

newell 16560 (GH); 800 m, 9°55'N, 84°16'W, *Barringer & Christenson* 3653 (MO); vic. Santa Ana, *Burger & Liesner* 7171 (MO), *Taylor* 17387 (NY, US); Cerro Turrubares, Puriscal, *Jiménez* 628 (US); Río del General, S of bridge over river, *Harmon & Fuentes* 6210 (UMO); Río Uruca near Santa Ana, 900 m, *Burger & Liesner* 7172 (MO). PANAMA. CHIRIQUI: Puerto Armuelles, *Woodson & Schery* 904 (MO); W of Puerto Armuelles, *Croat* 21938, 21972 (MO), 22474 (MO, PMA, RSA, US), *Liesner* 49 (MO, PMA).

b. *Anthurium acutifolium* var. *herrerai*

Croton, var. nov. TYPE: Costa Rica. Puntarenas: Esperanza, Macona, finca de José Herrera C. Miramar, 10°01'40"N, 84°36'33"W, 300–400 m, *Herrera* 372 (holotype, MO 3587626; isotypes, CR, K, US). Figure 351.

Planta terrestris: internodia brevía; cataphyllum persistens semi-intactum; petiolus 7–9 cm longus, ca. 3 mm diam., sulcatus; lamina oblongo-elliptica aut elliptica, 21–33.5 cm longa, 7.8–13.5 cm lata, in sicco flavo-viridis; pedunculus 11.5–28.5 cm longus; spathe linearis-lanceolata, viridis, 3.8–5.8 cm longa, 8–10 mm lata; spadix sessilis, luteus, 2.5–5 cm longus.

Based on dried material only. Terrestrial; stem short; internodes short, 1–1.5 cm diam.; roots moderately dense, whitish, woolly-pubescent, to 10 cm long, 5 mm diam.; cataphylls narrowly long-acuminate, 5–6.5 cm long, drying brownish, persisting semi-intact, eventually fibrous at least basally. *Leaves* ± erect; petioles 7–9 cm long, ca. 3 mm diam., ± C-shaped, sulcate adaxially, rounded abaxially; geniculum slightly paler than petiole, less than 1 cm long; blades subcoriaceous, drying moderately thin, oblong-elliptic to elliptic, gradually long-acuminate at apex, attenuate at base, 21–33.5 cm long, 7.8–13.5 cm wide, broadest at middle; both surfaces semiglossy; midrib drying sharply acute above, several-ribbed and paler than surface below; primary lateral veins (9)10–14 per side, departing midrib at 50–55° angle (sometimes to 75° angle nearer the base), moderately straight to the margin, then arcuate toward apex; tertiary veins obscurely visible, some weakly raised below; collected vein usually arising from about the middle of the blade, less commonly from the lower third, flat above, weakly raised below, 3–10 mm from margin. *Inflorescences* erect; peduncle 11.5–28.5 cm long; spathe spreading to reflexed-spreading, green, linear-lanceolate, 3.8–5.8 cm long, 8–10 mm wide, broadest near base, inserted at 45–60° angle on peduncle, narrowly acuminate at apex, narrowly acute at base and weakly decurrent; spadix yellow, sessile, moderately tapered, 2.5–5 cm long, 3–5 mm diam. near base, 2–3 mm diam. near apex; flowers 4-lobed, 2.3–2.5 mm long, 2.2–

2.7 mm wide, the sides jaggedly sigmoid, 5–6 flowers visible in principal spiral, 9–10 flowers visible in alternate spiral; tepals semiglossy, lateral tepals 1.3–1.4 mm wide, ± inequilaterally shield-shaped, the inner margins broadly rounded, the outer margins 3–4-sided; pistils not emergent but pushing up against the tepals and inclining their margins upward; stigma 0.4 mm long, 0.3 mm wide, brushlike, with medial separation, weakly exerted; stamens emerging in a regular sequence, the laterals preceding the alternates by ca. 5 spirals, the 3rd stamen preceding the 4th by 3–4 spirals, held tightly aggregated over and obscuring pistil; anthers 0.4–0.5 mm long, 0.7–0.8 mm wide; thecae ovoid, moderately divaricate. Infructescence not seen.

Anthurium acutifolium var. *herrerai* is endemic to Costa Rica, known only from the type collection in a dry area of tropical moist forest at 300–400 m.

It differs from the typical variety by its leaf blades, which are more elliptic and dry yellow-green rather than green. In addition, the dried epidermis of the blades is smooth with a distinct areolate cellular pattern on the upper surface at higher magnifications. In contrast, the typical variety dries dark green and has the surface rough and granular on high magnifications, with no sign of an areolate pattern.

The variety is named in honor of Gerardo Herrera, an outstanding Costa Rican collector working on the Costa Rican Flora Project with B. Hammel and M. Grayum of the Missouri Botanical Garden.

COSTA RICA. PUNTARENAS: Esperanza, Macona, finca de José Herrera C. Miramar, 300–400 m, 10°01'40"N, 84°36'33"W, *Herrera* 372 (CR, K, MO, US).

***Anthurium acutissimum* Engl., Bot. Jahrb. Syst.**
25: 398. 1898. TYPE: Ecuador. San Nicolas, *Sodi* s.n. (holotype, B). Figures 24, 25.

Anthurium acutissimum var. *maius* Sodiro, *Anales Univ. Centr. Ecuador* 22, no. 162: 267. 1908. TYPE: Ecuador. *Sodi* s.n. (n.v.).

Epiphytic, epilithic or terrestrial; stem short, 3–4(10) cm diam.; roots forming a dense mass, descending, drying whitish gray, somewhat pubescent, elongate, 2–4 mm diam.; cataphylls linear-lanceolate, (7)12–17 cm long, linear-elongate, drying brown to reddish brown, persisting semi-intact or as coarse linear fibers or as a reticulum of fibers. *Leaves* spreading to pendent; petioles (7.5)20–50 cm long, 5–12 mm diam., terete to subterete, somewhat flattened adaxially, rounded abaxially,

surface pale-speckled; geniculum flattened, slightly darker and thicker than petiole when dried, 1–2 cm long; blades usually pendent, coriaceous, oblong to oblong-elliptic, acuminate at apex, acute to narrowly acute at base, 60–118 cm long, 7.5–14 cm wide, broadest at or near the middle, the margins flat; upper surface matte, semivelvety, lower surface glossy, both surfaces dark to medium green, drying green to yellowish green, matte; midrib convexly raised, paler than surface above, prominently convex, much paler than surface below; primary lateral veins numerous, more than 25 per side, departing midrib at 50–70° angle, straight to the collective vein, flat and pale above, obscure below, slightly raised above when dried, more so below; interprimary veins moderately numerous, drying almost as conspicuous as primary lateral veins, raised above and below; tertiary veins obscure; collective vein arising from near the base, weakly raised above and below when dried, equally as prominent as primary lateral veins, 4–17 mm from margin. *Inflorescences* spreading to pendent; peduncle 22–64 cm long, (2)3–4 mm diam., equally or to 1.7 × as long as petiole, terete; spathe spreading, subcoriaceous, green to green-tinged with purple at margins, oblong-lanceolate, (5.5)8–21 cm long, 1.1–2.4 cm wide, broadest near the base, acuminate at apex (the acumen inrolled, to 25 mm long), acute at base; stipe 7–20 mm long in front, 0–4 mm long in back; spadix green to yellow-green, subsessile, erect, straight to curved, held at 160–180° angle from peduncle, (6.5)10.5–21.5 cm long, (3)6–8 mm diam. near base, (2)4–5 mm diam. near apex, broadest at the base; flowers square to rhombic, 2.2–2.8 mm in both directions, the sides smoothly sigmoid, (3)4–5 flowers visible in principal spiral, 6–9 in alternate spiral; tepals matte, pale-punctate when dried; lateral tepals 1.3–2 mm wide, the inner margins convex, becoming turned up against the pistil, the outer margins 2-sided; pistils emergent, raised, same color as tepals; stigma slitlike, becoming ellipsoid, 0.5–0.8 mm long; stamens emerging from the base, held well above the tepals, persisting, laterals emerging almost to apex before the alternates emerge in basal third, held in a circle around the pistil; filaments white, flattened, exerted, 0.7–1 mm long, 0.6–0.7 mm wide; anthers drying yellowish to brown, 0.5–0.8 mm long, 0.4–0.7 mm wide; thecae oblong, not divaricate. *Inflorescence* pendent; spathe persisting, green or withered; spadix ca. 23–30 cm long, 2 cm diam., with berries scattered throughout; berries yellow-orange becoming orange, ovoid to broadly ellipsoid, “hollow” when rehydrated, acute at apex, (6)8.6–9.5 mm long,

4–4.5 mm diam.; pericarp thickened, with some raphide cells; seeds 2 per berry, yellowish, oblong-ovoid, flattened, 3.7–4.8 mm long, 2.3–2.4 mm diam., 1.3–1.6 mm thick, with a transparent, gelatinous appendage at both ends.

A member of series *Multinervia*, *Anthurium acutissimum* is known from the provinces of Pichincha and Los Ríos in Ecuador where it occurs at 650–1,200 m in premontane moist and premontane wet forest life zones.

This species is characterized by its very elongate, mostly pendent, coriaceous, green-drying leaves, which are narrowly acute at the base and long-acuminate at the apex, by its large cataphylls which persist semi-intact as a reticulum of pale fibers, by its long-pedunculate inflorescence which has a tapered, green spadix with anthers exerted on long, whitish filaments and by its ovoid to broadly ellipsoid orange berries.

Anthurium acutissimum is most closely allied to *A. holmnielsenii*, which has generally more erect-spreading leaves, D-shaped petioles, which are sulcate adaxially with prominently raised, sharp margins and broader blades (averaging 5.1 vs. 8.6 × longer than broad). Leaves of both species dry dull green and matte.

The label data of *Madison 3826* mention that the plant was “ant inhabited” and that the stem was “massive, 10 cm thick,” perhaps owing to its being myrmecophilous; the manner in which it was inhabited by ants is not mentioned, and root mass probably accounts for this exceptional measurement.

ECUADOR. LOS RÍOS: 12 km E of Patricia Pilar, 650 m, *Madison 3826* (QCA, SEL). PICHINCHA: Chiriboga Road, Alluriquín-Chiriboga, 950–1,100 m, *Madison 4198* (originally 2094) (MO, SEL), *Madison 4075* (MO, SEL); 2–3 km from main Alogo–Sto. Domingo de los Colorados rd., 890–1,010 m, 0°18'13"S, 78°54.5'W, *Croat 56979* (MO, US); 12 km E of Patricia Pilar, 650 m, *Madison 3828* (SEL); Río Pilatón, *Sodiolo 20* (B); Quito–Santo Domingo de los Colorados, 44 km E of Santo Domingo, 1,200 m, 0°23'S, 78°50'W, *Hammel & Wilder 16081* (B, MO); Río Pilatón–Río Toachi confluence, 800–900 m, *Madison 4030* (K, QCA, SEL), *Sparre 18453* (S).

Anthurium affine Schott, Oesterr. Bot. Wochenbl. 5: 82. 1855. TYPE: illustrated by Schott Aroideae 465 (lectotype). Figures 26, 28, 29.

Terrestrial; stem short, 1.5–4 cm diam.; roots moderately numerous, descending to spreading, greenish, smooth to weakly pubescent, thick, moderately elongate, 3–8 mm diam.; cataphylls subcoriaceous, broadly lanceolate, 6–20 cm long, acuminate to narrowly rounded and prominently