

larger and never have the reticulate veins prominently raised.

VENEZUELA. AMAZONAS: Dpt. Río Negro, ca. 20 km SW of Mavaca, 420 m, 2°26'N, 65°20'W, *Huber 6201* (MO, NY, VEN).

***Anthurium wagnerianum*** K. Koch & Bouché, *Ind. Sem. Hort. Berol. App.* 7. 1853. TYPE: Venezuela. Caracas, *Wagner s.n.* (Type destroyed; cultivated at Vienna; Schott illustrations 542–544 serve as lectotype). Figures 335–338.

*Anthurium huequeense* Bunting, *Phytologia* 60(5): 295. 1986. TYPE: Venezuela. Cultivated at Jard. Bot. Maracaibo, originally collected by van der Werff in Falcón: Dpto. Zamora, delta of Río Hueque, Coro-Morón Hwy., 100 km E of Coro, *Bunting 7704* (holotype, NY, isotypes, MO, VEN).

Terrestrial, often epilithic; stem short, 1.5–3.5 cm diam.; roots moderately numerous, ascending to descending, greenish gray, often fuzzy or woolly-pubescent, thick, blunt, to 15 cm long, 2–7 mm diam.; cataphylls subcoriaceous, broadly lanceolate, 3–7 cm long, acute at apex, yellowish green weakly tinged with red, drying brown to reddish brown, usually with visible raphide cells, persisting semi-intact, eventually as coarse linear fibers. *Leaves* erect to erect-spreading; petioles (4)6–25 cm long, drying (1)4–10 mm diam., subquadrangular to trapezoidal or D-shaped, flattened to broadly sulcate to obtusely V-sulcate adaxially, with the margins sharply to bluntly raised, rounded to 3-ribbed abaxially; geniculum paler and thicker than petiole, becoming fissured transversely with age, 0.5–1.5 cm long; blades subcoriaceous to coriaceous, narrowly to broadly elliptic or oblanceolate, acute to obtuse or rounded at apex (the acumen briefly cuspidate), acute to attenuate at base, (8)17–70 cm long, (4)6–30 cm wide, broadest at or above the middle, the margins conspicuously wavy, minutely undulate when dried; both surfaces matte to weakly glossy to semiglossy, dark to medium green above, slightly paler below, with linear raphide cells conspicuous on drying (especially below), occasionally with pustules on either surface; midrib flat to weakly angular at base, becoming narrowly acutely raised toward the apex above, prominently 3-ribbed to convexly raised at base, becoming convexly raised toward the apex below; primary lateral veins (3)4–7 per side, departing midrib at 30–65° angle,  $\pm$  straight then arcuate close to margin, prominently and narrowly convex above, less narrow and prominent below; interprimary veins few, especially in juvenile leaves,

obscure; tertiary veins sunken to obscure above, weakly raised and darker than surface below; collective vein arising from near the apex, weakly sunken above, somewhat raised and darker than surface below, 2–10 mm from margin. *Inflorescences* erect to spreading, shorter than leaves; peduncle 8–54 cm long, 4–6 mm diam., (1)1.5–3  $\times$  as long as petiole, medium green tinged reddish at base, terete; spathe spreading to reflexed, subcoriaceous to moderately coriaceous, plain green to tinged with red-purple, lanceolate to broadly lanceolate, sometimes ovate, 2–6 cm long, 0.5–2 cm wide, broadest at or near the middle, inserted at 80–90° angle on peduncle, acute to acuminate at apex (the acumen inrolled, 2–5 mm long), obtuse to decurrent at base; spadix creamy to green to gray-green at anthesis, becoming red to purple-violet post-anthesis, cylindroid to weakly tapered, sessile or stipitate 1–25 mm, mostly erect, sometimes slightly curved, held at 130–180° angle from peduncle, (1.5)4–12.5 cm long, 5–12 mm diam. midway; flowers mostly square to occasionally 4-lobed, (1.2)1.6–3.1 mm in both directions, the sides straight to smoothly sigmoid; 5–10 flowers visible in principal spiral, 5–8 in alternate spiral; tepals matte, very minutely papillate, with pale protuberances when dried; lateral tepals 0.8–1.8 mm wide, the inner margins straight to convex, often broadly so, the outer margins 2-, occasionally 3-sided; pistils early-emergent, semiglossy, densely and minutely papillate, bright green; stigma linear to ellipsoid, 0.2–0.3 mm long; stamens emerging from the base, the laterals preceding the alternates by 6–13 spirals, the 3rd preceding the 4th by 3–6 spirals, held above the tepals in a circle around the pistil; filaments not exerted when dried; anthers creamy, sometimes tinged with pink, 0.6–0.9 mm long, 0.6–1 mm wide; thecae oblong-ellipsoid, not at all or only slightly divaricate; pollen faintly spicy scented, pale yellow to creamy white fading to white. *Inflorescence* spreading to pendent; spathe persisting, green; spadix to 13 cm long, to 2 cm diam., with berries scattered throughout; berries red to purple, oblong to obovoid, acute to mammilliform at apex, 6–8.2 mm long, 3.2–4.5 mm diam.; pericarp thickened, with numerous raphide cells; seeds 2 per berry, broadly ellipsoid or oblong-ellipsoid, 3.2–5 mm long, 1.6–3 mm diam., 0.8–1.6 mm thick, attached to carpel wall at radicle end by a thick strand of fibers running midway down the carpel to the basal end of the fruit.

*Anthurium wagnerianum* is known from the Cordillera Costal in Venezuela and from Curaçao

in the Netherlands Antilles. It is found on steep, rocky cliffs and dry slopes, rarely reported from primary forest, from sea level to 600 m in tropical moist, tropical dry, and premontane dry forest life zones.

This species can be distinguished by the blades, which dry with pale raphide cells conspicuously visible under low magnification and with conspicuous undulations along the margin, and by the petiole, which is more or less quadrangular, adaxially flat to broadly sulcate, and abaxially usually squared or 3-ribbed. The spathe and spadix of *A. wagnerianum* are both quite small, and the spadix is cream-colored to green at anthesis, sometimes with the tepals faintly tinged with purple.

*Anthurium wagnerianum* is deceptively similar to *A. crassinervium* in habit, range, and leaf shape. The above-mentioned blade and petiole characteristics, however, aid in identification of dried specimens. Furthermore, dried abaxial leaf surfaces of *A. wagnerianum* do not demonstrate the highly light-reflective character nor the readily distinguished concentric epidermal cell pattern of *A. crassinervium* (see that species for more details). The spathe and spadix of *A. wagnerianum* are, moreover, quite short and stout in comparison with those of *A. crassinervium*. Both species have red berries basally attached to the spadix by tepalar fibers at maturity. *Anthurium wagnerianum*, however, has a drier berry upon rehydration, its seeds being attached to the inner carpel wall at its apical end by a thick strand of fibers running midway down the carpel toward the basal end of the fruit, as in *A. bonplandii*. *Anthurium crassinervium*, in contrast, has seeds attached to the rehydrated berry by a mucilaginous substance typically found in fruits of most members of sect. *Pachyneurium*. Another feature separating *A. wagnerianum* from *A. crassinervium* are the pistils which are earlier emergent at anthesis in *A. wagnerianum* than is true of *A. crassinervium*.

Bunting *et al.* 11993 is included in *A. wagnerianum* with reservation. It is reportedly an epiphyte from a wet forest life zone, with an adaxially convex petiole. All three of these characteristics conflict with the norm for *A. wagnerianum*. Its lower leaf epidermal characteristics, stubby spadix, and short spathe suggest that its placement in this species is, however, correct.

*Anthurium huequeense* was compared by Bunting (1986) with *A. crassinervium*, but is in fact conspecific with *A. wagnerianum* and cannot be distinguished from typical material of the latter.

NETHERLANDS ANTILLES. CURAÇAO: Christoffel Mountain, Tuinen 79GR00095 (K). VENEZUELA. CARABOBO: Puerto Cabello, 100 m, Curran & Haman 1140 (GH, US); Las Trincheras-El Cambúr, 1.5 km N of bridge over Río Trincheras, N edge of Las Trincheras, 0-500 m, 10°21'N, 68°05'W, Croat 54543 (CAS, F, MO, RSA, SEL, US), 54544 (GH, K, MO, NY); Puerto Cabello-Valencia, El Cambúr, Bunting 2848, 2854 (NY); 100-300 m, Bunting 13512 (cultivated at MO). DISTRITO FEDERAL: W of Naiguatá, 0 m, Gentry & Berry 14735 (MO); Río Las Caracas, above town of Las Caracas, 100 m, Croat 21620 (MO). FALCÓN: Sierra de San Luis, Piedra de Agua, 600 m, 11°08'N, 69°40'W, Liesner *et al.* 7634 (MO); Dtto. Acosta, Via Pílancones, 6 km of Mirimire, Ruiz & Rondón 3726 (MYA); Dtto. Colina, Río Ricoa, S of Las Dos Bocas, 200 m, 11°19'N, 69°24'W, Steyermark & Gonzales 113632 (MO); Dtto. Zamora, Delta of Río Hueque, Coro-Morón, 100 km E of Coro, 50 m, Bunting 7704 (cultivated; originally collected as *van der Werff* 3522) (MO, NY, VEN), Croat 71734 (MO). MIRANDA: Carenero-Chirimena, 2 km NW of Carenero, 0-5 m, Steyermark & Bunting 102313 (MO); Río Chuapaque, new road 1 km S of main road, S of El Guacuco, 7 km E of Cupira, 0-150 m, 10°09'N, 65°38'W, Liesner & Gonzalez 11906 (MO, WIS), 11917 (MO); Dtto. Brion, Laguna Grande, 0-30 m, 10°33'N, 66°04'W, Berry *et al.* 3740 (MO). ZULIA: Dtto. Mara, Río Guasare, near Destacamento Guasare No. 1 (La Yolanda), abajo del Destacamento, 200-250 m, Bunting *et al.* 11993 (MO).

***Anthurium watermaliense* hort. ex L. Bailey & Nash, Stand. Cycl. Hort. 1:303. 1922.**  
TYPE: Colombia. Not seen, introduced into horticulture via Watermall, Belgium. Neotype: Panama. Bocas del Toro: Changuinola-Almirante, Railroad Station Milla 7.5, less than 100 m, Croat 38129 (lectotype MO-2820846; isoelectotypes, CAS, F, MEXU, NY, PMA, S, SEL, UC, US). Figures 333, 334.

Terrestrial; stem to 25 cm long, (1)1.5-3 cm diam.; roots numerous, descending, velutinous, 3-4 mm diam.; cataphylls thin, 4.5-14 cm long, obtuse to acute at apex, persisting as coarse linear fibers. Leaves erect-spreading; petioles (12)25-60(88) cm long, ca. 4-5 mm diam., subterete, flattened to slightly and narrowly sulcate with blunt to rounded margins adaxially, rounded abaxially; geniculum, 1-1.5 cm long; blades moderately coriaceous, ovate-triangular, long-acuminate at apex, deeply lobed at base, 21-60 cm long, (14)20-40 cm wide; anterior lobe 20-45 cm long; the posterior lobes mostly oblong, (7)14-26 cm long, (3.5)5-10(16) cm wide, rounded at apex; sinus parabolic to hippocrepiform; both surfaces semiglossy; midrib convexly raised above and below; basal veins 5-8 pairs, 2nd through 8th coalesced