

# NEW RECORDS OF RAUVOLFIOIDEAE (APOCYNACEAE, GENTIANALES) FOR PARAÍBA STATE, BRAZIL

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**Abstract.** This paper presents five new records of Rauvolfioideae for Paraíba state, northeastern Brazil: *Aspidosperma discolor*, *A. melanocalyx*, *Macoubea guianensis*, *Tabernaemontana catharinensis*, and *T. flavicans*, with the genus *Macoubea* being recorded for the first time in Paraíba state. Notes on distinguishing morphological features as well as data on geographical distribution and reproductive phenology of the species are provided.

**Keywords:** Caatinga, diversity, flora, Brazil

Apocynaceae encompass 5,000 species belonging to 375 genera (Rapini, 2012), distributed in pantropical regions with a few species in temperate regions (Endress, 2004; Sennblad and Bremer, 2002). This family is subdivided into five subfamilies: Rauvolfioideae, Apocynoideae, Asclepiadoideae, Secamonoideae, and Periplocoideae.

Rauvolfioideae comprise 11 tribes and 79 genera (Endress et al., 2014), which are commonly recognized by small flowers; hypocrateriform corolla; anthers free of the gynoecium; fruit a berry, capsule, drupe, or follicle;

and seeds naked, winged, or arillate.

To address the scarcity of floristic and taxonomic studies focused on this taxonomic group in some regions of Brazil, particularly in the region located north of the São Francisco River basin, a taxonomic survey for Apocynaceae subfamily Rauvolfioideae was carried out in Paraíba state, in northeastern Brazil. Here we report five new records, including one genus (*Macoubea*). In addition, data on distribution and reproductive phenology are provided for each species.

## MATERIAL AND METHODS

Our study was based on field collections housed in the main herbaria of Paraíba State (Fig. 1) (EAN, Jayme Cêlho de Moraes; JPB, Lauro Pires Xavier; and HACAM, Manuel de Arruda Câmara) and Bahia state (HUEFS, Herbarium of State University of Feira de Santana) (acronyms follow Thiers, continuously updated) and websites (*Flora do Brasil*, 2020, in progress; Tropicos, 2020). The website JSTOR Global Plants (2019) was used to consult type specimens, mainly from P, S, MO, L, and B. Geographic distribution and phytogeographic domains were consulted in *Flora do Brasil* (2020, in progress) and Tropicos (2020). Data on reproductive phenology were obtained from the labels of the exsiccatae consulted.

Five new records of species of Rauvolfioideae (Apocynaceae), including the first record of *Macoubea* Aubl., were detected for Paraíba state and are reported for the first time herein.

### 1. *Aspidosperma discolor* A. DC., Prodr. 8:398.1844.

TYPE: BRAZIL. Bahia, *J. S. Blanchet* 3388 (Holotype: P [P00645118], photograph seen).

**Distribution and habitat:** this species is found exclusively in South America: Brazil, Suriname, and Venezuela (Tropicos, 2020). In Brazil, it is distributed in northeastern region (Alagoas, Bahia, Pernambuco, and

Sergipe), and associated with the Caatinga and Atlantic forest domains (Flora do Brasil, 2020, in progress).

**Phenology:** flowering in November and fruiting in March.

**Additional specimens examined:** BRAZIL. Paraíba: Espírito Santo, 25 November 1968, fl., *D. Andrade-Lima* 68-5.471 (IPA); João Pessoa, 10 March 1995, fr., *M. R. Barbosa et al.* 1456 (JPB); Rio Tinto, 21 November 1991, fl., *L. P. Félix et al.* 4554 (EAN).

This species can be recognized by its sulcate stalks, alternate leaves, discolored with base revolute, brochidodromous venation, and muricate follicle, inconspicuous lenticels, and rounded apex.

### 2. *Aspidosperma melanocalyx* Müll. Arg., Fl. Bras. (Martius) 6(1): 52.1860.

TYPE: BRAZIL. Minas Gerais, A.-St. Hilaire s.n. (Holotype: P [P0038777], photograph seen).

**Distribution and habitat:** this species is endemic to Brazil and found in northeastern (Alagoas, Bahia, Pernambuco, and Sergipe), central-western (Distrito Federal, Goiás, and Mato Grosso), and southeastern (Espírito Santo, Minas Gerais, Rio de Janeiro, and São Paulo) regions, and associated with the Atlantic Forest and Cerrado domains (Flora do Brasil 2020, in progress; Tropicos, 2019).

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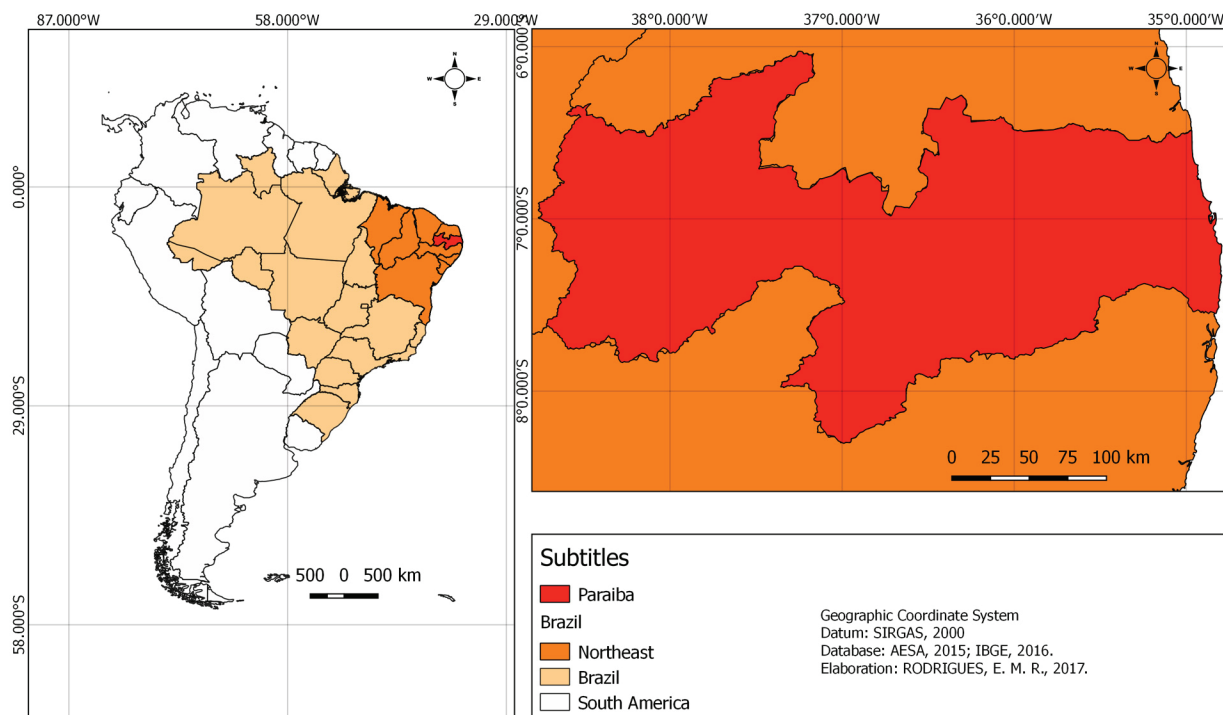


FIGURE 1. Map of the location of Paraíba state, Brazil.

**Phenology:** flowering in February and October and fruiting in March.

**Additional specimens examined:** BRAZIL. Paraíba: João Pessoa, 09 March 1995, fr., *M. R. Barbosa et al.* 1446 (JPB); João Pessoa, 08 October 1988, fl., *C. A. B. Miranda* 7767 (JPB); João Pessoa, 24 February 1984, fl., *C. Alonso* 56697 (JPB).

It is characterized by its red latex, smooth stalk, alternate leaves, leaf blade with craspedodromous venation, and fruits dark green, densely tomentose, and sulcate.

3. *Macoubea guianensis* Aubl., Hist. Pl. Guiane 2 (Suppl.): 18, t. 378. 1775.

TYPE: FRENCH GUIANA. *J. B. C. F. Aublet s.n.* (Holotype: BM [000952638], photograph seen).

**Distribution and habitat:** this species is found in Brazil, Bolivia, French Guiana, Guiana, Peru, Suriname, and Venezuela (Tropicos, 2020). In Brazil it is distributed in northern (Acre, Amazonas, Pará, and Rondônia), northeastern (Bahia, Maranhão, and Pernambuco), central-western (Mato Grosso), and southeastern (Espírito Santo) regions associated with the Amazon and Atlantic Forest domains (Flora do Brasil, 2020, in progress).

**Phenology:** flowering in May and fruiting in February.

**Additional specimens examined:** BRAZIL. Paraíba: João Pessoa, 03 May 2016, fl., *P. C. Gadelha-Neto* 4034 (JPB); Mamanguape, 10 February 2012, fr., *W. W. Thomas et al.* 15653 (JPB).

This species can be recognized by its arboreal habit as well as by the smooth stalks, white latex, opposite leaves, leaf blade presenting craspedodromous venation, fruit (berry) with dry pericarp, and seeds oblong and viscous.

4. *Tabernaemontana catharinensis* A. DC., Prodr. 8: 365. 1844.

TYPE: BRAZIL. Ile de Ste Catherine, *C. Gaudichaud* 186 (Isotype: P [P00646818]; Lectotype: G-DC; Isolectotypes: F, FI-W, G, P [photograph seen]).

**Distribution and habitat:** this species is found only in South America: Brazil, Argentina, Bolivia, Paraguay, and Uruguay (Tropicos, 2020). In Brazil it can be found in northeastern (Bahia, Ceará, Maranhão, Pernambuco, and Sergipe), central-western (Mato Grosso do Sul), southeastern (Espírito Santo, Minas Gerais, Rio de Janeiro, and São Paulo), and southern (Paraná, Rio Grande do Sul, and Santa Catarina) regions, associated with the Atlantic Forest and Cerrado domains (Flora do Brasil 2020, in progress).

**Phenology:** flowering and fruiting in March.

**Additional specimens examined:** BRAZIL. Paraíba: Alagoa Nova, 05 March 2012, fl., *E. Melo et al.* 10910 (HUEFS); Alagoa Nova, 08 March 2012, fl., fr., *E. Melo et al.* 11052 (HUEFS); Alagoa Nova, 08 March 2012, fl., fr., *E. Melo et al.* 11064 (HUEFS).

This species can be recognized by its membranaceous leaf blades, unequal on the same node, presenting eucamptodromous venation, calyx with lobes triangulate and revolute, white corolla presenting yellow mouth, and muricate follicle, convex-concave.

5. *Tabernaemontana flavicans* Willd. ex Roem. & Schult., Syst. Veg. ed. 15 bis. 4: 797. 1819.

TYPE: BRAZIL. Brasilia, *J. C. Hoffmannsegg s.n.* (Holotype: B [B-W05195-020], photograph seen).

**Distribution and habitat:** this species is found only in South America: Bolivia, Brazil, Colombia, Peru, and Venezuela (Tropicos, 2020). In Brazil it can be found in northern (Amazonas, Pará, and Rondônia), northeastern (Alagoas, Bahia, Maranhão, and Pernambuco), central-western (Mato Grosso), and southeastern (Espírito Santo, Minas Gerais, and Rio de Janeiro) regions associated with the Atlantic Forest, Cerrado, and Amazon domains (Flora do Brasil 2020, in progress).

**Phenology:** flowering in August, September, and October and fruiting in January and September.

**Additional specimens examined:** BRAZIL. Paraíba:

Baía da Traição, 11 October 2004, fl., *P. C. Gadelha-Neto et al. 1264* (JPB); João Pessoa, 06 September 2005, fr., *N. T. Amazonas et al. 44* (JPB); João Pessoa, 20 January 2012, fr., *P. C. Gadelha-Neto 3147* (JPB); João Pessoa, 12 August 2002, fl., *P. C. Gadelha-Neto et al. 727* (JPB); João Pessoa, 12 September 2011, fl., *P. C. Gadelha-Neto 3053* (JPB); Mamanguape, 04 September 2004, fl., *M. R. Barbosa et al. 3045* (JPB).

This species can be recognized by its chartaceous leaves, unequal on the same node, brochidodromous venation, white corolla presenting yellow mouth, and smooth follicle, ellipsoid with acute apex.

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