

TEN NEW MYRTACEAE FROM EASTERN AND NORTHEASTERN BRAZIL

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ABSTRACT

Ten new species of Myrtaceae from the eastern and northeastern Brazilian states of Bahia, Espírito Santo, Minas Gerais and Rio Grande do Norte are described, illustrated, compared to the related species, and have their conservation status evaluated: *Eugenia azeda* (from Rio Grande do Norte), *Eugenia valsuganana*, and *Myrcia crassa*, (both from Espírito Santo), *Myrcia floridissima* (from Minas Gerais), *Myrcia mucugensis*, *M. pendula*, *Myrcia pseudomarlierea*, *Myrcia pseudospectabilis* and *Myrcia tetraphylla* (all from Bahia) and *Plinia espinhacensis* (from Minas Gerais).

KEY WORDS: Myrtaceae, Brazil, taxonomy, *Eugenia*, *Myrcia*, *Plinia*

RESUMO

Onze novas espécies de Myrtaceae do nordeste e sudeste do Brasil, dos estados da Bahia, Espírito Santo, Minas Gerais e Rio Grande do Norte são descritas, ilustradas, comparadas com as espécies próximas e avaliadas quanto a sua situação de conservação: *Eugenia azeda* (do Rio Grande do Norte), *Eugenia valsuganana* e *Myrcia crassa*, (ambas do Espírito Santo), *Myrcia floridissima* (de Minas Gerais), *Myrcia mucugensis*, *M. pendula*, *Myrcia pseudomarlierea*, *Myrcia pseudospectabilis* e *Myrcia tetraphylla* (todas da Bahia) e *Plinia espinhacensis* (de Minas Gerais).

PALAVRAS CHAVE: Myrtaceae, Brasil, taxonomia, *Eugenia*, *Myrcia*, *Plinia*

The family Myrtaceae is represented in Brazil by about 1000 species (Landrum & Kawasaki 1997:508). Species of the family occur in all vegetation types in Brazil, but they seem to be especially frequent in the coastal rainforest (Floresta Atlântica) that ranges from northeastern to southern Brazil, as was recorded in some inventories (e.g., Mori et al. 1983; Lima & Guedes-Bruni 1997; Thomaz & Monteiro 1997). During the examination of exsiccates kept at some Brazilian herbaria, I had the opportunity of studying some species, mainly from the Atlantic Forest domain, that I consider here as undescribed.

1. *Eugenia* L.

Eugenia is characterized mostly by the presence of tetramerous flowers with two locules and several ovules per locule and seeds with completely fused cotyledons without any visible hypocotyl. The genus is pantropical, and presents about 350 species in Brazil (Landrum & Kawasaki 1997).

1.1. *Eugenia azeda* Sobral, sp. nov. (Figs. 1–3). TYPE: BRAZIL. RIO GRANDE DO NORTE: Pamamirim, CATRE-Ministério da Aeronáutica, 5°54'30"S, 35°13'30"W, 15 Dec 1999, L.A. Cestaro 99-0259 (HOLOTYPE: BHCB; ISOTYPE: UFRN).

Species Eugeniae ligustrinae foliis subsessilibus fructis majoribus recedit.

Shrub to small tree 2–9 m. Twigs terete, gray when dry, the most distal ones to 1 mm in diameter, glabrous or very minutely strigose with simple erect trichomes to 0.1 mm, falling off in longitudinal stripes; internodes 7–20 mm. Leaves subsessile, with petioles 1–2 × 1.5 mm, frequently evident only when the leaf is viewed abaxially; blades elliptic to ovate-elliptic, 20–50 × 10–22 mm, discoloured when dry, the abaxial face paler; glandular dots smaller than 0.1 mm in diameter, 10–30 per square millimeter, occasionally evident adaxially but clearly visible and darker than the surface abaxially; apex obtuse or rounded, sometimes widely acute; base obtuse to rounded, sometimes very slightly auriculate; midvein sulcate adaxially and prominent abaxially; lateral veins 6–8 pairs, markedly prominent adaxially and faintly so abaxially, leaving the midvein at angles of about 45 degrees; marginal vein to 1 mm from the revolute margin. Inflorescences terminal, with two

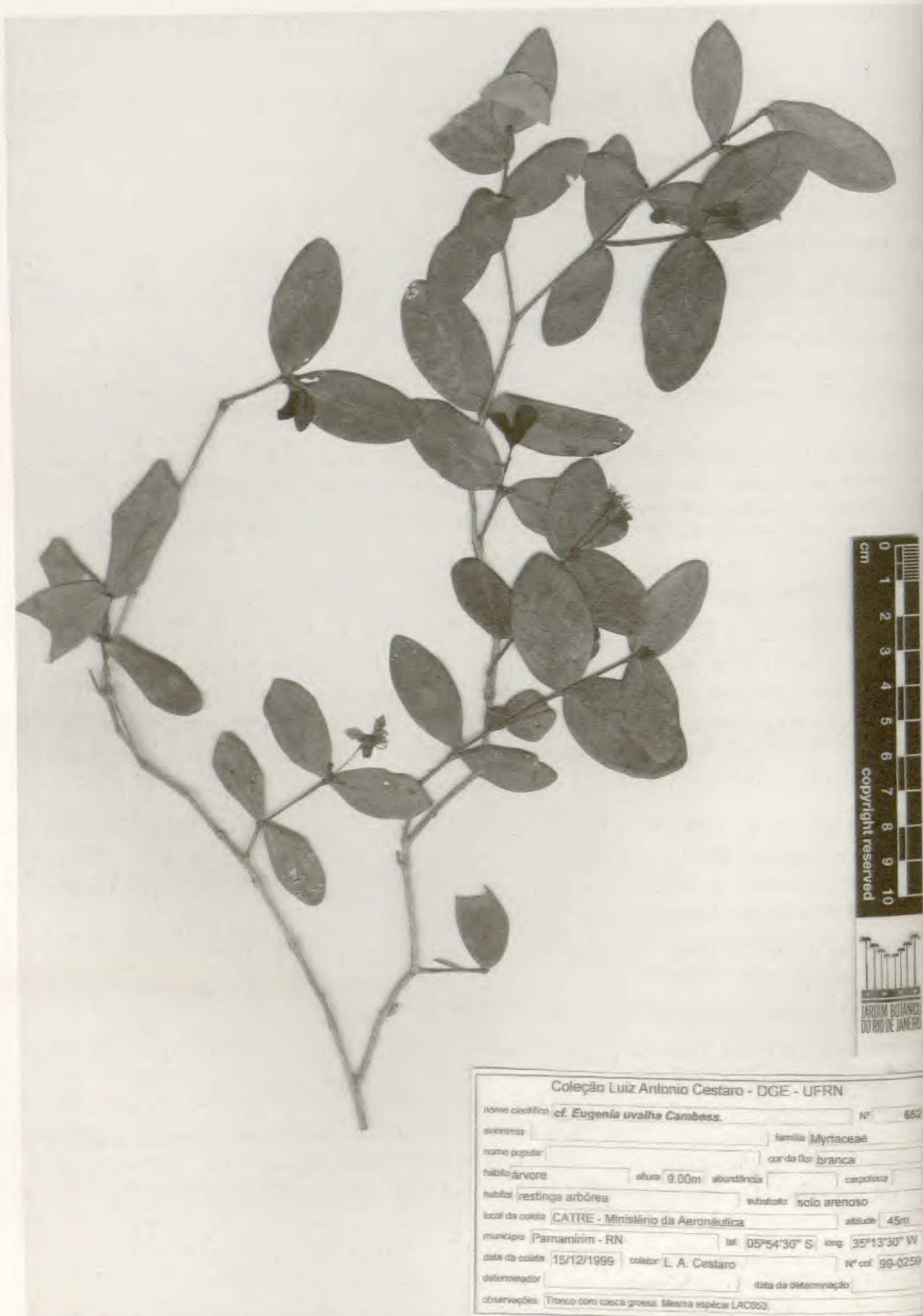


FIG. 1. *Eugenia azeda* - image of holotype.



FIG. 2. *Eugenia azeda* - detail of flowers (scale: 10 mm).

flowers on an auxotelic axis $1-4 \times 0.4-0.8$ mm that produces adult leaves after anthesis; bracts at the base of the axis lanceolate-ovate, $4 \times 0.8-1$ mm; pedicels $8-25 \times 0.2-0.3$ mm, with simple erect trichomes to 0.1 mm; bracteoles missing, probably deciduous before anthesis; flower buds obovate, glabrous, to 5×4 mm, the ovary markedly distinct from the calyx; calyx lobes four, oblong-lanceolate, $5-6 \times 2$ mm, concave, glabrous but sometimes with cilia to 0.2 mm at the apex, strongly reflexed and concealing the ovary at anthesis; petals obovate, glabrous, white, to 8×5 mm; stamens about 50, 5-6 mm, the anthers elliptic, to 0.6×0.3 mm, eglandular; staminal ring to 3 mm in diameter, occasionally with scattered trichomes to 0.2 mm; style 4-6 mm, the stigma punctiform, minutely papillose; calyx tube absent; ovary with two locules and 6 ovules per locule. Fruits globose, yellow when ripe, to 30 mm

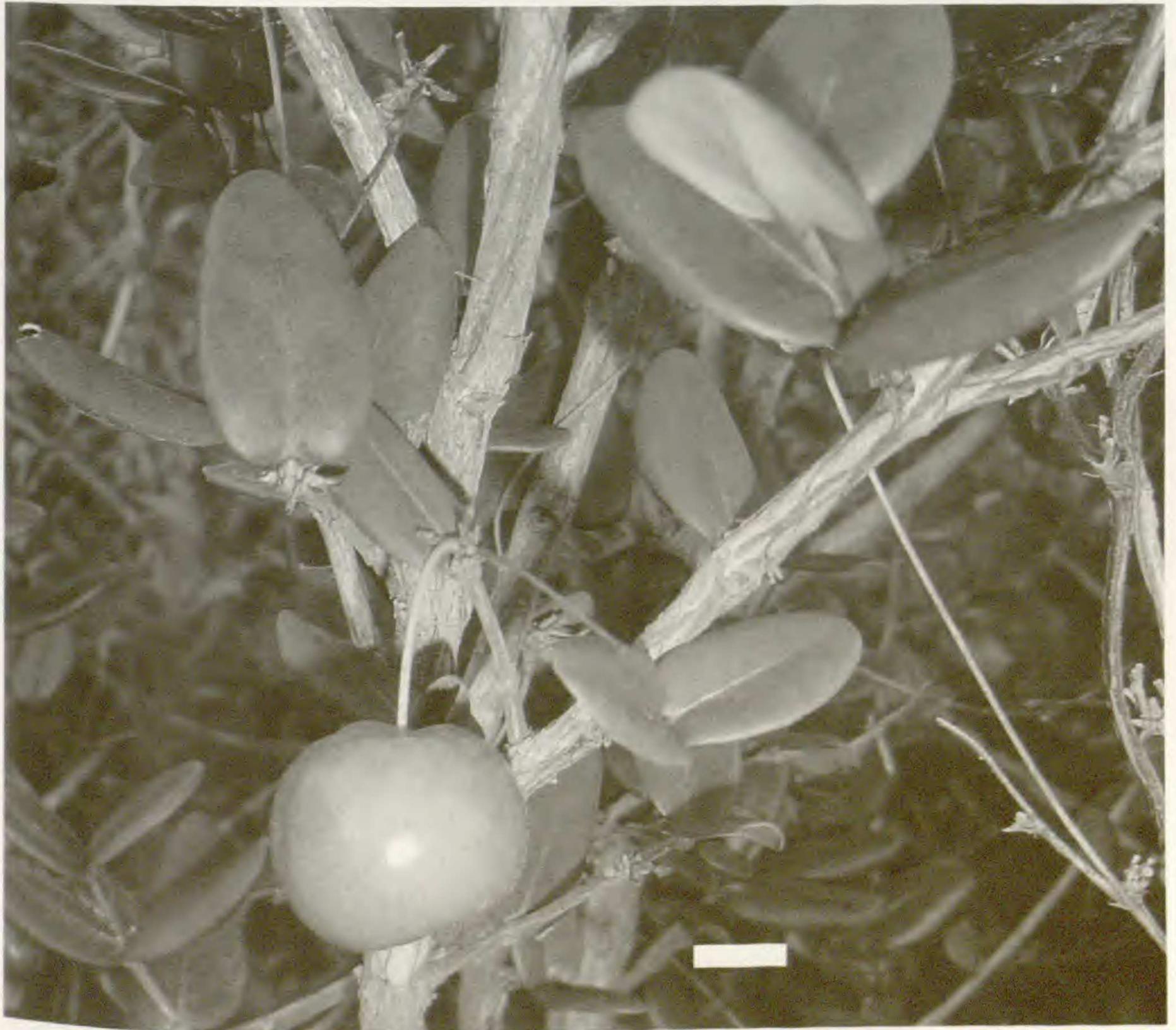


FIG. 3. *Eugenia azeda* - mature fruits (Sobral & Cestaro 10888; scale: 10 mm).

in diameter when fresh, about 20 mm when dry, with one seed, this slightly reniform, to 10 × 8 mm, with a gray, easily detachable testa and embryo with fused cotyledons and hypocotyl not visible.

Habitat, distribution and phenology.—This species is a shrub or small tree from coastal forests (restingas and seasonally deciduous forests) of the municipalities of Natal and Parnamirim, at the northeastern state of Rio Grande do Norte, growing at altitudes near the sea level. Flowers were collected in November and December, and fruits in December and February.

Conservation.—According to IUCN criteria (IUCN 2001), *Eugenia azeda* can be considered as endangered (EN), fitting criteria B1 ab(iii): its presently known area of occurrence is smaller than 5000 km² (criterion B1) and its habitat is a severely fragmented one (criterion a) which presents a continuing decline in extension (criterion b(iii)), since Natal, the capital of the state of Rio Grande do Norte, and neighbouring municipalities are under intense urban pressure.

Affinities.—This species is close to *Eugenia ligustrina* (Sw.) Willd. (for description see Berg, 1857–1859:343), from which it is set apart by the following characters:

- | | |
|--|----------------------------------|
| 1. Blades cuneate at base, with evident petioles to 4 mm; fruits smaller than 10 mm in diameter, red when ripe; widespread from Antilles to southeastern Brazil. | <i>Eugenia ligustrina</i> |
| 1. Blades rounded at base, sessile, the petioles to 2 mm and not evident when viewed from above; fruits to 30 mm in diameter, yellow when ripe; local in Rio Grande do Norte, northeastern Brazil. | <i>Eugenia azeda</i> |

Etymology.—The epithet is derived from the local name for the species, “ubaia-azeda.” The vernacular name “ubaia” or “uvaia” is used in Brazil for several species of *Eugenia* with edible fruits, the most widely known being *Eugenia pyriformis* Cambess. (Sobral 2003), and “azeda” is the Portuguese word for “bitter”—the fruits are widely appreciated locally for their bitter taste.

PARATYPES: BRAZIL. Rio Grande do Norte, mun.: Natal, 8 Nov 1951, Alvarenga 32 (BHCB, RB); 26 Feb 2001, Cestaro s.n. (BHCB); 10 Dec 2006, Sobral & Cestaro 10887 (BHCB, BRIT, MBM); 10 Dec 2006, Sobral & Cestaro 10888 (BHCB, BRIT, K, MBM, RB).

1.2. *Eugenia valsuganana* Sobral, sp. nov. (Fig. 4). TYPE: BRAZIL. ESPÍRITO SANTO, MUN.: Santa Teresa, Valsugana Velha, Reserva Biológica de Santa Lúcia, 28 Jan 1999, L. Kollmann, E. Bausen & W. Pizziolo 1737 (HOLOTYPE: MBML; ISOTYPES: BHCB, BRIT).

Species *Eugeniae plicatocostatis* proxima, a qua foliis angustatis, nervo medio supra prominentis et floris lobis calycinis glabris recedit.

Tree 4–7 m. Plants glabrous, except for gray trichomes to 0.1 mm on the ovaries. Twigs gray, complanate, to 2 mm in diameter, the internodes 15–20 mm. Leaves with petioles 6–8 × 1–1.7 mm, drying black; blades lanceolate to lanceolate-oblong, 90–140 × 25–40 mm, pale light green and concolored when dry, with 10–15 glandular dots per square millimeter, these smaller than 0.1 mm in diameter and easily visible on both sides; apex acute or acuminate to 10 mm; base cuneate; midvein prominent on both sides, more evidently so abaxially; lateral veins 10–14 pairs, prominent on both sides, leaving the midvein at angles 70–80 degrees; marginal veins two, 4–5 mm and 0.5–1 mm from the margin, the margin itself revolute. Inflorescences axillary, fasciculiform, with 4–8 flowers crowded in an axis to 3 × 2 mm; pedicels absent or occasionally developed in fruits, then to 2 × 1 mm; bracteoles widely triangular, to 1.5 × 1–1.5 mm, densely covered by convex glands to 0.1 mm in diameter, flower buds to 3 × 2 mm, the ovary densely pilose and clearly distinct from the glabrous calyx lobes, these rounded, glabrous, to 2 × 2 mm, with glands as on the bracteoles; petals rounded, to 2 × 2 mm in buds; stamens about 60, to 2 mm in bud, the staminal ring to 1.5 mm in diameter; style to 2.5 mm in bud; ovary with two locules and 6 ovules per locule. Fruits elliptic, 20–26 × 16–20 mm, yellow when ripe, glabrous, crowned by calyx lobes to 3 × 3 mm, with one seed, this elliptic, to 22 × 12 mm, with an easily detachable chartaceous, gray testa and embryo with two fused, indistinguishable cotyledons and no evident hypocotyl.

Habitat, distribution and phenology.—This species is a small tree from montane forests, growing at altitudes of about 600 m above sea level. It is presently known only from the municipality of Santa Teresa, in the eastern Brazilian state of Espírito Santo. Flowers were collected in October and fruits in January.

Conservation.—According to IUCN criteria (IUCN 2001), *Eugenia valsuganana* can be considered as endangered, fitting criteria B1 ab(iii): its known area of occurrence is smaller than 5000 km² (criterion

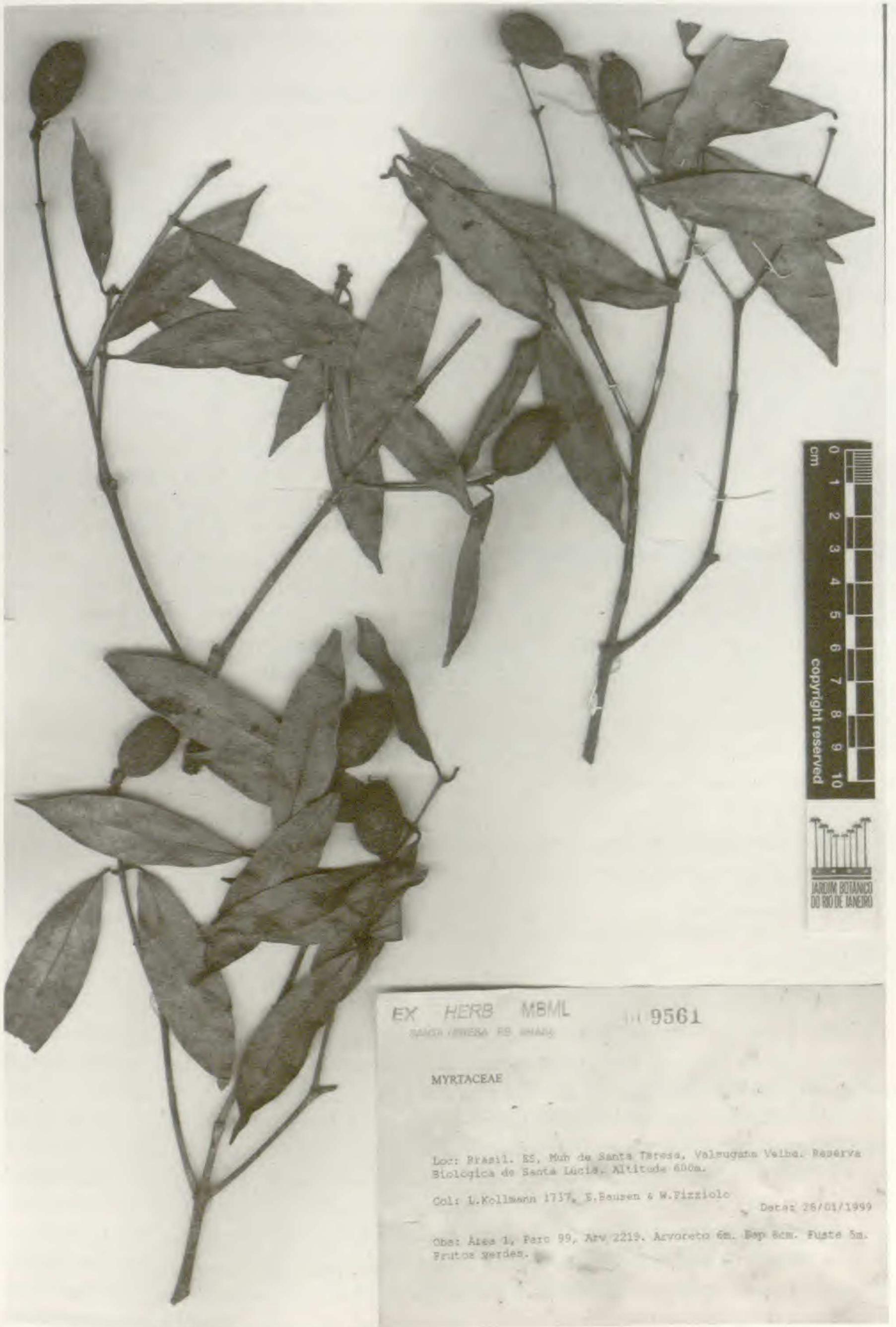


FIG. 4. *Eugenia valsuganana* - image of isotype at BHC.

B1), it grows in a severely fragmented habitat (criterium a) that presents a continuing decline in extension (criterium b(iii)), since only 18% of the area of Santa Teresa still retains its original vegetation (Mendes & Padovan 2000:16).

Affinities.—This species is apparently close to *Eugenia plicatocostata* O.Berg (for description see Berg 1857–1859:575), a species collected in coastal Bahia and Espírito Santo, from which it can be distinguished by the following characters:

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|--|--------------------------------------|
| 1. Blades light brown when dry, to 130 × 60 mm, the ratio length/width about 2:1; midvein adaxially sulcate; flowers without sharp contrast between ovary and calyx lobes, both equally pilose | <i>Eugenia plicatocostata</i> |
| 1. Blades pale light green when dry, to 140 × 40 mm, the ratio length/width 3–3.5:1; midvein adaxially prominent or biconvex; flowers with ovary pilose and calyx lobes glabrous | <i>Eugenia valsuganana</i> |

Etymology.—Alludes to the locality of the type collection.

PARATYPE: BRAZIL. Espírito Santo, Mun.: Santa Teresa, Oct 2005, Britto 117 (MBML).

2. *Myrcia* DC. ex Guillaumin

Myrcia is an American genus with about 400 species, characterized by mostly paniculiform inflorescences, pentamerous flowers with bi- or trilocular ovaries with two ovules per locule and embryos with well-developed hypocotyl and cotyledons (Landrum & Kawasaki 1997). It is one of the four genera of subtribe Myrciinae as provisionally accepted by Lucas et al. (2007)—*Calyptranthes* Sw., *Gomidesia* O.Berg, *Marlierea* Cambess. and *Myrcia*. The separation between these genera relied mostly in calyx characters: *Calyptranthes* and *Marlierea* present fused calyx lobes (opening through a calyptra in the first genus and tearing in lobes in the second) and *Myrcia* and *Gomidesia* free calyx lobes (*Gomidesia* being distinguished from *Myrcia* through its sinuose opening of the anthers). Such characters are feasible, and indeed the results of Lucas et al. point to this assemblage as more phylogenetically close than was thought before, since in her cladograms there is no consistent separation of these genera. So, I have decided here to take *Myrcia* in a wider circumscription, naming under it three species that might also be included under *Marlierea* (*Myrcia crassa*, *Myrcia mucugensis* and *Myrcia pseudomarlierea*). Indeed Kawasaki & Holst (1994:141) made a similar decision when they described *Myrcia rupta*, a species that otherwise would be assigned to *Marlierea*.

It is worth noting that among these genera *Calyptranthes* has nomenclatural priority over *Myrcia* and the others (McVaugh 1956). Moving all species of *Myrcia* to *Calyptranthes* would be quite undesirable as was adequately pointed by McVaugh (1968), so, it is convenient to consider the possibility of proposing the conservation of *Myrcia* over *Calyptranthes*.

2.1. *Myrcia crassa* Sobral, sp. nov. (Figs. 5–6). TYPE: BRAZIL. ESPÍRITO SANTO, MUN.: Santa Teresa, 25 Oct 2000, V. Demuner, E. Bausen & W. Pizziolo 1483 (HOLOTYPE: MBML; ISOTYPE: BHCB).

Species *Marlierea silvaticae* proxima, a qua ramis crassis glabrisque, foliis glabris, inflorescentiis glabris pluriflorisque et floribus minoribus recedit.

Small tree 1.5 m to tree 18 m. Twigs glabrous, to 2–5 mm in diameter, subterete; internodes to 60 mm. Leaves with petioles 8–20 × 2,2–3,2 mm; blades obovate, elliptic or ovate-elliptic, 100–200 × 60–110 mm, stiff, discoloured when dry; glands from 0.05 to 0.1 mm in diameter, about 10 per square millimeter, sometimes visible adaxially but more easily observed against light; apex widely acute to obtuse, sometimes abruptly acuminate to 10 mm; base cuneate or obtuse; midvein sulcate adaxially and prominent abaxially; lateral veins 15–20 pairs, prominent on both sides, leaving the midvein at angles 60–70 degrees; marginal veins two, 2–3 mm and 0.5 mm from the margin. Inflorescences paniculiform, with 30–60 flowers and two to three levels of ramification, the first branch occasionally with two contiguous ramifications, the axis 40–120 × 2–4 mm; flowers sessile, densely covered with brown simple appressed trichomes to 0.1 mm; bracteoles ovate-lanceolate, 1–1,5 × 0,8–1 mm; flower buds obovate, 3–3,5 × 2 mm, with four rounded lobes visible at the apex, at anthesis tearing the calyx tube somewhat irregularly, 1,2–1,5 × 1,5–2 mm; petals two to three, rounded, 2–3 × 2–3 mm; stamens 60–70, 3–4 mm, the anthers elliptic, to 0.5 × 0.3, eglandular; staminal ring



Museu de Biologia Mello Leitão

Santa Teresa - ES - Brasil

MBML

MYRTACEAE

MBML 13775

Det.:

Loc.: Brasil, ES, Mun. Santa Teresa. Alto São Lourenço, Sítio da Cachoeira (Lídio).

Col.: V. Demuner 1983, & E. Hausen & W. Pizziolo

Date: 25/10/2000

Obs.: Árvore 16m, DAP 30cm, fuste 7m, botões florais e flores sépalas bege, pétalas brancas, frutos imaturos de cor verde. Interior de mata, terreno ingrime.

Fig. 5. *Myrcia crassa* - image of holotype.

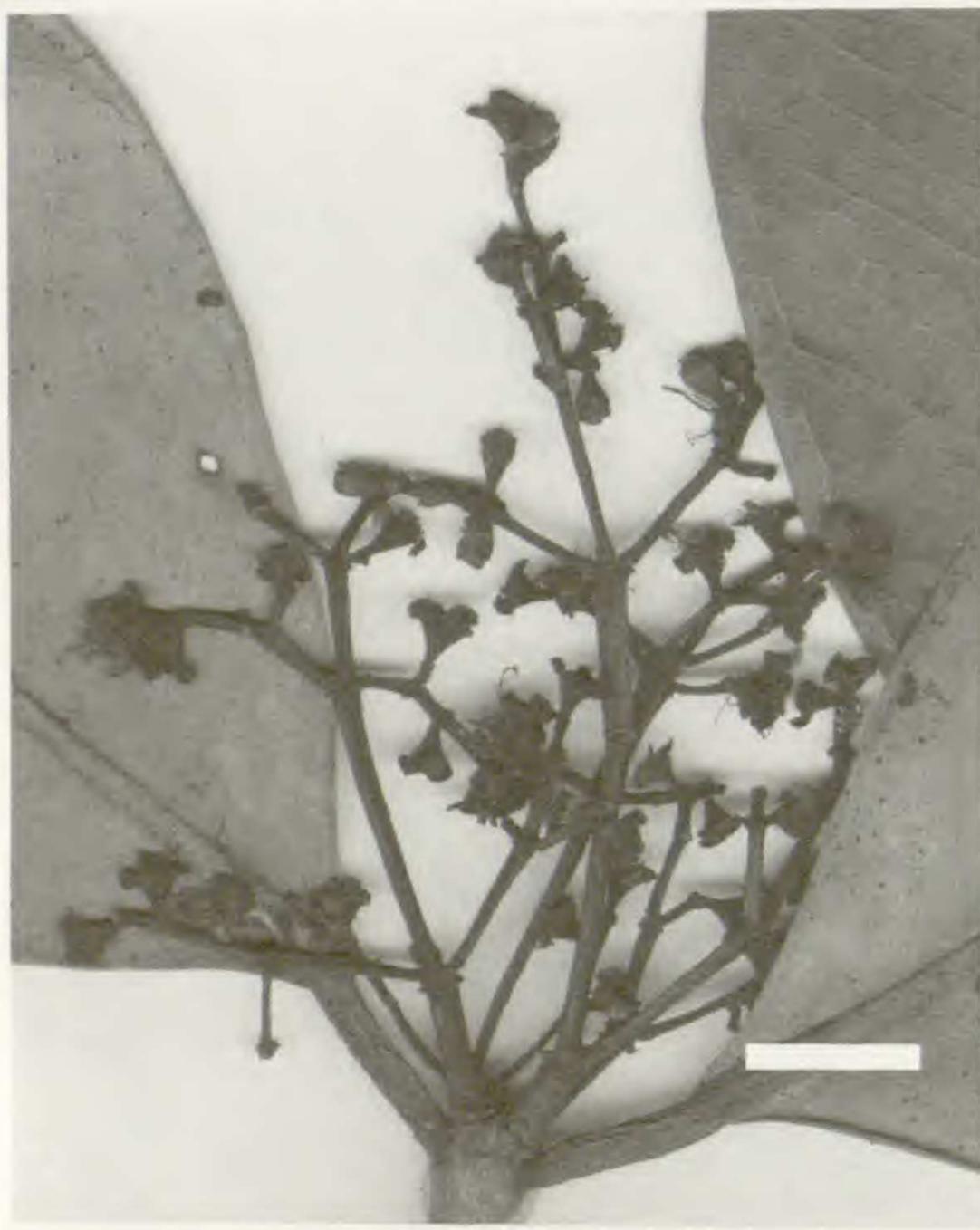


FIG. 6. *Myrcia crassa* - detail of inflorescence (scale: 10 mm).

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| 1. Twigs pilose, to 3 mm wide at the most distal internode; abaxial side of blades pilose; inflorescences with up to 30 flowers; flower buds to 5 mm | <i>Marlierea silvatica</i> |
| 1. Twigs glabrous, to 6 mm wide at the most distal internode; abaxial side of blades glabrous; inflorescences with up to 60 flowers; flower buds to 3.5 mm | <i>Myrcia crassa</i> |

Etymology.—The epithet means “thick” in Latin, alluding to the large width of the twigs and the stiffness of the blades.

PARATYPE. BRAZIL. Espírito Santo, Mun.: Santa Teresa, 6 Oct 1998, Kollmann et al. 682 (BHCB, MBML).

2.2. *Myrcia floridissima* Sobral, sp. nov. (Figs. 7–8). TYPE: BRAZIL. MINAS GERAIS, MUN.: Marliéria, UTM 0763960, 7814267 UTM 23 K, 5 Apr 2006, A. Percina s.n. (HOLOTYPE: ESAL, ISOTYPES: BHCB, BRIT).

Species *Myrciae pertusae* et *Myrciae lacunosae* proxima; *Myrciae pertusae* trichomis dibrachiatis, petiolis minoribus, bracteolis minoribus et lobis calycinis inaequalibus non strigosis recedit; *M. lacunosae* habitu arboreus, trichomis dibrachiatis, petiolis bracteolisque minoribus et floribus strigosis recedit.

Tree to 6 m high. Bark brown or orange brown, exfoliating; twigs glabrous, 1–2 mm in diameter, terete, exfoliating longitudinally, with the same color as the bark, the internodes 25–50 mm. Leaves with petioles canaliculate, 5–7 × 1.2–1.5 mm; blades lanceolate or elliptic, 110–150 × 20–45 mm, 3–5 times as long as wide, sometimes markedly bullate, discoloured when dry, with white, dibrachiata, asymmetrical trichomes 0.3–0.4 mm, scattered and curled, occasionally absent adaxially and more dense and appressed abaxially, glands more visible abaxially, with less than 0.05 mm in diameter and about 10 per square millimeter; apex acuminate to 10–15 mm; base cuneate; midvein sulcate adaxially and strongly prominent abaxially; lateral veins 17–20 pairs, sulcate or plane adaxially and prominent abaxially, leaving the midvein at angles 60–70 degrees [smaller ??]; marginal veins two, to 2 mm and 0.2–0.6 mm from the margin, the margin

to 3 mm in diameter; calyx tube 1–1.5 mm deep; style to 4 mm, the stigma punctiform; ovary with two locules and two ovules per locule. Fruits unknown.

Habitat, distribution and phenology.—Tree from montane rainforests, growing at altitudes about 750 m above sea level; presently known only for the municipality of Santa Teresa; flowers collected in October.

Conservation.—This species can be considered as endangered, according to IUCN criteria (IUCN 2001), fitting criteria B1 ab(iii), that is, its presently known range of occurrence is smaller than 5000 km² (criterion B1) its habitat is severely fragmented (Aguiar et al. 2005:121) (criterion a) and presents a continuing decline in extension (criterion b(iii)), since municipalities in central Espírito Santo have been intensely deforested (Mendes & Padovan 2000:16).

Affinities.—*Myrcia crassa* is related to *Marlierea silvatica* (O.Berg) Kiaersk. (for description see Berg 1857–1859:145 and Legrand & Klein 1971:479), from which it is distinguished by the following characters:



FIG. 7. *Myrcia floridissima* - image of unmounted holotype.



FIG. 8. *Myrcia floridissima* - detail of inflorescences (França 571; scale: 10 mm).

itself with a yellow thickening to 0.2 mm. Inflorescences drying dark purple or black, purple [when fresh], axillary or occasionally terminal, paniculiform, pyramidal, ramified two to four times, with dibrachiate trichomes like those of the leaves, the main axis 90–150 × 0.7–1 mm below the first branching, the internodes 10–15 mm, with 1–6 successive branchings, these nearly perfectly opposite one to the other, apparently bearing terminal flowers; pedicels in strict sense possibly absent, the last branches of the inflorescences simulating pedicels, 1–5 × 0.3 mm, occasionally with glabrous, linear [bracts] to 1 × 0.2–0.3 mm; bracteoles the same form and size of hypsophylls; flower buds white, obovate, 2–2.5 × 1.7–2 mm, glabrous; calyx-lobes five, visible in bud, glabrous or with scattered trichomes to 0.1 mm adaxially and cilia to 0.1 mm, unequal, three widely triangular, 0.8–1 × 1 mm, two hemispheric, 1.5–1.8 × 2 mm, strongly reflexed at anthesis; petals white, orbicular, 2 × 2.5 mm, glabrous or with scattered trichomes to 0.1 mm abaxially, reflexed at anthesis; stamens 60–70, white, 6–7 mm, the anthers hemispheric, 0.2–0.3 × 0.3, opening through longitudinal slits, eglandular; staminal ring to 3 mm in diameter, with scattered

white trichomes to 0.1 mm; hypanthium 0.5–0.7 mm deep; style 6 mm, the stigma slightly papillose; ovary 2-locular, with two ovules per locule. Fruits unknown.

Habitat, distribution and phenology.—*Myrcia floridissima* is a tree from rainforests (Floresta Atlântica) of eastern Minas Gerais, where it was collected at altitudes about 200 to 500 m above sea level. This species is presently known only for the state park of Rio Doce, in the municipalities of Marliérea and Dionísio, in the eastern portion of the southeastern Brazilian state of Minas Gerais. Flowers were collected in April and September.

Conservation.—Considering the presently available information on this species, it can be considered as an endangered one (EN; IUCN 2001), since it fits criteria B1 ab(iii), that is, its presently known range of occurrence is smaller than 5000 km² (criterion B1) it grows in a severely fragmented habitat (Aguiar et al. 2005:121) (criterion a) and its habitat presents a continuing decline in extension (criterion b(iii)), due to intense land use in southern Bahia, such as urban expansion and extensive cocoa plantations.

Affinities.—This species resembles *Myrcia pertusa* DC., presently known for the Brazilian state of Amazonas and from Peru (for description see McVaugh 1958:656), and the sympatric *Myrcia lacunosa* (O.Berg) N.Silveira (for description see Berg, 1857–1859:545). *Myrcia pertusa* is set apart by the presence of simple trichomes, smaller petioles (to 2 mm), longer bracteoles (to 5 mm), subequal, rounded and strigose calyx lobes and flowers with 250–300 stamens, while *M. lacunosa* is distinguished by its shrubby or semi-scandent habit, twigs and inflorescences with simple erect trichomes, petioles to 2 mm, bracteoles to 5 mm and densely strigose flowers with triangular calyx lobes.

Etymology.—The specific epithet is derived from the Latin superlative for “flowered,” alluding to the profusely branched inflorescences of the type specimen.

PARATYPE. BRAZIL. Minas Gerais, Mun. Dionísio: Parque Estadual do Rio Doce, Mumbaça, 19°48'18"S, 42°32'35"W, 6 Sep 2004, França et al. 571 (BHCB).

2.3. *Myrcia mucugensis* Sobral, sp. nov. (Figs. 9–10). TYPE: BRAZIL. BAHIA, MUN.: Mucugê, 9 Sep 1988, R. Kral & M.G. Wanderley 75641 (HOLOTYPE: SP; ISOTYPE: BHCB).

Species *Myrciae densae* proxima, sed indumento, foliis sessilibus cordatisque, inflorescentiis congestis et floribus tetrameris recedit.

Shrub 1.5–2 m tall; cortex gray, longitudinally rugose, glabrous, not exfoliating; twigs subterete to complanate and moderately keeled, to 2 mm wide, densely covered with gray or brown arachnoid simple trichomes to 0.2 mm, the internodes 3–5 mm. Leaves sessile, the blades ovate to ovate-triangular, 5–12 × 3–6 mm,



INSTITUTO DE BOTÂNICA **SP**
São Paulo - Brasil

MYRTACEAE

Myrcia
Det.

BRASIL, Bahia, ca. 7km de Mucugê ca. 1000m
altit. 09.XI.1988

Obs. Arbusto 1,5m alt., flores alvas.

Col. R.Kral, M.G.L.Wanderley, 75641

181-SCTC-med.104

FIG. 9. *Myrcia mucugensis* - image of isotype.

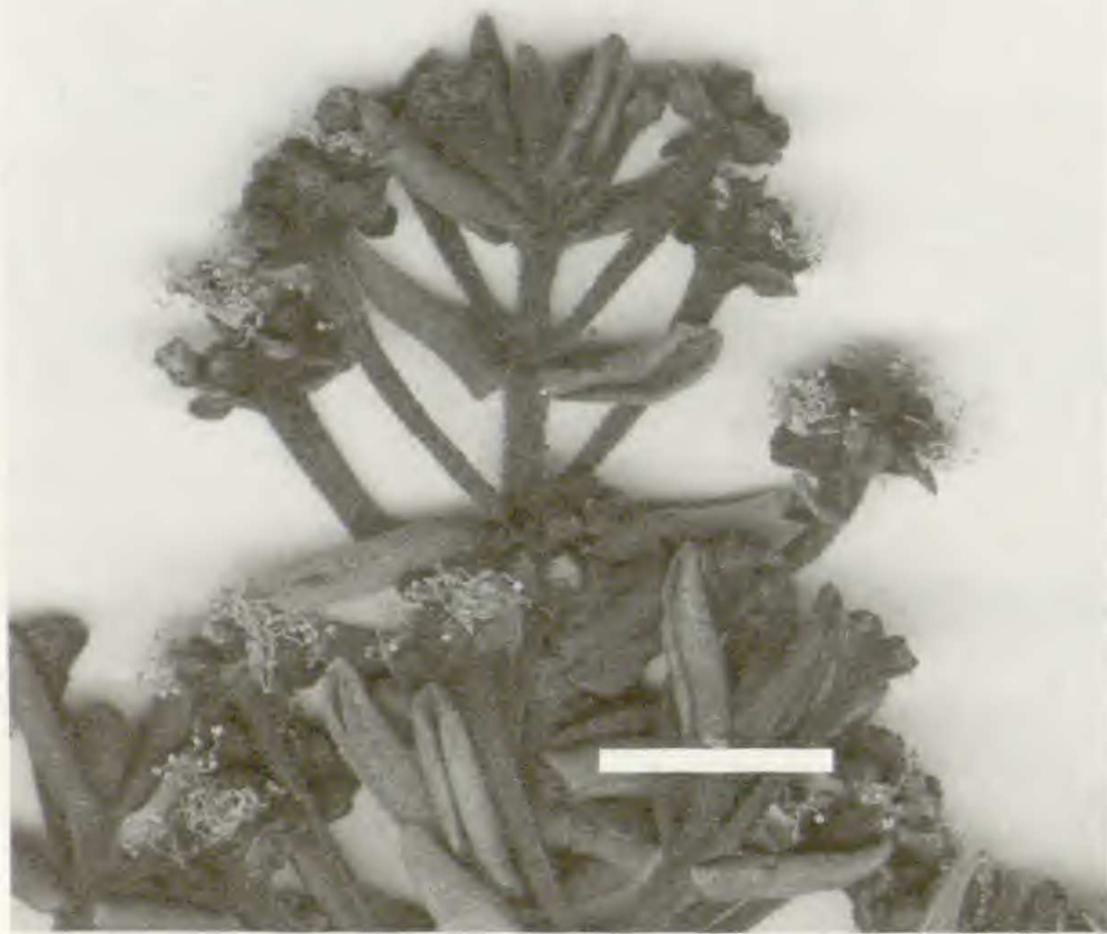


FIG. 10. *Myrcia mucugensis* - detail of inflorescence (scale: 10 mm).

8–12 sessile flowers crowded at the apex of a slightly complanate axis 12–15 × 1.5–1.8 mm wide at the apex, the axis occasionally with two ramifications 0.8–1.5 × 0.5 mm with generally three flowers each; bracts at the base of the ramifications or subtending the terminal flowers, elliptic, pilose as the axes, to 2 × 1 mm; bracteoles mostly abortive, sometimes present, linear, to 1.2 × 0.3 mm, with brown trichomes to 0.2 mm; flower buds globose-obovate, densely covered with brown arachnoid trichomes to 0.2 mm, 2 × 1.5–1.8 mm, with four subequal triangular-ovate calyx lobes 1 × 1–1.2 mm, with trichomes on both faces, opening regularly or tearing very slightly the staminal ring, occasionally falling after anthesis; petals 4 or 5, suborbicular, white, to 1 × 1.5 mm, with scattered brown dibrachiate trichomes abaxially; stamens 40 to 50, 3–4 mm, the connective with at least one apical gland ca. 0.05 mm, the anthers orbicular, 0.2 × 0.2–0.3, opening through longitudinal slits; staminal ring glabrous, 1–1.5 mm in diameter; hypanthium to 1.5 mm deep, glabrous; style 5 mm, the stigma minutely capitate and papillose; ovary 2-locular, with two ovules per locule. Fruits globose, to 2 mm in diameter, unripe, either crowned with calyx lobes or with the scar of deciduous ones. Seeds not examined.

Habitat, distribution and phenology.—So far This species has been collected only in “campos rupestres” (rocky open habitats) of the municipality of Mucugê at central Bahia, at altitudes 800–1000 m above sea level.

Conservation.—Although *Myrcia mucugensis* is known from only one municipality, I could not find additional informations relative to the present conditions of its habitat; considering this lack of information, this species can be considered as data deficient (DD), as is the case when “there is inadequate information to make a direct, or indirect, assessment of its risk of extinction based on its distribution and/or population status” (IUCN 2001).

Affinities.—This species is apparently related to *Myrcia densa* (DC.) Sobral, a species also collected in campos rupestres of central Bahia (for description see Berg (1857–1859:69), under *Aulomyrcia densa* (DC.) O.Berg). Both species can be distinguished by the characters in the following couplet:

1. Leaves with petioles to 3 mm; blades glabrous or with scattered trichomes, cuneate at base, the margin not revolute; inflorescences paniculiform, two to three times ramified, the secondary branches at least 5 mm long; flowers with five calyx lobes

Myrcia densa

2–2.5 times as long as wide, discoloured when dry, the adaxial face dull green or somewhat gray, the abaxial face brown or gray, both sides with trichomes as the twigs, those at the abaxial side always more dense than the adaxial one, the trichomes on the adaxial side occasionally deciduous in adult leaves, glands virtually invisible, generally evident against light, smaller than 0.05 mm in diameter and ca. 10 per square millimeter; apex acute to widely acute; base cordiform; midvein slightly sulcate adaxially and prominent abaxially; lateral veins 6–7 pairs, invisible on both sides, leaving the midvein at angles about 60 degrees; marginal vein not evident, the margin itself strongly revolute for at least half the width of the blades, frequently so revolute as to conceal completely the abaxial side. Inflorescences axillary, capituliform, as densely covered with brown trichomes as the twigs, with

1. Leaves sessile; blades densely pilose at least abaxially, the base markedly cordate, the margin strongly revolute, sometimes concealing the abaxial side; inflorescences capituliform, occasionally with only one secondary branch to 1.5 mm; flowers with four calyx lobes. *Myrcia mucugensis*

PARATYPE. BRAZIL. Bahia. Mun. Mucugê: 12°59'S, 41°21'W, 25 Jan 1980, Harley et al. 20619 (ASU, CEPEC, K).

- 2.4. *Myrcia pendula* Sobral, sp. nov. (Figs. 11–12). TYPE: BRAZIL. BAHIA MUN.: Ibirapitanga, 22 km N of Itamarati on BR-101, then 6.8 km E on road to Embratel tower; Reserva Municipal Cachoeira do Pau, 13°53'27"S, 39°27'33"W, 12 May 2005, A.M. Amorim, J.L. Paixão, S. Sant'Ana & L.C.J. Gomes 4940 (HOLOTYPE: CEPEC; ISOTYPE: BHCN).

Species *Myrciae croceae* affinis, a qua indumento hispido, foliis subsessilibus, inflorescentiis capitatis et fructis ecostatis recedit.

Trees 3–15 m tall. Branches pendulous, terete or slightly flattened, occasionally weakly channeled longitudinally, 4–5 mm in diameter, with dense simple red-brown erect trichomes to 8 mm long (occasionally deciduous in older twigs), occasionally with straight to slightly curved interpetiolar scars; internodes 40–100 mm long. Leaves sessile or shortly petiolate, the petiole when present to 1 × 4 mm, frequently evident only abaxially; blades ovate-lanceolate, 130–200 × 58–80 mm, 2–2.5 times as long as wide, slightly discoloured when dry, lighter abaxially; glands not evident on the surfaces but visible against light, to 0.1 mm in diameter, about 15 glands per square millimeter; apex acute or acuminate in 3–5 mm; base rounded, frequently with the margins folded in dried specimens; midvein sulcate adaxially, with red, brown or gray simple trichomes to 1 mm, strongly prominent abaxially, there with erect brown trichomes to 5 mm; lateral veins 18–25 pairs, sulcate adaxially and with scattered trichomes as on the midvein, prominent abaxially, [] with trichomes as the midvein but these 0.5–1 mm; marginal veins two, 2.5–6 mm and 1–1.3 mm from the margin. Inflorescences with dense brown erect trichomes to 0.5 mm, axillary or terminal, pendulous, mostly capitate, with 3–10 flowers crowded at the apex of an axis, occasionally racemiform or paniculiform and then mostly with one level of ramification, the main fertile axis 40–120 × 1–2.5 mm below the first branching, the secondary axes when present 2 at a same point, to 5 × 1.5 mm; bracts triangular, 10–12 × 5 mm, abaxially with brown appressed trichomes to 1.2–2 mm; pedicels absent; bracteoles triangular as the bracts, 9–10 × 4–6 mm, visibly crenate, abaxially with trichomes as on the bracts, persisting after anthesis; flower buds globose, 8–10 × 9 mm, densely and evenly covered with simple red brown trichomes 1–2 mm; calyx lobes five, triangular to widely triangular, somewhat unequal in size, 4–5 × 5–7 mm, abaxially with trichomes as on the rest of the flower bud and adaxially with gray appressed trichomes to 0.2 mm; petals rounded, to 9–10 × 10 mm; stamens about 200, to 6 mm, the anthers linear-rectangular, to 1 × 0.3 mm, opening longitudinally with a very slight sinuosity, without evident glands; staminal ring 5–6 mm in diameter; hypanthium absent or mostly 0.5 mm deep; style to 10 mm, stigma slightly capitate; ovary 2-locular, with 2 ovules per locule. Fruits globose, smooth, only immature collected, to 20 mm in diameter, densely covered with trichomes as the flowers; seeds one or two per fruit, incompletely developed.

Habitat, distribution and phenology.—*Myrcia pendula* was collected in rainforests in the municipalities of Ibirapitanga and Camamu, at altitudes from 600 to 700 m above sea level; flowers were collected in March and May and fruits in February.

Conservation.—According to IUCN criteria (IUCN 2001), *Myrcia pendula* can be scored as endangered (EN), fitting criteria B1 ab(iii), that is, its presently known range of occurrence is smaller than 5000 km² (criterion B1), it grows in a severely fragmented habitat (Aguiar et al. 2005:121) (criterion a) and its habitat presents a continuing decline in extension (criterion b(iii)), due to intense land use in southern Bahia, such as urban expansion and extensive cocoa plantations.

Affinities.—This species is apparently related to *Myrcia crocea* (Vell.) Kiaersk. (for description, see Berg (1857–1859:533), under *Gomidesia crocea* (Vell.) O.Berg), another species from atlantic rainforests that grows from Bahia to São Paulo; these species can be distinguished by the characters given in the following couplet:

1. Branches erect; plants with trichomes mostly 1 mm long; leaves with petioles to 8 mm; inflorescences paniculiform, with 30 or more flowers, the secondary axes 10 mm or more; fruits longitudinally sulcate

Myrcia crocea

FLORA

Envenenado com Mystox
Em, de de 200



The New York Botanical Garden
No. 13454 Myrtaceae

Brazil, Bahia, Mun. Ibirapitanga: 22 km N of Itamarati on BR 101, then 6.8 km E on road to Embratel Tower. Reserva Municipal Cachoeira do Pau. 13°53'27"S. 39°27'33"W. 690 m. Southern Bahian wet forest.

Treelet, 3 m; calyx receptacle covered with golden-brown pubescence; leaves coriaceous and ILLEGIBLE.

W. W. Thomas & A. M. Amorim, J. L. Paixão, P. Fiaschi, S. Sant'Ana & B. Clifton 19 Mar 2003

Supported by the Beneficia Foundation

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HERBÁRIO

N: 98740

Itapicoba Ilhéus / Itabuna - Bahia - Brasil

FIG. 11. *Myrcia pendula* - image of holotype.

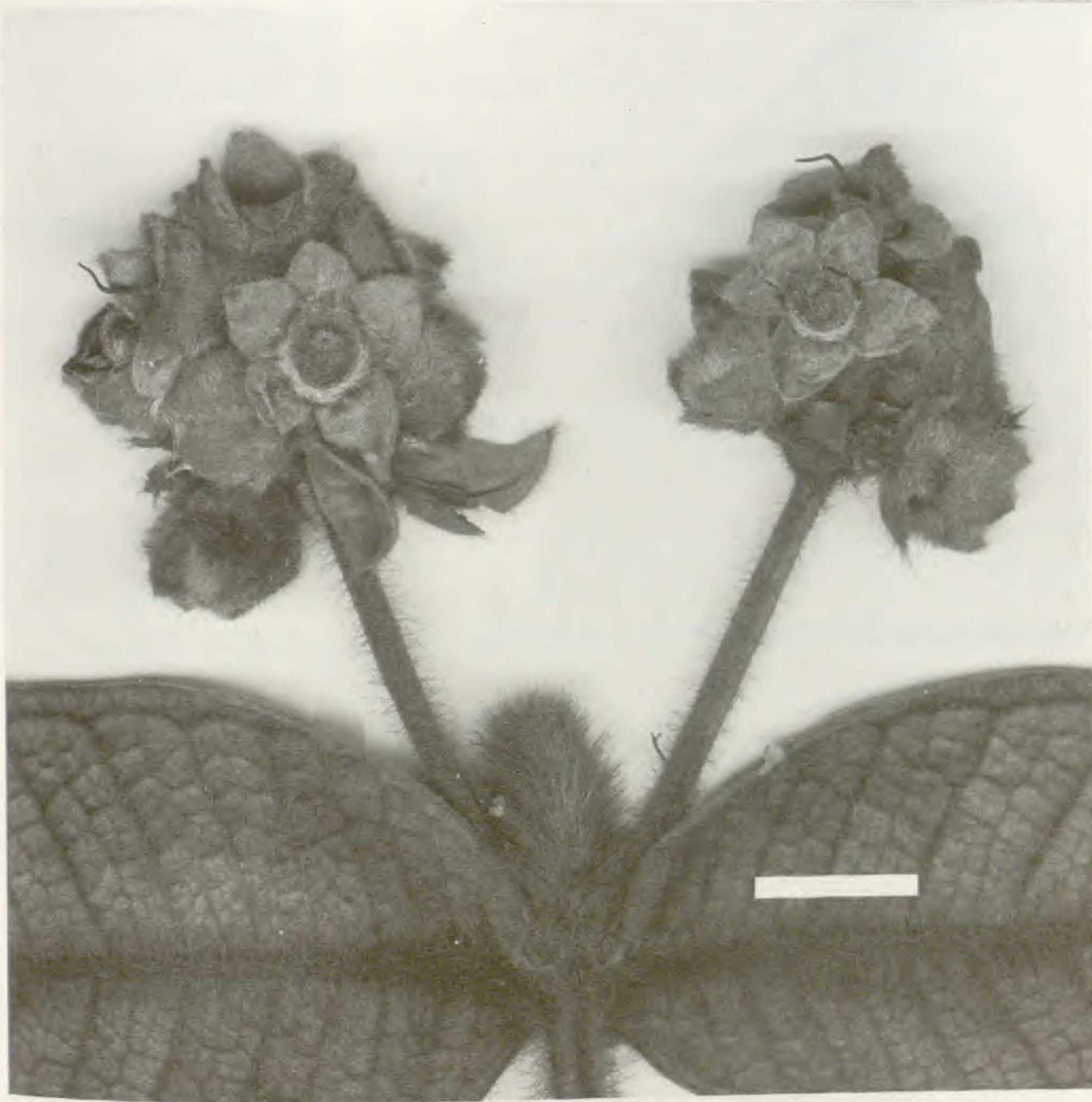


FIG. 12. *Myrcia pendula* - detail of inflorescences (scale: 10 mm).

1. Branches pendulous; plants with trichomes to 8 mm long; leaves sessile or with petioles to 1 mm; inflorescences mostly capitate, if racemiform or paniculiform then with up to 10 flowers, the secondary axes to 5 mm; fruits smooth. ***Myrcia pendula***

Etymology.—The epithet is derived from the Latin word for “pendulous,” alluding to the position of the branches of this species in nature.

PARATYPES. BRAZIL. Bahia. Mun. Ibirapitanga: 22 km N of Itamarati on BR-101, then 6.8 km E on road to Embratel tower, Reserva Municipal Cachoeira do Pau, 13°53'27"S, 39°27'33"W, 19 Mar 2003, Thomas et al. 13454 (CEPEC). Mun. Camamu: Fazenda Exílio, entrada no km 10,7 da BA-650 Camamu-Travessão, ca. 2 km L da sede da Fazenda, 21 Feb 2000, 14°00'07"S, 39°10'07"W, Jardim et al. 2732 (CEPEC).

2.5. *Myrcia pseudomarlierea* Sobral, sp. nov. (Figs. 13–14). TYPE: BRAZIL. BAHIA. MUN. URUCUCA:, rodovia Ilhéus-Itacaré, entrada à esquerda na rotatória de acesso a Uruçuca, ca. 9,5 km, ramal à esquerda do Parque Estadual da Serra do Conduru, 14°29'S e 39°6'W, 23 Oct 2003, P. Fiaschi, A. Amorim, S. Sant'Ana, J.L. Paixão & C.W. Espey 1747 (HOLOTYPE: CEPEC).

Species *Marliereae* affini proxima, a qua foliis majoribus sessilibus, basi cordati et apicis non acuminatis distincta est.

75027

Envenenado com *Nystox*
Em, de de 200



Herbário Centro de Pesquisas do Cacau - CEPEC - CEPLAC
Projeto Mata Atlântica Nordeste
Ilhéus - Bahia - Brasil

Brasil, Bahia, Uruçuca: Rodovia Ilhéus-Itacaré, entrada à esquerda, na rotatória de acesso à Uruçuca, ca. 9,5 km, ramal à esq. Parque Estadual Serra do Conduru. 14°25' S 39°6' W.

MYRTACEAE

Myrcia

Árvore ca. 16 m alt. Folhas fortemente coriáceas, bem discoloras. Inflorescência com indumento castanho-escuro, botões florais amarelados com indumento aspero.

Fischl, P. 1747. A. Amorim, S. Sant'Ana, J.L. Paixão & C.W. Espey 33/10/2003 Det.

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Fig. 13. *Myrcia pseudomarlierea* - image of holotype.



FIG. 14. *Myrcia pseudomarlierea* - detail of inflorescences (scale: 10 mm).

Trees 4–20 m. Branches and leaves glabrous. Twigs terete or slightly flattened, 4–7 mm in diameter; internodes 30–100 mm long. Leaves sessile; blades lanceolate, obovate-lanceolate or ovate-lanceolate, 130–320 × 55–150 mm, 2–2.5 times as long as wide, discoloured when dry, the abaxial surface lighter; glands not visible against light, moderately excavated in the adaxial side and occasionally barely prominent at the abaxial one, less than 0.1 mm in diameter, 10 to 15 glands per square millimeter; apex acute or rounded; base cordate or rounded, frequently folded or breaking in dried material; midvein sulcate or sometimes flat adaxially, strongly prominent and darker than the rest of the surface abaxially; lateral veins 22–25 pairs, evident and moderately prominent on both sides, with about the same number of thinner secondary lateral veins; marginal veins two, 2.5–5 mm and 1–1.5 mm from the margin. Inflorescences with dense and frequently deciduous glistening brown trichomes to 0.2 mm, terminal, paniculiform, with three to four levels

of ramification, the main fertile axis flattened, to 150 × 3–4 mm below the first branching, the secondary axes 2 at a same point, 50–110 × 3 mm; bracts, pedicels and bracteoles absent; flower buds obovate, to 4 × 3 mm, with brown persistent trichomes to 0.2 mm; calyx lobes four, fused between them except apically and tearing at anthesis more or less irregularly, strongly unequal, one of them larger and rounded, sometimes calyptriform, rounded, 2.3–3 mm in diameter, the other three irregularly rounded or triangular, 1–1.5 × 1.5–1.7 mm, with evident glands; petals absent; stamens 90–100, to 4 mm, the anthers subquadrate, 0.3 × 0.2–0.3 mm, opening through longitudinal slits, the connective bearing one evident gland; staminal ring 2–3 mm in diameter; hypanthium 1.5–2 mm deep; style 6–7 mm, stigma punctiform, softly papillose; ovary 2-locular, with 2 ovules per locule. Fruits globose, red when ripe, 12–15 mm in diameter; seeds one per fruit (in three examined fruits) subreniform, 12–15 × 12 mm, the testa light brown, shining, easily detachable, embryo with two folded cotyledons surrounded by an evident hypocotyl.

Habitat, distribution and phenology.—This species grow in coastal rainforests of the municipalities of Camamu, Itacaré and Uruçuca in southern Bahia, at altitudes 100–500 m above sea level. Flowers were collected in October and December; fruits in March and May.

Conservation.—Through IUCN criteria (IUCN 2001), this species could be considered as endangered (EN), fitting criteria B1 ab(iii), since its presently known area of occurrence is smaller than 5000 km² and its habitat is severely fragmented and suffering a continuing decline (for explanations on criteria and references, see comments under *Myrcia pendula*).

Affinities.—This species resembles *Marlierea affinis* (O.Berg) D.Legrand (for description see Berg (1857–1859:149), under *Eugeniopsis affinis* O.Berg), from which it can be distinguished by the characters in the following couplet:

- | | |
|--|-------------------------------|
| 1. Leaves with petioles to 16 mm long and blades to 200 × 60 mm, with acuminate apex and cuneate base; flowers with calyx lobes rounded. | Marlierea affinis |
| 1. Leaves sessile, to 320 × 150 mm, with acute apex and cordate base; flowers with unequal calyx lobes, one of them somewhat calyptriform. | Myrcia pseudomarlierea |

Etymology.—The epithet is derived from the Greek work meaning “false” and *Marlierea*, alluding to the close resemblance of this plant to a species presently assigned to *Marlierea*.

PARATYPES. **BRAZIL.** **Bahia.** **Mun. Camamu:** rodovia BA-650, Camamu-Travessão, fazenda Zumbi dos Palmares, Cachoeira de Crespe, 12 Nov 2004, Paixão et al. 282 (CEPEC). **Mun. Itacaré:** APA de Itacaré/Serra Grande, km 12 da rodovia Itacaré-Serra Grande, 19 May 2000, Sant’Ana et al. 875 (CEPEC); estrada que liga a torre da Embratel com a estrada BR-101/Itacaré, a 5,8 km da entrada; 200–300 m, 21 Oct 1979, Mori & Benton 12857 (CEPEC); mata parcialmente perturbada na estrada Itacaré-Taboquinhas, ao lado do loteamento da Marambaia, 20 Nov 1991, Amorim et al. 399 (CEPEC). **Mun. Uruçuca:** rodovia Ilhéus-Itacaré, 7.3 km N of Serra Grande on road to Itacaré, 14°25’S, 39°01’W, 7 May 1992, Thomas et al. 9201 (CEPEC).

2.6. *Myrcia pseudospectabilis* Sobral, sp. nov. (Figs. 15–16). TYPE: BRAZIL. BAHIA. MUN. ILHÉUS: rodovia Ilhéus-Itacaré (BA-001), na altura do km 20, entrada à esquerda; acesso ao Retiro, ramal vicinal 5,5 km à direita para a Lagoa Encantada, 14°35'10"S, 39°07'2"W, 27 Nov 2004, P. Fiaschi, J.L. Paixão, S.C. Sant'Ana & L.C.J. Gomes 2656 (HOLOTYPE: CEPEC; ISOTYPE: BHCB).

Species *Myrcia spectabilis* proxima, a qua habitu fruticoso, ramis ecallosis, foliis angustioribus, basi cordatis et fructis glabratis recedit.

Shrubs to small trees 1–6 m. Branches and adult leaves glabrous or with very scarce white trichomes to 0.3 mm. Twigs terete or slightly flattened, 3–4 mm in diameter, scarcely or not longitudinally striate, occasionally with straight to slightly curved interpetiolar scars; internodes 40–80 mm long. Leaves petiolate, the petiole 2.5–4 × 2–2.5 mm, frequently evident only abaxially; blades lanceolate, oblong-lanceolate or ovate-lanceolate, 130–220 × 30–55 mm, 4–4.5 times as long as wide, discoloured when dry, lighter abaxially; glands visible against light, moderately prominent abaxially, to 0.1 mm in diameter, 6 to 10 glands per square millimeter; apex acuminate (acumen 15–20 mm) or acute; base cordate, rounded or slightly auriculate above the petiole; midvein biconvex adaxially, prominent abaxially; lateral veins 16–27 pairs, evident and moderately prominent at least abaxially, with about the same number of much thinner secondary lateral veins; marginal veins two, 2–3 mm and 0.5–0.6 mm from the margin. Inflorescences with scarce white or ochraceous appressed simple trichomes to 0.3 mm, terminal, paniculiform, with two to three levels of ramification, the main fertile axis 80–130 × 2.5–3 mm below the first branching, the secondary axes 2 at a same point, 20–40 × 1–2 mm; bracts mostly absent, when present linear-lanceolate, those at the base of the first branching to 10 × 2 mm, those of the higher branchings to 5 × 0.5 mm; pedicels absent; bracteoles lanceolate, to 2 × 0.3–0.5 mm, deciduous at anthesis; flower buds obovoid or pyriform, to 5 × 3 mm, with simple, ochraceous or gray persistent trichomes to 0.2 mm densely covering the ovary, the calyx lobes with somewhat clearer and less dense trichomes to 0.3 mm, the ovary markedly wrinkled in dried specimens; calyx lobes five, triangular, slightly unequal, 1–1.5 × 2 mm; petals rounded or elliptic, 3–6 × 2–5 mm; stamens 40–50, to 6 mm, the anthers linear-rectangular, 1–1.3 × 0.4 mm, opening longitudinally, eglandular; staminal ring about 2 mm in diameter; hypanthium to 1 mm deep; style to 8 mm; stigma punctiform; ovary 2-locular, with 2 ovules per locule. Fruits glabrous, globose, purple or black when ripe, 10–12 mm in diameter; seeds one or two per fruit, to 10 mm, the testa easily detachable, embryo with two folded cotyledons surrounded by an evident hypocotyl, this with simple white trichomes to 0.3 mm near the proximal part.

Habitat, distribution and phenology.—*Myrcia pseudospectabilis* grows in coastal rainforests of southern Bahia, at altitudes from 170 to 510 m above sea level; flowers were collected in November and fruits from February to July.

Conservation.—This species can be considered, according to IUCN criteria (IUCN 2001) as endangered (EN), fitting criteria B1 ab(iii), since its presently known area of occurrence is smaller than 5000 km² and its habitat is severely fragmented and declining (for explanations on criteria and references, see comments under *Myrcia pendula*).

Affinities.—This species is apparently related to *Myrcia spectabilis* DC., a species widespread in coastal Brazil from Bahia to Santa Catarina (for description see Berg (1857–1859:12), under *Gomidesia spectabilis* (DC.) O.Berg); both species can be set apart by the following characters:

- | | |
|--|--|
| 1. Tree to 15 m tall or more; twigs with an interpetiolar callose scar; leaves with blades to 200 × 70 mm, the base acute to obtuse; fruits with yellow appressed trichomes. | <i>Myrcia spectabilis</i> |
| 1. Tree to 6 m tall; twigs devoid of interpetiolar scar; leaves with blades to 220 × 55 mm, the base cordate; fruits glabrous. | <i>Myrcia pseudospectabilis</i> |

Etymology.—The epithet is derived from the Greek word for “false” and “spectabilis,” alluding to the resemblance between this species and *Myrcia spectabilis*.

PARATYPES. BRAZIL. Bahia. Mun. Ilhéus: rodovia Ilhéus-Itacaré (BA-001), na altura do km 20, entrada à esquerda, acesso ao Retiro, ramal vicinal 5,5 km à direita para a Lagoa Encantada, 14°35'10"S, 39°07'2"W, 19 Feb 2005, Fiaschi et al. 2726 (CEPEC). Mun. Santa Luzia: estrada a 11,3 km E da sede do município, Serra da Onça, ca. 4,5 km da entrada, 23 Jul 1996, Jardim et al. 854 (CEPEC); estrada de Serra Grande para Uruçuca, área do inventário do plano de manejo, mata da torre do celular, 14°29'59"S, 39°06'54"W, 18 Mar 2004, Fiaschi et al. 2069 (CEPEC); idem, 2 Apr 2004, Fiaschi et al. 2216 (CEPEC); Serra da Onça, 10.8 km NE of Santa Luzia, on Una-Santa Luzia Road, then 4.2 km N on road to Serra da Onça, 15°30'S, 39°30'W, 21 Nov 1996, Thomas et al. 11363 (BHCB, CEPEC). Mun. Uruçuca:

Envenenado com Mystox
Em de de 200



Herbário Centro de Pesquisas do Cacau - CEPEC - CEPLAC
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Ilhéus - Bahia - Brasil

Brasil, Bahia, Ilhéus: Rodovia Ilhéus-Itacaré (BA 001), na altura do km 20, estrada à esquerda. Acesso ao Retiro. Ramal vicinal ca. 5,5 km à direita, para a Lagoa Encantada. 14°35'10"S 39°7'2"W. Alt: 170 m. Floresta Ombrófila antropizada.

MYRTACEAE

Arbusto ca. 3 m alt. Folhas discolores. Flores com sépalos alaranjados, pétalas alvas, estames creme.

Fuschi, P. 2856 J.L. Paixão, S.C. Sant'Ana & L.C.J. Gomes 27/11/2004
Det.

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Rodovia Ilhéus / Itabuna - Bahia - Brasil



Fig. 15. *Myrcia pseudospectabilis* - image of holotype.



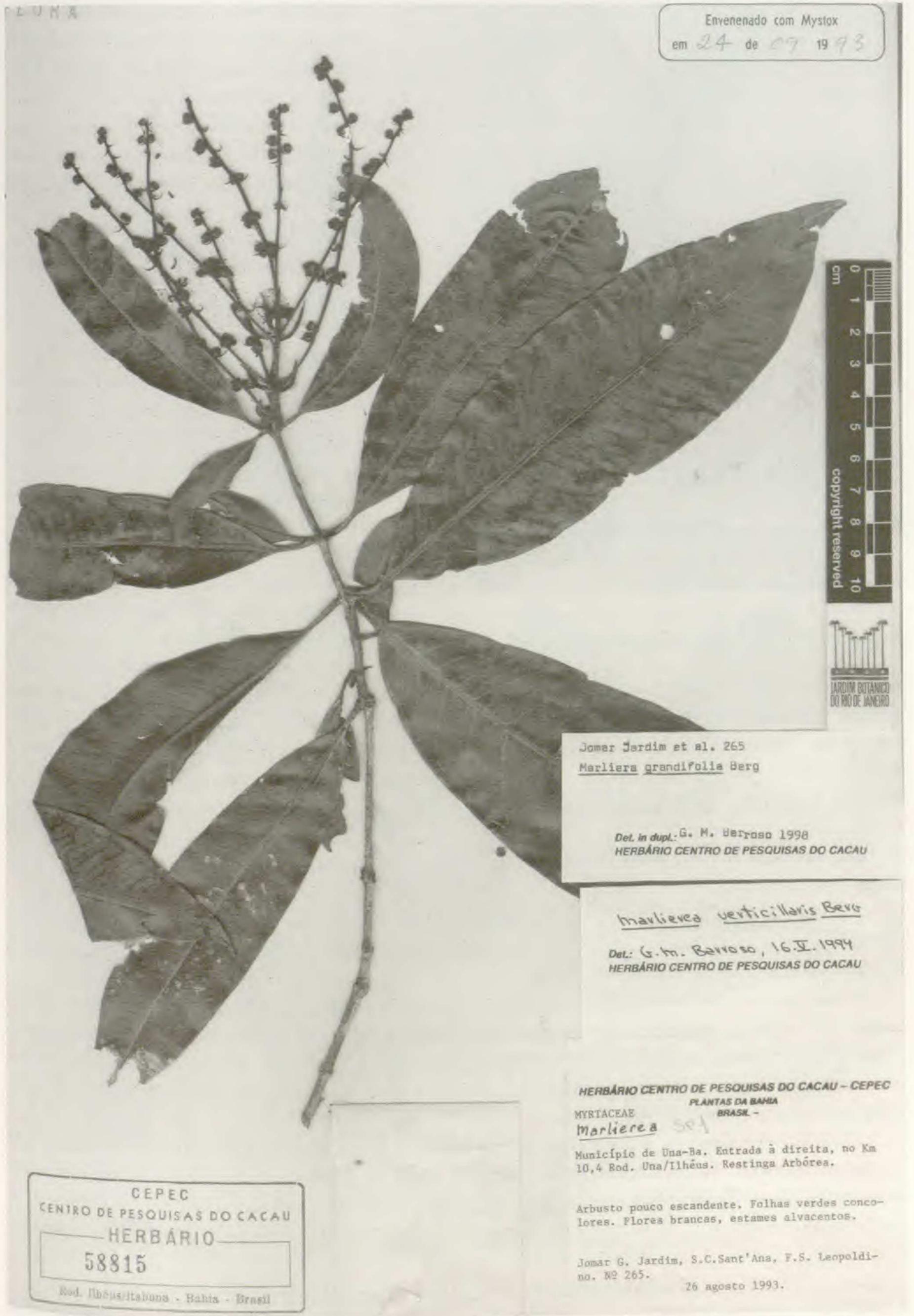
FIG. 16. *Myrcia pseudospectabilis* - detail of inflorescences (scale: 10 mm).

distrito de Serra Grande, estrada Serra Grande-Itacaré, 7,3 km a partir de Serra Grande, Fazenda Lagoa, do conjunto Fazenda Santa Cruz, 13 May 1999, Amorim et al. 3073 (CEPEC); 7 Sep 1991, Carvalho et al. 3643 (CEPEC); 7 Sep 1991, Carvalho et al. 3662 (CEPEC); 3 km N of Serra Grande on road to Itacaré, Fazenda Lagoa, 14°25'S, 39°01'W, 6 May 1993, Thomas et al. 9807 (CEPEC); 9 Feb 1994, Thomas et al. 10345 (CEPEC); 14°25'24"S, 39°03'38"W, 24 Apr 1995, Thomas et al. 10928 (CEPEC); 15 Nov 1995, Thomas et al. 11006 (CEPEC).

2.7. *Myrcia tetraphylla* Sobral, sp. nov. (Figs 17–18). TYPE: BRAZIL. BAHIA. MUN. UNA: entrada à direita no km 10,4 da rodovia Una-Ilhéus, 26 Aug 1993, J.G. Jardim, S.C. Sant'Ana & FS. Leopoldino 265 (HOLOTYPE: CEPEC).

Species *Myrciae eumecephyllae* et *M. clavijae* proxima; a prima foliis verticillatis recedit et altera petiolis longioribus, laminis cuneatis, lobis calycinis exaristatis et fructis majoribus recedit.

Shrubs to trees 2–8 m. Flowering branches pendulous. Branches and inflorescences with dense simple brown trichomes to 0.5 mm. Internodes usually unequal in a branch, 6–60 mm long. Leaves petiolate, verticillate, 3–4 at a same point of the branch; petioles 10–20 × 1–3 mm, thickened and somewhat darker at the proximal half, with simple brown trichomes 0.5–1 mm; blades narrowly lanceolate, oblanceolate or oblong, 150–270 × 15–60 mm, 4.5–10 times as long as wide, discoloured when dry, the adaxial side dull dark green and the abaxial light brown, with very scattered simple, white, and easily breakable trichomes to 1 mm on both surfaces near the midvein; glands not visible against light, occasionally barely visible on the blade surface, about 0.1 mm in diameter and less than 10 glands per square millimeter; apex acute or acuminate, the acumen 15–45 mm; base cuneate or attenuate; midvein strongly prominent on both sides, sometimes clearer than the rest of the blade; lateral veins 25–35 pairs, evident and moderately prominent on both sides.



Envenenado com Mystox
em 24 de 07 1993

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copyright reserved



Jomar Jardim et al. 265
Marliera grandifolia Berg

Det. in dupl.: G. M. Berruso 1998
HERBÁRIO CENTRO DE PESQUISAS DO CACAU

Marliera verticillaris Berg
Det.: G. M. Berruso, 16.V. 1999
HERBÁRIO CENTRO DE PESQUISAS DO CACAU

HERBÁRIO CENTRO DE PESQUISAS DO CACAU - CEPEC
PLANTAS DA BAHIA
BRASIL -

MYRTACEAE
Marliera sob
Município de Una-Ba. Entrada à direita, no Km 10,4 Rod. Una/Ilhéus. Restinga Arbórea.

Arbusto pouco escandente. Folhas verdes concolores. Flores brancas, estames alvacentos.

Jomar G. Jardim, S.C. Sant'Ana, F.S. Leopoldino. Nº 265.
26 agosto 1993.

CEPEC
CENTRO DE PESQUISAS DO CACAU
HERBÁRIO
58815
Rod. Ilhéus/Itabuna - Bahia - Brasil

Fig. 17. *Myrcia tetraphylla* - image of holotype.



FIG. 18. *Myrcia tetraphylla* - detail of inflorescences (scale: 10 mm).

axis); flower buds obovate, $3-4 \times 3-4$ mm, with brown trichomes to 0.2 mm on the ovary; calyx lobes unequal in size and shape, two of them rounded or widely triangular, $1.2-1.5 \times 1.8$ mm, three triangular, 0.8×1 mm, ciliate and with evident glands; petals rounded or obovate, glabrous, $2.5-3 \times 3$ mm; stamens 40-50, 3-4 mm, the anthers subquadrate, 0.3×0.2 mm, opening through longitudinal slits; staminal ring with scarce white trichomes to 0.2 mm, 2-2.2 mm in diameter; hypanthium 0.5-1 mm deep; style 6 mm, stigma punctiform; ovary 2-locular, with 2 ovules per locule. Fruits globose, purple when ripe, 15-22 mm in diameter; seeds 1-2, reniform, 10×8 mm, the testa brown, shining and easily detachable; embryo immature, not observed.

Habitat, distribution and phenology.—*Myrcia tetraphylla* grows in rainforests from four municipalities in southern coastal Bahia, at altitudes from the sea level to about 100 m; flowers were collected in January and fruits in January, October and November.

Conservation.—Considering IUCN criteria (IUCN 2001) for assigning conservation status for species, this species could be considered as endangered (EN), fitting criteria B1 ab(iii), that is, its presently known range of occurrence is smaller than 5000 km², it grows in a severely fragmented habitat and its habitat presents a continuing decline in extension due to intense land use (for explanations on criteria and references, see comments under *Myrcia pendula*).

Affinities.—This species is apparently closely related to *Myrcia eumecephylla* (O.Berg) Niedenzu, from coastal southeastern Brazil (for description see Berg (1857-1859:98) and *Myrcia clavija* Sobral, from the montane forests of the Brazilian state of Minas Gerais (for description see Sobral & Couto 2006); it can be easily distinguished from *M. eumecephylla* by the verticillate leaves, and from *M. clavija* by the following characters:

- | | |
|---|----------------------------------|
| 1. Petioles to 7 mm; blades with lateral veins to 60 pairs and base obtuse to cordate; calyx lobes aristate to 2 mm; fruit to 12 mm in diameter | <i>Myrcia clavija</i> |
| 1. Petioles to 20 mm; blades with lateral veins to 35 pairs and base attenuate; calyx lobes rounded or triangular, not aristate; fruit to 22 mm in diameter | <i>Myrcia tetraphylla</i> |

with about twice as many secondary lateral veins; marginal vein 1-5 mm, occasionally a second, 0.8-1 mm, from the margin. Inflorescences terminal, paniculiform, the main fertile axis 20-80 \times 2-3 mm below the first branching, the secondary axes verticillate, 4-6 at a same point, longer than the primary axis, 100-200 \times 1-1.5 mm; bracts at the base of the inflorescence whorled in 3-4 series, with brown trichomes to 0.5 mm, the proximal ones triangular, $2-4 \times 1.5$ mm, the distal ones narrowly triangular, 15×1.8 mm; bracts at the base of secondary branches in one series, narrowly triangular, 18×2 mm; bracts at the base of flowers along the secondary branches linear, $5-10 \times 0.2-0.3$ mm, persisting after anthesis, pilose as the bracts of the main axis and frequently evidently curved; pedicels absent; bracteoles one or two by flower, if two very unequal, $1 \times 0.2-0.3$ and 2×0.3 mm (in some cases three bracteoles could be observed, suggesting that what is here considered bracteoles could possibly be remnant bracts of an aborted tertiary



HERBÁRIO DO DEPARTAMENTO DE BOTÂNICA - ICB - UFMG
PLANTAS DO BRASIL
MYRTACEAE

Espécie:
Localidade: MG, Rio Vermelho, Serra do Ambrósio.
Lat.: 18° 07' S, Lon.: 43° 01' W, Alt.: 1400 m.
Data: 10/1/2008
Coletor: P. L. Viana, F. S. F. Leite, L. E. Lopes, M. Ferreira nº: 2403
Determinador:
Obs.: Arbusto em carrascal. Encosta de serra. Folhas discoloras.

BHCB 102134

FIG. 19. *Plinia espinhacensis* - image of holotype.

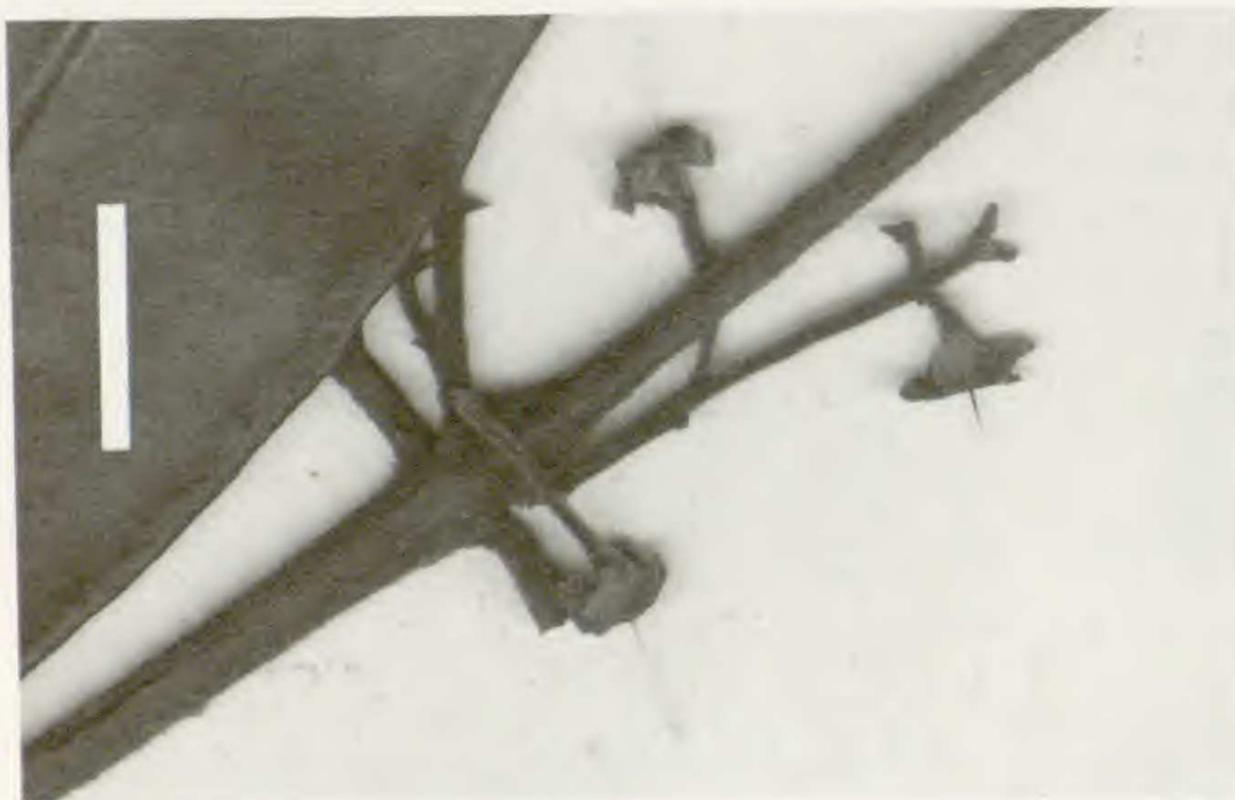


FIG. 20. *Plinia espinhacensis* - detail of inflorescences (scale: 10 mm).

Nov 2003, Amorim et al. 1427 (CEPEC); 13 Sep 2003, Amorim et al. 1334 (CEPEC); 7 Jan 2003, Jardim et al. 6 (CEPEC); 14 Nov 1992, Thomas et al. 9416 (CEPEC); rod. Una a Xapuri, Dendhaweia S/A, fazenda Iguaçu, 28 Oct 1971, Pinheiro 1681 (CEPEC); Rebio de Una, sede Maruim, 10 Nov 1998, Amorim et al. 2636 (CEPEC); Reserva Biológica de Una, Picada do Marimbondo, 15°10'S, 39°04'W, 24 Nov 1996, Thomas et al. 11409 (CEPEC).

3. *Plinia* L.

Plinia is an American genus with about 20 species in Brazil (Landrum & Kawasaki 1997), and is characterized by flowers with well developed calyx tubes, bilocular ovaries with two ovules per locule and seeds with two plano-convex cotyledons, without visible hypocotyl.

3.1 *Plinia espinhacensis* Sobral, sp. nov. (Figs. 19–20). TYPE: BRAZIL, MINAS GERAIS, MUN. RIO VERMELHO: Serra do Ambrósio, 10 Jan 2006, Viana et al. 2403 (HOLOTYPE: BHCb).

Species haec *Plinae complanatae* proxima, a qua ramis cylindricis, petiolis minoribus distincta est.

Tree to 5 m. Twigs cylindrical or subcylindrical, with simple, erect brown or gray trichomes to 0.5 mm. Leaves petiolate, the petioles sulcate adaxially, 5–6 × 1.1–1.8 mm, with trichomes as the twigs; blades lanceolate, 75–155 × 30–50 mm, 2.5–3 times as long as wide, concolorous or slightly discoloured in dried specimens, the adaxial surface somewhat lustrous, glabrous or with trichomes to 0.5 mm along the midvein, the abaxial surface dull, with scattered erect, simple trichomes 0.5–0.8 mm, intermixed with occasional dibrachiate trichomes with unequal branches to 0.5 mm; glands barely visible abaxially, about 10 per square millimeter and less than 0.1 mm in diameter; apex acute or acuminate, with an acumen to 10 mm; base acute; midvein sulcate adaxially and markedly salient abaxially; lateral veins 15–25 pairs, evident and moderately salient on both sides, diverging from the midvein in angles of 60–70 degrees, with thinner secondary lateral veins; marginal vein 1–1.5 mm from the occasionally revolute margin. Inflorescences paniculiform, axillary or in aphyllous brachyblasts, with gray erect trichomes to 0.2 mm, with up to 30 flowers, the main fertile axis 50–70 × 1–1.5 mm at the first branching, branched once or twice, the proximal ones 20–30 mm; occasionally the inflorescence is reduced either to a single, racemiform or even uniflorous structure, with fertile axes to 10 mm bearing 3–4 series of triangular hypsophylls 0.7–1 × 0.7–0.8 mm; bracts triangular, 1.3–1.5 × 1.2–1.5 mm; pedicels absent or to 1.5 × 1 mm; bracteoles triangular, 1–1.8 × 0.8–1 mm, with cilia to 0.2 mm; flower buds globose to ellipsoid, 4–5 × 3 mm, uniformly covered with gray trichomes to 0.2 mm; calyx lobes 4, hemispheric or widely triangular, sometimes of two distinct sizes, 1–2 × 1.5–2 mm, glabrous or scarcely pilose internally; petals rounded or oblate, chartaceous, 2–2.2 × 2.5–2.8 mm, externally with trichomes to 0.1 mm and venation scarcely visible; stamens ca. 90. 6–7 mm, the anthers globose or oblate.

Etymology.—The epithet is derived from the Greek words for “four” and “leaves,” alluding to the verticillate leaves of the species.

PARATYPES. **BRAZIL.** estrada São José da Vitória - Buerarema, ramal à direita, ca. 1 km de São José, estrada de acesso para a Pedra Branca, 15°05'S, 39°19'W, 15 Oct 2003, Fiaschi et al. 1689 (CEPEC). **Mun. Gandu:** Br-101, ao norte, 21 Oct 1970, Santos 1164 (CEPEC). **Mun. Ilhéus:** entrada entre Sururu e Vila Brasilo, a 6–14 km de Sururu, a 12–20 km SE de Buerarema, 27 Oct 1979, Mori & Benton 12887 (CEPEC). **Mun. Una:** km 17 da estrada que liga a Rod. BR-101(São José) à Rod. BA-215, 29 Oct 1978, Mori & Thompson 11021 (CEPEC); Reserva Biológica do Mico-leão (Ibama), entrada no km 46 da rodovia BA-001 Ilhéus-Una, 15°09'S e 39°05'W, 09

0.3–0.4 × 0.3 mm, without visible glands; staminal ring to 3 mm in diameter; hypanthium 1–1.5 mm deep; style 7–8 mm; stigma punctiform and papillose; ovary bilocular, with 2 ovules per locule. Fruits unripe, elliptic, 7–8 × 5 mm, 8-ridged longitudinally, 1-seeded; embryo with two distinct plano-convex cotyledons, without visible hypocotyl.

Habitat, distribution and phenology.—This species is a tree from montane gallery forests or dry forests (“carrascos”) from the Espinhaço Range in central Minas Gerais, growing at altitudes from 1000 to 1400 m. It is presently known from two municipalities. Flowers were collected in October and January and unripe fruits in November. Curiously, the flowers present a strong scent of cooked beans (R. Mota and P. Viana, pers. comm.).

Conservation.—*Plinia espinhacensis* is known for two localities distant about 300 km from each other, but there is neither information relative to the condition of its habitat nor about the occurrence of the species along this range. So, this species can be considered as data deficient (DD), since IUCN (2001) suggests this status when “there is inadequate information to make a direct, or indirect, assessment of its risk of extinction based on its distribution and/or population status.”

Affinities.—This species is close to *Plinia complanata* M.L. Kawasaki & B. Holst, described for the Brazilian atlantic coastal forest, from which it is kept apart by the characters in the following couplet:

- | | |
|--|--|
| 1. Branches evidently flattened; petioles to 10 mm; coastal atlantic forests of the state of São Paulo | ___ <i>Plinia complanata</i> |
| 1. Branches cylindrical; petioles to 6 mm; montane gallery forests from the Espinhaço Range at the state of Minas Gerais | _____ <i>Plinia espinhacensis</i> |

Etymology.—The epithet refers to the central mountainous massif that extends from central to northern Minas Gerais, the Serra do Espinhaço (Rapini et al. 2001), where the two collection sites are included.

PARATYPES. **BRAZIL. Minas Gerais. Mun. Conceição do Mato Dentro:** Parque Natural Municipal do Ribeirão do Campo, 28 Oct 2003, Mota et al. 3151 (BHCB); 14 Nov 2003, Mota et al. 3150 (BHCB).

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