



## Lectotypes for species of *Passiflora* L. (Passifloraceae) described by João Barbosa Rodrigues

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### ABSTRACT

During taxonomic review of the Brazilian species of the *Passiflora* subgenus *Astrophea* and *P.* subg *Decaloba*, six names published by the Brazilian botanist João Barbosa Rodrigues were found in need of discussion: *Passiflora alliacea*, *P. amalocarpa*, *P. cabedelensis*, *P. hexagonocarpa*, *P. hydrophila* and *Tacsonia coccinea*. The original illustrations are here designated as lectotypes for *P. alliacea*, *P. amalocarpa*, *P. cabedelensis* (a synonym of *P. amalocarpa*), *P. hexagonocarpa*, *P. hydrophila* (a synonym of *P. costata*) and *Tacsonia coccinea* (a synonym of *P. spinosa*).

**Keywords:** *Astrophea*, *Decaloba*, nomenclature, Passifloraceae, types

*Passiflora* L. is the largest genus of Passifloraceae with about 520 species (Feuillet & MacDougal 2007), the majority of which occur in the Americas and only about 20 that occur in India, China, Southeast Asia, Australia and islands of Oceania (Bernacci 2003). In Brazil, Passifloraceae occurs throughout the country and in practically all vegetation formations, with about 150 species in four genera: *Ancistrothyrsus* Harms, *Dilkea* Mast, *Mitostemma* Mast. and *Passiflora* (BFG 2015). *Passiflora* is divided into five subgenera with four of these, *Astrophea* (DC.) Mast., *Deidamioides* (Harms) Killip, *Decaloba* (DC.) Reich. and *Passiflora*, occurring in Brazil.

João Barbosa Rodrigues, an important Brazilian botanist, published several species descriptions and contributed immensely to the knowledge of the Brazilian flora, including important works on the families Arecaceae and Orchidaceae (Mori & Ferreira 1987). For the family Passifloraceae, more specifically the *Passiflora* subgenera *Astrophea* and *Decaloba*,

he described four species (*Passiflora alliacea*, *P. hexagonocarpa*, *P. hydrophila* and *Tacsonia coccinea*) and two species (*Passiflora amalocarpa* and *P. cabedelensis*), respectively.

Between 1883 and 1890 Barbosa Rodrigues directed the Museu Botânico do Amazonas, adding more than 3,000 cataloged specimens to its herbarium collection. He also created the scientific journal *Velloso*, in honor of Frei Velloso, which published only one issue in Manaus in the year 1888, which was subsequently removed from circulation because of a graphics problem; a second edition, with four volumes, was reprinted in Rio de Janeiro in 1891 (Sá 2001).

According to Stauffer *et al.* (2016), the fate of Barbosa Rodrigues' plant collection is quite confusing and there is little information available. Many of the specimens collected by Barbosa Rodrigues, including types, were lost after the closing of the "Museu Botânico do Amazonas" in 1890 (Mori & Ferreira 1987), because during the seven years that

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the museum and herbarium were functioning, there were budgetary problems that prevented it from functioning as planned (Sá 2001). Some information refers to Barbosa Rodrigues while he was director of the Jardim Botânico do Rio de Janeiro, and that he kept most of his collection at his home in Rio de Janeiro. However, there are reports that the collection was lost due to a fire, while others support a theory that it was lost during a flood, and that the exsiccates that were not lost disappeared after his death (Stauffer *et al.* 2016).

In addition to being a botanist, Barbosa Rodrigues also was a painter, and he illustrated the species that he himself described. Recent lectotypification work on the species described and illustrated by him were undertaken by Feuillet (2010), Buzatto *et al.* (2011), Buzatto *et al.* (2013), Freitas *et al.* (2016), Koch *et al.* (2016) and Stauffer *et al.* (2016). Since there is no type material for these taxa, according to Art. 9.11 of the Code of Nomenclature for algae fungi and plants (McNeill *et al.* 2012) it is necessary to designate lectotypes.

After the review of Brazilian species of the *P.* subgenera *Astrophea* and *Decaloba* in Brazilian and foreign herbaria did not reveal any types for the species described by Barbosa Rodrigues, the illustrations he published for these species (Rodrigues 1888; 1891; 1901) are here designated as lectotypes. Thus, six illustrations are here designated as lectotypes of *Passiflora alliacea*, *Passiflora amalocarpa*, *Passiflora cabedelensis*, *Passiflora hexagonocarpa*, *Passiflora hydrophila* and *Tacsonia coccinea*.

A detailed study was carried out based on the *princeps* work for the species *Passiflora alliacea*, *P. amalocarpa*, *P. cabedelensis*, *P. hexagonocarpa*, *Passiflora hydrophila* and *Tacsonia coccinea*, and on the bibliography of Mori & Ferreira (1987), a discussion of the life of João Barbosa Rodrigues. The classification followed the guidelines established by the Melbourne Code (McNeill *et al.* 2012).

### Typifications

1. *Passiflora alliacea* Barb. Rodr., Contr. Jard. Bot. Rio de Janeiro 1: 59. 1901. Lectotype designated here: BRAZIL, Rio de Janeiro: Restinga, Barbosa Rodrigues s/n, Contributions du Jardin Botanique de Rio de Janeiro, vol.1, tab. 7 (1901).

2. *Passiflora amalocarpa* Barb.Rodr., Velloso 1: 29, tab. 12. 1888; ed. 2, vol. 1: 25 e 80. 1891; 3(1), tab. 12. 1891. Lectotype designated here: BRAZIL, Amazonas: Manaus, Igarapé do Curro, Barbosa Rodrigues 964, Velloso 1, tab. 12 (1888), Velloso 3(1), tab. 12 (1891).

3. *Passiflora cabedelensis* Barb.Rodr., Velloso ed. 2, vol. 1: 30 e 81. 1891; 3(2), tab. 13c. 1891. Lectotype designated here: BRAZIL, Paraíba: Cabedelo, Forte de Santa Catarina do Cabedelo, Barbosa Rodrigues s.n., Velloso 3(2), tab. 13c (1891).

4. *Passiflora hydrophila* Barb.Rodr., Velloso 1: 26, tab. 13. 1888; ed. 2, vol. 1: 26 e 81, 1891; 3, tab. 13. 1891. Lectotype designated here: BRAZIL, Rio Negro, Barbosa Rodrigues

195, Velloso 1, tab. 13 (1888), Velloso 3, tab. 13 (1891).

5. *Passiflora hexagonocarpa* Barb.Rodr., Velloso 1: 24, tab. 9. 1888; ed. 2, vol. 1: 24 e 80. 1891; 3, tab. 9. 1891. Lectotype designated here: BRAZIL, Amazonas: Manaus, Barbosa Rodrigues 304, Velloso 1, tab. 9 (1888), Velloso 3, tab. 9 (1891).

6. *Tacsonia coccinea* Barb.Rodr., Velloso 1: 26. 1888. Velloso ed. 2, vol. 1: 23 e 80. 1891. Lectotype designated here: BRAZIL, Amazonas: Manaus, Barbosa Rodrigues 164, Velloso 1, tab. 11 (1888), Velloso 3, tab. 11 (1891).

*Passiflora alliacea* was described by Barbosa Rodrigues with the type locality being a restinga environment in Rio de Janeiro. The species flowers in December and fruits in January, and the specific epithet was based on the garlic odor emitted by its fruits. Both *P. amalocarpa* (1888 & 1891:25) and *P. cabedelensis* (1891:30) were described by Barbosa Rodrigues as apetalous species, and he distinguished them from each other by the number of series of filaments on the corona and by site of collection; while the first has two series of filaments on the corona and occurs near Manaus (Igarapé do Curro, AM), the second is characterized by having four series of filaments on the corona and occurs in restinga (Cabedelo, PB). *Passiflora hexagonocarpa* was described by Barbosa Rodrigues from the state of Amazonas in the municipality of Manaus, with flowering and fruiting from January to March. *Tacsonia coccinea* was also described from a specimen from the state of Amazonas in Igarapé near Manaus. *Passiflora hydrophila* was described from inundated sites, flooded forests of the Rio Negro, in the month of August.

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