

Studies in the Neotropical *Apocynaceae* LI: a new species of *Laubertia* (*Apocynaceae*) from Brazil

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Abstract. A new species of *Laubertia* from Brazil supported by morphological characters and molecular data is described and illustrated. *Laubertia brasiliensis* sp. nov. is closely related to *L. contorta* from northern Mesoamerica and Mexico, but differs by its straight corolla tube, whereas *L. contorta* has a spirally contorted corolla tube. A key to the species of *Laubertia* is also provided.

Resumen. Se describe e ilustra una nueva especie de *Laubertia* de Brasil de acuerdo con caracteres morfológicos y datos moleculares. *Laubertia brasiliensis* sp. nov. está estrechamente relacionada con *L. contorta* del norte de Mesoamérica y México, pero tiene el tubo de la corola recto, a diferencia de *L. contorta*, que lo tiene retorcido en espiral. Se incluye también una clave para las especies de *Laubertia*.

Keywords. *Apocynoideae*, *Echiteae*, *Laubertiinae*, Neotropics.

Palabras clave. *Apocynoideae*, *Echiteae*, *Laubertiinae*, neotrópicos.

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INTRODUCTION

Laubertia A.DC. —*Apocynaceae* Juss.— grows in tropical and subtropical regions of Mexico, Guatemala, and Belize, and from Colombia to Bolivia. It is composed of woody vines with milky sap, cymose inflorescences with scarious bracts, sepals without colleters at the base of the adaxial surface, corolla with an annular corona around the mouth, the tube without free corona lobes within, corolla lobes totally reflexed towards the tube during the anthesis, moniliform follicles and truncate seeds, comose at the micropylar end (Morales 2002, 2009). The first revision of *Laubertia* was conducted by Woodson (1936), who accepted four species, three of them restricted endemisms: *L. peninsularis* Woodson, *L. pringlei* (Greenm.) Woodson, and *L. sanctae-martae* (Rusby) Woodson, whereas *L. boissieri* A.DC. was known only from four collections from Ecuador and Peru. Shortly after, Woodson (1938) proposed *L. contorta* (M.Martens & Galeotti) Woodson, and reduced *L. pringlei* into the synonymy of that species. The most recent study (Morales 2002), accepted three species: *L. boissieri* —including *L. sanctae-martae*—, *L. contorta*, and *L. peninsularis*.

The research of phylogenetic relationships of tribe *Echiteae* Bartl. (Morales & al. 2017), and the revision of specimens for the *Flora of Brazil* (Morales in prep.) revealed a new species endemic to the Amazon basin

supported by molecular data and morphological characters, which represents the first record of *Laubertia* for the country. This paper aims to describe this new species, including an illustration and a key to the currently accepted species of *Laubertia*.

MATERIAL AND METHODS

Material of *Laubertia* of the following herbaria was reviewed: B, BM, BR, C, CIIDIR, CM, COL, CR, F, G, G-BOIS, G-DC, GH, IAN, INPA, K, LPB, MEXU, MG, MICH, MO, NY, O, P, P-HB, QCNE, RB, S, UB, US, USF, including all the type collections. The descriptions of the morphological structures follow Font Quer (1953), Radford & al. (1974), and Harris & Harris (1994).

RESULTS

Key to the species of *Laubertia*

1. Corolla tube straight, not spirally contorted around the stamens; South America 2
- Corolla tube spirally contorted around the stamens; Mexico and northern Central America 3
2. Inflorescences shorter than the subtending leaves; peduncle 7–9 mm; corolla lobes 8–9 mm; ovary 1–1.2 mm; seeds with a comma up to 9 mm
..... *L. brasiliensis* sp. nov.

- Inflorescences longer than the subtending leaves; peduncle 22–80 mm; corolla lobes 10–18 mm; ovary 1.5–2 mm; seeds with a comma 2.5–4.8 cm *L. boissieri*
- 3. Inflorescence with ferruginous indument; corolla white, the tube 10–14 mm long; anthers 5 mm long; Guatemala and Belize *L. peninsularis*
- Inflorescence without ferruginous indument; corolla purple, the tube 18–25 mm; anthers 6.5–7.6 mm long; Mexico *L. contorta*

Description of the new species

Laubertia brasiliensis J.F.Morales, sp. nov.

LSID: urn:lsid:ipni.org:names:77167102-1

Type: Brazil, Pará, south bank of Amazonas, ca. 2 km E of Arumanduba, 52° 27'W, 1°27'S, 27 Jul. 1961, *W. Egler & H. Irwin 46037* (holo-: NY). Fig. 1.

Diagnosis.—*Laubertia brasiliensis* sp. nov. differs from *L. contorta* (M.Martens & Galeotti) Woodson by its straight corolla tube —vs. spirally contorted in *L. contorta*—, and from *L. boissieri* A.DC. by its inflorescences shorter than the subtending leaves —vs. inflorescences longer than the subtending leaves—, smaller corolla lobes —8–9 mm vs. 10–18 mm in *L. boissieri*—, and seeds with a smaller apical comma —0–9 mm vs. 2.5–4.8 cm in *L. boissieri*.

Liana. Stems with white latex; branchlets terete to subterete when old, very inconspicuously puberulent when young, glabrate at maturity; nodal colleters up to 0.4 mm long. Leaves opposite; petioles 3–9 mm long; blade 4–10.3 × 1.4–4 cm, membranaceous, ovate to ovate-elliptic, glabrous adaxially, inconspicuously puberulent along the midrib abaxially, the apex shortly acuminate, the base obtuse truncate to obtuse, the margin not revolute. Inflorescence shorter than the subtending leaves, axillary, inconspicuously puberulent, few-flowered; peduncle 7–9 mm long; pedicels 6–9 mm long; bracts 1–1.5 × 0.3–0.4 mm, linear to linear-ovate, scarious. Sepals 6–7 × 0.9–1.2 mm, narrowly ovate, acuminate, inconspicuously puberulent; corolla purple, the lobes darker towards center and orange at margins, glabrous or glabrescent externally, the tube 14–15 × 2.7–3.7 mm, not twisted around the stamens; lobes 8–9 × 2.5–3.5 mm, narrowly obovate, totally reflexed during the anthesis; anthers 5.2–5.4 mm long, glabrous dorsally, included; style head 1.9–2.1 mm long; nectary 1–1.2 mm, 5-lobed, ovary as long as the nectary. Follicles 36–38 cm × 0.3–0.6 mm, glabrous, inconspicuously moniliform; seeds 15–17 mm long, glabrous, coma up to 9 mm or absent, tan.

Distribution and habitat.—Endemic to Brazil to the states of Para and Amazonas, growing in river margins and igarapó forest, from 100 to 200 m a.s.l.

Phenology.—Flowering occurs in February and July and fruiting in July.

Additional specimen examined.—Brazil: Amazonas, Rio Solimões, Igarapé Camatiá, Sao Paulo de Olivença, 68°55'W, 03°28'S, 27 Feb. 1977, *G. Prance & al. 24632* (CR, INPA, NY).

DISCUSSION

Laubertia was placed in the subtribe *Prestoniinae* Pichon ex M.E.Endress (Endress 2014), together with *Hylaea* J.F.Morales, *Prestonia* R.Br., and *Rhodocalyx* Müll. Arg., which have in common annular coronas around the corolla mouth or free corona lobes opposite to the anthers (Woodson 1936; Morales 1997, 1999; Morales & Liede-Schumann 2016). Based on the presence of an annular corona around the mouth, *Laubertia* had been considered as sister of *Prestonia* (Woodson 1936; Morales 2002), but the evidence provided by molecular data (Morales & al. 2017) showed that these genera are not even closely related and both are nested in different subtribes —*Laubertinae* J.F.Morales, M.E.Endress & Liede and *Prestoniinae*.

Laubertinae comprises *Hylaea* and *Laubertia*. The latter can be recognized from the former by its sepals without colleters on the base of the adaxial surface —vs. sepals with one colleter at the base of the adaxial surface—, corolla with an annular corona around the mouth —vs. annular corona absent— and corolla tube without free corona lobes within —vs. tube with free corona lobes.

Morales & al. (2017) published a phylogenetic study of the tribe *Echiteae* based on plastid —*trnL*F, *matK*-intron K, *rpl16*— and nuclear data —ITS—, in which *L. brasiliensis* sp. nov. was treated as *Laubertia* sp. nov. According to that study, *L. brasiliensis* sp. nov. is closely related to *L. contorta* from Mexico and northern Central America but differs by its tube corolla, not twisted, and disjunct geographical distribution. *Laubertia brasiliensis* sp. nov. may be distinguished from *L. boissieri* by its shorter inflorescences, smaller corolla lobes —lobes 8–9 mm vs. 10–18 mm—, and seeds with a smaller apical comma —0–9 mm vs. 2.5–4.8 cm.

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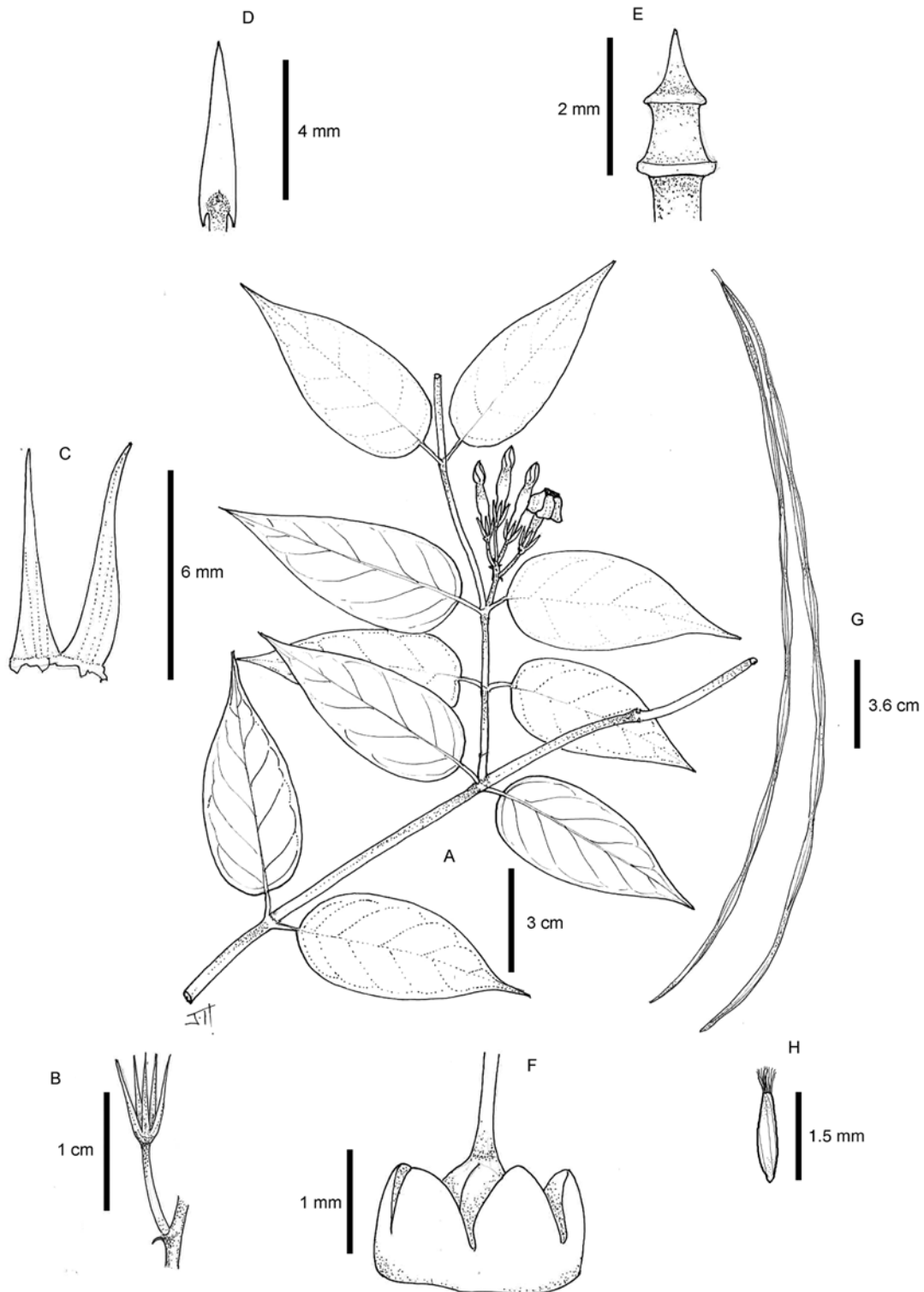


Fig 1. *Laubertia brasiliensis* J.F.Morales, sp. nov.: **a**, flowering branch; **b**, calyx, bract, and pedicel; **c**, adaxial view of two sepals; **d**, anther; **e**, style-head; **f**, nectary and ovary; **g**, follicles; **h**, seed [a, g, *G. Prance & al. 24632* (CR); b-h, *W. Egler & H. Irwin 46037* (NY)].

REFERENCES

- Endress M.E., Liede-Schumann S. & Meve U. 2014. An updated classification for *Apocynaceae*. *Phytotaxa* 159: 175–194. <https://doi.org/10.11646/phytotaxa.159.3.2>
- Font Quer P. 1953. *Diccionario de Botánica*. Labor S.A, Barcelona.
- Harris J.G. & Harris M.W. 1994. *Plant identification terminology: an illustrated glossary*. Spring Lake, Utah.
- Morales J.F. 1997. A synopsis of the genus *Prestonia* (*Apocynaceae*) section *Tomentosae* in Mesoamerica. *Novon* 7: 59–66.
- Morales J.F. 1999. *Hylaea* (*Apocynaceae-Apocynoideae*), a new genus from South America. *Novon* 9: 83–85
- Morales J.F. 2002. Studies in Neotropical *Apocynaceae* I: a revision of the genus *Laubertia*. *Rhodora* 104: 170–185.
- Morales J.F. 2009. Estudios en las *Apocynaceae* Neotropical XXXV: La familia *Apocynaceae* (*Apocynoideae*, *Rauvolfioideae*) en Guatemala. *Darwiniana* 47: 140–184.
- Morales J.F. & Liede-Schumann S. 2016. The genus *Prestonia* (*Apocynaceae*) in Colombia. *Phytotaxa* 265: 204–224. <https://doi.org/10.11646/phytotaxa.265.3.2>
- Morales J.F., Endress M.E. & Liede-Schumann S. 2017. Sex, drugs and pupusas: Disentangling relationships in *Echiteae* (*Apocynaceae*). *Taxon* 66: 623–644. <https://doi.org/10.12705/663.7>
- Radford A.E., Dickison W.C., Massey J.R. & Bell C.R. 1974. *Vascular Plant Systematics*. Harper & Row, New York.
- Woodson R.E. Jr. 1936. Studies in the *Apocynaceae*. IV. The American genera of *Echitoideae*. *Annals of the Missouri Botanical Garden* 23: 169–438.
- Woodson R.E. Jr. 1938. *Apocynaceae*. *North American Flora* 29: 103–192.