

A NEW SPECIES OF *ALGRIZEA* (MYRTEAE, MYRTACEAE) FROM BAHIA, BRAZIL

M. SOBRAL¹, J. E. Q. DE FARIA JR.² & C. E. B. PROENÇA²

¹Departamento de Ciências Naturais, Universidade Federal de São João del-Rei, Minas Gerais, Brazil.
e.mail: marcos_sobral@hotmail.com

²Departamento de Botânica, C. P. 4457, Universidade de Brasília, 70919-970, Brasília, Distrito Federal, Brazil.

ABSTRACT

A new species, *Algrizea minor* Sobral, Faria Júnior & Proença is described and illustrated. Apparently endemic to the eastern portion of the Brazilian state of Bahia, this species is distinguished from *Algrizea macrochlamys* (DC.) Proença & NicLugh. by its smaller leaves and smaller calyx lobes. With the description of this species, the generic circumscription of *Algrizea* is expanded as to habit (from shrub to treelet), calyx lobes variation, number of ovules and seeds. A distribution map and a key to the two species is also presented.

The Brazilian state of Bahia has a wide variety of phytophysiognomies associated to climatic and topographic diversity, allied to the fact that within its borders, the Atlantic Forest, Caatinga and Cerrado meet. This results in great diversity, which is also associated to a high degree of endemism, especially in the highland areas of the Chapada Diamantina (Giulietti et al. 2006).

In 2006, a new, monotypic genus of Myrtaceae, *Algrizea* Proença & NicLugh., was described from the Chapada Diamantina Highlands, where it is distributed at altitudes above 900 m. Morphological (and preliminary molecular) evidence suggested at the time that it might be basal and external to the rest of the Myrciinae *sensu stricto* with a bootstrap value of 67 percent and Bayesian posterior probability of 96 (Proença et al. 2006). Further studies, including additional molecular sequences (Lucas et al. 2007, Costa 2009) repositioned *Algrizea* (also as basal) in the clade which is sister to Myrciinae *sensu stricto* (the informal *Plinia* group), which includes *Plinia* L., *Siphoneugena* O.Berg, *Myrciaria* O.Berg and *Neomitranthes*

D. Legrand. This second placement, however, was weakly supported (bootstrap below 50) and may not yet be the true position of the genus.

The species described herein occurs at lower altitudes, from about 300–550 m in the northern parts of the Planalto da Bahia, and shows a more easterly and northerly distribution, disjunct from *A. macrochlamys* (DC.) Proença & NicLugh. which occurs in the Chapada Diamantina at altitudes ranging from 900–1250m (Fig. 1).

Algrizea minor Sobral, Faria Júnior & Proença **sp. nov.** (Figures 2, 3a.). TYPE: BRAZIL, Bahia, mun. Maracás, 13 Oct 1983, A.M. de Carvalho, G.M. Barroso, H.P. Bautista, M.P.M. de Lima, M.A. Mattos Silva, O. Peixoto & T.S. dos Santos 1979 (holotype CEPEC; isotypes RB, SP).

Species Algrizea macrochlamydi foliis minoribus subavenisque, inflorescentiis floribusque minoribus, embryonibus glandulosis recedit.

Shrub 2.5–3.5 m tall, profusely branched, the cortex grey to brown, glabrous, not

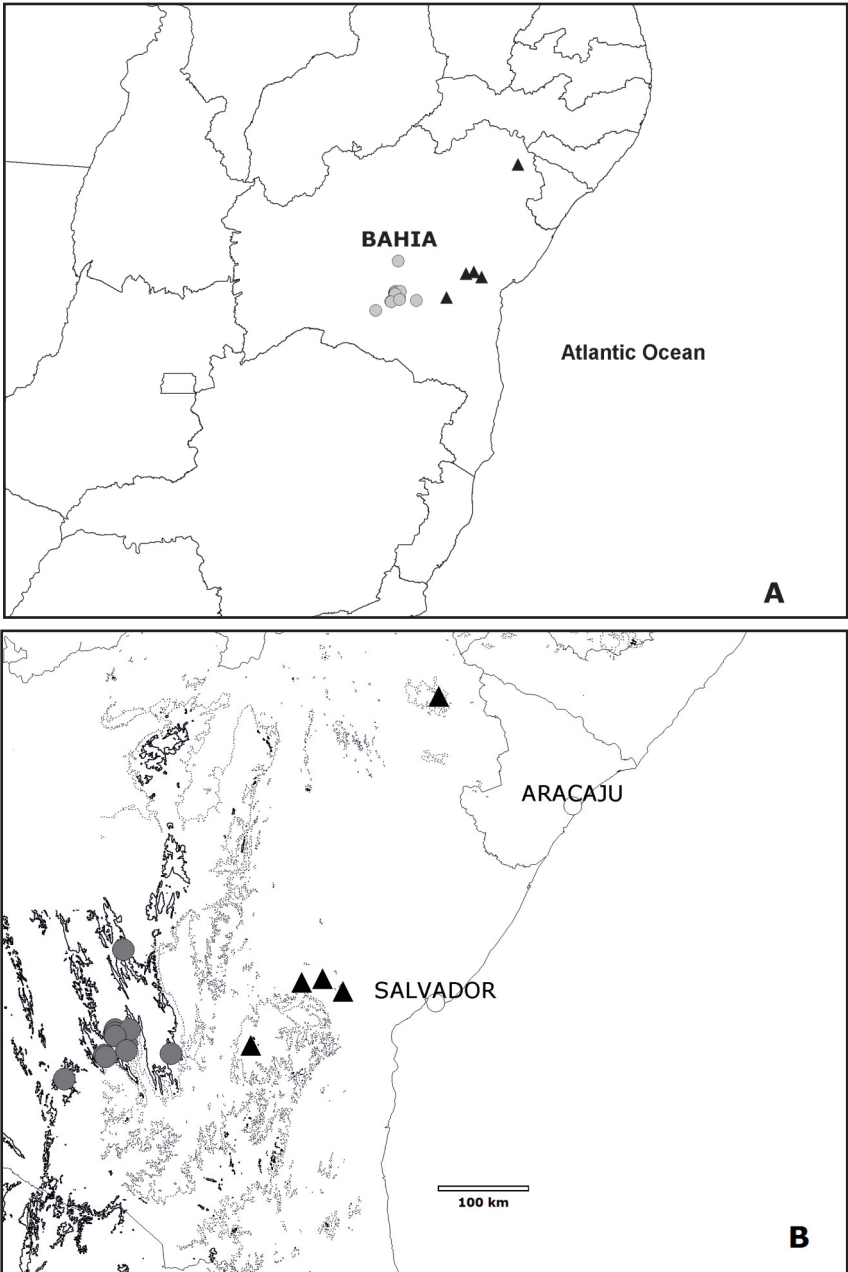


Figure 1. Distribution maps for *Algrizea macrochlamys* and *A. minor*: Gray circles = *A. macrochlamys*; Black triangles = *A. minor*. 1000m altitudinal contour lines are represented by full lines and 600m contour lines by dotted lines (plotted only for species distribution area).

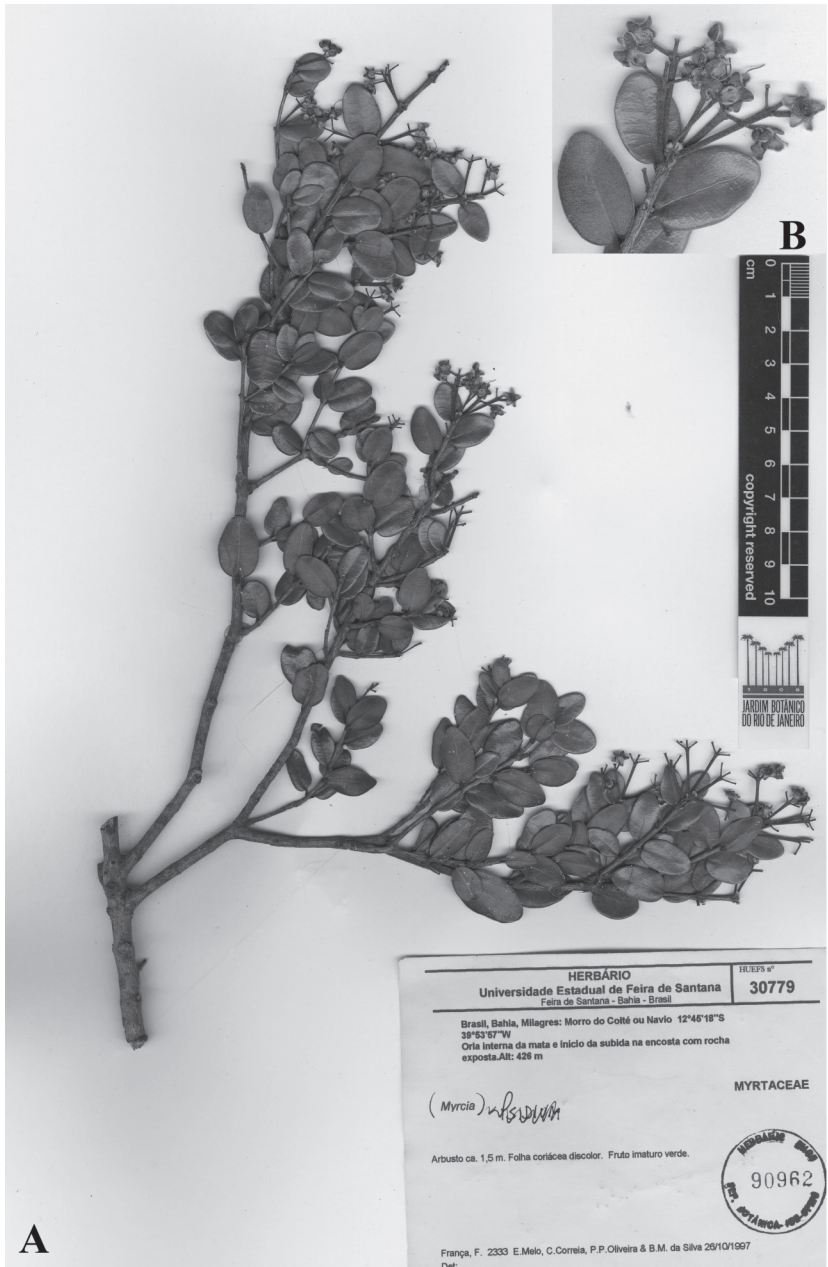


Figure 2. *Algrizea minor*. A. Habit. B. Detail of the inflorescences (França et al. 2333).

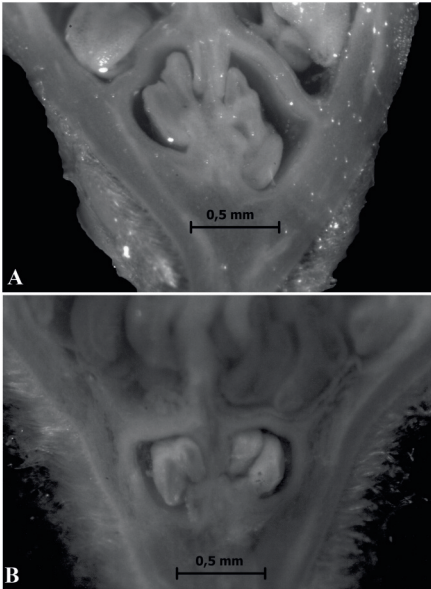


Figure 3. Ovaries in longitudinal section showing axilar ascendent placentation. A. *A. minor* (J.F.B. Pastore 2372) and B. *A. macrochlamys* (L. Coradin et al. 8640).

exfoliating; twigs to 1 mm in diameter, glabrous or with very scattered simple erect trichomes to 0.1 mm, the internodes 5–18 mm. **Leaves** with petioles $1.3\text{--}2 \times 0.9\text{--}1.4$ mm, cream or black in dried specimens, canaliculate, glabrous or with very asymmetrically dibrachiate white trichomes to 0.2 mm; blades elliptic, widely elliptic to nearly orbicular, $8\text{--}18.6 \times 4.6\text{--}11.9$ mm, sometimes discolourous when dry, green, glabrous and somewhat shining adaxially and dull brown, glabrous or with very scattered trichomes like the petiole abaxially, with dark glands about 0.05–0.1 mm in diameter, scattered adaxially (about 10 per square millimeter) and more dense abaxially (20–30 per square millimeter); apex rounded or obtuse; base obtuse, rounded or slightly cordate; midvein plane or sulcate adaxially, slightly prominent abaxially; lateral veins 6–8 pairs, leaving the midvein at angles 60–70 degrees, invisible adaxially and barely visible or invisible abaxially;

marginal vein arching along the lateral veins, 0.5–1.3 mm from the margin, the margin with a yellow thickening 0.2–0.3 mm that is revolute with age. **Inflorescence** a sub-terminal or axillary dichasium, 1–4 per axile, with 1–3 flowers crowded at the apex of an axis $3\text{--}15 \times 0.4\text{--}0.7$ mm, the axis with simple erect trichomes to 0.1 mm; bracts at the base on inflorescences triangular or ovate, to 1.8×0.9 mm, concave, with trichomes abaxially; bracts at the apex of the axis equaling or narrower than those at the base; pedicels $0.8\text{--}5.3 \times 0.3\text{--}0.4$ mm, pilose as the axes; bracteoles linear to narrow-triangular, $1.2\text{--}1.8 \times 0.2\text{--}0.7$ mm, abaxially pilose as the axes, adaxially with 3–5 linear basal colleters to 0.2 mm; flower buds globose, widely pyriform to obovate, to $2.2\text{--}3 \times 2\text{--}2.7$ mm, the ovary densely covered with white simple hairs to 0.2 mm, contrasting with the abaxially glabrous calyx lobes, these 4 to 5, somewhat unequal, triangular, oblong or ovate, $1.5\text{--}2 \times 1\text{--}1.8$ mm, with a thick fringe of white trichomes and adaxially with trichomes to 0.1 mm; petals rounded, 2×2.1 mm, inconspicuously ciliate, with scattered glands; stamens 57–70, $3.6\text{--}5.3$ mm, the anthers 0.3×0.1 mm, eglandular; staminal ring ca. 1.5 mm in diameter; hypanthium to 1 mm deep; style 3–4.8 mm, the stigma minutely papillose; ovary with two locules, with 4–11 ovules per locule. **Fruits** globose to elliptic, to 8×7 mm, with one seed, the seed C-shaped, to 5×3 mm, with light brown, shining and easily detachable testa; embryo with scattered glandular concave dots about 0.1 mm in diameter and two distinct cotyledons, both sheathing the hypocotyl, the external one about half as long as the hypocotyl and the internal one nearly as large as the hypocotyl.

PARATYPES. BRAZIL, Bahia, Itatim: Morro do Leão, 12o43' S, 39o41' W, 26 Oct 1996, F. França, E. Melo, C. Correa, I. Freitas & S. Vogel 1954 (HUEFS, RB, UB); Milagres: Morro do Coité ou Navio,

12o45'18" S, 39o53'57" W, 26 Oct 1997, *F. França, E. Melo, C. Correia, P.P. Oliveira & B.M da Silva* 2333 (BHCB, HUEFS); Paulo Afonso: Estação Ecológica Sema, 9o46' S, 38o28' W, 20 Mar 1985, *R.P. Orlandi* 730 (HRB, RB); Santa Terezinha: Serra da Jibóia, Morro do Cruzeiro, 12°46' 30"S, 39°31'19"W W, 15 Dec 2006, *J.F.B. Pastore* 2372 (CEN, HUEFS).

HABITAT, DISTRIBUTION AND PHENOLOGY. The species was collected on rocky outcrops, savanna vegetation with sandy soil and inselbergs at altitudes between c. 300–550m; material with buds, flowers and immature fruits were collected in October, with flowers in December and with mature fruits in March.

CONSERVATION STATUS. Information about the conditions of the habitat where *A. minor* was collected are scarce, as well as details of its distribution; this species should presently 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). Collection *Orlandi* 730 is from the Area de Proteção Ambiental Serra Branca/Raso da Catarina.

AFFINITIES. This species may be distinguished from *Algrizea macrochlamys* by the characters in the following couplet:

1. Leaves with petioles to 3–8 mm and blades to 15–54 × 6–30 mm, with 12–16 lateral veins visible at least abaxially; main axes of inflorescences to 7–48 mm; flower buds to 2.5–7 mm; embryo eglandular.....
*Algrizea macrochlamys*
 1'. Leaves with petioles to 1–2 mm and blades to 8–19 × 4.5–12 mm, with 6–8 lateral veins scarcely visible to invisible on both sides; main axes of inflorescences to 3–15 mm; flower buds to 2.2–3 mm; embryo with concave glandular dots.....
*Algrizea minor*

ETYMOLOGY. The epithet is derived from the Latin word for "smaller", alluding to the smaller dimensions of this species when compared to *A. macrochlamys*.

NOTES: *Algrizea* was distinguished in the original description (Proença et al. 2006) from other genera of tribe Myrteae by the combination of a shrubby habit, inflorescences in 3-flowered dichasia, long-pedunculate, solitary or in synflorescences, at upper nodes, pentamerous flowers of small size for the family, with bracts and bracteoles persistent in the open flowers, sometimes persistent in young fruit, *calyx lobes well-developed*, longer than the hypanthium, *explanate in the open flower and fruit*, the hypanthium very slightly prolonged above stylar insertion, the stamens (50–)70–90 with eglandular anthers, ovary 2-locular, *ovules 3–6(–8)* per locule, axillary and ascending, and the berry globose, dark wine-red when mature, *with 2–3 seeds per fruit*, the seeds C-shaped, the testa thin, not operculate, shiny, and the embryo very distinct, *lacking glands*, with a slightly curved, well-developed, terete hypocotyl, and cotyledons 2, well-developed, unequal, sheathing the inner curve of the hypocotyl; outer cotyledon smaller, saddle-shaped; inner cotyledon larger, scutelliform, nearly reaching the tip of the hypocotyl.

Most of the above characters are confirmed as good generic "markers" by their co-occurrence in this second species (those that differ are in italics above). Expansions of generic circumscription for *Algrizea* involve habit (expanded to treelet to 3.5m), calyx lobes (that can be more or less developed, if less so then resembling those of *Myrcia* DC.), number of ovules (increased from 4–8 to 4–11), and fruits (that can also be 1-seeded as well as 2–3 seeded).

Lucas et al. (2007) classified Myrtaceae placentation into types A-F, noting that certain types predominate in specific genera. *A. macrochlamys* and *A. minor* both

have the type D placentation (axillary and ascending) that is typical of genera *Siphoneugena* and *Neomitranthes* of the *Plinia* group (Fig. 3).

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