

# ***Anthurium rulandii*, a new species of *Anthurium* sect. *Belolonchium* (Araceae) at the Atlanta Botanical Garden**

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## **ABSTRACT**

A new species of *Anthurium* sect. *Belolonchium* is described as new to science and compared with other similar described species.

**Key Words:** *Anthurium*, sect. *Belolonchium*, new species, Ecuador

## **INTRODUCTION**

Botanical gardens with large collections of tropical plants often prove to be a major source of discovery as is the case of this new *Anthurium* species which has been in cultivation at the Atlanta Botanical Garden since about 1980. The species remained unpublished, as until recently the locality where the species was found was not known. Thanks to the helpful staff at the Atlantic Botanical Garden, including Ron Gagliardo and David Ruland, this plant was brought to my attention. While it was immediately recognized as a likely new species, the species was studied and compared with other similar species in sect. *Belolonchium* where many new species have been discovered and remain unpublished. The unpublished Croat Checklist of *Anthurium* sect. *Belolonchium* species numbers 284 species, many of which, like *A. rulandii*, remain unpublished and will be published later in a full revision of the section, where it will finally be lectotypified. Sect. *Belolonchium* is expected to have perhaps 350 total species. The section is largely Andean and mostly occurs at elevations of 1000 to 2000 m elevation, often in cloud forests. The group is characterized by its typical short internodes, large number of persistent red-brown cataphyll fibers, mostly sagittate to triangular blades with lateral margins of the anterior lobe often constricted, a frequent presence of ribs on the lower major veins, a lack of any markings such as pale lineations or dark dots or glands as well as inflorescences which have a hooding spathe

and frequently pendent spadices. Molecular work by Carlsen & Croat (2019) suggests that those supposed members of this section with erect spadices and reflexed spathes, such as *Anthurium brownii* Mast., likely form a different clade possibly requiring the establishment of a different section to accommodate them.

### Materials and Methods

The description of this species follows a standard published by Croat & Bunting (1979). The life zone ecology is based on the Holdridge Life Zone System (Holdridge et al, 1979). The Red Book status (IUCN, 2023) is classified as DD (Data Deficient), owing to the fact that it is known only from a single collection and the region where it occurs is poorly explored. The species was determined as new based on a study made with the Anthurium Lucid Key which contains details of nearly 2000 species, some of them as yet unpublished. The comparisons listed contain only those which have been previously published.

### NEW SPECIES DESCRIBED

*Anthurium rulandii* Croat & Grib, **sp. nov.** — Type: Cultivated at Atlanta Botanical Garden, 93–1468, vouchered June, 1997, *T.B. Croat 79594* [original collection: ECUADOR. Esmeraldas: along Río Crystal, vicinity of Crystal, a village located ca. 2.5 km SW of Lita (direct line), 00°50'45.62"N, 78°29'31.84"W, 1200 m.] (holotype, MO-04919046–47; isotypes, QCNE).

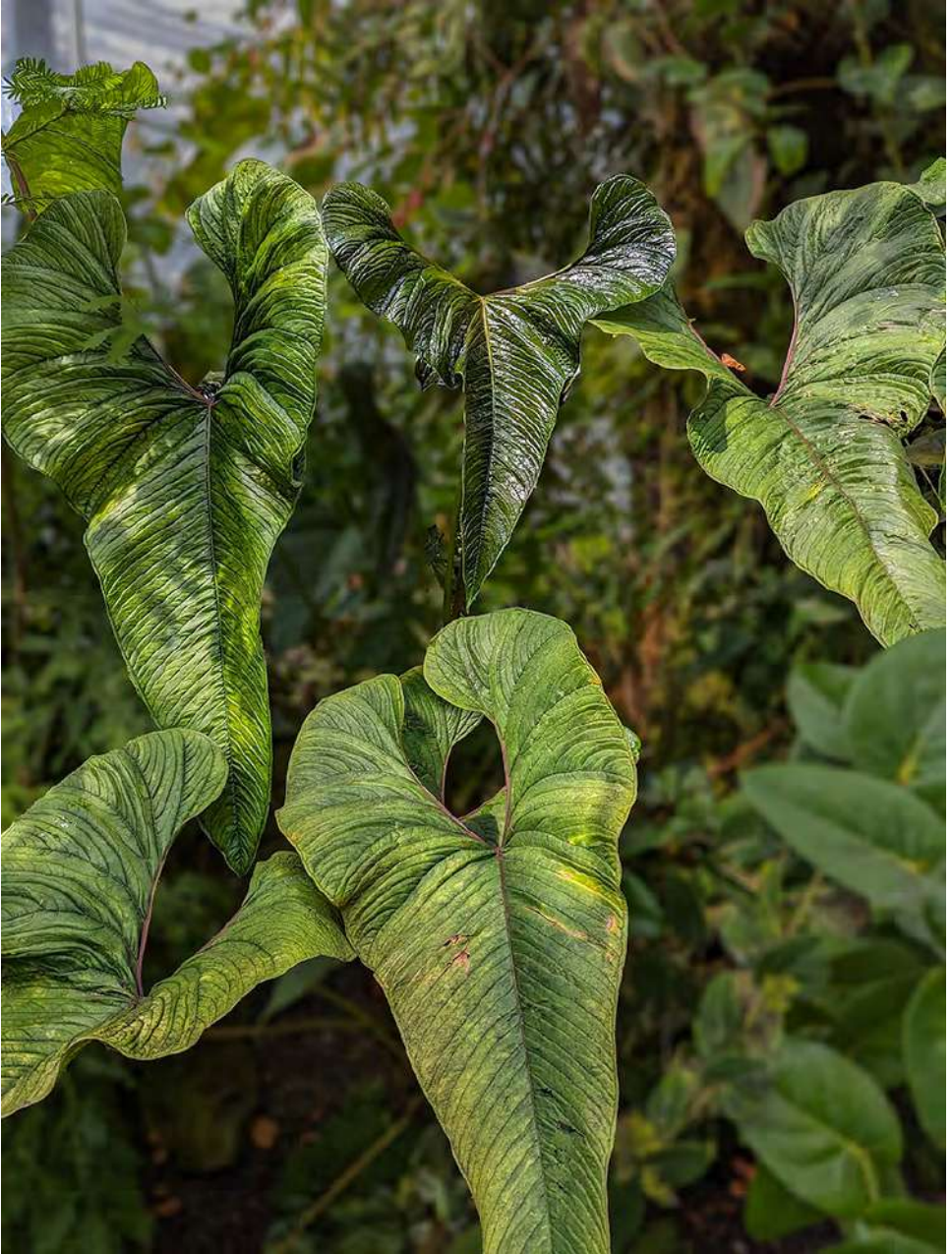
*Diagnosis:* Characterized by its short thick internodes, fibrous reddish brown cataphyll fibers, its petioles C-shaped, sharply V-sulcate petioles and closely circumferentially striate-ridged, narrowly ovate-sagittate abruptly acuminate brown-drying blades which are 1.4–1.7 times longer than broad with the anterior lobe straight to weakly concave along the margins, the posterior lobes directed downward and inward, a parabolic sinus, (21)24–26 (30) pairs of primary lateral veins, 10–11 pairs of basal veins, the 1st pair free to base, the remainder fused into a posterior rib which is largely naked along the sinus, a green lanceolate spathe and a stipitate whitish spadix.

Original habit unknown but likely terrestrial; **internodes** 2 cm diam.; **cataphylls** 21 cm long, persisting semi-intact on margins, mostly a network of reddish brown fibers otherwise; **petioles** 63.1–143 cm long, 7–1.2 mm diam., sharply sulcate, C-shaped in cross section, initially dark green, tinged dark purple, glossy, initially weakly ribbed, especially on the non-flattened portion, becoming sharply V-sulcate adaxially at least toward the apex, the upper margins along sulcus prominently and closely striate-ridged, the fine ridges weaker or absent abaxially (the ridges becoming more prominent on older petioles), unmarked, drying yellowish brown; geniculum 4–5 cm long, drying darker than petioles; **blades** narrowly ovate-sagittate, 74.3–95.3 cm long,

56 cm wide, 1.4–1.7 times longer than broad, broadest below petiole attachment, 1.2 times long as petioles, abruptly acuminate at apex, subcoriaceous, dark green and weakly glossy above, moderately paler and semiglossy below, drying subcoriaceous, brown and weakly glossy above, grayish olive-brown and semiglossy below, epunctate; upper surface drying moderately smooth sparsely granular; lower surface densely and minutely granular; **anterior lobe** (40)53.7–65 cm long, straight to weakly concave along the margins, the distal margin slightly rounded; **posterior lobes** (24)29.8–36 cm long, (12)14.4–19 cm wide, directed downward and inward; **sinus** parabolic, (22.5)26–31 cm deep, 12–22 cm wide; midrib acute and purple above, round-raised, paler and finely striate below, drying acute and darker above, narrowly raised, finely ribbed and darker below; **primary lateral veins** (21)24–26 (30) pairs, arising at 50–60°, sunken above, narrowly round-raised and paler below, narrowly (3)5–7-ribbed circumferentially below, drying sunken, paler above, narrowly raised, finely ribbed and darker below; interprimary veins present throughout most of the length of the blade, especially in the upper ¼; tertiary veins in part prominulous below; **collective veins** arising from the 6th pair of basal veins, rarely from the upper primary lateral veins, 1–4 mm from margin; **basal veins** 10–11 pairs, 1st pair free to base, 2nd pair fused to 2–4.5 cm, 3rd pair fused to 5–7 cm, 4th pair fused to 10 cm, 5th pair fused to 14 cm, 6th pair fused to 16 cm; 7th pair fused to 8–19.5 cm, 8th pair fused to 16.3–20.5 cm, 7th to 9th pairs fused to 19 cm, all basal veins prominently branched with 7–10 lateral branches per side; posterior rib finely ridged, gradually curved, naked 14–17.5 cm; **sinus** broadly hippocrepiform, 20.6–29 cm deep, 59.8 cm wide (to 16 cm wide when flattened). INFLORESCENCE with peduncle terete, prominently low narrow-ridged 41–51 cm long; **spathe** held at 180° to peduncle, green, tinted purple, turning dark brown, 12–15 cm long, 4.5–5.7 cm wide, drying 14.3 cm long, 3 cm wide, lanceolate to narrowly ovate-elliptic, rounded and short-acuminate at apex, rounded at base, 7–9-veined, coriaceous, red-brown, glossy; stipe 2–2.5 cm long, 1.1–2.3 cm diam.; **spadix** 16.5–20 cm, stipitate, weakly tapered, probably whitish at anthesis, turning light brown, drying 14.3 cm long, 1.1 cm wide, reddish brown; **flowers** 17–21 visible per spiral, drying (1.4)1.6–2(2.6) mm long, (1.4)1.8–2.3 mm wide; tepals held up against the emerging pistil, papillate-granular on drying; lateral tepals 1.6–1.8 mm wide, the outer margins 2-sided, inner margin rounded; stamens exerted by at least 1 mm; filament somewhat flattened, anthers 0.8 mm long, 0.4–0.6 mm wide, drying whitish around its margin, the connective thick, dark brown. INFRUCTESCENCE not seen. **Figures 1–9.**

**Distribution and ecology** — *Anthurium rulandii* is endemic to Ecuador, known only from the Lita-San Lorenzo Region along the Río Crystal at 1200 m elevation in a *Premontane wet forest* life zone.

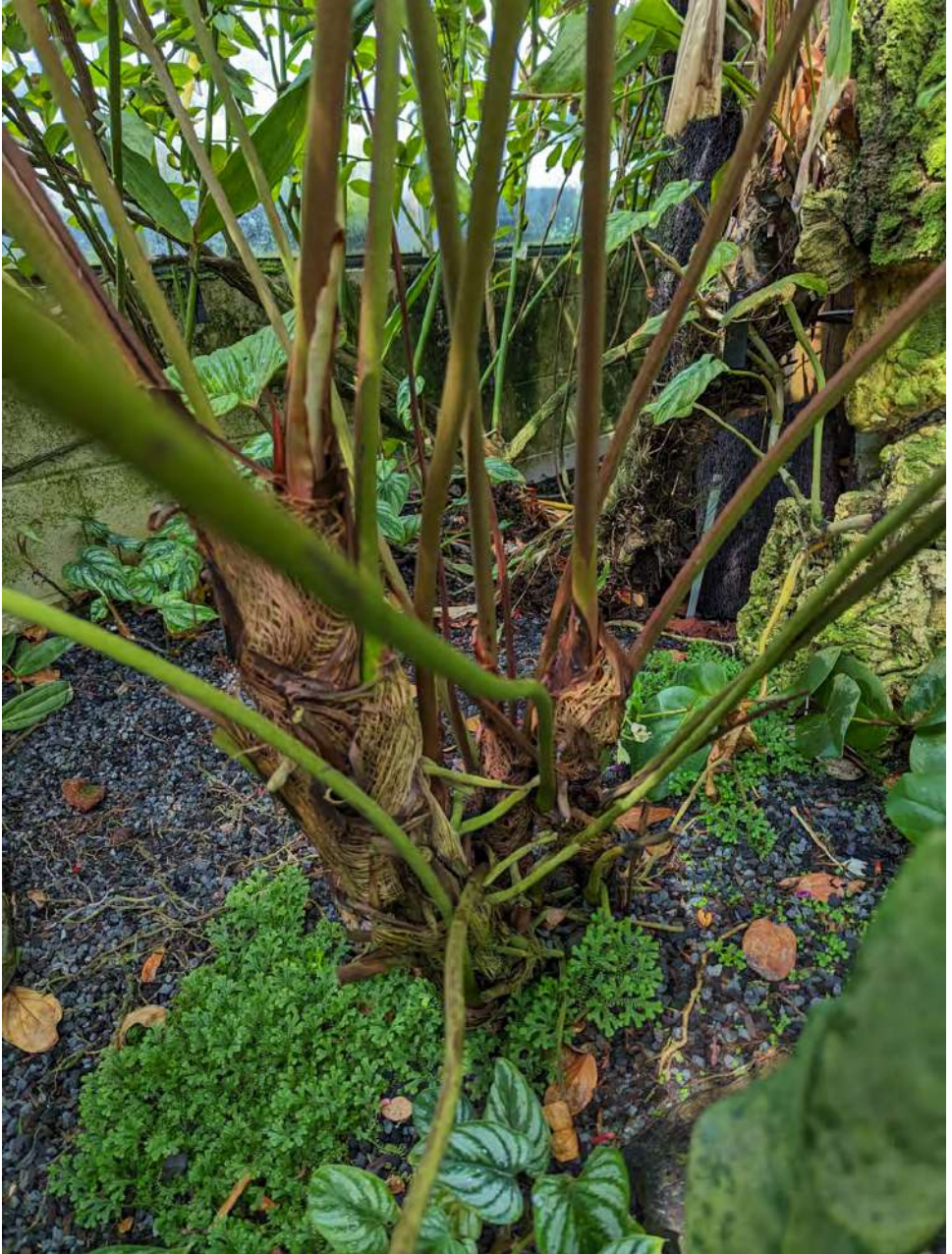
**Etymology** — The species is named for David Ruland, Manager of the Collections Greenhouse at the Atlanta Botanical Garden (ABG) who assisted in describing the



**Figure 1:** *Anthurium rulandii* – Habit of cultivated plant at Atlanta Botanical Garden.



**Figure 2:** *Anthurium rulandii* – Leaf blade adaxial surface.



**Figure 3:** *Anthurium rulandii* – Stems of a single plant with cataphyll fibers and petiole bases.



**Figure 4:** *Anthurium rulandii* – Stems with petiole bases and cataphylls in various stages.



**Figure 5:** *Anthurium rulandii* – Flowering plant with 2 juvenile inflorescences.

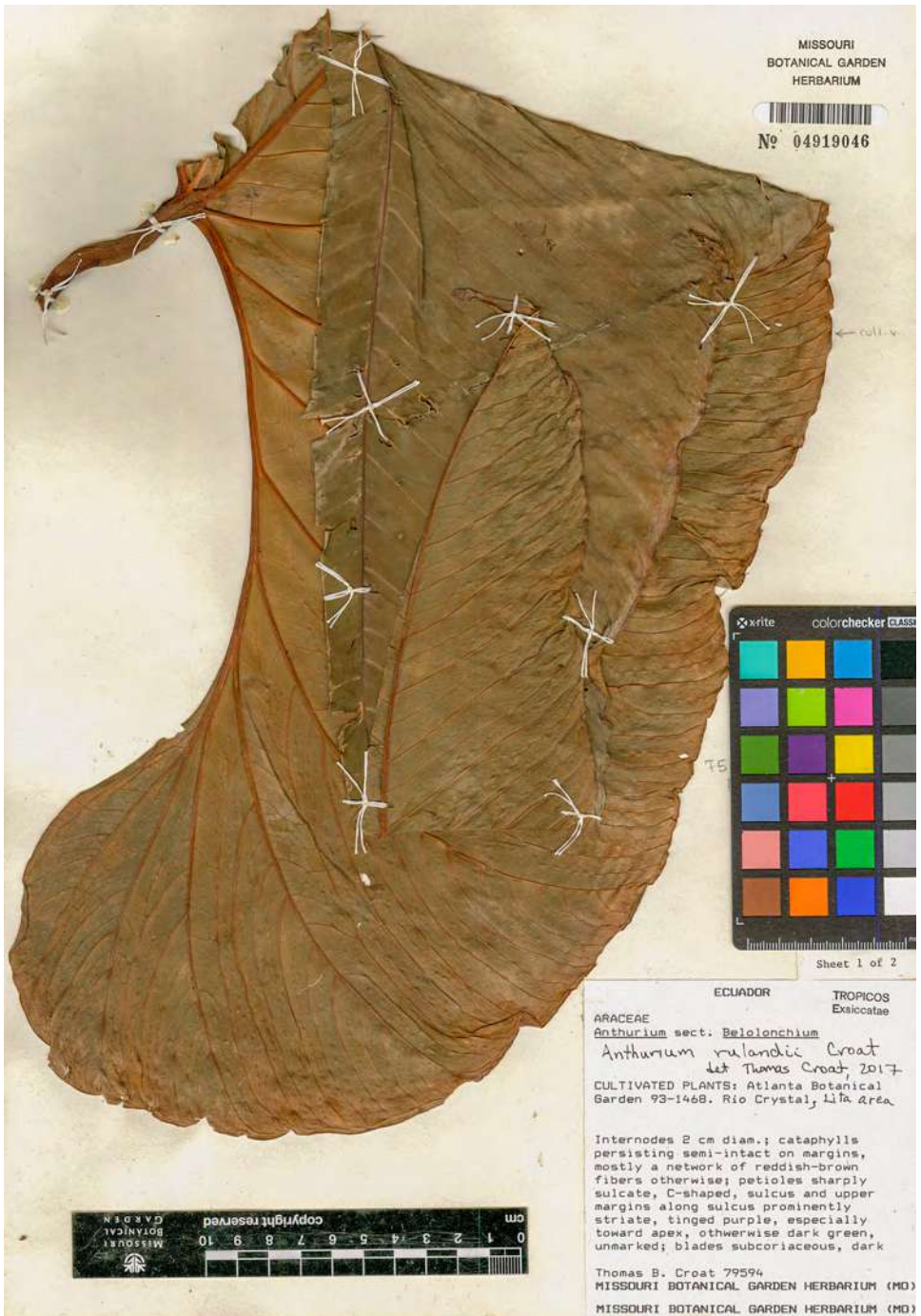




**Figure 6:** *Anthurium rulandii* – Flowering plant with 3 inflorescences in staminate phase on the left and on greenish inflorescences in pistillate phase on the right.



**Figure 7:** *Anthurium rulandii* – Close-up of mature inflorescence.



**Figure 8:** *Anthurium rulandii* – Herbarium specimen, folded leaf showing adaxial and adaxial surfaces (Croat 79594, sheet 1).

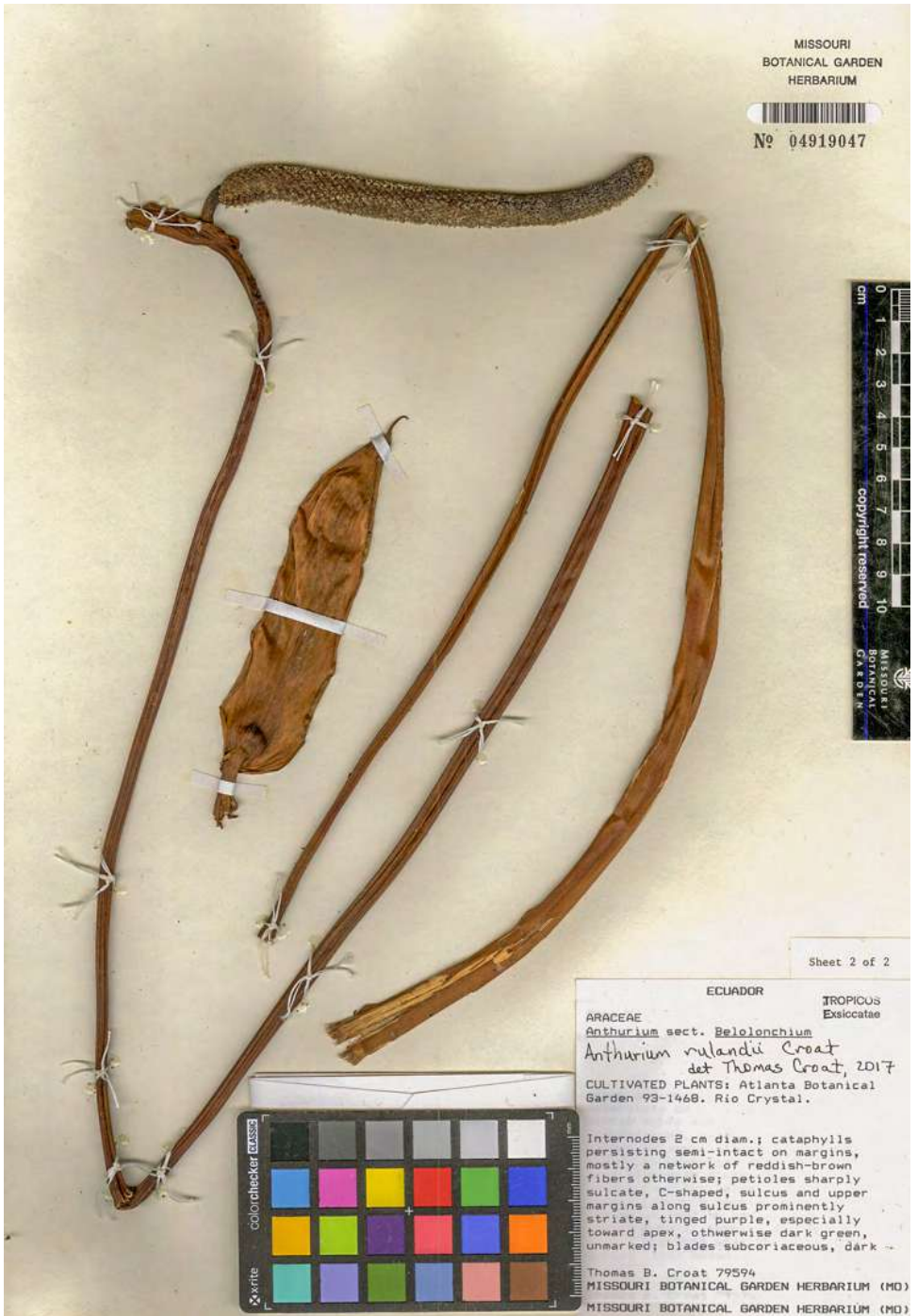


Figure 9: *Anthurium rulandii* – Herbarium specimen showing full inflorescence with partially detached spathe as well as full length petiole (Croat 79594, sheet 2).

plant, and who sent me the fresh material from the living type plant in the greenhouses of the garden from which the collections were. David, a native of Lake Ronkonkoma, New York, has worked as a horticulturist at the AGB for more than 25 years.

**Comments** — The species is a member of sect. *Belolochium* characterized by its short internodes, sharply C-shaped, sulcate and finely ribbed petioles with the upper margins prominently striate along the sulcus, narrowly ovate-sagittate somewhat glossy blades with the midrib acute above, round-raised below, usually 24–26 pairs of basal veins with the collective veins arising from the upper primary lateral veins and extending so near the margin that it is difficult to determine the origin of the collective veins. In addition, the inflorescence is characterized by its green, lanceolate spathe which is directed straight from the end of the peduncle and the white stipitate spadix which has exerted stamens. The species is unusual, especially for a *Belolochium* by producing a series of inflorescences that come into flower at nearly the same time. The inflorescences have a slightly unpleasant odor that is apparent during the day when the spadix is covered with fresh pollen.

The species is perhaps most easily confused with *Anthurium tremulum* Sodiro which differs in having fewer primary lateral veins and with the collective veins arising from one of the basal veins (in contrast to one of the primary lateral veins). In addition, the primary lateral veins of *Anthurium rulandii* are narrowly and acutely raised in contrast to those of *A. tremulum* which are typically narrowly rounded.

## ACKNOWLEDGEMENTS

We wish to thank Hugo Mediana of Ecuagenera who provided the coordinates for Crystal, and to Ron Gagliardo who first brought this plant to our attention and David Ruland for making better material available to me.

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