

midway, 2 mm diam. near apex; flowers rhombic, 1.4–1.8 mm long, 1.2–1.4 mm wide, the sides straight to smoothly or jaggedly sigmoid; 3–5 flowers visible in principal spiral, 3 in alternate spiral; tepals semiglossy, minutely papillate; lateral tepals 0.7–0.9 mm wide, the inner margins straight to rounded, the outer margins 2-sided; anthers 0.4 mm in both directions, inclined over and obscuring the pistil; thecae ellipsoid, slightly divaricate. *Infructescence* with spathe persisting \pm intact; spadix 0.9 cm diam.; berries violet.

Anthurium vaupesianum is endemic to southern Colombia in Vaupés (hence the name) and Amazonas departments, where it is an epiphyte at 130–250 m in tropical premontane wet forest.

This species is characterized by its small size, short petioles, obovate-oblancheolate leaf blades drying grayish-brown and usually rather abruptly attenuate in the lower half with conspicuously concave margins, and by its very slender, long-tapered spadix. It is probably most closely allied to *A. anorianum* from Antioquia Dept. in northern Colombia. Although it has a similar long, slender spadix, the latter has larger leaves that have convex margins in the lower half and are obtuse to acute at the base, and peduncles that dry reddish. It occurs at 300 to 750 m, in a region separated from *A. vaupesianum* by two major mountain ranges.

COLOMBIA. AMAZONAS: Río Caqueta, La Padraera, 240 m, *García-Barriga* 14605 (COL). AMAZONAS-VAUPÉS: Río Apaporis, Río Pacoa–Río Cananari, Soratama, 250 m, *Schultes & Cabrera* 13535, 13796 (ECON), 12772, 13621 (US); Jinogoje, mouth of Río Piraparana, 230 m, 0°15'S, 70°30'W, *Schultes & Cabrera* 19820 (US). VAUPÉS: 2 km SE of Mitú, 200 m, 1°14'N, 70°14'W, *Croat* 56795 (AAU, COL, F, JAUM, K, M, MO, NY, RSA, US); Río Kubiuyu, vicinity of Mitú, *Zarucchi & Davis* 1185 (COL, GH); Río Piraparana, middle course, *Schultes & Cabrera* 17128 (US); Río Vaupés, Mitú, 2–3 km below Urania, *Zarucchi & McElroy* 1172 (COL, GH).

Anthurium venosum Griseb., Cat. Pl. Cub. 219. 1866. TYPE: Cuba. Westindische Province, *Wright* 3209 (holotype, MO 2058854; isotypes, NY, US). Figures 328, 349, 350.

Terrestrial or epilithic. Stem short, ca. 1.5–2 cm diam.; roots dense, grayish, moderately to densely velutinous, moderately elongate, ca. 3–5 mm diam.; cataphylls subcoriaceous, lanceolate, 3–6 cm long, acute at apex, brown (B & K yellow 4/2.5), persisting semi-intact, eventually as a re-

ticulum of fibers. *Leaves* with petioles (5)15–40 cm long, ca. (3)6–10 mm diam., terete to weakly sulcate, medium green; geniculum 1 cm long; blades coriaceous to subcoriaceous, oblong-ovate, acute to shortly acuminate at apex (the acumen shortly apiculate), \pm rounded to subcordate or weakly cordate at base, (17)24.5–46 cm long, (12.5)15.7–21.5 cm wide, broadest at or near the middle, the margins broadly undulate; anterior lobe (15)22.5–40 cm long; the posterior lobes (3.5)5–6 cm long, (4)5–6 cm wide, directed downward and rounded at apex; sinus mostly triangular, rarely arcuate with the blade decurrent on petiole to shallowly triangular, 1–3 cm deep; both surfaces glossy, moderately bicolorous, drying yellowish brown to yellowish green; midrib convexly raised above, paler than surface, more prominently raised below; basal veins 3–4 pairs, all free to base, raised above and below; primary lateral veins 5–9 per side, departing midrib at 40–65° angle, straight to broadly arcuate, prominently raised and paler than surface above and below; interprimary veins almost as conspicuous as primary lateral veins; tertiary veins prominulous; reticulate veins raised; collective vein arising from near the apex or absent. *Inflorescences* spreading; peduncle 12–84 cm long, ca. 3–8 mm diam., 1.4–2.9 \times as long as petiole; spathe reflexed, subcoriaceous, green, lanceolate to linear-lanceolate, 3–10 cm long, 1–1.5 cm wide, broadest near the base, acuminate at apex (the acumen sometimes cuspidate, 6–7 mm long), acute to decurrent at base; stipe 15–17 mm long in front, 5 mm long in back; spadix brownish green to purplish brown, tapered, \pm erect to curved, 2–15 cm long, 5–6 mm diam. near base, 2–3 mm diam. near apex; flowers rhombic, 2.5–2.9 mm long, 1.4–2 mm wide, the sides straight to smoothly sigmoid; 5–6 flowers visible in principal spiral, 8–9 in alternate spiral; tepals weakly roughened; lateral tepals 1.3–1.7 mm wide, the inner margins broadly convex, the outer margins 2-sided; pistils pale green; stigma \pm ellipsoid, 0.3–0.4 mm long; anthers 0.3–0.4 mm long, 0.5–0.7 mm wide; thecae \pm ovoid, not at all or only slightly divaricate. *Infructescence* with spathe persisting; spadix to 17 cm long, to 2 cm diam.; berries orange-red, \pm ovoid to obovoid, 6–6.5 mm long, 4.5–6.2 mm diam.; seeds 1–2 per berry, brown with numerous pale raphide cells on the surface, 3.7–4 mm long, 1.7–2.8 mm diam., 1.2–1.8 mm thick.

Anthurium venosum is known only from Cuba and is apparently restricted to Piñar del Río Prov-

ince, especially around Viñales, where it occurs on limestone cliffs at less than 300 m.

This species is distinguished at once by its rather small, oblong-ovate leaf blades with conspicuous basal veins (3 to 4 pairs) and more or less rounded to shallowly cordate leaf bases, and brownish green, tapered spadix.

Anthurium venosum is a distinctive species within the section, but has been confused with other species in the West Indies. Most notable perhaps is a population of plants on Jamaica in St. James Parish at 700 m, which resembles both *A. mancutiense* C. D. Adams and the present species. This was reported by Adams (1972) for Jamaica based upon Proctor 7977 and Proctor & Stern 11748. Although these specimens look more like *A. venosum*, a re-collection (Croat 69757) proves that it belongs to neither species and probably represents a new species not belonging to sect. *Pachyneurium*.

CUBA. NO FURTHER LOCALITY: *Wright 3209* (MO, NY, US); Cultivated at Havana Botanical Garden, *Croat 69756* (MO). PINAR DEL RÍO: 250 m, *Rutten-Pekelharing & Gillavry 425* (B), *Hermann 3183* (NY, US); Mogote de la Baudera Viñales, *Leon 14378* (NY); Mogote de La Jagua, La Jagua, Consolación del Norte, *Roig & Asary 2540* (NY); San Vicente, Viñales, *Leon 22746* (US); Sumidero, *Shafer 13378* (A, BM, NY, US); Baños San Vicente, *Britton et al. 7314* (NY, US); Viñales, *Killip 13583* (US); Viñales, Mogote de Santo Tomás, *Arias s.n.* (MO); Sierra de Viñales, *Ekman 16539b* (NY, US).

Anthurium vinillense Bunting, *Phytologia* 64: 462–463. 1988. TYPE: Venezuela. Amazonas: Dept. Río Negro: hilly savanna, Serranía de Vinilla, ca 20 km SW of Mavaca, 2°26'N, 65°20'W, ca. 420 m, *Huber 6201* (holotype, VEN, isotypes, MO, NY). Figure 354.

Description based on dried material only. Usually terrestrial, sometimes epilithic, to ca. 35 cm tall; internodes short; cataphylls narrowly triangular, 5.5 cm long, narrowly acute at apex, drying reddish brown, the uppermost persisting semi-intact, promptly weathering to fibers. *Leaves* erect; petioles 3.2–5.2 cm long, less than 5 mm diam., C-shaped, weakly sulcate with raised margins and an obscure medial rib adaxially, rounded abaxially; sheathing to midway; 5.6–7.3 × as long as petiole; geniculum scarcely thicker and drying darker than petiole, ca. 0.5 cm long; blades coriaceous, elliptic to obovate-elliptic, acuminate at apex (the acumen short, with margins thickened and turned upward), acute to obtuse at base, 16–28 cm long, 4.3–9.5 cm wide, broadest at or slightly above the middle, 3–3.6 × longer than broad; upper surface incon-

spicuously punctate, lower surface densely dark glandular-punctate (those glands ca. 1.5 mm diam.); both surfaces drying yellow-green, glossy; midrib convexly raised on both surfaces; primary lateral veins 5–8 per side, departing midrib usually at ca. 10° angle from midrib, then spreading at 40° angle, moderately straight or weakly to markedly arcuate to the margin; collective vein lacking or arising from second to last primary lateral vein. *Inflorescences* erect, longer than leaves; peduncle 27–39 cm long, 5.6–7.3 × as long as petiole; spathe twisted, green, linear-lanceolate, to 6 cm long, 1 cm wide, thickened at base, inserted at 30° angle on peduncle, acuminate at apex (the acumen inrolled), decurrent for 7–10 mm at base, promptly drying and ultimately deciduous or nearly so; prominently and closely veined adaxially, densely purple-punctate adaxially (on surface and veins) with pale, short raphide cells; stipe 4–6 mm long; spadix green tinged with maroon, scarcely tapered at apex, erect, to 10.5 cm long, 5–6 mm diam.; flowers rhombic, 2–2.3 mm long, 1.6–1.9 mm wide, the sides moderately straight; 7–9 flowers visible in principal spiral; tepals obscurely pale-punctate; lateral tepals 1.6–1.9 mm wide, the inner margins broadly rounded, the outer margins 2-sided; pistils not at all exerted; stigma linear, 0.6 mm long; stamens held just above tepals in a tight cluster, inclined over and obscuring the pistil; anthers 0.4 mm long, 0.7 mm wide; thecae ovoid, moderately divaricate. *Inflorescence* with spathe withered, bearing berries in the basal fourth only; berries dark wine-red toward apex, paler to whitish in lower part, to 7 mm diam.; seeds 2 per berry, slightly flattened, 3.8 mm long, 2.6 mm diam.

Anthurium vinillense is endemic to Venezuela, known only from the type locality in the Serranía del Vinilla in southern Amazonas.

This species is characterized by its small size, short petioles that are sheathed to half their length, glandular-punctate, elliptic to subelliptic, coriaceous blades which dry with prominently raised reticulate veins on both surfaces, and dark wine-red berries.

Anthurium vinillense is closely related to both *A. xanthoneurum* and *A. bonplandii* subsp. *guayanum* and will perhaps prove to be only a subspecies of *A. bonplandii*. The type locality of *Anthurium vinillense* is a relatively remote and poorly explored area. *Anthurium bonplandii* subsp. *guayanum* has been collected in numerous localities to the north and south of the Serranía del Vinilla, but plants of subsp. *guayanum* are much