

New taxa and nomenclatural notes on the flora of the Marojejy Massif, Madagascar. IV. Myrtaceae: New species of *Eugenia* L.

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KEY WORDS

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ABSTRACT

Two new species, *Eugenia randrianasoloi* and *E. schatzii*, are described from the Marojejy Massif in northeastern Madagascar and compared with the species with which they are most likely to be confused.

RÉSUMÉ

Nouveaux taxons et notes nomenclaturales à propos de la flore du massif de Marojejy, Madagascar. IV. Myrtaceae : nouvelles espèces d'Eugenia L.

MOTS CLÉS

Eugenia,
Myrtaceae,
Madagascar.

Deux nouvelles espèces d'*Eugenia*, *E. randrianasoloi* et *E. schatzii*, du massif de Marojejy au Nord-Est de Madagascar, sont décrites et comparées aux espèces avec lesquelles elles sont souvent confondues.

The large genus *Eugenia* L. has long been problematic in its circumscription. PERRIER DE LA BÂTHIE (1953) treated the Malagasy species in a broadly defined *Eugenia*, recognizing two sections, *Jossinia* Comm. ex A. DC. and *Syzygium* P. Browne ex Gaertn. Most modern authors (e.g. WHITE 1978; ASHTON 1981) have followed

SCHMID (1972) and have treated *Eugenia* in a more restricted sense, composed mostly of tropical American species, and recognizing *Syzygium* as a distinct genus, restricted to the Old World, and some (e.g. HYLAND 1983) have further divided the latter. The two genera can be separated as follows:

1. Inflorescences predominantly axillary; flower and vegetative buds pubescent; petals free; cotyledons partially fused **Eugenia**
- 1'. Inflorescences usually terminal; flower and vegetative buds glabrous; petals connate in a calyptra; cotyledons free **Syzygium**

Following SCHMID's (1972) circumscription, Madagascar is home to ample numbers of species of both *Eugenia* and *Syzygium* although PERRIER DE LA BÂTHIE (1953) treated them all in a broadly defined *Eugenia*. LABAT & SCHATZ (in prep.) will provide new combinations for those taxa belonging in *Syzygium* and two new species of *Eugenia* are described below. The Marojejy Massif, in northeastern Madagascar, is a region rich in botanical diversity that has long been of great interest and has yielded many species new to science (HUMBERT 1955). Recent collecting efforts in the Réserve Naturelle Intégrale de Marojejy in northeastern Madagascar (MILLER, in press) have yielded a number of new taxa (e.g. MILLER & PIPOLY 1993; MILLER 1998; MILLER & RANDRIANASOLO 1998; RAZAFIMANDIMBISON & MILLER 1999) including the following:

***Eugenia randrianasoloi* J.S. Mill., sp. nov.**

Arbor ad 10 m alta. Folia persistentia, opposita; lamina oblonga ad anguste-elliptica, 12.3-19.5(-26.5) cm longa, 3.8-7 cm lata, apice acuminata, basi obtusis ad acutis, supra et infra glabra; petiolo 3-6 mm longa. Inflorescentia cauliflora, umbella 15-25 florum, pedicela 10-20 mm longa. Flores bisexualis; gemmae globosa ad ovoidea, 3-5 mm lata; flos calyce ca. 2 mm longo, lobulis 4, late-ovatis, ca. 3 mm longis; petala rosea, ovata ad anguste-elliptica, 6.7-9 mm longa, 3-4 mm lata; filamenta alba, 6-7 mm longa. Fructus non visi.

TYPUS. — *Miller & Randrianasolo 4298*, Madagascar, Antsiranana prov., Réserve Naturelle de Marojejy, western portion of the base of Mt. Beondroka, wet, evergreen rainforest, 180-230 m, 14°27'S, 49°47'E, 20 Oct. 1989 (holo-, MO 3769577; iso-, P, TAN).

Tree to 10 m tall, the branchlets slightly flattened, glabrous. Leaves persistent, opposite or the pairs slightly offset and appearing subopposite; leaf blades oblong to narrowly elliptic, 12.3-19.5 (-26.5) cm long, 3.8-7 cm wide, the apex abruptly acuminate, the acumen 1-15 mm long, the base obtuse to acute, the margin entire, both surfaces glabrous, the punctations small and scattered, the venation brochidodromous, the midrib strongly impressed above, raised well above the lower surface, the secondary veins 15-18 per side, more or less straight and parallel, at an angle of 60-70° from the midrib, coalescing at the apices

in a series of loops to form a distinct intramarginal vein 2-4 mm from the margin; petioles 3-6 mm long, 1.5-3 mm in diameter, corky and furrowed. Inflorescences borne along the main trunk, umbels of ca. 15-25 flowers, pedicels 10-20 mm long, 2 small bracteoles ca. 0.5 mm long borne at the articulation with the base of the flower. Flowers bisexual; buds globose to ovoid, 3-5 mm in diameter, calyx tube ca. 2 mm long, 2 mm in diameter, lobes 4, widely-ovate, ca. 3 mm long, 3 mm wide, rounded at the apex, evenly glandular on the outer surface; petals pink, free, ovate to narrowly elliptic, 6.7-9 mm long, 3-4 mm wide, acute to rounded at the apex, with 2-several nearly parallel veins running from the base through the central portion of the petals and a finer reticulum toward the margins, with evenly scattered oil dots in the central portion of the outer surface; filaments white, 6-7 mm long, the anthers ca. 0.5 mm long; ovary 2-locular, 1.5-2 mm tall, ca. 1 mm broad; style 8-9 mm long, slightly exceeding the anthers, stigma not distinctly enlarged from the end of the style. Fruits unknown. — Fig. 1.

DISTRIBUTION AND HABITAT. — *Eugenia randrianasoloi* is known only from the lowland forests between the Lokoho River and the southern slopes of the Marojejy massif from 180-380 m.

PARATYPES. — MADAGASCAR: *Humbert 22955*, Antsiranana, vallée de la Lokoho près d'Ambalavonihy, 200-300 m, 9-10 Jan. 1949 (P); *Miller, Rakotozafy, Schatz, Badré & Randrianasolo 3376*, Antsiranana, Réserve Naturelle Marojejy, along the trail to the summit of Marojejy Est, NW of Mandena, 380 m, 14°27'S, 49°17'E, 5 Oct. 1988 (MO, P, TAN).

Eugenia randrianasoloi most closely resembles *Eugenia antongilensis* H. Perrier, a species that occurs to the south and is known only from Rantabe, on the west coast of the Baie d'Antongil. Both species are small understory trees of eastern evergreen tropical forests with umbels borne along the main trunk. However the leaves of *E. randrianasoloi* (12-26.5 cm) average about half of the length of the leaves of *E. antongilensis* (30-35 cm). In addition, the flowers of *E. randrianasoloi* are

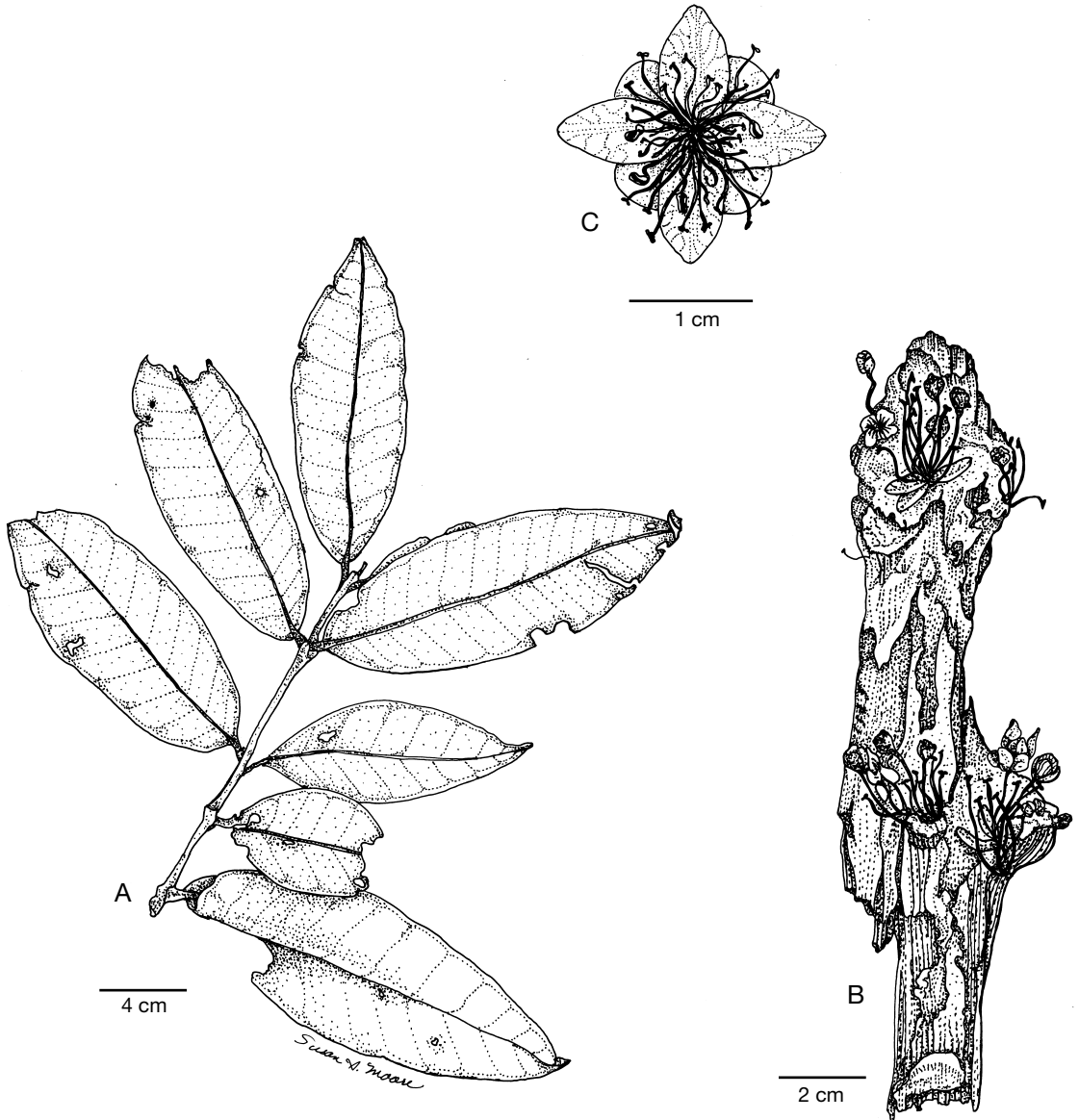


Fig. 1. — *Eugenia randrianasoloi* J.S. Mill.: A, vegetative branch; B, fertile branch with cauliflorous inflorescences; C, flower. From Miller & Randrianasolo 4298 (MO).

larger (3-5 mm in bud) and borne on pedicels 10-20 mm long, as opposed to the smaller flowers (ca. 2 mm in bud) on 7-12 mm long pedicels of *E. antongilensis*. The species is named in honor of Armand RANDRIANASOLO who has made several expeditions to Marojejy and has contributed to knowledge of Malagasy Sarcocaulaceae and Anacardiaceae.

***Eugenia schatzii* J.S. Mill., sp. nov.**

Frutex ad 3 m altus. Folia persistentia, opposita; lamina oblonga, 22-26 cm longa, 7.9-11.2 cm lata, apice obtusa, interdum abrupte-acuminata, basi rotundatis ad obtusa, supra et infra glabra; petiolo 9-12 mm longo. Inflorescentia ramiflora, umbella 3-6 flora, pedicela 5-13 mm longa. Flores bisexualis; gemmae globosa, 13-19 mm lata; flos calyce 8-10 mm longo, lobulis 4, depresso-ovatis, 5-6 mm longis; petala rosea, late-depresso-ovata, 15-17 mm longa, 18-19 mm lata; filamenta alba, ca. 10 mm longa. Fructus non visi.

TYPUS. — Miller, *Rokotozafy, Schatz, Badré & Randrianasolo 3330*, Madagascar, Antsiranana prov., Réserve Naturelle Marojejy, along the trail to the summit of Marojejy Est, NW of Mandena between the edge of the Réserve and the first camp, wet, evergreen forest, 225 m, 14°27'S, 49°17'E, 4 Oct. 1988 (holo-, MO; iso-, P, TAN).

Shrub 3 m tall, the branches glabrous. Leaves persistent, opposite; blades oblong, 22-26 cm long, 7.9-11.2 cm wide, the apex obtuse and sometimes abruptly acuminate, the base rounded to obtuse, the margin entire, slightly revolute, both surfaces glabrous and evidently glandular punctate, the venation brochidodromous, the midrib prominent, strongly impressed above, raised and sharply ridged below, the secondary veins indistinct, 15-20 per side, more or less straight and parallel, at an angle of 60-80° from the midrib, uniting to form a weak intramarginal vein 1.5-3 mm from the margin; petioles 9-12 mm long, ca. 3 mm thick, canaliculate on the adaxial surface. Inflorescences borne on the leafy branches or ramiflorous beneath the leaves, umbels of 3-6 flowers, pedicels 5-13 mm long, 2 small bracteoles ca. 0.5 mm long borne at the articulation with the base of the flower. Flowers bisexual; buds globose, 13-19 mm in diameter;

calyx tube green, 8-10 mm long, 6-9 mm in diameter, lobes 4, green near the base, white to pink toward the margin, depressed ovate, 5-6 mm long, 9-11 mm wide, densely glandular punctate, more sparsely so toward the apex of the lobes; petals pink, free, widely depressed ovate, 15-17 mm long, 18-19 mm wide, rounded at the apex, with evenly scattered oil dots in the central portion of the outer surface; filaments white, ca. 10 mm long, the anthers ca. 0.5 mm long; ovary 2-locular, 6-9 mm long, 7-9 mm broad; style 12-15, the stigma not distinctly enlarged from the end of the style. Fruits unknown. — Fig. 2.

Eugenia schatzii most closely resembles *Perrier de la Bâthie 15478*, the type of *Eugenia diospyroides* H. Perrier collected at Tsaratanana. When PERRIER DE LA BÂTHIE (1952) described *E. diospyroides* he cited four collections (his own numbers 6399, 6485, 15478, and 17461) without clear indication of which was the type. Examination of the specimens at P reveals that only *Perrier de la Bâthie 15478* is annotated as the type so it is considered here to represent the holotype. It also appears that the other cited specimens may not be conspecific and the taxonomy of this group will require more available collections and further study to resolve.

Eugenia schatzii differs from *E. diospyroides* in its larger leaves (22-26 × 7.9-11.2 cm vs. 13-21 × 4-6.5 cm) that are more coriaceous in texture and less often acuminate at the apex. In addition, although PERRIER DE LA BÂTHIE (1952) described *E. diospyroides* as having petioles 5-10 mm long, they actually measure 16-20 mm on the type specimen, much longer than the 9-12 mm long petioles of *E. schatzii*. While the inflorescences and overall appearance of the flowers of the two are relatively similar, the pedicels of *E. schatzii* are only 5-13 mm long while the pedicels of *E. diospyroides* are up to 25 mm long. The petals of *E. schatzii* (15-17 × 18-19 mm) are almost twice as large as those of *E. diospyroides*. Although the main differences between the two are size characters, *E. schatzii* appears to be quite distinct in its larger leaves and petals, but shorter petioles and pedicels.

Eugenia schatzii is named in honor of George E. SCHATZ, who first introduced me to the Flora of

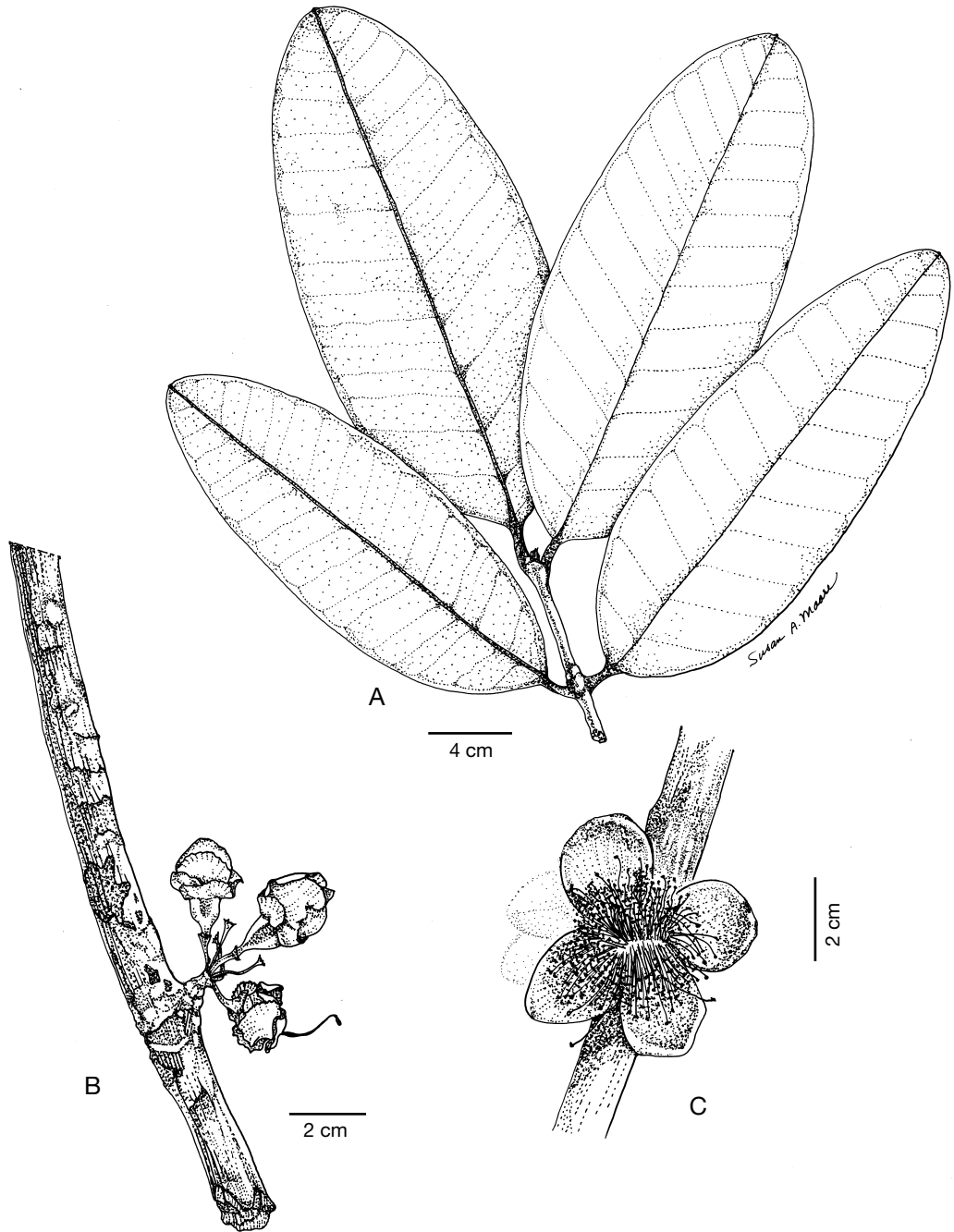


Fig. 2. — *Eugenia schatzii* J.S. Mill.: **A**, vegetative branch; **B**, fertile branch with ramiflorous inflorescence; **C**, flower. From Miller et al. 3330 (MO).

the Marojejy, and whose studies have contributed so much to our knowledge of the Malagasy Flora.

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