

A NEW SPECIES OF *ANTHURIUM* (ARACEAE) FROM OAXACA, MEXICO

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ABSTRACT

Anthurium coicoyanense Croat & de Ávila is described as new from a heretofore poorly collected area in Oaxaca State in Mexico. The species is a member of an as yet unpublished section of the genus that comprises a total of thirteen Mexican species. That section will be proposed formally in an upcoming paper by Croat and Monica Carlsen from the Missouri Botanical Garden.

Key words: *Anthurium*, Mexico, new species, Oaxaca.

RESUMEN

Se describe a *Anthurium coicoyanense* Croat & de Ávila como una especie nueva proveniente de una área pobremente explorada en el estado de Oaxaca en México. El taxon nuevo es miembro de una sección hasta ahora inédita del género que comprende trece especies mexicanas en total. Dicha sección será propuesta de manera formal en una publicación que preparan actualmente Croat y Mónica Carlsen del Jardín Botánico de Missouri.

Palabras clave: *Anthurium*, México, nueva especie, Oaxaca.

INTRODUCTION

The genus *Anthurium* was last revised for Mexico by the senior author (Croat, 1983); 219 species had been recorded for all of Central America (including Mexico,

Middle America and Panama). At that time, Mexico had 41 known taxa, with 26 endemic species. As was then reported (Croat, loc. cit.), six species are relatively wide spread: *A. andicola* Liebm., *A. chiapasense* Standl., *A. schlechtendalii* Kunth, *A. nizandense* Matuda, *A. oviandense* Matuda, *A. pedatoradiatum* Schott, and *A. podophyllum* (Schltdl. & Cham.) Kunth. The majority of the Mexican species are however relatively narrow endemics, mostly known from northern Oaxaca (eight taxa: *A. cerropelonense* Matuda, *A. chamulense* ssp. *oaxacatum* Croat, *A. longipetiolatum* Matuda, *A. machetioides* Matuda, *A. nelsonii* Croat, *A. subovatum* Matuda, *A. umbrosum* Liebm., *A. yetlense* Matuda); northern Chiapas (four taxa: *A. berriozabalense* Matuda, *A. clarinervium* Matuda, *A. leuconeurum* Lem., *A. lezamai* Matuda); or southeastern Chiapas (two taxa: *A. cordatotriangulum* Matuda, *A. nakamurae* Matuda).

In addition to these narrow endemic species, yet another one was published for Mexico in the revision of *Anthurium* section *Pachyneurium* (Croat, 1991), namely *A. sarukhanianum* Croat & Haager, known only from the lowlands of Guerrero State. Even later another rare endemic species was described from Chiapas, *Anthurium faustomirandae* Pérez-Farrera & Croat (Pérez-Farrera & Croat, 2001). The latter species is presently deemed to be a member of section *Calomystrium*. Further to the south in Guatemala, a number of new species have been discovered. Moreover, many species have been found in the southern extremes of Central America, in Costa Rica and especially in Panama (Croat & Ortiz, in prep.). Most of the species that have been discovered there pertain to the section *Porphyrochitonium* (Croat et al., in prep.).

The new taxon here proposed appears to be yet another narrow endemic, this one from western Oaxaca State in an area that had not been studied previously.

Anthurium coicoyanense Croat & de Ávila, sp. nov. Type: MEXICO. Oaxaca; Sierra Sur, distrito de Juchitahuaca, municipio de Coicoyán, Nami Ndosó Itia, SW of Coicoyán, bosque húmedo cerca de cascada, 17°15' N, 98°18' W, 2400 m, 16 Mar., 1988, *Alejandro de Ávila Blomberg* 228 (holotype, MEXU; isotype, NY) (Figs. 1, 2).

Hemiepiphytic; stems to 2 cm diam., with short internodes; cataphylls not seen; petioles D-shaped, 45 cm long, 5 mm diam., drying gray-green, weakly glossy and densely pale short-lineate, broadly sulcate adaxially with bluntly acute, somewhat spreading margins; blades narrowly ovate-triangular-sagittate, narrowly acuminate at apex, prominently lobed at base, 44.3-49.7 cm long, 17.7-18 cm wide, 2.5-2.7 times longer than wide, about as long as petioles, broadest slightly above the petiolar

plexus, subcoriaceous, semiglossy, somewhat bicolorous, dark green above, drying grayish green and weakly glossy above, moderately paler and grayish yellow-green below; anterior lobe 37.3-48.5 cm long, broadly concave to almost straight on the margin, convex toward the apex; posterior lobes 9.7-11.7 cm long, 6.2-6.7 cm wide, turned somewhat inward; sinus spatulate, 8 cm deep, 4.2 cm wide; midrib weakly raised, narrowly rounded and concolorous above, narrowly rounded and slightly paler below, drying somewhat acute and finely ribbed, faintly pale short-lineate below; primary lateral veins 10-13 pairs, scarcely distinguishable from the interprimary veins, arising at ca. 50° angle, concolorous and weakly raised above, narrowly rounded and slightly paler below, drying more or less concolorous; tertiary veins scarcely raised; basal veins 3-4 pairs, none free to the base, 1st pair spreading at ca. 90° angle and curving abruptly upward; collective veins arising from the 1st pair of basal veins, 1.5-2 cm from the margins, 2nd and 3rd fused 2.5-3.2 cm, 4th basal vein essentially marginal; posterior rib nearly straight, naked throughout most of its length; surfaces moderately smooth and unmarked on magnification. Inflorescence erect-spreading; peduncle 40-41.5 cm long, drying same color as petiole, 4 mm diam.; spathe lanceolate, 6-6.8 cm long, 1.5-2 cm wide, green, narrowly acuminate, erect-spreading; spadix green, cylindroid-tapered sessile, 7.5-8.8-9 cm long, drying 1.1 cm diam. at base, 1 cm diam. midway, 7 mm diam. at 1 cm from tip, narrowly rounded at apex; flowers 6-7 visible per spiral, subrounded (at least on drying), 3.3-3.6 mm long, 3.4-4 mm wide; tepals drying yellow-brown, minutely papillate, often turned up markedly on drying; lateral tepals 2.2-2.6 mm wide, inner margin broadly rounded, outer margin bluntly 2-sided; stamens held at level of tepals, anthers 0.6 mm long and wide; thecae slightly divaricate; stigma broadly ellipsoid, 7 mm x 6 mm. Fruit not seen.

The new species, *Anthurium coicoyanense*, is placed in an as yet unpublished new section centered around a group of species with thick stems, short internodes, D-shaped petioles and orange berries with a mealy endosperm. That group includes the following Mexican species: *A. andicola* Liebm., *A. berriozabalense* Matuda, *A. cerrobaulense* Matuda, *A. chamulense* Matuda, *A. cordato-triangulum* Matuda, *A. montanum* Hemsl., *A. nakamurae* Matuda, *A. nelsonii* Croat, *A. rionegrense* Matuda, *A. rzedowskii* Croat, *A. seleri* Engl., *A. subovatum* Matuda, and *A. titanium* Standl. & Steyermark. In the revision of *Anthurium* of Mexico and Middle America (Croat, 1983), these species were tentatively placed in section *Belolonchium*, but at the time the senior author expressed the opinion that this group that he referred to as the *Anthurium andicola* complex might ultimately prove to be a new section (Croat, 1983, p. 214). Indeed, a recent molecular study by Monica Carlsen (Carlsen, 2011),



Fig. 1. Holotype of *Anthurium coicoyanense* Croat & de Ávila. MEXU.



Fig. 2. Close up of the holotype, showing the inflorescence.

then a student of the senior author at the University of Missouri-St. Louis, found that at least some representatives of this group formed a distinct clade. The oldest name for this clade was proposed by H. W. Schott in his *Prodromus* (Schott, 1860) as grex *Andiphilum*, a name that will be formally resurrected to the level of section in an upcoming publication (Croat & Carlsen, in prep.).

The new species is characterized by its hemiepiphytic habit, long-petiolate, subterete sulcate gray-green-drying petioles, narrowly ovate-triangular-sagittate narrowly acuminate blades with the anterior lobe broadly concave along the margins, a spatulate sinus, 3(4) pairs of basal veins with none of the basal veins free to the base, the 1st pair of basal veins broadly spreading, then directed upward along the margin and regularly very remote from the margins, 10–13 pairs of primary lateral veins, and these scarcely distinct from the interprimary veins, as well as by long-pedunculate inflorescence with a green erect-spreading spathe which is shorter than the spadix, and a moderately short weakly tapered essentially sessile green

spadix with large flowers. *Anthurium coicoyanense* is probably most similar to *A. montanum* Hemsl., which differs by having leaf blades proportionately much less elongated and 1.2–2 times longer than wide, with the collective veins 5–14 mm from the margins, as well as by having a typically purple spadix.

Anthurium coicoyanense is endemic to Mexico, known only from the type locality in Oaxaca State at 2400 m above sea level, in a region where the dominant vegetation is mixed pine-oak forest (bosque de pino-encino). The plant was found in a ravine near a waterfall, growing in the proximity of many species characteristic of high altitude cloud forests (bosque mesófilo de montaña) of the Pacific drainage of southern Mexico (*Chamaedorea* sp., *Chiranthodendron pentadactylon* Larreat., *Cleyera integrifolia* (Benth.) Choisy, *Daphnopsis nevlingii* J. Jiménez Ram. & J.L. Contr., *Disocactus* cf. *ackermannii* (Haw.) Ralf Bauer, and tree ferns).

In the CATE (Creating a Taxonomic E-science) Anthurium Key (Haigh et al., 2009), the new species tracks to *A. cerropelonense* Matuda, differing in having blades broadly ovate with several pairs of basal veins free to the base; *A. chamulense* Matuda, differing by having a broadly, mostly arcuate sinus to broadly parabolic sinus and a frequently purple spadix; *A. lucens* Standl., differing in having a purplish spadix and leaf blades with dark punctations on the lower surface; and *A. rzedowskii* Croat differs in having more coriaceous blades with broadly concave lateral margins which are truncate to subcordate at the base.

The species is named for the type locality in the municipality of Coicoyán de las Flores in the Sierra Sur Mountains of the district of Juxtlahuaca, in the state of Oaxaca, Mexico. This description is based on the specimen held at MEXU, designated as the holotype, confirmed by the characteristics of the isotype at NY; additional collections, which had been deposited at the herbarium of the Instituto Tecnológico de Oaxaca (where the second author was employed at the time of his fieldwork), were unfortunately destroyed. It will be difficult to return to the site where this plant was found because of ongoing violence and insecurity due to the cultivation of opium poppies in the region. Other herbaria in Oaxaca (SERO and OAX) do not hold specimens from that area.

ACKNOWLEDGMENTS

We thank Dr. Abisaí García Mendoza (Jardín Botánico, Instituto de Biología, UNAM) for his kind assistance in locating the specimen we have designated as the holotype, and Dr. David Sebastian Gernandt (Herbario Nacional, Instituto de

Biología, UNAM) for his generous authorization to publish the photographs of that specimen.

LITERATURE CITED

- Carlsen, M. 2011. Understanding the origin and rapid diversification of the genus *Anthurium* Schott (Araceae), integrating molecular phylogenetics, morphology and fossils. Ph.D. Dissertation. Department of Biology, University of Missouri. St. Louis, USA. 157 pp.
- 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.
- Haigh, A., S. J. Mayo, T. Croat, L. Reynolds, M. Mora Pinto, P.C. Boyce, L. Lay, J. Bogner, B. Clark, C. Kostelac & A. Hay. 2009. Interactive web-taxonomy for the Araceae: www.cate-araceae.org. Blumea 54: 13-15.
- Pérez-Farrera, M. A. & T. B. Croat. 2001. A new species of *Anthurium* (Araceae) from Chiapas, Mexico. Novon 11: 88-91.
- Schott, H. W. 1860. Prodröm systematis Aroidearum. Typis Congregationis Mechitharisticae, Viena, Austria. 605 pp.

Recibido en abril de 2014.

Aceptado en noviembre de 2014.