

# Taxonomic novelties in Pentaphylacaceae: Four new species of *Ternstroemia* from Brazil

Jaqueline Alves Vieira<sup>1</sup> | Daniela Sampaio Silveira<sup>1</sup> | Valner Matheus Milanezi Jordão<sup>2</sup> | João Paulo Soares-Silva<sup>3</sup>

<sup>1</sup> Universidade Estadual Paulista "Júlio de Mesquita Filho" (UNESP/IBILCE), Programa de Pós-Graduação em Biociências, Departamento de Zoologia e Botânica, 15054-000, São José do Rio Preto, São Paulo, Brazil.

<sup>2</sup> Universidade Estadual Paulista "Júlio de Mesquita Filho" (UNESP/IBILCE), Programa de Pós-Graduação em Biodiversidades, Departamento de Zoologia e Botânica, 15054-000, São José do Rio Preto, São Paulo, Brazil.

<sup>3</sup> Universidade Estadual de Campinas (UNICAMP), Instituto de Biologia, Departamento de Biologia Vegetal, 13083-970, Campinas, São Paulo, Brazil.

<sup>1</sup> Correspondence: [jaqueline.vieira@unesp.br](mailto:jaqueline.vieira@unesp.br)

## ABSTRACT

Pentaphylacaceae (Ericales) comprise 14 genera and ca. 510 species distributed in subtropical and tropical regions worldwide. In Brazil, the family is represented by two genera (i.e., *Freziera* and *Ternstroemia*) with 21 species, after the inclusion of the four new species described here. *Ternstroemia bahiensis* is endemic to the Caatinga domain, *T. rupestris* is endemic to the Atlantic Forest-Cerrado transition, while *T. megaphylla* and *T. longipetiolata* are endemic to the Amazon Forest domain. Morphological descriptions and comments on habitat, distribution, conservation, phenology, and taxonomy affinities are presented for all the new species, plus line drawings, distribution map, and an identification key to all *Ternstroemia* species from Brazil.

## 1 | INTRODUCTION

Pentaphylacaceae Engl. is a family of flowering plants currently placed in Ericales, comprising 14 genera and ca. 510 species distributed in subtropical and tropical regions worldwide (Tsou *et al.* 2016; POWO 2020). In Brazil, the family is represented by two genera, *Ternstroemia* Mutis. ex L.f. (1781: 264) and *Freziera* Willd. (1799: 1179) (Vieira & Sampaio 2020). *Ternstroemia* is represented by ca. 150 species, of which 105 are confined to the Neotropical region (POWO 2020; Cheek *et al.* 2019). The genus was represented by 17 species in "Flora do Brasil" (Vieira & Sampaio 2020).

*Ternstroemia* is characterized by its simple, alternate, spiraled or verticillate leaves, usually fleshy and coriaceous, rarely membranaceous, glabrous, frequently with abaxial punctuations, attenuate to the petiole base, glandular arrows frequently present in margin, and brochidodromous venation, often hypodromous. Inflorescence one-flowered, one bract, inserted in the pedicel basis, caducous, two bracteoles, opposite, inserted in the calyx basis, frequently denticulate, persistent. Flowers are pedicellate, dichlamydeous, pentamerous, with five fleshy sepals with the margin frequently glandular-denticulate, with five petals with scarious margin, numerous stamens, flattened filaments, basifixed anthers rimose, connectives mucronate to caudate; superior ovary, 2-

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7-locular, 1-4 ovules per locule, erect styles, and usually punctiform stigmas, occasionally capitate, lobate, discoid or peltate. Fruits are smooth, rarely rugulose when dry, irregularly dehiscent into valves or circumcissile, and sepals and styles are persistent. Seeds are rounded to ovoid, as numerous as the ovules (Vieira & Sampaio 2020).

*Ternstroemia* is represented by 21 species in Brazil, instead of 17 species as previously recorded by Vieira & Sampaio (2020). Most of these species are exclusive to Brazil. Six of them occur in the Atlantic Forest, Cerrado and Caatinga domains, and the remaining 15 species are restricted to the Amazon Forest domain.

During a taxonomic study on Pentaphylacaceae from Brazil, carried out in the master's research by the first author, entitled "Revisão Taxonômica de Pentaphylacaceae para o Brasil" (Vieira 2020) and "Flora do Brasil 2020: Pentaphylacaceae" (Vieira & Sampaio 2020) we came across four new species of *Ternstroemia*. The species from the Amazon Forest, *Ternstroemia megaphylla*, occurs near streams in the State of Amapá, while *T. longipetiolata* occurs in altitudinal forests of the Guyana Shield in the State of Roraima. Of the extra-Amazonian species, *Ternstroemia bahiensis* occurs in the Caatinga domain of the State of Bahia, while *T. rupestris* occurs in the Cadeia do Espinhaço rocky outcrops ("campos rupestres"), in the Atlantic Forest-Cerrado domains transition of the State of Minas Gerais.

## 2 | MATERIALS AND METHODS

Dried specimens of *Ternstroemia* from the following herbaria were studied either on online databases, with high quality images, or by personal examination after loan and donation: BHCN, CEN, CEPEC, ESA, HAMAB, HUEFS, INPA, K, NY, RB, SP, SPF, US (acronyms following Thiers 2020). The morphological data was obtained from the herbarium specimens. Descriptions and line drawings are based on dried material, analyzed in a stereomicroscope. Morphological character terminology is based in Harris & Harris (2001) and Kobuski (1942).

Data on distribution gathered from herbarium labels were recorded using QGIS, version 3.16, and a map was elaborated with some coordinates taken from the labels. The conservation assessment was elaborated based on IUCN (2001), with the extent of occurrence (EOO) and the area of occupancy (AOO) estimated with GeoCat and AOO based on user defined cell size of 2 km<sup>2</sup> (Bachman *et al* 2011).

## 3 | TAXONOMY

***Ternstroemia bahiensis* J.Vieira & D.Sampaio., *sp. nov.***

*Ternstroemia bahiensis* resembles *T. carnosa* Cambess. (1828: 299) due to its 2–3-locular ovaries with 2 ovules per locule but differs in narrowly elliptic to narrowly oblanceolate leaves (vs. obovate in *T. carnosa*), acute to obtuse apex (vs. obtuse to rounded), flowers with aristate connectives (vs. mucronated), and punctiform stigma (vs. bilobed).

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**Typus**—BRAZIL: Bahia, Mucugê, 3 km ao S de Mucugê, na estrada para Jussiape, 1000 m de alt., 13°00' S, 41°24' W, 26 July 1979, *S.A.Mori 12568* (holotype: RB 00436091; isotype: CEPEC 00017819, US 2857098, RB 00436110). (Figure 1).

Shrubs 0.8–1 m tall. Leaves usually congested at the apex of branches, spiraled, petioles distally keeled, 2–3 mm long; leaf-blades 2–3.8 × 0.4–0.9 cm, coriaceous, narrowly elliptic to narrowly oblanceolate, base acute, briefly projected over the top of the petiole, margin glandular-denticulate, slightly revolute to plane, apex acute to obtuse, glabrous on both faces, punctuations absent on both surfaces, veins inconspicuous on both faces, midrib adaxially flat, abaxially proximally protruded, veins adaxially inconspicuous, abaxially conspicuous. Flowers ca. 0.5 cm long, cauliflorous; pedicels ca. 0.5 cm long; bracts caducous, bracteoles 2, ca. 1.5 × 2 mm, coriaceous, ovate, margin glandular-denticulate; sepals 5, subequal, obovate, outer sepals 2, 4.5–5 × 5 mm, glandular-denticulate, inner sepals 3, ca. 5 × 5 mm, entire, margin scarious; petals 5, ca. 5.5 mm long, ovate, basely connate, apex acuminate to acute; stamens ca. 21, filaments ca. 0.8 mm long, flat, anthers ca. 1.9 mm long, basifixed, connectives 0.5–0.8 mm long, acuminate; ovary globose, ca. 1.4 mm long, 2–3-locular, ovules 2 per locule, style rostrum ca. 4.5 mm long, entire, not divided, stigma punctate. Fruits not seen.

**Additional material examined (paratype)**—BRAZIL: Bahia, Mucugê, 3–5 km N da cidade, em direção a Palmeiras, campo rupestre próximo ao rio Moreira, 13°00'21" S, 41°23'22" W, 20 February 1994, *R.M.Harley et al.* CFCR 14264 (CEN, ESA, K, SP, SPF).

**Etymology**—The epithet *bahiensis* is related to the Brazilian State where the species occurs.

**Distribution and ecology**—*Ternstroemia bahiensis* occurs in campos rupestres of Caatinga domain, State of Bahia (Figure 2).

**Phenology**—The species blooms in February and July.

**Conservation**—*Ternstroemia bahiensis* should be regarded as Vulnerable [VU] following the IUCN criteria (2001) for being known from a very small and restrict population, and small number of locations. The species is prone to the effects of human activities, like deforestation, fire, and agriculture, or a stochastic event within a very short time period on an uncertain future being able to become Critically Endangered (CR) or Extinct (EX). Thus, *T. bahiensis* is assigned a status of VU: D2.

**Taxonomic comments**—*Ternstroemia bahiensis* is distinguished from all Brazilian species of *Ternstroemia* by its 2–3 mm long petioles, 2–3.8 × 4–6 mm leaf blades, narrowly elliptic to narrowly oblanceolate, acute base, and acute to obtuse apex. As for the floral characters, this



**Figure 1.** Line drawing of *Ternstroemia bahiensis*. A. Flowering branch. B. Flower in pre-anthesis. C. Longitudinal section of a flower in anthesis. D. Ovary in cross section (Illustration by J.A.Vieira).

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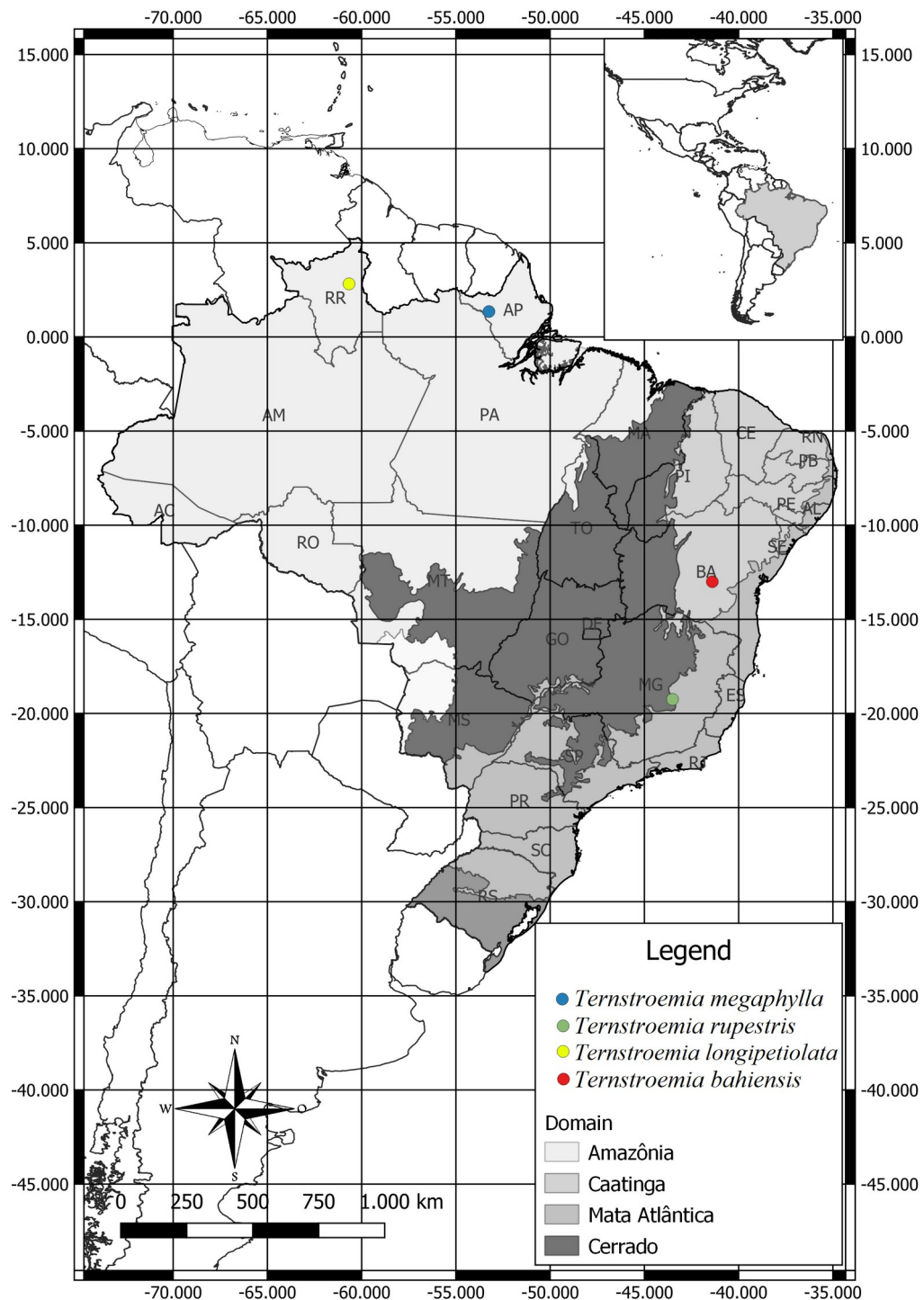


Figure 2. Distribution of *Ternstroemia bahiensis*, *T. megaphylla*, *T. rupestris* and *T. longipetiolata* (Map by J.A.Vieira).



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species shows 0.5–0.8 mm long connectives, aristate, ovary ca. 1.4 mm long, globose, 2–3-locular, two ovules per locule, ca. 4.5 mm long rostrate styles, and punctate stigma.

***Ternstroemia megaphylla*** J.Vieira & D.Sampaio., *sp. nov.*

*Ternstroemia megaphylla* resembles *T. urophora* Kobuski (1942: 312) due to its 4-locular ovary and 1 ovule per locule, but differs due to its tree habit, 8–23 m tall tree (vs. 1–7 m tall shrub or tree in *T. urophora*), leaf-blades with round to obtuse apex (vs. subcaudate to caudate), and eglandular-denticulate sepals (vs. glandular-denticulated).

**Typus**—BRAZIL: Amapá, Município de Macapá, 7 km NW of Riozinho on highway “Perimetral Norte” (BR210), ca. 1°21' N, 53°15' W, 31 December 1984, fr., *B.V.Rabelo et al.* 3120 (holotype: NY 1183432; isotype: HAMAB, US 3433327). (Figure 3).

Trees 8–23 m tall, diameter at breast height ca. 31 cm. Leaves evenly distributed along branches, spiraled; petioles ca. 1 cm long, proximally keeled; leaf-blades 6.5–13 × 4.3–6 cm, coriaceous, widely elliptic to oblanceolate, base obtuse, briefly projected over the top of petioles, margin eglandular-denticulate, slightly revolute, apex round to obtuse, glabrous on both faces, punctuations absent on both faces, midrib adaxially flat, abaxially proximally prominent to distally impressed, secondary veins adaxially inconspicuous to slightly conspicuous, venation brochidodromous. Complete flowers not seen. Fruits 1.5–2.5 × 1–2.5 cm, globose, smooth, 4-locular, 1 seed per locule, cauliflorous, not axillary, pedicels 1 cm long; bracts caducous, persistent bracteoles ca. 2 × 2 mm, ovate, margin glandular-denticulate, apex acute; persistent sepals 5, subequal, obovate, outer sepals 2, 6–7 × 5 mm, ovate, apex obtuse, margin eglandular-denticulate, inner sepals 3, ca. 6 × 5 mm, entire, margin scarious. Seeds ca. 1 × 0.5 cm.

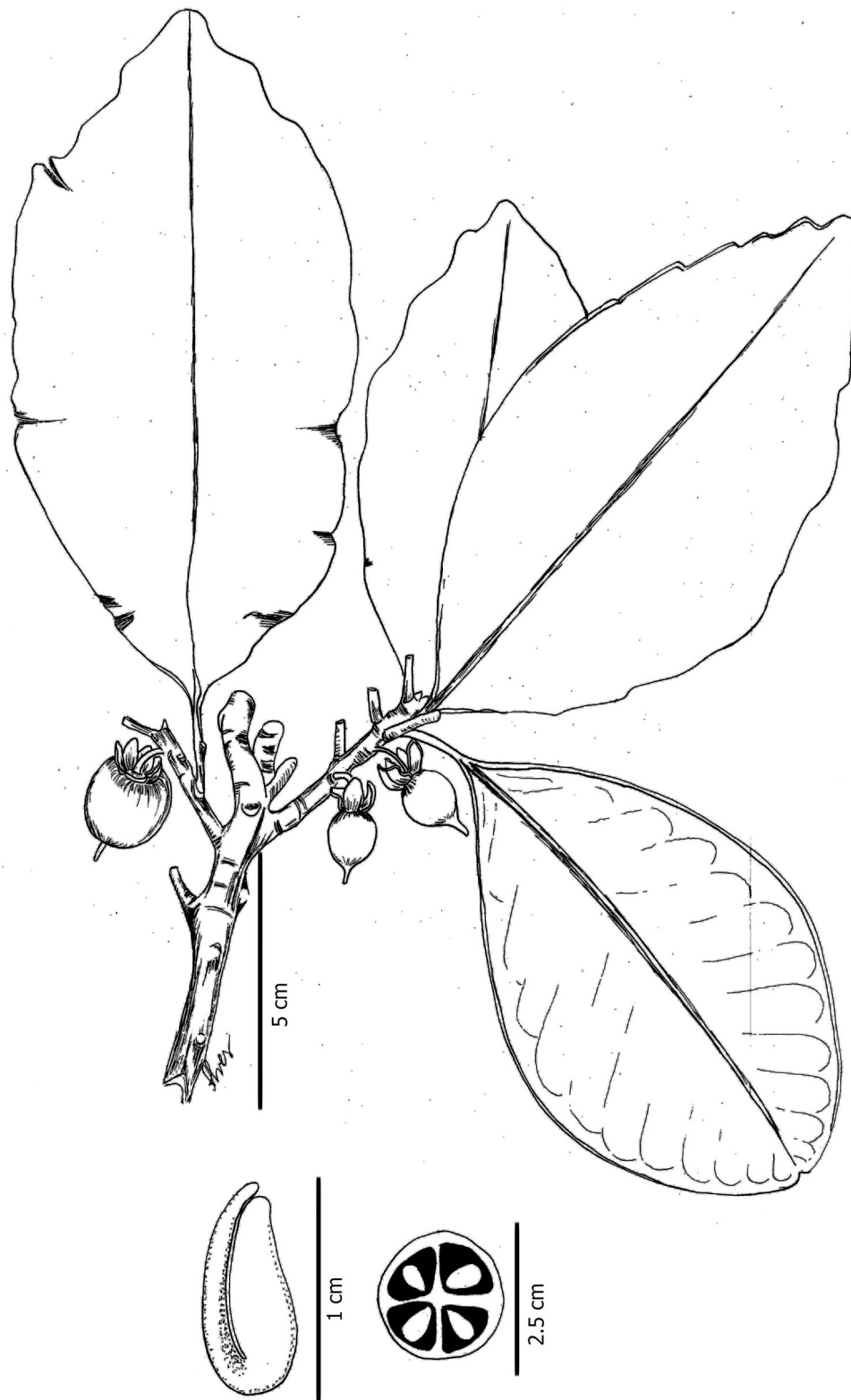
**Additional material examined (paratype)**—BRAZIL: Amapá, Estrada até Matapi, atrás Porto Grande, 17 October 1979, fr., *D. F. Austin et al.* 7068 (IAN, INPA, MO, NY, UEC, US).

**Etymology**—The epithet *megaphylla* is related to its large and long leaves.

**Distribution and ecology**—*Ternstroemia megaphylla* occurs in terra-firme (not floodable) rainforests within the Amazon Forest domain, State of Amapá (Figure 2).

**Phenology**—The species was collected fruiting from October to December.

**Conservation**—*Ternstroemia megaphylla* should be regarded as Data Deficient [DD], due to its few known collections, lacking on abundance and distribution data, and inadequate information



**Figure 3.** Line drawing of *Ternstroemia megaphylla*. A. Fruiting branch. B. Seed. C. Fruit in cross section (Illustration by J.A.Vieira).

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to assess the risk of extinction based on its distribution and population status. More information and future research are required show which threatened classification is appropriate.

**Taxonomic comments**—*Ternstroemia megaphylla* is distinguished by being a tree of 8–23 m in height, with 6.5–13 × 4.3–6 cm leaves, widely elliptical to oblanceolate, obtuse base, round to obtuse apex, eglandular-denticulate outer and inner sepals, and globose fruits, 4-locular, with one seed per locule (Figure 3). Although flowers were not seen, we were able to observe some flower characters that were persistent in fruit, such as bracts and sepals.

***Ternstroemia rupestris*** J.Vieira & D.Sampaio, *sp. nov.*

*Ternstroemia rupestris* is similar to *T. brasiliensis* Cambess. (1828: 298) due to its coriaceous leaf-blades, oblong to oblong-elliptic, and 4-locular ovary. It differs due to its congested flowers at the apex of the branches (vs. evenly distributed in *T. brasiliensis*), capitate stigma (vs. punctate), and ovary with one ovule per locule (vs. 2).

**Typus**—BRAZIL: Minas Gerais, Morro do Pilar, Parque Nacional da Serra do Cipó, acesso pelo Km 123 da rodovia MG010, 19°14'49" S 43°30'38" W, 1265 m., 12 November 2007, *M.A.Pena et al.* 580 (holotype: SPF 218745; Isotype: HUEFS 224091). (Figures 4–5).

Trees 2–10 m tall. Leaves evenly distributed along the branches, spiraled; petioles 1–1.5 cm long, proximally keeled; leaf-blades 8–14 × 3–6 cm, coriaceous, oblong to oblong-elliptic, base acute to obtuse, projected over the top of the petiole, margin glandular-dentate to serrulate, slightly revolute, apex acuminate, abaxially with black dots, venation conspicuous on both faces, hypodromous to brochidromous, midrib adaxially, proximally prominent, sometimes prominent throughout, abaxially distally inconspicuous. Flowers 0.5–0.7 cm long, congested distally at the apex of the branches, cauliflorous, caducous; pedicels ca. 1 cm long.; bracts ca. 1 × 0.3 cm, leaflike, linear, apex acute, margin sparsely glandular, bracteoles 2, ca. 3 × 5 mm, coriaceous, ovate, apex apiculate to acute; sepals 5, obovate, outer sepals 2, 6–7 × 3–3.5 mm, margin glandular-denticulate, inner sepals 3, 7–8.5 × 3–4.5 mm, margin entire to sparsely glandular; petals 5, 5–6 mm long, ovate, slightly concave, free at apex, apex acute to obtuse; stamens 29–36, filaments 0.5–0.7 mm long, flattened, anthers 1.5–2 mm, long, basifixed, connectives 1–1.5 mm long, aristate; ovary ca. 1.5 mm long, pyriform, styles ca. 2.5 mm, erect, entire, not divided, stigmas capitate, glandular. Fruits 3.5 × 1–2.5 cm, globose, smooth, 4-locular, seed 1 per locule, valves indehiscent or irregularly dehiscent, distinctly capitate. Seeds ca. 1 × 0.5 cm.

**Additional material examined (paratype)**—BRAZIL: Minas Gerais, Conceição do Mato Dentro, 19°30'11" S, 43°23'04" W, 13 November 2012, *E.Tameirão Neto* 5169 (BHCB, RB); 15 August 2012,





**Figure 4.** Line drawing of *Ternstroemia rupestris*. A. Flowering branch. B. Longitudinal section of a flower in anthesis. C. Ovary in cross section (Illustration by J.A.Vieira).

# Neodiversity

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Figure 5. Vegetative and floral characters of *Ternstroemia rupestris*. A. Flowering branch. B. Fruiting branch (Photographs by O.Ribeiro).

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fl., *E. Tameirão Neto* & *C. V. Vidal* 5132 (BHCB); Parcela 24 para os estudos EIA do Mineroduto Morro do Pilar/MG-Linhares/ES, 19°09'16" S, 43°10'18" W, 28 July 2012, *E. M. Saddi et al.* 819 (RB).

**Etymology**—The epithet *rupestris* is related to its occurrence in *campos rupestres* of the Espinhaço Range.

**Distribution and ecology**—*Ternstroemia rupestris* occurs in seasonally dry submontane forest and campos rupestres over quartzite rocks. It occurs in a Cerrado and Atlantic Forest ecotone, being endemic to the State of Minas Gerais (Figure 2).

**Phenology**—The species blooms from July to December.

**Conservation**—*Ternstroemia rupestris* should be regarded as Endangered [EN], for being known only from few collections, restricted to only three localities in the Campos Rupestres areas of Minas Gerais that represent two IUCN locations (*sensu* IUCN 2001), with an area of occupancy (AOO) of 12 km<sup>2</sup>, based on user defined cell width of 2 km, and extend of occurrence (EOO) of 601.04 km<sup>2</sup> (Bachman *et al.* 2011). Even though some of the populations are found within protected areas (Parque Nacional da Serra do Cipó), the region as a whole has undergone severe fragmentation, with continuing decline inferred of area of occupancy, quality of habitat and number of locations or subpopulations. Thus, *T. rupestris* is assigned a status of EN: B2ab(ii,iii,iv).

**Taxonomic comments**—*Ternstroemia rupestris* is distinguished by being a 2–10 m tall tree, with 8–14 × 3–6 cm leaf-blades, oblong to oblong-elliptic, acuminate apex, glandular-denticulate and serrulate margin, outer sepals smaller than the inner ones, and a 4-locular ovary with 1 ovule per locule (Figures 4–5).

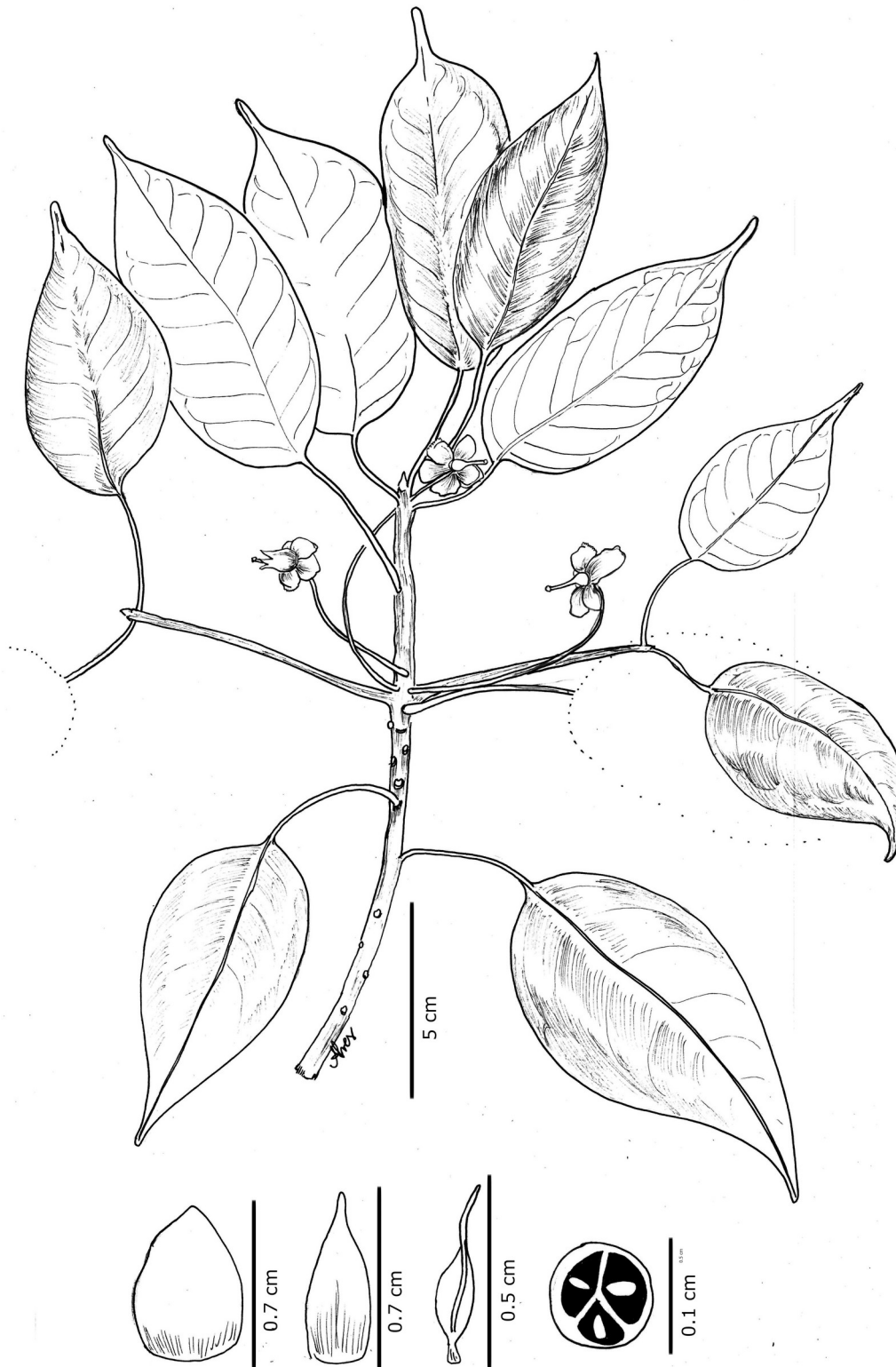
***Ternstroemia longipetiolata*** J.Vieira & D.Sampaio, *sp. nov.*

*Ternstroemia longipetiolata* resembles *T. subcaudata* Kobuski (1942: 312) due to its leaf-blades with caudate apex and 3-locular ovary with 1 ovule per locule. It differs due to its round leaf-blades bases (*vs.* acute in *T. subcaudata*) with long petioles, 2.8–3.5 cm long (*vs.* 1–3 cm long.) and pedicels 5 cm long (*vs.* 0.8–3 cm long).

**Typus**—BRAZIL: Roraima, Boa Vista, a 110 km do rio Anoá, na serra da Baieta, 11 November 1973, fl., *L. Coelho s.n.* (holotype: INPA 42106). (Figure 6).

Trees ca. 2 m tall. Leaves evenly distributed along the branches, spiraled; petioles 2.8–3.5 cm long, proximally keeled; leaf-blades 7–10.5 × 2.8–3.6 cm, coriaceous, ovate, base round, slightly unequal,





**Figure 6.** Line drawing of *Ternstroemia longipetiolata*. A. Flowering branch. B. Outer sepal. C. Petal. D. Stamen. E. Ovary in cross-section (Illustration by J.A.Vieira).

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projected on the part superior of the petiole, margin eglandular-denticulate, entire, slightly revolute, apex caudated, abaxially punctations present, venation conspicuous on both faces, midrib adaxially inconspicuous, abaxially proximally prominent, distally hyphodromous. Flowers 1–1.5 cm diameter; pedicel ca. 5 cm long; bracts caducous, not seen, bracteoles ca. 3.6 × 1.4 mm, ovate, apex acute, margin glandular; sepals 5, obovate, outer sepals 2, 6–7 × 3–3.5 mm, scarious, inner sepals 3, 6–7 × 3–4.5 mm, margins scarious; petals 5, ca. 8 mm long, ovate, slightly concave, apex free, acute to obtuse; stamens 39, filaments flattened, ca. 1.2 mm long, anthers ca. 2.5 mm long, basifixed, connectives 1.5–1.8 mm long, caudate; ovary ca. 1.0 mm long, pyriform, 3-locular, ovule 1 per locule, styles ca. 6 mm long, erect, entire, not divided, stigma discoid. Fruits not seen.

**Etymology**—The specific name *longipetiolata* is related to the long petioles.

**Distribution and ecology**—*Ternstroemia longipetiolata* occurs in rocky outcrop areas in Roraima (Figure 2).

**Phenology**—The species blooms in November

**Conservation**—*Ternstroemia longipetiolata* should be regarded Data Deficient [DD], due to its few known collections, lacking abundance and distribution data, and inadequate information to assess the risk of extinction based on its distribution and population status. More information and future research are required show which threatened classification is appropriate.

**Taxonomic comments**—*Ternstroemia longipetiolata* is distinguished by presenting ovate leaf-blades with entire margins and aristate apex, slightly unequal base, and 3–3.5 cm long petioles and ca. 5 cm long pedicels. In the field, this species presents purple flowers, making it significantly different from the remaining Amazonian species.

### Identification key for the Brazilian species of *Ternstroemia*

1. Membranaceous leaves ..... *T. delicatula* (Amapá, Amazonas, Pará)
- 1'. Papyraceous or coriaceous leaves ..... 2
  
2. Presence of a circumscissile dehiscence line near the base of the ovary; fruit with circumscissile dehiscence ..... 3
- 2'. Absent circumscissile dehiscence line at the base of the ovary; indehiscent fruit or dehiscent in irregular valves ..... 4
  
3. Bilobed stigma; ovary 2–4-locular, 1–2 ovules per locule ... *T. carnosa* (Bahia, Goiás, Minas Gerais)
- 3'. Peltate stigma; ovary 4–7-locular, 1 ovule per locule ..... *T. tepuiensis* (Amazonas)



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4. Bipartite, filiform style ..... *T. pungens* (Roraima)
4. Entire, robust style .....5
5. Absent or rare sparse punctation on the leaf blade .....6
- 5'. Densely present punctation on the leaf blade .....16
6. Spatulate or narrow-elliptic to narrow-oblongate leaf blade, 1.8–5 cm .....7
- 6'. Ovate, linear-lanceolate, or oblongate leaf blade, 4–15.5 cm .....10
7. Leaf with distinctly revolute blade margin, emarginate apex; 2-locular fruit, unequal number of seeds, 2 seeds in one locule, 3 in another ..... *T. prancei* (Amazonas)
- 7'. Leaf with flat, swollen blade margin, rounded, obtuse or acute apex; 2–3-locular fruit, equal number of seeds, 2–3 per locule .....8
8. Leaf with acute, mucronate blade apex, 2 locular fruit, 4 seeds per locule ..... *T. duidae* (Amazonas)
- 8'. Leaf with rounded to obtuse-acute, not mucronate blade apex, 2–3 locular fruit, 2 seeds per locule.....9
9. Axillary flowers and fruits ..... *T. aracae* (Amazonas)
- 9'. Cauliferous flowers and fruits ..... *T. bahiensis* (Bahia)
10. Subcaudate to caudate blade apex..... *T. urophora* (Amazonas)
- 10'. Rounded to acute or acuminate blade apex .....11
11. Papyraceous leaves, 3 locular ovary, 2 ovules per locule .....12
- 11'. Coriaceous leaves, 2–4 locular ovary, 1–2 ovules per locule, never 3 locular and 2 ovulate.....13
12. Oblanceolate leaf blade, acute-acuminate apex, acute, short-acuminate, or obtuse-rounded base ..... *T. candolleana* (Amazonas, Mato Grosso, Pará, Rondônia, Roraima, Tocantins)
- 12'. Linear-lanceolate leaf blade, acute apex, acute-attenuate base . . *T. candolleana* var. *angustifolia* (Amazonas)
13. Leaf with rounded to obtuse blade apex .....14
- 13'. Leaf with abruptly acuminate or long-acuminate blade apex.....15
14. Ovary 2-locular, 2 ovules per locule ..... *T. campinicola* (Amazonas, Roraima)
- 14'. Ovary 4-locular, 1 ovule per locule..... *T. megaphylla* (Amapá)

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15. Ovary 4-locular ..... *T. dehiscens* (Pará)
- 15'. Ovary 3-locular..... *T. subcaudata* (Amazonas, Roraima)
16. Peltate or 2–3 lobate stigma .....17
- 16'. Capitate or punctiform stigma.....18
17. Leaf blade 7.5–9 x 3–5 cm, distinctly crenate margin at the apex, peltate stigma ..... *T. alnifolia*  
**(Minas Gerais, São Paulo)**
- 17'. Leaf blade 1.9–6.5 x 1–2.5 cm, slightly crenulate margin along the length of the blade, 2–3 lobate stigma..... *T. cuneifolia* (Bahia, Minas Gerais, Rio de Janeiro, São Paulo)
18. Aristate blade leaf apex, rounded, unequal base, 3 locular ovary, 1 ovule per locule ..... *T. longipetiolata* (Roraima)
- 18'. Rounded to obtuse-acuminate blade leaf apex, acute or obtuse base, 2–5 locular ovary, 1–2 ovules per locule, never 3 locular and 1 ovulate.....19
19. Flowers and fruits congested in the nodes and apex of the branches, capitate stigma ..... *T. rupestris* (Minas Gerais)
- 19'. Flowers and fruits distributed along the branches, not congested in the nodes, punctiform stigma.....20
20. Fruit ca. 5 x 5 cm, seed ca. 2.5 cm length, 2 locular ovary, 1 seed per locule ..... *T. krukoffiana*  
**(Amazonas)**
- 20'. Fruit 1–3.5 x 0.5–1.5 cm, seed 1–2 cm length, 3–5 locular ovary, 1–2 seeds per locule.....21
21. Leaf with distinctly dentate margin, (2)4 locular ovary, 1 seed per locule ... *T. dentata* (Amazonas, Mato Grosso, Pará, Rondônia)
- 21'. Coriaceous leaves, 2–4 locular ovary, 1–2 ovules per locule, never 3 locular and 2 ovulate..... *T. brasiliensis* (Alagoas, Bahia, Espírito Santo, Minas Gerais, Paraná, Rio de Janeiro, Rio Grande do Sul, Santa Catarina, São Paulo, Sergipe)

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