Check List 8(4): 765–767, 2012

ISSN 1809-127X (available at *www.checklist.org.br*)

Check List
Journal of species lists and distribution

NOTES ON GEOGRAPHIC DISTRIBUTION

Tibouchina papyrus (Pohl) Toledo, 1952 (Melastomataceae): Distribution extension to the northern part of Brazilian Cerrado

Leandro Maracahipes [1*], Marcus Vinicius Cianciaruso [1], Eddie Lenza [2], José Roberto Rodrigues Pinto [3], Beatriz Schwantes Marimon [2] and Tassiana Reis Rodrigues dos Santos [4]

1 Universidade Federal de Goiás, Departamento de Ecologia. CP.131, CEP 74001-970. Goiânia, GO, Brazil.
2 Universidade do Estado de Mato Grosso, Departamento de Ciências Biológicas. BR 158, Km 148. CEP 78690-000. Nova Xavantina, MT, Brazil.
3 Universidade de Brasília, Departamento de Engenharia Florestal. Campus Darcy Ribeiro. CP.4357. CEP 70919-970. Brasília, DF, Brazil.
4 Universidade de Brasília, Programa de Pós-Graduação em Botânica, Campus Darcy Ribeiro. CEP 70910-900. Brasília, DF, Brazil.
* Corresponding author: *lmaracahipes@gmail.com*

ABSTRACT: New records of *Tibouchina papyrus* for Mato Grosso State extend its distribution in the northern part of the Brazilian Savanna, contributing to the conservation of this species and the areas in which it occur.

Melastomataceae is a rich family with about 4,500 species distributed mainly in the Neotropics (Melastomataceae 2011). In Brazil, there are approximately 1,500 species and the family is well represented in most of its vegetation formations. The great plasticity of Melastomataceae species and their life-form diversity allowed them to occupy different niches and promoted the diversification of the group. Therefore, they can be found in a wide range of habitats, from rainforests to savannas, and also in very harsh environments such as cerrado rupestre (rupestrian savanna) and campos rupestres (rocky fields) (Romero and Martins 2002).

Campo rupestre is a physiognomy dominated by herbs and shrub species, usually occurring in altitudes higher than 900 m whereas cerrado rupestre is characterized by shrub-tree species, both presenting several species adapted to nutrient poor soils and seasonal droughts (Ribeiro and Walter 2008). In the Brazilian campo rupestre there are about 366 species of Melastomataceae, many of them with restricted occurrence or endemic (Romero and Martins 2002; Montoro and Santos 2007; Mendonça *et al*. 2008).

Tibouchina papyrus (Pohl) Toledo, which has as synonyms *Tibouchina papyrifera* Cogn. and *Lasiandra papyrus* Pohl., has a restricted geographical distribution and is usually reported as endemic to cerrado and campo rupestres in Goiás state, central Brazil (Montoro and Santos 2007; Miranda *et al*. 2007; Guimarães 2010). This species is popularly known as "*pau-papel*" ("*paper wood*") due to its exfoliating bark which looks like thin paper sheets flaking off from the trunk. Moreover, besides this peculiar feature its exuberant long flowering period (five months) makes it a species with an excellent ornamental potential (Montero and Santos 2007; Telles *et al*. 2010) (Figure 1).

A new record for this species was done in a cerrado rupestre at Parque do Bacaba in Nova Xavantina, Mato Grosso state where few individuals with lower heights (1.50 m) and lower diameter (3 cm) were observed in the beginning of the reproductive period (Figure 1). The respective voucher was incorporated to the collection of Herbário NX (collection number: NX 9900). This record extends the geographic distribution of *T. papyrus* for the northern part of the Brazilian Savanna. In fact, considering that recently *T. papyrus* was reported to occur at Serra da Natividade, Tocantins state (Collevatti *et al*. 2012), here we report the second occurrence of this species outside

FIGURE 1. *Tibouchina papyrus* (NX 9900) from cerrado rupestre of Nova Xavantina, Serra do Roncador, MT. Photo by J. R. R. Pinto.

Goiás state and at altitudes lower than 650 m (Figure 2 and Table 1). The cerrado rupestre of Nova Xavantina is part of the Serra do Roncador vegetational complex and lies within the conservation unit of Parque do Bacaba (about 500 hectares) at an altitude of about 340 m. The soil of cerrado rupestre of Parque do Bacaba is classified as litholic, with irregular terrain and intense rocky outcrop (Maracahipes *et al*. 2011) which is similar to the soils of the cerrado rupestre at Serra do Pirineus and Serra Dourada. Serra dos Pirineus is a State park whereas Serra Dourada is a private property (Miranda *et al*. 2007; Moura *et al*. 2007). The greatest distance among these four locations, where *T*. *papyrus* has been recorded, is about 600 km (Nova Xavantina, MT to Serra da Natividade, TO) and the shorter distance is about 75 km (Serra dos Pireneus and Serra Dourada). The present record of *T*. *papyrus*, in altitudes lower than 650 m and in the Cerrado-Amazon Forest transition is an important addition to expanding its distribution, indicating that this species also can occupy different altitudinal strata. The exclusive occurrence of *T*. *papyrus* in environments with rocky outcrop suggest that this specie is a habitat specialist (Table 1) with disjunct distribution of its populations in Cerrado (Figure 2).

Studies investigating the population structure (Miranda *et al*. 2007; Montoro and Santos 2007; Moura *et al*. 2007; 2010, Santos *et al*. (in press) and genetics (Telles *et al*. 2010; 2011; Collevatti *et al*. 2012) of *T*. *papyrus* are scarce. However, this species was not recorded in any of the 376 areas of Cerrado and Amazonian savannas studied by Ratter *et al*. (2003). This species has only been recorded in campo rupestre and cerrado rupestre at altitudes higher than 850 m in Serra Dourada, Serra dos Pirineus, in Goiás

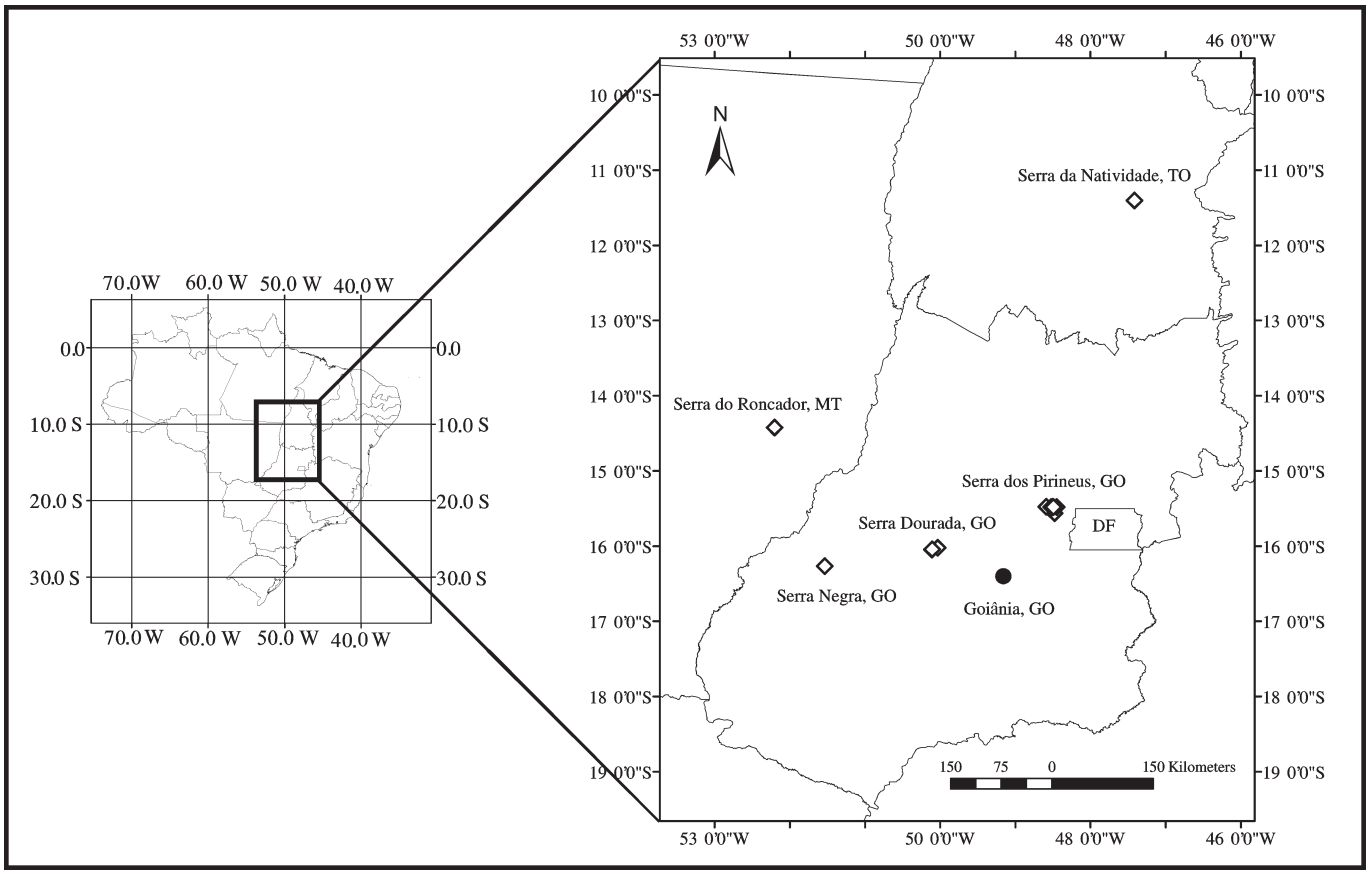

Figure 2. Map showing the records of *Tibouchina papyrus* (Pohl) Toledo for the State of Goiás (GO), Tocantins (TO), and the new record for the State of Mato Grosso (MT).

Table 1. Occurrences of *Tibouchina papyrus* in the Brazilian Cerrado.

SITE	LATITUDE – SOUTH/ LONGITUDE - WEST	PHYSIOGNOMY	ALTITUDE	AUTHOR
Nova Xavantina, MT (Serra do Roncador)	14°42'485"/52°21'082"	Cerrado rupestre	340	This study
Piranhas, GO (Serra Negra)	16°26'550"/51°53'580"	Cerrado rupestre	810	Abreu *et al.* (in press)
Mossâmides, GO (Serra Dourada)	16°04'716"/50°11'303"	Campo rupestre	993	Telles *et al.* 2010
Mossâmides, GO (Serra Dourada)	16°04'410"/50°10'587"	Campo rupestre	1,005	Telles *et al.* 2010
Mossâmides, GO (Serra Dourada)	16°02'010"/50°03'410"	Cerrado rupestre	840	Miranda *et al.* 2007
Cocalzinho de Goiás, GO (Serra dos Pirineus)	15°48'/48°45'	Cerrado rupestre	1,200	Pinto *et al.* 2009
Pirenópolis, GO (Serra dos Pirineus)	15°48'311"/48°49'399"	Cerrado rupestre	850	Santos *et al.* 2012
Pirenópolis, GO (Serra dos Pirineus)	15°47'710"/48°49'960"	Cerrado rupestre	1,355	Moura *et al.* 2007
Pirenópolis, GO (Serra dos Pirineus)	15°48'420"/48°52'400"	Cerrado sensu stricto	1,310	Moura *et al.* 2010
Pirenópolis, GO (Serra dos Pirineus)	15°46-50'/48°48-53'	Campo rupestre	1,100	Montoro and Santos 2007
Pirenópolis, GO (Serra dos Pirineus)	15°47'738"/48°58'722"	Campo rupestre	1,242	Telles *et al.* 2010
Natividade, TO (Serra da Natividade)	11°40'220"/47°41'540"	Cerrado rupestre	650	Collevatti *et al.* 2012

state, and 650 m in Serra da Natividade, in Tocantins state. One potential explanation for such disjunct populations is the fact that there are still few studies on cerrado rupestres in the northern part of the biome. Also, Maracahipes *et al*. (2011) showed that to better characterize the flora of cerrado rupestres it is necessary to use a minimal trunk diameter of 3 cm at 30 cm above soil level instead of the 5 cm currently used. Thus, it remains an opened question whether this species was not included in others inventories because of the inclusion criteria and its low density.

In relation to its threat of extinction, *T*. *papyrus* is considered vulnerable but likely to become critically endangered or extinct in short time due to its small population size and restricted occurrence (Biodiversitas 2011). Even by showing that its occurrence is larger than previously thought this should not remove the species from this category because it still has low density and only four occurrence points were confirmed. Nevertheless, in Serras dos Pirineus and Serra Dourada high values of genetic diversity were recorded for *T*. *papyrus* populations (Telles *et al*. 2010, Collevatti *et al*. 2012). Thus, the intensification of studies in other areas of cerrado rupestre and campo rupestre can reveal the existence of other populations. Such studies will be relevant to assess the real geographical distribution of this species and to determine with more precision its actual conservation status. Only then management actions can be carried out for conservation and preservation of this endemic and rare Cerrado species.

Acknowledgments: The Projeto Transição Cerrado-Floresta Amazônica: bases ecológicas e socioambientais para a conservação (CNPq/PELD - Process nº 558069/2009-6) and Rede ComCerrado for support.

Literature Cited

Abreu, M.F., E. Lenza, E.A. Oliveira, L. Maracahipes, B.S. Marimon, B.H. Marimon-Junior, L. Gomes, J.R.R. Pinto and J. Farias. *In press*. Influência das variáveis edáficas sobre a composição florística e a estrutura da vegetação arbustivo-arbórea de cerrado típico e rupestre na Serra Negra, Goiás. *Brazilian Journal of Botany*.

Biodiversitas. 2011. *Revisão da lista da flora Brasileira ameaçada de extinção*. Electronic Database accessible at http://www.biodiversitas.org.br/. Captured on 19 September 2011.

Collevatti, R.G., T.G. Castro, J.S. Souza and M.P.C. Telles. 2012. Phylogeography of *Tibouchina papyrus* (Pohls) Toledo (Melastomataceae), an endangered tree species from rocky savannas, suggests bidirectional expansion due to climate cooling in the Pleistocene. *Ecology and Evolution* 2(5): 1024-1035.

Guimarães, P.J.F. 2010. *Tibouchina in Lista de Espécies da Flora do Brasil*. Electronic Database accessible at http://www.floradobrasil.jbrj.gov.br/. Captured on 19 September 2011.

Maracahipes, L., E. Lenza, B.S. Marimon, E.A. Oliveira, J.R.R. Pinto and B.H. Marimon-Junior. 2011. Estrutura e composição florística da vegetação lenhosa em cerrado rupestre na transição Cerrado-Floresta Amazônica, Mato Grosso, Brasil. *Biota Neotropica* 11(1): 133-141.

Melastomataceae.Net 2007–2011. *A Site with Information on the Biodiversity of Melastomataceae*: www.melastomataceae.net. Electronic Database accessible at http://www.melastomataceae.net/. Captured on 19 September 2011.

Mendonça, R.C., J.M. Felfili, B.M.T. Walter, M.C. Silva Júnior, A.V. Rezende, T.S. Filgueiras, P.E. Nogueira and C.W. Fagg. 2008. Flora vascular do Bioma Cerrado: *checklist* com 12.356 espécies; p. 417-1279 *In* S.M. Sano, S.P. Almeida and J.F. Ribeiro (ed.). *Cerrado: Ecologia e flora*. Brasília: Embrapa Cerrados.

Miranda, S.C., M.C. Silva Júnior and L.A. Salles. 2007. A comunidade lenhosa de cerrado rupestre na Serra Dourada, Goiás. *Heringeriana* 1(1): 43-53.

Montoro, G.R. and M.L. Santos. 2007. Fenologia e biologia reprodutiva de *Tibouchina papyrus* (Pohl) Toledo (Melastomataceae) no Parque Estadual da Serra dos Pirineus, Goiás. *Revista de Biologia Neotropical* 4(1): 21-29.

Moura, I.O., V.L. Gomes-Klein, J.M. Felfili and H.D. Ferreira. 2007. Fitossociologia da comunidade lenhosa de uma área de cerrado rupestre no Parque Estadual dos Pireneus, Pirenópolis, Goiás. *Revista de Biologia Neotropical* 4(2): 83-100.

Moura, I.O., V.L. Gomes-Klein, J.M. Felfili and H.D. Fereira. 2010. Diversidade e estrutura comunitária de cerrado *sensu stricto* em afloramentos rochosos no Parque Estadual dos Pireneus, Goiás. *Revista Brasileira de Botânica* 33(3): 455-467.

Pinto, J.R.R., E. Lenza and A.S. Pinto. 2009. Composição florística e estrutura da vegetação arbustivo-arbórea em um cerrado rupestre, Cocalzinho de Goiás, Goiás. *Revista Brasileira de Botânica* 32(1): 23-32.

Ratter, J.A., S. Bridgewater and J.F. Ribeiro. 2003. Analysis of the floristic composition of the Brazilian cerrado vegetation III: comparison of the woody vegetation of 376 areas. *Edinburgh Journal of Botany* 60(1): 57-109.

Ribeiro, J.F. and B.M.T. Walter. 2008. As principais fitofisionomias do Bioma Cerrado; p. 151-199 *In* S.M. Sano, S.P. Almeida and J.F. Ribeiro (ed.). *Cerrado: Ecologia e Flora*. Brasília: Embrapa Cerrados.

Romero, R. and A.B. Martins. 2002. Melastomataceae do Parque Nacional da Serra da Canastra, Minas Gerais, Brasil. *Revista Brasileira de Botânica* 25(1): 19.24.

Santos, T.R.R., J.R.R. Pinto and E. Lenza. 2012. Floristic relationships of the woody component in rocky outcrops savanna areas in Central Brazil. *Flora* 207(7): 541-550.

Telles, M.P.C., S.P. Silva, J.R. Ramos, T.N. Soares, D.B. Melo, L.V. Rezende, E.C. Batista and B.F. Vasconcellos. 2010. Estrutura genética em populações naturais de *Tibouchina papyrus* (pau-papel) em áreas de campo rupestre no cerrado. *Revista Brasileira de Botânica* 33(2): 291-300.

Telles, M.P.C., F.P. Peixoto, J.S. Lima, L.V. Resende, R.P. Vianello, M.E.M.T. Walter and R.G. Collevatti. 2011. Development of microsatellite markers for the endangered Neotropical tree species *Tibouchina papyrus* (Melastomataceae). *Genetics and Molecular Research* 10(1): 321-325.

Received: October 2011
Accepted: July 2012
Published online: August 2012
Editorial responsibility: James Byng