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TWO NEW SPECIES OF MYRTACEAE FROM ECUADOR

MARIA LÚCIA KAWASAKI^{1,2} AND ÁLVARO J. PÉREZ³

Abstract. Two new species from Ecuadorian Amazon, *Calypttranthes yasuniana* and *Eugenia bullatifolia*, are described and illustrated. Their relationships to closest relatives in these genera are discussed. One hundred and forty-nine individuals of *C. yasuniana* and 68 individuals of *E. bullatifolia* with dbh ≥ 1 cm were recorded in a 25-ha plot at Yasuní National Park.

Resumen. Se describen y se ilustran *Calypttranthes yasuniana* y *Eugenia bullatifolia*, dos especies nuevas de Myrtaceae provenientes de la Amazonía Ecuatoriana. Se discuten sus relaciones con especies afines en los géneros. En una parcela de 25 ha en el Parque Nacional Yasuní se ha registrado un total de 149 individuos de *C. yasuniana* y 68 individuos de *E. bullatifolia* con DAP ≥ 1 cm.

Keywords: Myrtaceae, *Calypttranthes*, *Eugenia*, Ecuador, Yasuní, 25-ha plot.

Myrtaceae are represented in Ecuador by 16 genera and ca. 150 species; the genera with the largest number of species are *Eugenia* L. (ca. 50) and *Calypttranthes* Sw. (ca. 30). Several new species of these genera have been described based on material collected in the Yasuní National Park (Holst and Kawasaki, 2006; Kawasaki and Holst, 2005, 2009a, 2009b, 2009c), probably the richest center of diversity in the world for woody plants (Bass et al., 2010), located in the Ecuadorian Amazon. Two additional ones are here described and illustrated.

Calypttranthes yasuniana M. L. Kawasaki & A. J. Pérez, *sp. nov.* TYPE: ECUADOR. Orellana: Yasuní National Park, Yasuní Scientific Station, 50-ha plot, south trail, 00°38'S, 76°30'W, 200–300 m, 24 November 2010 (fl), A. J. Pérez, W. Loo & J. Suárez 4955 (Holotype: QCA; Isotype: F). Fig. 1.

This new species is similar to *Calypttranthes macrophylla* O. Berg in leaf morphology; it is distinguished by the very short 3-flowered, velutinous inflorescences, with flower buds tearing at anthesis into irregular lobes, one of them with a calyptriform tip.

Trees 5–15 m high; trichomes dibrachiate, yellowish-brown to yellowish, on lower surface of leaves, inflorescences, and fruits; stem branching bifurcate, the branchlets terete in cross section. *Leaf blades* narrowly elliptic, coriaceous, 18.5–25 \times 5–9 cm, glabrous and drying olive-green to brownish above, greyish or yellowish below, sericeous-pubescent; glands indistinct on both surfaces; midvein impressed above, convex below; lateral veins ca. 15–20 pairs, slightly convex on both surfaces; marginal vein 1, 1–2 mm from blade margin, similar to the lateral veins in prominence; apex obtuse to shortly and abruptly acuminate, the acumen 3–10 mm long;

base broadly cuneate; petioles 8–10 mm long, channeled, pilose. *Inflorescences* subterminal, of paired, very abbreviated panicles, pauciflorous, with 3 flowers, to 2 cm long, the main axis ca. 1 cm long, velutinous; bracteoles not seen, early deciduous. *Flower buds* closed, obovoid, apiculate, 7–8 mm long, sessile to subsessile; calyx lobes irregularly shaped, one of them calyptriform at the tip, velutinous without, deciduous; petals not seen; hypanthium prolonged ca. 2 mm beyond the ovary, velutinous without; disk ca. 2 mm diam., glabrous; stamens numerous, the filaments ca. 5–7 mm long, the anthers ca. 0.5 mm long; style ca. 8 mm long, the stigma punctiform; ovary 2-locular, with 2 ovules per locule. *Fruits* globose to oblate, crowned by remnants of the calyx lobes, 1.3–2 \times 1.4–2.4 cm; seeds 1 or 2, ca. 12 \times 9 mm, the seed coat membranous; embryo myrcioid, the cotyledons leafy and folded, the radicle elongate, equaling the cotyledons in length.

Among the Neotropical Myrtaceae, *Calypttranthes* is probably the genus that is most readily recognized by biologists. *Calypttranthes yasuniana* is, however, atypical in the genus: at anthesis, the calyx is not clearly calyptriform, but it tears into irregular lobes, one of them with an early deciduous calyptriform tip; the fruits are not crowned by a circular scar, but by remnants of these lobes. Nevertheless, at the Yasuní National Park, this new species was already assigned to *Calypttranthes* because of the combination of other distinguishing characteristics of the genus (indumentum with dibrachiate hairs, dichotomous branchlets, and paired panicles with closed flower buds).

In leaf morphology, *Calypttranthes yasuniana* is similar to *C. macrophylla* O. Berg (including *C. speciosa* Sagot), a species known from Northern South America to Bolivia. These two species are contrasted in the following key:

- 1a. Inflorescences 3-flowered, to 2 cm long, velutinous; flower buds 7–8 mm long; calyx tearing into irregular lobes at anthesis, one of them calyptriform at the tip; fruits crowned by remnants of the calyx lobes. *C. yasuniana*
1b. Inflorescences with more than 3 flowers, usually multiflorous, 5–10 cm long, appressed-pubescent; flower buds 3–5 mm long; calyx calyptrate and circumscissile at anthesis; fruits crowned by a circular scar *C. macrophylla*

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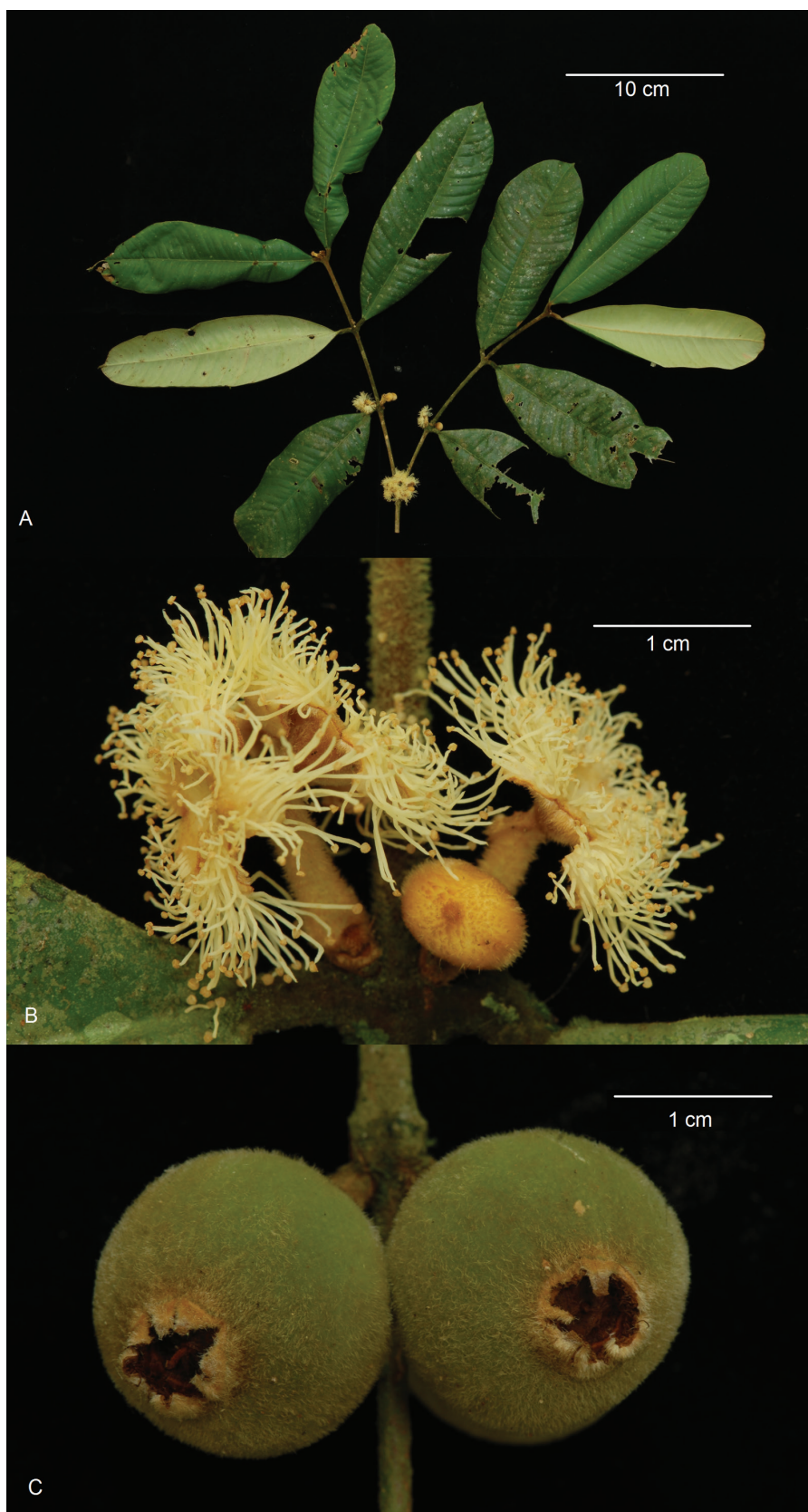


FIGURE 1. *Calyptranthes yasuniana* M. L. Kawasaki & A. J. Pérez. **A**, Branchlet with leaves and inflorescences; **B**, Flowers; **C**, Fruits. A–B from Pérez 4955 (QCA); C photo by Wilson Loo.



FIGURE 2. *Eugenia bullatifolia* M. L. Kawasaki & A. J. Pérez. **A**, Leaves and inflorescences; **B**, Flowers. A–B from Pérez 4676 (QCA).

Etymology: Named after the type locality, Yasuní National Park.

Additional specimen examined: ECUADOR. Orellana: Yasuní National Park, Yasuní Scientific Station, 50-ha plot, tag # 235026, 00°38'S, 76°30'W, 200–300 m, 27 Apr 2004 (fr), G. Villa, P. Alvia & M. Zambrano 3056 (QCA).

Distribution and habitat: Known only from the Yasuní National Park in Orellana Province, in lowland wet forests. To date it has been recorded only in a 25-ha plot in the forest surrounding the Yasuní Scientific Station. Inside this plot, there are 149 individuals with dbh \geq 1 cm (6 individuals per hectare); between 2002 and 2007, the annual mortality rate was 1.98% and the annual growth rate was 0.43 mm per year.

Phenology: Flowering in November; fruiting in April.

Eugenia bullatifolia M. L. Kawasaki & A. J. Pérez, *sp. nov.* TYPE: ECUADOR. Orellana: Yasuní National Park, Yasuní Scientific Station, “Napo” trail, 00°40'40"S, 76°23'40"W, 200–300 m, 26 January 2010 (fl), A. J. Pérez & W. Santillán 4676 (Holotype: QCA; Isotype: F). Fig. 2.

This new species is similar to *Eugenia stipitata* McVaugh in the morphology of inflorescences; it is distinguished by the leaves that are strongly coriaceous and bullate, with longer petioles.

Trees 12–15 m high, the trichomes yellowish-white on leaves and inflorescences; stems slightly compressed. *Leaf blades* narrowly elliptic to elliptic, or slightly ovate, 9–21 \times 6–11.5 cm, strongly coriaceous and bullate, drying olive-green, greenish-brown to brown on the upper surface, paler on the lower surface, sparsely pubescent, the trichomes especially evident near veins; glands indistinct above, dark and salient below; midvein plane to impressed above, convex below; lateral veins 8–12 pairs, strongly impressed above, convex below, joining in large arches, not forming a clear marginal vein; apex abruptly acuminate, the acumen 1–1.5 cm long; base cuneate to obtuse; petioles 8–12 mm long, flattened, pubescent. *Inflorescences* axillary, of irregular

racemes, 1.5–5 cm long, densely pubescent, the pedicels 1–1.5 cm long, with 1–3-flowers; bracteoles ovate to linear, 1–3 mm long. *Flowers* 4-merous, densely pubescent; buds subglobose to obovoid, 6–8 mm long; calyx lobes ca. 5 \times 4–5 mm, obtuse; petals white, ca. 9 mm long, obtuse, ciliate; disk ca. 5 mm diam., densely pubescent; stamens numerous, the filaments 5–7 mm long, the anthers ca. 1 mm long; style 8–9 mm long, the stigma punctiform; ovary 4-locular, with several ovules per locule. *Fruits* not known.

Eugenia bullatifolia is similar to *E. stipitata* McVaugh, a species from Colombia, Amazonian Brazil, Peru, Ecuador, and Bolivia, commonly cultivated for its edible fruits (“araçá-boi” in Portuguese, “[Guayaba] araza” in Spanish). In both species, the racemes are irregular with 1–3-flowered pedicels, the ovary is unusually 4-locular, and the leaves have few pairs of lateral veins that join in large arches, not forming a clear marginal vein. In *E. bullatifolia*, however, the leaves are strongly coriaceous and bullate (vs. chartaceous to coriaceous, not bullate), cuneate to obtuse (vs. obtuse to subcordate) at base, and the petioles are 8–12 mm long (vs. 1–4 mm long). In *E. stipitata*, the bracteoles are distinctively below the hypanthium (thus the flowers are stipitate), but this characteristic is not clearly seen in *E. bullatifolia*.

Etymology: The specific epithet denotes the bullate leaves.

Additional specimen examined: ECUADOR. Orellana: Yasuní National Park, Yasuní Scientific Station, “Botánico” trail, 00°38'S, 76°30'W, 200–300 m, 30 May 2013 (fl), A. J. Pérez, W. Looor & P. Alvia 6348 (F, QCA).

Distribution and habitat: It has been collected only in the Yasuní National Park, in lowland wet forest in a 25-ha plot. Inside this plot, there are 68 individuals with dbh \geq 1 cm (3 individuals per hectare); between 2002 and 2007, the annual mortality rate was 0.83% and the annual growth rate was 0.38 mm per year.

Phenology: Collected with flowers in January and May.

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