

their tepals turned somewhat upwards, which, in conjunction with the clustered stamens, gives the spadix a rough appearance. Other diagnostic features are the primary lateral veins often free to the margin in the basal half of the blade, the thick, grayish roots that are densely long-pubescent on drying and the early emergent berries that are quadrangular with prominent ridges radiating from the center to the corners.

Anthurium cotobrusii is an atypical member of sect. *Pachyneurium*, probably related to other cordate and subcordate, orange-fruited species such as *A. colonicum*, *A. nervatum*, *A. ranchoanum*, and *A. watermaliense*.

Specimens of *A. cotobrusii* with longer posterior lobes can be confused with *A. watermaliense*, but that species is distinguished by its early emergent pistils held above the tepals before anthesis, and by its often persistently long-exserted stamens.

The species was placed in sect. *Cardiolonchium* by Croat & Baker (1979) and later in sect. *Belolonchium* (Croat, 1983), but was confirmed as a member of sect. *Pachyneurium* by its involute veneration.

COSTA RICA. PUNTARENAS: Las Cruces-Neily, Fila de Cal, Gómez 19649 (CR, MO); Río Coto Brus, 23 km N of La Unión, Panama border, Croat 26674 (MO); San Vito de Coto Brus-Villa Neily, Fila de Cal, Cuesta Fila de Cal, 300-600 m, 8°41'N, 82°56.5'W, Hammel 14160 (MO); Cordillera de Talamanca, Tres Colinas, 1,800-1,850 m, 9°7'N, 83°4'W, Davidse et al. 25652 (MO); Cerro Frantizius-Cerro Pittier, Río Canasta, 9.5 air km NW of Agua Caliente, 1,500-1,600 m, 9°2'N, 82°59'W, Davidse et al. 28366 (MO); Cerro Pando, 1,000-1,800 m, 8°55'N, 82°45'W, Barringer & Gómez 1617 (F); Refugio de Fauna Silvestre, Peñas Blancas de Esparza, 1,000-1,400 m, 10°7'50"N, 84°40'25"W, Herrera et al. 295 (DUKE, F, MO, TEX, US); cultivated at Las Cruces Botanical Garden, 1,300 m, Croat 44452 (MO); originally from Las Alturas, Croat 44387 (MO). PANAMA. CHIRIQUÍ: above San Félix along mining road 18-27 mi. off Pan-Am Hwy., above Chamí or turnout to Escopeta, 1,200-1,500 m, Croat 33058 (AAU, B, CAS, C, M, COL, CR, DUKE, F, GH, K, L, M, MBM, MEXU, MO, NY, P, PMA, RSA, SEL, US, W), 33147A, 33152 (MO); Cerro Colorado, 7.6 km from main road, 1,450-1,750 m, Folsom et al. 4840 (MO); 17 km NE of San Félix, 13-14 km by road NE of bridge over Río San Félix, 1,000 m, Nee 10699 (MO); Cerro Hornito, beyond Gualaca, 2-3 km E of Finca Linares, vic. Planes de Hornito, 1,400-1,900 m, Croat 48850

(CM, COL, CR, ENCB, LE, M, MO, U); 1,750-1,900 m, 8°41'N, 82°10'W, Croat 67983 (MO).

Anthurium cowanii Croat, sp. nov. TYPE: British Guiana. Kaieteur Plateau, forest along Potaro River, ca. 1 mi. above Kaieteur Falls, 470 m, Cowan & Soderstrom 2230 (holotype, BH; isotypes, K, NY, US). Figure 103.

Planta epiphytica; internodiis brevibus, caule 1-1.5 cm diam.; cataphyllum persistens semi-intactum; petiolus 8.5-13 cm longus, 7-10 mm diam., D-formatus; lamina oblanceolata, 50-90 cm longa, 13.5-30 cm lata; pedunculus 49-63.5 cm longus, 3-7 mm diam.; spatha 9-16 cm longa, 1.5-2.5 cm lata; spadix stipitatis, (9)15-18(21) cm longis, 6-7(10) mm diam., atropurpureus-rubescens ad brunneo-rubescens. Baccae ignotae.

Description based on dried material only. Epiphytic; stem ca. 1-1.5 cm diam.; roots dense, numerous, grayish brown, somewhat pubescent, ca. 2-3 mm diam.; cataphylls apparently subcoriaceous, at least 8 cm long, acute at apex, brown (B & K yellow 4/2.5), persisting semi-intact, eventually as fine linear fibers; petioles 8.5-13 cm long, 7-10 mm diam., D-shaped, apparently sulcate adaxially, with the margins prominently raised, probably rounded abaxially; geniculum slightly thicker than petiole, 0.8-1.7 cm long; sheath (2.5)5.7-6.5 cm long; blades coriaceous, oblanceolate, acute to shortly acuminate at apex, narrowly rounded to obtuse at base, 50-90 cm long, 13.5-30 cm wide, broadest above the middle, the margins apparently undulate; both surfaces semi-glossy to weakly glossy, grayish green to brownish green; midrib convexly raised above, slightly paler than surface, prominently convex to higher than broad below, somewhat darker than surface; primary lateral veins 9-16 per side, departing midrib at 25-50° angle, straight, becoming somewhat arcuate toward the apex, prominently convex above and below, more so below; interprimary veins not present; tertiary veins prominulous, raised above and below; reticulate veins weakly raised; collective vein arising from near the apex, raised above and below, 3-11 mm from margin. Inflorescences with peduncle 49-63.5 cm long, 3-7 mm diam., 6.1-7.5× as long as petiole, probably terete; spathe apparently erect to spreading, coriaceous, green, oblong-lanceolate, 9-16 cm long, 1.5-2.5 cm wide, broadest near the base, shortly acuminate at apex (the acumen inrolled, 7-15 mm long), acute at base; stipe 1.5-4(7) cm long in front, 0.5-1.5(2.5) cm long in back; spadix dark purple-red to brown-red, long-tapered, somewhat curved, held at 150-165° angle from peduncle, (9)15-18(21) cm long,

6–7(10) mm diam. near base, 4–6 mm diam. near apex; flowers rhombic, 4–4.6 mm long, 2.5–2.8 mm wide, the sides straight; 7–8 flowers visible in principal spiral, 5–6 in alternate spiral; tepals minutely papillate, semiglossy on drying; lateral tepals 2.3–2.8 mm wide, the inner margins broadly rounded, the outer margins 2-sided; pistils minutely papillate; stigma slitlike, 0.4–0.5 mm long; anthers 0.4–0.5 mm long, 0.5–0.6 mm wide, contiguous, obscuring pistil; thecae oblong, not at all or slightly divaricate; pollen fading to white. Fruit unknown.

Anthurium cowanii is known only from the Kaieteur Plateau in gallery forest along the Potaro River in Guyana at 470 m, where it was reported as an epiphyte in a premontane moist forest life zone (though the area is mostly savanna).

This species is characterized by its large, oblanceolate and short-petiolate leaf blades which dry greenish gray above and more brown and semiglossy below. Also, the dark purple-red, tapered spadix on a peduncle much longer than the petioles is an important distinctive feature. *Anthurium cowanii* is not likely to be easily confused with any other species, but *A. lorentense* and *A. vaupesianum*, from lowland western Amazonia, may bear a resemblance in the color of the leaf blades on drying.

Anthurium cowanii has been cultivated at the New York Botanical Garden. An herbarium voucher at NY, prepared in 1948, was made from a living plant brought back as *Maguire & Fanshawe 26173*, from the Potaro River Gorge, but no field voucher has been located. The cultivated specimen resembles field-prepared specimens of *A. cowanii* quite well, but leaf blade shape is more obovate-oblanceolate (vs. oblanceolate).

The species is named in honor of Richard S. Cowan, who collected in the Guiana region in the early 1950s and early 1960s and who, with T. R. Soderstrom, collected most of the known material of *A. cowanii*.

GUYANA. Kaieteur Plateau, Potaro River, ca. 1 mi. above Kaieteur Falls, 470 m, *Cowan & Soderstrom 2230* (BH, K, NY, US), 1758 (BH, US); (cultivated), *Maguire & Fanshawe 26173* (NY).

Anthurium crassinervium (Jacq.) Schott, *Weiner Zeitschr.* 1825: 828. 1825. *Pothos crassinervia* Jacq., *Icon. Pl. Rar.* 3 (1793), t. 609, Coll. 4. 122. TYPE: t. 609 serves as the type. Figures 104, 105, 109, 110.

Anthurium ellipticum K. Koch & Bouché, *Ind. Sem. Hort. Berol. App.* 6. 1853. TYPE: Venezuela. Caracas, *Gollmer s.n.* (lectotype, B; photo seen (Field Mus. Neg. #F-011915)).

Anthurium rugosum Schott, *Oesterr. Bot. Z.* 8: 387. 1858. TYPE: Venezuela: Caracas, *Gollmer s.n.* (B, lectotype; photo seen (Field Mus. Neg. #F-012065)).

Anthurium egregium Schott, *Prodr.* 475. 1860. TYPE: Schott *Ardoeae 486* (microfiche #13 A 10) serves as the lectotype (W).

Anthurium fontanesii Schott, *Bonplandia* 10: 347. 1862. TYPE: Locality unknown, from a cultivated source; Field Museum Photo 29816 serves as the type.

Anthurium preussii Engl., *Pflanzenr.*, IV, 23B(Heft 21): 68. 1905. TYPE: Venezuela. Carabobo: Porto Cabello, *Preuss 1552* (holotype, B; isotype, BM).

Epiphytic, epilithic or terrestrial, sometimes colonial; stem short, 2.5–4 cm diam.; roots dense, ascending, smooth; cataphylls subcoriaceous, 7–13 cm long, acute at apex, drying medium brown (B & K yellow 4/7.5), persisting \pm intact, weathering into reticulum of fibers. *Leaves* erect to spreading; petioles 3–33.5 cm long, 4–11 mm diam., D-shaped to quadrangular or thicker than broad, broadly and shallowly sulcate to V-sulcate, rarely narrowly sulcate adaxially, the margins acute, rarely inclined inward, flattened to rounded or 3–5-ribbed abaxially; geniculum somewhat thicker and paler than petiole, 0.8–2 cm long; blades moderately coriaceous, oblanceolate, gradually acuminate or rarely rounded at apex, acute to somewhat obtuse at base, 25–142 cm long, 11–52 cm wide, broadest usually above the middle, the margins undulate; both surfaces matte to semiglossy, slightly paler below, often pale-pustulate and/or with pale or dark punctations; midrib flat with a conspicuous medial rib near the base above, becoming acutely raised near the middle, sharply raised below, sometimes 3-ribbed at base; primary lateral veins 6–14 per side, departing midrib at 40–70° angle, \pm straight or arcuate to the margin, prominently raised near the midrib above, then sunken and merging with margin, raised below, drying raised and paler on both surfaces; interprimary veins not apparent; tertiary veins flat and slightly visible above, visible and darker than surface below; collective vein arising in the upper 1/3 or in the upper 1/4 of the blade, prominulous when dried. *Inflorescences* erect to spreading; peduncle (13)20–98 cm long, 5–12 mm diam., 1–3(5)× as long as petiole, terete, sometimes ribbed near the base of spathe; spathe spreading to reflexed, moderately thin, green, sometimes tinged with purple, lanceolate, 8–12.5 cm long, 1.5–2 cm wide, broadest near the base, often decurrent at base; spadix dark purple or violet to green or green tinged with purple, tapered, sessile or stipitate to 12 mm, (6)12–