



A new species of *Passiflora* L. (Passifloraceae), from Espírito Santo, Brazil

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Abstract

In this paper we describe and illustrate *Passiflora junqueirae*, a new species for the Brazilian flora. The new species was collected in the Caparaó National Park, Espírito Santo, Brazil, and belongs to the genus *Passiflora*, subgenus *Passiflora*, supersection *Stipulata*, section *Granadillastrum*.

Resumo

No presente artigo descrevemos e ilustramos *Passiflora junqueirae*, uma nova espécie para a flora brasileira. A espécie foi coletada no Parque Nacional do Caparaó, Espírito Santo, Brasil, e pertence ao gênero *Passiflora*, subgênero *Passiflora*, superseção *Stipulata*, seção *Granadillastrum*.

Key words: taxonomy, vines, *Granadillastrum*, *Stipulata*, Passion flowers.

Introduction

The genus *Passiflora* Linnaeus (1753: 955) is the largest genus of the family Passifloraceae *sensu stricto*. The genus has a tropical and subtropical distribution, and contains more than 525 species (MacDougal & Feuillet 2004: 27). In Brazil, 141 species are recorded, of which 85 are endemic (Bernacci *et al.* 2014). Taxonomically, *Passiflora* is subdivided into four subgenera: *P.* subg. *Astrophea* (Candolle 1822: 435) (Masters 1872: 629), *P.* subg. *Deidamioides* (Harms 1923: 55), (Killip 1938: 25), *P.* subg. *Decaloba* (Candolle 1822: 435), (Reichenbach 1828: 132) and *P.* subg. *Passiflora*. The subgenus *Passiflora* retains most of the features of the Passifloraceae: presence of tendrils, large and colorful flowers (that can be purple, lilac, blue, violet, red, or mixtures of these colors), a conspicuous calyx tube and a complex corona of filaments, ranging from one to multiple series. Leaves entire or 3- to 7-lobed, not variegated and petiole glands usually present (MacDougal & Feuillet 2004: 30). The genus *Passiflora*, subg. *Passiflora* is further subdivided into six supersections. Among these, the supersection *Stipulata* MacDougal & Feuillet (2004: 31) is characterized by the following features: large, subreniform or oblong-ovate stipules; free bracts; entire or 3-lobed leaves; upright or rarely pendent flowers in hummingbird-pollinated species; generally with a large and complex corona of filaments (Ulmer & MacDougal 2004: 274). The Section *Granadillastrum* Triana & Planchon (1873: 127) retains most of the characteristics of the supersection and is the most species rich and diverse (Ulmer & MacDougal 2004: 275). Morphological studies performed, based on the material collected, fixed and deposited in herbarium, indicate a new species for the Brazilian flora, which is described and illustrated in this paper.

Taxonomy

Passiflora junqueirae Imig & Cervi, *sp. nov.* (Fig. 1 A–G)

Diagnosis:—*Passiflora amethystina* et *P. loefgrenii* similis sed lobulis foliorum oblongo-lanceolatis et absentis

glandulis in sinibus, alternatis bracteis, corona 7 seriebus filamentorum disposita, petalis et sepalis albis cum maculis lilacinis differt.

Type:—BRAZIL. Espírito Santo: National Park of Caparaó, 20°28'22,14"S, 41°49' 30,23"W. s.d. Cultured stakes at EMBRAPA CERRADOS, Planaltina—DF, 03 February 2014, *D.C. Imig; N.T.V. Junqueira & F.C. Pinheiro 296* (Holotype MBM!, Isotypes UPCB!, RB!, VIES! MBML!).

Vine, herbaceous, sparsely hairy, especially on the petioles, young stems, peduncles, flower buds and outer surface of calyx tube, with usually inconspicuous trichomes, 0.4–1.0 mm long. Stem cylindrical, striate, light green. Stipules persistent, reniform, 1.3–2.2 x 0.4–0.6 cm, inserted laterally on the stem, membranous, apex acute to acuminate, base asymmetric, margin entire, glabrous, glaucous on abaxial surface. Leaves with cylindrical petioles 3.0–5.5 cm, grooved on adaxial surface, 3.0–5.5 cm with 3–6 stipitate glands, usually 3–4 glands dispersed from the middle portion of petioles, and 2 glands near the blade. Blades 3-lobed, oblong-lanceolate lobes, median lobe 5.0–9.0 x 1.0–1.5 cm, lateral lobes 5.0–7.5 x 0.7–1.4 cm, divaricate to slightly ascending, margin entire and without glands in the sinus, apex obtuse to acute, acuminate, base truncate and sub-peltate, petiole inserted 1.4–2.3 mm from the base into the blade, membranous, glabrous, glaucous on abaxial surface, three main veins from the base, secondary veins reticulate. Tendrils well developed, thin, glabrous or sparsely hairy at the base. Peduncles solitary, 4.5–9.5 cm, pedicel 0.5–0.8 cm. Bracts alternate, linear, 0.3–0.5 cm, inserted from the median portion, alternating 0.8–1.0 cm from each other, apex acute, base truncate, margin entire, membranous, early deciduous, leaving discrete brown scar. Flowers 7.0–10.5 cm diam.; calyx tube campanulate, 0.4–0.5 x 0.8–1.0 cm, outer surface sparsely hairy, glaucous; sepals oblong-lanceolate 2.0–2.3 x 0.4–0.5 cm, fleshy, concave, apex obtuse, abaxial surface light green, sparsely hairy, apex acute, dorsal awns 2.0–3.4 cm, adaxial surface white with slight lilac nuances; petals oblong-lanceolate, 2.0–2.7 x 0.7–0.9 cm, membranous, apex obtuse, white on both faces, with slight lilac nuances on adaxial surface. Corona of filaments in seven unequal series, filaments of outer series cylindrical, 1.0–1.4 cm long., radiating, dark purple at the base, one white band in the middle portion, followed by light lilac to white at the apex; filaments of second series flattened at the base, the upper third filamentous until the apex (awl-shaped), radiating, 1.0–1.4 cm long., dark purple at the base, with one white band in the middle portion, followed by light lilac to white at the apex; the remaining five series of filaments threadlike, (0.3) 0.5–0.7 cm long., capitate or bilobed at the apex, dark purple, erect; operculum membranous at the base, 1.0–1.5 mm, followed by a filamentous portion with 4.0–4.5 mm, apex of the membranous portion slightly plicate, with dentiform projections on the base of the filamentous portion, facing the inner side of the calyx tube, erect filamentous portion, bordering the androgynophore, with filaments capitate or bilobed at the apex, dark purple; nectariferous ring membranous, 0.1–1.5 mm long., revolute at the apex; limen membranous, ca. 0.5 cm, adhering to the androgynophore, free portion ca. 0.1 cm, projecting horizontally and wavy at the apex. Androgynophore 1.3–1.5 cm long., light green spotted with purple; staminal filaments 0.6–0.8 cm long., light green spotted with purple; styles ca. 0.6 cm long., light green spotted with purple. Ovary oblong, tomentose, usually covered by yellowish trichomes. Fruits berries, elliptical, yellowish green when ripe, sparsely hairy. Seeds obovate, 0.5 x 0.3 cm, rigid, toothed at the apex, dark brown, deeply reticulated. Aril transparent, with slightly acidic flavor.

Etymology:—The epithet honors Dr. Nilton Tadeu Vilela Junqueira, researcher in Embrapa Cerrados-Planaltina, DF.

Distribution and habitat:—*Passiflora junqueirae* is known only from Espírito Santo state, in Brazil, in the National Park of Caparaó, in elevations from 1,400 to 2,100 m. In nature, the flowers reach anthesis in the morning.

Paratypes:—BRAZIL. Espírito Santo. National Park of Caparaó, 20°28'22"S, 41°49'30"W. 2100m elev., 19 December 2011, *D.C. Imig & A.C. Cervi 45* (HACC!- Centro Universitário Campos de Andrade, not indexed); *ib.*, 10 August 1999, *F.C. Campos Neto s.n.* (CEN!); *ib.*, 17 September 2013, *F.C. Campos Neto s.n.* (CEN!, UPCB!, HRJ!, UB!, NY!, MO!, BHMH!, FLOR!, ACCH!); Cultured stakes at EMBRAPA CERRADOS, Planaltina—DF, 31 January 2014, *F.C. Pinheiro & N.T.V. Junqueira 844* (VIES!, HCF!); *ib.*, 24 December 2013, *N.T.V. Junqueira s.n.* (CURD!, UPCB!).

Discussion:—*Passiflora junqueirae* Imig & Cervi is morphologically similar to *P. amethystina* J.C. Mikan (1825: 37) and *P. loefgrenii* Vitta (1997: 210), but several characteristics distinguish these species. *P. junqueirae* is a plant sparsely hairy, leaves are 3-lobed and the lobes are oblong-lanceolate, the base of the blade is sub-peltate and without glands in sinus. The bracts are linear and alternate. It has seven series of filaments in the corona, the second series of filaments are flattened from the base to the middle portion, and filamentous until the apex (awl-shaped). The sepals have dorsal awns 2.0–3.5 cm long, petals and the adaxial side of the sepals are white, with discrete portions of pale lilac, ovary tomentose (Fig. 2, A–E). *P. amethystina* differs from *P. junqueirae*, being totally glabrous, except for the ovary, the 3-lobed leaves have lobes which are oval or elliptical, the base of the blade is cordate or subcordate and has glands in the sinus. The bracts are ovate or ovate-lanceolate and verticillate. Corona of filaments is in 4–5 rarely

6 series, with threadlike filaments, radially, not showing flattened expansion, the sepals have dorsal awns, but do not exceed 1.0–1.5 cm, the petals and adaxial side of the sepals are purple. *P. loefgrenii* is vegetatively similar to *P. amethystina*, but differs from *P. junqueirae*, because the bracts are ovate-lanceolate, verticillate.

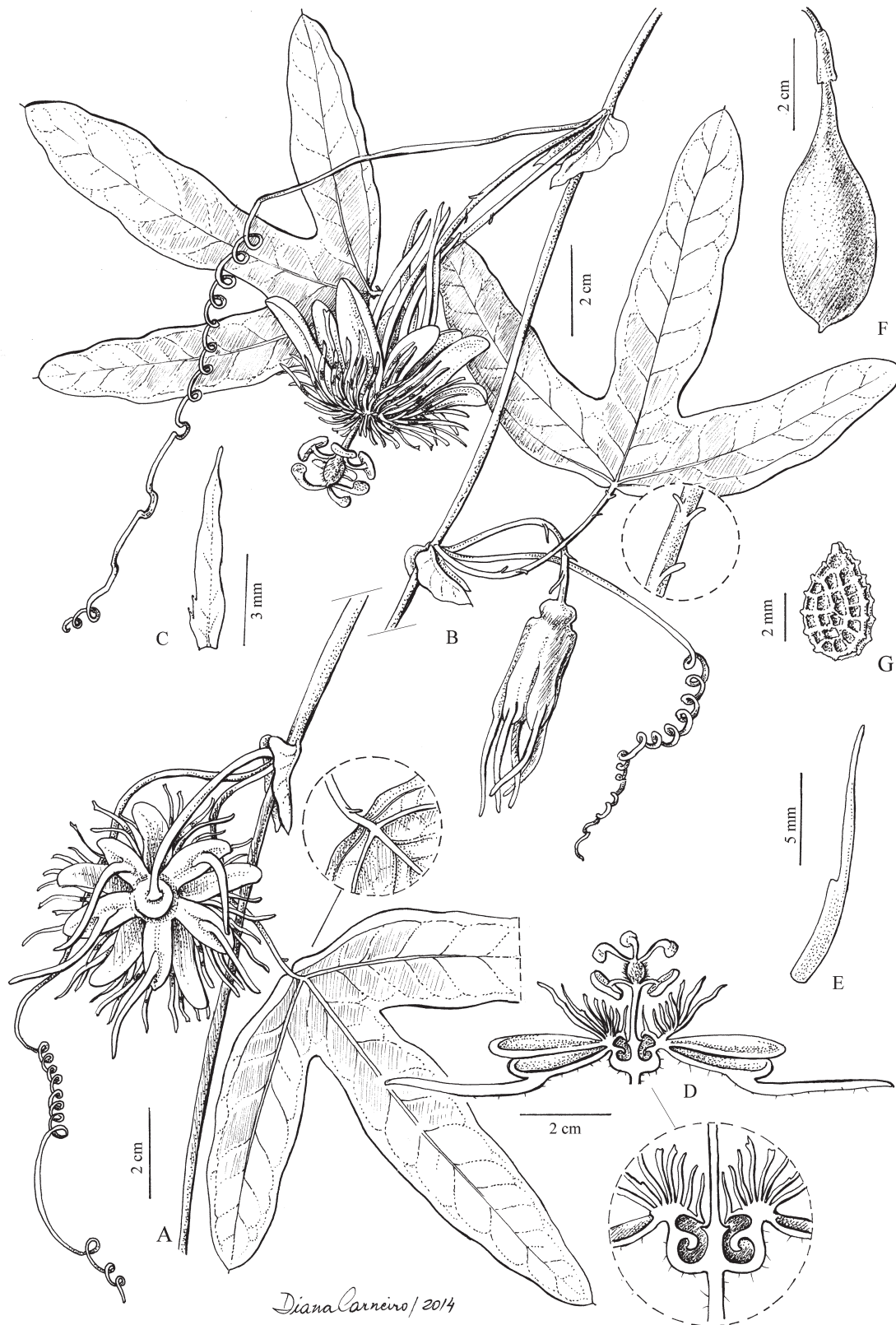


FIGURE 1. *Passiflora junqueirae*. A. Detail of flower in abaxial surface; B. Habit and detail of flowering branch. C. Detail of a bract. D. Flower detail in longitudinal section. E. Detail of second series of filaments. F. Fruit. G. Seed. (A–G based on D.C. Imig *et al.* 296).

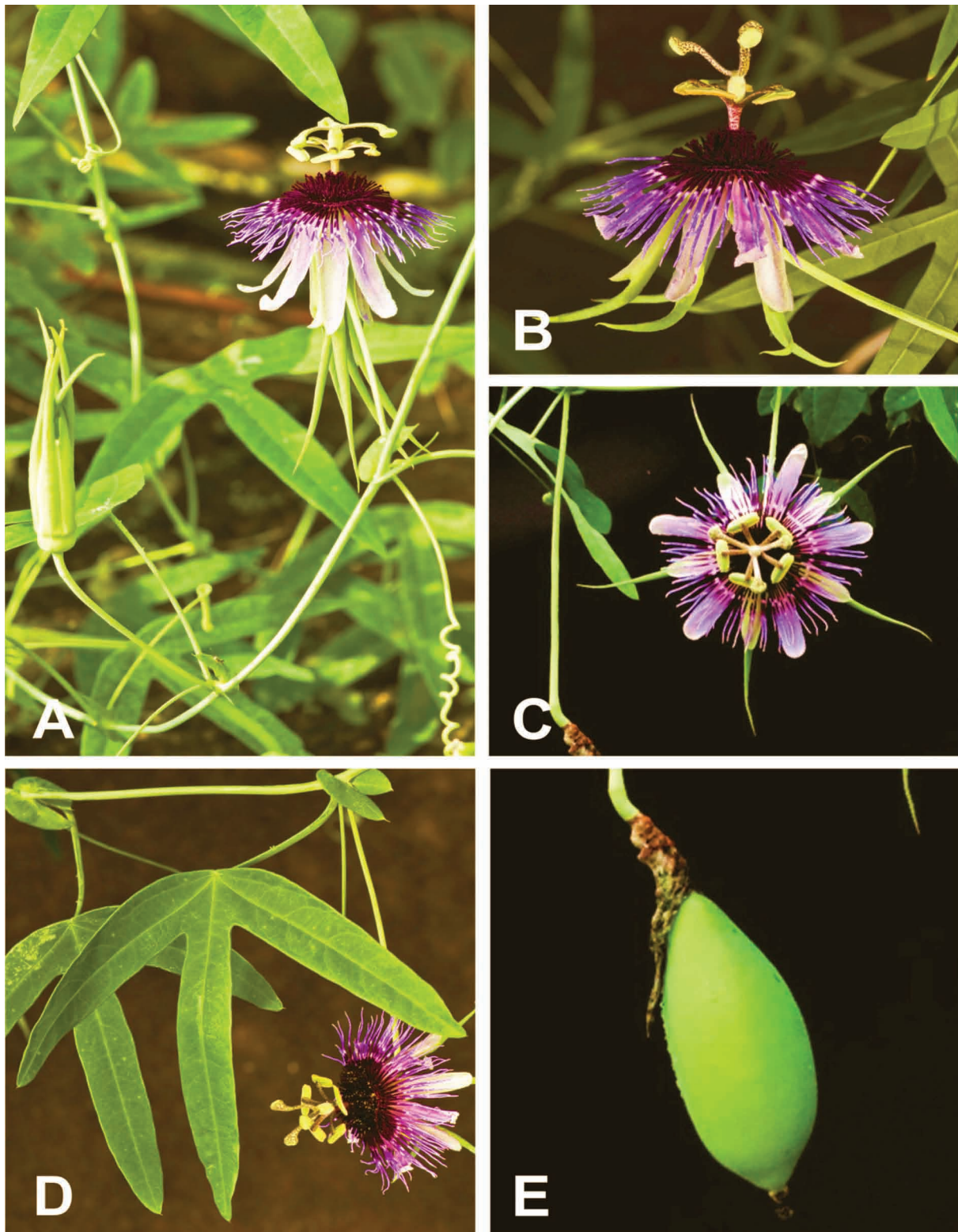


FIGURE 2. *Passiflora junqueirae*. A. Habit and detail of branch, flower bud and flower. B. Detail of flower. C. Flower frontal view. D. Details of leaf and lobes of blade. E. Fruit. Images: A, B, C, by Fernando da Costa Pinheiro; D, E by Nilton Tadeu Vilela Junqueira.

Key to *P. junqueirae* and related species:

1. Blades with oblong-lanceolate lobes, glands absent in sinus, bracts linear and alternate, sepals and petals with the adaxial surface white with discrete portions of light lilac *P. junqueirae*
- Blades with elliptic to oval lobes, glands present in sinus, bracts ovate and verticillate, petals and sepals with the adaxial surface purple or lilac.....2

2. Ovary glabrous..... *P. loefgrenii*
 - Ovary tomentose..... *P. amethystina*

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