

A new species of pendent-leafed *Anthurium* in sect. *Porphyrochitonium* (Araceae) from Costa Rica

Thomas B. Croat¹

¹ P. A. Schulze Curator, Missouri Botanical Garden, 4344 Shaw Blvd., St. Louis, MO 63110, USA. Thomas.croat@mobot.org

ABSTRACT

A new species of *Anthurium* sect. *Porphyrochitonium* (Araceae) is described, illustrated and compared with *A. wendlingeri* G.M.Barroso with which it has been confused.

Key Words: *Anthurium kubickii*, *Porphyrochitonium*, Araceae, Costa Rica, new species.

INTRODUCTION

Anthurium is the largest genus in Araceae, with 1144 published species, and is one of the world's largest plant genera with an estimated potential of 3000 species (Boyce & Croat, 2011 onward). Central America is now relatively well known for the genus (Croat, 1983; 1986; 1991), which has recently been revised again for the region, now with 397 species (Croat, 2023, in press). Costa Rica has only 119 *Anthurium* species, with 35 of them, including this new one, endemic. However, the species diversity of the genus increases dramatically to the south in the direction of Colombia, with Panama possessing 293 species and with Colombia having probably upwards of a thousand species.

Section *Porphyrochitonium* is the largest section in Central America with 127 species. Speciation in the section virtually explodes in the wetter regions of Colombia on the Pacific slope and in northwest Ecuador but no revision for any significant portion of the region has been completed. Preliminary studies in Esmeraldas Province in northwest Ecuador show that approximately 130 species occur in the region (Croat & Dmitrieva, in prep.). Many of the species in the section are small to minuscule and are easily overlooked, and many in the wettest part of the Pacific slope, such as in the pluvial forest in the Chocó, are terrestrial, unusually for *Anthurium*, a group of species of primarily epiphytic habit. This may help to explain the high species diversity in sect. *Porphyrochitonium* because of the greater number of niches exploited.

The new species of *Anthurium* sect. *Porphyrochitonium* described here was recently brought to my attention by Brian Kubicki who found it on his property in Costa Rica near the type locality of *Anthurium wendlingeri* G.M.Barroso (**Figure 1**). He questioned if his collection could be *A. wendlingeri* which led me to re-read the original diagnosis. Surprisingly, it fitted his plant well, except for the illustration provided by Barroso in her original publication (Barroso, 1965), a drawing which clearly showed a coiled spadix, a condition never found on the plant collected



Figure 1. Google Earth map showing type locality of *Anthurium wendlingeri*.

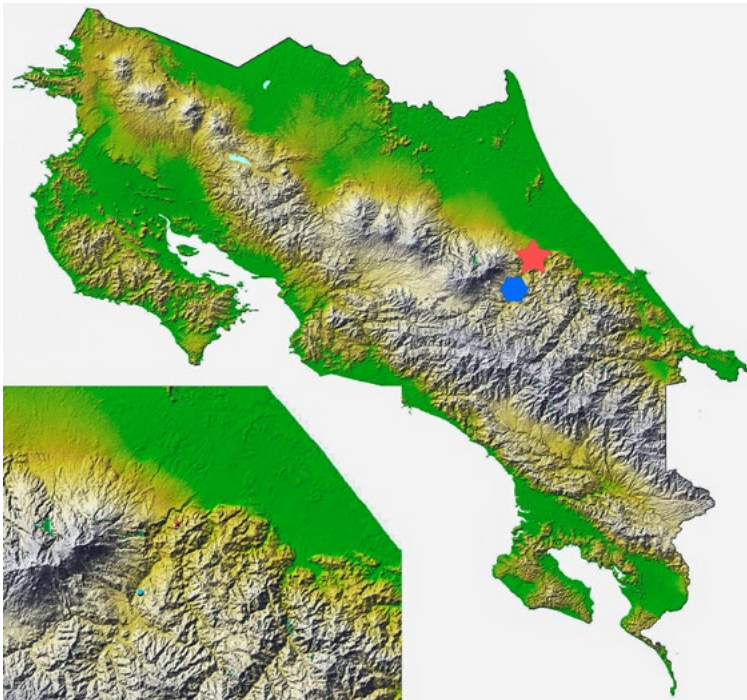


Figure 2. Topographical map showing type locality of *Anthurium wendlingeri* (blue hexagon) and *A. kubickii* (red star)

by Brian Kubicki but virtually always present on *A. wendlingeri*. This led to more examination of Barroso's species, including a study of the type specimen (RB 118049; **Figure 1**) which unquestionably proved to be typical usual *A. wendlingeri*.

However, another, unusual specimen (**Figure 2**), one made by Josef Bogner without date but believed to have been made shortly after the publication of Barroso's new species, was definitely not *A. wendlingeri* and has proven to be the same species collected on the property of Brian Kubicki. Bogner's collection came directly from the German horticulturist and plant seller, the late Clarence Horich, then living in Costa Rica. Bogner frequently wrote to Horich and got plants directly from him as in this case. It is assumed that Bogner, anxious to get a plant of this exciting new species by Barroso, must have contacted his friend Horich to obtain a collection. *Anthurium wendlingeri* was said to have come from Pavones [published erroneously as 'Turones' in the original publication (Croat, 1983)] near Turrialba, where it had been collected by another German, Kurt Wendlinger, then chief horticulturist at the Jardín Botánico de Munique de Caracas in Venezuela. Since Wendlinger also had a position at the Munich Botanical Garden and worked with Josef Bogner, Bogner soon learned of this mistake in the name of the collecting site and contacted his friend Clarence Horich in Costa Rica to find this plant.

Anxious to find this species for his friend Bogner, Horich went to the type locality of *A. wendlingeri* and collected a long strap-shaped leaved plant. He just got the wrong strap-shaped leaved plant, not *A. wendlingeri*, but rather the newly proposed species described here. It is also possible that Barroso had both species and made her description based on both species, thus illustrating *A. wendlingeri sensu stricto* but in part preparing the description from the newly proposed species below (i.e. describing both the spathe and spadix as dark purple). However, the exact nature of the type (which is clearly *A. wendlingeri* as generally understood) is more important than any discrepancy in the description. The other strap-shaped leaved plant thus remains as an undescribed species. Note that while the newly proposed species has not been recollected near Pavones it is not surprising that it has been collected not so far away at the Guayacán Rainforest Reserve.

The description is based on the standard established by Croat & Bunting (1979). Ecological assessments are based on the Holdridge Life Zone System (Holdridge et al., 1971).

ANTHURIUM KUBICKII

Anthurium kubickii Croat, **sp. nov.** — Type: COSTA RICA. Limón: Guayacán Rainforest Reserve, along CR Hwy #10, in foothills above Siquirres, 450 to 610 m, 10°03'18"N, 83°33'04"W to 10°03'40"N, 83°32'30"W, primary forest, T.B. *Croat & B. Kubicki 108730* (holotype, MO-6813000; isotypes CR, K, US).

Diagnosis: Pendent epiphyte with short internodes, persistent cataphyll fibers, subterete sulcate petioles, narrowly oblong to oblong-oblancoolate, pendent, narrowly long-acuminate, moderately coriaceous, dark green and matte-subvelvety blades which are narrowly rounded at base with the collective veins arising from near the base; it is further characterized by the pendent, moderately long-pedunculate inflorescence with a reflexed-spreading, dark violet

purple spathe, a medium purplish violet, matte, sessile, long-pendent spadix with 5–6(7) flowers visible per spiral and red, subglobose berries.

Pendent epiphyte at 1.5 to over 25 m high in the canopy; internodes very short, 1.5–2.5 cm diam.; cataphylls 6–7 cm long, drying reddish brown, mostly fibrous, erect to erect-spreading; petiole 15–20 cm long, 4–5 mm diam., subterete, sulcate adaxially, rounded abaxially, medium green, semiglossy; geniculum slightly swollen and nearly concolorous. *Leaves* with blades pendent, narrowly oblong to oblong-ob lanceolate, 100–120 cm long, 6–8 cm wide, 6 times longer than wide, 5 times longer than petioles, narrowly long-acuminate at apex, narrowly rounded at base, moderately coriaceous, dark green and matte-subvelvety above, paler and semiglossy below; midrib narrowly rounded, pale to nearly concolorous above, narrowly rounded and slightly paler below; primary lateral veins 25–28 per side, departing midrib at 40–55°, weakly raised, concolorous above, weakly raised, concolorous below; collective veins arising from near the base, 6–7 mm from margins, only weakly loop-connected; tertiary veins obscure on both surfaces. *Inflorescence* pendent; peduncle terete, 25 cm long, weakly tinged purplish; spathe reflexed-spreading, dark violet purple and semiglossy on inner surface, more nearly matte and curled inward longitudinally with age; spadix medium purplish violet, matte, sessile, long-pendent, 34.5 cm long, 6–7 mm diam., weakly glossy to matte; flowers 5–6(7) visible in principal spiral, 7–8(15) visible in alternate spiral; stamens held at surface of tepals. *Infructescence* 60 cm long, 2 cm diam.; berries red, subglobose, 6–7 mm diam., semiglossy with a nearly button-shaped style; seeds not studied.

Distribution and ecology — *Anthurium kubickii* is endemic to Costa Rica, known only from the eastern slope of the Cordillera de Talamanca in Limón Province at 450–610 m in a *Tropical wet forest* transition zone to *Premontane wet forest* life zone.

Etymology — The specific epithet is a patronym honoring Brian Kubicki, owner and operator of the Guayacán Rainforest Reserve, a small ecolodge near Guayacán de Siquirres, Limón Province, which is one of the most biodiverse private nature reserves in Central America. Brian moved from his home in Minnesota, U.S.A. to study amphibians in Costa Rica and has been living there full-time since 1998, during which time he has published several scientific papers on the amphibians of the country, including the taxonomic descriptions of several new species. In addition to his work with amphibians Brian is also making studies of many of the principal plant groups at his reserve.

Comments — The species has been confused with *Anthurium wendlingeri* G.M.Barroso but that species differs in having a green or faintly purplish spathe and a whitish spadix that is soon turned in a cork-screw-shaped configuration. In contrast, *A. kubickii* has a dark purple spathe and a dark purple straight inflorescence never formed in a cork-screw shape.

In the Lucid *Anthurium* Key *A. kubickii* tracks to *Anthurium friedrichsthalii* Schott which differs by having a much smaller spadix, less than 10 cm long and 4–6 mm in diam. and yellow-orange berries, and also to *A. utleyorum* Croat & R.A.Baker, which differs from *A. kubickii* by its smaller spathe (3.4–6.0 cm long, 1.0–1.5 cm wide) and by smaller stipitate spadix that is less than 15 cm long.



Figure 3. Herbarium specimen of *Bogner 2684* (M), first herbarium collection of *A. kubickii*, vouchered from living plant cultivated at Munich Botanical Garden (without date but believed to be 1965 or 1966).



Figure 4. Holotype specimen of *Anthurium wendlingeri* G.M.Barroso.



Figure 5. Brian Kubicki with *Anthurium kubickii*. Guayacan Rainforest Reserve, Costa Rica.

Conservation status — IUCN red list category ranking for the species is Data Deficient (DD) owing to the small number of known collections (IUCN, 2019).

Acknowledgements

Images of topo maps and all images of living plants were provided by B.Kubicki. Scans of herbarium specimens from MO scanning group.



Figure 6. *Anthurium kubickii*. Potted plant showing habit. Guayacan Rainforest



Figure 7. *Anthurium kubickii* Close-up of stem, leaf base and petiole. Guayacan Rainforest Reserve, Costa Rica.



Figure 8. *Anthurium kubickii*. Lower portion of leaf with inflorescence. Guayacan Rainforest



Figure 9. *Anthurium kubickii*. Inflorescence. Guayacan Rainforest Reserve, Costa Rica.



Figure 10. Type specimen of *Anthurium kubickii* Croat, T.B.Croat & B.Kubicki 108730 (MO)

REFERENCES

- Barroso, G.M. (1965). Especie nueva de *Anthurium* (Araceae) originaria de Costa Rica. *Boletín de la Sociedad Venezolana de Ciencias Naturales* 26: 151–152.
- Boyce, P.C. & T.B. Croat (2011 onwards). *The Überlist of Araceae: totals for published and estimated number of species in aroid genera*.
- Croat, T.B. (1983). A revision of the genus *Anthurium* (Araceae) of Mexico and Central America. Part 1: Mexico and Middle America. *Annals of the Missouri Botanical Garden* 70: 211–417.
- Croat, T.B. (1986). A revision of the genus *Anthurium* (Araceae) of Mexico and Central America. Part 2: Panama. *Monographs in Systematic Botany from the Missouri Botanical Garden* 14: 1–204.
- Croat, T.B. (1991). A revision of *Anthurium* section *Pachyneurium* (Araceae). *Annals of the Missouri Botanical Garden* 78: 539–855.
- Croat, T.B. (2023, in press). *Anthurium*. In C. Ulloa Ulloa, H.M. Hernández Macías, F.R. Barrie & S. Knapp (eds), *Flora Mesoamericana. Volumen 2, Parte 1. Cycadaceae a Connaraceae*. Missouri Botanical Garden, St. Louis.
- Croat, T.B. & A. Dmitrieva (in prep.). *Anthurium* sect. *Porphyrochitonium* from Esmeraldas Province, Ecuador.
- Croat, T.B. & G.S. Bunting (1979). Standardization of *Anthurium* descriptions. *Aroideana* 2: 15–25.
- Holdridge, L.R, W.C. Grenke, W.H. Hatheway, T. Liang & J.A. Tosi (1971). *Forest Environments in Tropical Life Zones: a Pilot Study*. Pergamon Press, New York.
- IUCN (2019). *Guidelines for Using the IUCN Red List Categories and Criteria, version 14*. Prepared by the IUCN Standards and Petitions Committee, Gland.