



On the identity of *Lepismium lineare* and *L. warmingianum* (Cactaceae, Rhipsalidae)

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Abstract

Field surveys, cultivation tests and literature examination allowed to clarify the identity and morphological distinction of *Lepismium lineare* and *L. warmingianum*. A diagnostic key for the *Lepismium* species in Brazil is also provided.

Key words: Cactaceae, *Lepismium lineare*, *Lepismium warmingianum*, taxonomy

Introduction

Lepismium Pfeiffer (1835: 315) are pendulous epiphytes with flattened or angled to winged branches following a mesotonic (lateral) pattern. They bear white or whitish lateral flowers with angled pericarpel, naked or scaly, and red to purple fruits, when mature (Hunt 2006).

Pfeiffer (1835) originally described three species of *Lepismium*, *L. commune* Pfeiff., *L. knightii* Pfeiff., and *L. tenue* Pfeiff. Since the taxa number of *Lepismium* was differently considered during time, from one (Britton & Rose 1923) to 17 species (Backeberg 1959). Morphological studies on the genus included three genera in *Lepismium*: *Acanthorhopsis* Britton & Rose (1923: 211), *Lymanbensonia* Kimnach (1984: 101), and *Pfeiffera* Salm-Dyck (1845: 40), besides a few species of *Rhipsalis* Gaertner (1788: 137), decreasing the species number to 14 (Barthlott 1987, 1991; Barthlott & Taylor 1995). Recently, Hunt (2006) and Korotkova (2011) recognized 5, and 6 species respectively, excluding *Pfeiffera* (including now *Acanthorhopsis* and *Lymanbensonia*) (Hunt, 2006), and *Lepismium incachacanum* (Cárdenas 1952: 125) Barthlott (1987: 99) that was transferred to the genus *Lymanbensonia*.

Lepismium warmingianum (Schumann 1890: 291) Barthlott (1987: 99) is considered an heterotypic synonym of *L. lineare* (Schumann 1890: 296) Barthlott (1991: 89) (Barthlott & Taylor 1995). However, Lombardi (1995) (sub *Rhipsalis linearis* K.Schum.) showed morphological differences between *L. warmingianum* and *L. lineare* after cultivation. Currently, the most of the authors considered these two names synonyms, following Barthlott & Taylor (1995).

Cultivation tests on clones of *Lepismium lineare* (Lombardi 149, 8085 and 8684) and *L. warmingianum* plants (Lombardi 4065, a clone coming from the Schumann's type locality) were carried out.

The *Lepismium lineare* clones of Lombardi 149 and 8085, the former after 25 years without producing any flower, bloomed and new interesting morphological data were available and useful to distinguish it from *L. warmingianum* (see below). In particular, the taxa can be easily distinguished by the size of flowers and floral parts, and the occurrence of the rest of the perianth on the young fruits. On the contrary, during the vegetative stage, the two species are very difficult to separate morphologically: although *L. lineare* has branches usually longer, narrower and more profusely branched than *L. warmingianum*, these differences are not observed in all plants, neither in all cultivated individuals.

Additional specimens examined:—BRAZIL . Minas Gerais: Belo Horizonte, cultivated, cutting from Caldas-MG, 5 Oct 2000, *Lombardi 4065* (BHCB); Caldas, Oct 1854, *Lindberg 611* (BR, MO). São Paulo: Piracicaba, cultivated, cutting from Campinas-SP, 17 Oct 1992, *Lombardi 148* (UEC); Rio Claro, Fazenda São José, 15 Nov 2000, *Udulutsch & Assis 85* (HRCB), *ibid.*, 3 Oct 2003, *Mania & Assis s.n.* (HRCB 40400, 40635); Rio Claro, cultivated, cutting from Caldas-MG, 2 Sept 2008, *Lombardi 7486* (HRCB).

Identification key to Brazilian *Lepismium* species [*L. cruciforme*, *L. houlettianum* (Lemaire 1858: 64) Barthlott (1987: 99), *L. lineare*, *Lepismium lumbricoides* (Lemaire 1839: 60) Barthlott (1987: 99), *L. warmingianum*]

1. Branches terete..... *Lepismium lumbricoides*
- Branches flattened, angled or winged 2
2. Flowering areoles sunken, densely hairy, pericarpel not apparent in the flowers after anthesis *Lepismium cruciforme*
- Flowering areoles not sunken, not hairy or with a few hairs or bristles, pericarpel apparent in the flowers before and after anthesis 3
3. Branches with a conspicuous, constricted petiole-like base, margin of the flattened blade serrate, with acute teeth *Lepismium houlettianum*
- Branches with no conspicuous, constricted petiole-like base, margin of the flattened blade crenate to crenulate, with blunt teeth 4
4. Flowers 2.5–3 × 1.5–2.5 cm..... *Lepismium lineare*
- Flowers 1.5–1.8 × 0.5–1 cm..... *Lepismium warmingianum*

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