

240 m, 0°06'N, 76°33'W, *Croat 58610* (BM, MO, QCA, US, W); rd. to Agua Pungo, Tena, 1.5 km past bridge over Río Mishahuallí, 550 m, 0°59'S, 77°47'W, *Croat 58825* (MO); Estación Biológica Jatún Sacha, 8 km E of Mishahuallí, 450 m, *Palacios 2863* (MO); Parque Nacional Yasuni, 200 m, 0°55'S, 76°11'W, *Cerón & Hurtado 4012* (MO); Cantón Aguariño, lagunas de Garza Cocha, 200 m, *Cerón & Gallo 4953* (MO, QCNE); Cantón Tena, headwaters of Río Huambuno, 6 km NNW of Ahuano, 440 m, 1°00'S, 77°40'W, *Kohn 1155* (MO); Río Aguariño, E of Lago Agrio, road to Cepe Ferry Crossing, 450 m, 0°02'N, 76°50'W, *Croat 50427* (MO), *58513* (MO, P, QCA); Santa Cecilia, 200 m, 0°04'N, 76°58'W, *Sparre 13043* (S); Río Lagartococha, Redondo Cocha, 190 m, 0°35'S, 75°15'W, *Lawesson et al. 44424* (AAU). PASTAZA: Río Curaray, Lagunas Patoamo, 230 m, 1°30'S, 76°30'W, *Palacios & Neill 762* (MO, NY, QAME). PERU. AMAZONAS: Río Cenepa, *Croat 57196* (MO); Río Santiago, La Poza, 400 m (180 m), *Huashikat 150* (MO); Río Santiago, Quebrada Caterpiza, 2–3 km behind community of Caterpiza, 200 m, 3°50'S, 77°40'W, *Tunqui 784* (MO). LORETO: vic. Yanamono, Explorama Camp, 130 m, 3°28'S, 72°50'W, *Croat 61760* (AMAZ, MO), *66057* (MO); Prov. Alto Amazonas, Río Pastaza, Uchipayaco–Rimachi, 4°20'S, 76°40'W, *Díaz et al. 1287* (MO); Prov. Loreto, Pucayacu, native community of Shimaco–Urarina, *Vásquez 6033* (MO); Prov. Maynas, Iquitos Region, Río Itaya, 10 km above Iquitos, *Croat 19151* (MO); Quebrada de Bo, ca. 90 m, *Rimachi 6490* (IBE); Río Maniti, Recreo, NE of Iquitos, 115 m, 3°42'S, 72°50'W, *Vásquez & Jaramillo 1123* (MO); Río Momón, tributary of Río Nanay, Iquitos, *Davidson & Jones 9802* (LAM); Sucusari, 116 m, 7°25'S, 3°20'S, *Vásquez & Jaramillo 8247* (MO); 11 km from Río Nanay, near Iquitos, Quebrada Momoncillo, 200 m, 3°43'S, 73°20'W, *Croat 51224* (COL, F, GH, M, MBM, MO, NY, SEL, U), *Davidson & Jones 9517* (LAM); Río Amazonas, Quebrada Panguanillo, Aucayo, 90 m, *Rimachi 6041* (IBE); Río Taeschurarray, tributary of Río Napo, 2°40'S, 73°30'–74°20'W, *Croat 20380* (MO). SAN MARTÍN: Tarpato–Yurimaguas, Km 54, Lamas, 350 m, 6°23'S, 76°18'W, *Knapp 8262* (MO).

***Anthurium penningtonii* Croat, sp. nov. TYPE:**

Ecuador. Napo: between Quito & Baeza, S of road above jct. of road to Baeza & to Lago Agrio, 1,800 m, *Croat 58491* (holotype, MO 3183150; isotypes, QCA, VEN, RSA, K, US). Figures 235, 236, 256, 257.

Planta terrestris aut raro epiphytica; internodia brevia, 1–3 cm diam., cataphyllum lanceolatum, persistens semi-intactum mox fibris stramineis fensis; petiolus 11–31 cm longus, 4–8 mm diam., subteres ad triangularis; lamina late elliptica, raro oblanceolata, 35–61 cm longa, 10–19 cm lata; nervis primariis lateralibus 24–43 utroque, acute elevatis; pedunculus 21–52 cm longus, 3–4 mm diam.; spadix viridis, 2.5–5.5 cm longus, 3–5 mm diam.

Terrestrial, rarely epiphytic; stem to 50 cm long, 1–3 cm diam.; roots dense, drying whitish to tan, moderately elongate; cataphylls thin, lanceolate, 6–13 cm long, acuminate at apex, drying reddish brown, persisting semi-intact, quickly weathering

to straw-colored fibers. *Leaves* erect-spreading; petioles 11–31 cm long, 4–8 mm diam., subterete to triangular, flattened to broadly convex adaxially, sometimes with the margins sharp, rounded or sharply 1-ribbed abaxially; geniculum slightly paler and scarcely thicker than petiole, (0.6)1–3 cm long; sheath 1.5–3 cm long; blades coriaceous to subcoriaceous, broadly elliptic, rarely somewhat oblanceolate, shortly acuminate at apex, acute to narrowly acute at base, 35–61 cm long, 10–19 cm wide, broadest near the middle, the margins flat to slightly revolute; upper surface weakly glossy to semiglossy to glossy, dark to medium green, lower surface semiglossy, conspicuously paler; midrib convexly raised at base, becoming sharply acute toward the apex above, slightly paler than surface, acutely raised below; primary lateral veins 24–43 per side, departing midrib at 40–60° angle, straight to the collective vein, usually prominently and sharply raised above, flat to sunken below; interprimary veins almost as conspicuous as primary lateral veins; tertiary veins obscure, prominulous above and below on drying; reticulate veins not visible; collective vein arising from the base, equally as prominent as primary lateral veins, 10–15 mm from margin. *Inflorescences* erect; peduncle 21–52 cm long, 3–4 mm diam., 1–2.2× as long as petiole, green to purple, terete, sometimes with many weakly to prominently raised striations; spathe reflexed or rarely spreading, subcoriaceous, green, usually tinged with purple, oblong-lanceolate, 3.5–7 cm long, 0.6–1.3 cm wide, broadest near the base, acute to abruptly acuminate at apex, acute at base; spadix green, usually tinged with purple to purplish brown, sessile or stipitate to 2 mm, scarcely tapered, erect, 2.5–5.5 cm long, 3–5 mm diam. midway, 3–4 mm diam. near apex; flowers square to rhombic, 1.4–2 mm long, 1.4–1.8 mm wide, the sides straight; 5–9 flowers visible in principal spiral, 4–6 in alternate spiral; tepals matte, minutely papillate; lateral tepals 1.1–1.2 mm wide, the inner margins rounded, the outer margins 2-sided; pistils emergent, glossy; stamens exerted; anthers pink-orange, 0.4–0.5 mm long, 0.5 mm wide; thecae oblong-ellipsoid, slightly divaricate; pollen pale orange fading to white. *Infructescence* erect; spathe persisting; spadix 8–10 cm long, 1.3–1.7 cm diam., with berries scattered throughout; berries (immature) green, emergent ca. halfway, obovoid, shortly beaked at apex on drying, ca. 6.5 mm long, ca. 4 mm diam.; pericarp with raphide cells; seeds 2 per berry, oblong-obovoid, flattened, beaked at apex, 4–4.5 mm long, 2.5–2.7 mm wide, 1.5–1.8 mm thick, with a gelatinous appendage at one end.

A member of series *Multinervia*, *Anthurium penningtonii* ranges from the Amazon slopes of Ecuador to northern Peru on both slopes of the Cordillera Oriental and the Cordillera Central at elevations of (800)1,000 to 2,500 m. The species is ecologically variable. In Ecuador it is known from premontane moist, premontane wet, lower montane moist, and lower montane wet forest life zones, while in Peru it is known from premontane rain and montane rain forest life zones.

This species is distinguished by its broadly elliptic, green-drying leaf blades with sharply raised (knife-edge) major veins, and by its rather remote collective vein (1–1.5 cm from the margin).

Anthurium penningtonii is not confused with any other species on the eastern side of the Andes, but *A. pallatangense*, from the Pacific slope of Ecuador, is very similar, differing mainly in its dark purple to maroon spadix. It occurs in drier life zones as well.

Some material from Morona-Santiago (*Stein 2826*, *Madison et al. 3457*, *Madison 2605*) has sharply triangular petioles. Considering the variation in the vicinity of Baeza alone (petioles terete to flattened adaxially and sometimes sharply 1-ribbed abaxially, sometimes with the margin sharp on one side), these collections are best placed in *A. penningtonii* and agree well in other characters. Another collection from Morona-Santiago (*Steyermark 53610*) differs in having the leaf blades attenuate at the base, rather than acute to narrowly acute. More collections from southern Ecuador and northern Peru are needed to determine the range of variability in this taxon.

The new species is named in honor of T. D. Pennington, a member of the 1960 Oxford University expedition to Ecuador and one of the first collectors of this species.

ECUADOR. MORONA-SANTIAGO: Limón (General Plaza)-Macas, 8 km N of Limón, 1,100 m, 2°57'S, 78°25'W, *Stein 2826* (B, K, MO, QCNE, US); 7–8 km N of Gualaquiza on road to Indanza, 1,450 m, *Harling & Andersson 24199* (GB, MO); Tumbéz-Tucumbatz, Km 20 on road Gualaquiza-Indanza, 1,600 m, *Harling & Andersson 24360* (GB); Cordillera de Cutucu, Rio Chihuasi, 25 km SE of Lagrono, 800–1,000 m, *Madison 2605* (SEL); Lagrono-Yaupi, 1,600 m, 2°46'S, 78°06'W, *Madison et al. 3457*, 3502 (SEL); Rio Tintas, Campanas-Arenillas, 10 leagues SE of El Pan, 2,195 m, *Steyermark 53610* (US, NY). NAPO: Lago Agrio-Baeza, 1,940–2,000 m, 0°15'S, 77°45'W, *Oellgaard et al. 35767* (AAU); Quito-Baeza, S of rd. above jct. of rds. to Baeza & Lago Agrio, 1,800 m, *Croat 58491* (K, MO, QCA, RSA, US, VEN); Lago Agrio-Baeza, 32.8 km E of Baeza turn-off, 1,840 m, 0°17'S, 77°46'W, *Croat 58730* (B, CM, MO, QCA); Baeza-jct. of road to Lago Agrio, 2,500 m, *Croat 49439* (MO, NY, QCA); Baeza-Tena, 37.7 km S of Baeza, 59 km N of Archidona, 1,700 m, 0°36'S,

77°51'W, *Croat 58781* (CAS, MO, QCA); Cantón Archidona, Carretera Hollín-Loreto, Km 50, Guagua Sumaco, 1,000 m, *Cerón & Hurtado 6565* (MO); Km 25, Challua Yacu, 1,200 m, *Cerón & Hurtado 6455* (MO); Baeza-Lago Agrio, 19.7 km NE of El Chaco, 39 km NE of jct. of road to Tena, 1,750 m, *Croat 58529* (MO, QCA); Rio Oyacachi, 1,620 m, 0°20'S, 77°55'W, *Croat 50297* (M, MO); Km 142, 1,800 m, *Croat 49454* (IBE, MO, NY); Cerro Antisana, 1 mi. NE of Borja, NE of Baeza, 1,850 m, 0°25'S, 77°50'W, *Grubb et al. 1267c* (K); Cordillera de Guacamayos, S slope, Baeza-Tena, above Jondachi, 1,500 m, *Harling & Andersson 16342* (AAU, MO); Volcán Sumaco, Cotundo-Coca, 15 km E of Baeza-Tena road, 1,300 m, 0°40'S, 77°40'W, *Palacios & Neill 1559* (MO). TUNCURAHUA: Rio Negro, 1,200 m, 1°24'S, 78°13'W, *Harling & Andersson 17240* (GB). ZAMORA-CHINCHIPE: La Saquea-Yacuambi, 1 km N of Chapintza road, 1,100 m, *Harling & Andersson 23868* (GB). PERU. AMAZONAS: Serranía de Bagua, 17 km E of La Peca, 1,850–1,900 m, *Gentry et al. 22969* (MO); Prov. Bagua, 20 km on trail E of La Peca, 2,190 m, *Barbour 2735*, 2746 (MO). CAJAMARCA: Cutervo, San Andrés de Cutervo, Parque Nacional de Cutervo, between Saucedal and Chorro Blanco, 2,250 m, *Díaz & Osores 2932* (MO, USM); between Saucedal and Pajonal, 2,300 m, *Díaz & Osores 2979* (MO, USM). SAN MARTÍN: Moyobamba-Chachapoyas, Km 380, E of Rio Nieva, 1,750 m, 5°44'S, 77°32'W, *Croat 58215* (MO, USM); Rioja-Pomacocha, Km 291, Venceremos, 1,850 m, 5°45'S, 77°40'W, *Gentry et al. 45504* (MO).

Anthurium plowmanii Croat, *Candollea* 42(2): 811–813. 1987. TYPE: Brazil. Amazonas: Mpo. Manaus, Chacaras de Taruma, 16 km NW of Manaus, 60 m, 2°51'S, 59°50'W, *Croat & Nelson 53563* (holotype, INPA; isotypes, B, G, K, IBE, MO, NY, RSA, US). Figures 237–239, 240, 258.

Epiphytic or epilithic; stem 10–30 cm long, 2.5–6 cm diam.; leaf scars ca. 4 cm wide; roots dense, ascending or descending, whitish green, shortly pubescent, short or elongate, tapered, 4–6 mm diam.; cataphylls coriaceous, 5–20(27) cm long, obtuse to acute at apex, drying reddish brown (B & K yellow-red 4/5), persisting as a reticulum of fibers, the epidermis drying thin and flaking off, revealing the thin, reddish brown, hairlike fibers beneath. *Leaves* erect to spreading, reported to 2 m long; petioles (7.5)10–40(50) cm long, 4–20 mm diam., U- to C-shaped, narrowly and obtusely sulcate adaxially with the margins blunt, rounded to rarely 1–2-ribbed abaxially, the surface pale-speckled; geniculum thicker than petiole, becoming fissured transversely with age, 0.5–2 cm long; sheath ca. 3 cm long; blades coriaceous, obovate to oblanceolate or elliptic to broadly elliptic, acuminate to obtuse at apex (the acumen inrolled or downturned), acute to attenuate (rarely long-attenuate), or obtuse at base, (24)40–125(200) cm