



Anales del Jardín Botánico de Madrid

ISSN: 0211-1322

anales@rjb.csic.es

Consejo Superior de Investigaciones

Científicas

España

Freitas, Joelcio; Alves-Araújo, Anderson; González, Favio  
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Anales del Jardín Botánico de Madrid, vol. 73, núm. 1, 2016, pp. 1-2  
Consejo Superior de Investigaciones Científicas  
Madrid, España

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# Lectotypifications and new synonyms of *Aristolochia* (Aristolochiaceae) described by the Brazilian botanist João Barbosa Rodrigues

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## Abstract

Freitas, J., Alves-Araújo, A., & Favio González, F. 2016. Lectotypifications and new synonyms of *Aristolochia* (Aristolochiaceae) described by the Brazilian botanist João Barbosa Rodrigues. *Anales Jard. Bot. Madrid* 73(1): e030.

Taxonomic, nomenclatural and typification issues regarding *Aristolochia chrysochlora* Barb. Rodr., *A. echinata* Barb. Rodr. and *A. silvatica* Barb. Rodr. (Aristolochiaceae) are discussed. The lectotypes are designated based on the illustrations made by J. Barbosa Rodrigues, and published next to the corresponding protologues. Additionally, *A. chrysochlora* and *A. echinata* are subordinated to *A. arcuata* Mast., and *A. tamnifolia* (Klotzsch) Duch., respectively. We also designated the lectotypes for the latter two species.

**Keywords:** Brazil, João Barbosa Rodrigues, lectotypification, Piperales.

## Resumen

Freitas, J., Alves-Araújo, A., & Favio González, F. 2016. Lectotipificaciones y sinónimos nuevos de *Aristolochia* (Aristolochiaceae) publicados por el botánico brasileño João Barbosa Rodrigues. *Anales Jard. Bot. Madrid* 73(1): e030.

Se discuten las tipificaciones de los nombres *Aristolochia chrysochlora* Barb. Rodr., *A. echinata* Barb. Rodr. y *A. silvatica* Barb. Rodr. (Aristolochiaceae). Se designan como lectotipos las ilustraciones originales hechas por J. Barbosa Rodrigues y publicadas junto a los protólogos respectivos. Además, *A. chrysochlora* y *A. echinata* se subordinan a *A. arcuata* Mast. y *A. tamnifolia* (Klotzsch) Duch., respectivamente. De estas dos últimas especies se designan también los lectotipos.

**Palabras clave:** Brasil, João Barbosa Rodrigues, lectotipificación, Piperales.

## INTRODUCTION

With approximately 500 species, *Aristolochia* L. is the largest genus of the family Aristolochiaceae (González, 2011). The genus has a pantropical distribution and is highly diversified in the neotropics (González, 2000). In Brazil, 92 species of *Aristolochia* have been documented (Barros & al., 2015), Brazil being one of the hotspots of the genus worldwide (González, 2000).

In the last two decades of the nineteenth century, several species were published in Brazil by J. Barbosa Rodrigues (1842-1909), an important Botanist who notably contributed to the Brazilian flora, especially in the taxonomy of Arecaceae and Orchidaceae (Mori & Ferreira, 1987). With respect to *Aristolochia*, Barbosa Rodrigues described four taxa, *A. alpestris*, *A. chrysochlora*, *A. echinata*, and *A. silvatica*. Barbosa Rodrigues did not designate type specimens for these species, but he cited the collecting localities and phenology (Toscano de Brito, 2013). His collections were housed at the former “Museu Botânico do Amazonas”, but they were lost after the Museum was closed in 1890 (Mori & Ferreira, 1987), including the potential type specimens, most of which did not have duplicates elsewhere.

Barbosa Rodrigues was a skilled botanical illustrator and, through watercolour or in line drawings, he drew the species described by himself. Here, we designate three of them as lectotypes of *A. chrysochlora*, *A. echinata*, and *A. silvatica*, respectively. In addition, *A. chrysochlora* and *A. echinata*

are subordinated as new synonyms of *A. arcuata* Mast. and *A. tamnifolia* (Klotzsch) Duchartre, respectively.

## TYPIFICATIONS AND NEW SYNONYMS

Barbosa Rodrigues (1891a) described *A. chrysochlora* and *A. silvatica*, both based on specimens collected in the Amazonian region of Brazil. *Aristolochia chrysochlora* was collected in Tarumã, by the Rio Negro, and *A. silvatica* in Cachoeira Grande, near Manaus. Given that there are no traceable type specimens for these taxa, it is necessary to designate lectotypes, following the Art. 9.11 of the Code of Nomenclature for Algae, Fungi, and Plants (McNeill & al., 2012). Therefore, published illustrations for these species (Barbosa Rodrigues, 1891b) are designated here as lectotypes. The original illustration of *A. chrysochlora* chosen as the lectotype shows a leaf that somehow does not represent the typical sagittate or hastate leaf shape found in *A. arcuata*; however, Barbosa Rodrigues's (1891: 71) description clearly states that it has “foliis sagittatis”.

*Aristolochia arcuata* was described by Masters (1878: 101) from three syntypes: [Brazil] “Habitat in prov. Minas Geraës ad Lagoa Santa”, *E. Warming s.n.*; “in prov. Rio de Janeiro”, *L. Riedel #196*, and “in Brasilia occidental”, *Tamberlik s.n.* We designate as lectotype the specimen *E. Warming s.n.*, collected in Lagoa Santa on 16th February 1864 (C 10006604). This specimen is the most complete, it clearly shows the diagnostic characters of the species, and

it has several black and white and colour illustrations and original handwritten annotations.

*Aristolochia echinata* was described and illustrated by Barbosa Rodrigues (1896). The original description was based on a flowering specimen cultivated at São Pedro do Itabapoana (State of Espírito Santo, Brazil). Also in this case, no type specimen was found, either at the herbarium of the Jardim Botânico do Rio de Janeiro nor in any other institution. In accordance with the Art. 9.1 of the Code (McNeill & al., 2012), the lectotypification of *A. echinata* is required. Thus, we designate the illustration made by Barbosa Rodrigues for the protologue as lectotype.

After detailed comparisons between the diagnosis, type specimens and illustrations of putatively related species, we came to the conclusion that *Aristolochia echinata* is conspecific with *Aristolochia tamnifolia* (Klotzsch) Duch. Therefore, *A. echinata* is here designated as a new synonym of *A. tamnifolia*. Detailed photographs of the latter species are provided in Freitas & al. (2016).

**1. *Aristolochia arcuata* Mart., Fl. Bras. 4(2): 101, tab. XXII (2) (1875).**

TYPE: [Brazil.] Habitat in prov. Minas Geraës ad Lagoa Santa, *E. Warming s.n.*, 16 Feb 1864, (lectotype, here designated: C 10006604).

*A. chrysochlora* Barb. Rodr., *Velloxia* ed. 2, 1: 71, tab. XXIII fig. A (1891).  
TYPE: [Icon] (lectotype, here designated: Barb. Rodr., *Velloxia* ed. 2, 1, tab. XXIII fig. A (1891)).

**2. *Aristolochia silvatica* Barb. Rodr., *Velloxia* ed. 2, 1: 70, tab. XXIII fig. B (1891).**

TYPE: [Icon] (lectotype, here designated: Barb. Rodr., *Velloxia* ed. 2, 1, tab. XXIII fig. B (1891)).

**3. *Aristolochia tamnifolia* (Klotzsch) Duch. in DC., Prod. 15(1): 448 (1896). *Howardia tamnifolia* Klotzsch, Monatsber. Königl. Preuss. Akad. Wiss. Berlin 1859: 620 (1859).**

TYPE: [Brazil.] "Hab. in Brasilia", *Sellow #146* (holotype: B n.v., lost; lectotype, here designated: BR; isolecotypes: K, P).

*A. echinata* Barb. Rodr., *Pl. Jard. Rio Janeiro* 5: 9, tab. III (1896).  
TYPE: [Icon] (lectotype, here designated: Barb. Rodr., *Pl. Jard. Rio Janeiro* 5, tab. III fig. A (1896)).

## ACKNOWLEDGEMENTS

The first author wishes to thank CAPES for its financial support. Thanks also to Elton John de Lirio and the anonymous reviewers for their valuable contributions to this work.

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Associate Editor: José María Cardiel

Received: 15-IV-2015

Accepted: 29-I-2016