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Matheus Nascimento Santos

Título: Revisão dos Nomes de Bignoniaceae Publicados na *Florœ Fluminensis*

Florianópolis
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Orientador: Dr. José Floriano Barêa Pastore
Coorientador: Dr. Alexandre Rizzo Zuntini

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O presente trabalho em nível de Mestrado foi avaliado e aprovado, em 20 de Dezembro de 2023, pela banca examinadora composta pelos seguintes membros:

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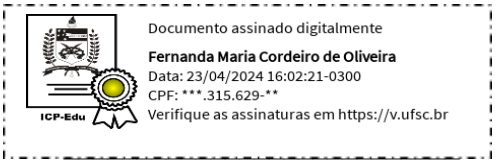

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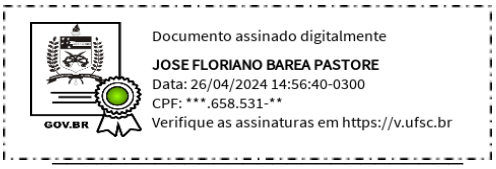

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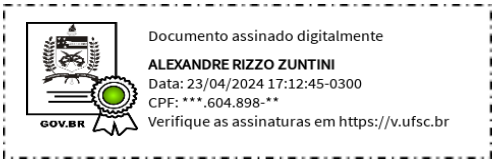

Dr. Alexandre Rizzo Zuntini

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Dedico este estudo à minha mãe Aldênia, minha avó Maria Aparecida, minha irmãzinha Sabrina e ao meu avô Antônio. Às/O amo!

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...

Nordeste é uma ficção

Nordeste nunca houve

Não, eu não sou do lugar

Dos esquecidos

Não sou da nação

Dos condenados

Não sou do sertão

Dos ofendidos

Você sabe bem

Conheço o meu lugar.

(BELCHIOR Antônio Carlos, 2 é Demais, 1978).

RESUMO

A *Floræ Fluminensis* faz parte do início de trabalhos naturalistas em terras da colônia portuguesa (Brasil), cujo objetivo era desvendar a diversidade de espécies e seu potencial econômico. O Vice-Rei da então Capitania do Rio de Janeiro, interessado no conhecimento do território, ordenou que José Mariano da Conceição Vellozo (Frei Vellozo) deixasse o convento, organizasse e preparasse coleções de espécies naturais. Dessa forma, Frei Vellozo (um naturalista autodidata) percorreu durante oito anos (1783-1790) o território do Rio de Janeiro e trechos de São Paulo. Entre as coleções organizadas, estão as 1630 descrições e ilustrações das plantas encontradas por Vellozo e sua comitiva, embora seu herbário ainda não tenha sido localizado. Mesmo com a finalização da *Floræ Fluminensis*, a obra só começou a ser impressa 39 anos após sua conclusão e 18 anos depois da morte de Vellozo, em 1829. Dessa forma, o presente trabalho realizou a revisão nomenclatural e taxonômica de todos os nomes de Bignoniaceae publicados na *Floræ Fluminensis*. Houve expedições de coleta realizadas em algumas localidades descritas por Vellozo, onde espécies da família foram coletadas. As informações nomenclaturais foram consultadas através do IPNI e de obras originais, com as decisões fundamentadas no Código Internacional de Nomenclatura para algas, fungos e plantas vigente. Para as análises taxonômicas, as espécies foram consultadas em coleções virtuais, onde também foram acessadas as coordenadas (ou localidade) de coleta para a produção dos mapas com distribuição no Sudeste. Ao fim, os 44 nomes (43 em *Bignonia* e um em *Crescentia*) receberam uma nova revisão e surgiram novidades taxonômicas. Com isso, um novo sinônimo foi detectado, foram realizadas duas novas combinações, 41 nomes receberam a correta lectotipificação e três nomes foram interpretados como citações ao Linnaeus. Além disso, três localidades de coleta citadas por Vellozo também foram interpretadas.

Palavras-chave: Rio de Janeiro; Botânica; Vellozo.

ABSTRACT

The *Florœ Fluminensis* is part of the early naturalistic efforts in the lands of the Portuguese colony (Brazil), aimed at unraveling the diversity of species and their economic potential. The Viceroy of the then Captaincy of Rio de Janeiro, interested in the knowledge of the territory, ordered José Mariano da Conceição Vellozo (Frei Vellozo) to leave the convent, organize, and prepare collections of natural species. Thus, Frei Vellozo (a self-taught naturalist) traveled for eight years (1783-1790) through the territory of Rio de Janeiro and parts of São Paulo. Among the collections organized are 1630 descriptions and illustrations of the plants found by Vellozo and his team, although his herbarium has not yet been located. Even with the completion of the *Florœ Fluminensis*, the work only began to be printed 39 years after its conclusion and 18 years after Vellozo's death, in 1829. Thus, the present work carried out the nomenclatural and taxonomic review of all the names of Bignoniaceae published in the *Florœ Fluminensis*. Collection expeditions were carried out in some locations described by Vellozo, where species of the family were collected. Nomenclatural information was consulted through IPNI and original works, with decisions based on the current International Code of Nomenclature for algae, fungi, and plants. For taxonomic analyses, species were consulted in virtual collections, where collection coordinates (or locality) were also accessed for the production of maps showing distribution in the Southeast. In the end, the 44 names (43 in *Bignonia* and one in *Crescentia*) received a new review, and taxonomic novelties emerged. As a result, a new synonym was detected, two new combinations were made, 41 names received correct lectotypification, and three names were interpreted as citations to Linnaeus. Additionally, three collection localities mentioned by Vellozo were also interpreted.

Keywords: Rio de Janeiro; Botany; Vellozo.

RESUMO EXPANDIDO

Introdução

O Frei José Mariano da Conceição Vellozo é considerado um dos grandes naturalistas brasileiros devido sua obra mais conhecida: "*Florae Fluminensis*", que traz as primeiras descrições de espécies de plantas no País. Ao longo de oito anos, o franciscano e sua comitiva de aproximadamente 40 pessoas reuniu amostras de insetos, conchas e espécies de plantas, as quais foram descritas, classificadas, ilustradas e herborizadas. Inventariar a diversidade existente nessas localidades seria um trabalho ainda maior, se Frei Vellozo não fosse ajudado por pessoas que o acompanhavam. Enquanto ele comandava a viagem, o Frei Anastácio de Santa Inês elaborava as descrições das plantas e outras pessoas eram responsáveis pelas ilustrações. Com base no reconhecimento de assinaturas em alguns rascunhos existentes no Arquivo Provincial dos Franciscanos, acreditava-se que os desenhos eram feitos somente por Frei Francisco Solano. Todavia, após a análise de outros volumes com estampas até então desconhecidas, foi possível evidenciar assinaturas de outros ilustradores, como José Correia Rangel de Bulhões. A presença de muitos ilustradores causou variações na qualidade dos desenhos, com isso, pode-se encontrar estampas ricas em detalhes e apropriadas para a identificação de espécies, bem como pranchas confusas que não representam nenhuma espécie já vista. As expedições para compor a "*Florae Fluminensis*" iniciaram em 1783 e foram concluídas em 1790, ano que o mandato do vice-rei e mecenas D. Luiz de Vasconcelos e Souza chegou ao fim. Em sua volta ao Reino, o vice-rei convidou Frei Vellozo para acompanhá-lo e levar consigo os manuscritos originais e o seu herbário para refinar as informações e publicar a obra. Entretanto, essa etapa final se prolongou por mais tempo que a própria realização do trabalho, com a publicação da primeira e parcial versão 39 anos após seu término. Devido a empecilhos que surgiram no processo de impressão, como o próprio custo, a obra possui três datas de publicação e lamentavelmente Vellozo não viu nenhuma delas, em razão da sua morte em 1811. A primeira e incompleta edição do texto foi divulgada em 1829, as estampas associadas às descrições foram divulgadas somente em 1831 e o texto completo foi publicado em 1881. Essa impressão tardia culminou na perda da prioridade para a maioria dos nomes novos propostos por Vellozo, mas conforme são elaboradas as revisões dos nomes descritos na obra, em alguns casos os nomes de Vellozo são recuperados como tendo prioridade sobre os de outros autores que até agora estiveram em uso. Os espécimes eventualmente coletados durante a elaboração da FF ainda não foram localizados e com isso, as pranchas e os manuscritos originais se tornaram referência para os nomes publicados. Entretanto, ocasionalmente as ilustrações não são adequadas para a precisa identificação de alguns taxa. A "*Florae Fluminensis*" é o primeiro estudo sobre a flora do país a ser redigido e editado por um brasileiro, isto gerou o interesse de pesquisadores em, a partir das estampas, revisar os nomes propostos por Vellozo. Grupos como: Fabaceae, Marantaceae, Passifloraceae, Polygalaceae, Solanaceae, Pontederiaceae, Commelinaceae, Eriocaulaceae, Gesneriaceae e Asteraceae, possuem algumas espécies examinadas e combinações feitas, mas ainda existem famílias sem revisão. Em Bignoniaceae são listadas 44 espécies, entre essas, sete com provável origem no município de Cunha/SP (*Bignonia arvensis*, *B. caroba*, *B. coccinea*, *B. digitalis*, *B. elliptica*, *B. ignea*, *B. pedunculata*). Para a interpretação dos nomes dessa família propostos por Vellozo, Sampaio e Peckolt (1943) fizeram um inventário das espécies com base nos nomes disponibilizados pelo Index Kewensis, mas o tratamento foi inadequado. Anos depois, Gentry (1975) elaborou uma análise mais ampla sobre 43 espécies descritas na FF, no qual, os nomes foram verificados quanto à prioridade de publicação. Desta forma, o presente estudo pretende revisar todos os nomes de Bignoniaceae publicados na "*Florae Fluminensis*", através de coletas nos prováveis sítios históricos das expedições

botânicas visitados por Vellozo, de forma a atribuir uma identidade a todos os binômios dessa família listados pelo frei.

Objetivos

O objetivo geral deste projeto é: Revisar os nomes de Bignoniaceae publicados na *Florae Fluminensis*. Como objetivos específicos, é possível listar: 1) Coletar espécimes de Bignoniaceae nos prováveis locais históricos visitados pela expedição do Frei Vellozo para compor a *Florae Fluminensis*, em especial, na "Estrada Real" no município de Cunha; 2) Contribuir com a coleção do "Projeto Frei Vellozo" disponível no Herbário CTBS (UFSC) Campus Curitibanos e com duplicatas para a outras coleções, entre elas, o Herbário do Departamento de Botânica da Universidade Federal de Santa Catarina (FLOR).

Metodologia

As coletas foram realizadas em localidades do município de Cunha, situado na região sudoeste de São Paulo e metropolitana do Vale do Paraíba. A cidade possui uma dimensão territorial de 1.407,250 km² e uma população estimada de 21.373 pessoas. O clima na região é temperado seco e o município possui duas áreas sob proteção: O Parque Estadual da Serra do Mar – Núcleo Cunha e o Parque Nacional da Bocaina. Além dos materiais amostrados, haverão análises dos espécimes anteriormente coletados na área de estudo e depositados em herbários. Para isso, às imagens (quando disponíveis) serão consultadas no SpeciesLink e o Herbário de Curitibanos - CTBS, coleção com mais registros de coletas em Cunha para Bignoniaceae, será visitado presencialmente. As expedições realizadas por Vellozo e sua comitiva se estenderam ao longo da "Estrada Real", um trecho entre as cidades de Paraty/RJ e Cunha/SP. Na "*Florae Fluminensis*", existem descrições de lugares em Cunha/SP e nomes de espécies relacionados com o termo "*mediterraneis*", que são atribuídos a esta região de São Paulo. Além disso, o local da antiga Fazenda Real Santa Cruz, que na época das expedições de Vellozo, correspondia a área parcial ou total de alguns municípios do Rio de Janeiro, também será visitada. A obtenção dos dados acontecerá de acordo com os tópicos: 1) Expedições de coleta: Serão feitas quatro expedições de coleta através do método de caminhamento, duas direcionadas à "Estrada Real" em Cunha (SP) e as outras à área da antiga Fazenda de Santa Cruz no Rio de Janeiro; 2) Coleta: Apenas os espécimes férteis (com flores ou frutos) serão coletados, já que a presença dessas estruturas é essencial para a identificação correta e o registro em herbários. Sempre que possível, serão coletados cinco exemplares (exsicata e suas duplicatas) de cada espécie, para as quais serão anotadas *in loco* todas as informações pertinentes (habitat/vegetação, data e local de coleta - município, estado, coordenadas geográficas, registros fotográficos e características das plantas que serão perdidas pelo processo de herborização). A coleta dos espécimes em Unidades de Conservação será feita mediante autorização do Sistema de Autorização e Informação em Biodiversidade (SISBIO) e demais órgãos competentes. Os espécimes coletados, serão tombados e depositados no Herbário CTBS na coleção intitulada "Projeto Frei Vellozo" e as duplicatas, serão enviadas para o Herbário do Departamento de Botânica da Universidade Federal de Santa Catarina (FLOR) e outras coleções; 3) Buscas na rede e identificação: As bases de dados *Specieslink*, Tropicos, Herbário Virtual - REFLORA e a Flora e Funga do Brasil serão consultadas, para agregar e validar algumas informações. A identificação dos espécimes coletados será feita através da consulta em bibliografia especializada, análise comparativa de amostras já identificadas da família e com o auxílio do Dr. Alexandre Rizzo Zuntini, coorientador deste trabalho e especialista em Bignoniaceae; 4) Revisão nomenclatural e taxonômica: Os nomes descritos na "*Florae Fluminensis*" para Bignoniaceae serão revisados com base na análise das ilustrações originais, descrições e informações contidas nos protólogos. Estes dados serão confrontados com os espécimes coletados nas

expedições. Além disso, será feita uma avaliação dos nomes sobre a validade (corretos ou sinônimos) de publicação e se há conformidade com o Código Internacional de Nomenclatura para algas, fungos e plantas vigente.

Resultados e Discussão

A nova e abrangente revisão foi conduzida e ao fim, os resultados ficaram organizados em quatro capítulos: 1) O primeiro capítulo será submetido a *Brittonia* e apresenta o texto principal desta dissertação. Nele, estão os resultados sobre: um novo sinônimo foi detectado, 37 novas tipificações, três citações a nomes do Linnaeus e a interpretação de três locais de coleta mencionados por Vellozo. Além de comentários sobre a distribuição das espécies, morfologia e nomenclatura, foram fornecidos; 2) O segundo capítulo é referente à primeira combinação publicada na *Phytotaxa*. O artigo traz comentários sobre distribuição, ecologia, fenologia, habitat e morfologia, além de notas nomenclaturais e taxonômicas; 3) O terceiro capítulo também se refere a uma combinação publicada na *Phytotaxa*. O texto, igualmente ao anterior, dispõe de comentários sobre distribuição, ecologia, fenologia, habitat e morfologia, além de notas nomenclaturais e taxonômicas. Em adição, é apresentado um mapa com a distribuição da espécie no Sudeste do Brasil e uma tabela comparativa onde as diferenças entre espécies próximas são elencadas; 4) O quarto capítulo expõe uma proposta para a rejeição do nome "*Bignonia hirta*". A proposta foi submetida e aceita pela *Taxon*, com o objetivo de manter o reconhecimento do nome atual e evitar mudanças desfavoráveis à estabilidade nomenclatural.

Considerações Finais

Os resultados compreensivos desta dissertação, totalizam: um novo sinônimo detectado, duas novas combinações, 41 tipificações, a interpretação de três citações a nomes do Linnaeus e de três localidades originais de coleta. A proporção e importância dos resultados aqui obtidos, deixa clara a necessidade dos trabalhos acerca da *Floræ Fluminensis*, que visem o apropriado tratamento das informações e o reconhecimento do valor que ainda lhe pertence.

Palavras-chave: Rio de Janeiro; Botânica; Vellozo.

SUMÁRIO

Apresentação

A presente dissertação foi desenvolvida entre os anos de 2022 e 2023, no Laboratório de Sistemática Vegetal do Departamento de Botânica da Universidade Federal de Santa Catarina, sob a orientação do Dr. José Floriano Barêa Pastore e coorientação do Dr. Alexandre Rizzo Zuntini.

O modelo de divisão aqui utilizado, seguiu a dinâmica de cada capítulo representar um artigo e sua formatação seguir as normas da revista na qual foi publicado ou será submetido.

Dessa maneira, a dissertação foi organizada em quatro capítulos:

Capítulo 1. Review of Vellozo's Bignoniaceae;

Capítulo 2. A new combination in *Dolichandra* (Bignoniaceae) from Brazil;

Capítulo 3. A new combination in *Handroanthus* (Bignoniaceae) from Brazil;

Capítulo 4. Proposal to reject the name *Bignonia hirta* (Bignoniaceae).

Chapter 1
Review of Vellozo's Bignoniaceae

Review of Vellozo's Bignoniaceae

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Abstract: A comprehensive treatment in the Bignoniaceae described by *Floræ Fluminensis* was provided and all names received a careful new analysis. The review includes the interpretation about original collection localities, besides detailing the differences between the collections of illustrations. Each name was re-evaluated and received comments on its distribution and/or original collection location, as well as nomenclatural and taxonomic notes. We propose here 37 new lectotypes, one new synonym, and three names to be cited as homonyms of Linnaeus.

Keywords: *Bignonia*, Botanical history, Rio de Janeiro, São Paulo, illustrations.

Associate Editor: _____

Introduction

José Mariano da Conceição Vellozo (Friar Vellozo) from a young age, he stood out for his brilliance, and later revealed himself as a self-taught botanist and Brazilian naturalist (Blake, 1899; Nunes & Brigola, 1999). Knowing about this talent, Luís de Vasconcelos e Sousa (viceroy of Rio de Janeiro) put Friar Vellozo to start the collect practice (common in other captaincies since 1760), preparing and sending natural specimens from Portugal (Nunes & Brigola, 1999; Pataca & Pinheiro, 2005). The expeditions to compose the *Florœ Fluminensis* (FF) began in 1783 and were completed in 1790, coinciding with the end of Luís de Vasconcelos e Sousa's mandate (Nunes & Brigola, 1999; Pataca & Pinheiro, 2005). Despite the main focus being on plants, these expeditions also resulted in the collection of insects, birds, shells, fish, and other natural history artifacts (Kury, 2015; Bediaga & Lima, 2015).

The botanical practices of the 18th century required expertise that was not easily obtained outside of Europe (Kury, 2015). In this context, Friar Vellozo, as a botanist and naturalist self-taught, encountered challenges in obtaining recognition and publishing his work (Blake, 1899; Nunes & Brigola, 1999). Over the years, the continued neglect of *Florœ Fluminensis* frustrated and saddened the Franciscan, who unfortunately died in 1811 without seeing the publication of his manuscripts (Nunes & Brigola, 1999; Bediaga & Lima, 2015).

The first printing version of the *Florœ Fluminensis* text (up to page 352) began in 1825 and was archived in 1829, where it was commercially released and considered validly published. The plates, including illustrations of the *Florœ Fluminensis* species, were produced over the course of a year, in 1827, and distributed or sold in 1831. In 1881, after almost a century in the shadows of science, the complete text was finally published (Carauta, 1973). This delay, influenced by several factors, in publishing the manuscripts led to the loss of

authorship priority for many new species names proposed by Vellozo (Bediaga & Lima, 2015). Thus, over the years and especially in the last decades, reviews of groups (Lima, 1995; Pastore, 2013; Knapp et al., 2015; Remor et al., 2022; Yamamoto et al., 2022) including Bignoniaceae (Gentry, 1975a).

In the original descriptions of *Florœ Fluminensis*, 43 names were included into genus *Bignonia*, and one from *Crescentia* (Vellozo, 1829). The first attempt to revise the Bignoniaceae names of *Florœ Fluminensis* was carried out by Sampaio and Peckolt (1943), where they provided a list of names and their current designations (following the Kewensis Index). Later, Gentry (1975a) considered the previous treatment inadequate and provided comprehensive study on the the names of the *Bignonia* published in *Florœ Fluminensis*. However, Gentry (1975a) highlighted that certain situations were left to be further clarified in the future.

Therefore, with the aim of refining the treatment of Vellozo's Bignoniaceae published in *Florœ Fluminensis*, a comprehensive new review was conducted. As a result, three new synonyms are proposed, four combinations are deemed necessary, and 37 new typifications (in accordance with recent recommendations) have been established; One new synonym was detected, and three names to be cited as homonyms of Linnaeus. Furthermore, three collection locations mentioned by Vellozo were also elucidated, and detailed comments on species distributions, morphology, nomenclature, and taxonomy were provided for all.

Material and Methods

The species were identified based on analyses of the original archives available at the National Library of Rio de Janeiro (http://bndigital.bn.gov.br/acervodigital/). Taking into consideration the likelihood that the initial plates and descriptions of *Florœ Fluminensis* were

originally sketched in the field, all plates of Bignoniaceae species and their descriptions were printed and taken along on field expeditions for the purpose of in vivo morphology comparison. The copies of these illustrations at the Arquivo Nacional da Torre do Tombo in Portugal (https://antt.dglab.gov.pt/) were consulted. Furthermore, specimen images available through the platforms databases, such as Herbário Virtual - Reflora (http://floradobrasil.jbrj.gov.br/reflora/herbarioVirtual/), Plants of the World Online - POWO (http://www.plantsoftheworldonline.org/), Jstor - Global Plants (https://plants.jstor.org/) and Tropicos (https://tropicos.org) were consulted for assertive identifications.

In taxonomic review had as background Gentry's (1975a) work, which was the first comprehensive review of Vellozo's names for Bignoniaceae, and also includes the most modern approach for Vellozo's names presented by Pastore et al. (2021, 2022). Therefore, all Bignoniaceae names were analyzed taxonomically, and their nomenclature was revised including their typification. Taxonomic accounts, mainly the modern ones and based on the Brazilian flora, were consulted on the taxonomic review. The *Floræ Fluminensis* descriptions were comprehensively analyzed to interpret the correct application of the terms used by Vellozo (1829). The original descriptions and plates of the FF for Bignonicaceae were cross-checked in order to verify potential inconsistencies. The original plates were carefully analyzed, and the details and identity of species illustrated were discussed for each name.

The nomenclatural review is according to Art. 9 of the International Code of Nomenclature for algae, fungi, and plants (Turland et al., 2018). Therefore, the original material for all names involved were verified based on protologue information available, and their historical context was also considered with the support of the information present in the Taxonomic literature (Stafleu; Cowan, 1985). Also, several digital images of specimens were consulted, mainly in large databases available, especially Herbário Virtual Reflora (http://reflora.jbrj.gov.br/), JABOT (http://jabot.jbrj.gov.br/v3/consulta.php), Jstor

(https://plants.jstor.org/), and SpeciesLink (https://specieslink.net/search/). Vellozo's names were typified following Pastore et al. (2022) recommendations, therefore, the lectotypes were selected on the original (non-published) plates available at the Biblioteca Nacional which were consulted online (https://bdlb.bn.gov.br).

Lastly, the original localities collected were interpreted following Pastore et al. (2021), and this information is compiled in Table 1 including all Bignoniaceae names in FF and their original toponyms associated. Also, three places were interpreted here.

Taxonomic Treatment

***Bignonia* L.**

1. *Bignonia squalus* Vell.

Amphilophium crucigerum (L.) L.G.Lohmann, Nuevo Cat. Fl. Vasc. Venezuela 270: (2008). *Bignonia crucigera* L., Sp. Pl. 2: 624 (1753). *Anisostichus crucigera* (L.) Small, Man. S.E. Fl. [Small]: 1240 (1933). *Pithecoctenium crucigerum* (L.) A.H.Gentry, Taxon 24: 123 (1975b). TYPE: Pseudo-apocynum folliculis maximis obtusis seminibus amplissimis albis in Morison, Pl. Hist. Univ., 3: 612, s. 15, t. 3, f. 16, 1699 [n.v.] (Lectotype, designated by Barrie et al., [1991: 2]).

Pithecoctenium squalus (Vell.) DC., Prodr. 9: 194 (1845). *Bignonia squalus* Vell., Fl. Flumin.: 244 (1829). TYPE: [Icon. Ined.] "Didyn. Angyosp. BIGNONIA *squallus Tab. 13*". Seção de Manuscritos, Bibliot. Nac. (Rio de Janeiro), n° I-17, 03, 002; mss1198655_017 [image!] (**lectotype, here designated**).

Original locality and distribution. *Bignonia squalus* was described by Vellozo (1829) as '*Habitat maritimis*', which is recognized as a place in Rio de Janeiro. In fact, *Amphilophium crucigerum* (L.) L.G.Lohmann is a plant native but not endemic to Brazil.

Following Gentry (1977), Lohmann and Taylor (2014), and Thode (2023), this species is found in semideciduous to evergreen forest, disturbed vegetation, Amazônia, Caatinga, Cerrado, Atlantic Forest, Pampa or Pantanal. It is distributed in Argentina (Corrientes, Jujuy, Misiones, Salta), Belize, Bolivia, Colombia (Atlântico, Bolivar, Cauca, Chocó, La Guajira, Magdalena, Nariño, Sucre, Valle del Cauca), Costa Rica, Ecuador, El Salvador French Guiana, Guatemala, Greater Antilles (Cuba, Jamaica), Honduras, Mexico (Campeche, Chiapas, Colima, Guanajuato, Guerrero, Jalisco, México, Michoacán, Morelos, Nayarit, Oaxaca, Puebla, Querétano, San Luis Potosí, Sinaloa, Tabasco, Tamaulipas, Veracruz, Yucatán), Nicaragua, Panama, Paraguay, Peru (Amazonas, Cajamarca, Cusco, Huánuco, Junín, Loreto, Mader de Dios, San Martín) Suriname, Trinidad and Tobago, Uruguay, Venezuela (Anzoátegui, Apure, Aragua, Barinas, Carabobo, Cojedes, Guárico, Lara, Mérida, Miranda, Portuguesa, Táchira, Zulia) and Brazil (all regions).

Nomenclatural notes. The lectotype designated by Gentry (1975a) is the published illustration from 1831. However, this cannot be considered an original specimen, once this name was published in 1829. Therefore, the lectotype selected by Gentry (1975a) is considered a neotype to be superseded by the original extant material, the original illustration from 1790 kept at Biblioteca Nacional do Rio de Janeiro. A copy of the illustration of *Bignonia squalus* stored in the Manuscript Sect. of Torre do Tombo can be accessed through the PT-TT-MSLIV-2776_m0033 [image!] (see Pastore et al., 2022).

Taxonomic notes. Gentry (1975a) put *Bignonia squalus* as a synonym of *Pithecoctenium crucigerum* (L.) A.H.Gentry [*Amphilophium crucigerum*]. This position was also accepted in later treatments (Pool, 2007; Zuntini, 2014), and it is reinforced here.

The *Bignonia squalus* plate well represents *Amphilophium crucigerum* and includes relevant diagnostic features as the capsule equinate fruit (Reiche et al., 2020). In addition, the

fruit morphology, 2- or 3-foliolate leaves with multifid terminal tendril, cordate base, acuminate apex, 5-dentate calyx and the corolla shape form also agrees with *A. crucigerum* (Reiche et al., 2020). Although there is a mistake in the line drawing of one leaf, where two small leaves were illustrated in the central foliole. Besides, the leaves venation were not represented in the illustration. The original descriptions include features such as: '*caulis volubilis*' [twining vine], '*cirrhosis*' [with tendrils], '*Corolla flavescens*' [yellow corolla], '*siliqua plana, muricata*' [Flat silique, muricata]. The plate, along with the original description, assertively support the species recognition.

2. *Bignonia triphylla* Vell.

Bignonia triphylla L., Sp. Pl., ed. 2. 2: 870 (1763). *Bignonia triphylla* Vell., Fl. Flumin. 6: 244. 1829. **orth. var**. TYPE: México: Vera Cruz.

Original locality and distribution. *Bignonia triphylla* Vell. was described by Vellozo (1829) as '*Habitat maritimis Pharmacopolitanis*', which is recognized as some Atlantic Forest in Rio de Janeiro state, likely in Paraty municipality, but there are no recent samples. In fact, *Pleonotoma tetraquetra* is a plant native and endemic to Brazil. Following Lohmann and Taylor (2014), and Gomes (2023), this species is found in Cerrado and Atlantic Forest. It is distributed in Brazil (Mindwest and Southeast regions).

Nomenclatural notes. *Bignonia triphylla* Vell. is here interpreted as a citation to *Bignonia triphylla* L. (1763). Thus, in this case, there would be no need to designate a "type material", but rather to mention the "reference material" deposited in the BN (mss1198655_018 [image!]). A copy of the illustration of *Bignonia triphylla* Vell. stored in the Manuscript Sect. of Torre do Tombo is accessed through the PT-TT-MSLIV-2776_m0035 [image!].

This decision is in accordance with the ICN code, as we assume that *Bignonia triphylla* L. and *B. triphylla* Vell. share the same type, allowing both names to be inserted as orthographic variants (Art. 61.2, Turland et al. 2018).

Taxonomic notes. Gentry (1975a) relates Vellozo's line drawing belonging to *Pleonotoma tetraquetra*, the revision of *Pleonotoma* Miers maintained this decision (Gomes, 2006) and it is reinforced here.

Bignonia triphylla Vell. well represents *Pleonotoma tetraquetra* and includes relevant diagnostics features as the trifoliate leaves and corolla narrowly bell-shaped with rounded apices (Gomes, 2006). Although a branch with a possible four divided tendril is detailed, which is interpreted as a mistake, once this species is known by its trifid tendril (Reiche et al., 2020). The original descriptions include features such as: '*caule quadrangulari, cirrhoso*' [quadrangular stem, with tendrils] and '*foliis triternatis; foliolis lanceolatis*' [tri-ternate leaves; lanceolate leaflets]. The plate, along with the original description, assertively support the species recognition.

3. *Bignonia ignea* Vell.

Pyrostegia venusta (Ker Gawl.) Miers, Proc. Roy. Hort. Soc. 3: 188 (1863). *Bignonia venusta* Ker Gawl., Bot. Reg. 3: t. 249 (1818). *Tecoma venusta* (Ker Gawl.) Lem., Hort. Universel 5: 1 (1843). *Pyrostegia venusta* var. *typica (*Ker Gawl.) Sprague, Bull. Herb. Boissier ser. 2, 5: 84 (1905). TYPE: Ker Gawler, Bot. Reg. 3: t. 249. 1818 [n.v.] (Lectotype, designated by Sandwith & Hunt, [1974: 75]).

Pyrostegia ignea (Vell.) C.Presl, Abh. Königl. Böhm. Ges. Wiss. ser. 5, 3: 523 (1845). *Bignonia ignea* Vell., Fl. Flumin.: 244 (1829). TYPE: [Icon. Ined.] "Didynamia.

Angyosp. BIGNONIA *ignea Tab. 15*" Seção de Manuscritos, Bibliot. Nac. (Rio de Janeiro), n° I-17, 03, 002; mss1198655_019 [image!] (**lectotype, here designated**).

Original locality and distribution. *Bignonia ignea* was described by Vellozo (1829) as "*Habitat fruticetis mediterraneis*", which is recognized as a Cerrado vegetation in São Paulo state, likely Cunha municipality, but there are no recent samples. In fact, *Pyrostegia venusta* is a plant native but not endemic to Brazil. Following Lohmann and Taylor (2014), and Lohmann (2023e), this species is found in dry to humid lowland forests, Amazonia, Atlantic Forest, Caatinga, Cerrado, Pampa or Pantanal. It is distributed in Argentina (Corrientes, Jujuy, Misiones, Tucumán), Bolivia, Colombia (Caquetá, Meta, Valle del Cauca), Costa Rica, El Salvador, Ecuador, Guatemala, Guyana, Honduras, Mexico (Chiapas, México, Michoacán, Morelos, Oaxaca, Sinaloa, Veracruz), Panama, Paraguay, Peru (Cusco, Huánco, La Libertad, Lambayeque, Lima, Loreto, Madre de Dios, Pasco, San Martín, Ucayali), Venezuela (Amazonas, Bolívar, Delta Amacuro, Distrito Federal, Miranda, Sucre, Táchira), Suriname, and Brazil (all regions).

Nomenclatural notes. Presl (1845) did the first treatment to *Bignonia ignea* and proposed *Pyrostegia ignea*. Later, Gentry (1975a) included *B. ignea* and *P. ignea* as synonyms of *Pyrostegia venusta*.

The lectotype designated by Sandwith and Hunt (1974) from *Bignonia ignea* is the illustration published in 1831. However, the published plate from 1831 cannot be considered an original specimen, once this name was published in 1829. Therefore, the lectotype selected by Sandwith and Hunt (1974) is considered a neotype to be superseded by the original extant material, the original illustration from 1790 kept at Biblioteca Nacional do Rio de Janeiro. A copy of the illustration of *Bignonia ignea* stored in the Manuscript Sect. of Torre do Tombo is accessed through the PT-TT-MSLIV-2776_m0037 [image!].

Taxonomic notes. The lectotype of *Bignonia ignea* well represents *Pyrostegia venusta* and includes relevant diagnostic features as the trifoliate leaves with terminal trifid tendril, inflorescence morphology, and flower color (Reiche et al., 2020). Although the plate also details what is interpreted as a mistake: two simple tendrils, and the not-often-cordate base leaflets. The original descriptions include features such as: '*Caulis teres, volubilis*' [Cylindrical stem, twining], '*cirrhosis*' [with tendrils], '*Cirrhi convoluti trifidi*' [trifid convolute tendril], '*corolla ignea*' [red corolla]. The plate, along with the original description, assertively support the species recognition.

4. *Bignonia trifoliata* Vell.

Adenocalymma trifoliatum (Vell.) R.C.Laroche, Loefgrenia 56: 5 (1973). *Bignonia trifoliata* Vell., Fl. Flumin.: 245 (1829). TYPE: [Icon. Ined.] "Didy. Ang[i]yosp. BIGNONIA *trifoliata Tab. 16*" Seção de Manuscritos, Bibliot. Nac. (Rio de Janeiro), n° I-17, 03, 002; mss1198655_020 [image!] (**lectotype, here designated**). Brazil, Rio de Janeiro, Niterói, Engenho do Mato, 20 December 2004, *A.A.M. Barros 2332* (Epitype, designated by Fonseca & Lohmann, [2019: 910]: RB, barcode 00866364 [n.v.]).

Original locality and distribution. *Bignonia trifoliata* was described by Vellozo (1829) as "*Habitat maritimis Regii Prædii S. Crucis*", which is recognized as a place in Rio de Janeiro, in the Southwest at Royal Santa Cruz farm region. In the past, the farm occupied an area of 50 kilometers, located in the Province of Rio de Janeiro, extending from the coast (east) to reach the river Paraíba do Sul (west), including the regions called Piraí and Itagui (Pedroza, 2018). In fact, *Adenocalymma trifoliatum* is a plant native and endemic to Brazil. Following Fonseca and Lohmann (2019), and Fonseca (2023a), this species is found in Atlantic Forest Restinga and Cerrado. It is distributed only in Rio de Janeiro state.

Nomenclatural notes. *Adenocalymma longeracemosum* DC. is considered a superfluous name, (Art. 52.1, Turland et al., 2018), because Candolle (1845), when describing this name, included *Bignonia trifoliata* as a synonym, instead of providing the combination *Adenocalymma trifoliatum.* Laroche (1973) provided the combination of *Adenocalymma trifoliatum* and this position was followed by later authors (Gentry, 1975a; Udulutsch et al., 2013; Lohmann & Taylor, 2014; Zuntini, 2014; Fonseca & Lohmann, 2019) and it is reinforced here.

The lectotype designated by Laroche (1973) is the published illustration from 1831. However, the published plate from 1831 cannot be considered an original specimen, once this name was published in 1829. Therefore, the lectotype selected by Laroche (1973) is considered a neotype to be superseded by the original extant material, the original illustration from 1790 kept at Biblioteca Nacional do Rio de Janeiro. A copy of the illustration of *Bignonia trifoliata* stored in the Manuscript Sect. of Torre do Tombo is accessed through the PT-TT-MSLIV-2776_m0039 [image!]. In addition, Fonseca and Lohmann (2019) designated an epitype.

Taxonomic notes. *Bignonia trifoliata* well represents *Adenocalymma trifoliatum* and includes relevant diagnostic features as the 2-3 foliolate leaves, lanceolate, entire margin, without tendril, short-pedunculate flowers (Laroche, 1973). Although, the venation of the leaves, which is a diagnostic feature for the species, was not represented in the illustration. However, the lack of this characteristic does not prejudice the recognition of species. The original descriptions include other features such as: '*Caulis scandens, teres*' [Scandent stem, cylindrical], *'Corollæ incurvæ*' [curved corolla]. The plate, along with the original description, assertively support the species recognition.

5. *Bignonia falcata* Vell.

Amphilophium falcatum (Vell.) L.G.Lohmann, Ann. Missouri Bot. Gard. 99: 404 (2014). *Bignonia falcata* Vell., Fl. Flumin.: 245 (1829). *Pithecoctenium falcatum* (Vell.) A.Pool, Ann. Missouri Bot. Gard. 94: 635 (2007). TYPE: [Icon. Ined. (in part)] "Didy. Angyosp. BIGNONIA *falcata Tab. 17*" (including branchlet, leaves, fruit, and seeds and excluding inflorescence and flowers). Seção de Manuscritos, Bibliot. Nac. (Rio de Janeiro), n° I-17, 03, 002; mss1198655_021 [image!] (**lectotype, here designated**). Brazil, Bahia, Coaraci, Almandina, 18 km de estrada, 5 feb. 1970, *T. S. dos Santos 574* (Epitype, designated by Pool, [2007: 635]: MO, barcode MO0000089383 [image!]; duplicate: NY, barcode NY00569053 [image!]).

Original locality and distribution. *Bignonia falcata* was described by Vellozo (1829) as"*Habitat silvis maritimis Pharmacopolitanis*", which is interpreted as some Rio de Janeiro place (see comments under *Bignonia triphylla*). In fact, *Amphilophium falcatum* is a plant native but not endemic to Brazil. Following Lohmann and Taylor 2014, and Thode (2023), this species is found in Atlantic Forest, Cerrado or humid vegetation. It is distributed in eastern Bolivia and Brazil (Midwest, Northeast, South, Southeast regions).

Nomenclatural notes. Pool (2007) decided to treat *Bignonia falcata* as a legitimate name and lectotypified part of the illustration. In view of Article 8.2 of the ICN for the typification of a species, it is possible to use a complete sample or part of it (Turland et al., 2018). Thus, Pool (2007) made the typification of part of the illustration [branchlet, leaves, fruit, and seeds] and excluded inflorescence and flowers that, obviously, are very different. *Amphilophium falcatum* can have a long inflorescence with 25-28 flowers and the calyx of the flowers is noticeably larger than that depicted by Vellozo.

Furthermore, likely as an attempt to “compensate” for the exclusion of the flowers illustration, she designates an epitype. Recently, Lohmann and Taylor (2014) made generic delimitation changes and proposed a new combination, *Amphilophium falcatum*, maintaining the wrongly assigned lectotype, plus the epitype selected by Pool (2007). However, even considering the author's expertise in delimiting the typification to legitimize the use of *Bignonia falcata*, she ended up typifying the species based on the published set of illustrations (Vellozo, 1831; see comments under *Bignonia squalus*). Due to that, following the same separation made in Pool (2007) and the recommendations of Pastore et al. (2022), a part of the original specimen present at Biblioteca Nacional is chosen as the lectotype. A copy of the illustration of *Bignonia falcata* stored in the Manuscript Sect. of Torre do Tombo is accessed through the PT-TT-MSLIV-2776_m0041 [Noting that the species is recognized only by the branchlet, leaves, fruit, and seeds and excluding inflorescence and flowers] [image!].

Taxonomic notes. Bureau & Schumann (1896-1897) recognized the identity of *Bignonia falcata* as a synonym of *Neves-armondia cordifolia* (Mart. ex DC.) K.Schum. However, Gentry (1975a) interpreted *Bignonia falcata* as a quimera of two species once the vegetative part well represents *Neves-armondia cordifolia*, whereas the flowers illustrated were very dissimilar and justify the rejection under the article 40 of Seattle Code ICBN (1972). Later, Gentry (1979) revised the case of *N. cordifolia* and *Pithecoctenium cordifolium* DC., proposing a new name: *Pithecoctenium hatschbachii* A.H.Gentry.

Pool (2007) affirmed the arguments previously used that there is no support for *Bignonia falcata* rejection, thus she proposed the combination “*Pithecoctenium falcatum*”. To validate the application of the name, she anchored to the interpretation of the illustration choosing part of the published plate (Vellozo, 1831), as lectotype. Since then, many authors follow this organization (Lohmann & Taylor, 2014; Zuntini, 2014), and it is reinforced here.

Bignonia falcata provides information about the leaves, fruits, and seeds but lacks information on the flowers. In fact, upon examining all Bignonia illustrations, the appearance of the flowers closely resembles the species now known as Lundia species. Therefore, it is possible that the illustrator became confused and made this mistake.

The original descriptions include features such as: '*cirrhosis*' [with tendrils], '*Cirrhus convolutus, trifidus*' [trifid convolute tendril], '*siliqua magna, falcata*' [extended silique, sickle-shaped], '*Siliqua longa, plusquam palmaris*' [Long silique, broader than the palm of the hand]. The plate, along with the original description, assertively supports the species recognition excluding the flowers and inflorescence.

6. *Bignonia conjugata* Vell.

Fridericia conjugata (Vell.) L.G.Lohmann, Ann. Missouri Bot. Gard. 99: 435 (2014). *Bignonia conjugata* Vell. Fl. Flumin.: 245 (1829). *Arrabidaea conjugata* (Vell.) Mart., Flora 24(2, Beibl.): 46 (1841). TYPE: [Icon. Ined.] "Didy. Angyosp. BIGNONIA *conjugata Tab. 18*", Seção de Manuscritos, Bibliot. Nac. (Rio de Janeiro), n° I-17, 03, 002; mss1198655_022 [image!] (**lectotype, here designated**).

Original locality and distribution. *Bignonia conjugata* was described by Vellozo (1829) as "*Habitat maritimis Regii Prædii S. Crucis*" which is recognized as some Rio de Janeiro place (see comments under *Bignonia trifoliata*). In fact, *Fridericia conjugata* is a plant native but not endemic to Brazil. Following Lohmann and Taylor (2014), and Kaehler (2023a), this species is found in Amazônia, Atlantic Forest, Cerrado, humid forest or Pantanal. It is distributed in Argentina (Misiones), Bolivia, Colombia (Atlántico, Bolívar, Caquetá, César, Chocó, Magdalena, Santander, Sucre, Vichada), Costa Rica, Equator, French Guiana,

Guatemala, Panama, Peru (Huánuco, Madre de Dios), Venezuela (Falcón), and Brazil (Midwest, North, Northeast and Southeast regions).

Nomenclatural notes. Gentry (1975a) recognized *Bignonia conjugata* citing the combination: *Arrabidaea conjugata*. Later, Lohmann and Taylor (2014) made generic delimitation changes and proposed *Fridericia conjugata*. This position is reinforced here.

The lectotype designated by Gentry (1975a) from *Bignonia conjugata* is considered superseded here (see comments under *Bignonia squalus*). A copy of the illustration of *Bignonia conjugata* stored in the Manuscript Sect. of Torre do Tombo is accessed through the PT-TT-MSLIV-2776_m0043 [image!].

Taxonomic notes. *Bignonia conjugata* well represents *Fridericia conjugata* and includes relevant diagnostic features as the axillary inflorescence and campanulate flowers (Reiche et al., 2020). Besides, the illustrated leaves also seem to agree with many collections, for example: *Amorim et al. 1252* (NY), *Paniagua et al. 1212* (MBM), *Tamashiro et al. 208* (UEC). Although there are leaves without venation, absence of simple tendril and calyx tubular instead of campanulate (Reiche et al., 2020). Even so, the lack of this characteristic does not harm the recognition of the species.

The original descriptions include features such as: '*Corolla violacea*' [violet Corolla]. The plate, along with the original description, assertively support the species recognition.

7. *Bignonia coito* Vell.

Bignonia corymbosa Vent., Jard. Malmaison 1: sub. t. 43, obs. 5 (1804). *Spathodea corymbosa* (Vent.) Vent., Mem. Cl. Sci. Math. Inst. Natl. France 1: 19 (1807). *Macfadyena corymbosa* (Vent.) Griseb., Bonplandia 6: 10 (1858). *Phryganocydia corymbosa* (Vent.) Bureau ex K.Schum., Nat. Pflanzenfam. [Engler & Prantl] 4(Abt.

3b): 224, fig. 89H (1894). *Phrygiobureaua corymbosa* (Vent.) Kuntze, Lex. Gen. Phan. 433 (1904). *Bignonia corymbosa* L.G.Lohmann, Nuevo Cat. Fl. Vasc. Venezuela 272: (2008). *Isonym*. TYPE: Trinidad, s. loc., s.d., *A. Riedle s.n*. (holotype: P, barcode P00481551 [image!]).

Bignonia coito Vell. Fl. Flumin.: 243 (1829). TYPE: [Icon. Ined.] "Didyn. Angiosp. BIGNONIA *coito Tab. 19*" Seção de Manuscritos, Bibliot. Nac. (Rio de Janeiro), n° I-17, 03, 002; mss1198655_023 [image!] (**lectotype, here designated**).

Original locality and distribution. *Bignonia coito* was described by Vellozo (1829) as "*Habitat silvis maritimis ad declivia Alpium Jerissinò*", which is recognized as a reference to the [base of the] Gericinó Massif, located in the now called "Serra do Mendanha" in Rio de Janeiro. In fact, *Bignonia corymbosa* is a plant native but not endemic to Brazil. Following Lohmann and Taylor (2014), and Zuntini (2023), this plant is found in Amazônia, Atlantic Forest, Cerrado, disturbed vegetation or semideciduous to evergreen forest. It is distributed in Bolívia, Colombia (Antioquia, Atlántico, Bolívar, Boyacá, Caldas, Caquetá, César, Chocó, Córdoba, La Guajira, Magdalena, Meta, Nariño, Norte de Santander, Santander, Sucre, Vaupés, Vichada), Costa Rica, Ecuador, French Guiana, Guyana, Lesser Antilles (Grenada, Martinique, St. Vincent, Virgin Islands), Panama, Peru (Loreto), Venezuela (Amazonas, Anzoátegui, Apure, Aragua, Barinas, Bolívar, Carabobo, Cojedes, Delta Amacuro, Distrito Federal, Falcón, Guárico, Lara, Miranda, Monagas, Portuguesa, Sucre, Táchira, Trujillo, Yaracuy, Zulia), Trinidad and Tobago, and Brazil (Midwest, North, Northeast and Southeast regions).

Nomenclatural notes. The combination *Bignonia corymbosa* L.G.Lohmann (2008) would be proposed in Nuevo Catálogo de la Flora Vascular de Venezuela, based on *Spathodea corymbosa* (Vent.) Vent. (1807). However, the name *B. corymbosa* Vent. (1804) already

existed and therefore *Bignonia corymbosa* (Vent.) L.G.Lohmann is a later homonym, hence illegitimate (Art. 53.1, Turland et al., 2018). Nonetheless, several studies mentioned the inappropriate name instead of the correct one (Lohmann & Taylor, 2014; Lohmann et al., 2018; Costa et al., 2019; Costa et al., 2021; Santos et al., 2021). This situation needs to be resolved, and *Bignonia corymbosa* Vent. non *Bignonia corymbosa* (Vent.) L.G.Lohmann, must be appropriately used.

The lectotype designated by Gentry (1975a) as *Bignonia coito* is considered superseded here (see comments under *Bignonia squalus*). A copy of the illustration of *Bignonia coito* stored in the Manuscript Sect. of Torre do Tombo is accessed through the PT-TT-MSLIV-2776_m0045 [image!].

Taxonomic notes. Gentry (1975a) treated *Bignonia coito* as a synonym of *Phryganocydia corymbosa*. The lectotype of *B. coito* well represents *Bignonia corymbosa* Vent. and includes relevant diagnostic features such as the cylindrical branchlets, 2-foliolate leaves, spathaceous calyx and corolla infundibuliform (Costa et al., 2019), although one of the terminal branches seems to have two petioles growing in the same place. Maybe the illustrator wanted to represent a 2-foliolate leaf, but misinterpreted it. The leaves are not fully represented, they are always folded (or part of them). Nevertheless, this situation does not prejudice the recognition of species. The original descriptions include an important feature: '*Corolla ampla, flavescens*' [Wide corolla, yellow]. The plate, along with the original description, assertively support the species recognition.

8. *Bignonia unguis* Vell.

Dolichandra unguis-cati (L.) L.G.Lohmann, Nuevo Cat. Fl. Vasc. Venezuela 273: (2008). *Bignonia unguis-cati* L., Sp. Pl. 2: 623 (1753). *Bignonia unguis* L., Syst. Nat., ed. 10. 2:

1114: (1759). orth. var. *Bignonia unguis* Vell., Fl. Flumin. 248: (1829). **orth. var**. *Doxantha unguis-cati* (L.) Miers, Proc. Roy. Hort. Soc. London 3: 189 (1863). *Batocydia unguis-cati* (L.) Mart. ex Britton & P.Wilson, Sci. Surv. Porto Rico & Virgin Islands 6: 194 (1925). *Macfadyena unguis-cati* (L.) A.H.Gentry, Brittonia 25: 236 (1973b). TYPE: Plumier, Descr. Pl. Amer., tab. 94, 1693 [n.v.] (Lectotype, designated by Nasir [1979: 18]).

Original locality and distribution. *Bignonia unguis* Vell. was described by Vellozo (1829) as "*Habitat silvis maritimis Paratyensibus*", which is recognized as Atlantic Forest in the Rio de Janeiro state, and here interpreted as the Paraty municipality region. In 1667, the 'Villa de Nossa Senhora dos Remédios de Parati' (or 'Paraty') was established, situated near the Paratiguaçu River (now Perequê-Açu) and the Patitiba River (Nascimento, 2005; IBGE, 2023). Thus, Vellozo (1829) may be referring to the region near the city, because he refers to Paraty, as noted by Pastore et al. (2021), using "*Pharmacopolitanis*". In fact, *Dolichandra unguis-cati* is a plant native but not endemic to Brazil. Following Gentry (1973a), Fonseca et al. (2017), and Fonseca (2023b), this species is found in Amazonia, Atlantic Forest, Caatinga, Cerrado, dry forests, moist forest, Pampa, Pantanal, or rarely in wet forest and tropical wet forest. It is distributed in Antigua, Argentina (Buenos Aires, Chaco, Corrientes, Entre Rios, Formosa, Jujuy, Misiones, Salta, Santa Fe, Tucuman), Bahamas Archipelago, Barbados, Belize, Bolivia, Colômbia (Atlântico, Bolivar, Caldas, Cesar, Choco, Cordoba, Cundinamarca, Guajira, La Guajira, Magdalena, Meta), Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, El Salvador, French Guiana, Guadalupe, Guatemala, Honduras, Mexico (Baja California, Campeche, Chiapas, Colima, Estado de Nueva Leon, Guerrero, Mexico, Michoachan, Nayarat, Oaxaca, Queretaro, Quintana Roo, San Luis Potosi, Sinaloa, Sonora, Tabasco, Tamaulipas, Veracruz, Yucatan), Nicaragua, Panama, Paraguay,

Peru (Amazonas, Cuzco, Junin, Loreto, Madre de Dios, Pasco, Puno, San Martin), Surinam, Puerto Rico, Saint Martin, Saint Thomas, Uruguay, Venezuela (Amazonas, Anzoategui, Apure, Aragua, Barinas, Bolivar, Carabobo, Cojedes, Delta Amacuro, Distrito Federal, falcon, Guarico, Lara, Merida, Miranda, Monaguas, Nueva Esparta, Portuguesa, Sucre, Uaracuy, Zulia) and the Windward Islands (Grenada, Martinique, Saint Lucia, Saint Vincent), and Brazil (all regions).

Nomenclatural notes. *Bignonia unguis* Vell. is here interpreted as a citation to *Bignonia unguis* L. (1759). Linnaeus initially published *Bignonia unguis-cati*, and, in 1759, changed its spelling removing "-*cati*" (Linnaeus, 1753, 1759). Therefore, Vellozo (1829) gave preference to (or eventually, only known) the later spelling "*Bignonia unguis*" from Linnaeus (1759). Thus, in this case, there would be no need to designate a "type material", but rather to mention the "reference material" deposited in the BN (mss1198655_024 [image!]). A copy of the illustration of *Bignonia unguis* Vell. stored in the Manuscript Sect. of Torre do Tombo is accessed through the PT-TT-MSLIV-2776_m0047 [image!].

This decision is in accordance with the ICN code, as we assume that *Bignonia unguis* L. and *B. unguis* Vell. share the same type, allowing both names to be inserted as orthographic variants (Art. 61.2, Turland et al. 2018). When searching the name at the site of Library National of Rio de Janeiro, put '*Bignonia unquis*' with a 'Q' instead of a 'G'.

Taxonomic notes. Gentry (1975a) placed *Bignonia unguis* Vell. as a synonym of *Macfadyena unguis-cati*, but he asserted, according to Gentry (1972), that *Dolichandra unguis-cati* is the most used name. This position was also accepted in later treatments (Lohmann & Taylor, 2014; Fonseca et al., 2017), and it is reinforced here.

The plate of *Bignonia unguis* well represents *Dolichandra unguis-cati* and includes relevant diagnostic features as the 2-foliolate leaves with a terminal modification into a trifid

tendril and campanulate calyx, inflated and truncate with a straight to sinuous margin (Fonseca et al., 2017). Although the illustration lacks representations of striate prophylls, these omissions do not impede species recognition. The original descriptions include features such as: '*Caulis scandens, teres*' [Scandent stem, cylindrical] and '*cirrho brevissimo, arcuato, tripartito*' [short, curved, tripartite tendril]. The plate, along with the original description, assertively support the species recognition.

9. *Bignonia ternata* Vell.

Adenocalymma ternatum (Vell.) Mello ex Bureau & K.Schum., Fl. Bras. (Martius) 8: 104 (1896). *Bignonia ternata* Vell., Fl. Flumin.: 246 (1829). TYPE: [Icon. Ined.] "Didyn. Angyosp. BIGNONIA *ternata Tab. 21*". Manuscript section, Bibliot. Nac. (Rio de Janeiro), n° I-17, 03, 002; mss1198655_025 [image!] (**lectotype, here designated**).

Original locality and distribution. *Bignonia ternata* was described by Vellozo (1829) from "*Habitat silvis maritimis*", which is recognized as some Rio de Janeiro place (see comments under *Bignonia squalus*).

Nomenclatural notes. Gentry (1975a) mentioned *Adenocalymma ternatum* as an established name. However, the author was unsure about the name without observing the collection mentioned by Bureau and Schumann (1896-1897). Following the same thought, Lohmann (2003) recognized *Adenocalymma ternatum* and proposed a typification, but in order to be effective the study needed to be validly published (Art. 7.10, Turland et al., 2018). Later, Lohmann and Taylor (2014), and Zuntini (2014) also accepted *Adenocalymma ternatum* as a valid name.

Nevertheless, Gentry (1975a) himself already said that the species is rarely collected and he has never seen it. Recently, Fonseca and Lohmann (2019) published an update about

the novelties on Adenocalymma, but *Adenocalymma ternatum* is not addressed to any species. However, Fonseca (2023a) mentioned *Bignonia ternata* as *Adenocalymma acutissimum* (Cham.) Miers synonym, even treating *Adenocalymma ternatum* as "in doubt". Indeed, *Bignonia ternata* is a name with difficult resolution, which explains the different interpretations. The reason is that the illustration does not have conclusive details (L.H.M. Fonseca, pers. comm.), meaning it is devoid of specific characters.

The lectotype designated by Gentry (1975a) as *Bignonia ternata* is considered superseded here (see comments under *Bignonia squalus*). A copy of the illustration of *Bignonia ternata* stored in the Manuscript Sect. of Torre do Tombo is accessed through the PT-TT-MSLIV-2776_m0049 [image!].

Taxonomic notes. Previous analysis (Bureau & Schumann, 1896-1897; Lohmann & Taylor, 2014; Zuntini, 2014) accepted *Bignonia ternata* [*Adenocalymma ternatum*]. Meanwhile, other authorities believe that illustration is insufficient for full recognition (L.H.M. Fonseca, pers. comm.).

The lectotype of *Bignonia ternata* does not present diagnostic features to recognize an *Adenocalymma* species. The 3-foliolate leaves with (or without) modified terminal foliole on simple tendril, axillary inflorescence and long flowers, are common at the very species. Also, the original descriptions cannot capture important features, only common ones such as '*cirrhosis*' [with tendrils] and '*multifloris, brevibus*' [numerous flowers, short]. Therefore, we agree with L.H.M. Fonseca (pers. comm.) and believe it is better to leave *Bignonia ternata* without identification (*incertae sedis*) until an assertive interpretation emerges.

10. *Bignonia scandens* Vell.

Anemopaegma chamberlaynii (Sims) Bureau & K.Schum., Fl. Bras. (Martius) 8: 128 (1896). *Bignonia chamberlaynii* Sims, Bot. Mag. 47: t. 2148 (1820). *Bignonia aequinoctialis* var. *chamberlaynii* (Sims) Ker Gawl., Bot. Reg. 9: t. 741 (1823). TYPE: Tab. 2148 in Sims, Bot. Mag. 47, 1820 [n.v.] (lectotype**,** designated by Lohmann & Taylor, [2014: 410]).

Bignonia scandens Vell., Fl. Flumin.: 246 (1829). TYPE: [Icon. Ined.] "Didyn. Ang[i]yosp. BIGNONIA *scandens Tab. 22*" Seção de Manuscritos, Bibliot. Nac. (Rio de Janeiro), n° I-17, 03, 002; mss1198655_026 [image!] (**lectotype, here designated**).

Original locality and distribution. *Bignonia scandens* was described by Vellozo (1829) as "*Habitat silvis maritimis*", which is recognized as some place in Rio de Janeiro (see comments under *Bignonia squalus*). In fact, *Anemopaegma chamberlaynii* is a plant native but not endemic to Brazil. Following Lohmann and Taylor (2014), and Firetti (2023), this species is found in Atlantic Forest, Caatinga, Cerrado or dry to wet forest. It is distributed in Bolivia, Paraguay and Brazil (Midwest, Northeast, South and Southeast).

Nomenclatural notes. The lectotype designated by Gentry (1975a) from *Bignonia scandens* is considered superseded here (see comments under *Bignonia squalus*). A copy of the illustration of *Bignonia scandens* stored in the Manuscript Sect. of Torre do Tombo is accessed through the PT-TT-MSLIV-2776_m0051 [image!].

Taxonomic notes. Gentry (1975a) included *Bignonia scandens* as a synonym of *Anemopaegma chamberlaynii*. This position was also accepted in later treatments (Lohmann & Taylor, 2014; Zuntini, 2014), and it is reinforced here.

Bignonia scandens well represents *Anemopaegma chamberlaynii* and includes relevant diagnostic features as the 3- or 2-foliolate leaves with modified terminal foliole on simple tendril, ovate leaves, acuminate apex, inflorescence with many flowers, corolla

infundibuliform, fruit morphology and winged seeds (Reiche et al., 2020). Although the complete leaves venation was not represented in the illustration, the lack of this characteristic does not prejudice the recognition of species. The original descriptions include features such as: '*pedunculis brevissimis, multifloris*' [short peduncle, many flowers], '*Cirrhi convoluti, simplices, longissimi*' [Coiled tendril, simple, long], '*Flores incurvi; siliquæ lanceolate, latas, breves*' [Curved flowers; lanceolate silique, wide, short]. Even though it is common to find descriptions that indicate the presence of "trifid tendrils" instead of "simple tendrils" (Reiche et al., 2020), most materials of this species presented leaves with simple tendrils (*Hatschbach 39842*; *Furlan et al. CFSC6728*; *Zuntini et al. 213*).

11. *Bignonia angrensis* Vell.

Bignonia angrensis Vell., Fl. Flumin.: 246 (1829). TYPE: [Icon. Ined.] "Didyn. Ang[i]yosp. BIGNONIA *angrensis Tab. 23*" Seção de Manuscritos, Bibliot. Nac. (Rio de Janeiro), n° I-17, 03, 002; mss1198655_027 [image!] (**lectotype, here designated**).

Original locality and distribution. *Bignonia angrensis* was described by Vellozo (1829) as "*Habitat silvis maritimis Angrensibus*" which is recognized as a place in Rio de Janeiro, here interpreted as Angra dos Reis municipality region.

Although Angra dos Reis was only officially elevated to the status of a city with this name in 1835 (Capaz, 2006; Soares & Rodrigues, 2020), the name "Angra dos Reis" was already in use long before that. Around 1593 the "Freguesia de Nossa Senhora da Conceição de Angra dos Reis" was established, after that, in 1608, the locality was elevated to 'Vila de Angra dos Santos Reis Magos da Ilha Grande' (APERJ, 2012; Rocha, 2013). On the official documents, the locality is commonly found under the names "Nossa Senhora da Conceição" and "Vila da Ilha Grande" (Capaz, 2006; Soares & Rodrigues, 2020). Besides, the use of the

name “Angra dos Reis” at the region before the realization of *Floræ Fluminensis* can be proven through parts of letters documented by Rocha (2013) in documentary analysis, such as: “*Angra dos Reis da Ilha Grande servimos este presente anno de 1749…*” and “*A Igreja Parochial da Villa de Angra dos Reys da Ilha grande se acha…*”. Thus, based on these explanations, it was concluded that *Bignonia angrensis* was collected in the current territory of Angra dos Reis municipality.

Nomenclatural notes. The lectotype designated by Sandwith and Hunt (1974) from *Bignonia angrensis* is considered superseded here (see comments under *Bignonia ignea*). A copy of the illustration of *Bignonia angrensis* stored in the Manuscript Sect. of Torre do Tombo is accessed through the PT-TT-MSLIV-2776_m0053 [image!].

Taxonomic notes. Gentry (1975a) highlights certain characteristics that may cause confusion due to anomalous details, but suggests *Bignonia angrensis* as a synonym of *Arrabidaea corallina* (Jacq.) Sandw. [*Tanaecium dichotomum* (Jacq.) Kaehler & L.G.Lohmann]. However, *Bignonia angrensis* does not appear recently as a synonym of any current names (Lohmann & Taylor, 2014), being placed as "nomina dubia" in Zuntini (2014) and it is not mentioned in the *Tanaecium* synopsis (Frazão & Lohmann, 2019).

Nevertheless, it was recently ascertained that *Tanaecium dichotomum* has no occurrence in RJ, RS, SP, and SC states (Frazão, 2023). Thus Gentry’s (1975a) hypothesis is put in doubt. Frazão and Lohmann (2019) discussed the large morphological variation of *T. dichotomum* and the species may be confused with others, such as *Tanaecium selloi*. Therefore, the illustration and plant collections from Rio de Janeiro were carefully analyzed, but we did not find morphological characteristics to suggest a synonymization assertion.

The lectotype of *Bignonia angrensis* resembles *Tanaecium selloi* and exhibits relevant features such as 3-foliolate leaves and a terminal thyrsus. However, the calyx is not truncate,

and the corolla also does not match that of *Tanaecium selloi* (Frazão & Lohmann, 2019). In fact, it seems like the plate has not been well-drawn, and the original descriptions also lack diagnostic features. Thus, in favor of nomenclatural stability, absence of debates about the true identity of the illustration, and in agreement with Gentry (1975a), this name should remain unidentified (*incertae sedis*).

12. *Bignonia fluminensis* Vell.

Pleonotoma fluminensis (Vell.) A.H.Gentry, Taxon 24: 342 (1975). *Bignonia fluminensis* Vell., Fl. Flumin.: 246 (1829). *Memora fluminensis* (Vell.) Miers, Proc. Roy. Hort. Soc. London III: 185 (1863). TYPE: [Icon. Ined.] "Didyn. Ang[i]yosp. BIGNONIA *fluminensis Tab. 24*" Seção de Manuscritos, Bibliot. Nac. (Rio de Janeiro), n° I-17, 03, 002; mss1198655_029 [image!] (**lectotype, here designated**).

Original locality and distribution. *Bignonia fluminensis* was described by Vellozo (1829) as "*Habitat silvis maritimis*", which is recognized as some place in Rio de Janeiro (see comments under *Bignonia squalus*). In fact, *Pleonotoma fluminensis* is a plant native and endemic to Brazil. Following Lohmann and Taylor (2014), and Gomes (2023), this species is found in Atlantic Forest. It is distributed in Brazil southeast (Minas Gerais, São Paulo).

Nomenclatural notes. The lectotype designated by Gentry (1975a) as *Bignonia fluminensis* is considered superseded here (see comments under *Bignonia squalus*). A copy of the illustration of *Bignonia fluminensis* stored in the Manuscript Sect. of Torre do Tombo is accessed through the PT-TT-MSLIV-2776_m0055 [image!].

Taxonomic notes. Miers (1863) noted *Bignonia fluminensis* and proposed the combination *Memora fluminensis*. Later, Sandwith (1962) commented that *Memora*

fluminensis is identifiable with Vellozo's description and illustration. Gentry (1975a) transferred *Bignonia fluminensis* to *Pleonotoma*, but made it clear that this could be a very rare species and perhaps already extinct. This position was also accepted in later treatments (Lohmann, 2003; Gomes, 2006; Lohmann & Taylor, 2014; Zuntini, 2014), and it is reinforced here. Although, due to the low number of collections (only two), it has been classified as 'questionable' in the genus review (Gomes, 2006).

Bignonia fluminensis well represents *Pleonotoma fluminensis* and includes relevant diagnostic features as the trifoliate leaves with a retuse or rounded apex (Gomes, 2006). Although the venation was not represented in the illustration, the lack of this characteristic does not prejudice the recognition of species. The original descriptions include features such as: '*foliolis ob-ovatis*' [obovate leaflets] and '*floribus solitariis, axillaribus*' [solitary and axillary flowers]. The plate, along with the original description, assertively support the species recognition.

Pleonotoma fluminensis exhibits morphological similarities with *Pleonotoma tetraquetra* (Cham.) Bureau (1868), a resemblance previously observed and documented by Gentry in an Herbarium voucher (Fig. 1) and also seen in Gomes (2006). Additionally, this study identified a resemblance between *P. fluminensis* and *P. tetraquetra* var. *tetraquetra* proposed in Gomes (2006). It would not be surprising if, in the future, they were to be recognized as the same species.

Fig. 1. Annotation of Gentry about a possible first *Pleonotoma fluminensis* collection. **A.** *Santos 24205* (NY). **B.** Gentry commentary in black rectangle. **Source:** SpeciesLink (2023).

13. *Bignonia fasciculata* Vell.

Tynanthus fasciculatus (Vell.) Miers, Proc. Roy. Hort. Soc. London 3: 193 (1863). *Bignonia fasciculata* Vell. Fl. Flumin.: 247 (1829). *Arrabidaea fasciculata* (Vell.) DC., Prodr. [A. P. de Candolle] 9: 185 (1845). *Cuspidaria fasciculata* (Vell.) Sond., Linnaea 22: 560 (1849). *Schizopsis fasciculata* (Vell.) Bureau ex Baill., Adansonia 5: 379 (1865). TYPE: [Icon. Ined.] "Didyn. Angiosp. BIGNONIA *fasciculata Tab. 25*" Seção de Manuscritos,

Bibliot. Nac. (Rio de Janeiro), n° I-17, 03, 002; mss1198655_028 [image!] (**lectotype, here designated)**.

Original locality and distribution. *Bignonia fasciculata* was described by Vellozo (1829) as "*Habitat silvis maritimis Regii Prædii S. Crucis*", which is recognized as some place in Rio de Janeiro (see comments under *Bignonia trifoliata*). In fact, *Tynanthus fasciculatus* is a plant native and endemic to Brazil. Following Lohmann and Taylor (2014), and Medeiros (2023), this species is found in Atlantic Forest, Cerrado or humid forest. It is distributed in Brazil southeast (Minas Gerais, São Paulo).

Nomenclatural notes. The Lectotype designated by Gentry (1975a) from *Bignonia fasciculata* is considered superseded here (see comments under *Bignonia squalus*). A copy of the illustration of *Bignonia fasciculata* stored in the Manuscript Sect. of Torre do Tombo is accessed through the PT-TT-MSLIV-2776_m0057 [image!].

Taxonomic notes. Gentry (1975a) agreed with the combination of *B. fasciculata* in *Tynanthus fasciculatus*. Later, other authors had made the effort to arrange the name in different genera of Bignoniaceae (Candolle, 1845; Sonder, 1849; Bureau, 1864-1865). However, the combination made by Miers (1863) was also accepted in later treatments (Sandwith, 1962; Lohmann, 2003; Lohmann & Taylor, 2014; Zuntini, 2014; Medeiros & Lohmann, 2015) and it is reinforced here.

Bignonia fasciculata well represents *Tynanthus fasciculatus* and includes relevant diagnostic features as the 3-foliolate leaves, acuminate apex , cuneate base, terminal thyrse that resemble corymbose or subcorymbose aspect and denticulate calyx apices (Medeiros & Lohmann, 2015). Although the leaves venation were not represented in the illustration, the lack of information does not prejudice the recognition of species. The original descriptions include features such as: '*Pedicelii trillori*' [Pedicel with three flowers] and '*Corolla*

ex-luteo-albida, tubo brevissimo, vix calycis longitudine' [Yellowish-white corolla, short tube, almost as long as the calyx]. The plate, along with the original description, assertively support the species recognition.

14. *Bignonia longisiliqua* Vell.

Stizophyllum perforatum (Cham.) Miers, Proc. Roy. Hort. Soc. London 3: 198 (1863). *Bignonia perforata* Cham., Linnaea 7: 667 (1832). TYPE: Brazil, s. loc. 1840, *F. Sellow s.n.*, (holotype: LE [n.v.]); Isotypes: B [lost]; K, barcode K000449667 [image!]; K000449668 [image!]; NY, barcode NY00313145 [image!]; US, barcode US00125839 [image!].

Bignonia longisiliqua Vell., Fl. Flumin.: 247 (1829) non *Bignonia longisiliqua* Jacq., Select. Stirp. Amer. Hist. 234 (1780). TYPE: [Icon. Ined.] "Didynamia. Angiosp. BIGNONIA *longisiliqua Tab. 26*" Seção de Manuscritos, Bibliot. Nac. (Rio de Janeiro), n° I-17, 03, 002; mss1198655_030 [image!] (**lectotype, here designated**).

Original locality and distribution. *Bignonia longisiliqua* Vell. has no indication of locality, vegetation or month of the year in the original manuscript of *Floræ Fluminensis*. In fact, *Stizophyllum perforatum* is a plant native but is not endemic to Brazil. Following Lohmann and Taylor (2014), and Beyer (2023), this species is found in Costa Rica, Guatemala, Guyana, Mexico (Campeche), Panama, and Brazil (Midwest, Northeast, South and Southeast).

Nomenclatural notes. The lectotype designated by Gentry (1975a) as *Bignonia longisiliqua* Vell. is considered superseded here (see comments under *Bignonia squalus*). A copy of the illustration of *Bignonia longisiliqua* Vell. stored in the Manuscript Sect. of Torre do Tombo is accessed through the PT-TT-MSLIV-2776_m0059 [image!].

Taxonomic notes. Gentry (1975a) treated *Bignonia longisiliqua* Vell. as a later homonym of *Bignonia longisiliqua* Jacq. (1780), and co-specific with *Stizophyllum perforatum*. Later, Zuntini (2014), also considered *B. longisiliqua* Vell. as a synonym of *S. perforatum*. Finally, Kataoka and Lohmann (2021) interpreted *B. longisiliqua* Vell. as an attempt to cite *Bignonia longisiliqua* Jacq. [*Catalpa longissima* (Jacq.) Dum.Cours.]. Our careful analysis supports Gentry's (1975a) and Zuntini's (2014) position, and *Bignonia longisiliqua* Vell. is here considered a synonym of *Stizophyllum perforatum*.

Bignonia longisiliqua Vell. well represents *Stizophyllum perforatum* and includes relevant diagnostic features as 3-foliolate leaves with presence (or not) of simple tendril, cordate base, entire margin and long fruit, although the illustration does not seem to have been well executed, since in the protologue (Vellozo, 1829) it is stated '*pedicellis unifloris*' [uniparous pedicel] and the characteristic was not depicted. Besides, there are confusing details, as the curved structure resembles a simple tendril, but without leaves and the lack the venation representation on the majority of leaves. Nevertheless, this detail does not prejudice the recognition of species. The original descriptions include features, such as: '*foliolis cordato-ovatis*' [cordate-ovate leaflets] and '*siliqua longissima*' [long silique]. The plate, along with the original description, assertively support the species recognition.

15. *Bignonia elegans* Vell.

Fridericia elegans (Vell.) L.G.Lohmann Ann. Missouri Bot. Gard. 99: 437 (2014). *Bignonia elegans* Vell., Fl. Flumin.: 247 (1829). *Adenocalymma elegans* (Vell.) Mart. ex K.Schum., H.G.A.Engler & K.A.E.Prantl, Nat. Pflanzenfam. 4: 214 (1894). *Pseudocalymma elegans* (Vell.) Kuhlm., Rodriguésia 14: 365 (1941). *Arrabidaea elegans* (Vell.) A.H.Gentry, Taxon 24: 338 (1975). TYPE: [Icon. Ined.] "Didyn.

Angiosp. BIGNONIA *elegans Tab. 27*" Seção de Manuscritos, Bibliot. Nac. (Rio de Janeiro), n° I-17, 03, 002; mss1198655_031 [image!] (**lectotype, here designated**).

Original locality and distribution. *Bignonia elegans* was described by Vellozo (1829) as "*Offendi ad viam publicam prope Molendimum Sacchariferum vulgo dictum Lamarão*", which is recognized as some Rio de Janeiro place. In fact, *Fridericia elegans* is a plant native and endemic to Brazil. Following Lohmann and Taylor (2014), Kaehler (2023a), this species is found in Brazil Southeast (Rio de Janeiro). When we carried out research about "sugar mills" or "sugar mills Lamarão" in Rio de Janeiro, it was shown information related to "Freguesia de Campo Grande". This place is currently a neighborhood in Rio de Janeiro (capital), but the region already has many sugar mills, with "Lamarão" being one of these mills (Pedroza, 2010). Considering this information, this collection locality is interpreted here in reference to Rio de Janeiro captaincy.

Nomenclatural notes. The lectotype designated by Gentry (1975a) as *Bignonia elegans* is considered superseded here (see comments under *Bignonia squalus*). A copy of the illustration of *Bignonia elegans* stored in the Manuscript Sect. of Torre do Tombo is accessed through the PT-TT-MSLIV-2776_m0061 [image!].

Taxonomic notes. Schumann (1894) made the first treatment with *Bignonia elegans* and proposed the combination: *Adenocalymma elegans*. Kuhlmann (1941) suggested a new generic delimitation and transferred the species to *Pseudocalymma* A.Samp. & Kuhlm. [*Mansoa* DC.]. Gentry (1975a) made a comprehensive treatment, explained about the right position to *Bignonia elegans* and made a combination: *Arrabidaea elegans*. This position was also accepted in later treatments (Gentry, 1980; Gentry, 1992a; Lohmann, 2003). Recently, Lohmann and Taylor (2014) proposed a new generic delimitation, transferring the species to

Fridericia Mart. emend. L.G.Lohmann. This decision was accepted in subsequent studies (Kaehler et al., 2019) and it is reinforced here.

Bignonia elegans well represents *Fridericia elegans* and includes relevant diagnostic features as the 2-foliolate leaves, rounded base, apex acute, yellow corolla. Although the fruits are not illustrated, this detail does not prejudice the species recognition. The original description includes features as: '*Corolla lutea; calyx strictus. Pedicelli trillori*' [Yellow corolla; straight calyx. Pedicel with three flowers]. The plate, along with the original description, assertively support the species recognition.

16. *Bignonia grandifolia* Vell.

Adenocalymma grandifolium Mart. ex DC., Prodr. [A. P. de Candolle] 9: 199 (1845). *nom. nov*. *Bignonia grandifolia* Vell. Fl. Flumin.: 247 (1829) non *Bignonia grandifolia* Jacq., Pl. Rar. Hort. Schoenbr. 3: 19. t.287 (1798). *Adenocalymma prasinum* Miers, Ann. Mag. Nat. Hist. Ser. 3, 7: 395 (1861). TYPE: [Icon. Ined.] Didyn. Angiosp. BIGNONIA *grandifolia Tab. 28* Seção de Manuscritos, Bibliot. Nac. (Rio de Janeiro), n° I-17, 03, 002; mss1198655_032 [image!] (**lectotype, here designated**).

Original locality and distribution. *Bignonia grandifolia* has no indication of locality, vegetation or month of the year in the original manuscript of *Floræ Fluminensis*. In fact, *Adenocalymma grandifolium* is a plant native and endemic to Brazil. Following Lohmann and Taylor (2014), and Fonseca (2023a), this species is found in Atlantic Forest. It is distributed in Brazil southeast (Espirito Santo, Minas Gerais, Rio de Janeiro and São Paulo).

Nomenclatural notes. *Bignonia grandifolia* Vell. is a later homonym of *Bignonia grandifolia* Jacq. (1798). Candolle (1845) published *Adenocalymma grandifolium* as a replacement name to *Bignonia grandifolia* Vell. (Art. 6.11, Turland et al., 2018). Later, Miers

(1863) proposed *Adenocalymma prasinum* to *Bignonia grandifolia* Vell. However, Miers (1863) did not see that Candolle (1845) had already proposed *Adenocalymma grandifolium* as a substitute name, and therefore, *Adenocalymma prasinum* is superfluous. The appropriate treatment is presented in Udulutsch et al. (2013).

Previous studies (Udulutsch et al., 2013; Lohmann & Taylor, 2014; Fonseca & Lohmann, 2019) follow the lectotypification from *Bignonia grandifolia* Vell. made by Laroche (1973), but this is considered superseded here (see comments under *Bignonia trifoliata*). A copy of the illustration of *Bignonia grandifolia* Vell. stored in the Manuscript Sect. of Torre do Tombo is accessed through the PT-TT-MSLIV-2776_m0063 [image!].

Taxonomic notes. Since Laroche (1973), the name of Vellozo is frequently associated with *Adenocalymma grandifolium* (Gentry, 1975a; Udulutsch et al., 2013; Lohmann & Taylor, 2014; Fonseca & Lohmann, 2019), Zuntini (2014) being the only exception who proposes a connection with *Adenocalymma ternatum*. In addition, *Bignonia grandifolia* Vell. received a confusing treatment in some databases. The POWO (2023), anchored in Lohmann and Taylor (2014) and Govaerts (1996), put *Bignonia grandifolia* Vell. as a synonym of *Adenocalymma ternatum*. Though, on the Flora and Funga of Brazil, anchored to Fonseca and Lohmann (2019), *Adenocalymma grandifolium* is considered as a valid name. This position was also accepted in recent treatment (Fonseca & Lohmann, 2019), and it is reinforced here.

Bignonia grandifolia Vell. well represents *Adenocalymma grandifolium* and includes relevant diagnostic features as the big 3-foliolate leaves, and terminal inflorescence with long flowers. The original descriptions include other features such as: '*foliolis lanceolatis*' [lanceolate leaflets] and '*racemis terminalibus; pedicellis bracteatis, unifloris*' [terminal racemes; pedicels with bracts, uniparous]. The plate, along with the original description, assertively support the species recognition.

17. *Bignonia cordata* Vell.

Lundia corymbifera (Vahl) Sandwith, Rec. Trav. Bot. Néerl. 34: 229 (1937). *Bignonia corymbifera* Vahl in Eclog. Amer. 2: 45 (1798). *Petastoma corymbiferum* (Vahl) Miers, Proc. Roy. Hort. Soc. London 3: 193 (1863). *Arrabidaea corymbifera* (Vahl) Bureau ex K.Schum., Nat. Pflanzenfam. [Engler & Prantl] 4: 213 (1894). *Cuspidaria corymbifera* (Vahl) Baill. ex K.Schum., Nat. Pflanzenfam. [Engler & Prantl] 4: 216 (1894). TYPE: Trinidad, s. loc., s.d., *J. P. von Rohr 6* (holotype: C, barcode C10008613 [n.v.]; C, as photo F neg. 22118 at MO-1692886 [n.v.]).

Bignonia cordata Vell. in Fl. Flumin.: 247 (1829). TYPE: [Icon. Ined.] "Didyn. Angiosp. BIGNONIA *cordata Tab. 29*" Seção de Manuscritos, Bibliot. Nac. (Rio de Janeiro), n° I-17, 03, 002; mss1198655_033 [image!] (**lectotype, here designated**).

Original locality and distribution. *Bignonia cordata* was described by Vellozo (1829) as "*Habitat silvis maritimis Pharmacopolitanis*", which is recognized as some place in Rio de Janeiro (see comments under *Bignonia triphylla*). In fact, *Lundia corymbifera* is a plant native but not endemic to Brazil. Following Lohmann and Taylor (2014), and Kaehler (2023b), this species is found in Amazônia, Atlantic Forest or seasonal forest. It is distributed in Bolivia, Colombia (Antioquia, Bolívar, César, Chocó, Córdoba, Cundinamarca, Magdalena, Sucre, Tolima, Valle del Cauca), Costa Rica, Equador, French Guiana, Guyana, Panama, Peru (Amazonas, Cajamarca, Cusco, Loreto, Madre de Dios, San Martín, Ucayali), Trinidad and Tobago, Venezuela (Amazonas, Aragua, Bolívar, Carabobo, Distrito Federal, Falcón, Lara, Miranda, Monagas, Sucre, Trujillo, Yaracuy, Zulia) and Brazil (North, Northeast and Southeast).

Nomenclatural notes. The Lectotype designated by Gentry (1975a) from *Bignonia cordata* is considered superseded here (see comments under *Bignonia squalus*). A copy of the illustration of *Bignonia cordata* stored in the Manuscript Sect. of Torre do Tombo is accessed through the PT-TT-MSLIV-2776_m0065 [image!].

Taxonomic notes. Gentry (1975a) put *Bignonia cordata* as a synonym of *Bignonia corymbifera* [*Lundia corymbifera*]. Other authors (Lohmann, 2003; Zuntini, 2014) accepted the combination *Lundia cordata*. Later, Lohmann and Taylor (2014) treated *Bignonia cordata* as a heterotypic synonym of *Lundia corymbifera* and this position is reinforced here.

Bignonia cordata well represents *Lundia corymbifera* and includes relevant diagnostic features as the 3-foliolate leaves with terminal foliole modified in simple tendril, acuminate apex, base cordate, inflorescence axillary and corolla infundibuliform form with acuminate apices. These characteristics agree with *Lundia corymbifera* (Kaehler & Lohmann, 2021). Although existing information lacks fruits and seeds, it does not prejudice the recognition of species. The original descriptions include features such as: '*cirrhosis; foliolis cordatis*' [with tendrils; cordate leaflets], '*pedunculis axillaribus; pedicellis fasciculatis, tritioris*' [axillary peduncle; fasciculate pedicels, with three flowers], '*laciniæ corollæ acuminatæ*' [corolla segments acuminate]. The plate, along with the original description, assertively support the species recognition.

18. *Bignonia exoleta* Vell.

Dolichandra unguis-cati (L.) L.G.Lohmann, Nuevo Cat. Fl. Vasc. Venezuela 273: (2008). *Bignonia unguis-cati* L., Sp. Pl. 2: 623 (1753). *Doxantha unguis-cati* (L.) Miers, Proc. Roy. Hort. Soc. London 3: 189 (1863). *Batocydia unguis-cati* (L.) Mart. ex Britton & P.Wilson, Sci. Surv. Porto Rico & Virgin Islands 6: 194 (1925). *Macfadyena unguis-cati*

(L.) A.H.Gentry, Brittonia 25: 236 (1973b). TYPE: Plumier, Descr. Pl. Amer., tab. 94, 1693 [n.v.] (Lectotype, designated by Nasir [1979: 18]).

Bignonia exoleta Vell., Fl. Flumin.: 248 (1829). TYPE: [Icon. Ined.] "Didyn. Angiosp. BIGNONIA *exoleta Tab. 30*" Seção de Manuscritos, Bibliot. Nac. (Rio de Janeiro), n° I-17, 03, 002; mss1198655_034 [image!] (**lectotype, here designated**).

Original locality and distribution. *Bignonia exoleta* has no indication of locality, vegetation or month of the year in the original manuscript of *Floræ Fluminensis*. In fact, *Dolichandra unguis-cati* is a plant native but not endemic to Brazil. Following Gentry (1973a), Fonseca et al. (2017), and Fonseca (2023b), this species is found in Amazonia, Atlantic Forest, Caatinga, Cerrado, dry forests, moist forest, Pampa, Pantanal, or rarely in wet forest and tropical wet forest. It is distributed in Antigua, Argentina (Buenos Aires, Chaco, Corrientes, Entre Rios, Formosa, Jujuy, Misiones, Salta, Santa Fe, Tucuman), Bahamas Archipelago, Barbados, Belize, Bolivia, Colômbia (Atlântico, Bolivar, Caldas, Cesar, Choco, Cordoba, Cundinamarca, Guajira, La Guajira, Magdalena, Meta), Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, El Salvador, French Guiana, Guadalupe, Guatemala, Honduras, Mexico (Baja California, Campeche, Chiapas, Colima, Estado de Nueva Leon, Guerrero, Mexico, Michoachan, Nayarat, Oaxaca, Queretaro, Quintana Roo, San Luis Potosi, Sinaloa, Sonora, Tabasco, Tamaulipas, Veracruz, Yucatan), Nicaragua, Panama, Paraguay, Peru (Amazonas, Cuzco, Junin, Loreto, Madre de Dios, Pasco, Puno, San Martin), Surinam, Puerto Rico, Saint Martin, Saint Thomas, Uruguay, Venezuela (Amazonas, Anzoategui, Apure, Aragua, Barinas, Bolivar, Carabobo, Cojedes, Delta Amacuro, Distrito Federal, falcon, Guarico, Lara, Merida, Miranda, Monaguas, Nueva Esparta, Portuguesa, Sucre, Uaracuy, Zulia) and the Windward Islands (Grenada, Martinique, Saint Lucia, Saint Vincent), and Brazil (all regions).

Nomenclatural notes. The lectotype designated by Sandwith and Hunt (1974) as *Bignonia exoleta* is considered superseded here (see comments under *Bignonia squalus*). A copy of the illustration of *Bignonia exoleta* stored in the Manuscript Sect. of Torre do Tombo is accessed through the PT-TT-MSLIV-2776_m0067 [image!].

Taxonomic notes. Gentry (1975a) listed *Bignonia exoleta* as a synonym of *Macfadyena unguis-cati*. Later, Zuntini (2014) accepted the connection between *Bignonia exoleta* and *Bignonia unguis-cati*. more recently, Fonseca et al. (2017) treated and also accepted this organization. Thus, our study, in accordance with Fonseca et al. (2017), reinforces this position.

Bignonia exoleta well represents *Dolichandra unguis-cati* and includes relevant diagnostic features as the folioles with apex acute, cuneate base, serrated margin, campanulate calyces, inflated, with truncate to sinuous margin. These characteristics agree with *Dolichandra unguis-cati* (Fonseca et al., 2017). Besides, the illustration shows bifoliolate leaves without tendril, a fact that disagrees with *D. unguis-cati* description (Fonseca et al., 2017). However, consulting the *D. unguis-cati* collections, it is possible to note the morphological variation already cited by Gentry (1975a). In this example, the *Bueno & Siqueira 86* (SPF) and *Hoehne s.n.* (NY) present gatherings lacking the terminal foliole modified on tendril. The original descriptions include features such as: '*foliolis ovato-lanceolatis*' [ovate-lanceolate leaflets], '*pedicellis bifloris*' [pedicel with two flowers]. The plate, along with the original description, assertively support the species recognition.

19. *Bignonia convoluta* Vell.

Cuspidaria convoluta (Vell.) A.H.Gentry, Taxon 24: 343 (1975). *Bignonia convoluta* Vell., Fl. Flumin.: 248 (1829). TYPE: [Icon. Ined.] "Didyn. Angiosp. BIGNONIA *convoluta Tab.*

31" Seção de Manuscritos, Bibliot. Nac. (Rio de Janeiro), n° I-17, 03, 002; mss1198655_035 [image!] (**lectotype, here designated**).

Original locality and distribution. *Bignonia convoluta* has no indication of locality, vegetation or month of the year in the original manuscript of *Floræ Fluminensis*. In fact, *Cuspidaria convoluta* is a plant native but not endemic to Brazil. Following Lohmann and Taylor (2014), and Francisco (2023), this species is found in Atlantic Forest, Cerrado, dry forest, Pampa or Pantanal. It is distributed in Argentina (Corrientes, Misiones), Bolivia, Paraguay, and Brazil (Midwest, South and Southeast).

Nomenclatural notes. The lectotype designated by Gentry (1975a) as *Bignonia convoluta* is considered superseded here (see comments under *Bignonia squalus*). A copy of the illustration of *Bignonia convoluta* stored in the Manuscript Sect. of Torre do Tombo is accessed through the PT-TT-MSLIV-2776_m0069 [image!].

Taxonomic notes. Gentry (1975a) interpreted *Bignonia convoluta* as *Cuspidaria* species for reasons of 'reflexed anther thecae'. He commented that Bureau and Schumann (1996-1997) treated *B. convoluta* as *Arrabidaea puberula* (Mart. ex DC.) Bureau [*Cuspidaria simplicifolia* DC.]. Nevertheless, Gentry concluded that, for reasons of open panicule and small deeply dissected calyx illustrated, this species should be best associated with *Cuspidaria pterocarpa* (Cham.) DC. Thus, he finished the analysis proposing a new (and currently accepted) combination: *Cuspidaria convoluta*. This position was also accepted in later treatments (Lohmann, 2003; Lohmann & Taylor, 2014; Zuntini, 2014). and it is reinforced here.

20. *Bignonia dichotoma* Vell.

Tanaecium pyramidatum (Rich.) L.G.Lohmann, Nuevo Cat. Fl. Vasc. Venezuela 274: (2008). *Bignonia pyramidata* Rich., Actes Soc. Hist. Nat. Paris 1: 110 (1792). *Haplolophium pyramidatum* (Rich.) Miers, Proc. Roy. Hort. Soc. London 3: 199 (1863). *Paragonia pyramidata* (Rich.) Bureau, Konigl. Danske Vidansk. Selsk. Skr., Naturivdensk. Math. Afd., ser. 6, 6: 422 (1892). *Tabebuia pyramidata* (Rich.) DC., Prodr. [A.P. de Candolle] 9: 214 (1845). TYPE: French Guiana, Cayenne, s. d., *J. B. Leblond 292* (holotype: P-LA, barcode P00358235 [n.v.]; Isotype: P-LA, barcode P00358236 [n.v.]).

Bignonia dichotoma Vell., Fl. Flumin.: 248 (1829). **syn. nov.** non *Bignonia dichotoma* Jacq. Enum. Syst. Pl. 25 (1760). *Arrabidaea dichotoma* (Vell.) Bureau, Warm. Lagoa Santa, K. Danske Vidensk. Selsk. Skr., Raekke 6, Naturvidensk. & Math. Afd., vi. No. 3, 422: 270 (1892). TYPE: [Icon. Ined.] "Didyn. Angiosp. BIGNONIA *dichotoma Tab. 32*" Seção de Manuscritos, Bibliot. Nac. (Rio de Janeiro), n° I-17, 03, 002; mss1198655_036 [image!] (**lectotype, here designated**).

Original locality and distribution. *Bignonia dichotoma* Vell. has no indication of locality, vegetation or month of the year in the original manuscript of *Floræ Fluminensis*. In fact, *Tanaecium pyramidatum* is a plant native but not endemic to Brazil. Following Frazão and Lohmann (2019), and Frazão (2023), this species is found in Amazônia, Atlantic Forest, Caatinga, Cerrado, dry and wet vegetation, Pampa or Pantanal. It is distributed in Belize (Cayo, Toledo, Stann Creek, Belize, Orange Walk, Corozal), Bolivia (Beni, Cochabamba, La Paz, Pando, Santa Cruz), Colombia (Amazonas, Antioquia, Atlántico, Boyacá, Caquetá, Chocó, Córdoba, Cundinamarca, Guaviare, Magdalena, Meta, Nariño, Putumayo, Santander, Valle del Cauca, Vaupés), Costa Rica (Alajuela, Guanacaste, Heredia, Limón, Puntarenas, San José), Ecuador (El Oro, Esmeraldas, Guayas, Loja, Los Ríos, Manabí, Napo, Pastaza, Pichincha, Sucumbíos, Zamora-Chinchipe), El Salvador (Ahuachapán, La Libertad,

Usulután), Guatemala (Alta Verapaz, Izabal, Petén), French Guiana (Cayenne, Saint-Laurent-du-Maroni), Guyana (East Berbice, Rupununi, West Demerara), Honduras (Colón, El Paraíso, Gracias a Dios, Islas de la Bahía, Olancho, Yoro), Mexico (Campeche, Chiapas, Colima, Oaxaca, Quintana Roo, Tabasco, Veracruz), Nicaragua (Atlántico Norte, Atlántico Sur, Chontales, Jinotega, Matagalpa, Río San Juan, Rivas), Panama (Bocas del Toro, Canal Area, Chiriquí, Coclé, Colón, Darién, Herrera, Los Santos, Panamá, San Blas, Veraguas), Peru (Amazonas, Cusco, Huánuco, Junín, Loreto, Madre de Dios, Pasco, Puno, San Martín, Ucayali), Suriname (Nickerie, Saramacca, Sipaliwini), Trinidad and Tobago, and. Venezuela (Amazonas, Anzoátegui, Apure, Barinas, Bolívar, Delta Amacuro, Distrito Federal, Falcón, Lara, Miranda, Monagas, Portuguesa, Sucre, Yaracuy, Zulia), and Brazil (all regions).

Nomenclatural notes. *Bignonia dichotoma* Vell. is a later homonym of *Bignonia dichotoma* Jacq. (1760), therefore it is illegitimate (Art. 53.1, Turland et al., 2018).

The lectotype designated by Sandwith and Hunt (1974) as *Bignonia dichotoma* Vell. non *Bignonia dichotoma* Jacq. (1760) is considered superseded here (see comments under *Bignonia ignea*). A copy of the illustration of *Bignonia dichotoma* Vell. stored in the Manuscript Sect. of Torre do Tombo is accessed through the PT-TT-MSLIV-2776_m0071 [image!].

Taxonomic notes. Sandwith and Hunt (1974) treated *Bignonia dichotoma* Vell. as a synonym of *Arrabidaea selloi* (Spreng.) Sandwith [*Tanaecium selloi*]. Gentry (1975a) also treated this name as a basionym of some species of *Arrabidaea* DC., especially *A. selloi* [*Tanaecium selloi*]. However, still considering the big variation in morphology in the species, the analysis of illustration and plants is a lot like *Tanaecium pyramidatum*. Although the origin description has no indication of locality, the search for information was concentrated in Rio de Janeiro and São Paulo states. Thus, based on evaluation of characteristics of the

illustration, description of species and plant collections in RJ and SP, a new synonym is detected here. The illustrated characteristics are 2–foliolate leaves with indication of terminal foliole often modified on simple tendril, axillary thyrse, (apparently) tubular calyx; these are some characteristics that agree with *Tanaecium* Sw. (Frazão & Lohmann, 2019).

Bignonia dichotoma Vell. well represents *Tanaecium pyramidatum* and includes relevant diagnostic features as the 2-foliolate leaves with terminal leaflet modified into a simple tendril, rounded base, apex acute, entire margin and flower morphology (Frazão & Lohmann, 2019; Fernando et al., 2021). Although *Tanaecium pyramidatum* is described with terminal inflorescence, in the lectotype the inflorescence is axillary, which can be also seen in other gatherings, such as: *Hatschbach & Guimarães 56149* (HUEFS, INPA, MBM), *Salis & Joly 78* (UEC), *Lombardi 6426* (SPF). The original descriptions include features such as: '*cirrhosis; foliolis ovatis*' [with tendril; oval leaflets], '*pedunculis axillaribus*' [axillary peduncle] and "*Inflorescentia…, axillaris*" [Axillary… inflorescence]. The plate, along with the original description, assertively support the species recognition.

Additional specimens examined. **BRAZIL. Rio de Janeiro**: Nova Iguaçu, Reserva Biológica do Tinguá, 15 Jan 2002, 22º45'S 43º27'W, *Silva-Neto 1613* (RBR). Petrópolis, Cortiço, À Margem de um caminho, na capoeira, 13 Jan 1942, 22º30'S 43º10'W, *Monteiro 2433* (RBR). Rio Claro, 06 Dez 2003, 22º43'S 44º08'W, *Assis 1695* (SPF). Santa Maria Madalena, Estrada para Sossego, via Cachoeirão, 20 Dec 2017, 21°51'S 41°51'W, *Ferreira et al. 514* (HUEFS, VIES). São Paulo: Pariquera-Açú, Estação Experimental do Instituto Agronômico, 16 Sep 1996, 24°36'S 47°52'W, *Ivanauskas & Gomes 883* (UEC). Riolândia, A 5km de Riolândia em direção a Cardoso 1º parada, 11 Oct 1994, 19°59'S 49°46'W, *Souza et al. 29* (UEC). São José do Rio Preto, Mirassol, 05 Oct 1995, 20°48'S 49°22'W, *Rezende 210*

(SJRP, UEC). Ubatuba, Picinguaba, 15 Dec 1995, 23°22'S 44°48'W, *Pedroni & Sanchez 2340* (UEC).

21. *Bignonia unguiculata* Vell.

Dolichandra unguiculata (Vell.) L.G.Lohmann, Ann. Missouri Bot. Gard. 99: 431 (2014). *Bignonia unguiculata* Vell., Fl. Flumin.: 248 (1829). *Doxantha unguiculata* (Vell.) Miers, Proc. Roy. Hort. Soc. London 3: 190 (1863). *Parabignonia unguiculata* (Vell.) A.H.Gentry, Taxon 24: 343 (1975). TYPE: [Icon. Ined.] "Didyn. Angiosp. BIGNONIA *unguiculata Tab. 33*" Seção de Manuscritos, Bibliot. Nac. (Rio de Janeiro), n° I-17, 03, 002; mss1198655_037 [image!] (**lectotype, here designated**).

Original locality and distribution. *Bignonia unguiculata* has no indication of locality, vegetation or month of the year in the original manuscript of *Floræ Fluminensis*. In fact, *Dolichandra unguiculata* is native and endemic to Brazil. Following Fonseca et al. (2017), and Fonseca (2023b), this species is found in Atlantic Forest. It is distributed in the Northeast, Southeast, and South of the country.

Nomenclatural notes. The lectotype designated by Gentry (1975a) as *Bignonia unguiculata* is considered superseded here (see comments under *Bignonia squalus*). A copy of the illustration of *Bignonia unguiculata* stored in the Manuscript Sect. of Torre do Tombo is accessed through the PT-TT-MSLIV-2776_m0073 [image!]. The search of the name on Library Nacional of Rio de Janeiro, put '*Bignonia unquiculata*' with a 'Q' instead of a 'G'.

Taxonomic notes. Gentry (1975a) proposed the combination *Parabignonia unguiculata*. Since then, the basionym *Bignonia unguiculata* has always been considered valid in other

studies, but in different genera (Lohmann, 2003; Lohmann & Taylor, 2014; Zuntini, 2014; Fonseca et al., 2017), and it is reinforced here.

Bignonia unguiculata well represents *Dolichandra unguiculata* and includes relevant diagnostic features as the 2-foliolate leave (terminal trifid tendril), apex apiculate, rounded base, inflated calyx and corolla infundibuliform (Fonseca et al., 2017). The original descriptions include features such as: '*pedunculis axillaribus, quadrifloris*' [axillary peduncle, with four flowers], '*Cirrhi brevissimi, arcuati, tripartiti*' [Short, curved, tripartite tendril]. Besides, it is interesting to note that a resemblance was perceived between *B. unguiculata* and *B. unguis*, when he wrote '*B. unguis assimilatur*' [resembling *Bignonia unguis*].

22. *Bignonia perianthomega* Vell.

Perianthomega vellozoi Bureau, Vidensk. Meddel. Naturhist. Foren. Kjøbenhavn 105: (1893).

Bignonia perianthomega Vell., Fl. Flumin.: 248 (1829). *Memora perianthomega* (Vell.) Miers, Proc. Roy. Hort. Soc. London 3: 185 (1863). TYPE: [Icon. Ined.] "Didyn. Angiosp. BIGNONIA *perianthomega Tab. 34*" Seção de Manuscritos, Bibliot. Nac. (Rio de Janeiro), n° I-17, 03, 002; mss1198655_038 [image!] (**lectotype, here designated**).

Original locality and distribution. *Bignonia perianthomega* has no indication of locality, vegetation or month of the year in the original manuscript of *Floræ Fluminensis*. In fact, *Perianthomega vellozoi* is a plant native but not endemic to Brazil. Following Lohmann and Taylor (2014), and Lohmann (2023d), this species is found in Atlantic Forest, Cerrado, dry vegetation or Pantanal. It is distributed in Bolivia, Paraguay (North), and Brazil (Midwest and Southeast).

Nomenclatural notes. The lectotype designated by Gentry (1975a) as *Bignonia perianthomega* is considered superseded here (see comments under *Bignonia squalus*). A copy of the illustration of *Bignonia perianthomega* stored in the Manuscript Sect. of Torre do Tombo is accessed through the PT-TT-MSLIV-2776_m0075 [image!].

Taxonomic notes. Miers (1863) treated *Bignonia perianthomega* and made the combination: *Memora perianthomega*. Gentry (1975a), without explications, recognized the basyonim *B. perianthomega* and combined the species in the monotypic genus *Perianthomega* Bureau ex Baill. This position was also accepted in later treatments (Gomes, 1957; Lohmann, 2003; Lohmann & Taylor, 2014; Zuntini, 2014), and it is reinforced here.

Bignonia perianthomega well represents *Perianthomega vellozoi* and includes relevant diagnostic features as the 9-foliolate leaves, the folioloes have acuminate apex, rounded base, entire margin, there is a simple tendril. Besides, the very large and campanulate calyx is diagnosed (Gentry, 1992b). The original descriptions include features such as: '*Perianthium magnum, laxum, dimidium corolla*' [Large, loose perianth, half the size of the corolla], '*Cirrhi oppositi-folii, convoluti*' [Tendril opposite the leaf, coiled]. The plate, along with the original description, assertively support the species recognition.

23. *Bignonia hirta* Vell.

Cuspidaria simplicifolia DC., Rev. Bignon.: 9 (1838). *Setilobus simplicifolius* (DC.) K.Schum., Nat. Pflanzenfam. [Engler & Prantl] 4, Abt. 3b: 221 (1894). TYPE: Brazil, Bahia, Sierra d'Apurna pre`s le Rio Saint-Francois, 1838, *J. S. Blanchet 2801* (holotype: G-DC, barcode G00133399 [image!]; Isotypes: MO, MO-1998979 [n.v.]; NY, barcode NY00328767 [image!]; P, barcode P00608082 [image!]; P, barcode P00608083 [image!]; P, barcode P00608084 [image!]).

Bignonia hirta Vell., Fl. Flumin.: 249 (1829). TYPE: [Icon. Ined.] "Didyn. Angiosp. BIGNONIA *hirta Tab. 35*" Seção de Manuscritos, Bibliot. Nac. (Rio de Janeiro), n° I-17, 03, 002; mss1198655_039 [image!] (lectotype, designated by Nascimento et al. *in press.*).

Original locality and distribution. *Bignonia hirta* has no indication of locality, vegetation or month of the year in the original manuscript of *Floræ Fluminensis*. In fact, *Cuspidaria simplicifolia* is a plant native but not endemic to Brazil. Following Lohmann and Taylor (2014), and Francisco (2023), this species is found in Atlantic Forest, Caatinga, Cerrado or dry forest. It is distributed in Bolivia and Brazil (Northeast, Southeast).

Nomenclatural notes. Gentry (1975a) emphasized the resemblance with *Clytostoma campanulatum* (Cham.) Bureau & K.Schum. due to the pseudostipules illustrated. Another resemblance highlighted by Gentry (1975a) is with *Cuspidaria puberula* [≡ *C. simplicifolia*], on account of the paniculate inflorescence and simple lower leaves of each branchlet. Nevertheless, he does not consider the anther thecae illustrated as reflexed and concludes by saying that he could not resolve at that moment. Although Gentry (1975a) praised Vellozo's original illustration, and noted some similarities, he did not address the name *Bignonia hirta*. In fact, the resolution case was better treated in Nascimento et al. (in press), where things such as priority and nomenclatural stability are explained.

The lectotype designated by Gentry (1975a) as *Bignonia hirta* was considered superseded. A copy of the illustration of *Bignonia hirta* stored in the Manuscript Sect. of Torre do Tombo is accessed through the PT-TT-MSLIV-2776_m0077 [image!].

Taxonomic notes. *Bignonia hirta* was frequently regarded as a heterotypic synonym of *Fridericia mollis* (Vahl) L.G. Lohmann, as documented by various sources (Zuntini, 2014; BFG et al., 2022; Kaehler, 2023a). However, in Brazilian territory, *F. mollis* is only collected

in the North, thus it does not make sense to associate it with *Bignonia hirta* (collected in the Southeast). In *Clytostoma campanulatum* [≡ *Bignonia campanulata* Cham.] has more elongated/lanceolate leaves with terminal foliole often modified on simple tendril (*Benson & Parentoni 5*; *Gentry 49155*; *Hoehne s.n.*). Besides, *B. campanulata* can have persistent foliaceous bracts (Zuntini, 2014) and *Bignonia hirta* illustration also does not show that.

The only detail that made Gentry (1975a) not relate *Bignonia hirta* with *Cuspidaria simplicifolia*, was the less curved anthers present in the illustration. In fact, members of Cuspidaria often have anthers with forward-curved thecae (Lohmann and Taylor 2014), but this characteristic was not drawn in *Bignonia hirta*. The imprecise or insufficient illustrations are common in FF (Pastore, 2013), but this lack of information does not prejudice the recognition of this species. Thus, it assertively identifies *B. hirta* as *C. simplicifolia*.

24. *Bignonia cymosa* Vell.

Bignonia cymosa Vell., Fl. Flumin.: 249 (1829). TYPE: [Icon. Ined.] "Didyn. Angiosp. BIGNONIA *cymosa Tab. 36*" Seção de Manuscritos, Bibliot. Nac. (Rio de Janeiro), n° I-17, 03, 002; mss1198655_040 [image!] (**lectotype, here designated**).

Original locality and distribution. *Bignonia cymosa* has no indication of locality, vegetation or month of the year in the original manuscript of *Floræ Fluminensis*.

Nomenclatural notes. The lectotype designated by Gentry (1975a) as *Bignonia cymosa* is considered superseded here (see comments under *Bignonia squalus*). A copy of the illustration of *Bignonia cymosa* stored in the Manuscript Sect. of Torre do Tombo is accessed through the PT-TT-MSLIV-2776_m0079 [image!].

Taxonomic notes. Gentry (1975a) commented that *Bignonia cymosa* does not correspond with any species already seen until that year. He still saw a possible resemblance with *Arrabidaea chica* (Bonpl.) Verl. [*Fridericia chica* (Bonpl.) L.G.Lohmann], but it would be necessary to consider some mistakes.

The interpretation of this drawing is difficult and, as Gentry (1975a) said, "would never be positively identifiable without type material". The species was referred to as possible junior synonyms of *Fridericia chica*, but the majority of the collections from Rio de Janeiro and São Paulo disagree with Vellozo's representation. Some agree with the leaves' shape (*Ferreira & Patusco 567*; *Santoro 901*; *Santoro 853*; *Stranghetti et al. 1458*). However, we were not able to find any collection with 3-foliolate leaves or with terminal foliole modified on simple tendril. When a tendril appears, the shape of the leaves does not agree with Vellozo's drawing (*Hoehne 2628*; *Leitão Filho et al. 32746*; *Tamashiro et al. 18805*). Besides, Vellozo illustrated flowers with lobes (apparently) crenatis (detail in two open flowers), but all collections of *Fridericia chica* seen in our study do not show this detail.

The last resource to obtain a convincing result, was a search in collections of a lot of Bignoniaceae in Rio de Janeiro state and observing the resemblances with Vellozo's drawing. Thus, we noticed an affinity with *Fridericia*, particularly with the "Group Six" of the identification key available on Kaehler (2023a). Therefore, we agree with (Gentry, 1975a) and believe it is better to leave *Bignonia cymosa* without identification (*incertae sedis*) until an assertive interpretation emerges.

25. *Bignonia longa* Vell.

Lundia longa (Vell) DC., Prodr. [A.P. de Candolle] 9: 180 (1845). *Bignonia longa* Vell., Fl. Flumin.: 249 (1829). *Exsertanthera longa* (Vell.) Pichon, Bull. Soc. Bot. France 92: 226

(1945). TYPE: [Icon. Ined.] "Didyn. Angiosp. BIGNONIA *longa Tab. 37*" Seção de Manuscritos, Bibliot. Nac. (Rio de Janeiro), n° I-17, 03, 002; mss1198655_041 [image!] (**lectotype, here designated**).

Original locality and distribution. *Bignonia longa* has no indication of locality, vegetation or month of the year in the original manuscript of *Floræ Fluminensis*. In fact, *Lundia longa* is a plant native and endemic to Brazil, it is found in Atlantic Forest at Northeast and Southeast of the country (Kaehler, 2023b; Lohmann & Taylor, 2014).

Nomenclatural notes. Candolle (1845) cites *Bignonia longa* at the *Lundia longa* (Vell.) DC. description. He also mentioned a collection of Martius, but this collection should be better interpreted as 'examined material', since he clearly indicates *Bignonia longa* as the basionym (Kaehler & Lohmann, 2021).

Gentry (1975a) misunderstood when considering *Bignonia longa* as synonym of *Lundia cordata* (Vell.) DC. [= *Lundia corymbifera* (Vahl) Sandwith]. In his opinion, *Lundia longa* (Vell.) DC. is based on Martius collection (*Martius s.n.* of 1818 from Minas Gerais), which is different from Vellozo's illustration. However, Gentry (1975a) as well as others people since Bureau and Schumann (1896-1897), have mistaken the species (Kaehler & Lohmann, 2021) and identified *Lundia longa* as *Lundia corymbifera*.

Bignonia longa, as a synonym of *Lundia cordata*, was inaccurately associated in some treatments (Lohmann, 2003; Zuntini, 2014). Nevertheless, the recognition of *Bignonia longa*, as the basionym of *Lundia longa* (Vell.) DC, is accepted in other treatments (Lohmann & Taylor, 2014; Zuntini & Lohmann, 2016; Kaehler & Lohmann , 2021; Costa et al., 2022), and it is reinforced here.

The lectotype designated by Gentry (1975a) as *Bignonia longa* is considered superseded here (see comments under *Bignonia squalus*). A copy of the illustration of *Bignonia longa*

stored in the Manuscript Sect. of Torre do Tombo is accessed through the PT-TT-MSLIV-2776_m0081 [image!].

Taxonomic notes. *Bignonia longa* well represents *Lundia longa* and includes relevant diagnostic features as the 3-foliolate leaves with terminal tendril modified in trifid tendril, acuminate apex, cordate base, axillary and terminal inflorescence (Kaehler & Lohmann, 2021). Although there are leaves without venation, the lack of this characteristic does not prejudice the recognition of species. The original descriptions include features such as: '*cirrhosis*' [with tendril], '*cirrho longo, tripartito*' [long, tripartite tendril], '*pedunculis axillaribus; pedicellis fasciculatis*' [axillary peduncle; fasciculate pedicels]. The plate, along with the original description, assertively support the species recognition.

26. *Bignonia triflora* Vell.

Cuspidaria pulchella (Cham.) K.Schum. First published, H.G.A.Engler & K.A.E.Prantl, Nat. Pflanzenfam. 4: 216 (1894). *Bignonia pulchella* Cham., Linnaea 7: 663 (1832). *Paracarpaea pulchella* (Cham.) Pichon, Bull. Soc. Bot. France 92: 223 (1945). *Arrabidaea pulchella* (Cham.) Bureau, Kongel. Danske Vidensk. Selsk. Skr., Naturvidensk. Math. Afd. ser. 6, 6: 422 (1892). TYPE: Brazil, s. loc., s.d., *F. Sellow 5349* (holotype: LE, [n.v.]; Isotypes: B, B-18453 [lost]; MO, MO-1692853 [n.v.]; K, [n.v.]).

Bignonia triflora Vell., Fl. Flumin.: 249 (1829).—Lectotype, designated by Nascimento et al. *in prep*: [Icon. Ined.] "Didyn. Angiosp. BIGNONIA *[trifolia] triflora Tab. 38*" Seção de Manuscritos, Bibliot. Nac. (Rio de Janeiro), n° I-17, 03, 002; mss1198655_042 [image!].

Original locality and distribution. *Bignonia triflora* has no indication of locality, vegetation or month of the year in the original manuscript of *Floræ Fluminensis*. In fact,

Cuspidaria pulchella is native and endemic to Brazil. Following Lohmann and Taylor (2014), and Francisco (2023), this species is found in Cerrado. It is distributed in Paraguay and Brazil (Midwest, South and Southeast).

Nomenclatural notes. Gentry (1975) noted a resemblance between *Bignonia triflora* and *Arrabidaea pulchella* [≡ *Cuspidaria pulchella*] by the few flowered inflorescence, calyx setae, and the simple tendrils. However, the pubescent filaments presented in Vellozo's drawing made Gentry prefer to maintain this species without definitive identification. In fact, the resolution case was better treated in Nascimento et al. (*in prep*), where things such as priority and nomenclatural stability are explained.

The lectotype designated by Gentry (1975a) as *Bignonia hirta* was considered superseded. A copy of the illustration of *Bignonia hirta* stored in the Manuscript Sect. of Torre do Tombo is accessed through the PT-TT-MSLIV-2776_m0083 [image!].

Taxonomic notes. In collections of Cuspidaria species from Southeast of Brazil, the resemblance between *Bignonia triflora* and *Cuspidaria pulchella* increases. Some species are restricted at a state: *Cuspidaria lasiantha* (Bureau & K.Schum.) L.G.Lohmann (Rio de Janeiro), *C. floribunda* (DC.) A.H.Gentry and *C. multiflora* DC. (São Paulo). Meantime other can ambiguously occur: *C. octoptera* A.H.Gentry, *C. pulchella*, *C. pulchra* (Cham.) L.G.Lohmann (Francisco 2023; SpeciesLink 2023).

Almost all species mentioned above do not agree with Vellozo's drawing, due to the terminal panicle (sometimes axillary in *C. lasiantha*). The shape of leaves between them varies but is similar, nevertheless, the only species to combine all details, including leaves, simple tendril, axillary inflorescence reduced to a few flowers is *Cuspidaria pulchella*.

The only detail that made Gentry (1975a) not relate *Bignonia triflora* to *C. pulchella* (treated as *Arrabidaea pulchella*), was the less curved anthers present in the illustration. In fact, members of Cuspidaria often have anthers with forward-curved thecae (Lohmann and Taylor 2014), but this characteristic was not drawn in *Bignonia triflora*. Nevertheless, in Lohmann and Pirani (1998) an illustration was provided with the appearance of anthers, making the similarity to Vellozo's drawing clear. Besides, it is common for plates from *Floræ Fluminensis* not to include diagnostic details to support the species identification (Pastore 2013, Pastore et al. 2022). Thus, it assertively identifies *B. triflora* as *C. pulchella*.

27. *Bignonia rego* Vell.

Fridericia rego (Vell.) L.G.Lohmann, Ann. Missouri Bot. Gard. 99: 444 (2014). *Bignonia rego* Vell., Fl. Flumin.: 249 (1829). *Arrabidaea rego* (Vell.) DC., Biblioth. Universelle Genève 17: 126 (1838). *Vasconcellia rego* (Vell.) Mart., Flora 24: 12 (1841). *Chasmia s[r]ego* Kuntze, Revis. Gen. Pl. 2: 479 (1891). TYPE: [Icon. Ined.] "Didyn. Angiosp. BIGNONIA *sego Tab. 39*" Seção de Manuscritos, Bibliot. Nac. (Rio de Janeiro), n° I-17, 03, 002; mss1198655_043 [image!] (**lectotype, here designated**).

Original locality and distribution. *Bignonia rego* has no indication of locality, vegetation or month of the year in the original manuscript of *Floræ Fluminensis*. In fact, *Fridericia rego* is a plant native and endemic to Brazil. Following Lohmann and Taylor (2014), and Kaehler (2023a), this species is found in Atlantic Forest or dry forest. It is distributed in the Northeast and Southeast of the country.

Nomenclatural notes. The lectotype designated by Sandwith and Hunt (1974) as *Bignonia rego* is considered superseded here (see comments under *Bignonia ignea*). A copy of the illustration of *Bignonia rego* stored in the Manuscript Sect. of Torre do Tombo is

accessed through the PT-TT-MSLIV-2776_m0085 [image!]. The search for this name on the Library Nacional of Rio de Janeiro, put '*Bignonia sego*' with an 'S' instead of an 'R'.

Taxonomic notes. Candolle (1838) makes the combination: *Arrabidaea rego* (Vell.) DC. [as "sego"]. Later, Martius (1841) changed to *Vasconcellia* Mart. (also as "sego"). Kuntze (1891) transfers the species to *Chasmia* Schott ex Spreng. Later, Gentry (1975a) re-established *Arrabidaea rego* (Vell.) DC. and considered *Arrabidaea agnus-castus* (Cham.) DC. [*Bignonia agnus-rastus* Cham.] as a synonym which was followed by Lohmann (2003). However, Lohmann and Taylor (2014) combined this name into *Fridericia*, which was followed by Zuntini (2014) and Kaehler et al. (2019). This position is reinforced here.

Bignonia rego well represents *Fridericia rego* and includes relevant diagnostic features as the 3-foliolate leaves with terminal foliole modified on simple tendril, the folioles are ovate with acuminate apex , plus the shape of the inflorescence, fruits, and seeds (Reiche et al., 2020). The original descriptions include features such as: '*cirrhosis*' [with tendril], '*pedunculis longissimis, floribus minimis*' [long peduncle, with small flowers], '*Racemi compositi*' [Compound raceme], '*Corolla minima, purpurascens*' [Small, purple corolla], '*Siliquæ breves, falcatæ*' [Short silique, sickle-shaped].

In addition, Vellozo (1829) commented: '*Vulgò cognita est nomine Sipó-rego*' [Generally known by the name 'Cipó-rego']. A reference to the common name of the species in the region and time period. The plate, along with the original description, strongly supports the recognition of the species.

28. *Bignonia arvensis* Vell.

Anemopaegma arvense (Vell.) Stellfeld ex J.F.Souza, Tribuna Farm. 13: 275 (1945). *Bignonia arvensis* Vell., Fl. Flumin.: 250 (1829). *Jacaranda arvensis* (Vell.) Steud.,

Nomencl. Bot. [Steudel], ed. 2. 1: 795 (1840). TYPE: [Icon. Ined.] "Didyn. Angiosp. BIGNONIA *arvensis Tab. 40*" Seção de Manuscritos, Bibliot. Nac. (Rio de Janeiro), n° I-17, 03, 002; mss1198655_044 [image!] (**lectotype, here designated**).

Original locality and distribution. *Bignonia arvensis* was described by Vellozo (1829) as "*Habitat campis apricis mediterraneis trans-alpinis*", which is recognized as some São Paulo place. Especially the cerrado vegetation in the stretch of BR-459 right before the São Paulo border, in the direction to Cunha town. In fact, *Anemopaegma arvense* is a plant native but not endemic to Brazil. Following Lohmann and Taylor (2014), and Firetti (2023), this species is found in Amazonia, Atlantic Forest or Cerrado. It is distributed in Bolivia, Paraguay and Brazil (all regions).

Nomenclatural notes. The lectotype designated by Gentry (1975a) as *Bignonia arvensis* is considered superseded here (see comments under *Bignonia squalus*). A copy of the illustration of *Bignonia arvensis* stored in the Manuscript Sect. of Torre do Tombo is accessed through the PT-TT-MSLIV-2776_m0087 [image!].

Taxonomic notes. Steudel (1840) mentioned *Bignonia arvensis* and later, in Souza (1945), it was proposed the combination: *Anemopaegma arvense*. Gentry (1975a) mentioned the combination made by Sousa (1945) and suggested *Bignonia arvensis* as a name to replace *Anemopaegma mirandum* (Cham.) DC. [*Bignonia miranda* Cham.]. This position was also accepted in later treatments (Scudeller, 2004; Lohmann & Taylor, 2014; Zuntini, 2014), and it is reinforced here.

Bignonia arvensis well represents *Anemopaegma arvense* and includes relevant diagnostic features, such as the appearance of leaves, flower position and morphology, as well as the details presented in fruits and seeds. The original descriptions include features such as:

‘*pedicellis terminalibus, unilloris*’ [terminal pedicel, uniparous], ‘*caule procumbenti*’ [procumbent stem], ‘*Siliqua ovata*’ [Ovate silique].

29. *Bignonia pedunculata* Vell.

Adenocalymma pedunculatum (Vell.) L.G.Lohmann, Ann. Missouri Bot. Gard. 99: 395 (2014). *Bignonia pedunculata* Vell., Fl. Flumin.: 250 (1829). *Memora pedunculata* Miers, Proc. Roy. Hort. Soc. London 3: 185 (1863). TYPE: [Icon. Ined.] "Didyn. Ang[i]yosp. BIGNONIA *pedunculata Tab. 41*" Seção de Manuscritos, Bibliot. Nac. (Rio de Janeiro), n° I-17, 03, 002; mss1198655_045 [image!] (**lectotype, here designated**).

Original locality and distribution. *Bignonia pedunculata* was described by Vellozo (1829) as "*Habitat campis apricis mediterraneis*", which is recognized as some Cerrado vegetation in São Paulo (see comments under *Bignonia ignea*). In fact, *Adenocalymma pedunculatum* is a plant native and endemic to Brazil. Following Fonseca and Lohmann (2019), and Fonseca (2023a), this species is found in Amazonia, Atlantic Forest or Cerrado. It is distributed in the Midwest, North, Northeast, and Southeast of the country.

Nomenclatural notes. The lectotype designated by Gentry (1975a) as *Bignonia pedunculata* is considered superseded here (see comments under *Bignonia squalus*). A copy of the illustration of *Bignonia pedunculata* stored in the Manuscript Sect. of Torre do Tombo is accessed through the PT-TT-MSLIV-2776_m0089 [image!].

Taxonomic notes. Miers (1863) made the combination *Memora pedunculata* (Vell.) Miers. Sandwith (1962) had already synonymized *Bignonia glaberrima* Cham. in *Bignonia*

pedunculata. Recently, other studies have followed this organization (Gentry 1975a, Zuntini, 2014; Fonseca & Lohmann, 2019), and it is reinforced here.

Bignonia pedunculata well represents *Adenocalymma pedunculatum* and includes relevant diagnostic features as the triternate leaves without tendril, ovate blade with ovate base, apex acute, entire margin, terminal inflorescence, floral morphology and yellow color (Machado & Romero, 2014). The original descriptions include features such as: '*caule herbaceo*' [herbaceous stem], '*caulis cubitalis*' [stem measuring a cubits length, 40-50 cm], '*pedunculo solitario, terminali; pedieeilis trifloris*' [solitary, terminal peduncle; pedicel with three flowers], '*Corolla flavescens*' [Yellowish corolla]. The plate, along with the original description, assertively support the species recognition.

30. *Bignonia coccinea* Vell.

Dolichandra coccinea (Vell.) M.Nascim., Zuntini & J.F.B.Pastore, Phytotaxa 616: 201 (2023).

Bignonia coccinea Vell., Fl. Flumin.: 250 (1829), non "*Bignonia coccinea* (Prush) Steud.", Nomencl. Bot. [Steudel]: 109 (1821). *Macfadyena coccinea* (Vell.) Miers, Proc. Hort. Soc. 3: 200 (1863). TYPE: [Icon. ined.] "Didyn. Ang[i]yosp. BIGNONIA *coccinea Tab. 42*". Secção de Manuscritos, Bibliot. Nac. (Rio de Janeiro), nº. I-17,03, 002; mss1198655_046 [image!] (lectotype, designated by Nascimento et al. [2023: 201]).

Original locality and distribution. *Bignonia coccinea* Vell. was described by Vellozo (1829) as "*Habitat silvis mediterraneis*", which is recognized as some place in São Paulo place (see comments under *Bignonia ignea*).

Nomenclatural notes. Gentry (1975a) recognized *Bignonia coccinea* Vell. non *Bignonia coccinea* (Prush) Steud. as *Dolichandra cynanchoides* Cham., Linnaea 7: 658 (1832), but treated Vellozo's name as a homonym later. However, Nascimento et al. (2023) revealed that *B. coccinea* Steudel is not validly published, and consequently, *B. coccinea* Vell. is legitimate. Thus, the combination "*Dolichandra coccinea* (Vell.) M.Nascim., Zuntini & J.F.B.Pastore" was made. However, some important taxonomic details were not illustrated and undermined the stability and valid use of this name.

Fonseca (2024) identified some mistakes in the illustration, including the portrayal of simple tendrils, a bi-labiate calyx, and linear fruits. In contrast, *Dolichandra cynanchoides* has tendrils trifid and uncinate, spathaceous calyx, and oblong fruits (Fonseca et al., 2017). Besides, Fonseca (2024) emphasized the misguided distribution presented, noting that *D. cynanchoides* occurs exclusively in southern Brazil (Fonseca et al., 2017). However, some occurrences exist in Southeast Brazil, but they are of cultivated plants (L.H.M. Fonseca, pers. comm.).

Thus, it is evident an opinion conflict that involves this name and its application, a debate, if it remains under discussion, entirely unfavorable to nomenclatural stability. Therefore, we agree with Fonseca (2024) and believe it is better to maintain *Bignonia coccinea* Vell. without identification (*incertae sedis*) until an assertive interpretation emerges.

The lectotype designated by Gentry (1975a) as *Bignonia coccinea* Vell. was considered superseded. A copy of the illustration of *Bignonia coccinea* Vell. stored in the Manuscript Sect. of Torre do Tombo is accessed through the PT-TT-MSLIV-2776_m0091.TIF [image!].

31. *Bignonia caroba* Vell.

Jacaranda caroba (Vell.) DC., Prodr. [A.P. de Candolle] 9: 232 (1845). *Bignonia caroba* Vell., Fl. Flumin.: 250 (1829). TYPE: [Icon. Ined.] "Didyn. Angiosp. BIGNONIA *caro[b]va Tab. 43*" Seção de Manuscritos, Bibliot. Nac. (Rio de Janeiro), n° I-17, 03, 002; mss1198655_047 [image!] (**lectotype, here designated**).

Original locality and distribution. From the description at locality origin in Vellozo (1829) "*Campis apricis mediterraneis habitat*", which is recognized as some place in São Paulo (see comments under *Bignonia ignea*). In fact, *Jacaranda caroba* is a plant native and endemic to Brazil. Following Gentry (1992b) and (Farias-Singer, 2023), this species is found in Atlantic Forest or Cerrado. It is distributed in the Midwest, Northeast and Southeast of the country.

Nomenclatural notes. The lectotype designated by Gentry (1975a) as *Bignonia caroba* Vell. is considered superseded here (see comments under *Bignonia squalus*). A copy of the illustration of *Bignonia caroba* Vell. stored in the Manuscript Sect. of Torre do Tombo is accessed through the PT-TT-MSLIV-2776_m0093 [image!]. A neotype designated by Morawetz (1982) is superseded here due to the presence of the original illustrations of *Florœ Fluminensis* (Art. 9.19, Turland et al., 2018).

Taxonomic notes. Candolle (1845) observed the species and arranged the combination: *Jacaranda caroba*. Gentry (1975a) also recognized *Jacaranda caroba* and listed a substantial number of illustrated characters. Later, other studies also accepted this organization (Gentry, 1992b; Zuntini, 2014), and it is reinforced here.

Bignonia caroba Vell. well represents *Jacaranda caroba* and includes relevant diagnostic features as the bi-pinnate leaves with apex acute, terminal inflorescence and flowers color (Gentry, 1992b). The original descriptions include features such as: '*foliis pinãtis cum impari*' [pinnate leaves with an uneven number], '*Foliola lanceolata*' [Lanceolate

leaflets], '*pedunculis racemosis, terminalibus*' [terminal racemose peduncles], '*Racemi compositi, terminales. Corolla violaceæ*' [Compound raceme, terminal. Purple corolla]. It is also commented '*Vulgo dicitur Carôba. Habet vim antivenerеam. Ideo rusticani eam magni faciunt. Qualitas amara.*' [Generally, it is called 'Carôba'. It has anti venomous power. Because of this, the peasants consider it of great value. The quality is bitter], a reference to common name, flavor, and possible uses by regional people, that indicates Vellozo or someone in the entourage knew about this species. The plate, along with the original description, assertively support the species recognition.

32. *Bignonia elliptica* Vell.

Jacaranda macrantha Cham., Linnaea 7: 552 (1832). TYPE: Brazil, *Sellow s.n.* (lectotype: HBG, barcode HBG522947 [image!]; Isolectotype: K, barcode K000449836 [image!]).

Bignonia elliptica Vell., Fl. Flumin.: 250 (1829) non *Bignonia elliptica* Thunb. Diss. Pl. Bras. iii. 34 (1821). TYPE: [Icon. Ined.] "Didyn. Angiosp. BIGNONIA *ellyptica Tab. 44*" Seção de Manuscritos, Bibliot. Nac. (Rio de Janeiro), n° I-17, 03, 002; mss1198655_048 [image!] (**lectotype, here designated**).

Original locality and distribution. *Bignonia elliptica* was described by Vellozo (1829) as "*Habitat silvis mediterraneis trans-alpinis propre prædium dictum Boavista*", which is recognized as some place in São Paulo (see comments under *Bignonia ignea*), especially near the Chapel of São José da Boa Vista in Cunha/SP (Pastore et al., 2021). In fact, *Jacaranda macrantha* is a plant native and endemic of Brazil. Following Gentry (1992b) and (Farias-Singer, 2023), this species is found in Atlantic Forest or Cerrado. It is distributed in the Southeast of the country.

Nomenclatural notes. *Bignonia elliptica* Vell. is a later homonym of *Bignonia elliptica* Thunb. (1821), therefore it is illegitimate (Art. 53.1, Turland et al., 2018). The lectotype designated by Gentry (1975a) to *Bignonia elliptica* Vell. is considered superseded here (see comments under *Bignonia squalus*). A copy of the illustration of *Bignonia elliptica* Vell. stored in the Manuscript Sect. of Torre do Tombo is accessed through the PT-TT-MSLIV-2776_m0095 [image!].

Taxonomic notes. Gentry (1975a) associated *Bignonia elliptica* Vell. with *Jacaranda macrantha* Cham. and explained that the substitute name *Jacaranda elliptica* Steud. (1840) is legitimate, but it is a synonym of *J. macrantha*. In Farias-Singer (2023), *Bignonia elliptica* Vell. does not appear in the search or as a synonym of *Jacaranda macrantha*. However, *Bignonia elliptica* Vell. (as synonym of *Jacaranda macrantha*) is found in other studies (Gentry, 1992b), and it is reinforced here.

Bignonia elliptica Vell. well represents *Jacaranda macrantha* and includes relevant diagnostic features as the bipinnate leaves, ovate, acuminate apex , cuneate base, entire margin, inflorescence, flowers, fruits, seeds morphology and corolla color (Gentry, 1992b). Although the line drawing lacks the majority of venation leaves, this detail does not prejudice the recognition of species. The original descriptions include features such as: '*foliis pinãtis cum impari*' [pinnate leaves with an uneven number], '*racemi terminalibus*' [terminal raceme], '*Pistillum e medio ad apicem tomentosum. Stigma indivissum. Corolla violacea, pendula*' [Stigma undivided. Middle and tomentose pistil at the apex. Purple, pendulous corolla], '*Siliqua ellyptica, limbo implicito, sutura intermedia duos seminum ordines dividente*' [Elliptical siliqua, with enclosed blade, intermediate suture dividing two rows of seeds]. The plate, along with the original description, assertively support the species recognition.

33. *Bignonia obovata* Vell.

Jacaranda puberula Cham., Linnaea 7: 550 (1832). TYPE: Brazil, *Sellow s.n.* (lectotype: K, barcode K000449847 [image!]; Isolectotype: HAL, barcode HAL0043170 [image!]).

Bignonia obovata Vell., Fl. Flumin.: 251 (1829) non *Bignonia obovata* Spreng., Syst. Veg., ed. 16 [Sprengel] 2: 830 (1825). TYPE: [Icon. Ined.] "Didyn. Angiosp. BIGNONIA *obovata Tab. 45*" Seção de Manuscritos, Bibliot. Nac. (Rio de Janeiro), n° I-17, 03, 002; mss1198655_049 [image!] (**lectotype, here designated**).

Original locality and distribution. *Bignonia obovata* Vell. was described by Vellozo (1829) as "*Habitat silvis maritimis, campisque*", which is recognized as a place in Rio de Janeiro (see comments under *Bignonia squalus*). In fact, *Jacaranda puberula* is a plant native but not endemic to Brazil. Following Gentry (1992b) and Farias-Singer (2023), this species is found in Atlantic Forest, Cerrado, coastal evergreen forest, semideciduous forest or montane forest. It is distributed in Argentina (Misiones), Paraguay and Brazil (Northeast, South and Southeast).

Nomenclatural notes. *Bignonia obovata* Vell. is a later homonym of *Bignonia obovata* Spreng. (1825), therefore it is illegitimate (Art. 53.1, Turland et al., 2018). The lectotype designated by Gentry (1975a) as *Bignonia obovata* Vell. is considered superseded here (see comments under *Bignonia squalus*). A copy of the illustration of *Bignonia obovata* Vell. stored in the Manuscript Sect. of Torre do Tombo is accessed through the PT-TT-MSLIV-2776_m0097 [image!].

Taxonomic notes. Gentry (1975a) treated *Bignonia obovata* Vell. as later homonyms and it was synonymized in *Jacaranda puberula*. This position was also accepted in later treatments (Gentry, 1992b; Zuntini, 2014), but in Farias-Singer (2023) this name does not

appear as a synonym of *J. puberula*. However, our study agrees with Gentry (1992b) and considers *Bignonia obovata* Vell. as a synonym of *J. puberula*.

Bignonia obovata Vell. well represents *Jacaranda puberula* and includes relevant diagnostic features as the bipinnate leaves, corolla tubular-campanulate and color (purple), oblong-obovate fruit and seed with wings (Gentry, 1992b). Although there is a lack of venation in the majority of the leaves and margin slightly serrated (a common characteristic in Rio de Janeiro collections), this detail can be variable and its absence does not prejudice the recognition of species.

The original descriptions include features such as: '*foliis pinãtis cum impari*' [pinnate leaves with an uneven number], '*Foliolis lanceolatis*' [Lanceolate leaflets], '*Folium impar, seu supremum productius*' [Imparipinnate leaf, or extended at the end], "*Corolla violacea*" [Purple corolla], '*siliquis ob-ovatis*' [obovate siliqua], '*Siliqua ob-ovata, plana duobus ordinibus seminum*' [Obovate, flat pod with two rows of seeds].

In addition, Vellozo (1829) commented: '*Carôba etiam dicitur*' [Also known as 'Carôba'], as reference to the common name of species. The plate, along with the original description, assertively support the species recognition.

34. *Bignonia tuberculosa* Vell.

Zeyheria tuberculosa (Vell.) Bureau, Rev. Hort. [Paris]. 40: 154 (1868). *Bignonia tuberculosa* Vell., Fl. Flumin.: 251 (1829). *Jacaranda tuberculosa* (Vell.) Steud., Nomencl. Bot. [Steudel], ed. 2. 1: 795 (1840). TYPE: [Icon. Ined.] "Didyn. Angiosp. BIGNONIA *tuberculosa Tab. 46*" Seção de Manuscritos, Bibliot. Nac. (Rio de Janeiro), n° I-17, 03, 002; mss1198655_050 [image!] (**lectotype, here designated**).

Original locality and distribution. *Bignonia tuberculosa* was described by Vellozo (1829) as "*Habitat silvis maritimis pharmacopolitanis*", which is recognized as some place in Rio de Janeiro place (see comments under *Bignonia triphylla*). In fact, *Zeyheria tuberculosa* is a plant native but not endemic to Brazil. Following Gentry (1992b) and Lohmann (2023h), this species is found in Atlantic Forest, Caatinga, Cerrado. It is distributed in Bolivia (apparently disjunct) and Brazil (Northeast, South and Southeast).

Nomenclatural notes. The lectotype designated by Gentry (1975a) as *Bignonia tuberculosa* is considered superseded here (see comments under *Bignonia squalus*). A copy of the illustration of *Bignonia tuberculosa* stored in the Manuscript Sect. of Torre do Tombo is accessed through the PT-TT-MSLIV-2776_m0099 [image!].

Taxonomic notes. Steudel (1840) treated *Bignonia tuberculosa* and made a combination: *Jacaranda tuberculosa*. Later, Bureau (1868) revised this name and proposed the combination in another generic delimitation: *Zeyheria tuberculata* (Vell.) Bureau. Gentry (1975a) and other studies also accepted it (Gentry, 1992b; Zuntini, 2014), and it is reinforced here.

Bignonia tuberculosa well represents *Zeyheria tuberculosa* and includes relevant diagnostic features as the 5-foliolate leaves, more or less oblong, acuminate apex , rounded base, entire margin, fruit and obovoid capsule, winged seeds. These characteristics agree with *Zeyheria tuberculosa* (Gentry, 1992b). The original descriptions include features such as: '*foliis digitatis; foliolis lanceolatis*' [digitate leaves; lanceolate leaflets], '*Folia tomentosa, rugosa*' [tomentose, rugose leaf], '*siliqua sub-rotunda, scabra, quibusdam protuberandis conferta*' [sub-rounded siliqua, rough, some clustered with protuberances], '*Siliqua magma, protuberantiis planis, inæqual bus referta exterius*' [Large siliqua, with flat protuberances, externally full of irregularities].

In addition, Vellozo (1829) commented: '*Florem non vidi*' [Unseen flower], an indication that at the moment of Vellozo and his entourage passage, specimens of *Bignonia tuberculosa* were not found with flowers.

35. *Bignonia digitalis* Vell.

Zeyheria montana Mart., Nov. Gen. Sp. Pl. (Martius) 2: 66 (1826). *Spathodea montana* (Mart.) Spreng., Syst. Veg., ed. 16 [Sprengel] 4: 236 (1827). TYPE: Brazil, Minas Gerais, *Martius* 533 (lectotype: M, barcode M-0088988 [image!]; Isolectotype: G, [n.v.]; Brazil, São Paulo, *Martius s.n.* (Syntypes: BR, [n.v.]; G, barcode G00177547 [!]; G-DC, barcode G00133660 [!]; K, [n.v.]; L, barcode L.2816376 [!]; L, barcode L.2816377 [!]; M, barcode M-0088983 [!]; M, barcode M-0088984 [!]; M, barcode M-0088985 [!]; M, barcode M-0088986 [!]; M, barcode M-0088987 [!]; NY, [n.v.]).

Zeyheria velloziana Miers, Proc. Roy. Hort. Soc. London 3: 201 (1863). *nom. superfl*. *Zeyheria digitalis* (Vell.) Hoehne, Ind. Bibl. Pl. Col. Com. Rondon: 365 (1951). *Bignonia digitalis* Vell., Fl. Flumin.: 251 (1829). TYPE: [Icon. Ined.] "Didyn. Ang[i]yosp. BIGNONIA *digitalis Tab. 47*" Seção de Manuscritos, Bibliot. Nac. (Rio de Janeiro), n° I-17, 03, 002; mss1198655_051 [image!] (**lectotype, here designated**).

Original locality and distribution. *Bignonia digitalis* was described by Vellozo (1829) as "*Habitat campis apricis mediterraneis. trans-alpinis*", which is recognized as some place in São Paulo. Especially the cerrado vegetation in the stretch of BR-459 (see comments under *Bignonia squalus*). In fact, *Zeyheria montana* is a plant native and endemic to Brazil. Following Gentry (1992b) and Lohmann (2023h), this species is found in Amazonia, Atlantic Forest, Caatinga or Cerrado. It is distributed in all regions of the country.

Nomenclatural notes. Gentry (1975a) accepting *Zeyheria digitalis* (Vell.) Hoehne, do not consider the priority of *Z. montana* and mention the posterior homonym *Zeyheria digitalis* (Vell.) L.B.Smith & Sandwith (1953). However, Sandwith (1953) considered 1825 as the publication year of *Floræ Fluminensis*, this detail led the author to attribute priority to *Bignonia digitalis*. Nevertheless, 1825 represents the initial date of printing which ends in 1829 (Carauta, 1973). *Bignonia digitalis* has had priority over *Zeyheria montana* since 1826 (Martius, 1826). Later, other studies proposed the appropriate organization (Gentry, 1992b; Zuntini, 2014), and it is reinforced here.

The lectotype designated by Gentry (1975a) as *Bignonia digitalis* is considered superseded here (see comments under *Bignonia squalus*). A copy of the illustration of *Bignonia digitalis* stored in the Manuscript Sect. of Torre do Tombo is accessed through the PT-TT-MSLIV-2776_m0101 [image!].

Taxonomic notes. *Bignonia digitalis* well represents *Zeyheria montana* and includes relevant diagnostic features as the 5-foliolate leaves, elliptics, apex acute, cuneate base, entire margin, terminal inflorescence, calyx irregularly 2-dentate, corolla tubular-cylindrical, fruit and seeds morphology. These characteristics agree with *Zeyheria montana* (Gentry, 1992b). Although there are leaves without venation, the lack of this characteristic does not prejudice the recognition of species. The original descriptions include features such as: '*foliis digitatis, foliolis lanceolatis*' [digitate leaves; lanceolate leaflets], '*racemis terminalibus*' [terminal raceme] "*Corolla tubulosa, æqualis, quinque-partita... Calyx bifidus*" [Tubular, uniform corolla, divided into five parts... Bifid calyx], "*siliquis lanceolatis, trapeziis cælatis*" [lanceolate pod, trapezoids sculpted], "*Siliqua superne triangulis cælata*" [Siliqua sculpted in triangles at the top].

In addition, Vellozo (1829) commented: "*Tota planta tomento subtilissimo rufo tecta*" [The entire plant is covered by a very fine and reddish tomentum], a reference to indument present in the plant. The plate, along with the original description, assertively support the species recognition.

36. *Bignonia heptaphylla* Vell.

Handroanthus heptaphyllus (Vell.) Mattos, Loefgrenia 50: 2 (1970). *Bignonia heptaphylla* Vell., Fl. Flumin.: 251 (1829). *Tabebuia heptaphylla* (Vell.) Toledo, Arq. Bot. Estado de São Paulo n.s., form. maior, 3: 33 (1952). *Tecoma heptaphylla* (Vell.) Mart., Flora 24 (2, Beibl.): 14 (1841). TYPE: [Icon. Ined.] "Didyn. Ang[i]yosp. BIGNONIA *heptaphylla Tab. 48*" Seção de Manuscritos, Bibliot. Nac. (Rio de Janeiro), n° I-17, 03, 002; mss1198655_052 [image!] (**lectotype, here designated**).

Original locality and distribution. *Bignonia heptaphylla* was described by Vellozo (1829) as "*Habitat silvis maritimis*", which is recognized as some place in Rio de Janeiro (see comments under *Bignonia squalus*). In fact, *Handroanthus heptaphyllus* is a plant native but not endemic to Brazil. Following Gentry (1992b) and Lohmann (2023c), this species is found in Atlantic Forest, Cerrado, Chaco or Pampa. It is distributed in Argentina, Bolivia, Paraguay and Brazil (Midwest, Northeast, South and Southeast).

Nomenclatural notes. The lectotype designated by Gentry (1975a) as *Bignonia heptaphylla* is considered superseded here (see comments under *Bignonia squalus*). A copy of the illustration of *Bignonia heptaphylla* stored in the Manuscript Sect. of Torre do Tombo is accessed through the PT-TT-MSLIV-2776_m0103 [image!].

Taxonomic notes. *Bignonia heptaphylla* was first treated by Martius (1841), who made the combination *Tecoma heptaphylla* (Vell.) Mart. Toledo (1952) and transferred to *Tabebuia* Gomes ex DC. In Mattos (1970) the species was combined in *Handroanthus*.

Gentry (1974) considered *Bignonia heptaphylla* as '*nomen confusum*', but in Gentry (1975a), after analyzing many collections near Rio de Janeiro, he undertook his mistake and affirmed that *Tabebuia heptaphylla* should be adopted. After the reestablishment of Handroanthus by Grose & Olmstead (2007), *H. heptaphyllus* (Vell.) Mattos became the most widely used name. This position was also accepted in later treatments (Gentry, 1975a; Zuntini, 2014), and it is reinforced here.

Bignonia heptaphylla Vell. well represents *Handroanthus heptaphyllus* and includes relevant diagnostic features as the number of leaflets (6-7), more or less oblong, acuminate apex, rounded base, serrated margin, terminal inflorescence, cupular calyx, elongate fruit and seeds details agree with *H. heptaphyllus* (Gentry, 1992b). Although the venation leaves were not represented in the illustration, the lack of this characteristic does not prejudice the recognition of species. The original descriptions include features such as: '*Caulis arboreus*' [tree stem], '*pedunculis terminalibus, racemoso-cymosis*' [terminal peduncle, racemose-cymose], '*Corolla violacea*' [purple corolla] and '*Siliqua bi-palmari longitudine, crassa digitum unum, striata, ensiformis*' [Siliqua about two feet in length, as thick as a finger, ribbed, sword-shaped].

37. *Bignonia leucantha* Vell.

Sparattosperma leucanthum K.Schum., Nat. Pflanzenfam. [Engler & Prantl] 4, Abt. 3b: 235 (1894). *Bignonia leucantha* Vell., Fl. Flumin.: 251 (1829). TYPE: [Icon. Ined.] "Didyn.

Angiosp. BIGNONIA *leucantha Tab. 49*" Seção de Manuscritos, Bibliot. Nac. (Rio de Janeiro), n° I-17, 03, 002; mss1198655_053 [image!] (**lectotype, here designated**).

Original locality and distribution. *Bignonia leucantha* was described by Vellozo (1829) as "*Habitat silvis maritimis*", which is recognized as some place in Rio de Janeiro (see comments under *Bignonia squalus*). In fact, *Sparattosperma leucanthum* is a plant native but not endemic to Brazil. Following Gentry (1992b) and Lohmann (2023f), this species is found in Amazonia, Atlantic Forest, Caatinga, Cerrado or Pantanal. It is distributed in Peru, Venezuela and Brazil (Midwest, North, Northeast and Southeast).

Nomenclatural notes. The lectotype designated by Gentry (1975a) as *Bignonia leucantha* is considered superseded here (see comments under *Bignonia squalus*). A copy of the illustration of *Bignonia leucantha* stored in the Manuscript Sect. of Torre do Tombo is accessed through the PT-TT-MSLIV-2776_m0105 [image!].

Taxonomic notes. Schumann (1894) treated *Bignonia leucantha* and made the combination: *Sparattosperma leucanthum*. Later, Gentry (1975a) recognizes and agrees with Schumann (1894). This position was also accepted in later treatments (Gentry, 1992b; Zuntini, 2014), and it is reinforced here.

Bignonia leucantha well represents *Sparattosperma leucanthum* and includes relevant diagnostic features as the 5-foliolate leaves, oblong-ovate folioles, acuminate apex , cuneate base, entire margin, terminal inflorescence, calyx irregularly, corolla tubular-campanulate and color, elongated fruit and winged seeds (Gentry, 1992b). The original descriptions include features such as: '*Caulis arboreus*' [tree stem], '*racemis terminalibus*' [racemo terminal], '*Perianthium uni-partitum. Corolla albida, lineolis coccineis notata*' [Perianto unipartido. Corola esbranquiçada, marcada por linhas escarlates], '*siliquis bilinearibus, longissimis*'

[Pods linear, very long], '*Siliquas longissimæ, pendulæ*' [Very long, pendulous pods]. The plate, along with the original description, assertively support the species recognition.

38. *Bignonia quinquefolia* Vell.

Cybistax antisyphilitica (Mart.) Mart., Syst. Mat. Med. Bras.: 66 (1843). *Bignonia antisyphilitica* Mart., Reise Bras. (Spix & Mart.) 1: 283 (1823). TYPE: Brazil, Rio de Janeiro, prope Sebastianópolis, *Martius 232* (holotype: M, barcode M-0086424 [image!]).

Bignonia quinquefolia Vell., Fl. Flumin.: 252 (1829). *Cybistax quinquefolia* (Vell.) J.F.Macbr., Publ. Field Mus. Nat. Hist., Bot. Ser. 13: 90 (1961). TYPE: [Icon. Ined.] "Didyn. Angiosp. BIGNONIA *quinquefolia Tab. 50*" Seção de Manuscritos, Bibliot. Nac. (Rio de Janeiro), n° I-17, 03, 002; mss1198655_054 [image!] (**lectotype, here designated**).

Original locality and distribution. *Bignonia quinquefolia* was described by Vellozo (1829) as "*Habitat silvis pharmacopolitanis*", which is recognized as some place in Rio de Janeiro (see comments under *Bignonia triphylla*). In fact, *Cybistax antisyphilitica* is a plant native but not endemic to Brazil. Following Gentry (1992b) and Lohmann (2023b), this species is found in Amazonia, Atlantic Forest, Caatinga, Cerrado, Chaco, Pampa or Pantanal. It is distributed in Argentina, Bolivia, Ecuador, Paraguay, Peru, Suriname and Brazil (all regions).

Nomenclatural notes. The lectotype designated by Sandwith and Hunt (1974) as *Bignonia quinquefolia* is considered superseded here (see comments under *Bignonia ignea*). A copy of the illustration of *Bignonia quinquefolia* stored in the Manuscript Sect. of Torre do Tombo is accessed through the PT-TT-MSLIV-2776_m0107 [image!].

Taxonomic notes. Gentry (1975a) discussed the stabilization of *Cybistax antisyphilitica* and listed *Bignonia quinquefolia* as a synonym of *Cybistax antisyphilitica*. This position was also accepted in later treatments (Gentry, 1992b; Zuntini, 2014), and it is reinforced here.

Bignonia quinquefolia well represents *Cybistax antisyphilitica* and includes relevant diagnostic features as the 5-foliolate leaves, elliptics, acuminate apex, cuneate base, entire margin, terminal inflorescence, calyx long, acuminate teeth, corolla tubular-campanulate, the oblong capsule fruit and winged seeds. These characteristics agree with *Cybistax antisyphilitica* (Gentry, 1992b). Although the venation leaves were not represented in the illustration, the lack of this characteristic does not prejudice the recognition of species.

The Vellozo drawn is well completed, bringing information about leaves, flowers, fruit and seed. In *Floræ Fluminensis* description is put '*foliis digitatis; foliolis lanceolatis*' [folhas digitadas; folíolos lanceolados], '*Limbus quinque partitus, erectus*' [leaf blade five-parted, upright], '*pedunculo racemoso, terminali*' [terminal racemosa peduncle], '*Calyx quinque-dentatus, laxus. Corolla sulphurea*' [Calyx with five teeth, loose. Sulfur-yellow corolla], '*Siliqua lanceolata, striata*' [Lanceolate siliqua, striated].

39. *Bignonia flavescens* Vell.

Handroanthus serratifolius (Vahl) S.O.Grose, Syst. Bot. 32: 666 (2007). *Bignonia serratifolia* Vahl, Eclog. Amer. 2: 46 (1798). *Tecoma serratifolia* (Vahl) G.Don in Gen. Hist. 4: 224 (1837). *Tabebuia serratifolia* (Vahl) G.Nicholson, Ill. Dict. Gard. 4: 1 (1887). TYPE: Trinidad. The island Trinidad, *Ryan s.n.*, (C, barcode C10008627 [image!]; C, barcode C10008629 [image!]).

Handroanthus flavescens (Vell.) Mattos, Loefgrenia 50: 2 (1970). *Bignonia flavescens* Vell., Fl. Flumin.: 252 (1829). TYPE: [Icon. Ined.] "Didyn. Angiosp. BIGNONIA *flavescens*

Tab. 51" Seção de Manuscritos, Bibliot. Nac. (Rio de Janeiro), n° I-17, 03, 002; mss1198655_055 [image!] (**lectotype, here designated**).

Original locality and distribution. *Bignonia flavescens* has no indication of locality, vegetation or month of the year in the original manuscript of *Floræ Fluminensis*. In fact, *Handroanthus serratifolius* is a plant native but not endemic to Brazil. Following Gentry (1992b) and Lohmann (2023c), this species is found in Amazonia, Atlantic Forest, Caatinga, Cerrado, Pantanal or seasonal forests. It is distributed in Bolivia, Colombia, Ecuador, French Guiana, Guyana, Peru, Suriname, Venezuela and Brazil (all regions).

Nomenclatural notes. The lectotype designated by Gentry (1975a) as *Bignonia flavescens* is considered superseded here (see comments under *Bignonia squalus*). A copy of the illustration of *Bignonia flavescens* stored in the Manuscript Sect. of Torre do Tombo is accessed through the PT-TT-MSLIV-2776_m0109 [image!].

Taxonomic notes. Mattos (1970) recognized *Bignonia flavescens* and made the combination in *Handroanthus flavescens* (Vell) Mattos. Later, Gentry (1975a) treated *B. flavescens* as a variation of *Tabebuia serratifolia* and suggested the synonymization. After the reestablishment of *Handroanthus* by Grose and Olmstead (2007), the name was synonymized in *Handroanthus*. This name as a synonym of *H. serratifolius* was also accepted in later treatments (Gentry, 1992b; Zuntini, 2014), and it is reinforced here.

Bignonia flavescens well represents *Handroanthus serratifolius* and includes relevant diagnostic features as the 5-foliolate leaves, elliptic, acuminate apex, rounded base, slightly serrated margin, terminal inflorescence and infundibuliform corolla. These characteristics agree with *Handroanthus serratifolius* (Gentry, 1992b). The original descriptions include features such as: '*foliis digitatis; foliolis lanceolatis, serratis*' [digitate leaves; lanceolate,

serrated], '*floribus fasciculatis, axillaribus*' [axillary fasciculate flowers], '*Perianthium tridentatum*' [three-toothed perianth].

In addition, Vellozo (1829) commented: '*Vulgo dicitur Ipéuva, vel Ipê do Campo*' [Generally known as 'Ipéuva,' or 'Ipê do Campo'], as reference to the common name of species. The plate, along with the original description, assertively support the species recognition.

40. *Bignonia longiflora* Vell.

Handroanthus speciosus (DC. ex Mart.) M.Nascim., J.F.B.Pastore & Zuntini, Phytotaxa 640: 172 (2024). *Tecoma speciosa* DC. ex Mart. in Flora 24: 13 (1841). *Gelseminum speciosum* (DC. ex Mart.) Kuntze in Revis. Gen. Pl. 3: 245 (1898). *Tabebuia vellosoi* Toledo in Arq. Bot. Estado São Paulo, n.s., 3: 34 (1952). *Handroanthus vellosoi* (Toledo) Mattos in Loefgrenia 50: 2 (1970). *Handroanthus longiflora* Mattos in Loefgrenia 100: 3 (1991). *Tecoma longiflora* Bureau & K.Schum. in C.F.P.von Martius & auct. suc. (eds.), Fl. Bras. 8: 324 (1896-1897) *nom. illeg*. *Bignonia longiflora* Vell., Fl. Flumin.: 252 (1829) *nom. illeg*. TYPE: [Icon. Ined.] "Didyn. Angiosp. BIGNONIA *longiflora Tab. 52*" Seção de Manuscritos, Bibliot. Nac. (Rio de Janeiro), n° I-17, 03, 002; mss1198655_056 [image!] (lectotype, designated by Nascimento et al. [2024: 172]).

Original locality and distribution. *Bignonia longiflora* was described by Vellozo (1829) as "*Habitat silvis maritimis pharmacopolitanis*", which is recognized as some place in Rio de Janeiro (see comments under *Bignonia triphylla*). In fact, *Handroanthus speciosus* is a plant native and endemic to Brazil. Following Gentry (1992b) and Lohmann (2023c), this species is

found in Atlantic Forest or montane forest. It is distributed in the South and Southeast of the country.

Notes. The combination, distribution, typification, nomenclature and taxonomy comments were discussed in Nascimento et al. (2024).

41. *Bignonia tababuya* Vell.

Tabebuia cassinoides (Lam.) DC., Prodr. [A.P. de Candolle] 9: 213 (1845). *Bignonia cassinoides* Lam., Encycl. [J. Lamarck & al.] 1(2): 418 (1785). *Catalpa cassinoides* (Lam.) Spreng., Syst. Veg., ed. 16 [Sprengel] 1: 70 (1824).—Type: Brazil, Rio de Janeiro, *Commerson s.n.* (P, barcode P00675480 [image!]).

Bignonia tababuya Vell., Fl. Flumin.: 251 (1829). TYPE: [Icon. Ined.] "Didyn. Angiosp. BIGNONIA *tababuya Tab. 53*" Seção de Manuscritos, Bibliot. Nac. (Rio de Janeiro), n° I-17, 03, 002; mss1198655_057 [image!] (**lectotype, here designated**).

Original locality and distribution. *Bignonia tababuya* was described by Vellozo (1829) as "*Habitat maritimis au loca inundata, vel a mari, vel a fluviis*", which is recognized as some place in Rio de Janeiro (see comments under *Bignonia squalus*). In fact, *Tabebuia cassinoides* is a plant native and endemic to Brazil. Following Gentry (1992b) and Lohmann (2023g), this species is found in Atlantic Forest. It is distributed in the Northeast, South, Southeast of the country.

Nomenclatural notes. The lectotype designated by Gentry (1975a) as *Bignonia tababuya* is considered superseded here (see comments under *Bignonia squalus*). A copy of the illustration of *Bignonia tababuya* stored in the Manuscript Sect. of Torre do Tombo is accessed through the PT-TT-MSLIV-2776_m0113 [image!]. The spelling in the text is

"*Bignonia tabebuya*", maybe he mistakenly used an ‘E’ instead of an ‘A’, because the original text, illustration and its copies are spelled with an ‘A’.

Taxonomic notes. Gentry (1975a) related *Bignonia tababuya* with *Tabebuia cassinoides.* Later, this position was also accepted in later treatments (Gentry, 1992b; Zuntini, 2014), and it is reinforced here.

Bignonia tababuya well represents *Tabebuia cassinoides* and includes relevant diagnostic features as the sample leaves, elliptic, cuneate base, entire margin margin, terminal inflorescence, corolla infundibuliform, oblong fruit, persistent calyx and winged seeds (Gentry, 1992b). Although the leaves venation was not represented in the illustration, the lack of this characteristic does not prejudice the recognition of species. The original descriptions include features such as: ‘*foliis lanceolatis, alternis*’ [lanceolate leaves, alternate], ‘*floribus terminalibus*’ [terminal flowers], ‘*Corolla ex luteo-alba*’ [Corolla yellowish-white]. It is also commented ‘*Radix eosdem usus habet, qnos suberis cortex*’ [The root has the same uses as the cork oak bark], regarding the common uses of species which shows that regional people, Vellozo or someone in the entourage knew this plant. The plate, along with the original description, assertively support the species recognition.

42. *Bignonia leucoxyla* Vell.

Tabebuia obtusifolia (Cham.) Bureau, Vidensk. Meddel. Naturhist. Foren. Kjøbenhavn: 113 (1893). *Spathodea obtusifolia* Cham., Linnaea 7: 660 (1832). TYPE: Brazil, *Sellow s.n.* (Lectotype: G-DC, barcode G00133619 [image!]; Isolectotypes: K, barcode K000449902 [image!], W, barcode 0057673 [image!]).

Bignonia leucoxyla Vell., Fl. Flumin.: 252 (1829). *nom. superfl*. non *Bignonia leucoxylon* L., Sp. Pl. 2: 624 (1753). *Tabebuia leucoxyla* (Vell.) DC., Biblioth. Universelle Genève,

n.s., 17: 131 (1838). TYPE: [Icon. Ined.] "Didyn. Angiosp. BIGNONIA *leucoxylla Tab. 54*" Seção de Manuscritos, Bibliot. Nac. (Rio de Janeiro), n° I-17, 03, 002; mss1198655_058 [image!] (**lectotype, here designated**).

Original locality and distribution. *Bignonia leucoxyla* was described by Vellozo (1829) as "*Habitat tum maritimis, cum mediterraneis ad cacumina, et declivia montium*", which recognized double occurrence in Rio de Janeiro and São Paulo. Especially at the stretch of BR-459 right after the São Paulo border in the direction to Cunha town. In fact, *Tabebuia obtusifolia* is a plant native and endemic to Brazil. Following Gentry (1992b) and Lohmann (2023g), this species is found in Atlantic Forest and Cerrado. It is distributed in the Midwest, Northeast and Southeast of the country.

Nomenclatural notes. Gentry (1975a) considered *Bignonia leucoxyla* as “orthographic variations” of *Bignonia leucoxylon* L. but, apparently, the situation was not presented to the International Code of Nomenclature. So, a binding decision was organized with the names and sent for review. However, parallel usages of the two epithets in the period between 1894 and 1953 were not documented, concluding that, to the interest of nomenclatural stability, the request is unnecessary (J. McNeill, pers. comm.). Thus, *Bignonia leucoxyla* needs to be continually treated as a later homonym of *Bignonia leucoxylon* (Art. 53.2, Turland et al., 2018).

The lectotype designated by Gentry (1975a) as *Bignonia leucoxyla* is considered superseded here (see comments under *Bignonia squalus*). A copy of the illustration of *Bignonia leucoxyla* stored in the Manuscript Sect. of Torre do Tombo is accessed through the PT-TT-MSLIV-2776_m0115 [image!].

Taxonomic notes. *Bignonia leucoxyla* well represents *Tabebuia obtusifolia* and includes relevant diagnostic features as the marks presented in the young blanches (dots or lines),

simple leaves, elliptics, rounded apex, cuneate base, entire margin, inflorescence terminal, flowers with large and toothed calyx and corolla infundibuliform. These characteristics agree with *Tabebuia obtusifolia* (Gentry, 1992b). The original descriptions include features such as: '*foliis oppositis, ob-ovatis*' [opposite, obovate leaves], '*floribus terminalibus; perianthio diphyllo; antheris reflexis*' [terminal flowers; perianth with two leaves; anthers reflexed], '*Corolla ampla, candida, laciniis magnis, reflexis. Pedunculi terminales, pauciflori*' [Wide, white corolla with large, reflexed lobes. Terminal peduncles, few-flowered].

In addition, Vellozo (1829) commented: '*Vulgò dicitur Caixeta*' [Commonly called 'Caixeta'] as reference to common name of species; '*Præbet materiariis lignum tenue*' [Provides a thin wood for carpentry] a reference to potential uses of species; '*Hunc offendi apud scaturiginem fluvii Tuguahy*' [This is observed at the source of the Taguay River] a comment about the probable collection place of the plant.

43. *Bignonia curialis* Vell.

Jacaranda jasminoides (Thunb.) Sandwith, Recueil Trav. Bot. Néerl. 34: 232 (1937). *Bignonia jasminoides* Thunb., Pl. Bras. 3: 36 (1821). TYPE: Brazil. *Thunberg s.n.* (holotype: UPS, barcode V-125224 [image!]).

Jacaranda curialis (Vell.) DC., Prodr. [A. P. de Candolle] 9: 232 (1845). *Bignonia curialis* Vell., Fl. Flumin.: 253 (1829). TYPE: [Icon. Ined.] "Didyn. Ang[ios]. BIGNONIA *curialis Tab. 55*" Seção de Manuscritos, Bibliot. Nac. (Rio de Janeiro), n° I-17, 03, 002; mss1198655_059 [image!] (**lectotype, here designated**).

Original locality and distribution. *Bignonia curialis* was described by Vellozo (1829) as "*Habitat silvis maritimis, et mediterraneis*", which is recognized as an ambiguous occurrence in Rio de Janeiro and São Paulo (see comments under *Bignonia leucoxyla*). In

fact, *Jacaranda jasminoides* is a plant native and endemic to Brazil. Following Gentry (1992b) and Farias-Singer (2023), this species is found in Atlantic Forest, Caatinga or Cerrado. It is distributed in the Northeast and Southeast of the country.

Nomenclatural notes. The lectotype designated by Gentry (1975a) as *Bignonia curialis* is considered superseded here (see comments under *Bignonia squalus*). A copy of the illustration of *Bignonia curialis* stored in the Manuscript Sect. of Torre do Tombo is accessed through the PT-TT-MSLIV-2776_m0117 [image!].

Taxonomic notes. Candolle (1845) treated *Bignonia curialis* and made the combination: *Jacaranda curialis*. Gentry (1975a) suggested that *J. curialis* (based in *B. curialis*) should be treated as a synonym of *Jacaranda jasminoides*. This position was also accepted in later treatments (Gentry, 1992b; Zuntini, 2014), and it is reinforced here.

Bignonia curialis well represents *Jacaranda jasminoides* and includes relevant diagnostic features as the bi-pinnate leaves, elliptic, acute apex, cuneate base, terminal panicle, tubular corolla and cupular calyx. These characteristics agree with *Jacaranda jasminoides* (Gentry, 1992b). Although the leaves venation were not represented in the illustration, the lack of this characteristic does not prejudice the recognition of species. The original descriptions include features, such as: '*Caulis arboreus*' [tree stem], '*foliis pinatis cum impari (trijugis, vel quadrijugis); foliolis lanceolatis*' [pinnate leaves with an uneven number (trifoliate, or quadrifoliate); with lanceolate leaflets], '*racemis terminalibus*' [terminal raceme], '*racemi pauciflori, terminales; corolla curvata , violacea…*' [raceme with few flowers, terminal; corolla curved, purple…].

In addition, Vellozo (1829) commented: '*Etiam vulgô dicitur Ipê roxo*' [Also widely known as 'Ipê roxo'] as reference to the common name of species; '*Duritiem, incorruptibibilitatem hujus ligni, cæterorumque, quæ ad hanc familiam pertinent, quis est, qui*

ignoret?' [Who is ignorant of the hardness, incorruptibility of this wood, and of the others that pertain to this family?], comments about the quality of the species wood.

***Crescentia* L.**

1. *Crescentia cujete* Vell.

Crescentia cujete L., Sp. Pl. 2: 626 (1753). *Crescentia cujete* Vell., Fl. Flumin.: 269 (1829). **orth. var**. TYPE: Plukenet's illustration, Icon. 3: t. 171, f. 2, 1692 (lectotype, designated by Wijnands [1983: 50]: [n.v.]).

Original locality and distribution. *Crescentia cujete* Vell. was described by Vellozo (1829) as "*Habitat tum maritimis, tum mediterraneis*", which is recognized as an ambiguous occurrence in Rio de Janeiro and São Paulo (see comments under *Bignonia leucoxyla*). In fact, *Crescentia cujete* L. is a plant probably native to at least Northern Central-America and Mexico (Gentry, 1980). Following Gentry (1980) and Lohmann (2023a), this species Amazônia and Atlantic Forest. It is naturally distributed in Bahamas, Belize, Cayman Islands, Colombia, Costa Rica, Cuba, El Salvador, Guatemala, Haití, Honduras, Jamaica, Leeward Islands, México, Nicaragua, Panamá, Puerto Rico, República Dominicana, Southern Dutch Antilles, Virgin Islands and Windward Islands. Also, it is cultivated in Bermuda, Bolivia, Ecuador, French Guiana, Ghana, Guyana, India, Indonésia, Libéria, Nigéria, Paraguay, Perú, Philippines, Society Islands, Surinam, Trinidad, Venezuela, Vietnam and Brazil (Midwest, North, Northeast and Southeast).

Nomenclatural notes. *Crescentia cujete* Vell. is here interpreted as a citation to *Crescentia cujete* L. (1753). Previous analyses also seem to reach the same conclusion, as Gentry (1975a) did not include *Crescentia cujete* Vell. in his study. Thus, in this case, there

would be no need to designate a “type material”, but rather to mention the “reference material” deposited in the BN (mss1198655_107 [image!]). A copy of the illustration of *Bignonia cujete* Vell. stored in the Manuscript Sect. of Torre do Tombo is accessed through the PT-TT-MSLIV-2776_m0213 [image!]. This decision is in accordance with the ICN code, as we assume that *Crescentia cujete* L. and *Crescentia cujete* Vell. share the same type, allowing both names to be inserted as orthographic variants (Art. 61.2, Turland et al. 2018).

Gentry (1980) suggested a typification for this species, selecting the specimen LINN 779.1 in the ‘Linnaean Herbarium’. Nevertheless, Wijnands (1983) noticed that this specimen was purchased by Linneaus in July 1758, so it must be rejected. In addition, Wijnands (1983) analysed other specimen of Linnaean Herbarium (LINN 779.2), and also perceived that it could not be the type of *Crescentia cujete* L. Thus, Wijnands (1983) designated (with Gentry aprovation) a lectotype for *Crescentia cujete* L. based on Plukenet’s illustration.

Taxonomic notes. *Crescentia cujete* Vell. well represents *Crescentia cujete* L. and includes relevant diagnostic features as the simple leaves, inflorescence cauliflorous, bilabiate calyx, corolla tubular-campanulate and calabash spherical fruit. These characteristics agree with *Crescentia cujete* L. (Gentry, 1980). Although the leaves' venation were not represented in the illustration, the lack of this characteristic does not prejudice the recognition of species. The original descriptions do not include good features to help in identification.

Results & Discussion

The plants collected on Vellozo’s expeditions were deposited in the library and registry of museums da Ajuda (Portugal) and named “*Nomes vulgares d’algumas plantas do Rio de Janeiro reduzidos aos triviais do systema de Linneo, e da Floræ Fluminense do P.*^{de} *Velloso. 1790*” (Nunes 1999; Brigola 2001). Meantime, sis herbarium has not been located since then.

Without the original gatherings, the names typification is done based on the illustrations. Thus, according to Art. 9.3. and 9.4 of the ICN, when the holotypes are lost, it is possible to designate a lectotype based on original elements (Turland et al., 2018).

In selection of lectotypes to Vellozo's names, it is important to note that there are three sets of materials (Pastore et al., 2022): 1) the published plates (Vellozo, 1831) that began to be produced after the death of Friar Vellozo and, therefore, are not part of the original material of names published in 1829 (also see Costa-Lima & Chagas, 2021); 2) the complete set of illustrations deposited in the Biblioteca Nacional in Rio de Janeiro, and 3) an incomplete set at the Arquivo Nacional Torre do Tombo, Lisbon. The drawings of BN belonged to Queen D. Maria I of Portugal and possibly served as the base for the plates published in 1831, which are Torre do Tombo's plates belonging to the Viceroy Luís de Vasconcelos e Sousa. Still, they have differences, as observed in *Bignonia ignea* (Fig. 2), which suggests that the BN's illustrations are the first elaborated set and the Torre do Tombo ones are copies of these (Pastore et al., 2022).

In the analysis, we noticed that many names do not present terms in reference to the original vegetation and/or the location where the plant was collected. Among these names, 44 in total, 14 do not include information about phenology, collection location and/or vegetation (*Bignonia convoluta*, *B. cymosa*, *B. dichotoma*, *B. elegans*, *B. exoleta*, *B. flavescens*, *B. grandifolia*, *B. hirta*, *B. longa*, *B. longisiliqua*, *B. perianthomega*, *B. rego*, *B. triflora*, *B. unguiculata*). Furthermore, all previous studies designated a neotype instead of a lectotype. This occurred because the authors treated the names anchored to Vellozo's (1831) illustrations. Considering that the only known complete set of original material are the illustrations at the Biblioteca Nacional Digital, these illustrations can be considered as lectotypes, whereas the published plates when selected as lectotypes are considered neotypes

instead (Art. 9.16 of the ICN, Turland et al., 2018). Additionally, according to Art. 9.8 of ICN, a neotype is selected when the original material does not exist (Turland et al., 2018), therefore, the neotypes are superseded once the original material —the plates at Biblioteca Nacional— is available.

Though, as previously seen, all the *Bignonia* names (taxonomy treated) had mistaken lectotypification because the responsible for the analysis mentioned or used the plates published in the *Floræ Fluminensis*. Even in the most recent studies, it was possible to find these cases (Pastore, 2013; Lohmann & Taylor, 2014; Fonseca et al., 2017; Fonseca & Lohmann, 2019). However, existing studies that made the correct typification mentioning the archives of BN still have not cited the illustration copies at Torre do Tombo (Knapp et al., 2015; Pellegrini et al., 2015; Milward-de-Azevedo, 2017; Menezes et al., 2023). Other evaluations, besides correct lectotypification, also cited the existing copies at Torre do Tombo (Pastore et al., 2022; Remor et al., 2023; Nascimento et al., 2024). Gentry (1975a) does not have a direct indication of the typification of the species, however, before making his comments he cited "based on" plus the name provided by Vellozo and the specific information about the plate where the respective species are represented. Because of this, based on the Art. 7.11 of ICN (Turland et al., 2018), we are considering the indication of the plates published by Vellozo (1831) as a clear "type element" for his decision and, consequently, as the typification of some of Vellozo's names of Bignoniaceae. Additionally, Fonseca et al. (2017) shared the same interpretation and considered the mention by Gentry (1975a) as a form of typification.

Before Gentry (1975a), Laroche (1973) had already utilized the plates published in Vellozo (1831) as the “type element” for *Bignonia trifoliata* and *B. grandifolia*. However, these illustrations were published subsequently to the protologue (Vellozo, 1829) and cannot

be considered as the “type” since there is unpublished material from 1790 housed at the National Library. In the following years, Sandwith and Hunt (1974) treated five species (*B. angrensis*, *B. dichotoma*, *B. ignea*, *B. quinquefolia*, *B. rego*) and also used the plates published in Vellozo (1831) as “type element”. Years later, Pool (2007) treated and designated the lectotype for *Bignonia squalus* and *B. falcata*. However, like Laroche (1973) and Gentry (1975a), she also used the plates published by Vellozo (1831) as the 'type element', which is deemed inappropriate. In addition, Lohmann and Taylor (2014) referenced the typifications made by Laroche (1973) and Pool (2007), in addition to making 14 inappropriate designations (*Bignonia arvensis*, *B. conjugata*, *B. convoluta*, *B. cordata*, *B. elegans*, *B. fasciculata*, *B. fluminensis*, *B. longa*, *B. pedunculata*, *B. perianthomega*, *B. rego*, *B. scandens*, *B. ternata*, *B. unguiculata*). Besides, other recent studies referenced these inappropriate typifications (Udulutsch et al., 2013; Fonseca et al., 2017; Fonseca and Lohmann, 2019).

In Gentry (1975a), all names of *Bignonia* were analyzed on five topics: “Established names”; “Existing but little-used combinations”; “Later homonyms”; “Junior synonyms” and “Names previously unaccounted for”. Thus, he organized each name based on evaluation and description of morphology characteristic, under nomenclatural analysis. In this way, ten names were synonymized (*Bignonia coito*, *B. cordata*, *B. exoleta*, *B. flavescens*, *B. ignea*, *B. quinquefolia*, *B. scandens*, *B. squalus*, *B. tababuya*, *B. unguis*); ten later homonyms were detected (*Bignonia coccinea*, *B. dichotoma*, *B. elliptica*, *B. grandifolia*, *B. leucoxyla*, *B. longa*, *B. longiflora*, *B. longisiliqua*, *B. obovata*, *B. triphylla*); Four new combinations were proposed (*Bignonia convoluta* [*Cuspidaria convoluta* (Vell.) A.H. Gentry], *Bignonia elegans* [*Arrabidaea elegans* (Vell.) A.H. Gentry], *Bignonia fluminensis* [*Pleonotoma fluminensis* (Vell.) A.H. Gentry], *Bignonia unguiculata* [*Parabignonia unguiculata* (Vell.) A.H. Gentry];

And five names remain with no precise solution (*B. angrensis*, *B. cymosa*, *B. falcata*, *B. hirta*, *B. triflora*).

All names of Bignoniaceae are compiled in Table 1, along with their accepted name and original localities with the interpretations provided here and Pastore et al. (2021).

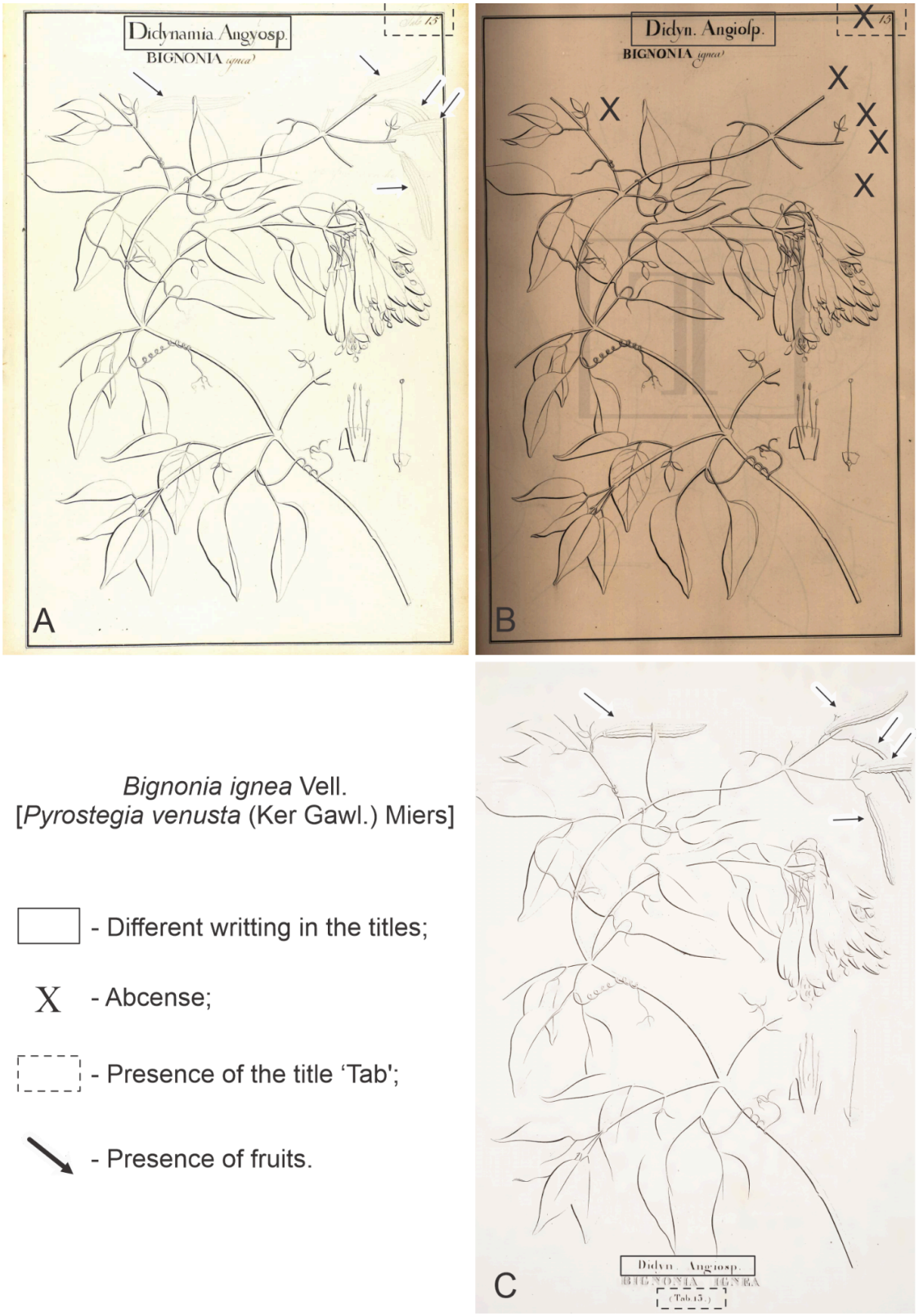

Fig. 2. Illustration of *Bignonia ignea*. **A.** Lectotype. **B.** Copy of illustration. **C.** Published plate (Vellozo, 1831). **Source:** Biblioteca Nacional do Rio de Janeiro, Torre do Tombo and Vellozo (1831).

Table 1. All Vellozo's Bignoniaceae, their localities (or not) and current names.

Vellozo's name	Localities [Interpretation]	Current names
Bignonia squalus	*Habitat maritimis* [Rio de Janeiro state].	= *Amphilophium crucigerum*
Bignonia triphylla	*Habitat maritimis Pharmacopolitanis* [Paraty municipality in Rio de Janeiro state].	= *Pleonotoma tetraquetra*
Bignonia ignea	*Habitat fruticetis mediterraneis* [presumably from the municipality of Cunha].	= *Pyrostegia venusta*
Bignonia trifoliata	*Habitat maritimis Regii. Prædii S. Crucis* [Royal Santa Cruz farm in the Southwest of Rio de Janeiro State]	≡ *Adenocalymma trifoliatum*
Bignonia falcata	*Habitat silvis maritimis Pharmacopolitanis* [Paraty municipality in Rio de Janeiro state]	≡ *Amphilophium falcatum*
Bignonia conjugata	*Habitat silvis maritimis Regii Prædii S. Crucis* [Royal Santa Cruz farm in the Southwest of Rio de Janeiro State].	≡ *Fridericia conjugata*
Bignonia coito	*Habitat silvis maritimis ad declivia Alpium* Jerissinò [Bocaína mountain area in direction to Cunha/SP].	= *Bignonia corymbosa*
Bignonia unguis	*Habitat silvis maritimis Paratyensibus* [Paraty, Rio de Janeiro].	= *Dolichandra unguis-cati*
Bignonia ternata	*Habitat silvis maritimis* [Rio de Janeiro state].	Unknown
Bignonia scandens	*Habitat silvis maritimis* [Rio de Janeiro state].	= *Anemopaegma chamberlaynii*
Bignonia angrensis	*Habitat stivis maritimis Angrensibus* [Angra dos Reis, Rio de Janeiro].	Unknown
Bignonia fluminensis	*Habitat silis maritimis* [Rio de Janeiro state].	≡ *Pleonotoma fluminensis*
Bignonia fasciculata	*Habitat silvis maritimis Regii Prædii S. Crucis* [Royal Santa Cruz farm in the Southwest of Rio de Janeiro State].	≡ *Tynanthus fasciculatus*
Bignonia longisiliqua	[without locality data].	= *Stizophyllum perforatum*

Bignonia elegans	*Offendi ail viam publicam prope Molendinum Sacchariferum vulgo dictum Lamarão* [Rio de Janeiro].	≡ *Fridericia elegans*
Bignonia grandifolia	[without locality data].	≡ *Adenocalymma grandifolium*
Bignonia cordata	*Habitat silvis maritimis Pharmacopolitanis* [Paraty municipality in Rio de Janeiro state].	= *Lundia corymbifera*
Bignonia exoleta	[without locality data].	= *Dolichandra unguis-cati*
Bignonia convoluta	[without locality data].	≡ *Cuspidaria convoluta*
Bignonia dichotoma	[without locality data].	= *Tanaecium pyramidatum*
Bignonia unguiculata	[without locality data].	≡ *Dolichandra unguiculata*
Bignonia perianthomega	[without locality data].	≡ *Perianthomega vellozoi*
Bignonia hirta	[without locality data].	= *Cuspidaria simplicifolia*
Bignonia cymosa	[without locality data].	Unknown
Bignonia longa	[without locality data].	≡ *Lundia longa*
Bignonia triflora	[without locality data].	= *Cuspidaria pulchella*
Bignonia rego	[without locality data].	≡ *Fridericia rego*
Bignonia arvensis	*Habitat campis apricis mediterraneis trans-alpinis* [The stretch in RJ before the SP border, known locally nowadays as “Virada da Serra”].	≡ *Anemopaegma arvense*
Bignonia pedunculata	*Habitat campis apricis mediterraneis* [It is the typical savanna (cerrado) vegetation in SP state].	≡ *Adenocalymma pedunculatum*
Bignonia coccinea	*Habitat silvis mediterraneis* [presumably from the municipality of Cunha].	Unknown
Bignonia caroba	*Campis apricis mediterraneis habitat* [It is the typical savanna (cerrado) vegetation in SP state].	≡ *Jacaranda caroba*
Bignonia elliptica	*Habitat silvis mediterraneis trans-alpinis prope prædium dictum Boavista* [The Chapel of São José da Boa Vista in Cunha/SP].	= *Jacaranda macrantha*

Bignonia obovata	*Habitat silvis maritimis, campisque* [fields in Rio de Janeiro state].	= *Jacaranda puberula*
Bignonia tuberculosa	*Habitat silvis maritimis Pharmacopolitanis* [Paraty municipality in Rio de Janeiro state].	≡ *Zeyheria tuberculosa*
Bignonia digitalis	*Habitat campis apricis mediterraneis, trans-alpinis* [The stretch in RJ before the SP border, known locally nowadays as "Virada da Serra"].	= *Zeyheria montana*
Bignonia heptaphylla	*Habitat silvis maritimis* [Rio de Janeiro state].	≡ *Handroanthus heptaphyllus*
Bignonia leucantha	*Habitat silvis maritimis* [Rio de Janeiro state].	≡ *Sparattosperma leucanthum*
Bignonia quinquefolia	*Habitat silvis Phannæopolitanis* [Paraty municipality in Rio de Janeiro state].	= *Cybistax antisyphilitica*
Bignonia flavescens	[without locality data].	= *Handroanthus serratifolius*
Bignonia longiflora	*Habitat silvis maritimis Pharmacopolitanis* [Paraty municipality in Rio de Janeiro state].	≡ *Handroanthus speciosus* ined.
Bignonia tababuya	*Habitat maritimis au loca inundata, vel a mari, vel a fluviis* [Rio de Janeiro state].	= *Tabebuia cassinoides*
Bignonia leucoxylla	*Hunc offendi apud scaturiginem fluvii Taguahy* [Rio de Janeiro state].	= *Tabebuia obtusifolia*
Bignonia curialis	*Habitat silvis maritimis, et mediterraneis* [the ambiguous occurrence in RJ and SP].	= *Jacaranda jasminoides*
Crescentia cuyeté	*Habitat tum maritimis, tum mediterraneis* [the ambiguous occurrence in RJ and SP].	≡ *Crescentia cujete*

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Declarations

Competing interests. The authors have no competing interests to declare that are relevant to the content of this article.

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Chapter 2
A new combination in *Dolichandra* (Bignoniaceae) from Brazil

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Abstract

The *Florae Fluminensis* was a colonial and pioneer study about the plants of the captaincy Rio de Janeiro and localities from São Paulo state, elaborated by Friar Vellozo. In the publication of the manuscript, many problems happened and this resulted in loss of priority from names of Vellozo. But in recent years, review in the nomenclature of the species has designated the correct authorship of many names. A new combination *Dolichandra coccinea*, based on Vellozo's *Bignonia coccinea* from *Florae Fluminensis*, for the species currently known as *D. cynanchoides* is provided. This taxonomic novelty was provided along with typification, nomenclatural, and taxonomic notes.

Keywords: *Bignonia*, *Dolichandra coccinea*, *Dolichandra cynanchoides*, *Florae Fluminensis*, Friar Vellozo

Introduction

Florae Fluminensis by Friar Vellozo (Conceição Veloso) was a pioneer plant taxonomic work in Brazil. The study itself originally refers to the captaincy of Rio de Janeiro Bediaga & Lima (2015), but also included nearby places from the "Estrada Real" in the municipality of Cunha (São Paulo state) (Pastore *et al*. 2021). The *Florae Fluminensis* was produced between 1783 and 1790, resulting in 1639 species described and illustrated (Bediaga & Lima 2015), 1296 of these representing new species (Pastore *et al*. 2021). The *Florae Fluminensis* publication faced several hindrances and the first, but incomplete version (until pg. 352), was validly published in 1829, the plates in 1831, and finally a complete version of text was validly published only in 1881 (Vellozo 1829; 1831; 1881, Carauta 1973). The waiting time of several decades resulted in loss of priority of a number of Vellozo's names (Bediaga & Lima 2015, Kury 2015). Recently, there are a growing interest in review the *Florae Fluminensis* names, thus revisionary studies are been published for several families, such as: Asteraceae Bercht. & J.Presl (Remor *et al*. 2022, Sitowski *et al*. 2022), Eriocaulaceae Martinov (Chagas *et al*. 2018), Leguminosae Juss. (Lima 1995, Menezes 2021), Polygalaceae Hoffmanns. & Link (Pastore 2013), and Solanaceae A.Juss. (Knapp *et al*. 2015). One of the first modern revisionary studies was presented by Gentry (1975), revisiting the taxonomy and nomenclature of 43 names of Bignoniaceae Juss. of *Florae Fluminensis*, all of these described in *Bignonia* Linnaeus (1753: 622); *Crescentia cujete* Linnaeus (1753: 626) was not addressed by Gentry. In his work, Gentry identified several earlier synonyms, leading to four new combinations. Despite Gentry's thorough examination of Vellozo's treatment for Bignoniaceae, one nomenclatural problem escaped to be resolved there. Thus, this paper is in order to resolve a nomenclatural issue in *Dolichandra* Chamisso (1832: 657) with a new combination, and taxonomic and nomenclatural notes.

Material and Methods

The bibliographic review concerning to *Dolichandra*, and '*Bignonia coccinea*' Vellozo (1829: 250) was prepared consulting the information on Vellozo (1829), Chamisso (1832) and Steudel (1821), Gentry (1975), and Pursh (1814). The nomenclatural decisions were taken following the ICN code (Turland *et al*. 2018). For the species characterization, and distributions data were taken from searches on 'Bignoniaceae' and '*Dolichandra*' entries on the online databases: SpeciesLink (available: https://specieslink.net/search/) and Herbário da Flora do Brasil (available on: https://reflora.jbrj.gov.br/reflora/herbarioVirtual/), and also JStor Plant (available on: https://plants.jstor.org/). Additional information on morphology, habitat, distribution, and phenology were obtained from Fonseca *et al*. (2017).

Taxonomic treatment

Dolichandra coccinea (Vellozo) M.Nascim., Zuntini & J.F.B.Pastore *comb. nov.* ≡ *Bignonia coccinea* Vellozo Florae Fluminensis (1829 [1825]: 250), non '*Bignonia coccinea* (Prush) Steudel', Nomencl. Bot. (1821: 109), pro syn. ≡ *Macfadyena coccinea* (Vellozo) Miers, Proc. Hort. Soc. 3 (1863: 200). Protologue: "*Habitat Silvis Mediterraneis*". Lectotype (designated here):—Icon. ined. "Didyn. Angyosp. BIGNONIA *coccinea Tab. 42*". Secção de Manuscritos, Bibliot. Nac. (Rio de Janeiro), no. I-17,03, 002; mss1198655_046.

= *Dolichandra cynanchoides* Chamisso, Linnaea 7: 658. 1832. Lectotype (designated by Fonseca *et al.* 2017: 10):—BRAZIL. Unknown state, s.d., *Sellow F. s.n.* (HAL0016196!). *syn. nov*.

Habitat, distribution and phenology:—*Dolichandra coccinea* was collected in the southern region in Brazil, also occurring in Argentina, Bolivia, Uruguay and Paraguay. The species is distributed in vegetation of Atlantic Forest, usually found between 500 and 800 m alt. The species flowering, generally, from October to April and fruits from November to July (Fonseca *et al*. 2017, treated under *D. cynanchoides*).

Morphology and ecology:—The comprehensive description of species was provided by Fonseca *et al*. (2017). The pollination syndrome existing in flowers of Bignoniaceae, is based on different groups of pollinators, among them hummingbirds (Gentry 1974a; 1974b). *Dolichandra coccinea* is a species which possibly sees this type of interaction.

Note:—The lectotype was chosen based on the Vellozo's original material, an unpublished plate kept by Biblioteca Nacional in Rio de Janeiro (Brazil), following the Pastore *et al*. (2022) recommendations. In addition, also was published a copy of the plate in Arquivo Nacional Torre do Tombo (Lisboa), at collection "Manuscrito da Livraria".

Taxonomic Note:—*Dolichandra* can be easily distinguished from other Bignoniaceae genera by several putative synapomorphies: multiple dissected phloem wedges from the propagation of parenchyma without significance (Pace 2015), tendrils uncinate or in claw like form, colpate pollen with a psilate exine (Gentry & Tomb 1979) and fruits with four divisions (Lohmann & Taylor 2014). The flowers in the genus have corolla yellow or red, tubular or infundibuliform, lobes 5, anthers glabrous, ovary sessile, smooth and outside glabrous to puberulous, ovules in multiple series at placenta. The fruits are elliptic capsules, flattened or inflated with 2 or 4 valves glabrous partially divided longitudinally (Lohmann & Taylor 2014).

Among the species in the genus, *D. coccinea* is characterized by: the purplish calyx and red corolla, stipitate ovary, flattened and oblong fruit. A comprehensive description for this species was presented by Fonseca *et al*. (2017), treated under *D. cynanchoides*. Gentry (1975) was the first to recognize *B. coccinea* Vellozo, non *B. coccinea* Steudel and *D. cynanchoides* as co-specific, however providing an explanation. The examination of the plate of *Bignonia coccinea* Vellozo non *Bignonia coccinea* (Prush) Steudel in conjunction with the protologue reveals several characters that support this affinity, like: persistent bracts; scarlet and spathaceous calyces; creamish corolla (not common, but coinciding with early anthesis (Palacios *et al*. 2019); fruits with persistent calyx; and flowering phenology. The only character that differs significantly is the tendrils: while in *Dolichandra* the tendrils are always trifid and uncinated (Lohmann & Taylor 2014), they are depicted as simple in the plate, which could be just an overlooked morphology or an artifact during the collection.

Despite Gentry's (1975) accurate assessment of the identity of *Bignonia coccinea* Vell., he opted not to adopt Vellozo's name, presuming it to be an illegitimate name (later homonym) due to *Bignonia coccinea* Steudel (1821). The examination of Steudel's work, however, reveals that *B. coccinea* Steudel is not validly published Steudel's work "*Nomenclator botanicus*" consists in an attempt to list all plant names at his time, not including descriptions, and often inadvertently proposing new names that are listed as synonyms in other species. This is the case of *Bignonia coccinea* Steudel, a new name proposed based on *Bignonia radicans* var. *coccinea* Pursh (1814). Since Steudel listed the basionym of *B. coccinea* as a synonym of *Bignonia radicans* Linnaeus, the name is not accepted by him, hindering it invalid (Turland *et al*. 2018, Art. 36.1b). Consequently, *B. coccinea* Vellozo (1829) is legitimate and has priority over *Dolicandra cynanchoides*.

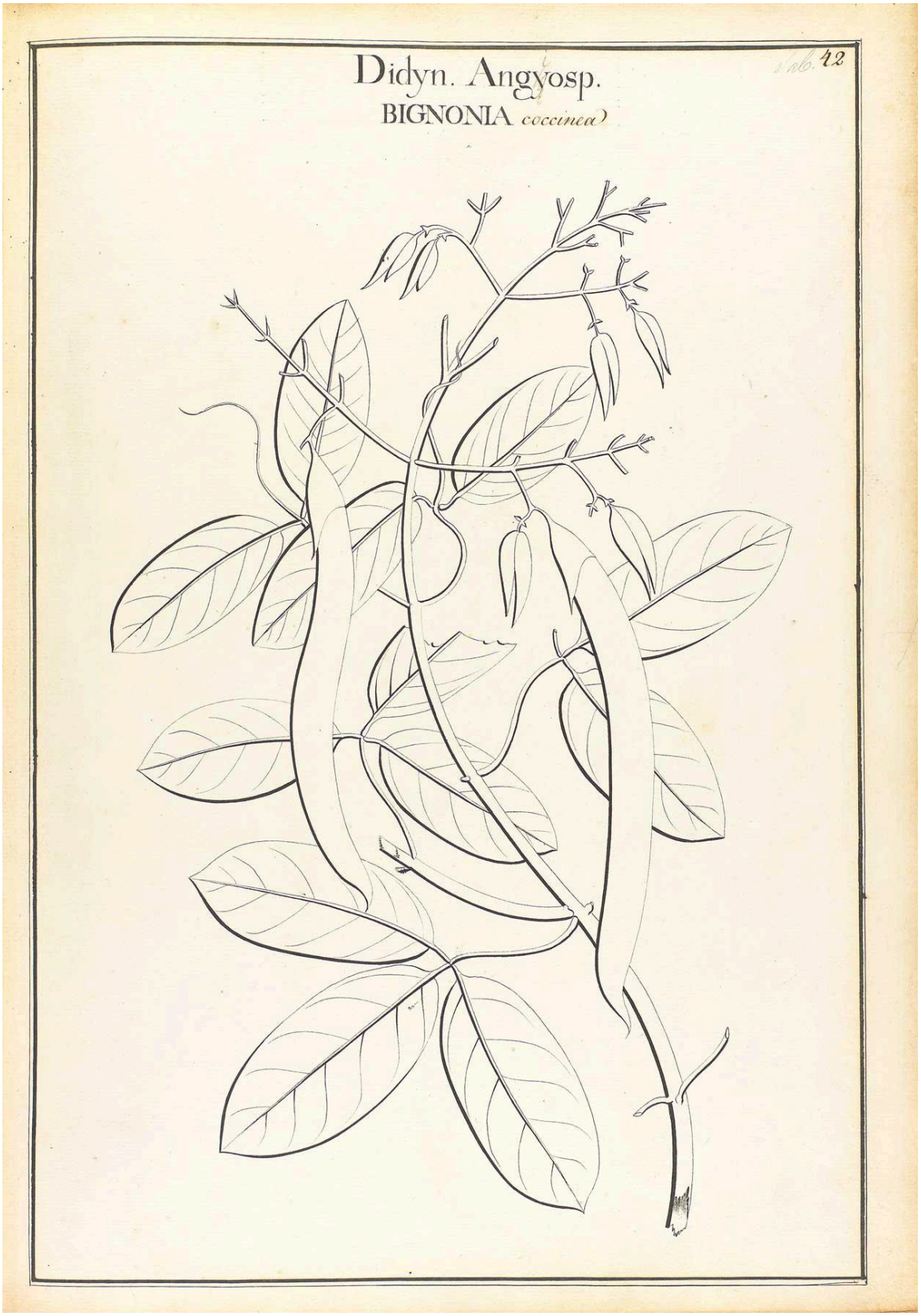

FIGURE 1. Lectotype of *Bignonia coccinea* Vellozo [≡ *Dolichandra coccinea* (Vell.) M.Nascim., Zuntini & J.F.B.Pastore], from Icon. Ined. kept in Biblioteca Nacional (Rio de Janeiro).

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Chapter 3
A new combination in *Handroanthus*(Bignoniaceae) from Brazil

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Abstract

While reviewing Vellozo's Bignoniaceae names in Floræ Fluminensis, a nomenclatural novelty came to light. The name Bignonia longiflora Vellozo, being a later homonym of B. longiflora Cavanilles, was deemed illegitimate. Consequently, Vellozo's name was eventually replaced with Tecoma speciosa Candolle ex Martius. However, when Tabebuia Gomes ex Candolle was considered the correct genus for this, the final combination 'Tabebuia speciosa' was not presented as it was blocked by Tabebuia speciosa Standley (1930). Instead, Tabebuia vellosoi Toledo (1952) was proposed in order to assign a name for Bignonia longiflora Vell. illeg., / Tecoma speciosa DC. ex Mart. Posteriorly, Handroanthus gained broad acceptance as the correct genus and the combination Handroanthus vellosoi (Toledo) Mattos was proposed, bypassing the previously validly published, Tecoma speciosa. However, the latter name holds priority over Tabebuia vellosoi Toledo (≡ Handroanthus vellosoi (Toledo) Mattos), resulting in a new combination, Handroanthus speciosus (Candolle ex Martius) M.Nascim., J.F.B.Pastore & Zuntini, as presented here. This nomenclatural novelty is accompanied by a distribution map, illustration, typification of all involved names, and nomenclatural and taxonomic notes.

Keywords: *Bignonia*, *Floræ Fluminensis*, Frei Vellozo, *Handroanthus speciosus*, *Handroanthus vellosoi*

Introduction

Upon reviewing the names published in *Floræ Fluminensis* (Vellozo 1829) regarding the Bignoniaceae, we have encountered a nomenclatural issue concerning the name *Bignonia longiflora* Vellozo (1829: 252) and its nomenclatural synonyms. Although *Bignonia longiflora* Vellozo is the oldest name for the species which this name applies to, it is deemed illegitimate due to *Bignonia longiflora* Cavanilles (1801: 58) (IPNI 2023). Later, several names were published in order to provide the correct name for this species, and all of which were based and are nomenclatural synonyms of *Bignonia longiflora* Vellozo. Listed chronologically, they are: *Tecoma speciosa* Candolle ex Martius (1841: 13) [≡ *Gelseminum speciosum* (Candolle ex Martius 1841: 13) Kuntze (1898: 245)], *Tabebuia vellosoi* Toledo (1952: 34) [≡ *Handroanthus vellosoi* (Toledo 1952: 34) Mattos (1970: 2)], *Tecoma longiflora* (Vellozo 1829: 252) Bureau & Schumann (1897: 324) and *Handroanthus longiflorus* (Vellozo 1829: 252) Mattos (1991: 3). It is worth noting that the oldest specific epithet *speciosum/speciosa/speciosus* was blocked to be combined with the generic name *Tabebuia* Gomes ex Candolle (1838: 130), due to *Tabebuia speciosa* Standley (1930: 49) [= *Callichlamys latifolia* (Richard 1792: 110) Schumann (1894: 223)]. Consequently, when *Tabebuia* was widely accepted as the correct generic name, *Tabebuia vellosoi* was the correct name. However, later *Handroanthus* Mattos was eventually considered the correct generic for many names (Grose & Olmstead 2007b), in the taxonomic generic delimitation provided by Mattos (1970). The latter author combined *Handroanthus vellosoi* and apparently overlooked the oldest specific epithet, which is still available in that genus. Here, we present an update on this situation in order to follow the art. 6.10 of the Code (Turland *et al*. 2018), providing a new combination accompanied by taxonomic and nomenclatural notes.

Material and methods

The bibliographic review concerning to Handroanthus, and ‘Bignonia longiflora’ was prepared consulting the information on Vellozo (1829), Martius (1841), Candolle (1845), Kuntze (1898), Bureau & Schumann (1896–1897), Gentry (1975, 1992) and Grose & Olmstead (2007b). The nomenclatural decisions were taken following the Code (Turland *et al.* 2018). For the species morphology characterization, and distributions data were taken from searches on ‘Bignoniaceae’ and ‘Handroanthus’ entries on the online databases: SpeciesLink (https://specieslink.net/search/) and Herbário Virtual da Flora do Brasil (https://reflora.jbrj.gov.br/reflora/herbarioVirtual/), and also JStor Global Plants (https://plants.jstor.org/). All entries were critically revised.

Additional information on morphology, habitat, distribution, and phenology were obtained from Gentry (1992), Lohmann (2023), POWO (2023) and SpeciesLink (2023). The map of geographical distribution was made in Quantum GIS v. 3.28.8 (QGIS Development Team 2021).

Taxonomic treatment

Handroanthus speciosus (Candolle ex Martius) M.Nascim., J.F.B.Pastore & Zuntini. *comb. nov.* ≡ *Tecoma speciosa* Candolle ex Martius, Flora 24(2, Beibl.): (1841: 13). ≡ *Gelseminum speciosum* (Candolle ex Martius 1841: 13) Kuntze (1898: 245). ≡ *Tabebuia vellosoi* Toledo (1952: 34). ≡ *Handroanthus vellosoi* (Toledo 1952: 34) Mattos (1970: 2). *syn. nov.* ≡ *Bignonia longiflora* Vellozo (1829: 252), *nom. illeg.* non Cavanilles (1801: 58). ≡ *Tecoma longiflora* Bureau & Schumann (1897: 324). *nom. illeg.* ≡ *Handroanthus longiflorus* (Vellozo 1829: 252) Mattos (1991: 3). Protologue: "*Habitat silvis maritimis Pharmacopolitanis*". Lectotype (designated here):—Icon. ined. "Didyn. Angyosp. *Bignonia longiflora Tab. 52*". Secção de Manuscritos, Bibliot. Nac. (Rio de Janeiro), no. I-17,03, 002; mss1198655_056.

Note:—The neotype designation provided by Gentry (1992) is superseded here due to the presence of the original set of unpublished plates of the *Floræ Fluminensis* which is still archived at Biblioteca Nacional in Rio de Janeiro (Brazil) and constitutes part of the original material (Pastore *et al*. 2021). The lectotype chosen here, an unpublished plate, is the sole extant original material, following Pastore *et al*. (2022), and excluding a contemporary copy of the lectotype in Arquivo Nacional Torre do Tombo (Lisboa), at collection "Manuscrito da Livraria"—PT-TT-MSLIV-2776_m0111.TIF.

Type locality:—The original locality and habitat of *Bignonia longiflora* was described by Vellozo (1829) as "*Habitat silvis maritimis Pharmacopolitanis*". This reference was interpreted as being the municipality of Paraty (Rio de Janeiro state) (Lima 1995, Pastore *et al*. 2021), where *Handroanthus speciosus* occurs frequently (Lohmann 2023, POWO 2023, SpeciesLink 2023).

Habitat, distribution and phenology:—*Handroanthus speciosus* is mainly distributed in the southern and southeast of Brazil, usually in places above 1000 m (Gentry 1992). This species is found in the Atlantic Forest phytogeographic domain, in Seasonal Forest and Ombrophilous Forests (Pluvial Forest) (Lohmann 2023). This species blooms generally between July and September and its flowers are well-known in attracting birds, especially in urban regions (Silva *et al*. 2021).

Taxonomic Note:—Although *Handroanthus speciosus* is presumably close related to *H. catarinensis* (Gentry 1977: 318) Grose (2007b: 664), these species were not sampled for the phylogeny study of *Handroanthus* presented by Grose & Olmstead (2007a). These two species can be easily distinguished by the morphological features observed by Gentry (1992) (see Table 1).

TABLE 1. Comparative table for morphological differences between *Handronathus catarinensis* (A.H.Gentry) S.Grose and *H. speciosus* (DC. ex Mart.) M.Nascim., J.F.B.Pastore & Zuntini.

Feature	***Handroanthus catarinensis***	***Handroanthus speciosus***
Habit	shrub	shrub or tree
Leaves	chartaceous	membranaceous to chartaceous
Calyx	tubular-campanulate	campanulate
Calyx indument	pilose with barbate trichomes	long simple trichomes
Fruit	linear-oblong capsule	linear-cylindric capsule
Fruit indument	mostly barbate trichomes	long simple trichomes

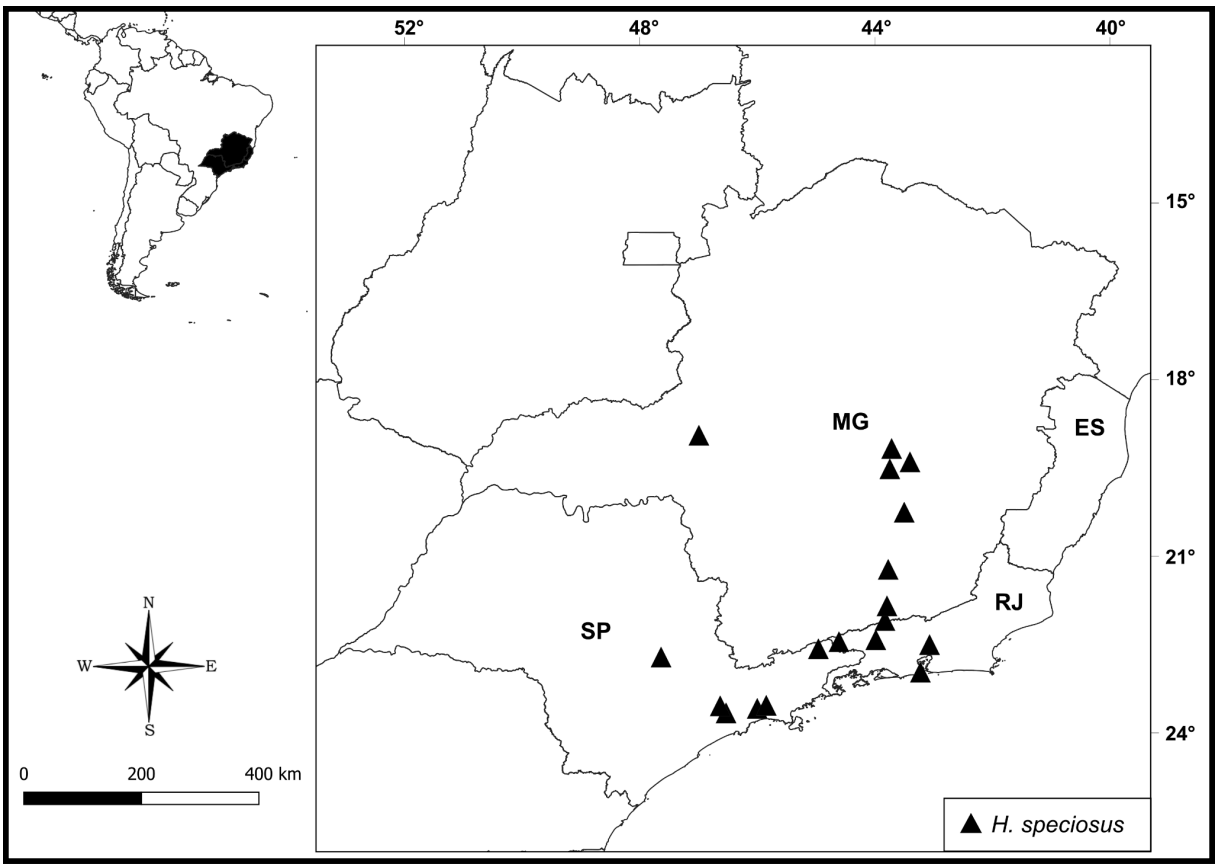

FIGURE 1. Map of southeastern Brazil with the distribution of Handroanthus speciosus (DC. ex Mart.) M.Nascim., J.F.B.Pastore & Zuntini.

The *Floræ Fluminensis* illustration, here designated as lectotype, represents well represents the species, showing all leaves 7-foliolate, secondary veins disposition, relatively long flowers, and calyx with presumably simple trichomes. The comprehensive morphological description of *H. speciosus* (as *T. vellosoi*) was provided by Gentry (1992). *Tabebuia vellosoi* was published as a replaced name for "*Bignonia longiflora* Vellozo, *Floræ Fluminensis* (1825) p. 252, VI (1827) tab. 52, non Cavanilles, Icon., VI (1801) p. 58, tab: 581". Toledo (1952) also commented that Martius (1841) did not effectively linked *Bignonia longiflora* with *T. speciosa*. However, Martius (1841) cited "*Tecoma speciosa* Candolle in litt. *Bignonia longiflora* Vellozo VI. t.52.", therefore, the link between these names is unequivocal. On the other hand, *Tabebuia speciosa* is taxonomic synonym of *Tabebuia serratifolia* (Vahl 1798: 46) Nicholson (1887: 1) [≡ *Handroanthus serratifolius* (Vahl 1798: 46) Grose (2007b: 666)], and not related with *Tecoma speciosa* [≡ *Handroanthus speciosus*].

Specimens used to compose the distribution map:—BRAZIL. Minas Gerais: Barbacena, Santos Dumont, [-21.219782, -43.7690], 15 August 1988, *Tabacow & Chamas s.n.* (MBML, MO, US); Caraça, Parque Natural de Caraça, trail to Cascatinha, behind monaster, transition between cerrado and campo de altura along black water stream, [-20.25, -43.50], 16 January 1985, *Gentry et al. 49602* (MO, RBR); Itambé do Mato Dentro, Distrito de Santana do Rio Preto (Cabeça de boi) APA do Parque Nacional da Serra do Cipó, Terras de José Agostinho, na mata, [-19.396147, -43.4020], 15 December 2007, *Santos 447* (BHCB, RB, SPF); Jaboticatubas, Serra do Cipó, Km 126 ao longo da rod. Lagoa Santa—Conceição do Mato Dentro—Diamantina, [-19.513599, -43.7449], 05 September 1973, *Semir et al. 4433* (UEC); Lima Duarte, Parque Estadual do Ibitipoca, [-21.842500, -43.7930], 15 July 2005, *Trovó 189* (SPF); Patrocínio, Serra do Salitre, cerrado oeste da Lagoa Campestre, região dos carbonalitos, [-18.943715, -46.9923], 24 March 1994, *Ceccantini 248* (BOTU, SPF); Rio Preto, próximo ao burraco de ouro, [-22.089199, -43.8278], 27 July 2006, *Matozinhos 283* (CESJ, SPF); Santana do Riacho, Serra do Cipó, ao longo da Rodovia Belo Horizonte—Conceição do Mato Dentro, brejo próximo à estátua do Velho Juca, [-19.168899, -43.7144], 03 September 1995, *Lohmann 48* (SPF). Rio de Janeiro: Itatiaia, Parque Nacional do Itatiaia [-22.450461, -44.6100], 17 August 2004, *Pereira 38* (RB); Jardim Botânico do Rio de Janeiro, [-22.967436, -43.2248], 08 November 1984, *Carvalho & Costa 619* (RB); Serra dos Órgãos, [-22.500140, -43.0692], 04 October 1876, *Glaziou 8213* (F, G, K, MO, US); Teresópolis, [-22.416667, -43.9833], 31 January 1978, *Peixoto & Gentry 935* (MO, RB). São Paulo: Boracéia, between Moji das Cruzes and Biritiba-Mirim, crest of Serra do Mar, [-23.583333, -46.0000] 05 February 1987, *Custódio-Filho et al. 4708* (MO); Pico do Itaguaré, Alto do Pico do Itaguaré, limite de estado entre Minas Gerais e São Paulo, Cruzeiro, [-22.569999, -44.9599], 04 June 1995, *Parra 35* (SPF); Piracicaba, Campus ESALQ/USP São Paulo, [-22.710980, -47.6353], 02 September 1994, *Faganello 1* (ESA, MO); Salesópolis, Estação Biológica de Boracema, [-23.531037, -45.8465], 20 August 1965, *Mattos 12457* (MO); Santo André, Estação Biológica do Alto da Serra de Paranapiacaba, [-23.659999, -46.5299], 15 August 1988, *Sugiyama et al. 779* (SPF); São Paulo, Cidade Jardim, [-23.540000, -46.6300], 26 September 1932, *Hoehne s.n.* (SPF, MO).

FIGURE 2. Lectotype of *Bignonia longiflora* Vellozo (≡ *Handroanthus speciosus* (DC. ex Mart.) M.Nascim., J.F.B.Pastore & Zuntini.), from Icon. Ined. kept in Biblioteca Nacional (Rio de Janeiro).

Acknowledgements

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Chapter 4
Proposal to reject the name *Bignonia hirta* (*Bignoniaceae*)

[Article Category: NOMENCLATURE COMMUNICATIONS]

[Running Head:] Nascimento & al. • **(3031) Reject *Bignonia hirta***

[Bottom line first page:] Proposals to Conserve or Reject Names **edited by John McNeill, Scott A. Redhead & John H. Wiersema**

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(3031) Proposal to reject the name *Bignonia hirta* (*Bignoniaceae*)

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(3031) ***Bignonia hirta*** Vell., Fl. Flumin.: 249. 7 Sep–28 Nov 1829 [Angiosp.: *Bignon.*], nom. utique rej. prop.
Lectotypus (hic designatus): [icon. ined.] "Didyn. Angiosp. BIGNONIA *hirta* Tab. 35" (Seção de Manuscritos, Bibliot. Nac., Rio de Janeiro No. I-17, 03, 002; mss1198655_039 [photo!]).

Bignonia hirta Vell. (Fl. Flumin.: 249. 1829) is a name that has never been adopted since its publication. As with other names described in *Florae Fluminensis*, the original herbarium specimens of *B. hirta* were not located. The remaining original material of these names are the plates, since all taxa described in this Flora were illustrated. In the protologue of *B. hirta* (l.c.), Vellozo cited a plate (t. 35) that was eventually published (Vellozo, Fl. Flumin. Icones 6: t. 35. 1831). However, the published plates in *Florae Fluminensis* are not the author's original material, since they were published only in 1831, after the protologue (Vellozo, l.c. 1829), and were prepared long after Vellozo's death in 1811 (Blake, Diccion. Bibliogr. Brazil. 5: 64. 1899). The names and plates published in *Florae Fluminensis* trace to original drawings now deposited at Biblioteca Nacional do Rio de Janeiro that were available to Vellozo during the preparation of his descriptions, and these constitute the unique available choice for typification (Art. 9.3 and 9.4 of the *ICN*; Turland & al. in Regnum Veg. 159. 2018). These drawings and the resulting illustrations (plates) published or not published in *Florae Fluminensis* are the most important elements for species recognition.

In a first attempt to evaluate *Bignonia hirta*, Bureau & Schumann (in Martius, Fl. Bras. 8(2): 221. 1896) tentatively associated the name with *Stizophyllum perforatum* (Cham.) Miers (in Proc. Roy. Hort. Soc. London 3: 198. 1863, based on *B. perforata* Cham. in Linnaea 7: 667. 1832). Disagreeing with this position, Gentry (in Taxon 24: 343. 1975) mentioned that the illustration of *B. hirta* in *Florae Fluminensis* resembles *Clytostoma*

campanulatum (Cham.) Bureau & K. Schum. (l.c.: 148; based on *B. campanulata* Cham. in Linnaea 7: 711. 1833) due to the shape of the pseudostipules. However, *C. campanulatum* often has leaves with the terminal foliole modified as a simple tendril, as well as persistent foliaceous prophylls (Zuntini, Taxonomic revision e phylogeny of Bignonia L. (Bignonieae, Bignoniaceae). Ph.D. Thesis, Univ. São Paulo: 160. 2014), illustrated in Lohmann & al. (in Ann. Missouri Bot. Gard. 99: 373. 2014), and not drawn in the plate of *B. hirta*. Additionally, Gentry (l.c.) suggested that *B. hirta* was conspecific with *Cuspidaria puberula* Mart. ex DC. (Prodr. 9: 178. 1845) (= *C. simplicifolia* DC. [Rev. Bignon.: 9. 1838]). However, a resultant new combination based on Vellozo's older name was not proposed by Gentry, who commented that the illustrated reflexed anther thecae do not match the genus *Cuspidaria*. Because of this impasse, Gentry (l.c. 343) concluded: "Although I cannot account for this species at present, the illustration is reasonably good and, unless based on more than one species, should eventually prove to be interpretable."

More recently, *Bignonia hirta* has often been regarded as a heterotypic synonym of *Fridericia mollis* (Vahl) L.G. Lohmann & al. (1.c.: 440, based on *B. mollis* Vahl, Eclog. Amer. 2: 46. 1798), as by Zuntini (l.c.: 235); Kaehler, in Fl. Funga Brazil, 2024 (https://floradobrasil.jbrj.gov.br/FB113382, accessed 25 Mar 2024); POWO (https://powo.science.kew.org/results?q=Bignonia hirta, accessed 25 Mar 2024); Tropicos (https://tropicos.org/name/100153891, accessed 25 Mar 2024). However, this taxonomic position is not supported by a comprehensive reevaluation of the identity of *B. hirta*. Vellozo's *B. hirta* plate is somewhat similar to *F. mollis*, but it can hardly be the same entity because *F. mollis* is only known from the Amazon region, and so has been collected only in the northern states of Brazil. In contrast, *B. hirta* presumably was originally collected in Rio de Janeiro or São Paulo (Pastore & al. in Taxon 70: 1078–1095. 2021). Furthermore, *B. hirta* was drawn with simple lower leaves on each branchlet, which are not present in *F. mollis*.

In a recent review of *Bignoniaceae* names in *Florae Fluminensis*, we concluded that *Bignonia hirta* is very likely the same entity as *Cuspidaria simplicifolia*, as had already been suggested by Gentry (l.c.). This is based on consideration of diagnostic characteristics such as typically 3-foliolate leaves with pinnate venation, acute-acuminate apex and acute-cuneate base, presence of simple lower leaves on each branchlet, predominantly terminal inflorescence (though occasionally axillary), flowers adorned with indumentum in some instances and the distribution of *C. simplicifolia*, which occurs in Rio de Janeiro State. This conclusion would necessitate a new combination in *Cuspidaria*, displacing *C. simplicifolia*.

Although the name *Cuspidaria simplicifolia* was published nearly two centuries ago, the species involved has been treated in distinct genera such as *Arrabidaea* DC. (as *A. puberula* (Mart. ex DC.) Bureau in Vidensk. Meddel. Naturhist. Foren. Kjøbenhavn, ser. 5, 5: 99. 1892), *Setilobus* Baill. (as *S. simplicifolius* (DC.) K. Schum. in Engler & Prantl, Nat. Pflanzenfam. 4, Abt. 3b: 221. 1894; Bureau & Schumann, l.c.: 206–207), *Blepharitheca* Pichon (as *B. puberula* (Mart. ex DC.) Pichon in Bull. Soc. Bot. France 92: 224. 1945), or *Saldanhaea* Bureau (as *S. puberula* (Mart. ex DC.) J.C. Gomes in Revista Bras. Biol. 11: 51. 1951; Sandwith in Kew Bull. 22: 406–408. 1968), or eventually retained in *Cuspidaria* DC. as *C. puberula* (Gentry, l.c.). Nevertheless, in recent years a consensus towards usage of *C. simplicifolia* for this taxon has emerged (e.g., Lohmann & al., 1.c.; Colombo & al. in Phytotaxa 278: 22. 2016; Villarroel & al. in Kempffiana 13: 47. 2017; Kaehler & al. in Taxon 68: 761. 2019; Costa & al. in Rodriguesia 72: 1–37. 2021; Francisco & al. in Taxon 72: 1057–1079. 2023; Francisco in Fl. Funga Brazil, 2024 [https://floradobrasil.jbrj.gov.br/FB113209, accessed 25 Mar 2024]).

Still, the original plates of *Florae Fluminensis* are often not well detailed, leading to historical criticism regarding the overall quality of the published plates. This is also true for the *Bignonia hirta* plate (Vellozo, l.c. 1831: t. 35), which lacks some important features for the distinction of *Cuspidaria simplicifolia*, such as the anthers lacking forward curvature and the axillary inflorescence (in specimens of *C. simplicifolia* the inflorescence is often preceded by a leaved branchlet). Thus, a new combination would create further dispute on the application of the name, and the resulting new combination in *Cuspidaria* would be a disadvantageous nomenclatural change. The proposal presented here is to reject outright the name *Bignonia hirta*, thus preserving the use of *Cuspidaria simplicifolia*, a more used and now widely cited binomial in the genus *Cuspidaria*.

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