



Increasing our knowledge of Brazilian bamboos: two new species of *Chusquea* subg. *Rettbergia* (Bambusoideae, Poaceae)

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Abstract

Brazil includes a very high diversity of bamboos, but this diversity is far from completely known. We increase the list of Brazilian woody bamboos by describing two new species of *Chusquea*, which belong to subgenus *Rettbergia*. *Chusquea ciliatifolia* sp. nov. differs from other species of this subgenus by its mottled culms, distinctly ciliate margins of the foliage leaf blades and pilose synflorescences; and *C. mirabilis* sp. nov. by the presence of branches with sericeous girdles. Both *C. ciliatifolia* and *C. mirabilis* occur exclusively in the Atlantic Forest, from the states of Bahia and Minas Gerais, known only from five and three populations, respectively. Comments on morphology, taxonomic relationships, ecological aspects, and conservation status of these new species are provided.

Keywords: Atlantic forest, Chusqueinae, montane forest, taxonomy, woody bamboo

Introduction

The bamboos comprise about 115 genera and 1439 species, with about two-thirds of the diversity occurring in tropical zones [Bamboo Phylogeny Group (BPG) 2012]. Brazil is one of the countries with the highest bamboo richness in the world, and the largest in bamboo diversity in the Western hemisphere (Soderstrom *et al.* 1988, Clark 1990, Judziewicz *et al.* 1999). Filgueiras & Santos-Gonçalves (2004) cited 34 genera and c. 232 species from Brazil, but new taxa have been continuously described, especially during the last decade, including both new genera (Ferreira *et al.* 2013a, Viana *et al.* 2013b) and new species (e.g., Oliveira & Longhi-Wagner 2005, Oliveira *et al.* 2004, 2008a, 2008b, Oliveira & Clark 2009, Santos-Gonçalves *et al.* 2011, 2012, Carvalho *et al.* 2012, Ferreira *et al.* 2013b, Mota *et al.* 2013, Viana *et al.* 2013a).

Chusquea Kunth (1822: 151) is one of the most diverse genera of bamboos occurring in Brazil, encompassing 42 of 168 species described in this group (BPG 2012, Guerreiro & Agrasar 2013, Mota *et al.* 2013, Ruiz-Sanchez & Clark 2013, Shirasuna 2013). According to Mota *et al.* (2013), Brazilian *Chusquea* diversity includes the three subgenera currently accepted in this genus, as defined by Fisher *et al.* (2009), and the Informal Group Neurolepis II.

Chusquea subg. *Rettbergia* (Raddi 1823: 17) Clark (1997: 41) is confined to South America (Judziewicz *et al.* 1999) and in the last update on the systematics of this genus, Fisher *et al.* (2009) referred eleven species to it, ten of them occurring in Brazil and one in Colombia. Subgenus *Rettbergia* is diagnosed by the following characters (Fisher *et al.* 2009): internodes solid, bud complement with central bud circular in outline and oriented horizontally, infravaginal branching, synflorescences subtended by one or two spatheate bracts and lemmas with a connate apex.

The Brazilian species of this subgenus occur in the Atlantic Rain Forest, with contrasting distribution ranges. For instance, *Chusquea bambusoides* (Raddi 1823: 18) Hackel (1908: 81), *C. oxylepis* (Hackel 1908: 81) Ekman (1913: 65), and *C. oligophylla* Ruprecht (1839: 124) are widespread along the coast, whereas *C. bradei* Clark (1996: 254) and *C. pulchella* Clark (1993: 236) are endemic to very restricted areas in the states of Bahia/Espírito

Geographic Distribution and Habitat:—*Chusquea mirabilis* is apparently endemic to Southeast Bahia State, Brazil, occurring in montane Atlantic Rainforest at 600–900 m elevation.

Conservation Status:—This species must be considered EN B2ab(iii) based on the existence of only three known populations with an area of occupancy smaller than 500 km² and the continuing decline projected in quality of habitat (IUCN 2013).

Phenology:—Three flowering events were recorded for *Chusquea mirabilis* in 2001, 2003 and 2007. This does not appear to represent a gregarious flowering pattern, since the different populations flowered at different times. In one of the populations sampled (from Boa Nova), individuals were collected in the same year in both vegetative and reproductive phases.

Additional Specimens Examined:—BRAZIL. **Bahia:** **Amargosa**, Serra do Timbó, Fazenda do Sr. Arlindo, 16 November 2007 (fl), *Ferreira et al. 1785* (CEPEC); **Boa Nova**, Fazenda São José, 8.8 km de Boa Nova, na estrada para Dário Meira, a 1.4 km do ramal à esquerda, 14°23'74"S, 40°8'76"W, 850 m, 7 January 2001 (fl.), *Amorim et al. 3601* (CEPEC); Fazenda Farofa (Dr. Mauro), estrada entre Boa Nova e Dário Meira, ca. 9,5 km de Boa Nova, entra em ramal à direita e anda mais 2 km, 14°25'13"S, 40°7'22"W, 797 m, 23 Oct 2007 (fl), *Ferreira et al. 1616* (CEPEC); Fazenda Farofa (Dr. Mauro), estrada entre Boa Nova e Dário Meira, ca. 9,5 km de Boa Nova, entra em ramal à direita e anda mais 2 km, 14°25'13"S, 40°7'22"W, 915 m, 24 October 2007, *Ferreira et al. 1669* (CEPEC); ca. 9 km a partir de Boa Nova pela rodovia BA-030 em direção a Dário Meira, entrando à esquerda na fazenda Liberdade e percorrendo ca. 2 km, 14°25'10.14"S, 40°07'17.89"W, 809 m, 15 February 2011, *Mota & Carvalho-Sobrinho 399* (HUEFS); Fazenda São José, 8.8 km east of Boa Nova then 1.4 km north on Fazenda road, 14°23.42'S, 40°08.765'W, 850–1000 m, 14 October 2000, *Thomas et al. 12252* (CEPEC, NY); Fazenda São José entrance 8.8 km E of Boa Nova on road to Dário Meira, 14°23.630'S, 40°08.722'W, 860–900 m, 25 October 2001, *Thomas et al. 12634* (CEPEC, NY, SP); **Brejões**, Fazenda Lagoa do Morro, 13°5'59"S, 39°54'7"W, 882 m, 17 November 2007, *Ferreira et al. 1884* (CEPEC); Fazenda Lagoa do Morro, 13°5'59"S, 39°54'7"W, 882 m, 17 November 2007, *Ferreira et al. 1885* (CEPEC).

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