

MEXICO. GUERRERO: 2–3 km N of Zihuatanejo, near sea level, Haager s.n. (MO, MEXU, PR).

Anthurium schlechtendalii Kunth, Enum. Pl. 3: 75. 1841.

a. **Anthurium schlechtendalii** subsp. **schlechtendalii**. TYPE: Mexico: Hacienda de La Laguna, Schiede & Deppe s.n. (not seen). Figures 278, 285, 286.

Anthurium mexicanum Liebm., Vidensk. Meddel. Dansk Naturhist. Foren. Kjøbenhavn 1: 21. 1849. TYPE: Mexico. Veracruz: between Colipa & Misantla (not seen).

Anthurium kunthianum Liebm., Ann. Sci. Nat. Bot. ser. 4, 2: 372. 1854. TYPE: Mexico (no type cited).

Anthurium brachygonatum Schott, Prodr. Aroid. 1860. TYPE: Mexico. Veracruz: Córdoba, Kerber s.n. (holotype, B).

Anthurium tetragramon Hook. ex Schott, Prodr. Aroid. 475. 1860. TYPE: locality unknown, Schott Aroid Drawing #541 (Schott Aroideae 541 serves as type).

Anthurium fortinense Engl., Bot. Jahrb. Syst. 25: 366. 1898. TYPE: Mexico. Veracruz: Fortín, Kerber 9b (holotype, B).

Anthurium tikalense Lundell, Wrightia 3:161, fig. 55. 1966. TYPE: Guatemala. Petén: Tikal National Park, on temple in Group "H," Mar. 1961, Lundell 18198 (holotype, LL).

Epiphytic or epilithic; stem usually short, but reported to 40 cm long, 2.5–5.5 cm diam.; leaf scars obscured by root mass, to 4.2 cm wide; roots numerous, dense, ascending to descending, greenish to tan, smooth, short to moderately elongate, tapered, 3–8 mm diam.; cataphylls moderately coriaceous, curved, 7.5–16 cm long, caudate-apiculate at apex, drying brown, initially persisting intact, but eventually as a reticulum of fibers. Leaves erect; petioles (2.5)10–23 cm long, 4–20 mm diam., quadrangular to trapezoidal, rarely D-shaped or terete, mostly widest adaxially, flattened to shallowly sulcate and with sharp margins adaxially, sharply to bluntly ribbed abaxially, rarely rounded; geniculum somewhat thicker and paler than petiole, 1–2 cm long; blades coriaceous, obovate-elliptic to broadly oblanceolate, acute to short-acuminate at apex (the acumen apiculate), acute to obtuse at base, (16.5)30–140(175) cm long, (4.5)10–60 cm wide, broadest near or above middle, the margins prominently undulate; both surfaces matte to semi-glossy, medium green above, paler below, drying greenish; midrib flat to weakly raised at base, becoming more acute (sometimes weakly ribbed), diminishing and sunken at apex above, raised and square at base below, convexly raised at apex; primary lateral veins 15–16 per side, departing midrib at 50° angle, straight almost to the margin,

then arcuate toward the apex, sharply to convexly raised and paler than surface above and below; tertiary veins flat, scarcely visible above, darker than surface below; collective vein arising from near the apex, sunken above, raised below, 2–5 mm from margin. Inflorescences erect to spreading, sometimes pendent, shorter than leaves; peduncle 10–43 cm long, (4)6–13 mm diam., 1.6–7.4× as long as petiole, plain green or tinged with violet-purple, terete to weakly flattened and ribbed; spathe spreading to strongly reflexed, coriaceous, plain green or heavily tinged with violet-purple to red or entirely purple, narrowly triangular to lanceolate, (8)10–28 cm long, (0.7)1.5–5 cm wide, inserted at 70° angle on peduncle, acuminate at apex (the acumen inrolled), obtuse at base; spadix green to gray to brown to red to purplish violet, tapered, curved, (5.5)8–29 cm long, (7)17–20 mm diam. near base, 4–6 mm diam. near apex; flowers square, (2)2.2–2.6 mm in both directions, the sides straight to weakly sigmoid; 7–17 flowers visible in principal spiral, 10–14 in alternate spiral; tepals matte, purplish punctate; lateral tepals 1–1.3 mm wide, the inner margins convex and turned up against pistil; pistils emergent to 1 mm, dark purple to brown; stigma linear, 0.8 mm long, droplets appearing ca. 4 days before stamens emerge; stamens emerging rapidly from the base, lateral stamens emerging to midway before alternates emerge; filaments translucent, soon retracting, 0.2–0.5 mm long, 1 mm wide; anthers yellow to pale orange, 0.9 mm long in both directions, inclined over the pistil; thecae ± oblong, scarcely divaricate; pollen orange fading to cream, yeasty-scented at anthesis. Inflorescence arching-pendent; spathe persisting; peduncle to 4 cm diam.; spadix 15.5–65(80) cm long, 4–6(9) cm diam.; berries bright red, obovoid to oblong to ellipsoid, rounded to acute at apex, 10–29 mm long, (5)6–7 mm diam.; pericarp thickened; mesocarp pulpy, white, with numerous raphide cells; seeds 2 per berry, greenish white, ovoid to oblong, flattened, 3–6 mm long, 1.5–3 mm diam., 1–1.5 mm thick, astringent to taste.

Anthurium schlechtendalii consists of two subspecies. Subspecies *schlechtendalii* ranges from Mexico (central Veracruz) to Nicaragua on the Atlantic slope, from near sea level to 1,600 m (most common below 1,000 m) in various life zones.

Anthurium schlechtendalii is characterized by its trapezoidal to quadrangular petioles, coriaceous spathe, tapered spadix, and bright red berries.

This taxon is most easily confused with *A. schlechtendalii* subsp. *jimenezii*, from the Pacific slope of Mexico, which differs by occurring in sea-

sonally drier habitats, and in its generally smaller leaves and frequently narrowly ovate, usually erect spathe. *Anthurium schlechtendalii* subsp. *schlechtendalii* may be confused with *A. upalense* in Nicaragua, where they both occur. See the discussion under that species for differences.

Anthurium schlechtendalii merges into the range of *A. salviniae* only in a few areas in the mountains of southeastern Chiapas, such as on Monte Ovando. Specimens collected in the municipios of Siltepec, Escuintla, and Acacoyagua tend to have leaf blades approaching the texture of those of *A. salviniae*, but the inflorescences and cataphylls are those of typical *A. schlechtendalii*. See the discussion following *A. salviniae* for separation characters for these two taxa.

In discussing Mexican aroids, Bunting (1965) included an illustration of a plant cultivated at Cornell University and reputedly collected by H. Moore in Mexico. This is almost certainly *A. crenatum* (L.) Kunth and perhaps represents a mixing of labels in the greenhouse. Two vouchers presumably prepared from this plant (Bunting 1579 and Nicolson 603) tend to confirm this notion. *Anthurium crenatum*, as far as is known, is restricted to Puerto Rico and the Virgin Islands.

Studies of populations of *A. schlechtendalii* in Mexico and elsewhere show most morphological characters to be variable. The petioles, although usually trapezoidal in cross section with the angles moderately acute, may be broadly rounded abaxially, such as those illustrated by Schott for *A. brachygonatum* (see Schott drawing No. 473 (W)). Although Bunting (1965) considered the latter distinct from *A. schlechtendalii*, it is here believed to be one form of this unusually variable species.

BELIZE. NO FURTHER LOCALITY: Schipp S402 (MICH, MO, NY, UC); Camp Cuello, Lincole 36 (MO). BELIZE: Bartlett 11325 (MICH); Gracie Rock, 1.1–4 mi. S of mi. 22 on Western Hwy., 100 m, Croat 23851, 23896 (MO), Liesner & Dwyer 1472 (MO); Northern River, Gentle 1291 (F, K); Western Highway, Gracie Rock, Whitefoord 3171 (BM). CAYO: Chanek 53 (MICH, MO); W of Hummingbird Hwy. at point 7 mi. S of jct. with Western Hwy., Line Transect 1, 90 m, Spellman & Newey 1984 (MO); Waterhole camp, Vaca, Gentle 2567 (MICH); ca. 10 km SW of San Ignacio, Ix Chel Farm, along Panti Trail, 17°6'N, 89°0'W, Balick et al. 1794 (MO); Mt. Pine Ridge, Blancaneaux Lodge, Dwyer 12658 (MO); Rio de La Flor, 6 mi. S of Grano de Oro, La Flor, 570–670 m, Croat 23811 (MO). COROZAL: Arnason & Lambert 17186 (MO), Gentle 597 (MICH); Tiger Savana, 12 km W of Little Belize, 10 m, 18°11'N, 88°17'W, Davids & Brant 32604 (CM, M, MICH, MISSA, MO, PMA, RSA). ORANGE WALK: Orange Walk-San Pablo, Sutton et al. 130 (BM, MO); 5 km N of August Pine Ridge, road to Trinidad, 100 m, Davidse & Brant 32792 (MO, RSA). TOLEDO: Moffredye Lagoon, Gentle 5372 (LL,

TEX); Rideau Camp, 40 m, Whitefoord 1801 (BM); Salamanca, 40 m, Whitefoord 1968 (BM); 1.5 mi. S of Mayan village of San José, 5 mi. W of Colombian Forest Station, Croat 24297, 24333 (MO); 6.7 mi. N of Columbia Forest Station, Croat 24431 (MO), Vanderveen 658 (MO); Maya Mts., Boutin & Schlosser 5144 (MO); vic. of junction of Richardson Creek and Bladen Branch, 80–420 m, 16°32'N, 88°45'W, Davidse & Brant 32025 (K, MO, NY, US); Rio Grande, Gentle 4723 (TEX). GUATEMALA. ALTA VERAPAZ: Tucurú-El Estor, above Papalha, 15 mi. W of Teleman, Finca Argentina, 250–650 m, Croat 41536, 41551 (MO); La Tinta, Smith 1530a (US); Lago Izabal, Tucurú-El Estor, Route 7E, 150–300 m, Croat 41525, 41529 (MO). ESCUINTLA: 5 km SW of Palin, Harmon 2420 (UMO). HUEHUETENANGO: Ixcán-Finca San Rafael, Steyermark 49411 (F); Rio Trapichillo, Paso del Boquerón, below La Libertad, 1,200–1,300 m, Steyermark 51171 (MO). IZABAL: 15.8 km S of Modesto Méndez, 70 m, Harmon & Fuentes 2115 (MO, UMO); 7 mi. S of Puerto Barrios, 50 m, Croat 41802 (MO); 1 mi. E of Santo Tomás, 4 mi. SW of Puerto Barrios, 50 m, Croat 41839 (MO); E of El Estor, Jones & Facey 3456 (NY, TEX); Quiriguá Viejo, Standley 24053 (NY, US); Virginia-Lake Izabal, Steyermark 38769 (F); Lago Izabal, Jones & Facey 3437 (NY, TEX). PETÉN: 5 mi. S of entrance to Tikal National Park, Croat 24753 (MO); Dolores, Contreras 2254 (LL); El Paso, Herman 14664, 14671 (MICH); Lundell 1573 (MICH); La Libertad, Lundell 2873 (MICH); Santa Teresa, Lundell 2708 (MICH), 2889 (MICH, NY); Uaxactun, Bartlett 12295, 12296 (MICH); Lago Macanche, Fallabon road, Contreras 920 (LL); Tikal National Park, Tikal, Bernhardt Tó (MO), Contreras 1618 (LL), Lundell 15410 (LL, TEX), 18198 (LL). SAN MARCOS: Volcán Tajumulco, Steyermark 37078 (F). ZACAPA: 2 mi. N of Route CA 9, 41 mi. S of turnoff to Petén Morales, Finca Agua Fría, 150 m, Croat 41879 (MO). HONDURAS. COLÓN: Trujillo, Clewell et al. 4335 (MO). COMAYAGUA: Lago de Yajoa, Zonigo 495 (TEFH), 590 (TEFH), 661 (TEFH), 867 (TEFH). COPÁN: E of Copán, Croat 42508, 42521 (MO); 35 km E of Copán, Blackmore & Chorley 3772 (BM). CORTÉS: 2–3 mi. SW of Omoa on road from Puerto Cortes to Guatemala border, 0 m, Croat 42564 (MO); 7 mi. S of Portrerillos on Hwy. 1, 100 m, Croat 42706 (MO); Guatemalan border, Corinto, Nelson et al. 2904 (MO); La Pimienta, Molina 5623 (F). GRACIAS A DIOS: Rio Patuca, 175 m, Clewell 4564 (MO). OLANCHO: Río Chiquito, 2 km above Río Grande, Blackmore & Heath 1843 (BM, MO); Río Olancho, Gualaco-San Bonito Oriental, 7.4 mi. NE of San Estebán, 540 m, 15°20'N, 85°42'W, Croat & Hannon 64362 (MO). SANTA BÁRBARA: road on NW side of Lago de Yojoa, 700 m, Croat 42757 (B, MO); Punta Gorda, W side of Lago de Yojoa, 600 m, 14°50'N, 88°08'W, Balick et al. 1734 (MO); Santa Rosa de Copán-San Pedro Sula, 51.3 mi. WSW of junction of main San Pedro Sula-Tegucigalpa Hwy., Hwy. 18, 500 m, 15°18'N, 88°25'W, Croat & Hannon 63871 (MO). YORO: Coyoles, Yunker et al. 8132 (K, MO, NY, US); Las Flores, Yunker et al. 8174 (F, MO, NY); Las Minas, 60 m, Ruiz 116 (NY); slope above Lake Yojoa, Clewell 3114 (FSU). MEXICO. CAMPECHE: Francisco Escarcega-Champon, 0–100 m, Mayo & Madison 369 (K). CHIAPAS: Huixtla-Motozintla de Mendoza, 25 km from Huixtla, 650 m, Croat 47225 (MO); Chiapa de Corzo-Pichucalco, Hwy. 195, 0.5 km from junction with Hwy. 190, 1,000 m, Croat 46437 (MO); 20–30 mi. SW of El Jocote on road to Motozintla, 700–900 m, Croat 40706 (MO); 20

mi. N of Ocozocoautla, road to Apitpac near Km 31, 700 m, *Croat* 40653 (K, MO); 13 mi. N of Ocozocoautla, road to Apitpac near Km 21, 900 m, *Croat* 40626 (MO); 6 mi. N of Ocozocoautla, road to Apitpac, 1,000 m, *Croat* 40587 (MO); Palenque–Ocosingo, 27 mi. SW of Palenque, Hwy. 199, 210 m, *Croat* 40319 (MO); Palenque–Bonampak, 89–90 mi. SW of Palenque, 350–370 m, *Croat* 40215 (MO); along Hwy. 195, 8 mi. N of Pichucalco, 2 mi. S of Chiapas border, 80 m, *Croat* 40074 (MO); San Cristóbal–Palenque, 97 km NE of San Cristóbal, San Cristóbal de Las Casas, 1,130 m, 17°27'N, 92°4'W, *Hammel et al.* 15616 (MO); Palenque, 170 m, *Davidse et al.* 20334 (MO); 2 mi. S of Chiapas border along Hwy. 195, 8 mi. N of Pichucalco, 80 m, *Croat* 40086 (MO); Motozintla de Mendoza–Siltepec, 2 mi. W of Motozintla, 1,400 m, *Croat* 47250 (MO); ruins of Bonampak, 670 m, *Hoover* 282 (MO); Motozintla–Huixtla, 15 mi. S of Motozintla, 900 m, *Croat* 40766 (MO); road to Finca Tres de Mayo, 3 mi. NE of El Triunfo, 13 mi. NE of Escuintla, 350 m, *Croat* 43879 (F, GH, K, MO, PMA, VDB); Acayaguaya, *Matuda* 19646 (DS); Angel Albino Corzo, *Ton* 3880 (MAD, DS); Bochil, *Roe et al.* 1132 (WIS), *Ton* 2587 (DS); Chiapa de Corzo, *Breedlove* 26872 (DS); Escuintla, *Matuda* 17973, 19645 (MEXU); Huixtla–Motozintla, *Breedlove* 28609 (DS); Ixtapa, *Laughlin* 723 (DS, MICH, NY), *Laughlin* 1599 (DS, MEXU, TEX); Jitotol, *Thorne & Lathrop* 41341 (DS); Las Margaritas, *Breedlove* 33199, 33446 (DS); Siltepec, *Matuda* 18798 (MEXU); ruins of Yaxchilan, Ocosingo, *Breedlove* 33872 (DS); Ocozocoautla de Espinosa, *Breedlove* 29004, 36555 (DS), 30358 (DS, MO), *MacDougall* H261 (NY); Pichucalco, *Breedlove* 35048 (DS), *Gilly & Hernández* 182 (MICH); Nuevo Acosta Solistahuacán, *Breedlove* 26042 (DS), *Roe et al.* 1239 (US); Raudales Mal Paso, *Quintero* 3441 (MEXU); Tejepetate, *Breedlove* 6242 (DS, F, MICH), 11731 (F, MICH, TEX), *Ton* 350 (DS); Tuxtla Gutiérrez, *Guzman* 13 (MEXU); 20 km S of Palenque, road to Ocosingo, 12–20 m, *Mayo* 32 (K); Mpo. El Bosque, Simojovel de Allende, El Bosque, 1,219 m, *Breedlove* 51732 (CAS, DS); Mpo. Mapastepéc, Sierra de Sonconuso, road to Tuxtla Gutiérrez from Hwy. 200, 5.5 mi. NW of turnoff to Mapastepéc, 15°32'N, 92°48'W, *Croat & Hannan* 63352 (B, MO, NY, US); Mpo. Ocosingo, 5 km SW of Santo Domingo, 120 km SE of Palenque on road to Bonampak, 600 m, *Davidse et al.* 20429 (MO); Mpo. Ocozocoautla de Espinosa, 3 km N of Ocozocoautla, road to Mal Paso, 900 m, *Breedlove & Smith* 21982 (DS, MO); Mpo. Palenque, 25 km S of Palenque, Cascada Mizola, road to Ocosingo, 300 m, *Breedlove & Davidse* 55398 (CAS). OAXACA: no further locality, *Calderón* 145 (GH); Parque Nacional de Laguna Temazcal, Temazcal, N end of rd. across dam, 150 m, 18°25'N, 96°25'W, *Hammel & Merello* 15455 (MO); Teotitlán del Camino–Chilchota, 1.2–3.8 mi. past turnoff to Huatla de Jiménez, 1,265 m, *Croat* 48374, 48396 (MO); Teotitlán del Camino–Huatla de Jiménez, near junction of road to Chilchota, 1,320 m, *Croat* 48296 (MO); hill 5 km S of Tuxtpec, 100 m, *Conrad & Conrad* 3251 (MO); 8.5 mi. NE of Valle Nacional, *Thurn et al.* 231 (UMO); Tuxtpec–Oaxaca, 0.5–4.5 mi. S of Valle Nacional, 120–450 m, *Croat* 39707, 39708, 39738 (MO); 8 km S of Matias Romero, 100 m, *Davidse et al.* 30195 (CM, MO); Tuxtpec–Oaxaca, Hwy. 175, 6 mi. W of Valle Nacional, 660 m, *Croat* 39756 (MO); Chinantla, *Ramírez* 144 (MEXU); Matatengo Gorge, *Croat* 32712, 32717 (MO); Santo Domingo Tehuantepec, *Williams* 70, 83 (MICH); Temascal, *Sousa* 936, 1037, 1801 (MEXU); Tuxtepec, *Calderón* 844 (MICH), *Miranda* 4274 (MEXU), *Moore & Bunting* 8907 (BH), *Quintero* 1820 (MEXU), *Rzedowski* 25480, 25483 (US), *Sousa* 1809, 1825 (MEXU), *Webster & Breckon* 15400 (DAV); Esmeralda–Río Manea, 11.5–13.5 mi. S of Esmeralda, Uxpanapa, 90–110 m, 17°4'N, 94°45'W, *Croat & Hannon* 63277 (MO, US); Trapiche de la Concepción, 1,000 m, *Liebman s.n.* (K); Cerro El Cacao (Sta. Cruz), Concepción del Progreso, Putla, 1,020 m, *Mendoza* 1516-A (MEXU); Cerro Concordia, *Morton & Makriñius* 2731 (F, US); Dto. Juchitán, Matías Romero–La Ventosa, 26 km S of Matías Romero, Route 185, 250 m, *Lorenze & Jrigos* 3093 (MO); Dto. Juchitán, Mpo. Matías Romero, La Laguna-Sarabia, 7.2 km W of Esmeraldas, 200 m, 17°7'N, 94°49'W, *Wendt et al.* 3634 (MO); Mpo. Santa María Chimalapa, Santa María, 300 m, 16°55'N, 94°40.5'W, *Hernández* 1167 (CHAPA, MO); Dto. Tuxtpec, E arm of Presa Miguel Alemán, Temascal, 200 m, *Neill* 5400 (MO); Mpo. Acatlán, Cerro Buenos Aires, intersection 2 km S of Corrales on road to Capilla, 4 km NW of Lindero, 70 m, 18°28'N, 96°38'W, *Gereau et al.* 2209 (MO); 8 mi. from Acatlán on ranch Campo Chico, *Butterwick* 59 (LL); Mpo. Soyaltepēc, 1 km S of S end of main dam of Presa Miguel Alemán, 140 m, 18°14'N, 96°23'W, *Gereau et al.* 2237 (MO); QUINTANA ROO: 6 km N of Xelha, *Téllez & Cabrera* 3233 (MEXU, MO). TABASCO: SE of Teapa, Km 4 on road to Tacotalpa, 325 m, *Croat* 47894 (MO); 3 km E of Teapa along road to Jalapa, 40 m, *Croat* 40109 (MO); Km 34 S of Villa Hermosa, 55 m, *Croat* 40069 (K, MO, RSA, US); Balancán, *Valdivia* 2028, 2052 (XAL); NW of Cárdenas, *Barlow* 26/10 (WIS); 9 km E of Teapa, road to Jalapa, 200 m, *Mayo & Madison* 343 (K); Cerro Las Campanas, 3 km E of Teapa, 50 km S of Villahermosa, 50–100 m, *Conrad et al.* 2866 (MO); Río Teapa, 2 km SE of Teapa, 20 m, *Davidse et al.* 29522 (MO, RSA); Mpo. Tacotalpa, 0.4 km E of Tacotalpa, *Cowan et al.* 3421 (MO). VERACRUZ: no further locality, *Orentt* 2950 (MO); Fortín, *Kerber* 9 (B); 3 km N of Catemaco, 400 m, 18°30'N, 95°10'W, *Solheim & Powers* 851 (WIS); Cervecería Moctezuma hydraulic plant, 1,000–1,150 m, *Croat* 39414 (DUKE, ENCB, HBG, MO, QCA, WIS); Catemaco, *Sousa & Sousa* 14 (MEXU), *Menéndez* 7599 (MEXU); Lago Catemaco, *Boeger* 1257 (CAS); Mun. Cuitalhuac, 250 m, *Hansen & Nee* (MO); Hidalgotitán, 17°47'N, 94°38'W, *Dorantes* 2862, 3099 (XAL), *Valdivia* 23, 138, 614, 799, 870, 1038, 1045, 1115, 1315, 1343, 1622 (XAL), 171, 236 (MO, XAL), 191, 309, 476, 533 (MEXU), 222, 731, 1165, 1285, 1674 (MO), 275, 667, 907, 931, 1196 (MEXU, MO, XAL), 458, 1094 (MEXU, XAL), *Vázquez* 582 (BM, MO, XAL); Hacienda Álvarez Obregón, 149 m, 17°47'N, 94°38'W, *Valdivia* 291, 421 (MEXU, MO); Laguna, Hidalgotitán, 160 m, 17°16'N, 94°33'W, *Valdivia* 689 (MO); 5 km from La Estación de Biología de Los Tuxtlas, Laguna Escondida, 300 m, *Soto et al.* 16 (MEXU, MO); 170–200 m, *Gentry et al.* 32391 (MO), *Dillor et al.* 1838 (MO), *Menéndez* 157 (MEXU, MO), *Cochrane & Cochrane* 8625 (MO), *Calzada* 455 (MEXU, MO); Valle de Córdoba, *Bourgeau* 1787 (MEXU, MO, P); Córdoba–Veracruz, 1 mi. off Hwy., above San Juan de Gracia, 750 m, *Croat* 39611 (MO), *Miranda* 4894 (MEXU), *Bourgeau s.n.* (K); El Mirador, 1,200 m, *Croat* 44000 (B, MO, NY, WIS); Mun. Coatepec, 670 m, *Castillo & Tapia* (MO); Actopán, *Ortega-Ortiz* 563 (F, XAL), *Ortega* 556 (MO); Atoyac, *Rosas* 1126 (F, XAL); Barra Platanar, *Dorantes et al.* 1287 (MEXU); road to Jalapa,

Dorantes 505 (CAS, F, MEXU); SE of Jalapa, *Barkley et al.* 2596 (MEXU, TEX); Cordillera, *Galeotti* 6055 (BR); Cuichapa, *Rosas* 910 (XAL); Huatusco, *Ghiesbregh* 70 (P), *Moore & Bunting* 8867, 8868 (CU); Ixhautlan, *Lot* 869 (CAS, MEXU); Laivaparu, *Purpus* 1400 (MICH); Minatitlán, 2 km N of Uxpanapa, 150 m, 17°13'N, 94°13'W, *Wendt et al.* 4828 (MO); 13.7 km E of La Laguna, 130 m, 17°19'N, 94°22'W, *Wendt et al.* 5809 (MO), *Gilly & Hernandez* 253 (MICH); Ori-
zaba, *Mueller* 1335 (K, NY), *Botteri & Lumichrast* 1602 (P), *Mueller* 1314, 1335 (NY); Cerro de Nogales, 1,700 m, *Matuda* 38590 (CAS); Río La Palma, Laguna de Sontecomapan, Catemaco, 0 m, 18°33'N, 95°00'W, *Me-
nández* 111 (MEXU, MO); Barra de Sontecomapan, *Her-
nandez* 608 (MEXU); Mun. Tapalapa, 500 m, *Gomez-
Pompa* 5105 (MO); vic. of Playa Escondida, 10 km N of Sontecomapan, 1–50 m, *Nee* 26699 (F, MO, XAL); Río Coatzacoalcos, *Williams* 8940 (MICH, US); Nautla, *Fay & Calzada* 925 (XAL); Rancho Viejo, *Purpus* 15711 (UC); Zacualpan, *Purplus* 1130 (MY, UC); San Andrés Tuxtla, *Dressler & Jones* 8 (MICH, NY, UC), *Hernandez & Vásquez* 552 (MEXU), *Moore & Cetto* 6232 (BH, MEXU); Santiago Tuxtla, *Sousa* 2158, 2373 (MEXU); Valle de Río Pescados, Techacastla, 1 km SSE of Jalucomulco, 480 m, 19°21'N, 96°45'W, *Iltis et al.* 28970 (MO, WIS). YUCATÁN: *Darwin & Sundell* 2137 (MO); ca. 2 mi. S of Kalcetac at Actum Spukil, *Butterwick* 88 (LL, MO, TEX); 11 km S of Xcalacoop, *Utey & Utey* 6495 (MO); Mun. Dzemul, 15 km N of Dzemul, 5 m, *Davidse & Davidse* 29469 (MO); Chichen Itza-Mérida, 25 mi. W of Chichen Itza, *Thompson* 437 (MO), *Steere* 1124 (MICH); Izamal, *Gaumer* 741 (F, MO); S of Mérida, *Schott* 638 (F); N of Muna, *Luteyn* 2528 (DUKE). NICARAGUA. BOACO: Cerro Mombachito, 500–900 m, 12°24'N, 85°32'W, *Stevens* 16318 (MO), *Stevens & Grijalva* 14768 (MO). CHONTALES: N of Cuapa, Juigalpa-La Libertad, *Stevens* 4030 (MO). ESTELÍ: N of Estelí, Kukamonga, 800–840 m, 13°14'N, 86°21'W, *Moreno* 19936 (MO); 15.8 km N of entrance to Estelí, km 167 on Hwy. 1, 825–840 m, 13°15'N, 86°22'W, *Stevens* 5786, 9095 (MO). RÍO SAN JUAN: Rio Oyate-San Miguelito, 100 m, *Grijalva & Almanza* 3581 (MO). ZELAYA: Kurinwacito, 80–100 m, 13°8'N, 84°55'W, *Moreno* 23782 (MO); Siuna, Calera, 300–345 m, 13°46'N, 84°46'W, *Ortiz* 1773 (MO); El Recreo, S of Siuna, *Neill* 4226, 4521 (MO); Cerro Kana Coperna, 30 km E of Siuna, 250 m, *Neill* 4527 (MO); Cerro La Calera, 4 km N of Siuna, 350 m, *Neill* 4289 (MO); Cerro Waylawas, 100–268 m, 13°39'N, 84°48–49'W, *Pipoly* 4199, 4300, 4360, 4361, 4372 (MO), *Stevens* 737, 7383, 7386, 8736, 8753, 8755 (MO).

b. *Anthurium schlechtendalii* subsp. *jimenezzii* (*Matuda*) Croat, Ann. Missouri Bot. Gard. 70(2): 377. 1983. Figures 279, 280.

Anthurium jimenezzii Matuda, Anales Inst. Biol. Univ. Nac. Mexico 32: 147. 1962. TYPE: Mexico, Mexico: Barranca de Zacualpan, 1,300 m, *Matuda* 37245 (holotype, MEXU).

Usually terrestrial or epilithic; stem less than 30 cm long, ca. 3–4 cm diam.; roots numerous, dense, ascending to descending, tan to greenish, usually smooth, short and thick, tapered, 5–10 mm diam.;

cataphylls subcoriaceous, broadly lanceolate, 6–7 cm long, acute to obtuse and weakly apiculate at apex, light green tinged with red, drying brown, persisting ± intact at the upper nodes, eventually deciduous. Leaves erect-spreading; petioles 2–17 cm long, 8–10 mm diam., subquadrangular to trap-
ezoidal, flattened to broadly and sharply sulcate adaxially, the margins somewhat raised, 2–3-ribbed abaxially, the surface minutely pale-speckled; geniculum paler and thicker than petiole, becoming fissured transversely with age, 1–2 cm long; blades moderately coriaceous, oblanceolate to oblong-oblanceolate, acute to acuminate at apex (the acumen apiculate), acute to obtuse to narrowly rounded at base, 36–104 cm long, 6–32 cm wide, broadest well above the middle, the margins undulate; both surfaces glossy to semiglossy, dark green above, paler, sometimes bluish green below; midrib above flat at base, becoming obtusely to acutely angular and then weakly sunken toward the apex, below prominently higher than broad and sharply 2-ribbed at base, becoming prominently and convexly raised toward the apex and paler than surface: primary lateral veins 9–14 per side, departing midrib at 50–70° angle, weakly arcuate-ascending, raised at the midrib, becoming sunken toward the margin above, prominently raised and darker than surface below, much more prominent than interprimary veins; interprimary veins weakly sunken above, prominulous below; tertiary veins weakly sunken above, prominulous below; collective vein arising in the lower half or in the upper third of blade or absent, flat to weakly sunken above, prominulous below, 2–4 mm from margin. Inflorescences erect, shorter than leaves; peduncle 10–54 cm long, equaling or 2–3.4 × as long as petiole, medium green weakly tinged reddish, terete; spathe spreading, subcoriaceous to moderately coriaceous, green weakly tinged with purple (B & K yellow-green 6/5), lanceolate, 4–8.5 cm long, 1–2.5 cm wide, broadest just above the base, inserted at 30° angle on peduncle, oblique and narrowly acuminate at apex (the acumen inrolled), subcordate at base; spadix greenish tinged with purple (B & K yellow-green 6/5), weakly and bluntly tapered, curved, 3.5–14 cm long, 5–17 mm diam. near base, 2–5 mm diam. near apex; flowers rhombic to 4-lobed, 2.1–2.6 mm long, 2.7–2.9 mm wide, the sides straight to jaggedly sigmoid; 10–12 flowers visible in principal spiral, 6–8 in alternate spiral; tepals densely and minutely papillate, sparsely punctate, with numerous droplets at anthesis; lateral tepals 0.8–1.5 mm wide, the inner margins straight to very broadly convex, the outer margins 2–4-sided; pistils weakly emergent,

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

Subspecies *jimenezzii* 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 *jimenezzii* 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. *jimenezzii* are commonly as long as or longer than the leaves, they may also be much shorter.

Subspecies *jimenezzii* is also similar to *Anthurium halmoorei*, 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. *jimenezzii* 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, *Miller & Tenorio* 639 (MO); Cerreceras, *Hinton et al.* 10098 (US); Km 39-Km 40, 3 mi. N of El Rincón, 15 mi. N of Sierra Colorada, Hwy. 95, 1,500 m, *Croat* 45694 (CAS, F, K, M, MO, MEX, US); Malinaltenango, S of Zacualpán, *Matuda* 37245 (MEXU); Milpillas-Atoyac de Alvarez, 3.7 mi. W of turnoff 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); Sierra Colorada, *Rodríguez* 51 (US), *Rzedowski* 22809 (MICH, US); Sierra Colorada-Agua de Obispo, El Ocoteo, *Crisman & Willis* 199 (MICH); Dto. Mina, Trincheras, *Hinton* 10125 (GH, K, US). OAXACA: La Galera, along Hwy. 175, 2.1 mi. N of turnoff to Pluma Hidalgo, 1,340 m, *Croat* 46142 (K, MO); Oaxaca-Pochutla, 55.1 mi. S of Miahuatlán, 12.9 mi. S of Suchixtepic, 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 Pachíñe, 7.5 km SW of Mogone, on road to San Juan Gachicoví, 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