



REU Program

Preliminary Revision of *Anthurium* Sect. *Polyneurium*

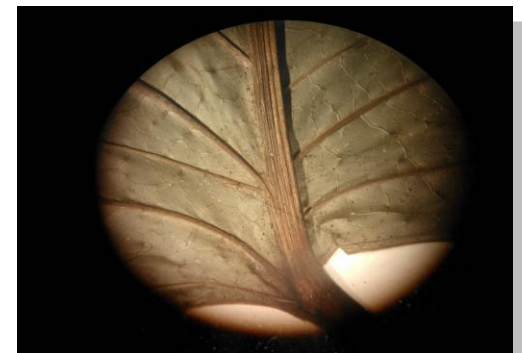
Description of New species of *Anthurium* (Araceae) Sect. *Polyneurium*



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Anthurium genus

- Is a Neotropical genus
- 1250 to 1500 species
- The flowers are bisexual
- Leaf blades with net-reticulate venation



Sect. *Polyneurium*

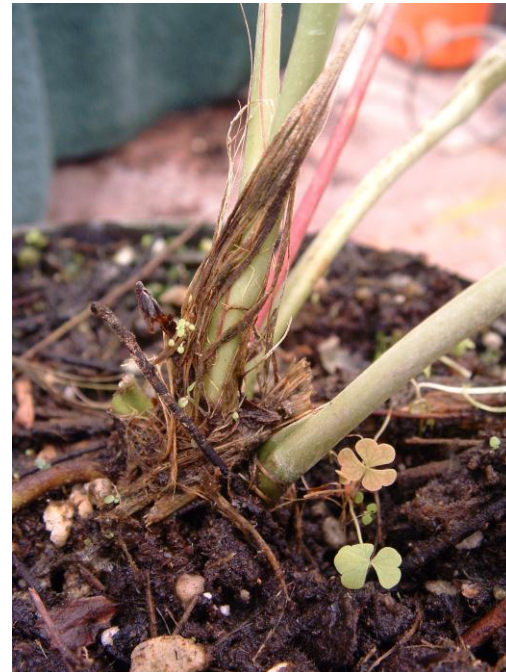
- Numerous closely parallel primary lateral veins
- Blades sagittate more or less oblong and acute to subcordate at the base



- Spadix usually purplish



- Cataphylls fiber residues



Aroid Research Program

- Program consists of Tom Croat
Carla Kostelac, Emily Colletti and 16
volunteer research assistants
- Activities:
 - Operating Lucid Key to *Anthurium* and
Philodendron
 - Decisions on possible novelties
 - Describing plants

The Process of Identification

- Lucid key is used to test unknown species to determine if they are new.

Character states in *Anthurium* key:

- **Ecology**
- **Stem**
- **Roots**
- **Cataphylls**
- **Leaves**
- **Inflorescence**
- **Infructescences**

Lucid screen program

The screenshot displays the Lucid screen program interface, which is used for selecting features and filtering entities. The interface is divided into several panels:

- Top Panel:** Contains a menu bar with "Key", "Features", "Entities", and "View". Below the menu is a toolbar with various icons for navigation and editing.
- Left Panel (Features Available):** Shows a tree view of available features. The "Leaves" folder is expanded, and the "Petiole" folder is selected. Under "Petiole", the "Petiole length in proportion to the leaf blade" folder is expanded, and the "longer than leaf blade" option is checked. A "Petiole length" feature is set to "11 cm".
- Right Panel (Entities Remaining):** Lists 109 entities that remain after filtering. The list includes species names such as *angosturense* Engl., *angustatum* (Kunth) Kunth, *angustilobum* Croat, *antioquiense* Engl., *arisaemoides* Madison, *auritum* Sodiro, *bellum* Schott, *besseae* Croat, *binotii* Linden, *bogotense* Schott, *brachypodium* Sodiro, *brittonianum* Sodiro, *cachabianum* Sodiro, *cainarachense* Engl., *caulorrhizum* Sodiro, *chiapasense* Standl., and *chocoense* Croat.
- Bottom Left Panel (Features Chosen):** Shows the selected features. The "Leaves" folder is expanded, and the "Petiole" folder is selected. Under "Petiole", the "Petiole length in proportion to the leaf blade" folder is expanded, and the "longer than leaf blade" option is checked. A "Petiole length" feature is set to "11 cm".
- Bottom Right Panel (Entities Discarded):** Lists 711 entities that have been discarded. The list includes species names such as *acanthospadix* Croat & Oberle, *acaule* (Jacq.) Schott, *acebeyae* Croat, *acutangulum* Engl., *acutibacca* Croat & M.M.Mora, *acutifolium* Engl., *acutissimum* Engl., *acutum* N.E.Br., *affine* Schott, *alatifidunculatum* Croat & R.Baker, *alatum* Engl., *albertiae* Croat & Bay, *albidum* Sodiro, *albispatha* Sodiro, *albovirescens* Sodiro, *alegriasense* Engl., and *alticola* Croat.

At the bottom of the interface, there are buttons for "Trees", "Lists", and "Images". The current view is "Trees". The status bar at the bottom left shows the path "Leaves/Petiole/Petiole length".

What features are good to start the identification?

- **Geographic distribution**
- **Elevation**
- **Genus section**
- **Internodes**
- **Cataphylls:** persistence
- **Blades:** shape, size, glossiness and texture
- **Inflorescences:** spathe and spadix color
- **Infructescences:** spathe persistence, berries color

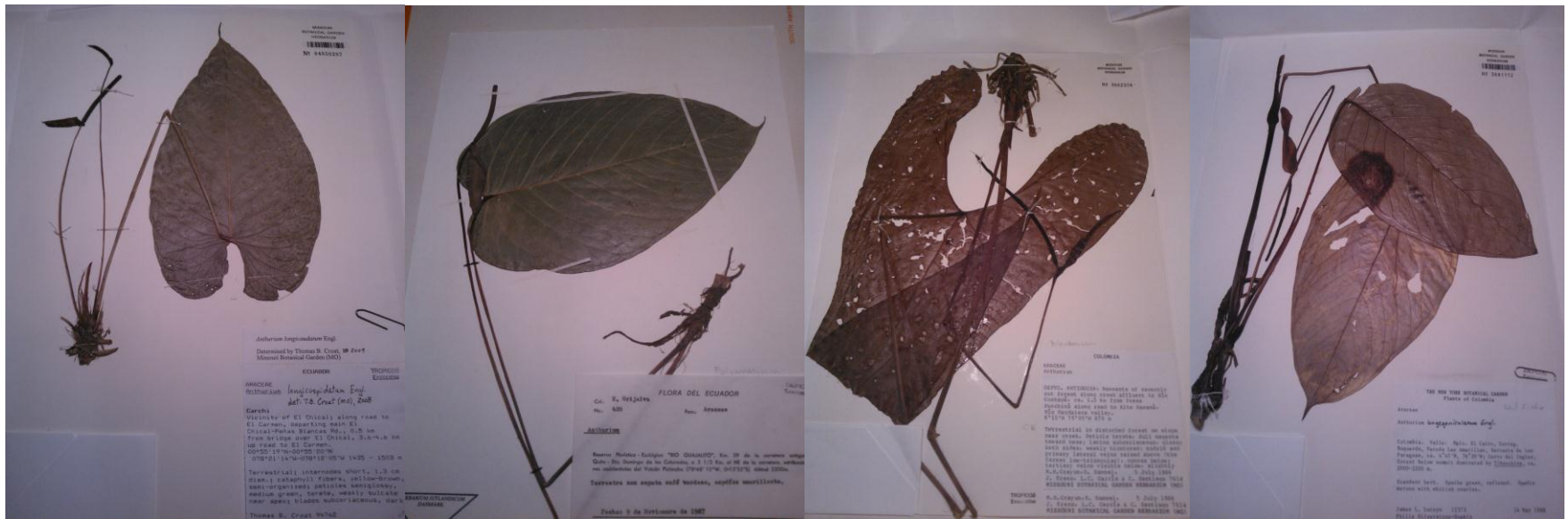
Comparing specimen with existing species

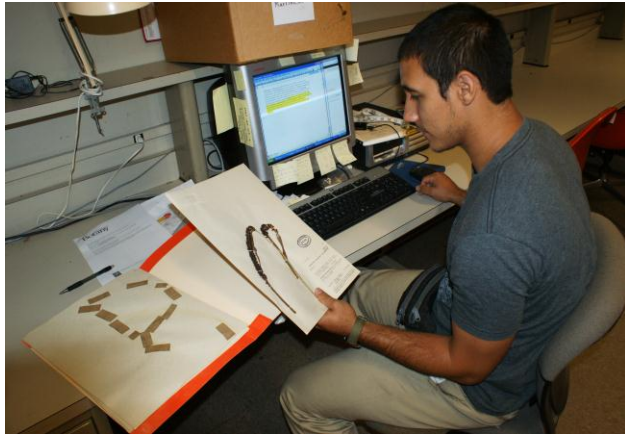
Deciding if a plant is new and preparing diagnosis



Describing New Species

- Once a species is deemed to be new the material is assigned to a describer.





analyzing the inflorescence



taking measures



analyzing the texture of leaf surface



writing the description

Anthurium vargastorresense Croat, sp. nov. Ecuador. Esmeraldas: Eloy Alfaro, Reserva Ecológica Cotacachi-Cayapas, Parroquia Luis Vargas Torres; Río Santiago, estero Pote; 00°49'N, 78°45'W, 250 m, *M. Tirado*, *P. Asimbava*, *M. Coroso*, *J. Arroyo* 558 (holotype, MO-04583472; isotype, QCNE).

Epiphytic; [all features from dried specimen]; **internodes** short; **cataphylls** deciduous; **petioles** 65.5 cm long, 3–6 mm diam., subterete, obtusely sulcate, drying greenish brown and prominently several-ribbed, geniculum 2.3 cm long, 3.2 mm diam.; **blade** ovate-sagittate, 65.5 cm long, 38 cm wide, broadest slightly below middle, 1.7 times longer than broad, as long as petioles, acuminate, deeply lobed at base, subcoriaceous, **epunctate** (lacking glandular punctations), slightly bicolorous, dark green and matte above, moderately paler and semiglossy below, drying dark brown and weakly glossy above, paler, semiglossy and yellowish brown below; **anterior lobe** more or less 47 cm long, broadly rounded on margins; **posterior lobes** 20 cm long, 14.5 cm wide more or less in the middle of lobe; **sinus** narrowly **hippocrepiform**, 17.7 cm deep, 6.3 cm wide; **both surfaces** smooth without notable features; **midrib** **thicker** than **broad**, **drying** slightly darker than surface above, narrowly convex, concolorous than below surface; **basal veins** 9 pairs, 2 pair free to the base; 4th fused 3 cm, 5th fused 5–5.5 cm 6th & 7th fused 5–6 cm, 8th pair fused 7–8.5 cm; **posterior rib** naked, 5.5–6 cm; **primary lateral veins** ca. (18)19–20 pairs, arising from the midrib at (40)42–57° angle, narrowly convex, slightly darker than surface above, narrowly rounded, slightly darker than surface below; **collective veins** arising from 4th pair of basal veins, moderately loop-connected, mostly 2.5–6 mm from the margin. INFLORESCENCE ca. 48.7 cm long; **peduncle** elongate, 31.2 cm long, 4–5 mm diam., drying red-brown; **spathe** sessile, long-spreading, spreading, light green, linear-lanceolate, more or less 27 cm long, 2.8 cm wide; **spadix** long-tapered, violet-purple, narrowly cylindroid, 17.5 cm long, 4–5 mm diam.; **flowers** 6–8 visible per spiral, 1–1.4 mm long, 1–1.2 mm wide; tepals moderately smooth; lateral tepals 0.4–0.5 mm wide, inner margin rounded, outer margin 2-sided.

New species described

- *Anthurium castrillonense* Croat
- *A. blanquitense* Croat
- *A. cajambrense* Croat
- *A. carmenense* Croat
- *A. castrillonense* Croat
- *A. convencionense* Croat
- *A. cotundoense* Croat
- *A. dolichocaulum* Croat
- *A. eforeroi* Croat
- *A. efrainii* Croat
- *A. falleniae* Croat
- *A. frieri* Croat
- *A. griseolaminum* Croat
- *A. griseosessilis* Croat
- *A. herediae* Croat
- *A. ipariaense* Croat
- *A. jasarum* Croat
- *A. jeanlindenii* Croat
- *A. josecamposii* Croat
- *A. killipii* Croat
- *A. liberum* Croat
- *A. longifilamentum* Croat
- *A. pedrazae* Croat
- *A. puchinaense* Croat
- *A. vargastorresense* Croat

Future works

- I will continue collaborating with Dr. Croat after I return to Puerto Rico by working on the Revision of *Anthurium* sect. *Polyneurium*.
- It is expected that by the means of loans to my institute I will be able to continue preparing descriptions of other new species.

Special thanks to

Dr. Thomas B. Croat for mentoring and dedication to the project and Carla V. Kostelac (editor).

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