



## **Philodendron longirrhizum (Araceae), a new montane species from Colombia and Venezuela**

Authors: Mora, Marcela, and Croat, Thomas B.

Source: *Willdenowia*, 37(2) : 541-545

Published By: Botanic Garden and Botanical Museum Berlin (BGBM)

URL: <https://doi.org/10.3372/wi.37.37212>

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MARCELA MORA & THOMAS B. CROAT

## *Philodendron longirrhizum* (Araceae), a new montane species from Colombia and Venezuela

### Abstract

Mora, M. & Croat, T. B.: *Philodendron longirrhizum* (Araceae), a new montane species from Colombia and Venezuela. – Willdenowia 37: 541-545. – ISSN 0511-9618; © 2007 BGBM Berlin-Dahlem.

doi:10.3372/wi.37.37212 (available via <http://dx.doi.org/>)

*Philodendron longirrhizum* is described as a species new to science. It is known from the Western, Central and Eastern Cordillera in Colombia and from the Cordillera de Mérida in Venezuela, occurring in montane tropical forests at 1650 to 2500 m elevation. The species is a member of *P.* subg. *Philodendron* sect. *Macrobelium* subsect. *Glossophyllum* ser. *Ovata*. It is similar to and distinguished from *P. montanum* and *P. fraternum*.

Key words: aroids, *Philodendron montanum*, *Philodendron fraternum*, taxonomy, South America.

Recent use of a newly constructed key to the genus *Philodendron* by the first author has shown that one of the more common montane species in Colombia and Venezuela is undescribed. The species is similar to and distinguished from *P. montanum* Engl. and *P. fraternum* Schott, two other montane species.

### *Philodendron longirrhizum* M. M. Mora & Croat, **sp. nov.**

Holotype: Colombia, Quindío, Municipio de Findlandia, Vereda Las Cruces, Finca Bengala, relicto de bosque cerca a la granja de la Universidad del Quindío, 1780 m, 28.8.2006, *N. García, G. Galeano & E. Castaño 659* (COL; isotypes: CUVC, FMB, HUA, HUQ).

Planta hemiepiphytica; *internodia adulta* (2-)7-20 cm longa, 1-3 cm diam., caulis cum fissuris tenuibus transversalis; *cataphylla* 2-costata, 11-13(-15) cm longa, decidua; *petioli* (20-)25-35(-51) cm longi, 0.5-0.8 cm diam., teretes vel U-formati; *laminae* ovato-cordatae vel anguste sagittatae vel oblongo-cordatae, 20-47 × 11-26 cm; venas basales (3-)4-5 utroque; nervis primariis lateralibus 7-10 utroque; *inflorescentiae* 1-2 in quoque axilla; pedunculus 2.5-5(-6.5) cm longus; *spatha* 8-16 cm longa, viridis, flavovirescens vel rubra, tubus rubellus extus, rubri-purpureus intus; *spadix* 7.9-12.8 cm longus; parte pistillata 4.5-5.8 cm longa.



Fig. 1. *Philodendron longirrhizum* – A: habit; B: leaf blade, adaxial surface; C: stem removed from tree showing petiole bases and clusters of inflorescences; D: close up of stem showing an inflorescence (post-anthesis) and a young infructescence.

Hemiepiphytic scandent creeper up to 15 m high, rarely terrestrial; *internodes* (2-)7-20 cm long, 1-3 cm in diam., greyish green and semiglossy, turning light brown to light yellowish with brown transverse fissures, epidermis commonly flaking when dry; *aerial roots* with epidermis tan to reddish brown, arising just below the nodes, 1-4 at the apical nodes, up to 8 at lower nodes, up to 3 mm in diam. and up to 8 m long. *Cataphylls* sharply 2-ribbed (the ribs slender, 3-5 mm high), 11-13(-15) cm long, succulent, whitish to greenish, sometimes tinged red-purple with scattered purple spots, most of them at the middle, deciduous intact. *Leaves* erect-spreading, distributed along the stem; *petioles* (20-)25-35(-51) cm long, 0.5-0.8 cm in diam., terete to U-shaped (thicker than broad) in cross section, obtusely and weakly flattened adaxially, light green, faintly streaked with darker lines, sometimes with a purplish apical ring at apex; *blades* ovate-cordate to narrowly sagittate to oblong-cordate; gradually long-acuminate at apex, cordate at base, 20-47 × 11-26 cm, 1.7-3.7 times longer than broad, semiglossy, dark green above, moderately paler below, drying dark brown to reddish brown above, paler and sometimes greenish brown below; posterior lobes 4.5-12.5 cm long, 4-9 cm wide; sinus 4-8 cm deep, subhippocrepiform to parabolic, sometimes triangular; *midrib* flat and moderately paler, with short intermittent lines; *basal veins* (3-)4-5, 3-5 close together at base but never forming a posterior rib; the 1st pair free to the base; *primary lateral veins* 7-10 per side arising at 65-75° angle, sunken above; interprimary veins usually present; minor veins moderately obscure. *Inflorescences* 1-2 per axil; *peduncle* 2.5-5(-6.5) cm long, 0.5-1.2 cm in diam., pale green; *spathe* 8-16 cm long; green to yellowish green at the blade, reddish at the tube outside, greenish at the apex and bright reddish purple at the tube inside, weakly constricted at the middle; *spadix* slightly protruding at anthesis 7.9-12.8 cm long, pistillate portion 4.5-5.8 cm long, 0.5-0.7 cm in diam. at base, 0.8-1 cm in diam. midway and at apex; staminate portion 3.4-7.3 cm long, 1-1.2 cm in diam. on sterile portion at base, 0.8-1 cm in diam. at constricted portion, 1.2-1.4 cm in diam. in upper  $\frac{2}{3}$ , narrowly rounded at apex; the staminate and pistillate portions often of the same length; sterile staminate portion 0.6-0.8 mm long; pistils 1.7-1.8 mm long; ovary broadly elliptic; stigma 1-1.2 mm in diam. at apex, weakly concave with the margins somewhat raised and with a weak central dome; ovary 6-8-locular, c. 1 mm long; ovules 1-2 per locule, 0.2 mm long, funicle 0.1 mm long; berries not seen. – Fig. 1.

*Relationship and delimitation.* – *Philodendron longirrhizum* is a member of *P.* subg. *Philodendron* sect. *Macrobelyium* subsect. *Glossophyllum* ser. *Ovata* Croat. It is distinguished by its scandent habit, long internodes with conspicuously and closely fissured stems, narrowly sagittate to triangular blades and up to 8 m long, tan to reddish brown aerial roots, hence the name (composed of Latin “longus” meaning long and Greek “rhiza” meaning root).

*Philodendron longirrhizum* can be confused with *P. montanum* Engl. (a species known only from Colombia), which differs in having fewer primary lateral veins (5-7 per side), petioles that are usually longer than the leaf blade and leaves proportionally wider and more cordate-lobed (instead of generally sagittate to oblong-sagittate in *P. longirrhizum*). In addition *P. montanum* has cataphylls that dry pale yellow and glossy.

The new species can, moreover, be confused with *Philodendron sagittifolium* Liebm., which also has sagittate leaves and petioles that are shorter than the leaf blade. However, *P. sagittifolium* differs in having larger inflorescences and proportionally longer posterior lobes directed outward (in contrast to directed downward to inward in *P. longirrhizum*), leaves more triangular-sagittate (in contrast to oblong-sagittate in *P. longirrhizum*) and generally fewer primary lateral veins.

*Philodendron longirrhizum* is also similar to *P. fraternum* Schott, a widespread species from Venezuela, occurring at 1000-2200 m elevation, but that species differs in having longer cataphylls, typically more than 18 cm long (instead of usually less than 13 cm long in *P. longirrhizum*), in having 5-6 pairs of primary lateral veins (instead of 7-10 in *P. longirrhizum*) and by having the staminate portion of the spadix about as long as the pistillate portion (instead of longer than the pistillate portion in *P. longirrhizum*).

*Distribution and ecology.* – *Philodendron longirrhizum* is known from the Western, Central and Eastern Cordillera of Colombia and from the Cordillera de Mérida in Venezuela, occurring at 1650 to 2500 m elevation in montane tropical forests (Holdridge 1967).

*Philodendron longirrhizum* has been collected in flower in October to March and in fruit in May.

*Additional specimens seen.* – COLOMBIA: CALDAS: Municipio de Aranzazu, Vereda Chambery, Finca Planes, 5°17'54.5"N, 75°28'12.7"W, 17.9.2003, S. Suárez & O. Cardona 1755 (FMB); Finca Las Garzas, 5°18'14.5"N, 75°28'7.9"W, S. Suárez & al. 1827 (FMB); Municipio de Filadelfia. Bosque Finca La Noria, 1450 m, 5°17'47.2"N, 75°33'39.0"W, 4.2006, Martínez & Álvarez 52 (FMB). – CUNDINAMARCA: Abajo del Salto de Tequendama, municipio de Mesitas, mentes arriba de Santívar, 2100 m, 31.10.1965, L. Uribe Uribe 5444 (COL); along the old road between Fusagasuga and Bogota via San Miguel at Río Vara Blanca near La Guaytia 12 km N of Fusagasuga, 29.5 km S of Bagota, tropical lower montane moist forest, 4°26'N, 74°20'W, 2000 m, 8.12.1980, T. B. Croat 51985 (MO); Alban, La María, 2000 m, 1.5.1965, E. Forero 190 (COL); La Aguadita, Vereda El Bermejil, carretera San Miguel, 21.11.2000, J. Jácome & A. Pico 557 (JBB); Municipio de Tena, Laguna de Pedro Palo, 4°41'07"N, 77°23'28"W, 25.10.2000, J. Jácome & A. Pico 528 (JBB), 16.11.2000, J. Jácome & A. Pico 546 (COL), 12.2.1976, E. de Pinzón 80 (COL); San Antonio del Tequendama, bosque en los alrededores del Salto del Tequendama, carretera a Santandercito, 2400-2500 m, 21.11.2000, J. Jácome & A. Pico 542 (COL). – HUILA: Municipio de San Agustín, Parque Arqueológico, c. 1700 m, 2.12.1957, R. Romero Castañeda 6599 (COL); Finca Merenberg, 100 km E of Popoyan, tropical lower montane rain forest, 2°16'N, 76°12'W, 2300 m, 5.-6.12.1980, T. B. Croat 51928 (COL, MO); Macizo Colombiano, Hoya del Magdalena, San Agustín, km 7 carretera a Santa Rosa, "Mesitas", 1860 m, 28.8.1958, Idrobo, Pinto & Bischer 2915 (COL, MO). – NORTE DE SANTANDER: Pica-Pica Valley, above Tapata (north of Toledo), dense woods, 2100-2400 m, 1.-5.3.1927, E. P. Killip & Albert C. Smith 20199 (US). – PUTUMAYO: Municipio de Mocoa, carretera entre Sibundoy y Mocoa, localidad El Mirador, 1°04'11"N, 76°44'41"W, 2000 m, 7.9.1998, H. Mendoza & al. 6364 (FMB), 6370 (FMB). – QUINDÍO: Municipio de Calarcá, corregimiento Quebrada Negra, Vereda Vista Hermosa, Finca La Floresta, 1650-2150 m, 2.3.1991, C. A. Agudelo & al. 939 (HUQ); Municipio de Circasia, Vereda La Concha, Reserva Forestal Bremen, 1775 m, 21.2.1997, E. Arias 22 (HUQ), 4.2006, Martínez & Alvarez 27 (FMB); Municipio de Circasia, Finca El Bosque Quebrada el bosque, 1885 m, 21.12.1989, M. C. Velez & al. 819 (COL, HUQ); Municipio de Córdoba, Vereda La Española, Finca El Roble, Finca La Guajira, borde Quebrada la Española, 2260 m, 28.2.1997, M. C. Velez & al. 6671 (COL, HUQ); Municipio de Finlandia, Vereda Las Cruces, Finca Bengala, 1780 m, 15.3.2000, D. Macias & E. Florez 1404 (HUQ); Municipio de Finlandia, Vereda Las Cruces Quebrada Portachuelo, 4.8.2005, Martínez & Álvarez 15 (COL); Vereda Cruces, 1900 m, 2.2004, W. G. Vargas 14337 (MO); Vereda Sierra Morena, Finca El Cairo, 1700 m, 13.6.1997, L. P. Guevara & al. 161 (HUQ); Municipio de Génova, Vereda Río Gris Alto, Finca La Granja, 2000 m, 14.2.1994, M. C. Vélez & al. 3840 (HUQ); Vereda Boquía, Finca La Julia, 1900 m, 12.3.1997, L. P. Guevara & al. 107 (HUQ); Municipio de Pereira, Bosques de Balsora, 4°43'17"N, 75°37'23"W, 4.2006, Martínez & Álvarez 48 (FMB). – SANTANDER: Municipio Charalá, Sitio El Bogotasito después de El Taladero, vía El Carmen-Violín, 2300 m, 23.11.1994, J. Betancur & al. 5818 (COL); Vereda Santa Helena, Margen Izquierdo aguas abajo del Río La Rusia, Santuario de Fauna y Flora Guaneté, Alto Río Fonce, 2400-2500 m, 6°01'N, 73°09'W, 13.11.1997, J. J. Cadena M. & al. 48 (COL); along road between Pto. Barrio and Velez, 3 km E of Alto Jordon, 6°07'N, 73°42'W, 1200 m, 2.5.1983, T. B. Croat 56386 (MO). – VALLE: Municipio de Argelia, Vereda Las Brisas, Finca San Jorge, 1850-1960 m, 22.1.1983, S. Díaz-P. 3898 (COL); along road between Tulua and Santa Lucia (via La Marina, La Moralia, Venus and Monteloro) SE of Tulua, at Hacienda Piedritas, 6.8 km S of Monteloro, along margins of virgin forest and pasture, 3°55'N, 76°04'W, 2080-2100 m, 16.2.1990, T. B. Croat 70647 (MO); along road from La Florida to border with Tolima Department, 3°21'N, 76°08'W, 2055 m, 15.7.1997, T. B. Croat & J. F. Gaskin 79823

(CUVC, MO). — VENEZUELA: MÉRIDA: Monte Zerpa, 4 km NE Mérida, 2200 m, 8°39'N, 71°10'W, 22.6.2007, A. Ruiz 40 (MER).

*Use.* – In some localities in Colombia, the strong aerial roots of *Philodendron longirrhizum* are used to make baskets, commonly used to collect coffee (Departments of Caldas and Quindío). Vernacularly this species is known as “tripa’ e perro” or “tripillo” in the Western and Central Cordillera and as “mimbres” or “chinche” in the Eastern Cordillera.

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Addresses of the authors:

Marcela Mora [current address: Herbarium, Department of Biological Sciences, University of Alabama, Box 870345, Tuscaloosa, Alabama 35487-0345, USA], Instituto de Ciencias Naturales, Universidad Nacional de Colombia, Apartado 7495, Bogotá, Colombia; e-mail: araceae@gmail.com

Thomas B. Croat, Missouri Botanical Garden, P.O. Box 299, St Louis, Missouri 63166-0299, USA; e-mail: thomas.croat@mobot.org