

de Baron von Humboldt, 1,100 m, 1°27'S, 78°06'W, *Palacios et al.* 58 (MO); Mera, *Lugo* 25 (S); Río Pastaza, Mera, *Lugo* 1117 (GB); El Topo, 1,250 m, 1°25'S, 78°10'W, *Harling* 3403 (S). TUNGURAHUA: Río Pastaza (Río Chambo), *Sodiro s.n.*, 8/1904 (G), *Sodiro s.n.*, 12/1906 (B).

Anthurium fatoense K. Krause, Notizbl. Bot. Gart. Berlin-Dahlem 11: 611. 1932. TYPE: Panama. Colón: Dos Bocas, Río Fato Valley, 40–80 m, *Pittier* 4227 (holotype, US). Figures 134–136.

Epiphytic; stem 10–60 cm long, 1–2 cm diam.; leaf scars obscured by root mass; roots dense, ascending to descending, numerous, pale green to white, smooth to very pubescent, short to elongate, usually tapered, 1–4 mm diam.; cataphylls subcoriaceous to coriaceous, oblong-lanceolate, 5–14.5 cm long, acute at apex with a subapical apiculum, pale yellow-green, sometimes tinged with red, drying medium brown, persisting semi-intact, soon deciduous. *Leaves* erect to spreading; petioles 2.5–9.5 cm long, 5–8 mm diam., sharply quadrangular to angularly D-shaped to occasionally subterete, flattened to broadly sulcate adaxially, sharply 1–3-ribbed or sometimes rounded abaxially, the surface minutely pale-speckled; geniculum paler and thicker than petiole, 0.7–1(2) cm long; blades subcoriaceous, oblong-oblancheolate to oblanceolate to oblong-ovate, long-acuminate at apex, acute to obtuse to narrowly rounded at base, 24–83 cm long, 6–26 cm wide, broadest at or above the middle, the margins weakly and broadly undulate; upper surface matte to glossy, medium green, lower surface semiglossy to glossy, paler, drying greenish to greenish brown; midrib flat at base, becoming sharply and narrowly raised toward the apex above, raised and sharply 2-ribbed or prominently convex-raised at base below, becoming convex to flat toward the apex; primary lateral veins 8–16 per side, departing midrib at 40–50° angle, arcuate-ascending, narrowly raised above, less so and darker than surface below; interprimary veins less conspicuous than primary lateral veins; tertiary veins obscure above, darker than surface below; collective vein arising from near the apex or absent, 2–9 mm from margin. *Inflorescence* erect-spreading to arching-pendent, shorter than or equaling leaves; peduncle 14–48 cm long, 2–6(9)× as long as petioles, green to reddish, weakly striate, terete to subterete, faintly ribbed; spathe spreading to reflexed, subcoriaceous, light green, sometimes tinged with purple, narrowly lanceolate, 5.5–9(13.5) cm long, 0.7–1.3(2) cm wide, broadest near base, in-

serted at 45–90° angle on peduncle, long-acuminate at apex (the acumen inrolled), obtuse to subcordate at base; spadix green to green tinged with red to pale reddish to reddish violet or purplish, oblong-cylindrical to long-tapered, 5–15 cm long, 4–10 mm diam. near base, 2.5–4 mm diam. near apex; flowers rhombic to weakly 4-lobed, 1.4–2.8 mm long, 1.8–3 mm wide, the sides smooth to jaggedly sigmoid; 5–9 flowers visible in principal spiral, 5–12 in alternate spiral; tepals matte to weakly glossy, minutely and densely papillate and pale punctate; lateral tepals 1.2–1.5 mm wide, the inner margins straight to broadly convex, somewhat erose, the outer margins 2–4-sided; pistils prominently to weakly raised, weakly glossy, papillate, green to white; stigma 0.4–0.5 mm long, brushlike; stamens emerging in slow progression from the base in a complete sequence, the laterals preceding the alternates by 6–34 spirals, the 3rd stamen preceding the 4th by 1–12 spirals, arranged in a circle around pistil; filaments translucent, 0.5 mm long, 0.4 mm wide; anthers yellow to white, 0.5–0.6 mm long, 0.5–0.8 mm wide; thecae broadly to oblong-ovoid, not divaricate; pollen yellow fading to white, sweet-scented. *Infructescence* spreading; spadix to 26 cm long, with berries scattered throughout; berries cream to greenish yellow or pale orange, oblong-ovoid to ovoid-ellipsoid, acute at apex, 4–7.8 mm long, 3.3–4.2 mm diam.; pericarp thickened; seeds 2 per berry, pale yellow with numerous pale, granular raphide cells on the surface, oblong-ovoid, slightly or not at all flattened, 2.6–3 mm long, 1.5–1.8 mm diam., 1–1.3 mm thick, with a transparent, gelatinous, sticky appendage.

Anthurium fatoense is known from southern Costa Rica and Panama, occurring principally on the Caribbean slope in wetter parts of tropical moist forest, as well as in tropical wet, premontane wet, and lower montane wet forest, from sea level to nearly 1,200 m. It also occurs on the Pacific slope in the Fortuna area of Chiriquí Province in Panama.

Anthurium fatoense is considerably variable in size of the leaves and inflorescences as well as in berry color. It is distinguished by its slender, erect, pointed roots, short, conspicuously sheathed petioles, green-drying blades, and its tapered, greenish spadix with the stamens closely clustered over the pistil, the latter being not at all apparent.

This species is most easily confused with *A. consobrinum*, but that species has prominently emergent pistils that emerge well ahead of the stamens and extend several millimeters above the stamens.

COSTA RICA: ALAJUELA: Naranjo-Aguas Zarcas, 8.5 km NE of Villa Quesada Hwy. 15, 600 m, *Croat* 46976 (MO); 2 km N of Santa Rosa, 15 km N of Boca Arenal on Quesada-Muelle San Carlos-Los Chiles road, 100 m, 10°38'N, 84°31'W, *Liesner et al.* 15024 (MO). CARTAGO: cultivated, *Madison* 6957 (MO, SEL). LIMÓN: 7 km W of Bribri, 100-250 m, *Gomez et al.* 20386 (CR, MO); 10 mi. S of Punta Cahuita, 3 mi. S of turnoff to Bribri, 70 m, *Croat* 43197 (MO); Cantón de Talamanca, Suretka, 9°34'N, 82°56'W, *Barringer et al.* 3554 (MO); Caribbean Coast, between Río Bananito and Cahuita, 0-10 m, 9°53'N, 82°59'W, *Burger et al.* 10485 (MO); Refugio Gandoca-Manzanillo, 0-5 m, 9°36'N, 82°36'W, *Grayum* 8018 (MO); Hitoy Cerere reserve, Río Cerere, SW of Valle La Estrella, 1 km upstream from Quebrada Barrera, 90-200 m, 9°40.5'N, 83°02'W, *Grayum & Hammel* 5787 (MO); Río Sizaola, between Limón and Shiroles, 6.5 mi. SW of Bribri, 6 mi. SW of Bambú, 50 m, *Croat* 43295 (MO). PUNTARENAS: Cantón de Coto Brus, 6 km W of San Vito de Java, 1,200 m, 8°49'N, 82°58'W, cultivated at Las Cruces Tropical Botanical Garden, *Croat* 57229 (CR, MO). PANAMA: BOCAS DEL TORO: 15 km S of Changuinola, 300-500 m, *Antonio* 3147 (MO); Cerro Banyic, above Quebrada Huron, 170-400 m, *Kirkbride & Duke* 606 (MO); Fortuna Road, Changuinola-Luzon, *Kennedy* 3266 (F, MO); Fortuna Lake-Chiriquí Grande, 1.2-8 km N of Continental Divide, 310-1,000 m, *Churchill et al.* 4635, 4942 (MO), *Croat & Grayum* 60121 (K, MO, RSA), 60171 (CM, MO), 60256 (MO, RSA), 60423 (B, K, MO, RSA, US), *Hampshire & Whitefoord* 484 (BM); along road from Fortuna Dam toward Chiriquí Grande, 10 mi. from Continental Divide, 120 m, 8°55'N, 82°10'W, *McPherson* 8587 (MO); Río Guarumo, Chiriquí to 5 mi. S along Río Guarumo, *Lewis et al.* 2051 (MO); Chiriquí Lagoon, Fish Creek Mts., *von Wedel* 2350 (MO). CHIRIQUÍ: Fortuna Road, E of Fortuna, 1,200-1,600 m, *Folsom et al.* 5293 (MO); between Gualaca and Fortuna Dam site, 5.9-11.8 mi. N of Los Planes de Hornito, 1,100-1,470 m, *Antonio* 5175 (MO), *Croat* 48705 (MO, F, DUKE, NY, RSA, S, US), 48716 (FTG, MO), 50095 (F, MO, TEX, W), 49893 (FTG, MISSA, MO), *Knapp & Vodicka* 5517 (MO); vic. Fortuna Dam, N of the lake, 1,100 m, *McPherson* 10407 (MO); along trail from Forestry Nursery to Río Hornito, 1,100-1,200 m, 8°45'N, 82°15'W, *Thompson* 5029 (CM). COCLÉ: Cerro Tute, *Antonio* 2055 (MO); Llano Grande-Colecito, vic. Continental Divide, 400-600 m, *Antonio* 1358, 3598 (MO), *Croat* 49220 (MO), *D'Arcy & Sytsma* 14690 (MO), *Hammel* 1619 (MO), 3483 (MO, SEL), *Sytsma* 3880 (MO, PMA); S of Cascajal, Continental Divide, 800-900 m, 8°45'N, 80°25'W, *Knapp* 1961 (MO); 9-12 mi. from Llano Grande, 170-330 m, *Churchill et al.* 3994, 4165 (MO), *Hammel* 1808, 1908 (MO); El Copé Region, Alto Calvario, 600-800 m, *Folsom* 3183 (MO); El Copé W of sawmill, *Hammel* 2420, 2441 (MO); Continental Divide, sawmill above El Copé, 750-800 m, 8°40'N, 80°36'W, *Knapp & Dressler* 3501 (B, MO); El Valle Region, El Valle de Antón, 2 km W of Cerro Pílon, vic. La Mesa, 860-900 m, *Croat* 37347 (MO, SEL); El Valle de Antón, N of Cerro Gaital, vic. La Mesa, 700 m, *Hammel* 3902 (MO). COLÓN: San Lucas, 100 m, *Hammel* 4549 (MO); Cerro Bruja, S slope, Río Escandaloso, 200 m, *Hammel* 3197 (MO); Portobelo Region, Río Escandaloso, abandoned Manganese mine, 170 m, *Hammel* 2661 (MO, SEL); Río Cascajal, *Croat* 33649 (MO, PMA); Río Guanche, E of Colón, W of Portobelo, 50 m, 9°30'N, 79°40'W, *McPherson* 8513 (MO); Río Boqueron head-

waters, fork with Río Nombre de Diosito, 170 m, *Hammel* 3947 (MO); Río Tato, Dos Bocas, 40-80 m, *Pittier* 4227 (US). VERAGUAS: trail from Barrera to gold mine "Cocuyo," 30-200 m, *Hammel* 5192 (MO). Santa Fe Region, Cerro Tute, beyond Escuela Agrícola Alto Piedra, NW of Santa Fe, 900-1,250 m, *Antonio* 2910, 4039 (MO), *Croat* 48940 (MO), *Sytsma & Antonio* 3049 (MO), 3068 (K, MO), *Sytsma & Andersson* 4658 (MO); between Escuela Agrícola Alto Piedra and Río Dos Bocas, 350-770 m, *Croat* 25941 (MO), 27365 (MO), 27583 (MO), 27749 (MO); 5.9 mi. N of Escuela Circo Alto de Piedra, between Santa Fe and Río San Luis, 480 m, *Croat* 66940 (MO); Río Primero Brazo, 5 mi. NW of Santa Fe, 700-1,200 m, *Croat* 23115 (MO); 3.9-5 mi. N of Santa Fe, 500-1,000 m, *Folsom* 2949 (MO, PMA), *Gentry* 2953 (MO); 1-3 km N of Escuela Agrícola Alto de Piedra, N of Santa Fe, 900-1,250 m, *Mori & Kallunki* 2560 (MO); 6-7 km W of Santa Fe, 970 m, *Nee* 9807 (MO), *Nee* 11220 (MO, PMA); between Santa Fe and Río Calovébora, 735 m, *Croat & Folsom* 34124 (B, CAS, COL, CR, DUKE, F, MBM, MEXU, MO, NY, PMA, RSA, US), *Knapp & Sytsma* 2623 (MO), *Hamilton & Krager* 3965 (MO).

***Anthurium fendleri* Schott, Prodr. 468. 1860.**

TYPE: Venezuela. Colonia Tovar, *Fendler* 1343 (lectotype, K; isolectotype, GH). Figures 137-139.

Anthurium recusatam Schott, Prodr. 467. 1860. TYPE: cultivated plant of unknown origin, illustrated by Schott, Aroideae 525-527, serves as the type.

Anthurium buenaventurae Engl., Bot. Jahrb. Syst. 25: 363. 1898. TYPE: Colombia. Valle: near Buenaventura, vic. Las Juntas near Dagua, 200-600 m, *Lehmann* 5332 (holotype, B; isotype, F).

Anthurium canasas Croat, Aroideana 2(1): 30. 1979. TYPE: Panama. Veraguas: Dist. Cañasas, ca. 1 km above Cañasas on road to Los Valles, 230 m, *Croat* 37051 (holotype, MO; isotypes, B, COL, F, PMA, S, SCZ, US).

Epilithic, epiphytic or terrestrial, on steep rocky banks; stem to 15 cm long, 1-3 cm diam.; roots moderately numerous, descending, greenish to brownish, densely pubescent, moderately elongate, tapered, 2-5 mm diam.; cataphylls moderately thin, broadly lanceolate, 5-10 cm long, acute with sub-apical apiculum at apex, yellowish red, heavily pale-speckled, drying brown, persisting semi-intact to fibrous, eventually deciduous. *Leaves* erect-spreading; petioles (2)4-47 cm long, 5-8 mm diam., D-shaped to subtriangular, narrowly to broadly sulcate adaxially, the margins sharply to bluntly raised, rounded to 1-5-ribbed abaxially, the surface medium green, pale-speckled; geniculum thicker and paler than petiole, becoming fissured transversely with age, (0.5)1-2.5 cm long; blades chartaceous to subcoriaceous, oblanceolate to broadly elliptic, gradually acuminate at apex, usually rounded or shallowly cordate, sometimes acute to obtuse at