

Tercero Brazo, 11 km beyond Santa Fe, 650 m, *Croat 25613* (MO); Río Dos Bocas, 11 km from school, 450 m, *Croat 27544* (F, MO).

***Anthurium concolor*** K. Krause, Notizbl. Bot. Gart. Berlin-Dahlem 11: 606. 1932. TYPE: Panama. Colón: Río Indio de Gatun, 0–300 m, *Pittier 2798* (holotype, US). Figures 90, 94–96.

Epiphytic or epilithic; stem to ca. 25 cm long, ca. 2.5 cm diam.; roots dense, spreading to erect-ascending, pale greenish white, ca. 4 cm long, 3–5 mm diam.; cataphylls narrowly coriaceous to subcoriaceous to nearly membranous, lanceolate, sometimes hooked in the upper part, weakly 1-ribbed near apex, 11–18 cm long, acuminate at apex with a subapical apiculum ca. 6 mm long at apex, drying dark brown to reddish brown (B & K yellow-red 3/10), persisting  $\pm$  intact, ultimately deciduous. *Leaves* erect; petioles (2)8–16 cm long, 10–15 mm diam., erect, D-shaped to  $\pm$  quadrangular, shallowly sulcate adaxially, with thin, erect margins, prominently and unevenly 3–8-ribbed abaxially; geniculum somewhat thicker and slightly paler than petiole, 1–2 cm long; blades coriaceous to subcoriaceous, usually oblanceolate to  $\pm$  elliptic, sometimes narrowly obovate, acute at apex, narrowly acute to narrowly rounded (less often rounded-subtruncate) at base, (30)40–110 cm long, (13)18–36 cm wide, broadest above the middle, the margins moderately undulate; both surfaces semiglossy, upper surface medium green (B & K yellow-green 6/7.5), drying greenish to grayish brown; lower surface moderately to conspicuously paler greenish to reddish brown (B & K yellow-green 7/10); midrib flat with medial rib at base, becoming broadly acute toward the apex below, drying reddish brown; primary lateral veins 10–17 per side, departing midrib at 50–65° angle, ascending  $\pm$  straight or slightly arcuate to near the margin, prominently and convexly raised above, less so below; tertiary veins scarcely visible above, slightly darker than surface below, prominulous and raised on both surfaces when dried; reticulate veins not visible below when fresh, weakly visible when dried; collective vein arising from near the apex, less prominent than primary lateral veins, 5–10 mm from margin. *Inflorescences* arching-erect to spreading; peduncle 30–75 cm long, 5–9 mm diam., 2–4.4(11) $\times$  as long as petiole, green, sometimes purple-speckled, usually subterete, sometimes 1-ribbed; spathe reflexed, subcoriaceous, green tinged with violet-purple, narrowly oblong-ovate or oblong-elliptic 5.5–14 cm long,

1.4–3.5 cm wide, inserted at 10–70° angle on peduncle, gradually to abruptly acuminate at apex, acute to obtuse at base; spadix dark purple-violet (B & K red-purple 2/5), sometimes green tinged purple-violet, sessile or subsessile, subcylindroid or weakly tapered, 5.5–16 cm long, 7–9(12) mm diam. near base, 5–7(9) mm diam. near apex; flowers rhombic, 2–3.3 mm long, 2.4–3.5 mm wide, the sides  $\pm$  straight parallel to spiral, sigmoid perpendicular to spiral; 5–9 flowers visible in principal spiral, (3)6–10 in alternate spiral; tepals matte to semiglossy weakly to conspicuously and densely punctate, forming large nectar droplets on surface at anthesis; lateral tepals 2–2.3 mm wide, the inner margins straight; pistils weakly emergent, green tinged with violet-purple; stigma broadly ellipsoid, 0.5–0.6 mm long, brushlike, droplets appearing 5–8 days before stamens emerge; stamens emerging rapidly in a scattered pattern throughout, sometimes those at apex emerging first, held barely above level of the tepals, sometimes erect when dried; anthers purplish brown to purple-violet, 0.8–1 mm long, 0.8–1.1 mm wide, in a tight cluster obscuring pistil; thecae oblong-ellipsoid,  $\pm$  divaricate; pollen purplish (B & K purple 6/10). *Inflorescence* pendent; spathe persisting at least in early fruit; spadix to 30 cm long, 2.5 cm diam.; berries red, obovoid, 7–8 mm long, ca. 5 mm diam.; pericarp with numerous raphide cells; mesocarp transparent, gelatinous; seeds 2 per berry, white, oblong-ellipsoid, ca. 4 mm long, ca. 1.3 mm diam.

*Anthurium concolor* ranges from central Panama on the Atlantic slope to northern Colombia (Chocó) from sea level to 100 m in tropical wet forest and wetter parts of tropical moist forest. It is to be expected in Costa Rica in Limón Province.

This species is distinguished by its short, cylindrical, violet-purple spadix held erect at anthesis, by its tendency to form globular droplets on the tepals, by its purplish pollen, its bright red berries, and by the petioles, which are broadly sulcate adaxially and usually prominently several-ribbed abaxially.

*Anthurium concolor* is apparently not closely related to any other species, but has been confused with *A. salviniae* due to similarities in leaves and habit. *Anthurium salviniae* can be readily distinguished by its long-tapered, pale lavender spadix. Because of its similar leaf and petiole shape, *A. concolor* might also be confused with *A. upalaense*, but that species has a long-tapered, green spadix, a longer, recurled spathe, and orange rather than purple anthers.

COLOMBIA. CHOCÓ: hill behind Capulgana, 0–100 m, *D'Arcy 14217* (MO). PANAMA. BOCAS DEL TORO: *Carleton 377* (US). CANAL AREA: Fort Randolph, *Standley 28723* (US); Fort Sherman, *Standley 31018* (US); Matachín-Las Cascadas, *Cowell 324* (NY). CHIRIQUÍ: Barro Colorado Island, *Croat 8154* (MO); Río Providencia, S of Colón, *Tyson & Blum 3936* (MO), *3999* (SCZ). COLÓN: Garote (cultivated: originally collected by D'Arcy), *Croat 50108* (BM, CAS, CM, MO, PMA, SEL, S); Portobelo Region, Río Indio, *Croat 33637* (B, F, K, MO, PMA, RSA, U, US); Río Indio de Gatún, 0–300 m, *Pittier 2798* (US).

*Anthurium consobrinum* Schott, Oesterr. Bot.

Wochenbl. 5: 66. 1855. TYPE: Nicaragua. Río San Juan: along Río San Juan, *Friedrichsthal s.n.* (destroyed; Schott Aroideae #353 serves as the type). Figures 99–101.

*Anthurium consobrinum* var. *cuneatissimum* Engl., Pflanzenn. IV. 23B(Heft 21): 176. 1905. *Anthurium cuneatissimum* (Engl.) Croat, Ann. Missouri Bot. Gard. 70: 285. 1983. TYPE: Costa Rica. Limón: Lanuras de Santa Clara, 250 m, *Donnell Smith 6811* (holotype, B; isotypes, K, US).

Epiphytic; stem short, 1–2 cm diam.; leaf scars conspicuous, 0.7 cm high, 0.9 cm wide; roots numerous, dense, descending to spreading or ascending, white to pale green, smooth, moderately elongate and slender, blunt, to 11 cm long, 2–4 mm diam.; cataphylls subcoriaceous, lanceolate, 5.5–15 cm long, acute to caudate-acuminate at apex, light green, drying reddish brown (B & K yellow 6/2.5), persisting intact, eventually deciduous. *Leaves* erect to spreading; petioles 2.5–9 cm long, 6–10 mm diam., D-shaped, broadly sulcate adaxially, margins blunt to sharply raised, rounded abaxially, the surface pale-speckled; geniculum thicker and paler than petiole, becoming fissured transversely with age, 0.5–2 cm long; blades subcoriaceous, oblanceolate to broadly oblanceolate, long-acuminate at apex, attenuate to acute to narrowly rounded at base, 19–84 cm long, 3.5–21 cm wide, broadest above the middle, the margins broadly undulate; upper surface matte to semiglossy, medium green, lower surface semiglossy to glossy, slightly paler, drying matte, brown, occasionally greenish; midrib flat at base, becoming sharply acute-raised toward the apex above, higher than broad to round-raised at base below, becoming convexly raised toward the apex; primary lateral veins 12–18 per side, departing midrib at 40–60° angle, straight to near the margin, then arcuate and joining the margin, convexly raised above and below (more so below); tertiary veins obscure above, weakly visible below; collective vein arising from about the middle of the blade or absent, weakly sunken above, raised below, 5–12 mm from mar-

gin. *Inflorescences* erect to spreading, shorter than leaves; peduncle 20–43 cm long, 5–6 mm diam., 4–7× as long as petiole, medium green, terete; spathe spreading to reflexed, subcoriaceous, green, sometimes tinged with maroon, linear-lanceolate to oblong-ovate, 4.5–7.5 cm long, 0.8–2.5 cm wide, inserted at 30–90° angle on peduncle, abruptly acuminate at apex (the acumen inrolled), obtuse to rounded at base; spadix green to white, becoming pinkish to orange to tan to reddish violet, subcylindroid, prominently curved, 5.2–9 cm long, 0.8–1.5 cm diam.; flowers 4-lobed, 2–3.4 mm in both directions, the sides weakly to jaggedly sigmoid; 9–15 flowers visible in principal spiral, 12–16 in alternate spiral; tepals matte, greenish white turning pinkish tan; lateral tepals 1.1–1.3 mm wide, the inner margins broadly convex, turned up against pistil, the outer margins 3–4-sided; pistils early emergent, exerted to 2.2 mm, sharply pointed, pale green to white; stigma ellipsoid to circular, 0.5–0.7 mm long, becoming brushlike; stamens emerging slowly from the base, held above then retracting to surface of the tepals; filaments fleshy, colorless, 0.5–1 mm long, 0.6 mm wide; anthers white, 0.7–1 mm long, 0.7–1 mm wide; thecae narrowly ovoid, slightly divaricate; pollen white. *Inflorescence* pendent; spadix to 13 cm long; berries greenish white, reddish to purplish at apex, ovoid, narrowly acute to prominently beaked at apex, ca. 10 mm long, 5 mm diam.; mesocarp clear, juicy; seeds 2 per berry, white to greenish white, oblong-ellipsoid, 3–3.4 mm long, 2 mm diam., 1.5 mm thick, enveloped by gelatinous, transparent substance extending ca. 1 mm beyond seed on both ends.

*Anthurium consobrinum* ranges from Nicaragua to Panama, from sea level to 850 m (mostly less than 450 m). It is a common species from tropical wet forest and premontane wet basal belt transition life zones on the Caribbean slope.

This species is distinguished by its oblanceolate blades; short, sulcate, and conspicuously sheathed petioles; whitish roots that are slender, sharply tapered, and often directed upward; spreading inflorescences with upturned nontapered spadix; the markedly protruding styles; and the berries that are greenish white at the base and reddish at the apex.

*Anthurium consobrinum* is probably most easily confused with *A. fatoense* of Costa Rica and Panama, differing from that species in its abaxially rounded petioles and nearly oblong spadix, and by its berry coloration. *Anthurium fatoense* has a