

medium green, darker than tepals; stigma oblong ellipsoid, 0.3–0.5 mm long; stamens emerging promptly in a regular sequence from the base, the laterals preceding the alternates by 6 spirals, the 3rd stamen preceding the 4th by 3 spirals, held just above tepals in a circle around the pistil; anthers conspicuously white to pale orange (B & K yellow 9/5), 0.7–0.8 mm long, 0.8–1 mm wide, inclined over the pistil; thecae oblong-ellipsoid to ovoid, 0.5 mm wide, slightly or not divaricate; pollen bright yellow fading to white. *Infructescence* pendent; berries red, oblong-ellipsoid, rounded at apex, 11 mm long, 9 mm diam.; mesocarp with numerous dense raphide cells; seeds 2 per berry, tan, oblong-ellipsoid, flattened, 6 mm long, 4 mm diam., 2 mm thick, with pale punctiform raphide cells, with a sticky, gelatinous apical appendage.

Anthurium schlechtendalii subsp. *jimenezii* is endemic to the Pacific slope of Mexico and is restricted to Guerrero, Oaxaca, and Chiapas in seasonally very dry forest ("selva baja cauducifolia" and "bosque del pino-encino") at 250 to 1,500(2,325) m.

Subspecies *jimenezii* is recognized by its exclusively terrestrial or epilithic habit, thick, oblanceolate leaf blades with usually free-ending primary lateral veins, purplish spadix, green, lanceolate spathe, and red berries.

This subspecies is geographically isolated from the typical subspecies of *A. schlechtendalii*, which is found in Veracruz and northern Oaxaca and also on the eastern side of the Isthmus of Tehuantepec, but not in western Oaxaca. Subspecies *jimenezii* differs from the typical subspecies in being generally smaller, occurring exclusively on rocks and in habitats seasonally much drier, and in having usually thicker leaf blades. Matuda (1961) stressed that the taxon has peduncles relatively much longer than those of *A. schlechtendalii*. While it is generally true that the inflorescences of subsp. *jimenezii* are commonly as long as or longer than the leaves, they may also be much shorter.

Subspecies *jimenezii* is also similar to *Anthurium halmooi*, which differs in having an ovate to ovate-elliptic spathe and mature berries that are pale greenish yellow. Also similar is *A. nizandense*, which is endemic to southern Guerrero and southern Oaxaca. *Anthurium nizandense* differs in having proportionately much longer petioles and elliptic to oblong-elliptic blades that are matte on the lower surface. In *A. nizandense* the blades are 1.3–2.5 times longer than the petioles, whereas in *A. schlechtendalii* subsp. *jimenezii* they are usually 6–10 times longer (rarely only as little as 3 times longer).

MEXICO. CHIAPAS: Mpo. Ángel Albino Corzo, Finca Cuxtepec, 1,380 m, *Breedlove* 50763 (MO); Mpo. Cintalapa de Figueroa, Colonia Francisco I. Madero-Colonia A. López Mateos, 560 m, *Breedlove* 50560 (MO). GUERRERO: Acahuizotla-Agua de Obispo, *Moore* 5120 (BH, UC); above Acahuizotla, *Moore* 6957 (BH); Acapulco-Chilpancingo, *Moore* 5099 (BH); Atoyac-Filo de Caballo, Nueva Deli, 1,300–1,500 m, 17°24'N, 100°17'W, *Milner & Tenorio* 639(MO); Cerceceras, *Hinton et al.* 10098 (US); Km 39–Km 40, 3 mi. N of El Rincón, 15 mi. N of Tierra Colorada, Hwy. 95, 1,500 m, *Croat* 45694 (CAS, F, K, M, MO, MEX, US); Malinaltenango, S of Zacualpán, *Matuda* 37245 (MEXU); Millillas-Atoyac de Álvarez, 3.7 mi. W of turnout on road to Chichihualco, 2,325 m, *Croat* 45621B (MO); Motozintla-Huixtla, ca. 11 mi. S of Motozintla de Mendoza on Hwy. 211, 4,800 ft., *Utley & Utley* 6813 (MO); Tierra Colorada, *Rodríguez* 51 (US), *Rzedowski* 22809 (MICH, US); Tierra Colorada-Agua de Obispo, El Ocotito, *Crisman & Willis* 199 (MICH); Dtto. Mina, Trincheras, *Hinton* 10125 (GH, K, US). OAXACA: La Galera, along Hwy. 175, 2.1 mi. N of turnout to Pluma Hidalgo, 1,340 m, *Croat* 46142 (K, MO); Oaxaca-Pochutla, 55.1 mi. S of Miahuatlán, 12.9 mi. S of Suchixtepec, Hwy. 175, 1,540 m, *Croat* 46093 (MO); Oaxaca-Puerto Escondido, km 195, Santa Rosa, *Rzedowski* 19592 (MEXU); Pinotepa Nacional-Tlaxiaco, 15.3 mi. N of Putla de Guerrero, 49 mi. S of Tlaxiaco, Hwy. 125, 1,480 m, *Croat* 45926 (F, MO); Mpo. Matías Romero, 2.2 km SW of Pachihé, 7.5 km SW of Mogone, on road to San Juan Guichicovi, 200–300 m, 16°58'N, 95°04'W, *Wendt et al.* 4816 (MO).

Anthurium schottianum Croat & R. A. Baker, *Brenesia* 16(Suppl. 1): 83. 1979. TYPE: Costa Rica. Limón: ca. 1 mi. N of Bribri, ca. 40 mi. SW of Limón, 50–100 m, *Croat* 43247 (holotype, MO 2584489; isotypes CR, F, K, M, NY, SEL, US). Figures 281, 287.

Terrestrial, to 1 or more m tall; stem usually less than 50 cm long, 2.5–5 cm diam.; leaf scars conspicuous, 2–4 cm wide; roots few, descending, green, with flaky or scaly epidermis when dried, often short and blunt, ca. 5 mm diam.; cataphylls coriaceous, hooked, faintly 1-ribbed at apex, 9–12 cm long, apiculate at apex, dark purple to maroon (B & K purple 2/7.5), drying brown tinged with reddish purple, persisting intact or semi-intact, eventually deciduous. *Leaves* erect to spreading; petioles 40–150 cm long, 5–10 mm diam., stiff and firm, bluntly D-shaped to subterete, weakly and shallowly sulcate to flattened adaxially, rounded (sometimes with few faint ridges) abaxially, the surface green, sometimes with dark purple tinge spreading from the base; geniculum thicker and paler than petiole, 2–3 cm long; blades subcoriaceous, ovate, gradually acuminate at apex (the acumen downturned, long-apiculate), cordate at base, 44–100 cm long, 33–50 cm wide, broadest below or near the middle, the margins shallowly undulate, flat to revolute; anterior lobe 32–80 cm

long, the posterior lobes 12–21 cm long, directed inward, rounded at apex; sinus usually narrowly triangular to closed, sometimes with overlapping lobes; upper surface matte to semiglossy, medium green, lower surface semiglossy, slightly paler; midrib above acutely raised at base, becoming sharply and narrowly raised toward the apex and paler than surface, below convexly raised at base, becoming sharply acute toward the apex; basal veins 5–9 pairs, not coalesced, sharply and narrowly raised above, less so below; primary lateral veins 9–20 per side, departing midrib at 35–50° angle, slightly arcuate-ascending, faintly loop-connecting, sharply raised above, less prominently and paler than surfaces below; interprimary veins few, narrowly raised above and below, paler than surface above; tertiary veins flat to weakly sunken above, somewhat raised below, paler than surface above and below; reticulate veins scarcely visible above, scarcely raised below, prominent when dried on both surfaces; collective vein arising from 2nd basal vein, slightly sunken above, slightly raised below, obscure above when dried, slightly raised and paler than surface below, 2–6 mm from margin. *Inflorescences* erect, much shorter than leaves; peduncle sometimes absent or to 20 cm long, 4–5 mm diam., 0.2–0.4× as long as petiole, dark purple, terete; spathe spreading-reflexed to twisted, coriaceous, dark purple tinged with green (B & K red-purple 2/7.5), ovate-lanceolate, 6.5–15 cm long, 1.6–3.5 cm wide, broadest near base, inserted at 45° angle on peduncle, abruptly acuminate at apex (the acumen inrolled), rounded to subcordate at base, the margins meeting at 90–180° angle and stiffly rolled under; spadix deep red-violet to purple (B & K purple 2/7.5), cylindroid-tapered, 4–14 cm long, 7–9 mm diam. near base, 4–5 mm diam. near apex; flowers rhombic to square, 2.6–3 mm long, 1.5–3.5 mm wide, the sides ± straight; 4–6 flowers visible in principal spiral, 5–8 in alternate spiral; tepals matte, densely greenish punctate, minutely papillate; lateral tepals 1.9 mm wide, the inner margins straight to convex; pistils not emergent, rectangular, minutely and barely exposed and somewhat glossy, violet-purple (also reported as white); stigma slitlike; stamens emerging slowly from the base, in a regular progression, weakly exerted then retracting, grouped in a tight cluster above pistil; filaments flattened, translucent, 0.3–0.5 mm long, 0.6–0.7 mm wide; anthers yellow, 0.5–0.6 mm long, 0.7–0.9 mm wide, inclined over pistil; thecae ellipsoid, scarcely divaricate; pollen yellow (B & K yellow 9/5), sweet-scented; *Infructescence* with spathe usually persisting; spadix to 35 cm long, 2.5 cm diam., bearing berries in the basal portion only; berries pinkish with metallic sheen,

darker in the apical third, obovoid, acute to rounded at apex, 9–10 mm long; pericarp thin; seeds 2 per berry, light brown, flattened, 6 mm long, 5 mm diam., 2 mm thick.

Anthurium schottianum is known only from a region of premontane wet forest-basal belt transition in extreme southwestern Costa Rica at less than 100 m. It will no doubt be found elsewhere in Costa Rica and Panama on the Atlantic slope.

This species is distinguished by its large, thin, ovate leaf blades with scarcely any posterior rib (i.e., all basal veins are free to the petiole), and by its short peduncle, purple spadix and ovate-lanceolate, often purplish, frequently twisted spathe. An unusual feature is the seasonal appearance of several inflorescences at the same time. The species has no known relatives.

COSTA RICA. LIMÓN: 1 mi. NE of Bribri, 40 mi. SW of Limón, 50–100 m, *Croat 43247* (CR, F, K, M, MO, NY, RSA, SEL, US); Reserva Biológica Hitoy Cerere, Río Cerere to 1 km upstream from Quebrada Barrera, SW of Valle La Estrella, 90–200 m, 9°40.5'N, 83°2'W, *Grayum & Hammel 5764* (B, MO); Río Catarata, N of Bribri, *Utley 5500* (DUKE); Río Sixaola, Bribri–Caribbean coastal plain, 50–100 m, 9°37'N, 82°49'W, *Baker & Burger 69* (MO), *Burger et al. 10391* (F, MO), *10300* (MO).

Anthurium seibertii Croat & R. A. Baker, *Brenesia* 16(Suppl. 1): 85. 1979. TYPE: Panama. Chiriquí: wooded slopes on Cerro Horqueta, 1,650 m, *Croat 26976* (holotype, MO 2251853; isotypes, B, BM, CM, CR, F, GH, K, M, NY, PMA, RSA, US). Figures 282, 288, 291.

Epiphytic or epilithic or terrestrial; stem thick, short, 3–6 cm diam.; leaf scars mostly inconspicuous, ca. 2 cm wide; roots numerous, spreading to descending, pale green, pubescent, moderately thick and elongate, blunt, 3–6 mm diam.; cataphylls moderately coriaceous, lanceolate, prominently 1-ribbed near the apex, 12–21 cm long, acute at apex with subapical apiculum to 5 mm long, light green, drying tan (B & K yellow-red 8/5), persisting semi-intact, eventually deciduous. *Leaves* erect-spreading; petioles 10–55 cm long, 6–10 mm diam., stiff, firm, subquadrangular, flattened adaxially, the margins sometimes raised, 1–5-ribbed abaxially, the surface pale-speckled; geniculum thicker and paler than petiole, becoming fissured transversely with age, 1.5–3 cm long; blades coriaceous to subcoriaceous, oblong-elliptic, gradually acuminate at apex (the acumen apiculate), acute to obtuse to narrowly rounded at base, 45–85 cm long, 4–16 cm wide, broadest at or near the middle, the margins flat to slightly undulate;