

THREE NEW SPECIES OF *EUGENIA* (MYRTACEAE) FROM ECUADOR

Maria Lúcia Kawasaki

Department of Botany, Field Museum of Natural History, 1400 South Lake Shore Drive,
Chicago, IL 60605-2496, USA.

BRUCE K. HOLST*

Center for Tropical Plant Science and Conservation, Marie Selby Botanical Gardens,
811 South Palm Ave., Sarasota, FL 34236-7726, USA. Email: bholst@selby.org

ABSTRACT. Three new species of *Eugenia* (Myrtaceae) from Ecuador are described and illustrated: *Eugenia ampla*, *E. prolongata*, and *E. sericifolia*.

RESUMEN. Se describen y se ilustran tres especies nuevas de *Eugenia* (Myrtaceae): *Eugenia ampla*, *E. prolongata* y *E. sericifolia*.

Key words. Ecuador, *Eugenia*, Myrtaceae

INTRODUCTION

Eugenia is the largest genus of neotropical Myrtaceae and pantropical in distribution, comprising more than 700 species (Barrie 2006). It is characterized by the following combination of characters: inflorescences racemose, the axis elongate to greatly reduced and then appearing fasciculate or glomerate, or flowers solitary; flowers 4-merous, hypanthium usually not prolonged above the ovary; ovary 2-locular with (2–) several–many ovules per locule; and embryo eugenioid, i.e., the cotyledons fused into a solid mass, fleshy and thick, the hypocotyl indistinguishable.

There are approximately 30 named species of *Eugenia* in Ecuador and perhaps an additional 30 unnamed *taxa* (Holst 1999). In preparation for the treatment of the Myrtaceae for the Flora of Ecuador, three new species are here recognized and described.

NEW SPECIES

Eugenia ampla M.L. Kawasaki & B.K. Holst, sp. nov. TYPE: Ecuador—Prov. Orellana (Napó on label): Añangu, NW corner of the Parque Nacional Yasuní, near Tiputini trail, 00°32'S, 76°22'W, 300 m, 14–22 Jan. 1985 (fr), B. Øllgaard, J. Korning & K. Thomsen 57051 (Holotype: AAU; Isotype: AAU).

FIGURE 1.

Arbor, indumento bruneo vel ochraceo; foliis late

* Corresponding author.

ellipticis vel ellipticis, magnis, 21–31 × 12–17.5 cm, infra tomentosis; racemis brevibus; bacca globosa vel oblata, costato-verrucosa.

Tree ca. 8 m high, ca. 10 cm dbh, the trichomes, where present, brown or ochraceous; branchlets slightly laterally compressed, tomentose. **Leaf blades** broadly elliptic to elliptic, 21–31 × 12–17.5 cm, coriaceous, sparsely pubescent to puberulous on upper surface, tomentose on lower surface, the trichomes present especially on veins, brown or brownish-green above when dry, paler below; apex abruptly acuminate, the acumen to ca. 1 cm long; base obtuse; midvein flat or sulcate on upper surface, convex on lower surface; lateral veins 12–15 pairs, sulcate above, prominent below; innermost marginal vein irregular and strongly arched, 6–10 mm from leaf margin, the secondary marginal vein 1–3 mm from leaf margin; dark glandular dots visible on lower surface; petioles 1.3–1.8 cm long. **Inflorescences** of short racemes at leafless nodes, with 2 pairs of flowers per inflorescence, the main axis ca. 1.2 cm long; bracts broadly ovate, velutinous, 3–4 × ca. 6 mm, acute to obtuse; pedicels ca. 2 mm long. **Flowers** not seen; bracteoles persistent, suborbicular, ca. 8 × 8 mm, velutinous; calyx lobes 4, velutinous. **Fruits** berries, globose or subglobose, 3–4 × 3–4.5 cm, costate-verrucose, velutinous, crowned by the calyx lobes; calyx lobes 4, triangular, ca. 5 mm long, acute; disk to ca. 1 cm diam.; seeds 1 or 2; embryo eugenioid.

Comments. *Eugenia ampla* is only known from fruiting collections, but is quite distinct and characterized by the large leaves, brown- or



FIGURE 1. *Eugenia ampla*. A. Leaves. B. Old inflorescence with bracts and bracteoles. C. Fruit. (A–C: Øllgaard et al. 57051).

ochraceous-tomentose on the lower surface, the reduced racemes, and the costate-verrucose fruits. It is known only from collections in rain forests of the Parque Nacional Yasuní, at 260–350 m elevation. *Eugenia marowynensis* Miq., a species known from Suriname, French Guiana,

Ecuador, and Amazonian Brazil, also has large leaves and costate fruits, but *Eugenia ampla* is distinguished by the abundant indument (vs. mostly glabrous in *E. marowynensis*), leaves 21–31 × 12–17.5 cm (vs. 15–25 × 6–10 cm), persistent bracteoles, ca. 8 mm long (vs. early de-

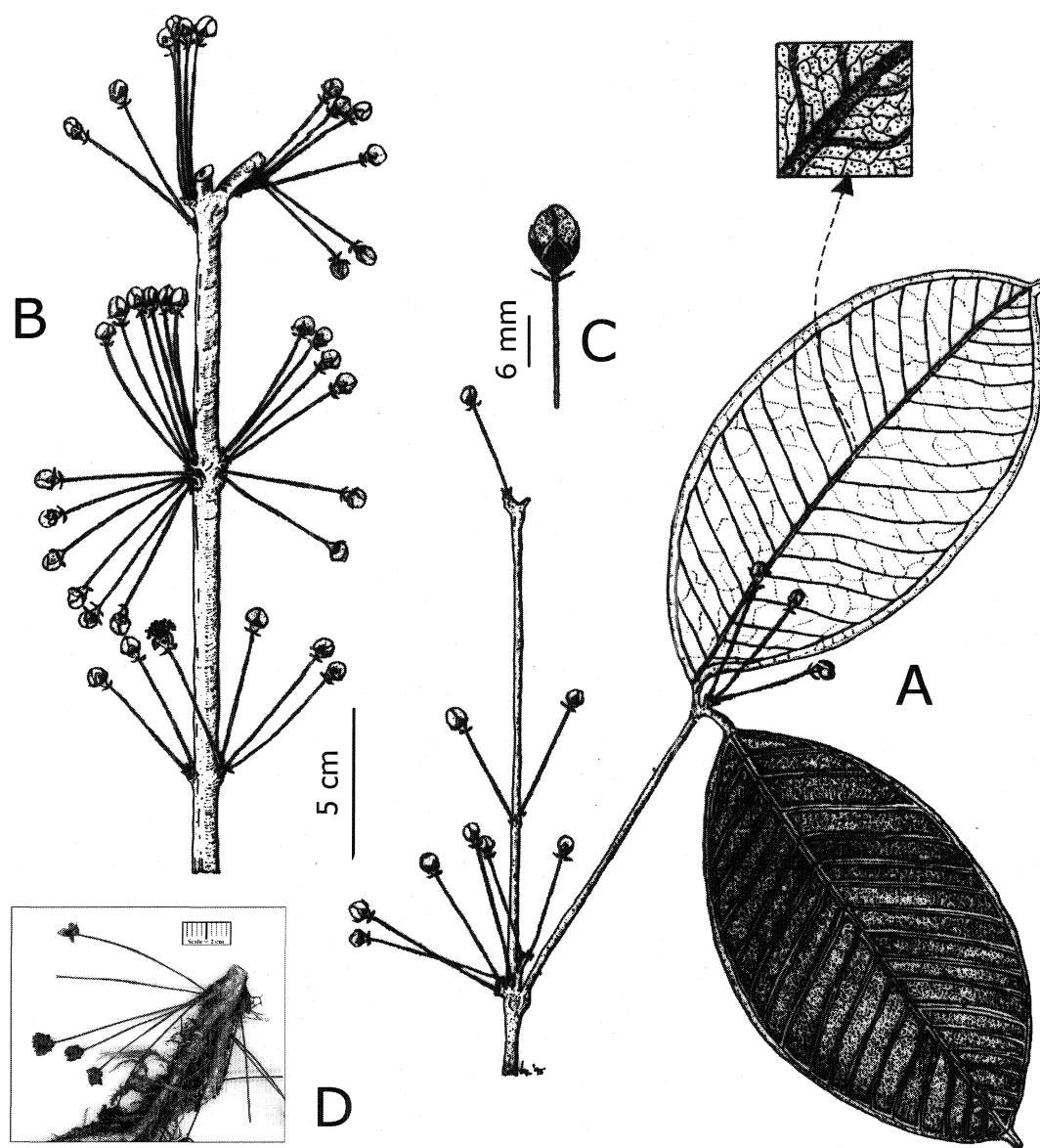


FIGURE 2. *Eugenia prolongata*. A. Habit of leaves and inflorescences. B. Flowering branch. C. Flower bud. D. Digital scan of inflorescence. (A–D: van der Werff *et al.* 12513).

ciduous, ca. 0.7 mm long), persistent calyx lobes, ca. 5 mm long (vs. usually deciduous, 1–2 mm long), and disk in fruit to 1 cm diam. (vs. to 0.4 cm diam.).

Paratypes. Ecuador—Prov. Orellana: Añangu, Parque Nacional Yasuní, 00°31–32'S, 76°23'W, 260–350 m, 4 May 1983 (st), SEF #9147, *J. Lawesson et al. s.n.* (AAU). Añangu, Parque Nacional Yasuní, 00°31–32'S, 76°23'W, 260–350 m, Jan. 1985 (st), SEF #9147, *B.*

Øllgaard et al. s.n. (AAU). Añangu, Parque Nacional Yasuní, 00°31–32'S, 76°23'W, 260–350 m, 30 May–21 Jun. 1982 (st), SEF #8977 (AAU).

Eugenia prolongata M.L. Kawasaki & B.K. Holst, sp. nov. TYPE: Ecuador—Prov. Bolívar: Along road Chillanes–El Tambo, 1700–2300 m, 19 Jul. 1991 (fl), *H. van der Werff, B. Gray & G. Tipas* 12513 (Holo-

type: MO; Isotypes: F, NY, QCA, QCNE, SEL).

FIGURE 2.

Arbor, indumento cupreo vel aureo-brunneo; foliis 13.8–18 × 7.3–11 cm, ellipticis vel ovatis, nervo medio supra plano vel convexo, venis marginalis 3–5 mm remotis, apice abrupto acuminato; racemis abbreviatis, 2-vel 4-floris, pediculis prolongatis, 3–6.3 cm longis, bracteolis persistentibus, calycis lobis ad 4.5 mm longis.

Small tree ca. 6 m high, the trichomes copper or golden brown; stems slightly laterally compressed, the new growth densely to loosely lanate. **Leaf blades** elliptic to slightly ovate, 13.8–18 × 7.3–11 cm, subcoriaceous, when young lanate on both surfaces, glabrescent, the trichomes especially evident near veins, drying dark brown on upper surface and lighter reddish brown on the lower; apex abruptly acuminate, the acumen 4–7 mm long, indented at the very tip; base gently cuneate; midvein slightly impressed with the vein proper noticeably convex; lateral veins 14–19 (–22) pairs, prominent on both sides, slightly impressed on the upper surface with the vein proper convex, raised and evident on the lower surface; innermost marginal vein 3–5 mm from leaf margin and scarcely arching between the lateral veins, the outer marginal vein ca. 1 mm from leaf margin and arching between the fine outer secondary veins; dark red glandular dots visible on lower surface; petioles 0.8–1.3 cm long. **Inflorescences** of much reduced racemes and appearing fasciculate to shortly racemose with slender axes 5–10 mm long (obscured by abundant bryophytes on only known collection), often at leafless nodes, solitary or several borne together and the inflorescences appearing many-flowered, with 2–4 flowers per inflorescence; bracts ovate, brownish red or golden-lanate, often persistent, 1–2 × ca. 1 mm, acuminate; pedicels 3–6.3 cm long, glandular-dotted. **Flowers** 4-merous; buds globose, 6–7 mm long; bracteoles persistent at least until anthesis, lanceolate to linear, 3–5 mm long (to 6.5 mm long when rehydrated), lanate adaxially, glabrous abaxially, glabrescent; calyx lobes glandular-dotted, glabrescent, ciliate, thin, the 2 larger ones 2–3.5 × 3–3.5 mm when dry (ca. 4.5 × 3.5 mm rehydrated), obtuse, the 2 smaller ones, 1.5–2.5 × 2–3 mm when dry (ca. 3 × 4 mm rehydrated); petals white, suborbicular, ciliate, glandular-dotted, ca. 7 × 7 mm (ca. 9 × 7.5–8 mm rehydrated), obtuse; stamens numerous, 4–7 mm long; anthers ca. 1 mm long; filaments 3–6 mm long; immature style ca. 6 mm long; hypanthium lanate; disk ca. 3 mm diam., pubescent; ovary 2-locular, with several ovules per locule. **Fruits** not known.

Comments. *Eugenia prolongata* is known from a single collection in bud and flower, in

forests remnants at 1700–2300 m elevation. It is a highly distinctive species with elongate pedicels and bracteoles, and the abundant indument. The midvein and secondary veins are slightly impressed on the upper surface but distinctly convex and prominently raised on the lower surface. The affinities of this species are not clear.

Eugenia sericifolia M.L. Kawasaki & B.K.

Holst, sp. nov. TYPE: Ecuador—Prov. Orrellana (Napo on label): San José de Payamino, 40 km of Coca, 00°30'S, 77°20'W, 300–600 m, 18 Jul. 1982 (fl), D. Irwine 140 (Holotype: F; Isotype: AAU). FIGURE 3.

Arbor, indumento luteo-brunneo vel luteolo; foliis anguste ellipticis vel ellipticis, infra dense sericeo-pubescentibus; racemis brevibus, ad 10-floris; bacca ellipsoidea.

Trees 11–13 m high, the trichomes yellowish-brown to yellowish on leaves, reddish-brown to yellowish brown on inflorescences; branchlets compressed in cross section. **Leaf blades** narrowly elliptic to elliptic, 13–18.5 × 4–6.5 cm, chartaceous, the upper surface puberulous to glabrous, drying brownish-green to dark-brown, the lower surface densely sericeous-pubescent; apex abruptly acuminate, the acumen to ca. 1 cm long; base cuneate to obtuse; midvein sulcate above, convex below; lateral veins 11–13 pairs, impressed above, convex below, strongly arcuate-ascending, the marginal vein arching to 5 mm from blade margin; glands on upper surface indistinct to numerous, punctiform, dark-brown, plane to convex, indistinct below; petioles 0.8–1.5 cm long, channeled, appressed-pubescent. **Inflorescences** of short racemes, axillary, each with up to ca. 10 flowers, the axis ca. 1–2 cm long, the pedicels to 5 mm long, to 10 mm long in fruit, appressed-pubescent to puberulous. **Flowers** 4-merous; buds globose, ca. 3–4 mm long; bracts and bracteoles ovate, 2–3 mm long, deciduous; calyx-lobes ovate to broadly ovate, 2–3 mm long, obtuse, appressed-pubescent without, glabrescent, glabrous within; petals elliptic, ca. 4 mm long; stamens numerous; filaments ca. 5–6 mm long; anthers ca. 0.8 mm long; style ca. 7–8 mm long; stigma punctiform; hypanthium not prolonged beyond the ovary in flower, and only slightly so in fruit with minor longitudinal tearing between the lobes, sericeous-pubescent without; disk ca. 2 mm diam., pubescent; ovary 2-locular, with many ovules per locule. **Fruits** berries, ellipsoid to obpyriform, ca. 3 × 1.5 cm, crowned by the calyx lobes, gland-dotted, glabrous, yellow to orange; seed 1, ellipsoid, ca. 2.5 × 1 cm; embryo eugenoid.

Comments. *Eugenia sericifolia* resembles *Eugenia myrobalana* DC. from upper Ama-

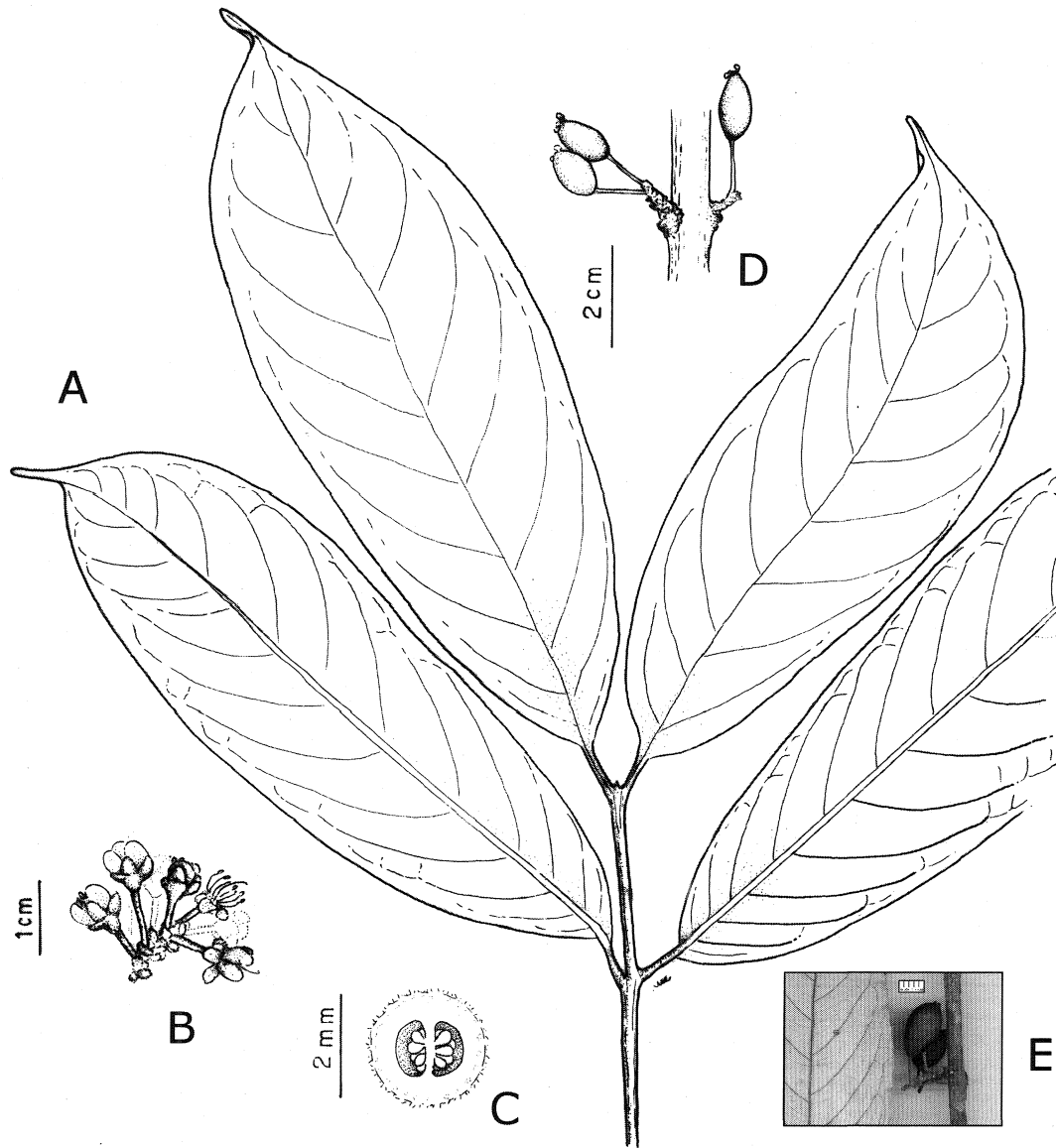


FIGURE 3. *Eugenia sericifolia*. A. Branch with leaves. B. Inflorescence. C. Transversal section of ovary. D. Immature fruits. E. Digital scan of lower leaf surface and mature fruits. (A and D: Palacios & Neill 1268; B-C: Irwine 140; E: Hurtado 2329).

zonian Brazil and Peru due to the *upwardly* curved secondary veins, shiny-sericeous indument of the lower leaf surface, and the short-racemose inflorescences. It can be distinguished from *E. myrobalana* by the sulcate midvein (vs. plane to convex), the small, subtending 2–3 mm long bracteoles (vs. 8–10 mm long and enveloping the flower bud), and the small flower buds (3–4 mm long vs. ca. 8 mm long). *Eugenia sericifolia* occurs in rain for-

ests of Amazonian Ecuador (Prov. Orellana), at 300–620 m elevation.

Paratypes. Ecuador—Prov. Orellana: Cantón Archidona, SE area of Volcán Sumaco, road Hollín—Loreto, Km 65, *Huaticochoa*, 00°45'S, 77°28'W, 620 m, 23–28 Jun. 1989 (fr), *F. Hurtado* 2329 (F, MO, SEL). Estación Experimental INIAP, San Carlos, 8 km S of Los Sachas, Reserva Florística 'El Ahuano', 00°20'S, 76°56'W,

350 m, 12 Sep. 1986 (fr), W. Palacios & D. Neill 1268 (F, MO, SEL).

LITERATURE CITED

ACKNOWLEDGMENTS

We thank the herbaria cited in the manuscript for the collections used in this study, Valerie Renard for the illustration of *Eugenia prolougata*, and two anonymous reviewers for their helpful suggestions.

- Barrie, F. 2006. A new species of *Eugenia* (Myrtaceae) from the Monte verde region, Costa Rica. *Sida* 22: 1071–1073.
- Holst, B.K. 1999. Myrtaceae. In P.M. Jørgensen and S. León-Yáñez, eds. *Catalogue of the Vascular Plants of Ecuador*. Monogr. Syst. Bot. Missouri Bot. Gard. 75: 618–622.