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A new species of *Anthurium* (Araceae) from Ecuador

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Abstract

Anthurium sect. *Belolonchium* (Araceae) is defined and characterized. One new species of sect. *Belolonchium*, namely *A. yanacochense* Croat, C.Ulloa & E.Freire from Pichincha province, Ecuador, is described as new and compared with related species.

Resumen

Se define y caracteriza *Anthurium* sect. *Belolonchium* (Araceae). Se describe como una especie nueva de la sect. *Belolonchium*, *A. yanacochense* Croat, C.Ulloa & E.Freire de la provincia de Pichincha, Ecuador, y se compara con especies afines.

Keywords: *Anthurium*, endemism, Section *Belolonchium*, Araceae, Ecuador

Introduction

The genus *Anthurium* Schott (1829: 828) is represented in Ecuador by some 291 species (WCSP 2015) of which more than half are endemic to the country (Croat 1999, Croat *et al.* 2011). *Anthurium* sect. *Belolonchium* (Schott) Engler (1879: 151) is one of about 20 to 25 natural groups which are recognized at the sectional level (Croat & Sheffer 1983, Carlsen & Croat 2013). Up till now the section contains 276 species but a conservative estimate of the total number of species left undescribed will elevate the total number of species in this section to at least 315 (Croat & Grib unpublished data). *Anthurium* sect. *Belolonchium* is characterized by having short thick internodes, densely persistent red-brown cataphyll fibers, the frequent presence of ribbed or acutely low-winged petioles, moderately coriaceous red-brown-drying blades which are frequently concave along the anterior lobe, major veins often low-ridged-winged as well as by a frequently hooding moderately coriaceous spathe and frequently subpendent spadices.

Collections made by Carmen Ulloa and her colleagues in the Yanacocha Reserve on the back of Volcán Pichincha revealed to be a undescribed species in sect. *Belolonchium*, a section characterized by typically growing at high elevations, usually in cloud forest areas, and is herein described and illustrated. Acronyms of the herbaria follow Thiers (2015).

Taxonomic treatment

***Anthurium yanacochense* Croat, C.Ulloa & E.Freire, *sp. nov.* (Figs. 1–4)**

The species is characterized by its epiphytic habit, short internodes, reddish brown persistent cataphyll fibers, subterete unribbed sulcate

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petioles, ovate-cordate-sagittate coriaceous gradually acuminate blades with overlapping posterior lobes and a reniform sinus, 8 pairs of basal veins, the first pair of which is free to base, a shortly curved posterior rib which is naked to 4 cm, 7–11 pairs of primary lateral veins, collective veins arising from 2nd to 4th pair of basal veins and 2–4 mm from margin as well as by the long-pedunculate inflorescence with the oblong to lanceolate spathe erect and in line with peduncle, hooding, purplish violet and nearly matte on inner surface, medium green outside and the dark violet-purple stipitate medium dark violet-purple long-cylindroid and weakly tapered spadix which is directed downward at 45° angle.

Type:—ECUADOR. Pichincha: Carretera Quito-Nono: Hacienda Yanacocha, Volcán Pichincha, 00°07’00”S, 78°35’21.6”W, 3560 m, 21 Apr 2015, *C. Ulloa, C. Davidson, S. Christoph, J. Irazábal & C. Edwards 2465* (fl, fr) (holotype: QCNE!; isotypes: AAU!, COL!, GB!, HA!, K!, MO!, US!).

FIGURE 1. *Anthurium yanacochense* Croat, C.Ulloa & E.Freire. A. Habit. B. Leaf cataphylls. Photographs courtesy FloraoftheWorld©.

Epiphyte; **internodes** short, 2–2.5 cm; **cataphylls** 17.6–24 cm long, acute persisting intact at apex, becoming loosely fibrous with fragments of reddish brown epidermis, the fibers reddish brown, mostly closely parallel; **petioles** 33.5–70 cm long, drying 5–8 mm diam., medium green, semiglossy, almost cylindrical, sharply and broadly sulcate adaxially, up to 5-ribbed on each side, rounded abaxially, densely short raised-lineate throughout, drying yellowish brown; **geniculum** 2.1–3.0 cm long, drying slightly darker than petioles; **blades** ovate-cordate-sagittate, 40–72.5 cm long, 26.8–45 cm wide, 1.45–1.74 times longer than broad, broadest at petiole attachment, 0.8 times long as petioles, gradually acuminate at apex, (acumen to 1.2 cm long), prominently deeply lobed at base, dark green and glossy above, moderately paler and semiglossy below, drying chartaceous, brownish green to gray-green and semiglossy above, greenish brown to grayish brown and semiglossy below, epunctate; upper surface densely granular-ridged; lower surface densely brownish speckled and granular; **anterior lobe** 27.5–52.5 cm long, with straight to slightly concave margins midway up, the distal margin slightly rounded; **posterior lobes** touching to slightly or markedly overlapping, 9.5–18.5 cm long, 9.0–15.5 cm wide, directed downward and inward; **midrib** drying narrowly raised, finely ribbed and darker above, narrowly rounded, finely ribbed and darker below; **primary lateral veins** 7–11 pairs,

arising at 44–55° angle near middle, drying weakly and narrowly raised, darker above, narrowly rounded, finely ribbed and darker below; **secondary veins** drying prominently raised below; **tertiary veins** drying indistinct above, weakly raised below; **collective veins** arising from 2nd to 4th pair of basal veins, 2–4 mm from margin; **basal veins** 8–9 pairs, 1st pair free to base, 3rd pair fused to 2.6 cm, 6th and 7th pair fused to 5.8 cm; **posterior ribs** shortly curved, usually naked throughout, 3.5–5.6 cm; **sinus** usually closed and reniform, (2.5)11.7–14.5 cm deep, 3.7–5.2 cm wide. INFLORESCENCE with **peduncle** 41–66 cm long; **spathe** erect and in line with peduncle, hooding, purplish violet and nearly matte on inner surface, medium green outside, 8–18 cm long, 2.5–4.5 cm wide, oblong to lanceolate, drying coriaceous, reddish brown; **spadix** medium dark violet-purple, stipitate (0.5)1.7–1.9 cm, long-cylindroid and weakly tapered, 7–16.5 cm long, (0.5)0.9–1 cm diam., directed downward at 45° angle, drying reddish dark brown; **flowers** 6–8 visible per spiral, drying 2–3 mm long and wide; tepals minutely granular on drying; lateral tepals 1.7 mm wide, inner margin rounded, outer margins 3-sided; pistils early-emergent, narrow; stamens initially exserted ca. 1 mm with fleshy bright red filament, anther soon retracted to level of tepals; thecae purplish, weakly divaricate. INFRUCTESCENCE stipitate 2.2–3.5 cm; fruiting spadix 13.5–15 cm long, 1.4–2.5 cm wide; berries ca. 4.5 mm long and wide, reddish-purplish.

Specimens examined (Paratypes):—ECUADOR. Pichincha: Carretera Quito-Nono: Hacienda Yanacocha, Volcán Pichincha, 00°09'S, 78°35'W, 3700 m, 21–22 Mar 1987, *C. Ulloa 384* (GB!, QCA 2-sheets!); 00°07'02"S, 78°35'08.2"W, 3548 m, 11 Jun 2011, *C. Ulloa, C. Davidson, S. Christoph & J. Irazábal 2181* (MO!, QCA!).

Habitat and conservation.—*Anthurium yanachochense* is endemic to Ecuador, known only from the type locality in Pichincha Province in a Montane wet forest life zone. It was found in the Yanacocha Reserve and surrounding forest on the north western flanks of Pichincha volcano. The Area of Occupancy (AOO) is of 45 km^2 where it has persisted for almost thirty years since first collected, due in part to the conservation efforts of the Jocotoco Foundation. The Reserve is an important touristic attraction because of its bird diversity but most importantly serves as water catchment for the city of Quito. The major threat could be ash deposition in an eventual eruption of volcano Guagua Pichincha which last activity was in 1999. With our current knowledge the species is assigned an IUCN (2014) provisional conservation status of Endangered owing to the small size of the population.

Discussion:—The species is a member of *Anthurium* sect. *Belolonchium*, characterized by its epiphytic habit, short internodes, persistent cataphyll fibers with fragments of epidermis, almost cylindrical, sulcate brown drying petioles, ovate-cordate-sagittate acuminate blades with overlapping lobes, a small reniform sinus, 8 pairs of basal veins, a single pair free to the base; a slightly curved short posterior rib which fans out sharply and turns out promptly, nearly entirely naked along the sinus; 7–11 pairs of primary lateral veins; collective veins arising from the 2nd to 4th pair of basal veins and moderately close to the margins as well as by a long-pedunculate inflorescence with a purple-violet erect spathe which hoods the spadix and a curved long-stipitate long-cylindroid violet-purple spadix.

The species is most closely related *A. oxybelium* Schott (1857: 310), another species which also occurs at high elevations but that species differs by having a usually open, usually brownish-drying blades with a usually spathulate to parabolic sinus with collective veins arising usually from the 1st pair of basal veins or the primary lateral veins and a shorter, dark violet-purple spadix. In the Lucid Anthurium key (Cate Araceae, http://araceae.e-monocot.org/) the species tracks to *A. camposii* Sodiro (1905: 9) which differs by having much longer blades to 2.9 times longer than broad with the posterior lobes much narrower and directed toward the base and not at all inward as well as a much longer spadix (20–30 cm long); *A. gualeanum* Engler (1898: 424), differing by having blades with more deeply sunken anterior lobes, a broader more hooding spathe and a stubbier spadix; *A. jaramilloi* Croat & Rodríguez (1995: 80), differing by its terrestrial habit and light green spadix and *A. orientale* Sodiro (1901: 14), differing by having proportionately narrow blades to more than 2 times longer than broad and a more greenish, more tapered spadix. *Anthurium striatipes* Sodiro (1902: 81) differs from *A. yanacochense* by having proportionately much narrower blades, up to 2.4 times longer than broad which are matte-subvelvety on the upper surface (versus glossy for *A. yanacochense*), dry darker brown, have only 7–8 pairs of basal veins, lack free basal veins (versus with having the 1st pair of basal veins free to the base), have the collective veins arising from the 3rd to 5th pairs of basal veins and have white berries with a red tip. In addition *A. striatipes* occurs at a much lower elevations, 1200–2700 m in *Premonane wet forest* to *Lower montane wet forest* life zones (versus occurring in a *Montane wet forest* life zone at 3700 m elevation.)

The species has also been confused with *A. cupulispathum* Croat & Rodríguez (1995: 63) but that species differs by having terete petioles, much larger blades, often more than 80 cm long, a broader spathe (6.5–7.5 cm wide) which red on the inner surface and a much larger spadix (20–30 cm long, 2–3.2 cm diam.), and a distribution at much lower elevations of below 1000 m.

Etymology:—The species is named in honor of the type locality Yanacocha, a cloud forest area in Parroquia Nono, only 15 km northwest from the city of Quito, off the old Quito-Nono road.

FIGURE 2. *Anthurium yanacochense* Croat, C.Ulloa & E.Freire. A. Leaf blade adaxial side. B. Leaf blade abaxial side showing 9 basal veins and posterior rib. Photographs courtesy FloraoftheWorld©.

FIGURE 3. *Anthurium yanacochense* Croat, C.Ulloa & E.Freire. A. Leaf blade abaxial surface showing 5–7 pairs of basal veins, prominent posterior lobes and concave margin. B. Inflorescence showing erect greenish spathe and spreading purple-violet fusiform spadix. Photographs courtesy FloraoftheWorld©.

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FIGURE 4. *Anthurium yanacochense* Croat, C.Ulloa & E.Freire. A. Inflorescence showing close-up of flowers with exserted red stamens. B. Habit of infructescence with leaf abaxial surface. Photographs courtesy FloraoftheWorld©.

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