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## Three new species of *Eugenia* sect. *Racemosae* (Myrtaceae) from the *cerrados* of the state of Mato Grosso, Brazil

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**ABSTRACT** – (Three new species of *Eugenia* sect. *Racemosae* (Myrtaceae) from the *cerrados* of the state of Mato Grosso, Brazil). Three new species of *Eugenia* sect. *Racemosae* (Myrtaceae) from *cerrado* vegetation of central region in Brazil are described and illustrated. They are: *Eugenia hatschbachii* Mazine, *Eugenia mattogrossensis* Mazine and *Eugenia glabrescens* Mazine. Data on the geographic distribution and habitat are given for the new taxa.

Key words - Brazil, *Eugenia*, Myrtaceae, taxonomy

**RESUMO** – (Três espécies novas de *Eugenia* sect. *Racemosae* (Myrtaceae) dos cerrados do Estado do Mato Grosso, Brasil). Três espécies novas de *Eugenia* sect. *Racemosae* (Myrtaceae) dos cerrados da região central do Brasil são descritas e ilustradas. São elas: *Eugenia hatschbachii* Mazine, *Eugenia mattogrossensis* Mazine e *Eugenia glabrescens* Mazine. São fornecidos dados de distribuição geográfica e hábitat de cada um dos táxons.

Palavras-chave - Brasil, *Eugenia*, Myrtaceae, taxonomia

### Introduction

As referred by Holst (2002), *Eugenia* is one of the neotropical genera of Myrtaceae most in need of study, as *Myrcia* is. Because of their large sizes, no one has attempted to treat them as a whole since the major publications of Berg (1856, 1857, 1858a, 1858b, 1859, 1860, 1861).

The largest of the New World Myrtaceae genera, *Eugenia* L. is currently estimated to contain 500 (Holst *et al.* 2003) to 2,000 species (Sanchez-Vindas *et al.* 2001), distributed from South of Mexico, Cuba, the Antilles to Uruguay and Argentina, with a small number of species (*ca.* 60) in Africa (Merwe *et al.* 2005).

The species of *Eugenia* have been classified by Berg (1856) into sections based on inflorescence morphology. According to Mazine (2006), *Eugenia* sect. *Racemosae* O. Berg is a phylogenetically consistent group, diagnosed by its flowers exclusively in racemes and/or panicles, with a distinctive axis bearing the flowers along with a proportion pedicel  $\times$  internode of 2 $\times$ 1 ratio or less. During the preparation of a monograph of the Brazilian species of *Eugenia* sect. *Racemosae* O. Berg, several new species were found. Descriptions of three new species of *Eugenia* sect. *Racemosae* from the cerrado region

of central Brazil are presented here. Distribution data, illustrations as well as comments on all species are also presented.

### Results and discussion

*Eugenia hatschbachii* Mazine, *sp. nov.* Type: BRAZIL. MATO GROSSO: Barra do Bugres, fazenda Ochsenfeld, 23-X-1995, G. Hatschbach, A. V. Pott & E. Barbosa 63773 (holotype MBM).

Figure 1

*Racemi multiflori, rhachidi glabra, hypanthio glabro, bracteeae florales caducae. Ab Eugenia glabrescenti Mazine alabastro c. 2 mm diam. (nec 3-3.5 mm) et pedicelo 1-2.5 mm (nec 5-9 mm) differt.*

Tree *ca.* 5 m; branches glabrous. Leaf blade oblong-lanceolate, 6-8.5 cm long, 1.6-2.3 cm wide, chartaceous, glabrous on the upper surface, glabrous to subglabrous on the lower surface, hairs simple; apex acute-acuminate; base acute; midvein sulcate on the upper surface; lateral veins slightly prominent, marginal vein *ca.* 1.5 mm from the margin; glandular dots slightly prominent on the upper surface; petiole 4-6 mm long. Raceme with 6-10 pairs of flowers, axillary or extra-axillary, peduncled to subsessile, peduncle 0-2 mm long; rachis 2-3 cm long, glabrous. Flower bud *ca.* 2 mm diam.; floral bracts deciduous, *ca.* 1 mm long; pedicel 1-2.5 mm, glabrous; bracteoles *ca.* 0.5 mm, persistent, free (not connate on the base), apex acute, glabrous with margin ciliate; sepals *ca.* 1 mm long, apex acute, glabrous, ciliate, persistent; petals 2-5 mm long, orbicular, apex

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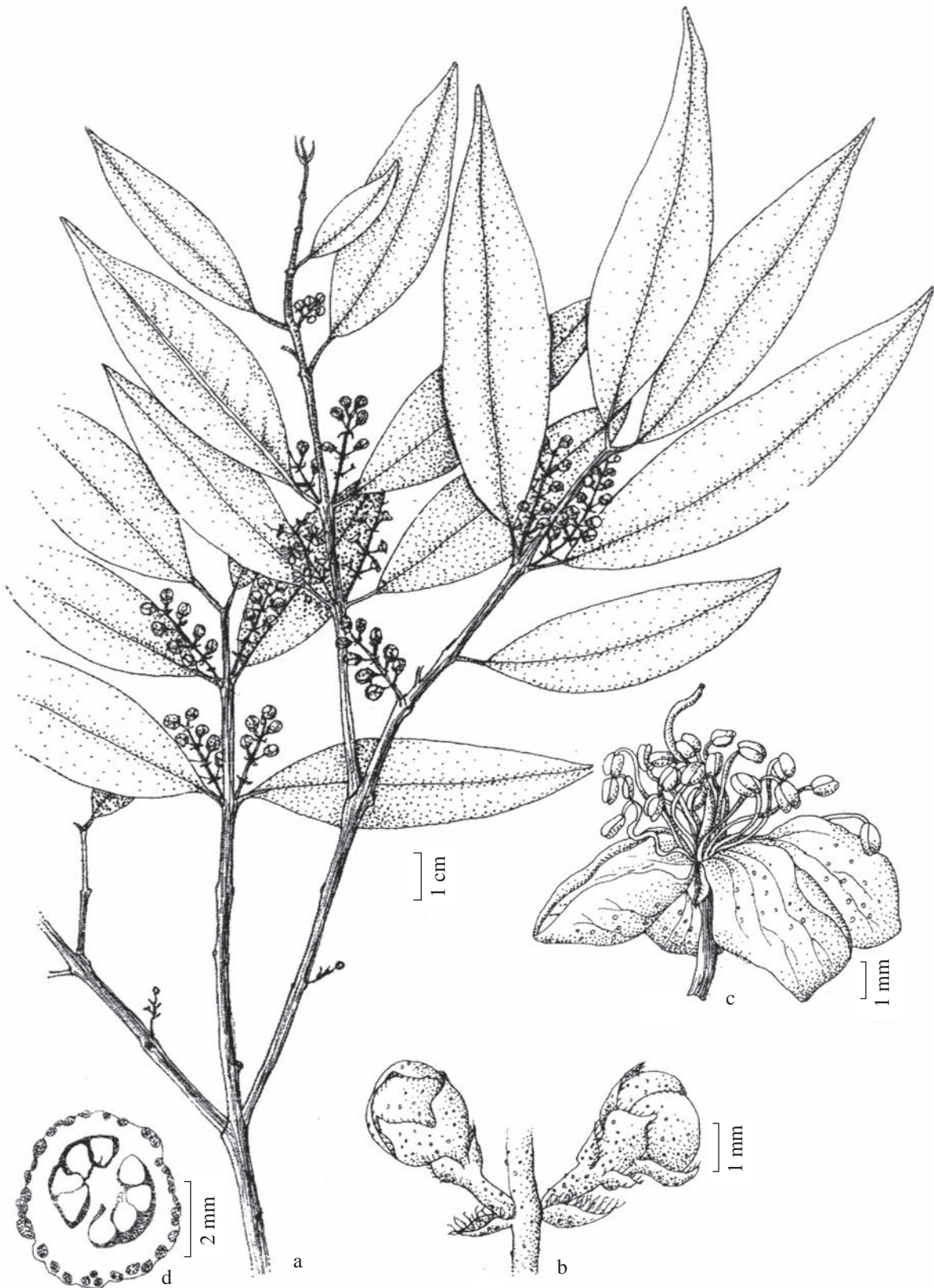


Figure 1. *Eugenia hatschbachii* Mazine. a. Flowering branch. b. Detail of the inflorescence with a pair of flower buds. c. Flower, side view. d. Medial section of ovary. (*Hatschbach 63773*).

rounded; filaments *ca.* 2 mm long, glabrous; hypanthium glabrous, surface smooth, style *ca.* 2 mm long, glabrous. Fruit not observed.

Etymology – the specific epithet honors Dr. Gerdt Hatschbach, Brazilian botanist who collected the type.

Known only from the type collection (*cerrado* of the region of Barra do Bugres in the State of Mato Grosso, Brazil), *Eugenia hatschbachii* is morphologically related to the group of species characterized by deciduous floral bracts, group where *Eugenia aeruginea* DC. and *E. brownsbergii* Amsh., for example, are also circumscribed. *Eugenia hatschbachii* has pluriflorous inflorescences, with glabrous rachis and flowers with glabrous hypanthium. The flowers are very small, the

floral bud is *ca.* 2 mm in diameter, which can be used to distinguish it of *Eugenia glabrescens* (also described in this paper), in addition to the very short pedicel.

*Eugenia mato grossoensis* Mazine, *sp. nov.* Type: BRAZIL. MATO GROSSO: Cláudia, perímetro urbano, 09-XI-1996, G. Árbocz 3167-A (holotype ESA).

Figure 2

*Frutex vel suffrutex, floes dispositi in racemis axillaribus et apicalibus, vel in paniculis racemorum, rhachis racemi et hypanthium dense puberulum (velveto simile), bractee florales ca. 3 mm longae, alabastra 4-5 mm diam., globosa, pedicelli 2.5-3.5 mm longi. Ab Eugenia polystachya Mazine bracteis floralibus caducis differt.*

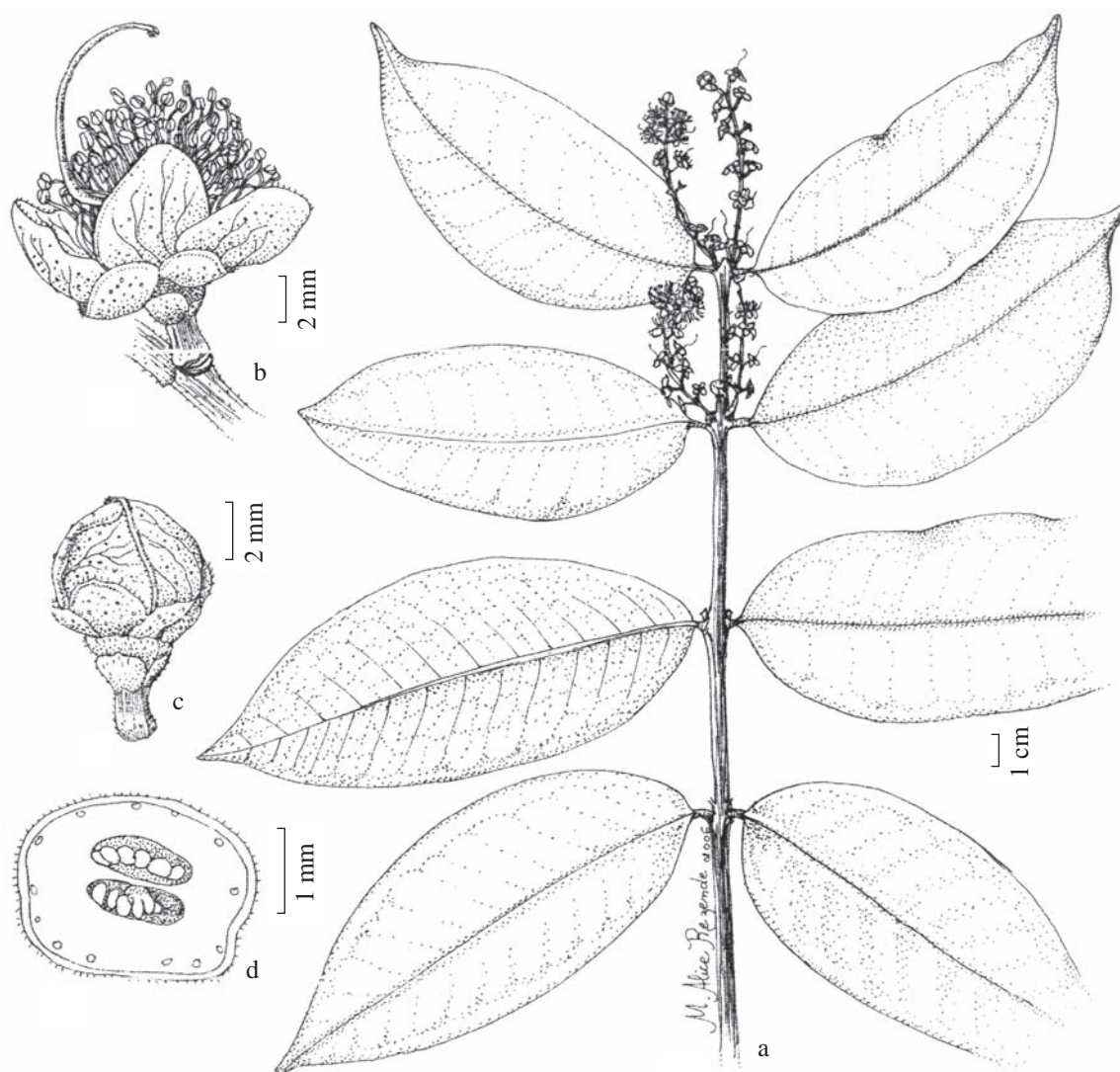


Figure 2. *Eugenia mato grossoensis* Mazine. a. Flowering branch. b. Flower, side view. c. Flower bud, side view. d. Medial section of ovary. (Árbocz *et al.* 3167-A).



Figure 3. *Eugenia glabrescens* Mazine. a. Flowering branch. b. Flower bud, side view. c. Flower, side view. d. Medial section of ovary. (Prance & Silva 59428).

Subshrub to shrub 0.7-1.8 m; branches puberulous. Leaf blade elliptic, 12.5-16.8 cm long, 5.1-8 cm wide, chartaceous, subglabrous to puberulous on both surfaces, hairs simple; apex acuminate; base acute or obtuse-rounded; midvein sulcate on the upper surface; lateral veins flat to slightly prominent, marginal vein 3-4 mm from the margin; glandular dots indistinct or prominent; petiole 5-7 mm long. Racemes and/or panicle of racemes, with 7-15 pairs of flowers, axillary, peduncled or sessile, peduncle 0-7 mm long; rachis 5-11.4 cm long, densely puberulous, hairs whitish. Flower bud 4-5 mm diam.; floral bracts deciduous at the floral bud, *ca.* 3 mm long; pedicel 2.5-3.5 mm, densely puberulous; bracteoles *ca.* 1 mm long, connate on the basis, apex obtuse or rounded, sparsely puberulous, margin ciliate, persistent; sepals *ca.* 2 mm long, apex rounded, sparsely puberulous, margin ciliate, persistent; petals 3-5 mm long, apex rounded; filaments 4-5 mm long, glabrous; hypanthium densely puberulous, smooth, style *ca.* 10 mm long, glabrous. Fruit not observed.

Paratypes: BRASIL. MATO GROSSO: Cuiabá, Chapada dos Guimarães, margem do rio Coxipozinho, perto da rodovia, 15°30' S 55°45' W, 21-X-1985, *J. Pirani 1343* (K, MG, SPF). Cristianópolis, rodovia MT 339, 18 km de Cristianópolis para Tangará da Serra, 25-X-1995, *G. Hatschbach, A.V. Pott & E. Barbosa 63883* (MBM).

*Eugenia mottogrossensis* is a shrub from Mato Grosso state, with flowers that can be arranged in simple racemes or panicles of racemes. The indumentum of the rachis and hypanthium of this species is densely puberulous and similar to velvet, its racemes are long, always axillary and on the top of the branches. It has also very short pedicels and large, globose flower buds. The floral bracts are large and early deciduous, falling before anthesis.

*Eugenia glabrescens* Mazine, *sp. nov.* Type: BRAZIL. Mato Grosso: Serra do Roncador, road Nova Xavantina to Barra do Garças, 55 km north of Barra do Garças, 15-X-1964, *G.T. Prance & N.T. Silva 59428* (holotype RB, isotypes F, K, UB).

Figure 3

*Folia glabra ad subglabra, racemi axibus tenuibus et fiiformibus, hypanthium subglabrum.* *Eugenia* *egensis* DC. *affinis, sed racemis rachidi 2.5-4.5 cm longa (nec brevi, rachidi 0,2-1,5 cm longa), bracteis floralibus caducis (nec persistentibus) distincta.*

Tree *ca.* 6 m, branches densely pubescent. Leaf blade elliptic-lanceolate, 8.7-11 cm long, 2.3-2.8 cm wide, chartaceous, glabrous to subglabrous on both surfaces, hairs simple and dibrachiate, apex acuminate, base acute,

midvein sulcate, subglabrous to very sparsely pubescent in both surfaces, lateral veins prominent, marginal vein *ca.* 1.5 mm from the margin; glandular dots indistinct on the upper surface; petiole 5-7 mm long. Raceme with 7-11 pairs of flowers, axillary or extra-axillary, subsessile, peduncle 1-3 mm long, rachis 2.5-4.5 cm long, sparse to densely pubescent, hairs whitish. Flower bud 3-3.5 mm diam., floral bracts deciduous, 1.5 mm long, pedicel 5-9 mm long, sparse to densely pubescent, bracteoles *ca.* 1 mm long, free (not connate on the base), apex acute, subglabrous, ciliate, persistent, sepals *ca.* 1 mm long, apex acute or rounded, subglabrous, ciliate, persistent; petals *ca.* 4 mm long, orbicular, apex obtuse-rounded; filaments 3-4 mm long, subglabrous; hypanthium subglabrous, style 3-4 mm long, subglabrous. Fruit not observed.

*Eugenia glabrescens* is known only from the type collection (Serra do Roncador, Mato Grosso State). The leaves and flowers with a subglabrous hypanthium of *Eugenia glabrescens* are similar to those of *Eugenia egensis* DC., from Central America to Northeastern Argentina (Govaerts *et al.* 2008). However, *E. egensis* is not part of *Eugenia* sect. *Racemosae*. Furthermore, *Eugenia glabrescens* has deciduous bracts, while the bracts of *E. egensis* are persistent. The racemes of *Eugenia glabrescens* are longer and have delicate, filiform axis.

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