

NEW SPECIES OF *PHILODENDRON* SUBGENUS *PTEROMISCHUM*
(ARACEAE) FROM MESOAMERICA AND PACIFIC SOUTH AMERICA

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ABSTRACT

Five new species in *Philodendron* subg. *Pteromischum* are described from Mesoamerica and northwestern South America. ***Philodendron alliodorum*** Croat & Grayum ranges from Nicaragua to Ecuador, ***P. ensifolium*** Croat & Grayum from Costa Rica to Pacific Colombia; ***P. herbaceum*** Croat & Grayum and ***P. opacum*** Croat & Grayum range from Costa Rica to coastal Ecuador. ***Philodendron standleyi*** Grayum is a strictly Mesoamerican species, distributed at midelevations from southern México to western Panamá.

KEY WORDS: Araceae, *Philodendron*, *Pteromischum*, México, Guatemala, Honduras, Nicaragua, Costa Rica, Panamá, Colombia, Ecuador

During the course of my ongoing revision of *Philodendron* subg. *Pteromischum* (Araceae), a number of undescribed taxa have come to light. The following five novelties are described at the present time in order to make the names available for several impending floristic treatments. Only fertile specimens are cited. More detailed accounts and specimen citations, as well as illustrations, will be provided in the revision.

Philodendron alliodorum Croat & Grayum, *sp. nov.* TYPE: COSTA RICA. San José: western part of Montañas Jamaica, ca. 3 km NE of Bijagual de Turrubares, Carara reserve, 9° 45.5' N, 84° 33' W, 500-600 m, 7 Aug. 1985, M.H. Grayum, R. Warner, J.C. French, & P. Sleeper 5857 (HOLOTYPE: MO-3446392!; Isotypes: BM, CR, NY, US).

Plantae fruticulosae scandentes usque ad minimum 10 m altae; petioli 5.6-13.6 cm longi vagina involuta marginibus scariosis fragilibusque; laminae anguste vel late ellipticae aut lanceolatae vel

oblanceolatae 13.4-32.2 cm longae ca. 2.0-3.5 plo longiores quam breviores valde inaequilaterales nervis lateralibus utroque latere 10-14 in sicco brunneolis vel rubellis; fructus maturi noctu alliodori.

Shrubby, much branched, rigidly clambering plants, ascending to at least 10 m on tree trunks, the fertile branches divergent. *Internodes* drying stramineous to midbrown, the epidermis slightly to moderately brittle and flaky; nodal roots absent, except on juvenile shoots. *Petiole* 5.6-13.6 cm long, the sheath involute with the edges brownish, dry and cracking, the unsheathed portion obsolete or to 0.3(-0.5) cm long. *Lamina* in life thinly coriaceous to subcoriaceous, semiglossy to glossy both sides, narrowly to broadly elliptical to lanceolate or oblanceolate. markedly inequilateral, gradually to abruptly acuminate apically, narrowly to broadly cuneate or (more rarely) truncate to rounded basally, 13.4-32.2 cm long, 3.2-14.0 cm wide; primary lateral veins 10-14 per side. *Bracteoles* absent. Inflorescences solitary, very rarely paired; peduncle subterete, with pale, short lineations, (0.6-)1.1-3.5 cm long (to at least 4.4 cm in fruit); *spathe* at anthesis externally green and often whitish lineolate below, paler (greenish white to cream) distally, often with pale whitish spots, internally uniformly whitish, 6.8-15.0 cm long, 1.4-3.6(-4.1) cm wide. *Spadix* 5.9-12.3 cm long, the fertile male portion cream colored, 0.6-1.2 cm wide; sterile male zone 0.7-1.2 cm long; female portion of spadix 1.1-4.3 cm long (to at least 8.3 cm in fruit), 0.50-1.25 cm wide (to at least 2.1 cm in fruit), pale green or yellowish; fertile *male flowers* 0.8-1.7 mm long, 0.6-2.0 mm wide, irregularly polygonal; sterile male flowers 1.2-2.3 mm long, 0.7-1.7 mm wide, cuboidal to claviform; *female flowers* 1.3-2.1 mm long, 0.5-0.9 mm wide, the stylar canals 4-5. Ripe fruits very pale yellowish orange (ochroleucous), emitting a pronounced garlicky odor at night. *Seeds* straight to somewhat (or occasionally strongly) curved, twisted or spindled, finely striate with the striae cancellate, (0.7-)0.9-1.0 mm long, ca. 0.2 mm wide.

PARATYPES: NICARAGUA. Río San Juan: *Moreno* 26101 (MO). Zelaya: *Stevens* 8848 (MO).

COSTA RICA. Alajuela: *Croat* 46970 (MO). Heredia: *Burger & Stolze* 5892 (CR,F); *Folsom* 9883 (MO); *Grayum* 2303 (MO), 2842 (MO), 3059 (DUKE), 8594 (MO), 8659 (CR), 9447 (CR,MO); *Grayum & Chavarria* 8287 (MO); *Jacobs* 2322 (DUKE), 2533 (DUKE), 2702 (DUKE,MO,NY), 2773 (DUKE); *Jacobs & Ford* 2809 (DUKE); *Jacobs & Smith* 2464 (DUKE,MO); *Kress* 84-1625 (SEL); *Proctor* 32113 (IJ,LL,MO); *Stevens* 13315A (MO); *Wilbur* 37153 (DUKE), 37603 (DUKE). Limón: *Gómez et al.* 20555 (MO); *Grayum* 9797 (CR,MO). Puntarenas: *Burger & Liesner* 7227 (F,PMA); *Burger & Mata U.* 4805 (F); *Burger & Stolze* 5427 (CR,F,US); *Croat & Grayum* 59720 (CR,MO); *Grayum et al.* 4084 (CR,MO), 7565 (CR,MO); *Knapp* 2183 (MO); *Liesner* 1861 (MO). San José: *I. Chacón* 346 (MO).

PANAMA. Bocas del Toro: *McPherson* 12564 (MO); *Thompson* 4931

(CM). Darién: *Croat 38004* (MO), *68868A* (MO); *Duke 5168* (MO); *Gentry et al. 28544* (MO); *Hammel et al. 16185* (MO), *16190* (MO); *McPherson 7079* (MO), *11555* (MO), *12237* (MO), *15008* (MO); *Sullivan 692* (MO). Panamá: *Hamilton & Stockwell 1047* (MO); *Hammel 7334* (MO); *Knapp et al. 4745* (MO); *Thompson 4626* (CM,MO), *4787* (CM); *Tyson & Nee 7345* (MO).

COLOMBIA. Antioquia: *Brand 1039* (MO); *Rentería 3766* (MO). Chocó: *E. Forero et al. 4123* (COL,MO), *4231* (COL,MO). Valle: *Croat 61363* (MO).

ECUADOR. Carchi: *Madison & Besse 7029* (QCA,US); *Ollgaard et al. 57267* (AAU). Cotopaxi: *Sparre 17116* (S), *17328* (S). Esmeraldas: *Barfod et al. 48246* (AAU); *Madison et al. 5201* (SEL). Guayas: *Camp E-3848* (NY); *Lehmann 6458* (K). Los Ríos: *Dodson 6652* (F,MO,QCA,SEL); *Gentry et al. 54761* (MO); *Madison 3839* (SEL). Pichincha: *Hammel & Trainer 15838* (MO); *Madison 3813* ['Los Ríos'] (SEL); *Sparre 14058* (S).

Philodendron alliodorum is distinguished by its high climbing habit, relatively short, fully sheathed petioles, involute petiole sheath with the margins brittle and scarious, and comparatively narrow (2.0-3.5 times longer than wide), markedly inequilateral leaf blades with 10-14 primary lateral veins per side. This is a species more easily recognized on herbarium sheets than in life, as the leaf blades generally dry with a distinctive brownish or reddish cast.

Philodendron alliodorum is common in primary forest from northeastern Nicaragua to Guayas Province, Ecuador, at elevations of 0-800(-1000) m. It is ecologically versatile, occurring in Tropical Wet, Premontane Wet, and Premontane Rain Forest and extending more sparingly into Tropical and Premontane Moist Forest. Although flowering collections have been made in every month of the year except September, over 75% are from March-July.

The specific epithet of *Philodendron alliodorum* derives from the pronounced garlicky odor emitted by the ripe fruits.

Philodendron ensifolium Croat & Grayum, *sp. nov.* TYPE: COSTA RICA. Limón: Cordillera de Talamanca, ridge separating Río Madre de Dios from Quebrada Cañabral and slope leading down to former, 10° 02' N, 83° 26' W, 440-460 m, 2 Sep. 1988, *M. Grayum, G. Herrera, & R. Robles 8697* (HOLOTYPE: CR!; Isotypes: F,K,MO).

Plantae epiphyticae caulibus adpressis in sicco viridibus; petioli (12.8-)13.1-29.9 cm longi vagina plerumque erecta parte non vaginata 0-0.1(-0.8) cm longa; laminae tenuiter coriaceae vel subcoriaceae supra nitidae vel seminitidae infra similes (26.7-)34.1-54.4 cm longae (2.0-)4.5-10.9 cm latae nervis lateralibus utroque latere 3-6+; inflorescentiae 1-2(-3) pedunculo (0.8-)1.7-4.2(-8.5) cm longo; spatha fructifera aurantiaca; spadix 8.2-11.9 cm longa parte feminea 0.9-1.7 cm lata; semina cochleata.

Appressed climbing understory vine on trunks, fertile at ca. 2-7 m above the ground. *Internodes* drying green and finely striate stems with roots at most distal nodes. *Petiole* (12.8-)13.1-29.9 cm long, the sheath erect (usually) to spreading, the unsheathed portion 0-0.1(-0.8) cm long. *Lamina* in life thinly coriaceous to subcoriaceous, semiglossy to glossy above, matte (rarely) to semiglossy or glossy below, linear-lanceolate to narrowly lanceolate or oblanceolate, gradually long acuminate apically, broadly cuneate or subtruncate basally, (26.7-)34.1-54.4 cm long, (2.0-)4.5-10.9 cm wide; primary lateral veins obscure or occasional, usually ca. 3-6 pairs countable. *Bracteoles* of regular occurrence, 6.0-12.3 cm long, 0.4-1.9 cm wide. Inflorescences solitary, paired or occasionally 3; peduncle densely green lineate, (0.8-)1.7-4.2(-8.5) cm long; *spathe* at anthesis externally weakly glossy to semiglossy, green below, yellow-green and densely pale short lineate distally, becoming uniformly orange in fruit, internally greenish white, 11.6-17.5(-19.1) cm long. *Spadix* 8.2-11.9 cm long, the fertile male portion chalk white, 0.5-1.2 cm wide; sterile male zone 0.6-1.5 cm long; female portion of spadix 2.3-3.4(-4.0) cm long, 0.9-1.7 cm wide, pale greenish; fertile *male flowers* polygonal, somewhat laterally compressed, 1.8-2.3 mm long, 0.9-2.1 mm wide; sterile male flowers obconic, often laterally compressed, 1.8-3.5 mm long, 1.1-2.6 mm wide; *female flowers* 2.0-3.3 mm long, 1.0-1.3 mm wide, the stylar canals 3-4. Color of ripe fruits unknown. *Seeds* in life red, cochleate, finely striate with the striae minutely cancellate, 0.4-0.5 mm diam.

PARATYPES: COSTA RICA. Alajuela: *Croat* 36367(MO), 36434 (F,MO); *Hammel et al.* 9592 ['Guanacaste'] (DUKE,MO), 14042 (MO). Heredia: *Grayum* 2834 (F,MO); *Lent* 2129 (F).

PANAMA. Coclé: *Croat* 67523 (MO); *Hammel* 2570 (MO); *Miller et al.* 794 (MO); *Thompson* 4751 (CM). Panamá: *Croat* 34783 (MO), 67348 (MO); *Kennedy & Dressler* 3343 (US). San Blas: *de Nevers et al.* 6146 (MO); *Hamilton & Stockwell* 1078 (MO); *McPherson* 11032 (MO). Veraguas: *Croat* 25949 (MO); *Mori & Kallunki* 3187 (MO).

COLOMBIA. Chocó: *Duke* 11483 (NY). Valle: *Gentry et al.* 47911 (MO).

Philodendron ensifolium is usually immediately distinguished from all other *Pteromischum* species in the region by its green stems, fully sheathed petioles and very narrow (usually more than 4.5 times longer than wide), highly glossy leaf blades with the primary lateral veins adaxially obscure. It is similar to the closely related *Philodendron senatocarpium* Madison (1977) of Ecuador in possessing orange fruiting spathes and cochleate seeds, but differs in its persistently green stems, smaller and proportionately narrower leaf blades, and typically paired (rather than solitary) inflorescences smaller in all their dimensions.

Philodendron ensifolium ranges from extreme northeastern Costa Rica (and probably southeastern Nicaragua) to Valle Department, Colombia, at elevations of 0-950(-1100) m. It occurs exclusively in Tropical and Premontane

Wet Forest in Panamá and Costa Rica, but primarily in Tropical and Premon-tane Rain Forest in Colombia. Flowering appears to be concentrated from June-August.

The specific epithet refers to the narrow, swordlike leaves of this species.

Philodendron herbaceum Croat & Grayum, *sp. nov.* TYPE: COSTA RICA. Heredia: Finca La Selva, at confluence of Río Sarapiquí and Río Puerto Viejo, Atlantic slope, 10° 26' N, 84° 01' W, 50-80 m, 22 Sep. 1986, *M.H. Grayum* 7672 (HOLOTYPE: MO-3491551!; Isotypes: CR,K).

Plantae graciles scandentes usque ad 3 m altae caulibus in sicco viridibus subtiliter striatisque nodis radicanibus; petioli (5.4-)7.4-10.5(-11.3) cm longi vagina involuta; laminae membranaceae vel tenuiter coriaceae lanceolatae aut anguste vel late ovatae, oblanceolatae vel ellipticae (7.9-)12.0-19.9(-23.8+) cm longae (3.5-)4.0-8.8 (-9.0) cm latae; inflorescentiae plerumque solitariae; pagina interior spathae striis secretoriis carentibus; spadix (7.30-)8.40-12.15 (-15.00) cm longa zona distali sterili; pars feminea spadicis (0.45-)0.60-0.85(-1.55) cm lata.

Slender stemmed vine clambering among understory shrubs and treelets or climbing (often twining) on small trunks to no more than ca. 3 m above ground, the fertile branches divergent with the inflorescences held erect. *Internodes* drying green, finely striate, the epidermis typically tessellate; roots present but few at distal nodes. *Petiole* (5.4-)7.4-10.5(-11.3) cm long, the sheath involute, the margins scarious and brittle, the unsheathed portion obsolete or to 0.3 cm long. *Lamina* in life membranous or thinly coriaceous, subchartaceous, semiglossy to glossy above, matte or weakly glossy to glossy below, lanceolate to narrowly or broadly ovate, oblanceolate or elliptical, somewhat abruptly to gradually acuminate apically, cuneate to rounded, subtruncate or subcordate basally, (7.9-)12.0-19.9(-23.8+) cm long, (3.5-)4.0-8.8(-9.0) cm wide; primary lateral veins (7-)11-12(-14) per side. *Bracteoles* occasional, 3.9-5.3 cm long, 0.35-0.55 cm wide. Inflorescences solitary or (less commonly) paired; peduncle subterete, with raised whitish striations, 1.65-4.00(-4.50) cm long; *spathe* at anthesis externally semiglossy, pale yellow green to green below, yellowish green to greenish white or white distally, internally rather uniformly light green to white, without secretory striations, 7.9-14.2(-16.0) cm long, 1.40-2.45 cm wide. *Spadix* (7.30-)8.40-12.15(-15.00) cm long, with apical sterile male zone 1.8-4.2 cm long; fertile male portion of spadix white, (0.30-)0.45-0.55 (0.70) cm wide; intermediate sterile male zone 0.25-0.80 cm long; female portion of spadix 2.05-3.90(-4.10) cm long, (0.45-)0.60-0.85(-1.55) wide, pale green or yellow green; apical sterile male flowers more or less mushroom shaped, 0.95-1.25 mm long, 0.6-2.7 mm wide; fertile *male flowers* irregularly polygonal, columnar, 0.8-1.3 mm long, 0.6-1.3 mm wide; intermediate sterile male flowers

anvil or goblet shaped, with oily appearance, 1.2-1.7 mm long, 1.1-1.8 mm wide; female flowers 1.3-1.9 mm long, 0.8-1.3 mm wide, the stylar canals probably mostly 4. Ripe fruits very pale ochroleucous (essentially white). Seeds in life white, curved 6- or C-wise or (rarely) nearly in a circle, finely striate with the striae vaguely cancellate (0.50-)0.65-0.75(-0.80) mm long, 0.2-0.3 mm wide,

PARATYPES: COSTA RICA. Heredia: *Grayum* 1840 (DUKE), 2026 (DUKE), 2276 (DUKE), 2282 (DUKE), 2297 (DUKE), 2924 (DUKE), 2932 (DUKE), 2933 (DUKE), 2981 (MO), 9988 (CR,MO); *Grayum* & Greig 8301 (MO); *Grayum* & Hammel 5569 (CR,MO); *Grayum* & Jacobs 5335 (MO); *Grayum* et al. 5552 (CR,MO); *Jacobs* et al. 2515 (DUKE); *Kress* 84-1631 (SEL); *MacDougal* 1001 (DUKE); *McDowell* 198 (DUKE,MO); *Wilbur* 37858 (DUKE), 39243 (DUKE). Limón: *Grayum* 9836 (CR,MO); *Hammel* et al. 17529 (CR,MO). San José: *Gómez* et al. 22907 (CR,MO).

PANAMA. Bocas del Toro: *McPherson* 12562 (MO); *von Wedel* 1946 (F,GH,MO). Coclé: *Grayum* & Evans 9888 (MO); *Thompson* 4728 (CM,MO), 4753 (CM,MO,SEL). Panamá: *Nee* & *Warmbrodt* 10340 (MO).

COLOMBIA. Valle: *Maas* & *Plowman* 1972 (GH,U).

ECUADOR. Pichincha: *Dodson* 11596 (MO,SEL).

Philodendron herbaceum is recognized by its small size, appressed climbing or twining habit with adventitious roots at most nodes, persistently green stems, relatively short, fully sheathed petioles with the sheath involute, absence of secretory striations on the inner spathe surface and relatively long, slender spadices with a conspicuous apical sterile zone.

Philodendron herbaceum is distributed from extreme northeastern Costa Rica (and probably southeastern Nicaragua) to Pichincha Province, Ecuador, at elevations of 0-700(-850) m. It is characteristically a species of Tropical Wet and Premontane Wet (warm transition) Forest. *Philodendron herbaceum* has been collected in flowering condition during every month from February through October, with a peak from June to August.

The specific epithet refers to the growth habit of these plants as well as the uniformly bright green coloration of most organs.

Philodendron opacum Croat & Grayum, *sp. nov.* TYPE: PANAMA.

Darién: Parque Nacional Darién, trocha limítrofe al NO en la vecindad de la Estación Pirre, 08° 00' N, 77° 45' W, 150 m, 7 Oct. 1990, *H. Herrera* 692 (HOLOTYPE: PMA!; Isotypes: CR,MO,K).

Plantae epiphyticae caulibus adpressis in sicco stramineis grosse sulcatisque; petioli 16.6-29.5(-35.2) cm longi vagina pro parte maxima erecta parte non vaginata 3.5-10.7 cm longa; laminae tenuiter coriaceae vel subcoriaceae supra impolitae vel seminitidae infra similes 17.7-43.4 cm longae 7.8-18.8 cm latae nervis lateralibus

utroque latere 5-9; inflorescentiae 1-2 pedunculo 3.7-5.8(-7.7) cm longo; spadix (5.2-)9.0-12.8(-14.8) cm longa parte feminea 0.9-1.6 cm lata.

Appressed climbing vines in understory, generally fertile 2-5 m above ground. *Internodes* drying tan or yellowish brown, coarsely sulcate; stems with nodal roots. *Petiole* 16.6-29.5(-35.2) cm long, the sheath erect or involute toward apex, the unsheathed portion 3.5-10.7 cm long. *Lamina* in life thinly coriaceous to subcoriaceous, matte or velvety to semiglossy above, matte to semiglossy below, narrowly to broadly ovate to broadly or more or less narrowly lanceolate, elliptic, oblong or broadly oblanceolate, abruptly to gradually acuminate apically, cuneate, truncate, or rounded basally, 17.7-43.4 cm long, 7.8-18.8 cm wide; primary lateral veins 5-9 per side. *Bracteoles* commonly present, 6.0-10.0 cm long, 0.4-1.8 cm wide. Inflorescences usually solitary, occasionally paired; peduncle flattened on one side with the margins rounded, weakly striate distally, 3.7-5.8(-7.7) cm long (to at least 9.0 cm post anthesis); *spathe* at anthesis externally matte, medium green, becoming paler distally, internally pale green, 12.6-17.7 cm long (to at least 21.6 cm post anthesis), 1.8-3.9 cm wide. *Spadix* (5.2-)9.0-12.8(-14.8) cm long, the fertile male portion cream-white, 0.80-1.45 cm wide; sterile male zone 0.6-1.6 cm long; female portion of spadix 2.3-5.7 cm long (to at least 6.1 cm toward fruit), 0.9-1.6 cm wide (to at least 3.0 cm toward fruit), pale green; fertile *male flowers* irregularly polygonal, 1.0-1.8 mm long, 0.6-1.9 mm wide; sterile male flowers incudiform and more or less laterally compressed, with texture of beeswax, 1.4-3.1 mm long, 1.0-2.6 mm wide; *female flowers* 2.2-2.8 mm long, 0.6-1.0 mm wide, the stylar canals (4-)5(-6). Ripe fruits translucent-whitish. *Seeds* in life purple, purplish violet or lavender, straight to somewhat spindled or slightly curved, finely striate with the striae minutely and obscurely cancellate, 0.6-0.8(-1.0) mm long, 0.15-0.25(-0.30) mm wide.

PARATYPES: COSTA RICA. Alajuela: *Burger & Baker* 9979 (CHAPA, CR,F). Heredia: *Grayum* 2731 (DUKE), 2756 (DUKE,F,MO), 8656 (CR), 10222 (CR); *MacDougal* 1094 (DUKE). Puntarenas: *Croat* 67631 (MO); *Gómez* 22930 (MO); *Grayum* 4116 (CR,MO); *Grayum & Fleming* 8120 (CR, MO).

PANAMA. Canal Zone: *Croat* 4647 (MO), 6500 (F,MO), 6793 (MO), 12464 (MO), 12604 (MO); *Gentry & Nee* 8645 (MO); *Kennedy* 1850 (MO,US); *Nee & Gentry* 8661 (MO); *Pittier* 2262 (US); *Standley* 40889 (US). Coclé: *Croat* 67476 (MO). Colón: *Croat* 36979 (MO); *Mori & Crosby* 6421 (MO). Darién: *Hammel et al.* 16157 (MO), 16189 (MO), 16425 (MO); *H. Herrera et al.* 951 (MO); *McPherson* 11547 (MO,PMA).

COLOMBIA. Cauca: *Collenette* 568 (K). Chocó: *von Sneider* A227 (S).

ECUADOR. Esmeraldas: *Asplund* 16515 (S). Los Ríos: *Dodson* 5699 (SEL); *Grayum & Zamora* 9378 (MO).

Philodendron opacum is easily distinguished by its appressed climbing habit, stem epidermis drying yellowish brown and coarsely sulcate, erect, proportionately short petiolar sheaths (with the unsheathed portion of the petiole more than 3.5 cm long), subcoriaceous, matte leaf blades (the surface drying densely alveolate) with only 5-9 primary lateral veins and relatively stout spadices, sometimes paired, on peduncles more than 3.5 cm long.

Philodendron opacum is rather spottily distributed from northern Costa Rica (and ostensibly southeastern Nicaragua) to Los Ríos Province, Ecuador, at elevations of 0-850(-1000) m, with an outlying population on the eastern slope of the Colombian Cordillera Central in Antioquia Department. In Costa Rica and Panamá, *P. opacum* appears largely restricted to Tropical Wet and Premontane Wet (warm transition) Forest, however in Colombia it extends into Premontane Rain Forest (warm transition). It has been collected in fertile condition in every month of the year, but shows a pronounced peak from September through November, with a secondary peak in March and April.

The specific epithet is in reference to the dull or matte leaf blades of this species.

Philodendron standleyi Grayum, *sp. nov.* TYPE: COSTA RICA. Puntarenas: Monte Verde Reserve, Cordillera de Tilarán 10° 18' N, 84° 47' W, 1500-1600 m, 5 Jun. 1986, *M.H. Grayum, P. Sleeper, & R. Sleeper 7581* (HOLOTYPE: MO-3486472!; Isotypes: CR, HNMN, K, MEXU, PMA, TEFH, US, USCG).

Plantae epiphyticae caulibus adpressis in sicco stramineis grosse sulcatisque; petioli (13.6-)18.9-37.8(-42.0) cm longi vagina saltem parte proximali erecta parte non vaginata (0.9-)2.0-4.6(-7.1) cm longa; laminae ovatae aut late lanceolatae vel ellipticae (17.6-)22.1-40.3(-54.8) cm longae (7.3-)10.3-21.5(-27.2) cm latae nervis later-alibus utroque latere (5-)8-15(-21); inflorescentiae 1-2 pedunculo (2.3-)3.4-7.1(-8.6) cm longo; spadix 9.0-15.3(-16.9) cm longa parte feminea 0.7-1.0 cm lata.

Typically appressed climbing epiphyte on trunks of trees, climbing to at least 10 m, usually fertile at least 2.5 m above ground, the fertile branches sometimes swooping divergent. *Internodes* drying yellowish brown to mid-brown, coarsely sulcate, the epidermis brittle; roots abundant at distal nodes. *Petiole* (13.6-)18.9-37.8(-42.0) cm long, the sheath involute to erect proximally, erect to horizontally splayed distally, the unsheathed portion (0.9-)2.0-4.6(-7.1) cm long. *Lamina* in life thinly coriaceous to subcoriaceous, matte to glossy on both sides, ovate to broadly or narrowly lanceolate or elliptical, abruptly to gradually acuminate apically, subauriculate or subcordate to (most usually) rounded, truncate or broadly cuneate basally, (17.6-)22.1-40.3(-54.8) cm long, (7.3-)10.3-21.5(-27.2) cm wide; primary lateral veins (5-)8-15(-21) per

side. *Bracteoles* frequently present, (4.9-)6.9-11.6(-17.4) cm long, 0.5-1.5 cm wide. Inflorescences solitary or paired; peduncle subterete, finely to coarsely greenish striate, (2.3-)3.4-7.1(-8.6) cm long; *spathe* at anthesis externally light green to cream yellow or cream proximally and becoming coarsely dark green striate, cream colored distally, internally greenish white and sometimes reddish flecked proximally, cream colored distally, (10.2-)15.0-18.3(-22.1) cm long, 1.3-2.9(-3.4) cm wide. *Spadix* 9.0-15.3(-16.9) cm long, the fertile male portion cream colored or white, (0.55-)0.80-1.00(-1.15) cm wide; sterile male zone 0.70-1.25 cm long; fertile female portion of spadix 2.4-5.1(-5.9) cm long (to at least 7.7 cm in fruit), 0.7-1.0 cm wide (to at least 2.5 cm in fruit), pale yellowish to yellowish green; fertile *male flowers* irregularly polygonal, columnar or slightly anvil shaped, 0.9-1.7 mm long, 0.7-1.8(-2.4) mm wide; sterile male flowers anvil shaped or more or less mushroom shaped, 1.25-1.80 mm long, 0.9-2.4 mm wide; *female flowers* 1.5-2.1(-2.9) mm long, 0.6-1.1(-1.4) mm wide, the stylar canals 4-6. Color of ripe fruits unknown. *Seeds* in life dark purple, straight to slightly curved or bent, finely striate with the striae minutely cancellate, 0.9-1.1 mm long, 0.25-0.30 mm wide.

PARATYPES: MEXICO. Chiapas: *Breedlove* 35169 (DS); *Breedlove & Bourell* 67984 (CAS); *Matuda* 18651A (MEXU,NY).

GUATEMALA. Baja Verapaz: *Croat* 41358 (MO,SEL). Quezaltenango: *Castillo M. & Hodel* 1062 (MO).

HONDURAS. La Paz: *Molina R. & Molina* 14043 (EAP,F). Santa Bárbara: *Clewell & Hazlett* 3883 (EAP,MO).

COSTA RICA. Alajuela: *Barringer et al.* 2445 (F); *Burger [et al.]* 11913 (F,MO); *Grayum & Hammel* 5518 (MO); *Grayum et al.* 8110 (MO), 10195 (CR); *Haber & Bello* 7905 (CR,MO); *Stevens* 13560 (MO). Cartago: *Liesner & Judziewicz* 14484 (MO). Heredia: *Grayum & Jermy* 6788 (MO); *Grayum et al.* 7004 (MO). Puntarenas: *Dryer* 1414 (CR,F); *Hammel & Trainer* 13780 (MO); *Hammel et al.* 15088 (MO). San José: *Davidse et al.* 23193 (MO).

PANAMA. Chiriquí: *Croat* 66374 (MO), 66567 (MO); *Knapp* 1553 (MO); *Thompson* 5001 (CM,MO). Veraguas: *Croat & Folsom* 34194 (MO).

Philodendron standleyi is best characterized by its cloud forest habitat, appressed climbing habit, stem epidermis drying yellowish and sulcate, petioles of at least some larger leaves with the unsheathed portion 2 cm or more long, relatively large, generally semiglossy to glossy leaves with 8 or more primary lateral veins per side, and relatively long and slender, sometimes paired inflorescences on peduncles usually greater than 3 cm long.

Philodendron standleyi ranges from central Veracruz to Veraguas Province, Panamá, at elevations of (400-)600-1800(-2100) m. In southern Central America it is restricted to Premontane and Lower Montane Rain Forest, and collections from the northern part of the range indicate a similar habitat. Flowering is concentrated from April to June throughout its range, although fertile specimens have been collected during every month of the year except September

and November.

This new species is dedicated to the eminent North American botanist Paul Carpenter Standley (1884-1963), who collected it in Guatemala on at least 13 occasions despite never encountering it in fertile condition.

ACKNOWLEDGMENTS

Field work and herbarium studies relevant to the present publication were funded largely by NSF Grant BSR-8607307, and partly by NSF Grants BSR-8700068. and BSR-9004449 and National Geographic Society Grant 3317-86. I am grateful to George E. Schatz and Henk van der Werff for reviewing the manuscript.

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DOI: <https://doi.org/10.5962/bhl.part.6220>

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