A new species of *Leiothrix* (Eriocaulaceae) from the Espinhaço Range, Bahia, Brazil

ANA MARIA GIULIETTI1,2,3 & DANIELE MENDES DA SILVA

1Programa de Pós-Graduação em Botânica, Departamento de Ciências Biológicas, Universidade Estadual de Feira de Santana, Av. Transnordestina s.n., Novo Horizonte, 44036-900, Feira de Santana, Bahia, Brazil.
2Instituto Tecnológico Vale de Desenvolvimento Sustentável, Rua Boa Ventura da Silva 955, 66055-090, Belém, Pará, Brazil.
E-mail: anagiulietti@hotmail.com; ana.giulietti@itv.org
3Royal Botanic Gardens, Kew, Richmond, Surrey, TW9 3AB, UK.

Abstract

A new species of *Leiothrix* (Eriocaulaceae) from Brazil is described and illustrated. *Leiothrix raymondii* is a restricted endemic living under the shelter of rocks, in large rocky outcrops, occurring in the Northern part of the Espinhaço range in Bahia state, Brazil. The species is here assessed as endangered.

Keywords: rocky field, *Leiothrix raymondii*, taxonomy

Resumo


Palavras chave: campos rupestres, *Leiothrix raymondii*, savana, taxonomia

Introduction


*Leiothrix* is a neotropical genus with about 49 species, occurring in Brazil, especially in the Espinhaço Range in Minas Gerais and Bahia (Giulietti & Hensold 1990, Giulietti et al. 2010). It is a monophyletic clade in the Eriocaulaceae.
subf. Paepalanthoideae, based on morphological and molecular dates (Giulietti et al. 1995, Andrade et al. 2010, Giulietti et al. 2012). During the ongoing revision of Leiothrix for the Flora Neotropica, a new analysis of the specimens from Pico das Almas and Catolès was made and mixed with the L. schlechtendalii specimens, a new species was recognized and is described in this paper.

**Taxonomic Treatment**


Leiothrix raymondi differs from the sympatric L. schlechtendalii and the Minas Gerais species L. fulgida by its longer leaves and shorter scapes. Also differs from L. schlechtendalii by the plane leaves, pubescent on both faces, scape 3-costate, and pistillate flowers with sepals the same size as the ciliate petals versus conduplicate leaves, pubescent on adaxial face and glabrous on the adaxial face, scape 6-costate, and pistillate flowers with sepals 2x the size of the glabrous petals. Also differs from L. fulgida by the involucral bracts elliptic-lanceolate and apex acute, and staminate flowers with short pistillodes versus involucral bracts obovate to ovate and apex round, and staminate flowers with long pistillodes up ½ size of the filaments.

Perennial, caespitose herb 15–28 cm tall. **Rhizome** short, light-brown roots. **Leaves** rosulate, flat, (6.5–14.0) 15.0–20.0 × 0.1–0.2 cm, linear-lanceolate, membranous, delicate, multi-nerved, “in vivo” erect to bent, glaucous-green when young, changing to light brown, apex acute to acuminate, sheath slightly wider 0.2–0.3 mm, pubescent in both surface, more densely on the adaxial surface. Trichomes on the leaves, spathes and scapes of two different types always together: filamentous, multicellular, delicate, white, long (ca. 0.5 mm) in greater number; or capitate, multicellular, apical cell more densely on the adaxial surface. Trichomes on the leaves, spathes and scapes of two different types always together: young, changing to light brown, apex acute to acuminate, sheath slightly wider 0.2–0.3 mm, pubescent in both surface, × 0.1–0.2 cm, linear-lanceolate, membranous, delicate, multi-nerved, “in vivo” erect to bent, glaucous-green when young, changing to light brown, apex acute to acuminate, sheath slightly wider 0.2–0.3 mm, pubescent in both surface, more densely on the adaxial surface. Trichomes on the leaves, spathes and scapes of two different types always together: filamentous, multicellular, delicate, white, long (ca. 0.5 mm) in greater number; or capitate, multicellular, apical cell globose, glandular. Spathe 3.7–4.5 × 0.1 cm, external face pubescent, with capitate and filamentous trichomes, the last ones bigger in size and number, internal face with rare filamentous trichomes, operculum with apex oblique, 3-lacerate, teeth acuminate and involute. **Scape** few per plant, delicate (10.5) 15.0–25.0 cm long, slightly larger than the leaves, 3-costate, ribs slightly evident, pubescent, filamentous trichomes larger and with larger basal cell than the capitate trichomes. The scape, from the base to the middle, with filamentous trichomes much more abundant than capitate trichomes, from the middle to the lower 2/3 of the upper part, the trichome types occur in equal frequency, while the apical 1/3 of the upper half of the scape bears many more capitate than filamentous trichomes. **Capitulum** elliptic-globose, 0.7–0.9 × 0.8–1.3 cm. Receptacle flat, scarcely hairy. Involucral bracts in 4 ranks, all of them elliptic-lanceolate with acute apex, the external ones ca. 1.2 × 0.5 mm and the internal ones ca. 2.5 × 1 mm long, ciliate from the middle to apex, dorsal surface with few filamentous and capitate trichomes, shorter than the cilia, ventral surface glabrous. Floral bracts hyaline, ca. 2.5 mm long, same size as the flowers, oblong-spathulate, apex obtuse, ciliate along the upper 1/3, dorsal surface with rare filamentous and capitate trichomes, ventral surface glabrous. Flowers trimerous, staminate and pistillate flowers mixed on the capitulum. In one capitulum of the collection Giulietti 1360 there were 46 staminate flowers and 36 pistillate flowers. **Staminate flower** zygomorphic, ca. 2.5 mm long, with pedicel ca. 0.9 mm; sepals 3, ca.1.6 mm long, united at base, the two posterior-lateral carinate and the anterior flat, apex obtuse, ciliate, dorsal surface with rare trichomes on apical portion, ventral surface glabrous; corolla funnel-shaped, 3-lobed, lobes triangular obtuse, erect, slight larger than the calyx; short anthophore at the base of the corolla; stamens 3, anthers basifixied, filaments flattened, free from the corolla, pistillodes 3, free, short, filiform. **Pistillate flower** zygomorphic ca. 2.5 mm long, pedicel ca. 0.6 mm; sepals 3, ca. 2 mm long., free, the two posterior-lateral carinate and the anterior concave, apex acute, ciliate, dorsal surface with rare trichomes on apical portion, ventral surface glabrous, petals free, linear-ovate, flattened, ca.1.8 mm long, slight ciliate at apex, annulus between corolla and gynoecium pilose; gynoecium ca. 2 mm long, ovary ca. 0.4 mm long, stylar column up to nectariferous branches ca. 0.9 mm long, the nectariferous branches ca. 0.3 mm long, filiform-cylindrical, the column up to the stigmatic branches ca. 0.3 mm long, cylindrical, stigmatic branches ca. 0.3 mm long, exserted. **Fruits** loculicidal capsule, in general producing 3 seeds per fruit; seeds ca. 0.5 mm, with striate testa.

**Distribution and habitat:**—So far only known in the southern part of the Chapada Diamantina in Bahia in high altitudes above to 1300 m, usually 1700–1800 m in the “Campo Rupestr” vegetation, and in the shade of large quartzitic boulders (Fig. 2). This is the only species of Leiothrix living in this habitat, which in the Espinhaço Range area in Minas Gerais is a preferential habitat for small plants of Paepalanthus, previous included in the genus Blastocaulon

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FIGURE 2. Photo of the species in its natural habitat in Pico das Almas, Rio de Contas, Bahia, Brazil (Photo Raymond M. Harley).

(Ruhland 1903: 223) Andrade et al. (2011). The species was collected between the Pico das Almas, in Rio de Contas Municipality to Serra da Tromba in Catolés, Abaíra Municipality (Fig. 3). Ule 7299 is referred to Serra do Sincorá without a precise locality.

**Etymology:**—The specific epithet is named in honour of Dr Raymond Mervyn Harley, Honorary Research Fellow at the Royal Botanic Gardens, Kew and Visiting Professor of the Post Graduate programme in Botany, at the State University of Feira de Santana, for his great contribution to our knowledge of the Flora of Bahia and Brazilian Lamiaceae.

**Conservation status:**—This species is so far only known from a small area on the top of the hills in Pico das Almas and Catolés. The total area of occupancy is less than 500 km² and the extent of occurrence is less than 722 km². Therefore, the species is here considered as Endangered (IUCN 2014).


**Notes:**—Leiothrix raymondii is similar to L. schlechtendalii from Chapada Diamantina in Bahia and also to L. fulgida Ruhland (1903: 233) from the Diamantina Plateau in Minas Gerais, due to the spathe with apex 3-dentate, leaves and spathe with filamentous and capitate trichomes together, zygomorphic staminate and pistillate flowers, and a pilose annulus between corolla and gynoecium. But L. raymondii have longer leaves (6.5–14)–15–20 cm versus short leaves (1.7–) 4–6 (–11) cm in both species; the scapes are shorter, (10.5) 15–25 cm versus long, (6.5–15) 15–40 cm in both species and have few scapes per plant versus many per plant in both species. Leiothrix raymondii also differs from L. schlechtendalii and from L. fulgida by the characters mentioned in the diagnosis.

In the mountains of Pico das Almas and Catolés, Leiothrix raymondii occur sympatrically with L. angustifolia, L. schlechtendalii, L. distichoclada and L. flavescens, but all these species except L. raymondii occur at much lower
altitude (to 1500 m) over open sandy humid soils. Also those species have a wider distribution from Rio de Contas and Catolés up to the Sincorá Mountain in Mucugê, Andaraí, and Lençóis. *Leiothrix angustifolia* and *L. schlechtendalii* grow up to Morro do Chapéu and Jacobina, from where the type materials of these species were collected: *L. angustifolia*—between Jacobina and Vila Nova, *Blanchet 3820* (holotype Herb. Martius BR!; isotypes B!, BM!, BR!, F!, G! [3 exs.], M!, P! [2 exs.]) and *L. schlechtendalii*—Near Jacobina, *Blanchet 3818* (holotype B!, isotypes BM!, BR!, G! [3 exs.], NY!, P! [2 exs.]).

Giulietti & Parra (1995) in the Flora of the Pico das Almas, refer the specimens CFCR 6927 and Harley 25795, as *L. schlechtendalii* but a new analysis confirmed both as *L. raymondii*. According the light cream color of the capitulum *L. raymondii* is similar to some species of *Syngonanthus* as the capitulum in *Leiothrix* is usually light to dark brown.

**FIGURE 3.** Map of distribution of *Leiothrix raymondii*.

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**REFERENCES**


