



## A new species of *Chamaecrista* (Leguminosae) from the Brazilian Central Plateau

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### Abstract

During a taxonomic study of *Chamaecrista* sect. *Absus* subsect. *Absus* ser. *Rigidulae* a new species was discovered growing in the Chapada dos Veadeiros National Park and neighboring areas. *Chamaecrista tenuicaulis* is herein described and illustrated and has its morphological affinities and systematic position discussed. The geographical distribution, conservation status, and information about flowering and fruiting are also provided.

**Key words:** Cerrado, Chapada dos Veadeiros, diversity, endemism

### Introduction

*Chamaecrista* Moench (1794:272) is a pantropical genus with over 360 species and is among the most abundant and ecologically important taxa of Leguminosae (Lewis *et al.* 2005), especially in Brazil, home to 255 species, 206 of which are endemic (Souza & Bortoluzzi 2014). Studies have shown that the topography and vegetation of Central Brazil play important roles in the diversification of *Chamaecrista*, and that the diversity of this taxon, as well as of other genera of Leguminosae (*Mimosa* L.), in the Cerrado Biome is the result of recent irradiation (Irwin & Barneby 1982; Pennington *et al.* 2006; Fiaschi & Pirani 2009). In this region, *Chamaecrista* is represented by over 200 species (Souza & Botoluzzi 2015).

New species of *Chamaecrista* have been described in Brazil (Barneby 1999; Conceição *et al.* 2001; Hervencio & Queiroz 2004; Rando & Pirani 2012; Silva & Souza 2014) after Irwin & Barneby (1982) review. It is common that after intensive fieldwork new taxa are discovered in underexplored regions such as the Chapada dos Veadeiros, an area with high floristic diversity and endemism (Munhoz & Felfili 2006), where new species of other families of plants have been also recently described (Pastore & Marques 2009; Souza & Bove 2011; Silva *et al.* 2013; Silva *et al.* 2014; Silva & Sodr e 2014; Silva & Souza 2014).

During a taxonomic study of *Chamaecrista* sect. *Absus* subsect. *Absus* ser. *Rigidulae* (Bentham 1870:142) H.S. Irwin & Barneby (1982: 654) specimens of this genus were collected from the Chapada dos Veadeiros region. After meticulous analyses of these collections as well as a literature review (Irwin & Barneby 1982), we concluded that some of them belong to an undescribed species. *Chamaecrista tenuicaulis* is herein described and illustrated and its morphological affinities and systematic position are discussed. The geographical distribution, conservation status based on the IUCN red list category (IUCN 2014), and information about flowering and fruiting are also provided.

### Material and methods

Monthly expeditions to collect botanical material were performed by the authors from February 2013 to September 2014. The description of this new species was based on observations of populations in the field, voucher specimens, and literature review (Irwin & Barneby 1982; Barneby & Irwin 1984; Barneby 1994; Conceição *et al.* 2001; Hervencio & Queiroz 2004). The measurements of vegetative and floral parts were made using fresh material and the flowers

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## References

- Barneby, R.C. (1994) A new species of *Chamaecrista* Moench from interior Bahia, Brazil. *Brittonia* 46: 69–71.
- Barneby, R.C. (1999) Increments to genus *Chamaecrista* (Caesalpinieaceae: Cassiinae) from Bolivia and from Atlantic and Planaltine Brazil. *Brittonia* 51: 331–339.
- Barneby, R.C. & Irwin, H.S. (1984) A new species of *Chamaecrista* sect. *Absus* (Caesalpinieaceae) from Bahia, Brazil. *Phytologia* 55: 305–307.
- Benthham, G. (1840) Tribe Cassieae. In: Hooker, W.J. & Arnott, G.A.W. (Eds.) *Journal of Botany* 2 (10). Miscellany, O. Longman & CO., London, pp. 79–83.
- Benthham, G. (1870) Leguminosae II. *Cassia*. In: von Martius, C.F.P. & Eichler, A.G. (Eds.) *Flora Brasiliensis* 15 (2). F. Fleischer, Leipzig, pp. 82–176.
- Colladon, L.T.F. (1816) *Histoire naturelle et médicale des Casses, et particulièrement de la Casse et des Sénésemployés en médecine*. Jean Martel, Montpellier, pp. 116–117.
- Conceição, A.S., Queiroz, L.P. & Lewis, G.P. (2001) Novas espécies de *Chamaecrista* Moench (Leguminosae-Caesalpinioideae) da Chapada Diamantina, Bahia, Brasil. *Sitientibus Série Ciências Biológicas* 1: 112–119.
- Fiaschi, P. & Pirani, J.R. (2009) Review of plant biogeographic studies in Brazil. *Journal of Systematics and Evolution* 47: 477–496.
- Harms, H.A.T. (1924) Leguminosae americanae novae VII. *Repertorium Specierum Novarum Regni Vegetabilis* 20: 123–136.
- Hervencio, P. & Queiroz, L.P. (2004) A new species of *Chamaecrista* sect. *Absus* (Leguminosae-Caesalpinioideae) from Minas Gerais, Brazil. *Kew Bulletin* 59: 149–151.
- Irwin, H.S. & Barneby, R.C. (1978) Monographic studies in *Cassia* (Leguminosae-Caesalpinioideae) III. Sections *Absus* and *Grimaldia*. *Memoirs of the New York Botanical Garden* 30: 1–277.
- Irwin, H.S. & Barneby, R.C. (1982) The American Cassiinae: a synoptical revision of Leguminosae tribe Cassieae subtribe Cassiinae in the New World. *Memoirs of the New York Botanical Garden* 35: 455–918.
- IUCN (2014) *Guidelines for using the IUCN red list categories and criteria*, version 11. Standards and Petitions Subcommittee of the IUCN Species Survival Commission, Gland, Switzerland and Cambridge, United Kingdom. Available from: <http://www.iucnredlist.org/documents/RedListGuidelines.pdf> (accessed 18 November 2014).
- Lewis, G.P. (2005) Tribe Cassieae. In: Lewis, G.P., Schrire, B., Mackinder, B. & Lock, M. (Eds.) *Legumes of the world*. Royal Botanic Gardens, Kew, pp. 111–161.
- Moench, C. (1794) A staminum situ describendi. *Methodus Plantas Horti Botanic et Agri Marburgensis* 1: 1–368.
- Munhoz, C.B.R. & Felfili, J.M. (2006) Floristics of the herbaceous and subshrub layer of a moist grassland in the Cerrado biosphere reserve (Alto Paraíso de Goiás), Brazil. *Edinburgh Journal of Botany* 63: 343–354.
- Pastore, J.F.B. & Marques, M.C.M. (2009) Duas novas espécies de *Polygala* (Polygalaceae) da região da Chapada dos Veadeiros, GO, Brasil. *Acta Botânica Brasílica* 23: 446–450.
- Pennington, R.T., Richardson, J.E. & Lavin, M. (2006) Insights into the historical construction of species-rich biomes from dated plant phylogenies, neutral ecological theory and phylogenetic community structure. *New Phytologist* 172: 605–616.
- Rando, J.G. & Pirani, J.R. (2012) A new species of *Chamaecrista* sect. *Chamaecrista* ser. *Flexuosae* (Leguminosae, Caesalpinioideae) from Serra do Cipó, Minas Gerais, Brazil. *Brittonia* 64: 241–245.
- Silva, M.J., Sodr , R.C. & Almeida, L.C.S. (2013) A new endemic species of *Manihot* (Euphorbiaceae s. str.) from the Chapada dos Veadeiros, Goiás Brazil. *Phytotaxa* 131 (1): 53–57. <http://dx.doi.org/10.11646/phytotaxa.131.1.10>
- Silva, M.J. & Sodr , R.C. (2014) A dwarf species of *Manihot* Mill. (Euphorbiaceae s.s.) from the highlands of Goiás, Brazil. *Systematic Botany* 39: 222–226.
- Silva, M.J., Sodr , R.C. & Sales, M.F. (2014) A new species of *Croton* L. (Euphorbiaceae s.s.) from the Brazilian Cerrado. *Systematic*

*Botany* 39: 216–221.

- Silva, M.J. & Souza, A.O. (2014) A new species of the genus *Chamaecrista* (Leguminosae, Caesalpinioideae) from Chapada dos Veadeiros, Goiás, Brazil. *Phytotaxa* 174 (3): 181–186.  
<http://dx.doi.org/10.11646/phytotaxa.174.3.7>
- Souza, P.C.B. & Bove, C.P. (2011) A new species of *Utricularia* (Lentibulariaceae) from Chapada dos Veadeiros (Central Brazil). *Systematic Botany* 36: 465–469.
- Souza, V.C. & Bortoluzzi, R.L.C. (2015) *Chamaecrista*. In: *Lista de espécies da flora do Brasil*. Jardim Botânico do Rio de Janeiro, Rio de Janeiro. Available from: <http://www.floradobrasil.jbrj.gov.br/jabot/floradobrasil/FB22876> (accessed 25 November 2014).
- Thiers, B. (2014) *Index Herbariorum: A global directory of public herbaria and associated staff*. New York: New York Botanical Garden's Virtual Herbarium. Available from: <http://sweetgum.nybg.org/ih/> (accessed 20 November 2014).