The Likely Origin of *Anthurium roseonervium* Croat & Hodel and the Probability of More Discoveries in Mexico

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Abstract: The probable origin of *Anthurium roseonervium* Croat & Hodel (Araceae), a recently published new species in sect. *Andiphilum*, is Tomellín Canyon in Oaxaca. We also discuss the probability of high *Anthurium* species diversity and the possibility of new discoveries in Mexico.

Kew Words: *Anthurium*, new species, Mexico.

The aroid flora of Mexico is still poorly known because of a diverse array of poorly explored habitats and the paucity of local specialists but surprisingly the past few months have seen the discovery of several new species from Chiapas and Oaxaca in southern Mexico. Of these as many as 10 new species are in the genus *Anthurium*, including a new species from Oaxaca (Díaz et al. 2020a), but two new species of *Spathiphyllum* (one from Oaxaca and the other from Guerrero, Croat in prep.) and a new species of *Philodendron* from Tabasco (Diaz et al. 2020b) were also discovered.

We recently published a new species *Anthurium roseonervium* Croat & Hodel from cultivation in California (Croat and Hodel 2020) (**Fig. 1**). Because the late Loran M. Whitelock of Los Angeles, a cycad and exotic plant aficionado who had collected and distributed this new species and who had spoken much about an area in Chiapas referred to as Lago Malpaso and its rich and diverse flora, we speculated that this new species might have been from that region.

However, Dylan Hannon, the Curator of Living Plants in the Conservatory and plantsman extraordinaire at The Huntington Library, Art Museum, and Botanical Gardens in San Marino, California, read our paper and immediately recognized this new species as one that he, too, was cultivating. His plant had come from Rancho Soledad Nursery in Rancho Santa Fe, California, the same source as our type plant, and still had Whitelock's original tag indicating the origin of the plant was Tomellín Canyon in Oaxaca. Thus, we were correct in speculating that Whitelock had originally collected this new species in southern Mexico. We erred, though, because he had apparently collected it not at one of his favorite regions (Lago Malpaso in Chiapas) but rather from the canyon of the Río Tomellín much further north in adjacent Oaxaca.

Tomellín Canyon is a relatively well known place mostly because of the famous rail line passing through it that was the main connection between Puebla and Oaxaca. The town of Tomellín is

1. *Anthurium roseonervium* Croat & Hodel, habit, cultivated in Lakewood, California. Type plant, *Hodel & Hodel 4004*. Note the reddish pink nerves. © 2020 D. R Hodel.

at the mouth of the canyon and there the Río Tomellín merges into the Río Grande, which flows north where it merges with the Río Salado to form the Río Santo Domingo. This latter river flows east to join the Río Papaloapan, which flows into the Gulf of Mexico. A publication summarizing the *Mammillaria* cacti in Tomellín Canyon (Lau 1979) indicates it is likely a dry area and not a logical habitat for *Anthurium*.

However, we suggest that Whitelock probably collected *Anthurium roseonervium* near the town of Tomellín because it is the most mesic part of the otherwise dry and inhospitable canyon and the vegetation, especially along the river, is quite suitable for aroids. Thus, we suggest that *A. roseonervium* is endemic to southern Mexico and is likely known only from the presumed type locality near the town of Tomellín at the mouth of Tomellín Canyon in northern Oaxaca at approximately 17°45'N, 96°57'W, and about 615 m elevation. In Tomellín Canyon, *A. roseonervium* is likely restricted to rocks along the river or a moist stream bank in this mesic refuge. Indeed, another species, *A. nelsonii* Croat was also collected in Tomellín Canyon (*Rose & Rose 11351*). That species, while also a member of sect. *Andiphilum*, differs in having proportionally broader leaf blades with an arcuate sinus and a whitish abaxial blade surface.

While it might seem unusual to encounter *Anthurium* in such a dry area, Mexico is renowned for its many isolated and often small, mesic refugia scattered over the country, even in areas with a harsh environment (Croat 1983, 1991, 1997). Typically, these refugia consist of small populations with just a few plants clinging to the rocky margins of small, intermittent streams. These isolated remnants of mesic forest are the reason Mexico has such a high rate of endemism compared to similar mesic areas in Middle America, especially in Honduras where endemism is the lowest. Nearly all *Anthurium* species in Oaxaca, Puebla, Guerrero, Jalisco, Nayarit, Colima, and Michoacan have similar, restricted distributions and we suspect that dozens more, as yet undiscovered species likely exist, some occupying only a single isolated mesic spot not yet seen by botanists, and just waiting to be discovered.

Many of Eizi Matuda's *Anthurium* species described more than 50 years ago have never been seen again while *A. hagsaterianum* Haager from Guerrero is known only from the type locality. Some of Matuda's collections and those of others, although known from more collections, occur only in one or a few, often isolated but closely associated localities. These include *A. berriozabalense* Matuda, *A. cerrobaulense* Matuda, *A. cerropelonense* Matuda, *A. cordato-triangulum* Matuda, *A. coicoyanense* Croat & Avila B., *A. lezamae* Matuda, *A. leuconeurum* Lemaire, *A. nakamurae* Croat, *A. ocotepecense* Matuda, *A. nelsonii* Croat, *A. riograndicola* Matuda, *A. rionegrense* Matuda, *A. rzedowskii* Croat, *A. sarukhanianum* Croat & Haager, *A. tlaxiacense* Matuda, and *A. yetlense* Matuda.

Certainly, no other country in Central America has such a high percentage of species known from so few, often closely associated localities, which is likely due to the generally drier conditions throughout most of Mexico and the isolation of suitable habitats for *Anthurium*. These drier conditions probably afford the possibility that many more isolated and new *Anthurium* species occur in Mexico because botanists have by no means explored all the possible habitats in the country.

Erratum

In our recent article describing *Anthurium roseonervium* (Croat and Hodel 2020) the genus section to which the new species belongs was misspelled. The correct spelling is *Andiphilum*.

Literature Cited

Croat, T. B. 1983. A revision of the genus *Anthurium* (Araceae) of Mexico and Central America. Part 1: Mexico and Middle America. Ann. Missouri Bot. Gard. 70: 211–417.

Croat, T. B. 1991. A revision of *Anthurium* section *Pachyneurium* (Araceae). Ann. Missouri Bot. Gard. 78: 539–855.

Croat, T. B. 1997. A revision of *Philodendron* subgenus *Philodendron* (Araceae) for Mexico and Central America. Ann. Missouri Bot. Gard. 84(3): 311–704.

Croat, T. B. (in prep.). A revision of *Spathiphyllum* (Araceae) for Mexico and Central America.

Croat, T. B. and D. R. Hodel. 2020. A New Species of *Anthurium*, sect. *Andiphilum* (Araceae) from cultivation. PalmArbor 2020-8: 1–16.

Díaz Jiménez, P., P. A. Aguilar-Rodríguez, T. B. Croat, M. Cedeño-Fonseca, M. Alarcón-Montano, Y. Yovel, and M. C. Macswiney-G. 2020a*. Philodendron quadarramanum* (Araceae), a new species from Tabasco, Mexico. Phytotaxa (in press).

Díaz Jiménez, P., T. B. Croat, M. Cedeño-Fonseca, H. Gómez-Domínguez, O. O. Ortiz, O.O., and P. A. Aguilar-Rodríguez. 2020b. *Anthurium perezfarrerae* (Araceae, sect. *Andiphilum*), a new species from Sierra de Juarez, Oaxaca, Mexico*.* Rev. Mex. Biodiversidad (in press).

Lau, A. B. Mammillarias of Tomellin Canyon, Oaxaca, Mexico. Cactus Succulent J. Great Britain 41(3): 61–66. 1979.

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