpanapaense Matuda, Cact. Suc. Mex.. 21(3). 1976. [What happened to this species?]

Spathiphyllum zetekianum Standl. Ann. Miss. Bot. Gar. 27: 267. 1940

Type: PANAMÁ. Barro Colorado Island, Canal Zone, Zetek trail, July. 1931, *D. E. Starry 27* (holotype, F).

Terrestrial 0.6-1.5 m. tall; Leaves in a loose rosette; petioles 46-59 (-70) cm. long., terete, drying dark brown, sheathed to midway, the sheath slightly darker than shaft; **genículum** 0.8-1.5 (-4) cm. long., sulcate, drying slightly darker than petiole; **blades** lanceolate, 39-54 cm. long, 9.5-15.5 cm. wide, 3.5 times longer than wide, assmetrical with one side up to 1 cm. wider, acute at apex, obtuse at base, dark green above, moderately paler below, drying dark brown above, light brown below; **midrib** sulcate above, narrowly rounded below, drying concolorous above, darker below; **primary lateral veins** 16-20 pairs, spaced 1.8-2 cm. apart, arising at 45-55°, drying concoloroous above, darker below. INFLORESCENCE longer than leaves; **peduncule** 63-67 cm. long, 1.5 times longer than blades, drying concolorous with petioles; **spathe** green, lanceolate-elliptic, (13-) 20-28 cm. long, 5-7 cm wide. 3-4 times longer than wide, attenuate at apex, acute and decurrente onto the peduncle at base for 2-5.5 cm.; **spadix** cylindric, 4-9 cm long., 7 mm. diam., green or white at anthesis, 3.8 cm. long., 0.9 cm. diam., white in fruit, stipitate 1.2-1.8 cm. long., perianth of 6 free tepals; anthers exserted at anthesis; pistils cylindric with the pyramidal stylar region exceeding the perianth by 4.8 mm, 1.2 mm diam.; stigma rounded apically; ovary 3-locular, ovules 3 per locule; **fruits** obovoid, rostrate at apex, 6 mm long, 3 mm diam.; **seeds** 3 per fruit, elongate-ovoid, 2.8 mm. long, 1.5 mm. diam.; testa foveolada.

*Spathiphyllum zetekianum* ranges from Panama to Colombia from sea level to 600 m in *Tropical moist forest* and *Tropical wet forest* life zone. In Colombia the species is known from the western slope of the Cordillera Occidental in Chocó Department along the Pacific coast and in the northern part of the Department near the Panamanian border.

*Spathiphyllum zetekianum* was considered only a form of *S. phryniifolium* by Bunting (1960) but Cardona has resurrectd the species based on its lanceolate leave with an acute leaf base and an obtuse stylar region.

Additional specimens seen

COLOMBIA, **CHOCÓ**, Acandí, corregimiento de Sapzurro, 5 m., 08°31'00'' N, 77°17'00'' W, 10 julio 1997, *Estudiantes de botanica taxonomica MEDEL 100* (MEDEL); Nuqui, Corregimiento de Arusí, estacion biologica El Amargal, 05°34'00'' N, 77°31'00'' W, Enero-abril 1999, *Jorge Jacome 314* (COL, HUA), *363* (COL, HUA); Unguía, resguardo de Arquía, 200 m., 08°00'00'' N, 77°10'00'' W, 25 abril de 1993, Giraldo, Izquierdo & Pinto 45GIP (COL); Carmen de Atrato, carretera entre el Carmen y Quibdó, 600 m, 05°45'00'' N, 76°30'00'' W, 7 julio de 2000, *F. Cardona, R. Callejas, et al. 1018* (HUA). PANAMA. Veraguas: Alto de Piedra, vicinity of Santa Fe, Cerro Tute, along ridge which leads to summit,, 08°33’N, 81°08”W, 29 June, 1987, Croat 66998 (MO).

References

Bunting, G. S. 1960. A revision of the genus *Spathiphyllum* (Araceae). Mem. New York Bot. Gard. 10: 1–54.

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and Colombia. Aroideana 27:139-141.