

surface pale-speckled; geniculum flattened, slightly darker and thicker than petiole when dried, 1–2 cm long; blades usually pendent, coriaceous, oblong to oblong-elliptic, acuminate at apex, acute to narrowly acute at base, 60–118 cm long, 7.5–14 cm wide, broadest at or near the middle, the margins flat; upper surface matte, semivelvety, lower surface glossy, both surfaces dark to medium green, drying green to yellowish green, matte; midrib convexly raised, paler than surface above, prominently convex, much paler than surface below; primary lateral veins numerous, more than 25 per side, departing midrib at 50–70° angle, straight to the collective vein, flat and pale above, obscure below, slightly raised above when dried, more so below; interprimary veins moderately numerous, drying almost as conspicuous as primary lateral veins, raised above and below; tertiary veins obscure; collective vein arising from near the base, weakly raised above and below when dried, equally as prominent as primary lateral veins, 4–17 mm from margin. *Inflorescences* spreading to pendent; peduncle 22–64 cm long, (2)3–4 mm diam., equally or to 1.7 × as long as petiole, terete; spathe spreading, subcoriaceous, green to green-tinged with purple at margins, oblong-lanceolate, (5.5)8–21 cm long, 1.1–2.4 cm wide, broadest near the base, acuminate at apex (the acumen inrolled, to 25 mm long), acute at base; stipe 7–20 mm long in front, 0–4 mm long in back; spadix green to yellow-green, subsessile, erect, straight to curved, held at 160–180° angle from peduncle, (6.5)10.5–21.5 cm long, (3)6–8 mm diam. near base, (2)4–5 mm diam. near apex, broadest at the base; flowers square to rhombic, 2.2–2.8 mm in both directions, the sides smoothly sigmoid, (3)4–5 flowers visible in principal spiral, 6–9 in alternate spiral; tepals matte, pale-punctate when dried; lateral tepals 1.3–2 mm wide, the inner margins convex, becoming turned up against the pistil, the outer margins 2-sided; pistils emergent, raised, same color as tepals; stigma slitlike, becoming ellipsoid, 0.5–0.8 mm long; stamens emerging from the base, held well above the tepals, persisting, laterals emerging almost to apex before the alternates emerge in basal third, held in a circle around the pistil; filaments white, flattened, exerted, 0.7–1 mm long, 0.6–0.7 mm wide; anthers drying yellowish to brown, 0.5–0.8 mm long, 0.4–0.7 mm wide; thecae oblong, not divaricate. *Infructescence* pendent; spathe persisting, green or withered; spadix ca. 23–30 cm long, 2 cm diam., with berries scattered throughout; berries yellow-orange becoming orange, ovoid to broadly ellipsoid, “hollow” when rehydrated, acute at apex, (6)8.6–9.5 mm long,

4–4.5 mm diam.; pericarp thickened, with some raphide cells; seeds 2 per berry, yellowish, oblong-ovoid, flattened, 3.7–4.8 mm long, 2.3–2.4 mm diam., 1.3–1.6 mm thick, with a transparent, gelatinous appendage at both ends.

A member of series *Multinervia*, *Anthurium acutissimum* is known from the provinces of Pichincha and Los Ríos in Ecuador where it occurs at 650–1,200 m in premontane moist and premontane wet forest life zones.

This species is characterized by its very elongate, mostly pendent, coriaceous, green-drying leaves, which are narrowly acute at the base and long-acuminate at the apex, by its large cataphylls which persist semi-intact as a reticulum of pale fibers, by its long-pedunculate inflorescence which has a tapered, green spadix with anthers exerted on long, whitish filaments and by its ovoid to broadly ellipsoid orange berries.

Anthurium acutissimum is most closely allied to *A. holmnielsenii*, which has generally more erect-spreading leaves, D-shaped petioles, which are sulcate adaxially with prominently raised, sharp margins and broader blades (averaging 5.1 vs. 8.6 × longer than broad). Leaves of both species dry dull green and matte.

The label data of *Madison* 3826 mention that the plant was “ant inhabited” and that the stem was “massive, 10 cm thick,” perhaps owing to its being myrmecophilous; the manner in which it was inhabited by ants is not mentioned, and root mass probably accounts for this exceptional measurement.

ECUADOR. LOS RÍOS: 12 km E of Patricia Pilar, 650 m, *Madison* 3826 (QCA, SEL). PICHINCHA: Chiriboga Road, Alluriquín–Chiriboga, 950–1,100 m, *Madison* 4198 (originally 2094) (MO, SEL), *Madison* 4075 (MO, SEL); 2–3 km from main Allag–Sto. Domingo de los Colorados rd., 890–1,010 m, 0°18'13"S, 78°54.5'W, *Croat* 56979 (MO, US); 12 km E of Patricia Pilar, 650 m, *Madison* 3828 (SEL); Río Pilatón, *Sodi* 20 (B); Quito–Santo Domingo de los Colorados, 44 km E of Santo Domingo, 1,200 m, 0°23'S, 78°50'W, *Hammel & Wilder* 16081 (B, MO); Río Pilatón–Río Toachi confluence, 800–900 m, *Madison* 4030 (K, QCA, SEL), *Sparre* 18453 (S).

Anthurium affine Schott, Oesterr. Bot. Wochenbl. 5: 82. 1855. TYPE: illustrated by Schott Aroideae 465 (lectotype). Figures 26, 28, 29.

Terrestrial; stem short, 1.5–4 cm diam.; roots moderately numerous, descending to spreading, greenish, smooth to weakly pubescent, thick, moderately elongate, 3–8 mm diam.; cataphylls subcoriaceous, broadly lanceolate, 6–20 cm long, acuminate to narrowly rounded and prominently

apiculate at apex, light green, drying brown, persisting semi-intact, eventually dilacerating into coarse linear fibers. *Leaves* erect to spreading; petioles 5–28 cm long, 7–16 mm diam., U-shaped to quadrangular, shallowly to prominently sulcate, sometimes with a medial rib adaxially, prominently and sharply raised marginally, usually (1)3–5-ribbed, or sometimes rounded abaxially; geniculum thicker and slightly paler than petiole, becoming fissured transversely with age, 1–2.5 cm long; blades moderately coriaceous, obovate to oblanceolate to \pm elliptic, obtuse to short-acuminate or rounded at apex (the acumen apiculate), acute to obtuse to rounded or shallowly cordate at base, 33–95 cm long, 10.5–32 cm wide, broadest at or above the middle, the margins markedly undulate; upper surface matte to semiglossy, dark green, lower surface semiglossy to glossy, paler, both surfaces drying olive-green to yellow-green; midrib flat and 1-ribbed at base, becoming obtusely angled toward the apex above, slightly paler than surface, prominently thicker than broad and 2–3-ribbed at base below, becoming convexly raised toward the apex, paler than surface; primary lateral veins 7–14 per side, departing midrib at 40–60° angle, slightly arcuate to the margin, prominently and convexly raised above and below; interprimary veins absent; tertiary veins obscure to weakly sunken above, slightly raised and darker than surface below; reticulate veins not visible to prominent when dried, collective vein arising from near the apex or absent, less prominent than primary lateral veins when present. *Inflorescences* erect, somewhat shorter than the longest leaves; peduncle 31–78 cm long, 4–15 mm diam., 2–9 \times as long as petiole, green or green-tinged with purple at apex, subterete; spathe reflexed to recurved, moderately thick, purple to green tinged with purple, ovate to broadly lanceolate, (3.5)5–10 cm long, 1.7–7.5 cm wide, acuminate at apex, acute and usually decurrent to 1–3(6) cm at base; stipe 0.5–5 cm long, 6–18 mm diam., pale green to purple; spadix olive-green to yellowish, cylindroid to clavate, subsessile to long-stipitate, erect, straight, 4.5–17 cm long, 5–15 mm diam. near base, 6–10 mm diam. near apex, broadest near the middle or near the apex; flowers \pm square, 1.6–2.2 mm in both directions, the sides straight to sigmoid; 7–14 flowers visible in principal spiral, 4–10 in alternate spiral; tepals slightly roughened, pale-punctulate (when dried); lateral tepals 0.7–1 mm wide, the outer margins 2-sided, the inner margins convex to rounded; stamens emerging in a regular sequence from the base, semi-erect in a tight cluster above the pistil, arching over and obscuring it; anthers 0.5–0.7

mm long, 0.7–0.8 mm wide; thecae somewhat divaricate; pollen creamy. *Infructescence* erect; spadix ca. 2.5 cm diam. (not including exerted berries); berries red to rich purple-maroon or purple-maroon at apex becoming red below, whitish toward the base, obovoid to oblong-ellipsoid, truncate at apex, 7–13 mm long, 4–7 mm diam.; seeds oblanceolate, 5–8 mm long, 2–3 mm diam.

Anthurium affine is found in eastern and south-eastern Brazil in the states of Mato Grosso, Minas Gerais, Goiás, Bahia, and Pernambuco from sea level to 1,300 m on rocky slopes, along streams, and in open areas. *Heringer 7801* notes the vegetation type as “cerrado mata ciliar.”

This species can be recognized by its large, coriaceous leaf blades, frequently with strongly undulate margins, and its relatively short spadix, which is sometimes broadest near the apex.

Because of its fruit color, spadix shape, and geographical isolation, *A. affine* is not easily confused with any other species.

The species was placed into synonymy with *Anthurium solitarium* by Engler, but that species has an elongate, tapered spadix and an elongate spathe, and is primarily restricted to southern coastal Brazil. Engler's drawings of *A. affine* are, in fact, *A. solitarium*.

Confusion arising from Engler's treatment of *A. affine* as a synonym of *A. solitarium* has permeated subsequent publications and label data in Brazil, Europe, and the United States, where it has been cultivated to a limited extent for many years. To this day, any member of sect. *Pachyneurium* from eastern Brazil is usually called *Anthurium solitarium* in botanical gardens and on herbarium labels, and annotations on the latter reflect the confusion between the two epithets.

Anthurium macedoanum, an unpublished name attributed to A. D. Hawkes, was based on an unusually broad-leaved form of *A. affine* (*Macedo 2185*) from San Vincente in the state of Minas Gerais.

Confusion has also resulted from the Field Museum photograph (FM 11838) of *Glaziov 9040* from Rio de Janeiro. This photograph is actually *A. solitarium*, not *A. affine* as annotated by Engler, nor a type of *A. affine* as suggested by the photograph.

BRAZIL. BAHIA: *Blanchet 1055* (G); Hwy BA:052, Chapada da Diamantina, E of Morro do Chapéu, 900 m, *Davidse et al. 11902* (K, MO); N of Itapua, Salvador, 0 m, 12°58'S, 38°23'W, *Plowman & Almeida 10046* (F, K, MO); Mato Grosso-Serra do Rio Contas, N of Vila do Rio do Contas, 980 m, 13°33'S, 41°49'W, *Harley et al. 19973* (K, MO); 3 km N of Milagres, BR-116, *Hatsch-*

bach 45069 (K); Morro do Chapéu, 900 m, *Hatschbach* 42428 (K); Mucugê, 2 km along Andaraí road, 850 m, 12°59'S, 41°21'W, *Harley et al.* 20615 (K); *Hatschbach* 47955 (K); Pasto Guanabara, Faz Morro de Pedra-Itaberaba, *Ferreira* 191 (K); Rio do Contas-Livramento, cachoeira near road, *Storr* 194 (K); Rio Cumbuca, N of Mucugê on Andaraí Road, 850 m, *Harley* 16000 (K, US); Rio Ferro Duido, 19.5 km SE of Morro do Chapéu on BA 052 road to Mundo Novo, 900 m, 11°38'S, 41°02'W, *Harley et al.* 19254 (K, MO), 22865 (K); Rio Itapicuru, Jacobina, 450 m, *Martinelli* 5143 (RB); Rio Paragucu, Andaraí-Mucugê, BA Mucugê, *Pirani et al.* 1625 (K, MO); Serra da Jacobina, Senhor do Bonfim-Juazeiro, BA 130, 12 km N of Senhor do Bonfim, W of Estiva, 850 m, *Harley* 16589 (K); Serra das Almas, NW of Rio de Contas, 1,000–1,200 m, *Mori & Benton* 13536 (NY); Serra do Jatobá, Morro do Couro or Morro São Cristóvão, 500–600 m, 12°54'S, 39°52'W, *Harley* 19427 (K), 19429 (K, MG, MO). Serra do Rio de Contas, Rio do Contas-Mato Grosso, 12–14 km N of Rio de Contas, 1,200 m, 13°28'S, 41°50'W, *Harley* 15196 (K); Serra do Sincorá, 5 km S of Andaraí, road to Mucugê near bridge over Rio Paragucu, 400 m, 12°50'S, 41°19'W, *Harley et al.* 18594 (K, MO); Serra dos Lençóis, Seabra-Itaberaba, 7–10 km, W of Lençóis turnoff, by Rio Mucugezinho, 12°28'S, 41°26'W, *Harley* 22695 (K); Mpo. Jaguaruara, Jaraguara-Milagras, Rodovia BR116, *Silva et al.* 1576 (K); Mpo. Lençóis, NW of Lençóis, Barro Branco road, 630 m, 12°32'S, 41°20'W, *Lewis et al.* 920 (K, MO); Mucugezinho Rodovia BR242, 720–760 m, *Lewis & Carvalho s.n.* (K); Mpo. Livramento do Brumado, Rodovia Liv. do Brumado-Rio de Contas, 600 m, *Mori et al.* 12242 (K, NY); Mpo. de Palmeiras, ca. km 250 na Rodovia BR 242, *de Carvalho & Saunders* 2966 (NY). GOIÁS: Dianópolis, *Pirani et al.* 1965 (K, MO, SPF). MATO GROSSO: cultivated at Floricultura Campeira Hda. Campinas, São Paulo (*Oliveira* 1420), *Hutchinson* 8849 (MO). MATO GROSSO DO SUL: Ituiutaba, (Furma?) de São Vicente, *Macedo* 1237 (RB), 1910 (RB, UC, US), 2185 (UC, US). MINAS GERAIS: Mpo. Diamantina, Diamantina, 1,200 m, *Martinelli* 5900 (RB); Rodovia Guinda-Cons. Mata, *Hatschbach & Kummrow* 49742 (MBM, MO); road to Diamantina, SW of Mendanha and Rio Jequití, 1,150 m, *Anderson* 8841 (F, NY, US); NE of Diamantina, on road to Mendanha, 1,300 m, *Irwin et al.* 22630 (US); Rio Abaite, Rodovia Brasília, *Heringer* 7801 (MG); Rio Jequití, E of Diamantina, 790 m, *Irwin et al.* 27430 (MO, NY, SEL, US); Mpo. Diamantina, Biribiri, *Hatschbach & Pelada* 27550 (K), 27990 (MU), *Zappi et al.* 47358 (MO); Joaquim Felício, Serra do Cabral, *Zappi et al.* 39756 (MO); 1,160 m, 17°42'S, 44°18'W, *Pirani et al.* 2183 (K, MO, SPF). PARÁIBA: *Xavier s.n.* (RB), 42082 (RB); vic. João Pessoa, nos Tubuleiros da Costa, *Xavier* 9191 (K). PERNAMBUCO: Tapera, *Pickel* 2373 (US); Praia do Guaiubá, 35 km S of Recife, 10–30 m, *Tsugaru et al.* B-1377 (MO, OOM); Rio Formoso, Horto Florestal de Salinho, *Falcão et al.* 775 (MO, RB).

Anthurium angustilaminatum Engl., Bot. Jahrb. Syst. 25: 411. 1898.

a. *Anthurium angustilaminatum* subsp. *angustilaminatum*. TYPE: Ecuador. Pichincha: Guallea, *Sodiro s.n.* (holotype, B; isotypes, P, Q). Figure 31.

Anthurium angustilaminatum var. *album* Sodiro, Anales Univ. Centr. Ecuador 22(156): 21. 1906. TYPE: Ecuador. Imbabura: Gualupe, *Sodiro s.n.* (n.v.).

Anthurium angustilaminatum var. *brevipetio* Sodiro, Anales Univ. Centr. Ecuador 22(156): 21. 1906. TYPE: Ecuador. Imbabura: between Paramba and Gualupe, *Sodiro s.n.* (n.v.).

Anthurium angustilaminatum var. *crassum* Sodiro, Anales Univ. Centr. Ecuador 22(156): 20. 1906. TYPE: Ecuador. Pichincha: Nanegal, *Sodiro s.n.* (n.v.).

Anthurium angustilaminatum var. *gladiatum* Sodiro, Anales Univ. Centr. Ecuador 22(156): 20. 1906. TYPE: Ecuador. Imbabura: between Coajara and Paramba, *Sodiro s.n.* (n.v.).

Based on dried material only. Terrestrial; stem short, 1.8–2.5 cm diam.; roots moderately numerous, grayish brown, puberulent, slender, elongate, 2–3 mm diam.; cataphylls 9.5–20 cm long, acuminate to short-acuminate at apex, light brown, persisting semi-intact as fine linear fibers; petioles 8–15 cm long, 5–8 mm diam., D-shaped to subtriangular, broadly rounded to sulcate adaxially, the margins thin, prominently raised, appearing winged, rounded and acutely to obtusely 1-ribbed abaxially; geniculum slightly thicker than petiole, (0.5)1.5–2 cm long; blades coriaceous, narrowly to broadly oblong-elliptic, acute, sometimes shortly acuminate at apex, acute to narrowly acute (rarely rounded) at base, 40–94 cm long, 6–12 cm wide, broadest at or near the middle, the margins narrowly undulate; upper surface green, slightly paler below, both surfaces matte to semiglossy, yellowish brown, sometimes greenish; midrib convexly raised above, prominently raised and 1-ribbed at base, becoming narrowly acutely raised toward the apex below; primary lateral veins darker than surface, 25–35 per side, departing midrib at 30–55° angle, straight to weakly arcuate to the collective vein, prominently raised above; interprimary veins numerous, almost as conspicuous as primary lateral veins; tertiary veins prominulous; collective vein arising from the base, raised above and below, equally as prominent as primary lateral veins, 5–10 mm from margin. *Inflorescences* apparently spreading; peduncle 15–55 cm long, 5–8 mm diam., 2.2–3.1× as long as petioles, green, sharply angular, rarely terete; spathe erect to reflexed, subcoriaceous, yellowish green, lanceolate to ovate-lanceolate, 5–9 cm long, 1–1.3 cm wide, acuminate at apex (the acumen inrolled), narrowly acute at base; spadix dark purple, cylindroid, subsessile, 6–12 cm long, 5–12 mm diam.; flowers rhombic, 1.9–2.4 mm long, 1.5–2.1 mm wide, 4–6 flowers visible in principal spiral, 9–12 in alternate spiral; tepals minutely papillate, lateral tepals 1.4–2 mm wide, the inner margins straight, sometimes broadly convex, occasionally turned up against the pistil,