

Carlos, *Atwood 2028* (MO); W of San Carlos, 30–35 m, 11°08'N, 84°47'W, *Sandino 1773* (MO). RIVAS: Isla de Ometepe, Volcán Concepción, Altagracia "La Sabana," 200–500 m, 11°32'N, 85°35'W, *Robleto 133* (MO); N side of Volcán Concepción, 300–1,000 m, 11°33'N, 85°37'W, *Moreno 19827* (MO); NE of Volcán Concepción, 140–160 m, 11°33'N, 85°35'W, *Sandino 4240* (MO); Volcán Maderas, Mérida, vic. "Las Abejas," 500–700 m, 11°26'N, 85°32'W, *Robleto 293* (MO); NE side of Volcán Maderas, 600–900 m, 11°27'N, 85°29'W, *Moreno 19580, 19600B* (MO); Volcán Masearas, Santa Cruz, *Stevens 6626* (MO). ZELAYA: Caño Majagua, *Stevens 6894* (MO). PANAMA: CHIRIQUI: 1 km E of Remedios, 8°14'N, 81°50'W, *Nee 10104* (MO, PMA); Río Estí, Gualaca-Fortuna, 0.6 km E of Gualaca, 700 m, *Croat 48793* (FTC, MO). VENEZUELA: FALCÓN: Dto. Silva, Golfe de Guare, "La Penita," S of Chichiriviche, 10–100 m, 10°54'N, 68°16–17'W, *Steyermark & Manara 110434* (MO). ZULIA: Quebrada Perayra, SE of Machiques, *Steyermark 99847* (MY); Serranía de Perijá, Río Palmar, *Chitty & Benkowski 3061* (VEN); SE of Machiques, *Steyermark & Fernandez 99638* (K, MY, NY, US); headwaters of Río Guasare, 280 m, *Gentry 41141* (B, MO); 6 km W of main road and 2 km S of Río Catatumbo, 20–100 m, 9°06'N, 72°142'W, *Liesner & Gonzalez 13274* (MO); Dto. Colón, Laguna de Congo, *Lescarboura 55* (MY); Dto. Mara, El Palmar, *Medina 902* (MY); Caño Indio, Hacienda Caño Azul-Base of Cerro Yolanda, *Steyermark et al. 122640* (VEN); Cerro Negro, SE of Río Guasare, *Steyermark et al. 122687, 122690* (MO, VEN); Río Socuy, W of Cerro Caracas, SW of Corpozulia Campamento Socuy, *Steyermark et al. 123115* (VEN); Dto. Perijá, La Villa de Rosario, foot of Sierra de Perijá (via Arimpia), 20–25 km W of La Villa, 225–350 m, *Bunting et al. 8800* (MO, NY); Quebrada Cosira, SW of Los Angeles de Tucuco, *Davidse et al. 18531* (MO, VEN).

***Anthurium curtispadix* Croat, sp. nov. TYPE:**

Ecuador. Pastaza: Puyo; originally collected by Mickey Carmichael, *Croat 55207* (holotype, MO 3104658; isotypes, AAU, B, K, M, NY, RSA, U, US; cult. at MO). Figures 114, 118, 123.

Caulis ad 21 cm longus, 3 cm diam.; cataphyllum persistens semi-intactum; petiolus 3.5–14 cm longus, 4–9 mm diam., D-formatus ad C-formatum, adaxialiter sulcatus; lamina elliptica ad oblanceolata, 17–57 cm longa, 7.5–20 cm lata; nervis primariis lateralis 5–7 utroque. Pedunculus 5–10 cm longus, 4 mm diam., effusus; spathe pallida viridis, oblongo-lanceolata, 3–3.5 cm longa, 1.5–2 cm lata; spadix erectus, cylindricus, 3.5–4.7 cm longus, 6–7 mm diam., pallide viridis. Baccae ignotae.

Stem to 21 cm long, ca. 3 cm diam.; leaf scars conspicuous or obscured by root mass, 0.5–1 cm high, 0.6–0.8 cm wide; roots ascending to spreading to descending, green to light brown (B & K yellow-red 9/7.5), smooth to sometimes weakly pubescent, tapered, elongate, 4–7 mm diam.; cataphylls subcoriaceous, weakly 1-ribbed near the apex, 5–8 cm long, narrowly acute and apiculate at apex, drying tan to reddish brown, persisting semi-intact,

eventually as a reticulum of fibers with the apex remaining intact. *Leaves* erect to spreading; petioles 3.5–14 cm long, 4–9 mm diam., D-shaped to C-shaped, slightly sulcate adaxially, with the margins sharply to obtusely raised, rounded to sometimes obscurely 1–2-ribbed abaxially, the surface obscurely short-lineate; geniculum paler and thicker than petiole, becoming minutely and transversely fissured and scurfy abaxially, (0.7)1–2.2 cm long; blades subcoriaceous, elliptic to oblanceolate, gradually acuminate at apex (the acumen apiculate), narrowly acute to obtuse to weakly rounded at base, 17–57 cm long, 7.5–20 cm wide, broadest at or above the middle, the margins weakly undulate; upper surface semiglossy, medium green, lower surface matte to weakly glossy, paler, drying greenish to yellowish green; midrib flat at base with blunt medial rib, narrowing and acute toward the apex above, convexly raised and paler than surface below; primary lateral veins 5–7 per side, departing midrib at 30–45° angle, ± straight, raised and weakly paler than surface above, convex below; interprimary veins absent; tertiary veins obscure above, visible below; reticulate veins obscure above, darker than surface below; collective vein arising from near the apex, weakly sunken above, prominent below, 2–9 mm from margin. *Inflorescences* spreading, usually several present at once; peduncle 5–10 cm long, 4 mm diam., equaling to usually ca. 0.5× as long as petioles, green (B & K yellow-green 6/7.5), terete; spathe reflexed-spreading, coriaceous, pale green, sometimes weakly tinged with red (B & K yellow-green 8/10), oblong-lanceolate, 3–3.5 cm long, 1.5–2 cm wide, broadest in the lower 1/3, inserted at 75° angle on peduncle, gradually to abruptly acuminate at apex (the acumen inrolled, hooked), acute to decurrent at base, the margins strongly downturned, meeting at 60–80° angle; spadix pale, dull green, somewhat tinged with brown, sessile, cylindroid to sometimes weakly clavate, erect, held at ca. 90° angle from peduncle, 3.5–4.7 cm long, 6–7 mm diam. near base, 3–4 mm diam. near apex, broadest at the base; flowers rhombic to 4-lobed, 1.7–2.3(2.6) mm long, 1.3–2.3 mm wide, the sides straight to jaggedly sigmoid; 13–15 flowers visible in principal spiral, 9 in alternate spiral; tepals matte, minutely papillate; lateral tepals 1.5–1.8 mm wide, the inner margins broadly rounded, the outer margins irregularly 3-sided; pistils weakly emergent, purplish violet; stigma linear, slitlike, 0.3 mm long; stamens emerging in a prompt, erratic sequence, the laterals extending to the apex in a scattered pattern before the 3rd stamen emerges, laterals followed by alternates in a rapid succession but very irregularly

on the spadix (sometimes the 4th stamen appearing first); anthers white, 0.6 mm long, 0.7 mm wide, obscuring pistil; thecae ellipsoid, not divaricate; pollen drying white. *Infructescence* not seen.

Anthurium curtispadix is known only from a living collection made near Puyo in Pastaza Department, Ecuador, by Mickey Carmichael. It was probably collected in an area of premontane wet forest at ca. 1,000 m.

This species is distinguished by its short, spreading inflorescence with an erect, short, stubby spadix (hence the name) with many (9–15) flowers per spiral. It is probably most closely related to *A. ernestii*, which differs in having an erect inflorescence and cataphylls persisting as an intact network of fine, pale fibers.

ECUADOR. PASTAZA: Puyo, cult. at MO and originally collected by Mickey Carmichael, ca. 1,000 m, *Croat 55207* (AAU, B, K, M, MO, NY, RSA, U, US).

Anthurium dombeyanum Brongn. ex Schott, Prodr. 477–478. 1860. TYPE: Peru, without exact locality, *Dombey s.n.* (holotype, P). Figures 11, 13, 119–122, 127.

Anthurium cymatophyllum K. Koch & Sello in K. Koch, 1221 xi. 276. 1868. TYPE: destroyed, locality unknown, of cultivated origin said to be from Brazil (a tracing at Kew prepared by Masters from Koch's type specimen in Berlin serves as the type).

Anthurium agoyanense Sodiro, Anales Univ. Centr. Ecuador 19: 286. 1905. TYPE: Ecuador. Tungurahua: Agoyán waterfalls in Río Pastaza, slopes of Volcán Tungurahua, 1,550 m, *Sodiro s.n.* (holotype, B)

Anthurium agoyanense var. *eleutheroneuron* Sodiro, Anales Univ. Centr. Ecuador 19: 287, 1905. TYPE: Ecuador. Tungurahua: slopes of Volcán Tungurahua, vic. Machay, *Sodiro s.n.* (holotype, B).

Anthurium rigidissimum Engl., Pflanzenr. IV. 23B(Heft 21): 292. 1905. TYPE: Peru. Junín: Tarma, above Huacapistana, 1,900–2,000 m, *Weberbauer 2007* (holotype, B).

Anthurium rigidissimum var. *mutatum* Engl., Pflanzenr. IV. 23B(Heft 21): 292. 1905. TYPE: Peru. Junín: Tarma, above Huacapistana, 1,900–2,000 m, *Weberbauer 2158* (holotype, B).

Terrestrial or epilithic, rarely epiphytic; stem 20–30 cm long, 2–6 cm diam.; roots dense (the root mass to 20 cm wide), greenish to pale reddish, grayish when dried, sometimes with raphide cells on the surface, elongate, blunt at apex, to 40 cm long, 4–10 mm diam.; cataphylls subcoriaceous, lanceolate, 5–25 cm long, narrowly rounded to bluntly acute at apex, pale green, drying brown, persisting semi-intact at upper nodes, otherwise as coarse linear fibers, sometimes with the apex remaining intact. *Leaves* erect to spreading; petioles (3)10–30 cm long, 5–18 mm diam., erect to

spreading, D-shaped, slightly thicker than broad in juveniles and lacking the medial rib adaxially, sulcate in age with an obtuse to acute medial rib, rounded (rarely 1–2-ribbed) abaxially, the surface pale-speckled; geniculum slightly thicker and paler than petiole, 0.5–2.5 cm long; sheath 3–11 cm long, extending halfway or throughout the petiole in smaller leaves; blades subcoriaceous to thickly coriaceous, oblong-lanceolate to oblanceolate or narrowly obovate, often elliptic in smaller leaves, bluntly acute or acuminate at apex (the acumen minutely apiculate), long-attenuate to obtusely rounded or subcordate at base, (10)40–190 cm long, (2)10–35 cm wide, broadest above or near the middle, the margins flat in smaller leaves or markedly undulate especially in larger leaves; upper surface glossy to semiglossy, dark to medium green, occasionally developing a bluish, glaucous covering with age, lower surface usually semiglossy, rarely matte, concolorous or paler than upper surface; midrib above acutely raised, below obtusely ribbed at base, becoming acutely angled in upper $\frac{1}{3}$, and then convexly rounded toward the apex, paler than surface or concolorous with it; basal veins usually present and aggregated in subcordate leaves, arcuate-ascending, free to base; primary lateral veins (7)10–20(24) per side, departing midrib at (18)40–60(70) $^{\circ}$ angle, usually gently arcuate-ascending to within 1 cm of the margin, then abruptly ascending to the margin, convexly raised above; tertiary veins scarcely visible above, moderately to distinctly visible below, sometimes darker than surface, very weakly raised below or flat, drying raised and conspicuously visible; collective vein arising from near the base to near the apex, less prominent than primary lateral veins, sunken to weakly raised above, raised below, 2–10 mm from margin. *Inflorescences* erect-spreading to spreading-arching, shorter than or almost equaling leaves; peduncle (15)30–65(90) cm long, 2–11 mm diam., (2)3–7(10) \times as long as petiole, pale green, sometimes tinged with red-violet, green to dark brown when dried, subterete, sometimes 1-ribbed, flexible; spathe spreading to reflexed at anthesis, recurled, subcoriaceous to coriaceous, green, sometimes tinged with red-violet, speckled with raphide cells, linear-lanceolate, 7–20 cm long, 1–3.5 cm wide, broadest near base, acute at apex, decurrent at base; spadix olive-green to grayish, becoming dark pink or maroon (B & K red-purple 2/2.5) to purplish at anthesis (B & K blue-purple 4/10), weakly to moderately tapered, rarely cylindroid, sessile to stipitate to 2.5 cm, \pm erect, rigid, held at 130–180 $^{\circ}$ angle from peduncle, 4–28 cm long, 4–17 mm diam. near