

Anthurium acutifolium Engl., Bot. Jahrb. Syst. 25: 365. 1898.

a. *Anthurium acutifolium* var. *acutifolium*.

TYPE: Costa Rica. Puntarenas: Río Hakum, Buenos Aires (SE of San Isidro del General), elev. 250 m, *Pittier 6539* (lectotype, B; isotypes, BR, CR). Figures 23, 27.

Anthurium scopulicola Standley & L. O. Williams, Ceiba 3: 105. 1952. TYPE: Costa Rica. Puntarenas: vic. Palmar Norte, near sea level, *P. Allen 5788* (holotype, EAP; isotype, F).

Terrestrial or often epilithic; stem 1 cm diam.; roots descending, greenish, smooth to velutinous, elongate, blunt, 2–4 mm diam.; cataphylls subcoriaceous, lanceolate, 6–10 cm long, narrowly rounded to obtuse at apex with a subapical apiculum, dark green, drying dark tan, persisting semi-intact, then as linear fibers, eventually deciduous. Leaves erect to spreading, occasionally pendent; petioles (2)6–22 cm long, (3)6–9 mm diam., sharply D-shaped to subquadrate, flattened to broadly sulcate with the margins sharply raised adaxially, sharply 3-ribbed abaxially, surface sparsely pale-speckled; geniculum slightly thicker than petiole, 1.4–2.5 cm long; blades subcoriaceous, elliptic to oblanceolate to broadly oblanceolate, gradually acuminate at apex (the acumen apiculate), attenuate to narrowly acute at base, (11)25–62 cm long, (3.5)5.5–27 cm wide, broadest at or above the middle, the margins weakly undulate; both surfaces semiglossy to matte, medium green above, paler below, drying greenish to greenish brown, matte; midrib flat at base, becoming acutely raised toward the apex above, sharply 2-ribbed at base, becoming sharply raised toward the apex below, paler than surface; primary lateral veins 8–12 per side, departing midrib at 40–45° angle, broadly arcuate to straight, acutely raised above, convexly raised below; tertiary veins weakly raised to sunken above, raised and darker than surface below; reticulate veins weakly visible above, obscure below; collective vein arising from about the middle of the blade or near the apex, sunken above, raised below, equally as prominent as primary lateral veins, 3–5 mm from margin. Inflorescences erect to erect-spreading; peduncle (17)24–53 cm long, 3–5 mm diam., 3–6 × as long as petiole, angular; spathe reflexed to reflexed-spreading, subcoriaceous, green, linear-lanceolate, 5–12 cm long, 0.6–1.1 cm wide, broadest just above the base, acuminate at apex (the acumen inrolled); spadix green to white to yellow, sometimes tinged with red-violet, sessile, long-tapered, rarely stipitate, to 2 cm, occasionally cylindroid, (4)7–16 cm long, 6–8 mm diam. near

base, 3–4 mm diam. near apex; flowers square to rhombic, 1.9–3.4 mm long, 1.7–2.7 mm wide, the sides smoothly to weakly and jaggedly sigmoid; 5–6 flowers visible in principal spiral, 5–7 in alternate spiral; lateral tepals (0.5)1–1.7 mm wide, the inner margins straight, the outer margins 2–3-sided; stigma ellipsoid, 0.3–0.5 mm long; stamens held above tepals in a circle around the pistil, persisting; anthers 0.4–0.5 mm long, 0.6–0.8 mm wide; thecae oblong-ovoid, divaricate. Inflorescence 1 cm diam., bearing berries in the lower part of the spadix; berries greenish yellow, obovoid to globose, rounded to somewhat mammilliform at apex, 3.8–4.7 mm long, 3.8–4 mm diam.; seeds 2 per berry, yellow-orange, oblong-ovoid, flattened dorsally, 2.9–3.5 mm long, 1.8–2.3 mm diam., 1.5–2 mm thick.

This species is known from Costa Rica and Panama principally on the Pacific slope in tropical moist, premontane wet, and tropical wet forest life zones, mostly from sea level to 900 m (rarely to 1,500 m). The species has been collected in Panama on the Burica Peninsula in Chiriquí Province. There are two varieties. The typical variety occurs throughout the range of the species, whereas the variety *herreriae* is restricted to drier parts of tropical moist forest.

Anthurium acutifolium var. *acutifolium* is distinguished by its terrestrial or epilithic habit, by its thin, green-drying, oblanceolate to broadly lanceolate leaf blades that are attenuate at the base, by its slender, long-tapered, usually green to yellowish spadix, and by its greenish yellow berries.

It is similar vegetatively to *A. consobrinum*, but does not have the early-emergent pistils characteristic of that species. See variety *herreriae* for comparison with that species.

COSTA RICA. PUNTARENAS: cabecera del Bkis, *Pittier 11129* (BR, CR, US); Boruca, *Pittier 4656* (BR); Buenos Aires, *Pittier 6539* (BR); Río Cañas–Buenos Aires, *Pittier 3862* (BR); Buenos Aires, Ujarrás, 300 m, *Ocampo 2818* (MO, CR); Las Cruces–Villa Neily, Fila de Cal, 500–600 m, *Gómez 19633* (MO, CR); Mellizas, 1,500 m, 8°54'N, 82°46'W, *Romero & Fallas 7* (CM, CR, MO); along road to microwave tower above Gofito, 90 m, *Croat 67615* (MO); Palmar Norte, *Croat 32962* (MO); Refugio de Fauna Silvestre, Peñas Blancas de Esperza, 107°50'N, 84°40'25"W, 1,000–1,400 m, *Herrera et al. 280* (B, CR, K, MO); W of Rincón de Osa, along abandoned "high road," 250–540 m, 8°42'N, 83°31'W, *Croat & Grayum 59853* (MO); Burica Peninsula, S of Puerto Armuelles, Quebrada Macho, 100–200 m, *Croat 22127* (F, K, MO); Osa Peninsula at Sirena, *Liesner 2921* (MO); Quebrada Palito, *Croat 22614* (MO). SAN JOSÉ: Quebrada Micos, 8.5 km W of Ciudad Colón, 600 m, 9°55.5'N, 83°17.5'W, *Grayum & Sleeper 6098* (B, CR, K, M, MO); 700 m, *Burger et al. 11938* (F, MO); El General basin, *Skutch 4749* (MO); Pacaca, *Pittier 4099* (BR); El Rodeo, Hun-

newell 16560 (GH); 800 m, 9°55'N, 84°16'W, *Baringer & 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, *Sodiro* s.n. (holotype, B). Figures 24, 25.

Anthurium acutissimum var. *maius* Sodiro, *Anales Univ. Centr. Ecuador* 22, no. 162: 267. 1908. TYPE: Ecuador. *Sodiro* 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,