



The census continues: Two new montane species of *Mimosa* (Leguminosae Mimosoideae) from Southeastern Brazil

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Abstract

Many species and infraspecific taxa in *Mimosa* are narrow endemics. Following the same pattern, two new Brazilian species of the genus, *M. perplicata* and *M. serpensetosa* are described, both from the Southern Espinhaço Range (one from Serra do Cabral, the other from Serra de Capanema and Serra do Cipó), in Minas Gerais state, a region known as a key area for *Mimosa* diversity. The description of more species sharing affinities with *M. setosa* var. *paludosa* indicates that the latter may be acting as a species pump.

Key words: endemism, Espinhaço Range, Phylogenetic Species Concept, Taxonomy

Introduction

Mimosa Linnaeus (1753: 516) is one of the largest genera of Leguminosae Mimosoideae, with more than 500 species and around 200 infraspecific taxa (Barneby 1991, Simon & Proença 2000, Luckow 2005, Simon *et al.* 2011). Although Bentham (1842, 1846, 1875) and Barneby (1991, 1993, 1997) described the majority of taxa in the genus, new names are still being proposed (Simon *et al.* 2010, Särkinen *et al.* 2011, Silva & Tozzi 2011, Dutra & Garcia 2012). The recent description of a number of new taxa is not a mere consequence of new findings in underexplored regions. Instead, we believe that the current knowledge about *Mimosa* species diversity is in fact largely underestimated.

Many taxa in *Mimosa* are narrowly distributed endemics (Barneby 1991) and the high altitudinal areas of Central Brazil are amongst the main centers of endemism of the genus (Simon & Proença 2000, Luckow 2005). Amongst those, the Espinhaço Range, a mountain chain located between the Cerrado and Mata Atlântica domains in the states of Minas Gerais and Bahia is particularly rich in *Mimosa* taxa (Simon & Proença 2000). The Espinhaço landscape is dominated by *campos rupestres*, defined as open grasslands with scattered evergreen shrubs and subshrubs on poor, sandy, rocky soils with several rock outcrops, hosting high levels of plant endemism (Giulietti & Pirani 1988).

The Espinhaço Range is subdivided in several subunits, mostly called *serras*, and some of them, individually or grouped, have been recognized as areas of endemism (Echternacht *et al.* 2011). At its southwestern portion is located the Serra do Cabral, a 3000 km² plateau that despite being isolated from the core range by a large rift, shares with it geomorphological and floristic characteristics. At least 20 taxa of *Mimosa* are reported for Serra do Cabral (Barneby 1991, 1993, 1997, Hatschbach *et al.* 2006, Dutra 2009) and three of them are endemic to the area. The southern most portion of the Espinhaço comprises the Serra to Cipó, where 27 *Mimosa* species occur, with three taxa (two species and one variety) endemic to the area (Barneby 1991, Dutra 2009, Borges & Pirani 2013). The Serra do Cipó endemics belong to *M. sect. Calothamnus* Barneby (1991) (*M. barretoii* Hoehne [1938: 25], *M. macedoana* Burkart [1964: 389]) and to *M. ser. Pogocephalae* Barneby (1991: 718) (*M. bombycina* Barneby [1991: 722] var. *bombycina*). However, the three endemic species of Serra do Cabral belong to *M. ser. Setosae* Barneby (1991: 350) (*M. acroconica* Barneby [1991: 361]) and *M. ser. Pachycarpae* Bentham (1875: 439) (*M. bispiculata* Barneby [1997: 454], *M. chiliomera* Barneby [1993: 329]), which form together a monophyletic group (Simon *et al.* 2011) that is highly diversified and with most species endemic to cerrado areas of Central Brazil and adjacent Bolivia (Barneby 1991, Simon *et al.* 2009).

The distinction between *Mimosa ser. Pachycarpae* and *M. ser. Setosae* is given mainly by fruit type, which is a

Of the species of *Mimosa* ser. *Pachycarpae* and *M.* ser. *Setosae* occurring at Serra do Cipó, only *M. setosa* var. *paludosa* shares a close resemblance with *M. serpensetosa*. So, if included in the same kind of analysis described above, it could also be used to investigate the occurrence of sympatric speciation through a species pump mechanism, which may be linked to the environmental heterogeneity of the Espinhaço Range.

The range's role as a particular area for development of taxa evolutionary studies is reinforced by the discovery of these two new species. The high concentration of narrowly endemics at that region of the Espinhaço range may be an indicative of the presence of a pattern similar to that found by Davies *et al.* (2011) in the Cape Floristic Region. There, a large number of restricted species, and, by that, prone to become extinct, are associated with recently diversified lineages, as are the cerrado's *Mimosa* (Simon *et al.* 2009).

Development of studies dealing with processes are greatly improved when based on taxonomic investigation focused on pattern discovery of evolutionary end products such as the here proposed *Mimosa perplicata* and *M. serpensetosa*.

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