

elliptic to oblong-linear, long-acuminate to short-acuminate (rarely acute) at apex, attenuate to narrowly acute at base, (18)30–79 cm long, (3.2)4–7(11) cm wide, broadest at or near the middle, the margins flat, weakly revolute; upper surface semi-glossy, medium to dark green, lower surface glossy, much paler; midrib convexly raised at base, becoming acutely raised toward the apex above, prominently and acutely raised at base, becoming less pronounced toward the apex below; primary lateral veins 25–55 per side, departing midrib at 40–50° angle, straight to the collective vein, obscure and flat above and below; interprimary veins numerous, almost as conspicuous as primary lateral veins; tertiary veins drying visible; collective vein arising from the base, slightly more prominent than primary lateral veins, 4–6 mm from margin. *Inflorescences* erect-spreading; peduncle 20–45 cm long, 2–4 mm diam., 1.6–4(5.5)× as long as petiole, pale green, sometimes tinged purplish, subterete to 3–4-ribbed; spathe spreading, rarely reflexed, thin, green to pale green, sometimes tinged with purple at margins, lanceolate-elliptic to linear-lanceolate, (2.5)3–7 cm long, 0.7–1.7 cm wide, broadest near the base, short-acuminate at apex (the acumen somewhat inrolled), acute at base; stipe 2–13 mm long in front and in back; spadix medium green (B & K yellow-green 7/5) to pale green, cylindroid, scarcely tapered, curved, (1.7)4–11(15) cm long, 3–6 mm diam. near base, 2–3 mm diam. near apex; flowers 4-lobed; 2–3 mm in both directions, the sides jaggedly sigmoid, 3–5 flowers visible in principal spiral, 5–7 in alternate spiral; tepals matte, weakly and minutely papillate, droplets present at anthesis; lateral tepals 1–1.8 mm wide, the inner margins straight to broadly rounded, the outer margins irregularly 3–5-sided; pistils weakly raised, green; stigma depressed, 0.2–0.4 mm long; stamens emerging in prompt sequence from the base, the laterals preceding the alternates by 3–11 spirals, held in a tight cluster above the pistil; filaments translucent, 0.4 mm long, 0.5–0.7 mm wide; anthers creamy white, 0.6–0.7 mm long, 0.7–0.9 mm wide; thecae ellipsoid to ovoid, scarcely divaricate; pollen pale yellow fading to white. *Infructescence* erect to pendent; spathe persisting, green, or absent; spadix 7–16 cm long; berries green becoming purplish to purple-black, obovoid-ellipsoid, quadrangular at apex, 6 mm long, 5 mm diam.

A member of series *Multinervia*, *Anthurium obscurinervium* is endemic to the Pacific slope of Ecuador, at 50 to 1,330 (2,000) m, in premontane moist, premontane dry and premontane wet forest.

This species is characterized by its more or less oblong leaf blades with the primary lateral veins obscure when fresh and obscure to weakly raised on drying (hence the name), green spadix with exerted stamens, and orange berries.

Anthurium obscurinervium is most similar to *A. carchiense*, which differs in having a brownish spadix and purple to purple-black fruits.

ECUADOR. BOLIVAR: Charquiayacu, 600 m, *Solis 6114* (F). CAÑAR: Azogues–El Triunfo, 2 km S of Hwy. at Cedro Pampa, 800–1,000 m, 2°25'S, 79°10'W, *Croat 50914* (AAU, BM, G, K, LL, M, MICH, MO, NY, QCA, RSA, SEL, US). CARCHI: Guapli Chico, near Awá encampment, 1,300 m, 0°58'N, 78°16'W, *Hoover et al. 2658* (MO). COTOPAXI: Río Pílaló, Quevedo–Latacunga, 950–1,100 m, 0°53'S, 79°10'W, *Holm-Nielsen et al. 3076* (AAU). EL ORO: 11 km W of Piñas, new rd. to Santa Rosa, 850 m, *Dodson et al. 9033, 9037* (MO, SEL); Machala–Loja, 25 km SE of jct. to Piñas, 890 m, 4°15'S, 79°45'W, *Croat 50715* (CM, MO, NY, SEL, US, TEX). GUAYAS: Naranjal–Machala, 13 km S of Naranjal, 50–150 m, *Harling & Andersson 19301* (GB, MO). LOS RÍOS: Alta Centinela, 29.5 km W of Patricia Pilar, 450–475 m, 0°33'S, 79°22'W, *Croat 50664* (AAU, MO, NY, RSA); Patricia Pilar–24 de Mayo, Centinela, *Dodson et al. 8703* (MO, SEL); Río Blanco, Santo Domingo de Los Colorados–Esmeraldas, Villa Hermosa, 3 km S of Km 24, 250 m, 0°5'S, 79°15'W, *Croat 50694A* (MO). PICHINCHA: 27 km S of San Juan, 12 km NE of Chiriboga, 2,000 m, 0°17'S, 78°42'W, *Croat 50606A* (IBE, K, MO, NY, RSA, US, VDB).

Anthurium oerstedianum Schott, Oesterr. Bot. Z. 8: 180. 1858. TYPE: Costa Rica. Near Naranjo, *Oersted s.n.* (lectotype, illustrated by Schott, *Aroideae* 328). Figures 205, 206.

Anthurium cuspidifolium Schott, Oesterr. Bot. Z. 8: 180. 1858. TYPE: Costa Rica, *Oersted s.n.* (lectotype, illustrated by Schott, *Aroideae* 314).

Terrestrial; stem to 30 cm long, 2–4 cm diam.; leaf scars, 0.8–1 cm high, 2–2.5 cm wide; roots moderately numerous, descending, tan, smooth, short, moderately thick, slightly tapered, 3–5 mm diam.; cataphylls subcoriaceous, 7–13 cm long, acute at apex and with subapical apiculum, medium green, drying brown, persisting intact, eventually deciduous. *Leaves* erect to spreading; petioles (12)30–73 cm long, 5–7 mm diam., quadrangular to subterete, flattened to weakly and broadly sulcate adaxially, sharply to bluntly 1–3 ribbed abaxially, the surface minutely pale-speckled; geniculum remote from the base of the blade 10–20 cm, 1.5–2 cm long; blades subcoriaceous, ovate to narrowly ovate or lanceolate, long-acuminate at apex, abruptly attenuate then acute to obtuse to truncate or subcordate at base, 20–66 cm long, 8.5–30 cm wide, broadest at or near the middle, the mar-

gins undulate; upper surface matte to weakly glossy, medium green, lower surface semiglossy to glossy, paler; midrib bluntly angular-raised above, below prominently higher than broad at base, becoming angular-raised toward the apex and paler than surface; primary lateral veins 11–20 per side, departing midrib at 40–60° angle, broadly arcuate, sunken to weakly raised in grooves above, prominently convexly raised below; interprimary veins almost as conspicuous as primary lateral veins; tertiary veins sunken above, raised below; collective vein arising from near the base, sunken above, raised below, equally as prominent as primary lateral veins, 2–8 mm from margin. *Inflorescences* erect, longer than leaves; peduncle (30)70–130 cm long, equal to 1.2–1.5× as long as petiole; spathe pale green, ovate-lanceolate, 8–13 cm long, 2.5–4.8 cm wide, inserted at 45° angle on peduncle, acuminate at apex, rounded at base; spadix pale green, moderately tapered, 5–12 cm long, ca. 9 mm diam. near base, ca. 6 mm diam. near apex; flowers sub-rhombic to 4-lobed, 1.7–2.5 mm long, 2–2.7 mm wide, the sides straight to sigmoid; 8–9 flowers visible in principal spiral, 12–18 in alternate spiral; tepals matte, minutely and densely papillate; lateral tepals 1.4–1.8 mm wide, the inner margins straight; pistils weakly emergent, green; stigma 0.4 mm long, weakly exerted and brush-like, droplets appearing 3–4 days before stamens emerge; stamens emerging in a scattered pattern, held against the pistil; filaments fleshy, greenish, translucent; anthers creamy white, 0.5–1 mm long, 0.6–1.1 mm wide; thecae ellipsoid, not divaricate; pollen yellow fading to creamy white, abundant.

Anthurium oerstedianum is endemic to Costa Rica at 800 to 1,300 m, principally on the south-western, Pacific slope in premontane wet, tropical wet, and premontane rain forest.

This species is distinguished by its strictly terrestrial habit as an understorey forest herb and by its geniculum, which is located 10–20 cm below the base of the blade. Other distinguishing features are its four-sided petiole and greenish spadix. This species is a somewhat atypical member of sect. *Pachyneurium* because of its elongate petioles, remote geniculum, and lack of a dense, rosulate habit. It is apparently not closely related to any other species.

Anthurium cuspidifolium, which is synonymous with *A. oerstedianum*, was reported by Macbride (1936) from Peru. However, the specimens cited by him (*Macbride* 5622 (F); *Schunke* 572 (F)) are referable to *A. flavescens* Poeppig.

The Cartago collection locality cited by Schott

in the type description is dubious because no modern collection of this species has been made from anywhere on the Atlantic slope. Since Schott mentions only "Naranjo," perhaps the collection refers to the Río Naranjo on the Pacific slope where it easily could have occurred.

COSTA RICA. CARTAGO: vic. Naranjo, *Oersted s.n.* (illustrated by Schott, Aroideae 328). PUNTARENAS: 6 km S of San Vito de Java, Wilson's finca, 1,330 m, *Raven* 20922 (MO); Las Cruces Botanical Garden, along road to river below botanical garden, 1,300 m, *Croat* 44415 (MO); Osa Peninsula, Corcovado, *Gilbert s.n.* (MO). SAN JOSÉ: San Isidro de General—coastal town of Dominical, SW of San Isidro, 900–1,000 m, *Croat* 35267 (MO, NY), 35293 (MO); 0.5 mi. above turnout to Canaán at Rivas, 900 m, *Croat* 43419 (MO); El General, 1,010 m, *Skutch* 2291 (MO); Cerro Pelón, N base, just E of main road, 0.5 km S of San Martín de Puriscal, 800 m, 9°44'N, 84°23'W, *Grayum & Baker* 4693 (B, CR, MO); Río Chirripó del Pacífico, Canaán—Chimiro, General Valley, 1,000 m, *Burger & Liesner* 7124 (MO).

***Anthurium ottonis* K. Krause, Notizbl. Bot. Gart. Berlin-Dahlem XI: 609. 1932. TYPE: Bolivia. La Paz: Prov. Sud Yungas: Jirupaysi, near Yanacachi, *Buchtien* 387 (holotype, B). Figures 209, 210.**

Terrestrial; stem moderately slender, to at least 11 cm long, 0.8–1.5 cm diam.; roots moderately numerous, spreading, green, drying grayish to pale brown, ± villous, especially when young, elongate, somewhat tapered, sometimes branching, ca. 3–25 cm long, 2–8 mm diam.; cataphylls subcoriaceous, lanceolate to broadly lanceolate, 7–13 cm long, acute to rounded at apex, yellow-green, tinged with red, drying brown to reddish brown (B & K yellow-red 4/10), persisting intact to semi-intact, rarely as fine linear fibers, eventually deciduous. *Leaves* erect to spreading; petioles 22–42 cm long, 3–6 mm diam., erect to erect-spreading, subterete to broader than thick, bluntly and shallowly sulcate adaxially, rounded abaxially, the surface prominently pale-speckled; geniculum much paler and somewhat thicker than petiole, becoming fissured transversely with age, 0.5–2 cm long; blades coriaceous, linear-oblong, narrowly acute and mucronate at apex, acute to obtuse to narrowly rounded at base, 38–60(100) cm long, 2.2–7 cm wide, broadest at or near the middle (12.6–17.6× longer than the petiole), the margins flat to somewhat undulate; upper surface matte to weakly glossy, dark green, lower surface matte, conspicuously paler; both surfaces drying matte, green to yellowish green; midrib convexly raised, paler than surface above, pale-speckled like petiole, higher than broad at base, becoming prominently convex to