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THE IDENTITY AND TYPIFICATION OF THE BEGONIAS FROM VELLOZO'S *FLORA FLUMINENSIS*

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We review the 22 names in the genus *Begonia* (Begoniaceae) from J. M. da C. Vellozo's *Flora Fluminensis*, taking advantage of recent advances in the understanding of Vellozo's collecting itinerary and the *Begonia* flora of southern Rio de Janeiro State, Brazil. We unambiguously match 18 of Vellozo's names to current species concepts in the genus *Begonia*, resulting in 10 new synonyms. We provide lectotypifications and epitypifications and accepted names for all taxa. The widespread and common species currently known as *Begonia radicans* Vell. is shown to be a misapplication of the name, and we reinstate the name *B. limmingheiana* É.Morren for this taxon. We report the rediscovery of *Begonia acetosa* Vell., which was last collected approximately 250 years ago by Vellozo, and provide an emended description and IUCN conservation assessment for this species. We are unable to match four of Vellozo's names to current species concepts and propose that they are rejected.

Keywords. Begoniaceae, Brazil, nomenclature, Rio de Janeiro State.
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Introduction

The *Flora Fluminensis* (*FF*) by Friar José Mariano da Conceição Vellozo marks the first publication of 1630 names for Brazilian species (Vellozo, 1829, 1831, 1881). *FF* was the result of extensive fieldwork in Rio de Janeiro and São Paulo States (Lima, 1995) and represented the most extensive taxonomic treatment of the Brazilian flora at its time of completion. The application of many of Vellozo's names has proven problematic in part because Vellozo's specimens have yet to be found (Carauta, 1973), but also because of the *FF*'s complicated publication history (Carauta, 1973), its highly stylised and often inaccurate illustrations (Pastore, 2013), and uncertainty regarding Vellozo's original collecting localities (Pastore *et al.*, 2021). In response, several articles have dealt with the typification of Vellozo's names in specific families, including the Leguminosae (Lima, 1995), Polygalaceae (Pastore, 2013), and Solanaceae (Knapp *et al.*, 2015).

Despite this focus on Vellozo's names, the status of several of his 22 names in the Begoniaceae remains unclear. We present here an overview of Vellozo's names in the Begoniaceae. We provide lectotypes for all 22 names and epitypes for a further 12 names, following recent recommendations (Pastore *et al.*, 2022). We unambiguously match 18 of

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Vellozo's Begoniaceae names to currently recognised species concepts, resulting in 10 new synonyms. We are unable to match four of Vellozo's names to recognised species concepts with confidence so propose the rejection of four names.

Materials and methods

Effective and valid publication dates

The dates of effective and valid publication of Vellozo's *FF* are complicated by the time taken for the full distribution of all text and plates (Carauta, 1973). The full work was completed around 1790, during Vellozo's lifetime (1742–1811), but printing began only in 1824. Most of the text was distributed in 1829 (Vellozo, 1829), including descriptions up to page 352 of *FF*. All *Begonia* species follow this page, so none of Vellozo's *Begonia* names was effectively published on this date. The plates for *FF* were first printed in 1827 and distributed in 1831, including all *Begonia* plates. Finally, the complete text was published in 1881 (Vellozo, 1881), including all *Begonia* descriptions.

As Vellozo's *Begonia* names were omitted from the first printing of the text in 1829, we need to consider whether the plates alone were sufficient for valid publication. Article 38.8 of the *International Code of Nomenclature for algae, fungi, and plants* (ICN; Turland *et al.*, 2018) states that "The name of a new species or infraspecific taxon published before 1 January 1908 may be validly published even if only accompanied by an illustration with analysis." Article 38.9 clarifies that "an analysis is a figure or group of figures, commonly separate from the main illustration of the organism (though usually on the same page or plate), showing details aiding identification, with or without a separate caption". There is some debate about what constitutes an analysis on Vellozo's plates (e.g. Pastore *et al.*, 2022). We consider all names effectively published in 1831 and validly published on this date if their accompanying plate includes at least a flower or fruit separate from the main part of the figure. This is the case for all Vellozo's *Begonia* plates except those for *B. dimidiata* Vell., *B. dubia* Vell., *B. herbacea* Vell. and *B. rotunda* Vell.

In 1843, Walpers treated Vellozo's *Begonia* names in part of a larger account of the Begoniaceae (Walpers, 1843). In this account, he treated 12 names as "*species minus notae*" or "*species without description*" and provided a description for each, presumably based on Vellozo's published plates. Included were the then-invalid names *Begonia dimidiata* Vell., *B. herbacea* Vell. and *B. rotunda* Vell. Walpers therefore affected the valid publication of these three names. *Begonia dublia* Vell. was treated by Walpers as a synonym of *B. radicans* Vell., so no description was provided. This name remained not validly published until the publication of Vellozo's descriptions (Vellozo, 1881).

Species in the taxonomic treatment are ordered by date of valid publication.

Lectotypification

That Vellozo's specimens are lost is well documented (Carauta, 1973). We therefore lectotypify all names validly published in 1831 or 1881 by Vellozo based on the unpublished original iconographies of the *FF*, held in the Bibioteca Nacional do Rio de Janeiro Brazil. Scans of these publications are available online at https://bndigital.bn.gov.br/acervodigital.

We lectotypify those Vellozo names that were validated by Walpers (1843) based on the plates published in the 1831 distribution of *FF*. Walpers did not travel to Brazil or Portugal so would not have had the opportunity to examine the unpublished plates in either the library of the Biblioteca Nacional do Rio de Janeiro, Brazil, or the Torre do Tombo, Lisbon. Rather, his descriptions of Vellozo's names are almost certainly based on the published plates distributed in 1831. Published plates were examined online through scans of the copy held in the Peter Raven Library in Missouri Botanical Garden, USA, available at https://www.biodiversitylibrary.org/bibliography/70380.

Accepted names and epitypification

To assess to which taxa Vellozo and Walpers' names should be applied, we first reviewed the provenance of each taxon. Recent authors have reviewed in detail Vellozo's collecting itinerary and the names he used for each locality (Pastore *et al.*, 2021). We then carried out a full revision of the *Begonia* species found in each locality, using the *Begonia* Resource Centre database (Hughes *et al.*, 2015–), which we supplemented with further data from both CRIA Species Link (https://splink.cria.org.br/, accessed May 2023) and Reflora (https://floradobrasil.jbrj.gov.br/reflora/herbarioVirtual/, accessed May 2023). From this work, we derived hypotheses for the taxa to which each of Vellozo's and Walpers' names could be applied.

Next, we carried out a field trip to Paraty Municipality, Rio de Janeiro State, and Cunha Municipality, São Paulo State, in June 2023. All specimens collected were deposited in RB, RBR and TCD herbaria (abbreviations follow Thiers, continuously updated). Vellozo's plates (Vellozo, 1831) and descriptions (Vellozo, 1881) were carefully studied. Epitypes were chosen when the lectotype illustration was demonstrably ambiguous (see Article 9.9 of the ICN; Turland *et al.*, 2018). We prioritised epitype material from our own collections but also considered existing material where our own material of the identified taxon lacked flowering or fruiting material. While we considered material from across all species' ranges, we cite material only from areas collected by Vellozo, including Paraty and Cunha Municipalities (Pastore *et al.*, 2022).

Once the identity of each of Vellozo and Walpers' names was determined, we evaluated whether they should be the accepted names for those taxa or treated as synonyms, in accordance with the principal of priority (Turland *et al.*, 2018). In cases where the quality of the original descriptions was insufficient to permit the clear and unambiguous attribution

of the name to a specific taxon, Vellozo or Walpers' names may provide an older name to two or more taxa. To avoid choosing an epitype based on arbitrary criteria, resulting in unwarranted nomenclatural instability, we have prepared a separate article, to be published in *Taxon*, where we propose that these names are rejected in accordance with the rules and recommendations of the ICN (Turland *et al.*, 2018).

Taxonomic treatment

Begonia reniformis Dryand., Trans. Linn. Soc. 1: 161 (1791). – Type: Brazil, Rio de Janeiro State, 1768, *J. Banks* 3525 (lectotype BM [BM001008546], designated by Kollmann [2020: 93]). **Figures 1A, 2.**

Begonia truncata Vell., Fl. Flumin. Icon. 10: 47 (1831). – Type: [icon ined.] "Monoec. Polyand. BEGONIA truncata, Tab. 47" (lectotype, Manuscript Sect., Bibliot. Nac., Rio de Janeiro

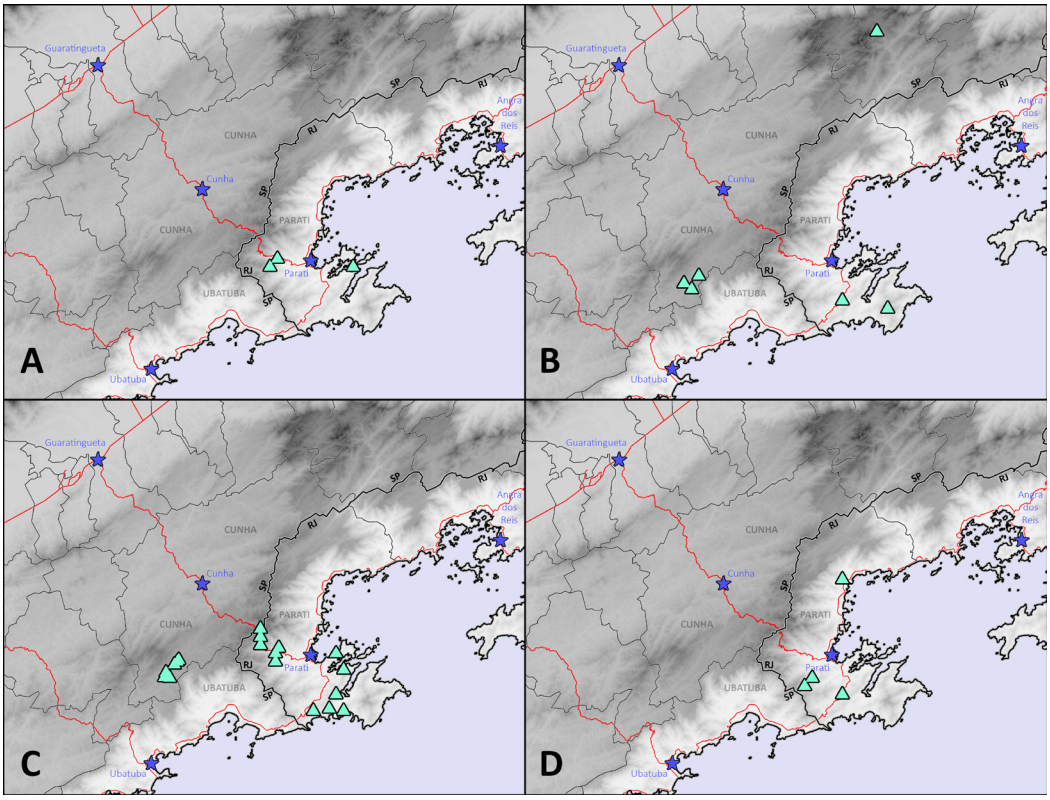

Figure 1. Distribution of *Begonia reniformis* Dryand. (A), *B. angularis* Raddi (B), *B. hirtella* Link (C) and *B. depauperata* Schott (D) in Paraty Municipality, Rio de Janeiro State, and surrounding municipalities (triangles). Thick black lines indicate state borders; thin black lines, municipality borders; red lines, major roads; and blue stars, major settlements.

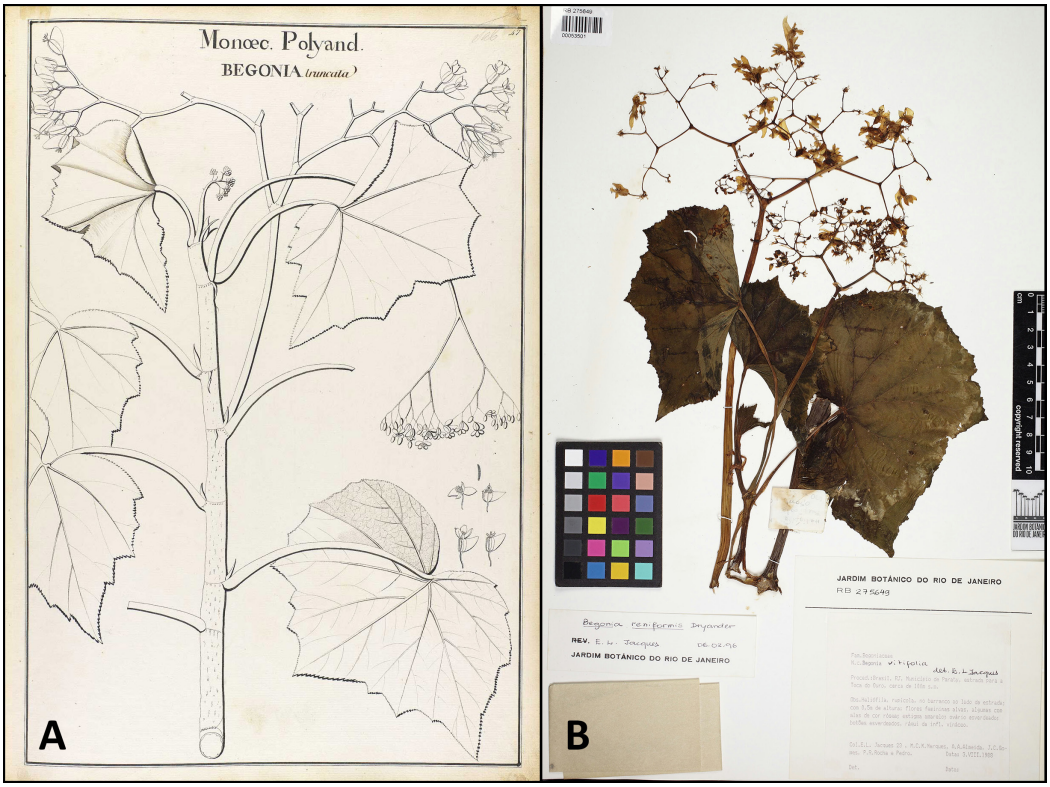

Figure 2. *Begonia reniformis* Dryand. A, Lectotype illustration of *Begonia truncata* Vell., Manuscript mss1198659_051 in the National Library of Brazil; B, epitype of *B. truncata*, *E.L. Jacques* et al. 23 (RB [00053501]).

mss1198659_051), designated here. – Brazil, Rio de Janeiro State, Paraty Municipality, Estrada para a Toca do Ouro, [23°13'S, 44°48'W], c.100 m, 3 viii 1988, *E.L. Jacques, M.C.M. Marques, A.A. Allmeida, J.C. Gomes, P.R. Rocha & Pedro* 23 (epitype RB [00053501], designated here).

Notes. We lectotypify *Begonia truncata* Vell. based on the original illustration held in the Biblioteca Nacional do Rio de Janeiro, Brazil (**Figure 2A**). This illustration is an unambiguous match for the current concept of *Begonia reniformis* Dryand. Indeed, *Begonia truncata* Vell. was first treated as a synonym of *B. vitifolia* Schott (now a synonym of *B. reniformis*) by Walpers (1843) and was subsequently treated as a synonym of *B. vitifolia* and later *B. reniformis* by authors including de Candolle (1861, 1864) and Smith & Wasshausen (1984). Vellozo (1881) did not include a locality in his description of *Begonia truncata*, but *B. reniformis* is a widespread and often common species mostly found in semideciduous forests across the Caatinga and Cerrado biomes, although it has also been collected in

humid forest within the Mata Atlântica biome, including in Paraty Municipality (Hughes *et al.*, 2015–). We designate *E.L. Jacques* et al. 23 (RB [00053501]) the epitype of *Begonia truncata* (**Figure 2B**).

Selected specimens examined. Brazil. **Rio de Janeiro State**. **Paraty Municipality**: Estrada para a Toca do Ouro, [23°13'S, 44°48'W], c.100 m, 3 viii 1988, *E.L. Jacques, M.C.M. Marques, A.A. Allmeida, J.C. Gomes, P.R. Rocha & Pedro* 22 (RB [00053477]); Paratimirim, Ilha da Cotia, [23°14'S, 44°38'W], 2 viii 1989, *G. Martinelli* et al. 13459 (CEPEC [# 69048]).

Begonia angularis Raddi, Quar. Piant. Nuov. Bras.: 287 (1820). – Type: Brazil, *G. Raddi s.n.* (lectotype FI [FI005290], designated here). **Figures 1B, 3.**

Begonia hastata Vell., Fl. Flumin. Icon. 10: 54 (1831). – Type: [icon ined.] “Monoec. Polyand. BEGONIA hastata, Tab. 54” (lectotype, Manuscript Sect., Bibliot. Nac., Rio de Janeiro mss1198659_058, designated here). – Brazil, Rio de Janeiro State, Teresópolis Municipality, Parque Nacional da Serra dos Órgãos, trilha para a Pedra do Sino, [22°28'S,

Figure 3. *Begonia angularis* Raddi. A, Lectotype illustration of *Begonia hastata* Vell., Manuscript mss1198659_058 in the National Library of Brazil; B, epitype of *B. hastata*, *G.O. Romão & A.P.T. Dantas* 1362 (RB [00753051]).

43°2'W], 12 vii 2006, *G.O. Romão & A.P.T. Dantas* 1362 (epitype RB [00753051], designated here; isoepitype ESA [ESA106613]).

Notes. We lectotypify *Begonia hastata* based on the original illustration held in the Biblioteca Nacional do Rio de Janeiro, Brazil (**Figure 3A**). We consider this species a good match for *Begonia angularis* Raddi because it is a large, erect species with strongly asymmetrical, palmate-pinnate leaves that are often lobed at the base, and because of its large inflorescences bearing both staminate flowers with four tepals and pistillate flowers with five tepals. This illustration does, however, have similarities to *Begonia pulchella* Raddi, with which it shares these characters. Vellozo (1881) clarified that this species was collected in "*Alpes Fluminensis*", which is how he referred to the highest mountains of the Serra da Estrêla and the Serras dos Orgãos (Lima, 1995). Both species are common in these Serras (Hughes *et al.*, 2015–), but we consider *Begonia angularis* a better match because its pistillate flowers lack dentate margins, and it lacks a ring of trichomes at the petiole insertion, both characters characteristic of *B. pulchella*. This is in line with the historical treatment of this name, which has been considered a probable synonym of *Begonia angularis* since de Candolle's treatment of the Brazilian members of the genus (de Candolle, 1861). We designate *Romão & Dantas* 1362 (RB [00743051]) as the epitype of *Begonia hastata*, because this is a high-quality specimen with staminate flowers, pistillate flowers, and fruits (**Figure 3B**).

During the preparation of the present treatment, it became clear that it would be desirable to designate a lectotype for *Begonia angularis*. This species was described by Raddi (1820) based on his own collections made in April from a mountain known as Frade. We are aware of only two sheets of *Begonia angularis* collected by Raddi: one held in FI (FI005290) and a second held in B (B100124261). The FI sheet is a good-quality specimen including both flowers and fruits, whereas the B sheet is mostly fragments, probably removed from the FI sheet. Neither collection sheet has a collection month or locality more precise than Brazil. We designate the sheet in FI (FI005290) as the lectotype of *Begonia angularis* Raddi.

Selected specimens examined. Brazil. **Rio de Janeiro State**. **Teresópolis Municipality**: 1918, *A. Frazão* 8756 (RB [00052072]); Teresópolis, km 17, 12 iii 1944, *E. Pereira* 368 (RB [00053025]); Parque Nacional da Serra dos Órgãos, Pedra do Sino, 1100–1700 m, [22°28'S, 43°2'W], 19 iii 1964, *K. Lems s.n.* (NY [NY00453864]); Parque Nacional da Serra dos Órgãos, Estrada da Barragem caminho sede-trila do Cartão Postal, 22°25'S [W missing], 11 iv 2011, *J.A. Lombardi & Taxonomia de Campo 2011* 8169 (UNOP [UNOP007095]); Trilha suspensa, 22°27.352'S, 42°59.821'W, 1107 m, 22 x 2012, *Vermelho (D. Auaújo* et al.*)* 31 (UPEB [UPCB0029273]); Parque Nacional da Serra dos Órgãos, Fazenda Baraira, [22°30'S, 43°0'W], 400 m, 28 iii 1944, *P. Occhioni s.n.* (RB [00053054]). **Petrópolis Municipality**: 20 v 1877, *A. Glaziou* 8914 (R [R000009847]); 24 iii 1879, *A. Glaziou* 11494 (P [P05586896]); Prope Petrópolis, 2–3000 ft, 10–16 vii 1882, *J. Ball s.n.* (E [E00299490, E00299489], K); Rocinha, [22°21'S, 43°11'W], c.900 m, 12 iv 1968, *D. Sucre & P.I.J. Praga* 530 (RB [00053117]); Araras, base do Pico da Maria Comprida, [22°24'S, 43°12'W], 1700 m, 27 vi 1981, *G. Martinelli & L.A. Simoes Lopes* 7618 (RB

[0053039]); ibid., 22°24.219"S, 43°12.616"W, 1000–1200 m, 11 iv 2006, *M.A. Moraes & B. Benevenuto* 52 (RB [00591361]); Serra do Maria Comprida, Vale do Catito, 22°24'46"S, 43°14'48"W, 1000 m, 23 iv 2006, *M.A. Moraes & B. Beneventuro* 103 (HUEFS [HUEFS000028870], RB [00591362]); Araras, Estrada do Capoeirão, [22°25'S, 43°14'W], c.900 m, 26 ix 1977, *G. Martinelli* et al. 3046 (RB [00052992]); Correiras, [22°27'S, 43°7'W], 650–700 m, 25 v 1968, *D. Sucre* & *P.I.J. Praga* 822 (RB [00053527]); Caetitu, [22°27'S, 43°9'W], v 1944, *O.B. Góes & Donisiu* 501 (RB [00052926]); Carangola, [22°27'S, 43°10'W], c.100 m, 19 v 1943, *O.B. Góes* 58 (RB [0052933]); Vale das Videiras, km 1 da Estrada Araras-Vale das Videiras, [22°27'S, 43°20'W], c.1000 m, 18 vi 1976, *G. Martinelli* 821 (RB [00053005]); Gruta do Jacob, [22°27'S, 43°12'W], 20 v 1967, *J.P. Fontella* 164 (RB [00053108]); Dist. Bomfim, poço das bromélias, 22°27'53"S, 43°5'19"W, 1252 m, 30 i 2008, *M. Nadruz, J. Iganci, C. Cronemberger, M. Silva & M. Santana* 2135 (RB [00517463]); Parque Nacional da Serra dos Órgãos, Bonfim, picada para a cachoeira Véu da Noiva, 22°28'10"S, 43°4'25"W, 29 i 2008, *M. Nadruz, J. Iganci, G. Heiden, C. Cronemberger, E. Martins F. Junior & S. Oliveira* 2100 (RB [00517177]); Parque Nacional da Serra dos Órgãos, cachoeira do Presidente, 22°28'11"S, 43°4'28.4"W, 1340 m, 28 ix 2006, *L.C. Giordano, M.G. Boivini, J.F.A. Baumgratz & B. Chiavegatto* 2805 (RB [00467250]); Road up the Srra to Petropolis, [22°33'S, 43°11'W], 500–700 m, 10 iv 1952, *L.B. Smith, F. Segadas-Vianna, I. Vattimo, S.L. Oliveira, S.L. Dau, G.C. Machline & J. Augusta* 6487 (NY [NY00453865]).

Begonia hirtella Link, Enum. Hort. Berol. Alt. 2: 296 (1822). – Type: Brazil, *F. Sellow* 2192. (neotype B [B100243031], designated by Kollmann *et al.* [2020: p. 92]; isoneotypes B [B100243032, B100243033]). **Figures 1C, 4.**

Begonia obliqua Vell., Fl. Flumin. Icon. 10: 48 (1831). – Type: Fl. Flumin. Icon. 10: 48 'BEGONIA obliqua' (1831), designated Jacques & Mamede (2005, p. 580). – Brazil, Rio de Janeiro State, Paraty Muncipality, Estrada para Parati-Mirim, trilha logo após a ponte que atravessa o río, APA-Cairuçu, [23°15'S, 44°39'W], 11 vi 1994, *M.G. Bovini, L.C. Giordana, J.F. Baumgratz, L. Mauas & I. Fernandes 474* (epitype RB [00053988], designated here), **syn. nov.**

Notes. The lectotype plate of *Begonia obliqua* Vell. (**Figure 4A**) shows a diminutive species rooting at the nodes along much of the stem, with leaves with palmate-pinnate venation and a dense indumentum. The inflorescences are few flowered, with pistillate flowers with five tepals. These characters are an excellent match for species in *Begonia* sect. *Ephemera* Moonlight (Moonlight *et al.*, 2018), which is represented in Paraty by three species: *B. cucullata* Willd., *B. fischeri* Schrank and *B. hirtella* Link (Hughes *et al.*, 2015–). We note that the lectotype plate of *Begonia obliqua* shows a plant with two tepals on the staminate flower, while both *B. hirtella* and *B. fischeri* have four, but we consider this most likely an error in the original illustration. Such errors are common on Vellozo's plates (Pastore, 2013), and this particular error is understandable as the second pair of tepals on both *Begonia hirtella* and *B. fischeri* are much smaller than the first pair.

Begonia hirtella and *B. fischeri* can be distinguished with ease by the shape of the largest wing on their fruit, which are strongly ascending in *B. fischeri* but not in either *B. hirtella* or in the lectotype illustration of *B. obliqua*. Vellozo's *Begonia obliqua* can also be distinguished

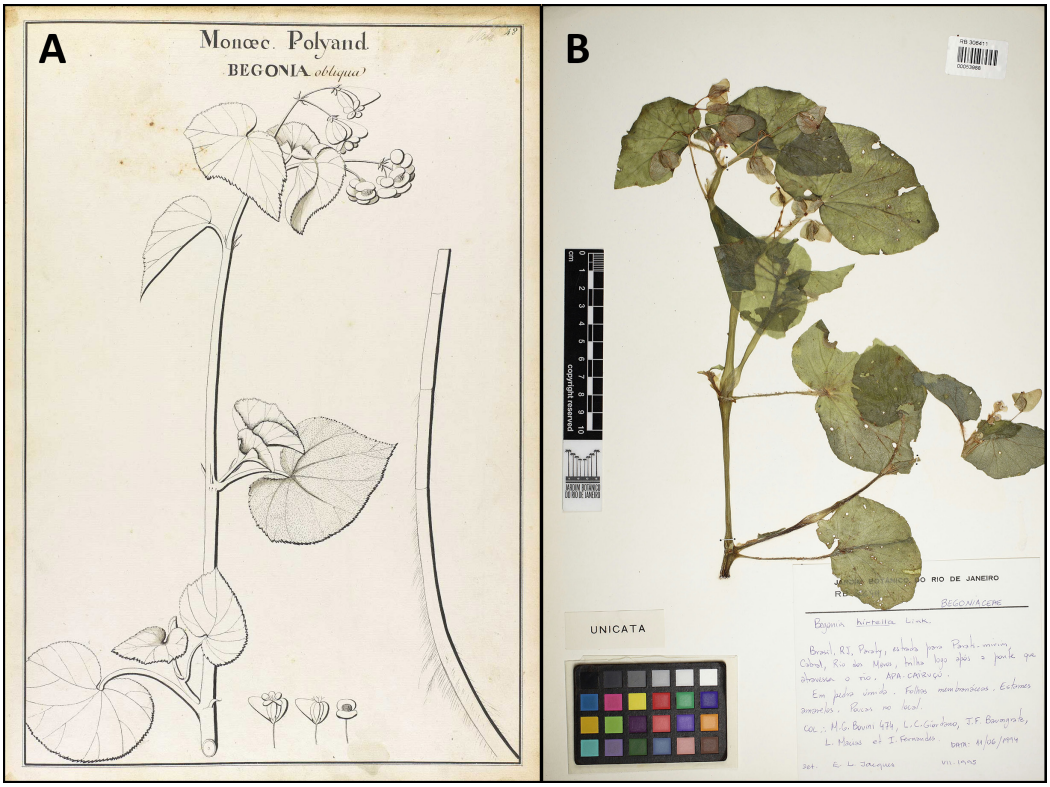

Figure 4. *Begonia hirtella* Link. A, Lectotype illustration of *Begonia obliqua* Vell., Manuscript mss1198659_052 in the National Library of Brazil; B, epitype of *B. obliqua*, *M.G. Bovini* et al. 474 (RB [00053988]).

from *B. cucullata* by its dense indumentum, which contrasts with glabrous *B. cucullata*. Further, Vellozo (1881) described his *Begonia obiqua* as ubiquitous in Paraty, which is true of *B. hirtella*, a commonly encountered species found in humid natural, disturbed, and urbanised areas in the Atlantic Forest. By contrast, *Begonia fischeri* and *B. cucullata* are relatively rare in Paraty, preferring waterlogged, grassy areas. Accordingly, we are confident that Vellozo's *Begonia obliqua* falls within the current concept of *B. hirtella*. We synonymise *Begonia obliqua* with *B. hirtella* and designate *Boivini* et al. 474 (RB [00053988]) as an epitype of *B. obliqua* (**Figure 4B**), as this is a particularly high-quality collection of *B. hirtella* from Paraty Municipality.

Selected specimens examined. Brazil. **Rio de Janeiro State**. **Paraty Municipality**: Rodovia Paraty para Cunha, [23°12'S, 44°50'W], 1 xii 2000, *C.M. Sakuragui* et al. 829 (HUEM [HUEM000002179]); Estrada Parati-Cunha, entre km 13 e 14, [23°12'S, 44°50'W], 16 iii 1989, *A.L. Almeida, B.C. Kurtz, J.C. Silva, L.C. Giordano & M. Nadruz* 15 (RB [00054236]); Estrada Paraty-Cunha, Estrada do Carrisquino, 23°12'30"S, 44°47'35"W, 592 m, 22 vi 2023, *E.L. Jacques & P.W. Moonlight* 2096 (RBR [RBR00058601]); Praia de

Jurumirim, [23°13'S, 44°40'W], 3 xii 1995, *L.C. Giordano, S.P. Oliveira, K. Autran, J.Q. Melo, L.C. Souza Silva & F.P. Abreu* 2081 (RB [00054292]); ibid., 3 xii 1995, *J. Queiroz de Melo, L.C. Giordano* et al. 40 (RB [00053729]); Estrada para a Toca do Ouro, [23°13'S, 44°48'W], c.350 m, 3 viii 1988, *E.L. Jacques, M.C.M. Marques, A.A. Almeida, J.C. Gomes, P.R. Rocha & Pedro* 26 (RB [00054210]); Estrada para Cunha, [23°14'S, 44°48'W], 1 xii 1988, *L.C. Giordano, R. Marquete, N. Marquete, F da Silva & M.C. Valente* 531 (RB [00054228]); À 29 do Trevo de Paraty, (Faz. Sr. Gibrail), antiga trilha para o Saco de Mamanguá, [23°18'S, 44°40'W], 27 iv 1993, *R. Marquete, N. Marquete, F. Silva, M.C. Valente, Abreu & J. Caruso* 835 (RB [00054002]); APA-Cairuçu, Bifurcacão à esquerda da estrada para a Praia do Sono, no sentido para o saco de Manguangua, [23°20'S, 44°43'W], 19 x 1998, *V.L.G. Klein* et al. 984 (RB [00053977]); Condominio Laranjeiras, estrada para praia do Sono, [23°20'S, 44°49'W], 9 viii 1994, *R. Marquete* 1985 (RB [00054029]). **São Paulo State**. **Cunha Municipality**: Area antrópica, 11 xii 1996, *J.P. Souza, L.B. Albuquerque, E.R.N. Franciosi, D.F. Bertani & L.F. Yamamoto* 742 (ESA [ESA037207], SPF [SPF00121992], UEC [UEC005821]); Parque Estadual da Serra do Mar, picada do Rio Bonito, [23°14'S, 45°1'W], 18 viii 1994, *M.L. Kawazaki & G.A.D.C. Franco* 579 (HUEFS [HUEFS000024052], UEC [UEC005823]); Parque Estadual Serra do Mar, Núcleo Cunha, 23°14'38"S, 45°1'40"W, 1045 m, 15 xi 2006, *E.J. Lucas, F.F. Mazine, N.A. Brummitt, C.P. Caliari, T.B. Flores, L.V.S. Jennings, R.B.M. Souza, V.C. Souza & M.T.G. Lima* 296 (ESA [ESA053296], K); ibid., 23°15'20"S, 45°2'30"W, 14 xii 1996, *A.P. Bertoncini, F.R. Dário, R.F. Lopes, R.R. Rodrigues, V.C. Souza, J.Y. Tamashiro, N.M. Ivanauskas & J.P. Souza* 777b (ESA [ESA34184], SPF [SPF121994], UEC [UEC041832]); Parque Estadual da Serra do Mar, estrada municipal, c.4 km da sede, 23°15.91'S, 45°2.70'W, 1071 m, 16 xi 2006, *E.J. Lucas, F.F. Mazine, N.A. Brummitt, C.P. Caliari, T.B. Flores, L.V.S. Jennings, R.B.M. Souza, V.C. Souza & M.T.G. Lima* 362 (ESA [ESA053362], K); Parque Estadual da Serra do Mar, estrada de acesso ao Núcleo, [23°16'S, 45°2'W], 29 iii 1994, *J.B. Bailtello* 500 (HUEFS [HUEFS000024254]).

Begonia depauperata Schott in Sprengel, Syst. Veg. 4 (app): 408 (1827). – Type: Unknown. **Figures 1D, 5.**

Begonia repens Vell., Fl. Flumin. Icon. 10: 35 (1831), *nom. illeg.* [later homonym], non Lam. (1785). – *Begonia velloziana* Walp., Repert. Bot. Syst. 2: 216 (1843). – Type: [icon ined.] "Monoec. Polyand. BEGONIA repens, Tab. 35" (lectotype Manuscript Sect., Bibliot. Nac., Rio de Janeiro mss1198659_039, designated here). – Brazil, Rio de Janeiro State, Paraty Municipality, Fazenda São Roque, [23°4'S, 44°42'W], c.200 m, 2 viii 1988, *E.L. Jacques, M.C.M. Marques, A.L. Almeida, J. Caruso, P.R. Rocha & Pedro* 14 (epitype RB [00053848], designated here), **syn. nov.**

Notes. We lectotypify *Begonia repens* Vell. based on the original illustration held in the Biblioteca Nacional do Rio de Janeiro, Brazil (**Figure 5A**). This plate shows a rhizomatous, probably epiphytic species with subsymmetrical leaves and few, flowered inflorescences with persistent bracts. These characters are diagnostic of members of *Begonia* sect. *Trachelocarpus*, which is represented in Paraty by three currently recognised species: *B. depauperata* Schott, *B. herbacea* and *B. lanceolata* (Hughes *et al.*, 2015–). Of these species, *Begonia depauperata* is distinguished by its broad leaf laminae (around half as broad as long), which often have white spots, and have long petioles (at least 50% of the

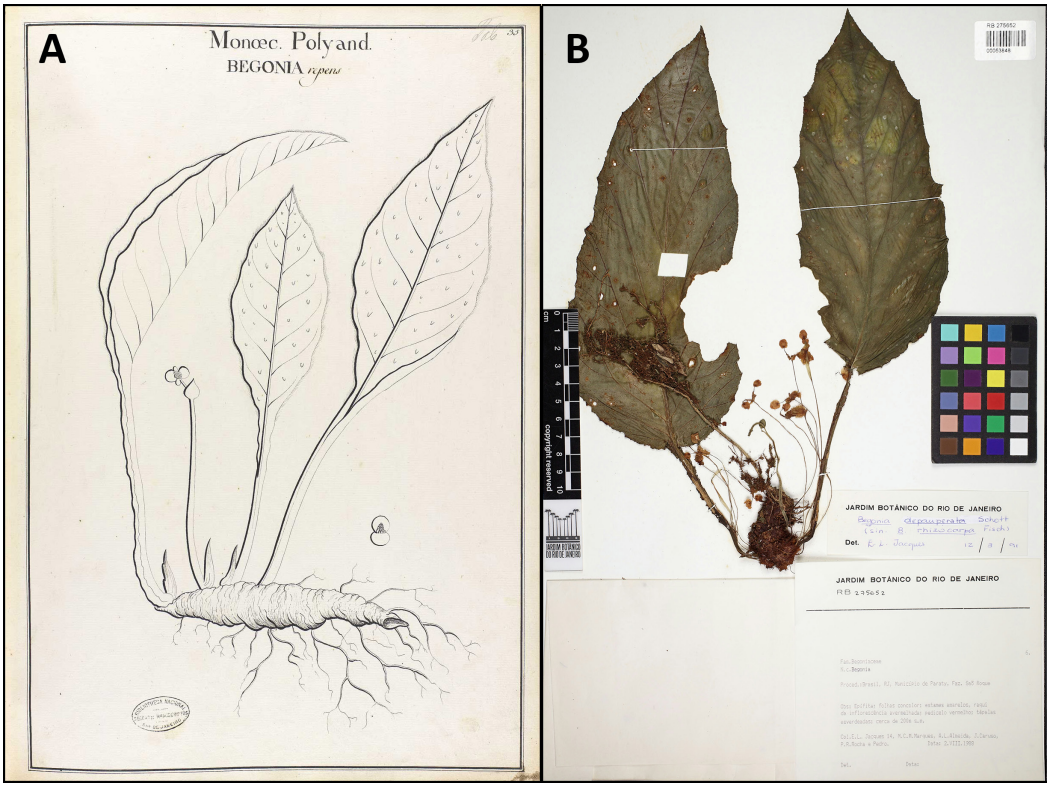

Figure 5. *Begonia depauperata* Schott. A, Lectotype illustration of *Begonia repens* Vell., Manuscript mss1198659_039 in the National Library of Brazil; B, epitype of *B. repens* Vell., *E.L. Jacques* et al. 14 (RB [00053848]).

length of the lamina). All three diagnostic characters are shared with the type illustration or mentioned in the description of *Begonia repens* Vell. (Vellozo, 1831, 1881). Accordingly, we synonymise *Begonia repens* with *B. depauperata*. We designate *E.L. Jacques* 14 (RB [00053848]) as the epitype of *Begonia repens* because it is the best-quality flowering specimen of *B. depauperata* from Paraty Municipality (**Figure 5B**).

The name *Begonia depauperata* was published by Schott (1827), presumably based on his own collections. Most of Schott's material is deposited in B and W. Despite a thorough search, we have been unable to locate any such material in B, but we refrain from designating a neotype until it is certain that no type material exists in W.

Selected specimens examined. Brazil. **Rio de Janeiro State**. **Paraty Municipality**: Fazenda São Roque, [23°4'S, 44°42'W], c.300 m, 2 viii 1988, *E.L. Jacques, M.C.M. Marques, A.L. Almeida, J. Caruso, P.R. Rocha & Pedro* 16 (RB [00053874]); ibid., c.250 m, 2 viii 1988, *E.L. Jacques, M.C.M. Marques, A.L. Almeida, J. Caruso, P.R. Rocha & Pedro* 20 (RB [00053824]); A cerca de 16 km do Trevo de Parati, entrada a

direta do Rio/Santos, antes da ponta na mata próxima ao Córrego dos Micos, [23°16'S, 44°46'W], 440 m, *R. Marquete, M.C.M. Marques, T. Konno, R.C.C. Reis, J. Gomes, J. Gomes & J.C. Silva* 638 (HUEFS [HUEFS000028393], RB [00053907]); Corisco, Morro do Corisco, 670 m, 21 x 1993, *R.R.C. Reis, T. Konno, B.A.M., J. Silva* 80 (RB [00053452]).

Begonia lanceolata Vell., Fl. Flumin. Icon. 10: 33 (1831). – Type: [icon ined.] "Monoec. Polyand. BEGONIA lanceolata, Tab. 33" (lectotype Manuscript Sect., Bibliot. Nac., Rio de Janeiro mss1198659_037, designated here). – Brazil, Rio de Janeiro State, Paraty Municipality, Mata Costeira, 29 vii 1975, *A.L. Peixoto & O.L. Peixoto* 567 (epitype RB [00054114], designated here). **Figures 6, 9A.**

Trachelanthus attenuatus Klotzsch, Abh. Kon. Akad. Wiss. Berlin 1853: 203 (1855). – *Begonia attenuata* (Klotzsch) A.DC. in Martius C.F.P.b., Fl. Bras. 4 (1): 383 (1861). – Type: Brazil, [Rio de Janeiro State], Mandioca, [22°34'S, 43°10'W], *F. Sellow* c.2182 (lectotype B [B100242186, photo F #20846], designated here).

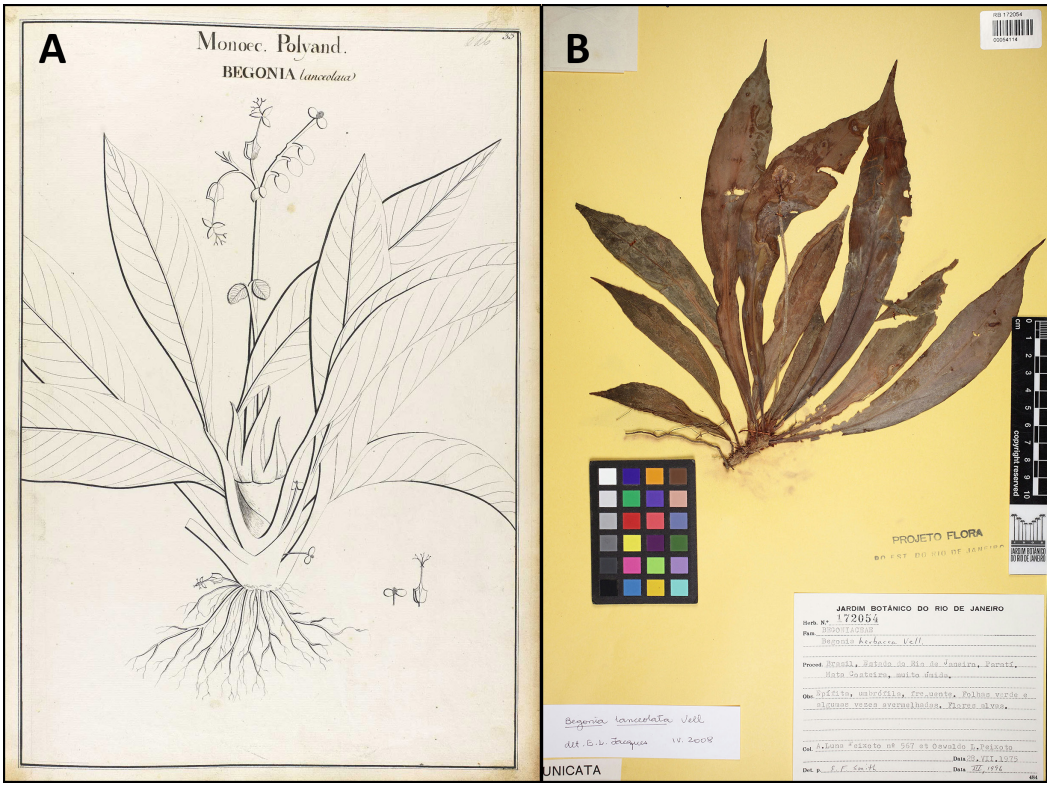

Figure 6. *Begonia lanceolata* Vell. A, Lectotype illustration, Manuscript mss1198659_037 in the National Library of Brazil; B, epitype, *A.L. Peixoto & O.L. Peixoto* 567 (RB [00054114]).

Begonia angraensis Brade, Arq. Serv. Florest. 2: 22 (1943). – Brazil, Rio de Janeiro State, Angra dos Reis, [23°0'S, 44°20'W], 300 m, 30 vi 1935, *A.C. Brade* 14923 (holotype RB [00536645], isotype RB [00536660]).

Notes. We lectotypify *Begonia lanceolata* Vell., based on the original illustration in the Biblioteca Nacional do Rio de Janeiro, Brazil (**Figure 6A**). This illustration shows an epiphytic herb with a probably rhizomatous rootstock, with symmetrical leaves, and with few-flowered inflorescences with persistent bracts. Vellozo (1881) stated that this species was collected "*Prope Pharmacopolim*", an old name for Paraty. These characters place the species in *Begonia* sect. *Trachelocarpus* (Müll.Berol.) A.DC., which is represented in Rio de Janeiro State by three species (Hughes *et al.*, 2015–). Of these, the species currently called *Begonia lanceolata* is distinguished by its lanceolate to elliptic leaf blades with short petioles (usually < 1/4 of the length of the leaf blade). This description is a good match for the lectotype of *Begonia lanceolata*, so we confirm that this is the correct name for this species concept. We select *Peixoto & Peixoto* 567 (RB [00054114]) as an epitype for this species because it is a high-quality flowering specimen from Paraty Municipality (**Figure 6B**).

Begonia lanceolata Vell. was treated as a synonym of the later *B. attenuata* (Klotzsch) A.DC. by de Candolle (1861, 1864) because the illustration in the protologue of *B. lanceolata* was poor. Golding (1984) reinstated the name, with *B. attenuata* treated as a synonym, because a poor-quality illustration does not override the principal of priority. *Begonia lanceolata* has since been treated as an accepted name, including in a recent treatment of the Begoniaceae of São Paulo State (Mamede *et al.*, 2012) and the *Flora do Brasil* (Jacques, 2024).

During the present treatment, it was desirable to designate a lectotype for *Trachelanthus attenuatus* Klotzsch. This name was published based on specimens collected by F. Sellow at Fazenda Mandioca in Rio de Janeiro State (Klotzsch, 1855). To our knowledge, two specimens matching this description exist: *F. Sellow* c.2182 in B (B100242186) and *F. Sellow s.n.*, also in B (B100242187). No lectotype has been designated, so we designate B100242186 as the lectotype of this name. This is the superior specimen and black-and-white photographs of it were distributed to several European and US herbaria in the 1940s (F#20846), so it has probably been treated as the *de facto* type for 80 years.

Selected specimens examined. Brazil. **Rio de Janeiro State**. **Paraty Municipality**: Mata Costeira, 28 ix 1975, *A.P. Peixoto & O.L. Peixoto* 567 (RB [00054114]); Picada para Toca Ouro, na beira da Cachoeira do Rio d'Ouro, [23°14'S, 44°49'W], 320 m, 3 viii 1988, *E.L. Jacques et al.* 27 (RB [00054179]); APA-Cairuçu, nas da ponte do Rio das Meros, [23°14'S, 44°42'W], 50 m, 11 vi 1994, *L.C. Giordano, J.F.A. Baumgratz, L. Macias, I. Fernandes, M.G. Boivini & L.C. Souza Silva* 1650 (RB [00054280]); Parque Nacional da Serra da Bocaina, Morro da Forquila, [23°16'S, 44°40'W], 8 xi 1995, *A.C.B. Remón, M.G. Bovini, D.P. Campos, M.C.M. Marques et al.* 37 (RB [00053909]); APA-Cairuçu, Morro da Trinidade, [23°17'S, 44°40'W], c.270 m, 31 viii 1994, *M.G. Boivini, B. Kurtz, L.C. Giordano & B.M.G. Ciaros* 543 (RB [00054215]); Passando a primera ponte entrar a direita, c.13 km do Trevo de Paraty, subindo o Rio Corisco, [23°17'S,

44°47'W], 29 vi 1993, *R. Marquete, M.C.M. Marques, T. Konno, R.C.C. Reis, J.C. Silva & J.C. Gomes* 1065 (RB [00054241]); APA-Cairuçu, Corrego dos Micos, trilha para o Morro da Pedra Rolada, [23°18'S, 44°42'W], 240 m, 7 xii 1995, *L.C. Giordano, S.P. Oliveira, K. Autran, J.Q. Melo, L.C. Souza Silva & F.P. Abreu* 2102 (RB [00054325]); c.17 km do Trevo de Paraty, até a entrada de Maramjeiras mais 9 km, [23°20'S, 44°42'W], 30 vi 1993, *R. Marquete, M.C.M. Marques, T. Konno, R.C.C. Reis, J.C. Silva & J.C. Gomes* 1112 (RB [00054297]); APA-Cairuçu, Patrimônio, estrada Rio-Santos, a 21 do Trevo de Paraty (lado esquerdo, sentido Picinguaba), [23°21'S, 44°44'W], 250 m, 7 ix 1992, *L.C. Giordano, E.F. Guamarães, J. Carusco & J.C. Silva* 1476 (RB [00054164]). **São Paulo State**. **Cunha Municipality**: Reserva Estadual de Cunha, Inst. Floresta, [23°14'S, 45°1'W], 20 xi 1979, *H.C. de Lima* 1123 (RB [00053980]); Parque Estadual Serra do Mar, Núcleo Cunha-Indaiá, trilha do rio Bonito, 23°14'12.1"S, 45°1'15.4"W, 1050 m, 22 vi 2006, *P. Fiashi, A. Reydon, S.E. Martins, M.C.H. Mamede, D.F. Peralta, G.O. Souza & A.L. Santos* 3049 (SPF [SPF175654]).

Begonia radicans Vell., Fl. Flumin. Icon. 10: 39 (1831). – Type: Fl. Flumin. Icon. 10: 39 (mss1198659_043) 'BEGONIA radicans' (1831), designated Jacques & Mamede (2005, p. 583). – Brazil, Rio de Janeiro State, Paraty Municipality, Margem do Rio Funil (próximo

Figure 7. *Begonia radicans* Vell. A, Lectotype illustration, Manuscript mss1198659_043 in the National Library of Brazil; B, epitype of *B. radicans*, *B. dubia* Vell. and *B. procumbens* Vell., *O. Handro* 660 (MBM [#41337]).

do Estado do São Paulo), [22°59'S, 44°43'W], 8 xi 1956, *O. Handro* 660 (epitype MBM [#41337] designated here; isoepitypes HUEFS [HUEFS000023913], SPF [SPF71880]). **Figures 7, 9B.**

Begonia procumbens Vell., Fl. Flumin. Icon. 10: 36 (1831). – Type: Fl. Flumin. Icon. 10: 36 'BEGONIA procumbens' (1831), designated Jacques & Mamede (2005, p. 583). – Brazil, Rio de Janeiro State, Paraty Municipality, Margem do Rio Funil (próximo do Estado do São Paulo), [22°59'S, 44°43'W], 8 xi 1956, *O. Handro* 660 (epitype MBM [#41337], designated here; isoepitypes HUEFS [HUEFS000023913], SPF [SPF71880]).

Begonia dubia Vell., Fl. Flumin. Icon. 10: 42 (1831), *nom nud.*; descr. Arch. Mus. Nat. Rio de Janeiro, 5: 404 (1881), *nom. illeg.* [later homonym], non Haw (1819). – Type: [icon ined.] "Monoec. Polyand. BEGONIA dubia, Tab. 42" (Fl. Flumin. Icon. 10: 42 'BEGONIA dubia' (1831), designated Jacques & Mamede (2005, p. 583). – Brazil, Rio de Janeiro State, Paraty Municipality, Margem do Rio Funil (próximo do Estado do São Paulo), [22°59'S, 44°43'W], 8 xi 1956, *O. Handro* 660 (epitype MBM [#41337], designated here; isoepitypes HUEFS [HUEFS000023913], SPF [SPF71880]).

Begonia solananthera A.DC., Ann. Sci. Nat. Bot., IV (11): 128 (1859). – Type: Brazil, Rio de Janeiro State, Sierra de Orgaos, *Lhotsky* 135 (lectotype G-DC [photo F #7343, 2 sheets], designated here; isolectotype W [W0057193]), **syn. nov.**

Notes. We lectotypify *Begonia dubia*, *B. radicans* and *B. procumbens* based on the original plates, produced within Vellozo's lifetime and held in the Biblioteca Nacional do Rio de Janeiro, Brazil (**Figure 7A**).

The lectotype plates of *Begonia radicans*, *B. dubia* and *B. procumbens* all show climbing species, rooting at the nodes, with ovate leaves with pinnate venation. In addition, the type plates of *Begonia radicans* and *B. procumbens* show staminate flowers with four tepals, and pistillate flowers with five tepals. This unambiguously places the three species within *Begonia* sect. *Solananthera*. Vellozo's three names were described from plants collected in Paraty Municipality (Vellozo, 1881).

Begonia sect. *Solananthera* is represented by three species, currently known as *B. integerrima* Spreng., *B. radicans* and *B. solananthera* A.DC. (Moonlight *et al.*, 2018; Jacques, 2024). The current concept of *Begonia radicans* is distinguished from the other two species in its section by its elliptic leaves that are glabrous on both faces (vs ovate to broadly leaves with microscopic, glandular hairs on the abaxial face) and its pink to red tepals (vs white to white with a red spot at the base of the tepals; Jacques, 2024). Vellozo's illustrations of his three names all show plants with ovate to broadly leaves, while his description of *Begonia procumbens* describes white flowers and his description of *B. radicans* describes white flowers with a red spot at the base of the petals. These characters are inconsistent with the current concept of *Begonia radicans*. However, all Vellozo's illustrations show species with glabrous leaves, which are consistent with

Begonia radicans but inconsistent with *B. integerrima* and *B. solananthera*. His illustrations do, however, tend to lack detail such as microscopic hairs.

As part of the present treatment, we reviewed material of *Begonia* sect. *Solananthera* and re-evaluated the distributions of the three species. We found that the current concept of *Begonia radicans* is absent from Paraty Municipality, where *B. solananthera* is ubiquitous, and further, that it is not known from Rio de Janeiro State. Rather, it is found from southern Santa Catarina State as far as north as Ubatuba Municipality in São Paulo State, while *Begonia solananthera* is found from Santos Municipality in São Paulo State as far north as Itabuna Municipality, Bahia. We conclude that Vellozo's *Begonia dubia*, *B. procumbens* and *B. radicans* all fall within the current concept of *B. solananthera* and that the lack of an indumentum on the Vellozo's plates is because Vellozo's illustrators tended to ignore characters only visible with a hand lens. We transfer *Begonia solananthera* into the synonymy of *B. radicans* and reinstate the name *B. limmingheiana* É.Morren to include the former concept of *B. radicans*. We epitypify *Begonia dubia*, *B. procumbens* and *B. radicans* based on *Handro* 660 MBM [#41337]), an excellent flowering specimen of the former concept of *B. solananthera* from Paraty Municipality (**Figure 7B**).

Selected specimens examined. Brazil. **Rio de Janeiro State**. **Paraty Municipality**: Fazenda São Roque, c.450 m, 4 viii 1988, *E.L. Jacques* et al. 31 (RB [00053699]); Estrada Paraty-Cunha, 23°10'18"S, 44°50'10"W, 1445 m, 22 vi 2023, *E.L. Jacques & P.W. Moonlight* 2114 (RBR [RBR00058619]); Estrada Paraty-Cunha, c.10 km de Paraty, [23°12'S, 44°48'W], *M. Kirizawa & E.A. Lopes* 1895 (US [00591504]); ibid., 1160 m, 22 vi 2023, *E.L. Jacques & P.W. Moonlight* 2106 (RBR [RBR00058611]); APA-Cairuçu, Rio dos Menos, [23°15'S, 44°42'W], 70 m, 27 vi 1995, *M. Bouche* et al. 7 (RB [00053717]); Camino à cachoeira do Véu da Novia, 23°17'47"S, 44°45'51"W, 293 m, 24 vi 2023, *E.L. Jacques & P.W. Moonlight* 2123 (RBR [RBR00058628]); Trilha do Rio Corisquinho, [23°20'S, 44°37'W], 215 m, 4 viii 1994, *T. Barbará* 15 (RB [00054574]); Condomínio Laranjeiras, estrada para praia do Sono, [23°20'S, 44°39'W], 9 viii 1994, *R. Marquete* 1979 (RB [00054558]); Margem do Rio Funil (próximo do Estado do São Paulo), [23°59'S, 44°43'W], 8 xi 1956, *O. Handro* 660 (HUEFS [HUEFS000023913], MBM [MBM041337], SPF [SPF71880]). **São Paulo State**. **Cunha Municipality**: Parque Estadual Serra do Mar, Núcleo Cunha, [23°14'S, 45°1'W], 12 xii 1996, *A.P. Bertoncini, F.R. Dário, R.F. Lopes, R.R. Rodrigues, V.C. Souza, J.Y. Tamashiro, N.M. Ivanauskas & J.P. Souza* 729 (ESA [ESA034249], UEC [UEC041890]); ibid., 23°13'28"–16'10"S, 45°2'53"–5'15"W, 1100 m, 19 iii 1996, *C.B. Costa, M. Kirizawa & A. Rapini* 198 (PMSP [PMSP007456], UEC [UEC041889]).

Begonia erecta Vell., Fl. Flumin. Icon. 10: 43 (1831). – Type: [icon ined.] "Monoec. Polyand. BEGONIA erecta, Tab. 43" (lectotype Manuscript Sect., Bibliot. Nac., Rio de Janeiro mss1198659_047, designated here). – Brazil, Rio de Janeiro State. Paraty Muncipality: Praia de Parati-Mirim, [23°15'S, 44°39'W], 1 xii 1976, *D. Araujo* 1377 (epitype RB [00327524], designated here). **Figures 8, 9C.**

Begonia stenophylla A.DC., Ann. Sci. Nat. Bot., IV 11: 137 (1859). – Type: Brazil, São Paulo State. Entre Jundiaí and Sao Carlos [Campinas], [23°5'S, 46°58'W], *L. Riedel & G. von Langsdorff* 1920 (lectotype G-DC, designated here), **syn. nov.**

Figure 8. *Begonia erecta* Vell. A, Lectotype illustration, Manuscript mss1198659_047 in the National Library of Brazil; B, epitype, *D. Araujo* 1377 (RB [00327524]).

Notes. We lectotypify *Begonia erecta* Vell. based on the original illustration in the Biblioteca Nacional do Rio de Janeiro, Brazil (**Figure 8A**). This plate shows an erect species with straight, short-petiolate leaves with narrowly lanceolate laminae, serrated margins, and indistinct venation. The inflorescence bears small staminate flowers with four tepals and pistillate flowers with five tepals. *Begonia erecta* Vell. was collected in Paraty Municipality (Vellozo, 1881), and the illustration is a close match to several species found in the municipality, including *B. bidentata* Raddi, *B. fruticosa* Klotzch and *B. stenophylla* A.DC. *Begonia bidentata* can be distinguished from the lectotype of *B. erecta* based on its fewer-flowered inflorescences, whereas *B. fruticosa* can be distinguished based on its reflex tepals. The species currently known as *Begonia stenophylla* is commonly found in Paraty Municipality, and we can find no characters to distinguish it from the type collection of *B. erecta*. Accordingly, we designate a specimen of *Begonia stenophylla* as an epitype of *B. erecta* (**Figure 8B**) and treat *B. stenophylla* as a synonym of *B. erecta*.

During the preparation of the present treatment, it became clear that it would be desirable to designate a lectotype for *Begonia stenophylla*. This species was described based on

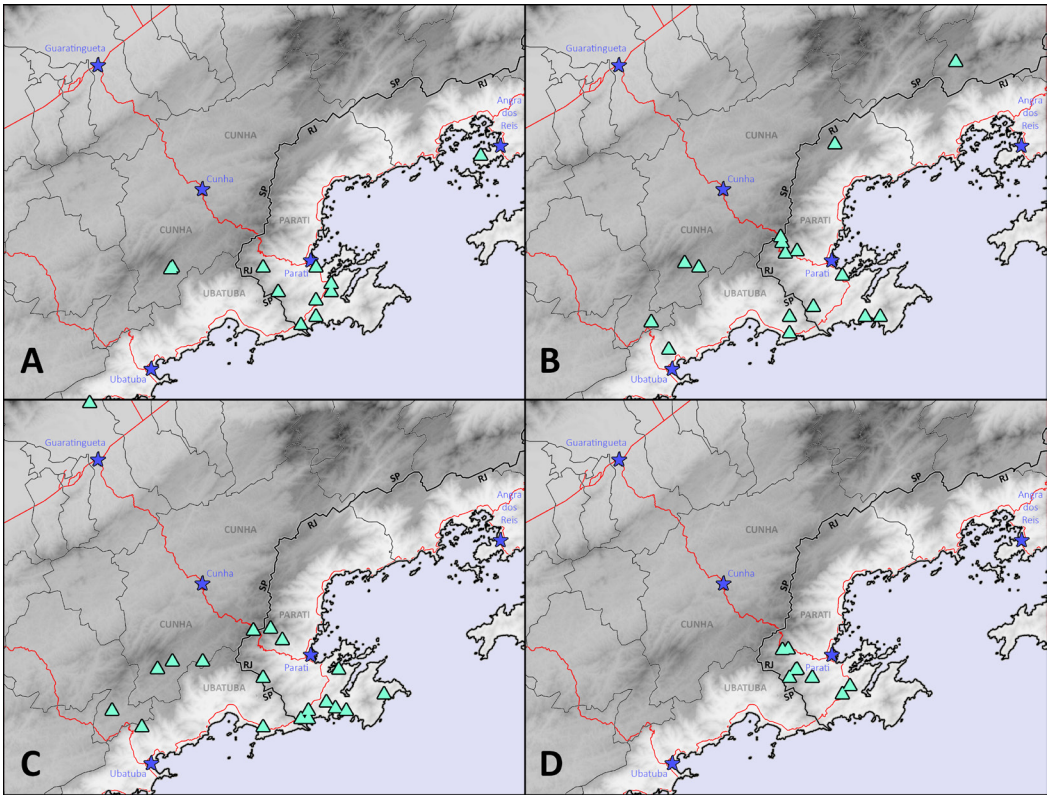

Figure 9. Distribution of *Begonia lanceolata* Vell. (A), *B. radicans* Vell. (B), *B. erecta* Vell. (C) and *B. declinata* Vell. (D) in Paraty Municipality, Rio de Janeiro State, and surrounding municipalities (triangles). Thick black lines indicate state borders; thin black lines, municipality borders; red lines, major roads; and blue stars, major settlements.

specimens collected in Brazil by Riedel. We designate the specimen *Riedel & von Langsdorff* 1920 (G-DC) as the lectotype. This sheet was removed from Saint Petersburg by de Candolle and included in his own herbarium. De Candolle also only cited this collection in his later treatment of the genus for the *Flora do Brasil* (de Candolle, 1861).

Selected specimens examined. Brazil. **Rio de Janeiro State**. **Paraty Municipality**: APA-Cairuçu, Corisco, [23°16'S, 44°49'W], 11 xi 1991, *V.L.G. Klein, L.C.S. Giordano, R. Marquete, & M.V. Pereira* 1208 (RB [00053548]); Trinidade, 23°18'58"S, 44°40'37"W, 47 m, 24 vi 2023, *E.L. Jacques & P.W. Moonlight* 2129 (RBR [RBR00058634]); Condominio das Larenjeiras, trilha indo para a praia do Sono, 23°19'42"S, 44°39'25"W, 15 xi 1993, *E. Martins* et al. 29245 (UEC [UEC041962]); APA-Cairuçu, Trilha da praia do sono para o condominio de Larenjeiras, [23°20'S, 44°38'W], 20 x 1990, *V.L.G. Klein* et al. 1001 (RB [00053523]); APA-Cairuçu, estrada para Trintade, [23°21'S, 44°43'W], 23 x 1990, *V.L.G. Klein* et al. 1051 (RB [00053426]); Mata do lado diereto da trilha para Praia de Martim de Sá, [23°21'S, 44°43'W], 200 m, 10 xi 1990, *R. Marquete, D.P. Costa, L.C. Giordano & A.L. Toscano* 259 (RB [00053511]); Estrada para

Paraty c.30 km antes da estrada da cidade, [23°20'S, 44°43'W], 13 i 2000, *C.M. Sakuragui* et al. 847 (HUEM [HUEM000002182]); APA-Cairuçu, Trindade, Praia de Fora, [23°21'S, 44°43'W], 7 xi 1991, *V.L.G. Klein, L.C.S. Giordano, R. Marquete, L.C. Aquino & M.V. Pereira* 1151 (RB [00053537]); ibid., 22 viii 1991, *R. Marquete, V.L.G. Klein, N.M.F. Silva, M.C. Valente, J. Caruso & M.G. Avelar* 335 (RB [00053464]); Distrito de Trindade, lado esquerdo da praia do Caxadaço, [23°21'S, 44°44'W], 14 iii 1989, *B.C. Kurtz, M. Nadruz, L.C. Giordano, A.L. Almeida & J.C. Silva* 31 (RB [00053445]). **São Paulo State**. **Cunha Municipality**: 11 xii 1996, *J.P. Souza, L.B. Albuquerque, E.R.N. Franciosi, D.F. Bertani & L.F. Yamamoto* 36 (SPF [SPF00121997], UEC [UEC041955]); Parque Estadual Serra do Mar, Pedreira e alrededores, [23°14'S, 45°1'W], 30 iii 1994, *J.B. Baitello* 562 (PMSP [PMSP007457], UEC [UEC041959]); Parque Estadual Serra do Mar, estrada municipal, c. de 5 km da sede, 23°15.94'S, 45°2.99"W, 1024 m, 16 xi 2006, *E.J. Lucas, F.F. Mazine, N.A. Brummitt, C.P. Caliari, T.B. Flores, L.V.S. Jennings, R.P.M. Souza, V.C. Souza & M.T.G. Lima* 331 (ESA [ESA053331], K).

Begonia declinata Vell., Fl. Flumin. Icon. 10: 44 (1831). – Type: [icon ined.] "Monoec. Polyand. BEGONIA declinata, Tab. 44" (lectotype Manuscript Sect., Bibliot. Nac., Rio de Janeiro mss1198659_048, designated here). – Brazil, Rio de Janeiro State, Paraty Municipality, APA do Cairuçu, Corisco, 11 xi 1991, [23°16'S, 44°46'W], *V.L.C. Klein, L.C.S. Giordano, R. Marquete* & *M.V. Pereira* 1211 (epitype RB [00420053], designated here). **Figures 9D, 10.**

Begonia fischeri Otto & A.Dietr., Allg. Gartenzeitung 4: 354 (1836), *nom. illeg*. [later homonym], non Schrank (1820). – *Pritzelia fischeri* Klotzsch, Ber. Bekanntm. Verh. Konigl. Presuss. Akad. Wiss. Berlin 126 (1854). – *Begonia dietrichiana* Irmsch., [replacement name – *Begonia fischeri* Otto & A.Dietr.], Bot. Jahrb. Syst. 76: 60 (1953). – Type: Brazil, Hort Edinburgh. *Unknown*, *s.n.* (neotype K [K000536682], designated here), **syn. nov.**

Notes. We lectotypify *Begonia declinata* Vell. based on the original illustration in the Biblioteca Nacional do Rio de Janeiro, Brazil (**Figure 10A**). The illustration shows an upright to semiscandent species with swollen nodes, early-caducous stipules, strongly asymmetrical leaves, and few-flowered inflorescences with staminate flowers with four tepals and pistillate flowers with five tepals. Vellozo's description of the species (Vellozo, 1881) clarifies that the plant was c.2 m tall with red undersides to the leaves, red inflorescences, and red to white tepals on both the staminate and pistillate flowers. Vellozo (1881) further stated that *Begonia declinata* was collected in Paraty, where the only species to match this description is the current concept of *B. dietrichiana* Irmsch. In common with many of Vellozo's illustrations, there are clear differences between the illustration and the species concept they represent. In this case, the leaf venation is palmate-pinnate in the plant but is illustrated as pinnate, although with veins clustered towards the base of the leaf. We consider this an error in the illustration and accordingly synonymise *Begonia dietrichana* with *B. declinata* Vell. We designate *Klein* et al. 1211 (RB [00420053]) as the epitype of *Begonia declinata*, because it is the only specimen of this species from Paraty with pistillate flowers, fruits and staminate flower buds (**Figure 10B**).

Figure 10. *Begonia declinata* Vell. A, Lectotype illustration, Manuscript mss1198659_048 in the National Library of Brazil; B, epitype, *V.L.C. Klein, L.C.S. Giordano, R. Marquete* & *M.V. Pereira* 1211 (RB [00420053]).

During the preparation of the present treatment, it was desirable to designate a type for *Begonia fischeri* Otto & A.Dietr. The name *Begonia fischeri* Otto & A.Dietr. was published based on a plant grown in a botanical garden in Berlin received from von Fischer in Saint Petersburg (Otto & Dietrich, 1836). No specimens were cited, and we have been unable to find any specimens in Berlin that could conceivably have been original material and available for lectotypification. It is therefore appropriate to designate a neotype. Shortly following the publication of *Begonia fischeri*, Graham received material labelled as *B. fischeri* from Berlin and grew it on at the Royal Botanic Garden Edinburgh, where he produced a plate and description in *Curtis' Botanical Magazine* (Graham, 1836). The plate, description, and a specimen prepared from Graham's plant in K herbarium (K000536682) are all good matches for Otto & Dietrich's description. We designate the specimen as the neotype of *Begonia fischeri*.

Selected specimens examined. Brazil. **Rio de Janeiro State**. **Paraty Municipality**: Estrada Paraty-Cunha, 23°12'30"S, 44°49'11"W, 592 m, 22 vi 2023, *E.L. Jacques & P.W. Moonlight* 2093 (RBR [RBR00058598]);

Estrada Paraty-Cunha, 23°12.613'S, 44°47.964'W, 400 m, 15 vii 2012, *E.L. Jacques, H. Lorenzi* et al. 1850 (RBR [RBR00035453]); Morro do Corisco, subindo o rio Corisco, [23°15'S, 44°48'W], 330 m, 29 iv 1993, *R. Marquete, N. Marquete, F. Silva, M.C. Valente, Abreu & J. Caruso* 956 (RB [00052557]); Subindo pelo lado esquerdo do rio Coriscão, [23°16'S, 44°46'W], 11 xi 1991, *R. Marquete* et al. 505 (RB [00052655], RBR [RBR00036922]); Subindo o Morro da Pedra Rolada, Córrego dos Micos, [23°18'S, 44°42'W], 240 m, 19 x 1993, *B.A. Moreira, T. Konno, M.C.M. Marques & R. Marquete* 10 (RB [00052635], RBR [RBR00037097]).

Begonia verticillata Vell., Fl. Flumin. Icon. 10: 45 (1831). – Type: [icon ined.] "Monoec. Polyand. BEGONIA verticillata, Tab. 45" (lectotype Manuscript Sect., Bibliot. Nac., Rio de Janeiro mss1198659_049, designated here. – Brazil, Rio de Janeiro State, Paraty Municipality, Distrito de Patrimônio, Estrada da Forquilha, [23°19'S, 44°44'W], 14 iii 1989, *B.C. Kurtz, M. Nadruz, L.C. Giordano, A.L. Almeida & J.C. Silva* 29 (epitype CEPEC [#69041] ***designated here***; isoepitypes ESA [ESA125660], RB [00052709]). **Figures 11, 12A.**

Begonia luxurians Scheidw., in Otto & Dietrich, Allg. Gartenzeitung 16: 131 (1848). – *Scheidweileria luxurians* (Scheidw.) Klotzsch, Ber. Bekanntm. Verh. Konigl. Presuss. Akad.

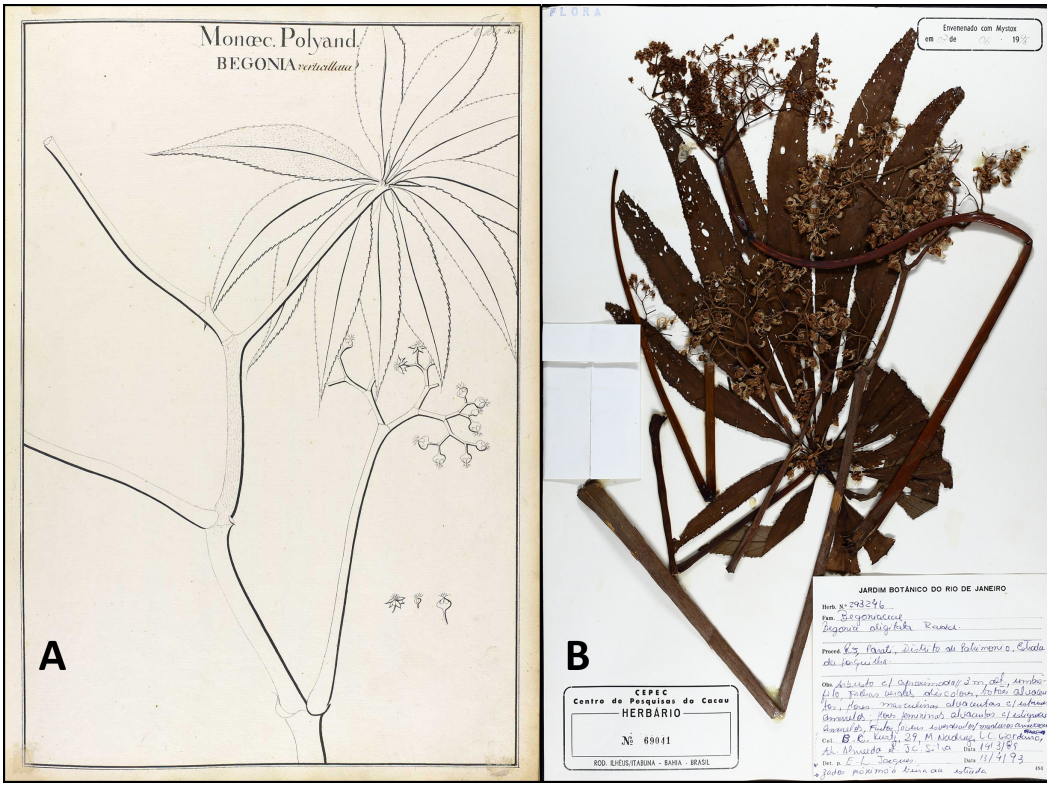

Figure 11. *Begonia verticillata* Vell. A, Lectotype illustration, Manuscript mss1198659_049 in the National Library of Brazil; B, epitype, *B.C. Kurtz* et al. 29 (CEPEC [#69041]).

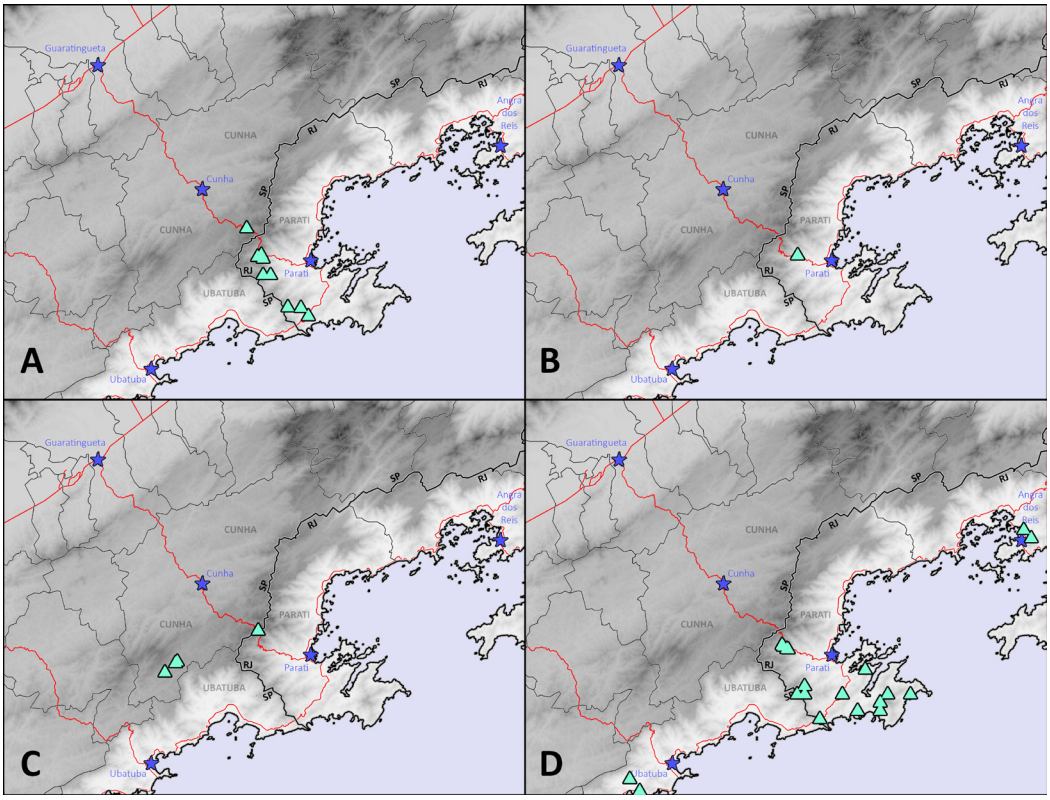

Figure 12. Distribution of *Begonia verticillata* Vell. (A), *B. acetosa* Vell. (B), *B. angulata* Vell. (C) and *B. rotunda* Vell. ex Walp. (D) in Paraty Municipality, Rio de Janeiro State, and surrounding municipalities (triangles). Thick black lines indicate state borders; thin black lines, municipality borders; red lines, major roads; and blue stars, major settlements.

Wiss. Berlin: 123 (1854). – Type: Brazil, Rio de Janeiro State. Organ Mountains, 5000 ft, *G. Gardner* 607 (neotype BM, designated here; isoneotypes K [K000102448, K000102449, K000102450, K000102451], MO [# 1624280], NY [NY00454005], W [W0057227]), **syn. nov.**

Notes. We lectotypify *Begonia verticillata* Vell. based on the original illustration in the Biblioteca Nacional do Rio de Janeiro, Brazil (Figure 11**A**). This plate shows a large, upright species of *Begonia* with palmately compound leaves with 11 leaflets, which are pubescent beneath. Vellozo (1881) clarified that there were in fact c.18 leaflets per leaf, and that the species was collected between Paraty and Cunha. The only species of palmately compound–leaved *Begonia* with up to 18 leaflets per leaf in Brazil is the current concept of *B. luxurians* (Jacques, 2024), which is found along the road from Paraty to Cunha. Several species, however, have 11 leaflets, including *Begonia digitata*, so while the description is unambiguous, the lectotype is ambiguous. Accordingly, we transfer *Begonia luxurians* into

the synonymy of *B. verticillata* and designate *Kurtz* et al. (CEPEC [#69041]) as the epitype of this name (**Figure 11B**).

We note that our treatment of *Begonia verticillata* disagrees with all previous treatments of the name. Steudel (1840) included the name in the synonymy of *Begonia digitata* Raddi, a similar species but with fewer leaflets on the leaf than *B. luxurians*, probably based on the illustration. This synonymy was replicated by Walpers (1843) and de Candolle (1861) and has remained the accepted synonymy to date. *Begonia digitata*, however, has not been collected in Paraty or Cunha Municipalities (Hughes *et al.*, 2015–) and never has more than 12 leaflets per leaf, so we are confident in our treatment.

Begonia luxurians Scheidw. was published by Scheidweiler in Otto and Dietrich's *Allgemeine Gartenzeitung* (Scheidweilder, 1848). No material was cited. Most of Scheidweiler's material was incorporated into the BR herbarium, but we have been unable to fund any specimens that could be considered original material for lectotypification. It is therefore appropriate to designate a neotype for this name. We select a sheet of *G. Gardner* 607 in BM as the neotype, because this is a high-quality collection with several duplicates distributed across international herbaria.

Selected specimens examined. Brazil. **Rio de Janeiro State**. **Paraty Municipality**: Morro do Corisco, subindo o Rio Corisco, [23°15'S, 44°48'W], 350 m, *R. Marquete, N. Marquete, F. Silva, M.C. Valente, Abreu & J. Caruso* 980 (RB [00052758]); APA-Cairuçu, Morro do Corisco, descendo o Rio Corusco, [23°15'S, 44°49'W], 430 m, 21 xii 1993, *T. Konno, B.A. Moreira* et al. 336 (RB [00052598]); Passando a la ponte, entrar à direita (sentido RJ/SP) a c.13 km do Trevo de Paraty, 380–440 m, [23°15'S, 44°49'W], 380–440 m, 29 vi 1993, *T. Konno, R. Marquete, M.C. Marques, R.C. Reis, J. Caruzo & J.C. Silva* 180 (RB [00052739]); Camino à cachoeira do Véu da Novia, Próximo do rio, 23°18'55"S, 44°45'45"W, 224 m, 24 vi 2023, *E.L. Jacques & P.W. Moonlight* 2119 (RBR [RBR00058624]); APA-Cairuçu, Estrada para Trinidade, [23°20'S, 44°43'W], 300 m, 12 iv 1991, *L.C. Giordano, L.S. Sarahyba & J. Caruso* 1046 (RB [00052726]).

Begonia acetosa Vell., Fl. Flumin. Icon. 10: 50 (1831). – Type: [icon ined.] "Monoec. Polyand. BEGONIA acetosa, Tab. 50" (lectotype Manuscript Sect., Bibliot. Nac., Rio de Janeiro mss1198659_054, designated here). – Brazil, Rio de Janeiro State, Paraty Municipality, Estrada Paraty-Cunha, 23°12'37"S, 44°47'56"W, 200 m, 25 vi 2023, *E.L. Jacques & P.W. Moonlight* 2130 (epitype RBR [RBR00058635, 3 sheets] designated here; isoepitypes RB, TCD). **Figures 12B, 13.**

Description. Caulescent herb, to 60 mm high. *Stem* erect, unbranched; internodes to 2.5 cm long, to 1.2 cm thick, succulent, pale green to red, villous. *Stipules* caducous, broadly elliptic, 20–30 × 8–11(–25) mm, apex piliferus, vinaceous to reddish green when fresh, light brown when mature, villous, margin entire. *Leaves* > 3 per stem, alternate, basifixed; petiole half-terete, 25–36 cm long, 1–1.5 cm thick, pale green to red, villous; blade asymmetrical, ovate, 22–28 × 14–20 cm, succulent, apex short acuminate, base cordate, basal lobes not overlapping to overlapping, sinus to 2–3 cm deep, margin entire,

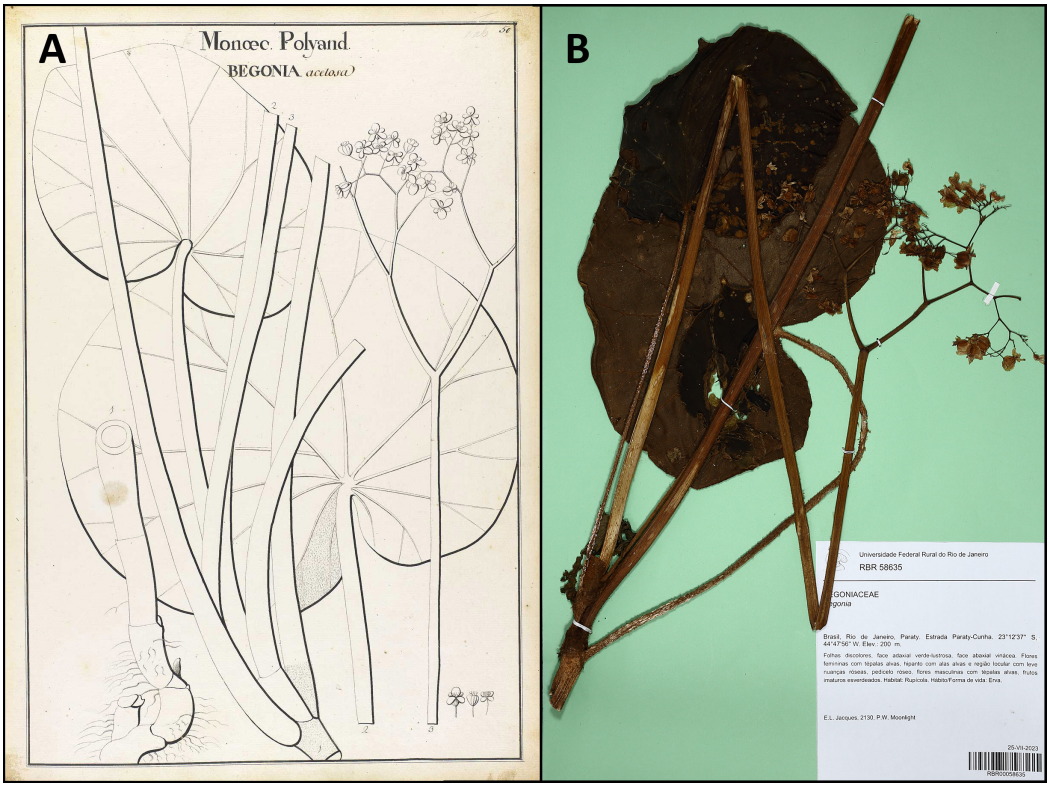

Figure 13. *Begonia acetosa* Vell. A, Lectotype illustration, Manuscript mss1198659_054 in the National Library of Brazil; B, epitype, *E.L. Jacques & P.W. Moonlight* 2130 (RBR [RBR00058635, sheet 1]).

slightly revolute, ciliate, upper surface dark green, often pale green on the major veins, glabrous, pilose on the major veins, lower surface red, often pale brown on the major veins, pilose, arachnoid on the major veins, veins palmate-pinnate, 8- to 12-veined from the base, with 1–3 secondary veins on the larger side of the leaf, 1 or 2 on the smaller side. *Inflorescences* 1–3 per stem, bisexual, axillary, erect, cymose, branching c.7 times, protandrous; peduncle 58–74 cm long, red, villous, bracts caducous, lanceolate to ovate, size unknown, white, drying brown, glabrous, apex acute to obtuse, margin entire. *Staminate flowers*: pedicel to 5 mm long, glabrous to sparsely villous; tepals 4, spreading, outer 2 ovate, 9–10 × 8–9 mm, apex acute to obtuse, base subcordate, margin entire, white, microscopically pubescent, inner 2 narrowly lanceolate to narrowly elliptic, 4–5 × 1–3 mm, apex acute, base obtuse, margin entire, white, glabrous; stamens c.12, projecting, yellow, filaments c.1 mm long, free, anthers elliptic, c.2 mm long, dehiscing via lateral slits, connectives minutely extending, symmetrically basifixed. *Pistillate flowers*: pedicels to 9–12 mm long, microscopically pubescent to sparsely villous; bracteoles 2, caducous,

the largest spatulate to filiform, 2–3 × c.0.5 mm, apex acute, revolute, margin entire, the smallest corniculate, c.0.5 × 0.05 mm; tepals 5, subequal, caducous in fruit, spreading, narrowly ovate to ovate, 7–9 × (4–)5–6 mm, apex acute, base subcordate, margin entire, white, glabrous; ovary body ovoid, c.9 × c.10 mm (including the wings), white to pink, glabrous, unequally 3-winged, largest wing broadly semicircular, c.10 × 4–5 mm, white, glabrous, the smallest two wings semicircular, 7–8 × 1.5–2 mm, white, glabrous; 3-locular, placentae entire; styles 3, yellow, free, c.3 mm long, bifid to trifid, stigmatic papillae in a spirally twice-twisted band. *Fruiting pedicel* to 10–15 mm long, microscopically pubescent. *Fruit body* ovoid, 12–15 × c.15 mm (including the wings), drying brown, wings same shape as in ovary, the largest expanding to 14–c.6 mm, the smallest two expanding to 11–12 × c.3 mm, drying brown. Seeds oblong.

Proposed IUCN conservation category. *Begonia acetosa* Vell. is known only from a c.100 m stretch of the road from Paraty to Cunha, where it is found in a dense population on rocks in the shade of humid forest. We estimate that this population includes 250–500 individuals. This population is outside the area protected by the Parque Nacional da Serra da Bocaina. Google Earth imagery (Google Earth Pro, 2020, accessed May 2023) shows several small agricultural fields surrounded the population until 2001, but that these were largely abandoned and overgrown by 2010. Since this time, there has been a proliferation of houses and small hotels aimed at ecotourism between Paraty and Parque Nacional da Serra da Bocaina, including several developments within 50 m of the population. Given the species is known from only a single population, which is threatened by the development of ecotourism, we consider it Critically Endangered (CRB1B2ab(iii)) under IUCN Criteria (IUCN Standards and Petitions Committee 2024).

Notes. We lectotypify *Begonia acetosa* based on the original illustration in the Biblioteca Nacional do Rio de Janeiro, Brazil (**Figure 13A**). This plate shows a large species with short, upright stems and transversely ovate leaves, and with an inflorescence exceeding the leaves and bifurcating at least four times. Vellozo (1881) noted that his *Begonia acetosa* was collected close to Paraty, and that its leaves were several times larger than those of any other begonias in the area. The description and illustration of *Begonia acetosa* are an excellent match for two collections made by the authors in June 2023 and otherwise known from a single collection made in 2012. We designate a flowering and fruiting collection of this species as the epitype (**Figure 13B**).

We note that our treatment of *Begonia acetosa* Vell. is at odds with all treatments of the name since its original publication. Walpers (1843) treated the name as accepted, but it was treated as a dubious name by de Candolle (1861). The name *Begonia acetosa* has also been misapplied to plants grown as *B. cantareira* hort. *nom. nud.* (Carrell, 1951, 1952). An amended description of *Begonia acetosa* was provided by Golding (1989) based on such plants, although these have thickened, contorted rhizomes rather than the 2 m tall

erect stems illustrated and described by Vellozo (1831, 1881). *Begonia cantareira* was later identified as a synonym of *B. itaguassuensis* Brade (Kollmann, 2023). To further clarify the application of the name *Begonia acetosa*, we provide an emended description and also a provisional IUCN Red List assessment of this species.

Selected specimens examined. Brazil. **Rio de Janeiro State**. **Paraty Municipality**: Estrada Paraty-Cunha, 23°12.613'S, 44°47.964'W, c.400 m, 15 viii 2012, *E.L. Jacques, H. Lorenzi et al.* 1849 (RBR); Estrada Paraty-Cunha, 23°12'35"S, 44°47'56"W, 282 m, 23 vi 2023, *E.L. Jacques & P.W. Moonlight* 2097 (RB, RBR [RBR00058602], TCD).

Begonia angulata Vell., Fl. Flumin. Icon. 10: 52 (1831). – Type: [icon ined.] "Monoec. Polyand. BEGONIA angulata, Tab. 52" (lectotype Manuscript Sect., Bibliot. Nac., Rio de Janeiro mss1198659_056, designated here). – Brazil, Parque Estadual Serra do Mar, núcleo Cunha-Indaiá, trilha para as nascentes do rio Bonito, [23°14'S, 45°1'W], 1100 m, 25 iii 2000, *R. Mello-Silva, M.C. Assis & M.A. Farinaccio* 1801 (epitype SPF [SPF140780], designated here). **Figures 12C, 14.**

Figure 14. *Begonia angulata* Vell. A, Lectotype illustration, Manuscript mss1198659_056 in the National Library of Brazil; B, epitype, *Mello-Silva* et al. 1801 (SPF [SPF140780]).

Notes. We lectotypify *Begonia angulata* Vell. based on the original illustration in the Biblioteca Nacional do Rio de Janeiro, Brazil (**Figure 14A**). The plate shows an upright species with persistent stipules, asymmetrical leaves with palmate-pinnate venation and short, triangular lobes toward the base, and serrate or serrulate margins. The inflorescences displayed are large with around 30 flowers or fruits, the staminate flowers have four tepals, the pistillate flowers have five tepals, and the fruits have asymmetrical wings, with one significantly larger than the rest. Vellozo's description clarifies that the species was collected alongside rivers in Paraty, and the species is c.2 m tall (Vellozo, 1881).

The description of the lectotype plate provided here could apply to either *Begonia pulchella* Raddi or the species currently known by *B. angulata*. *Begonia pulchella*, however, differs from both the lectotype plate and the current concept of *B. angulata* in its much broader and longer stipules, its relatively long leaves, and its triangular fruit wings. As such, we agree that the type illustration of *Begonia angulata* falls within the current circumscription of the species. Accordingly, we designate *R. Mello Silva* 1801 (SPF [SPF140780]) as the epitype of *Begonia angulata* (**Figure 14B**), as this is a high-quality specimen collected in Cunha Municipality.

Selected specimen examined. Brazil. **São Paulo State**. **Cunha Municipality**: Estrada em direçóão a trilha do rio Bonito, 23°15'20"S, 45°2'30"W, 14 xii 1996, *J.P. Souza, V.C. Souza, R.R. Rodrigues, J.Y. Tamashiro & N.M. Ivanauskas* 884 (ESA [ESA035694], UEC [UEC053658]).

Begonia rotunda Vell. ex Walp., Repert. Bot. Syst. 2: 216 (1843). – Type: Tab. 38 [lectotype '*Begonia rotunda*', designated here], Fl. Flumin. Icon. 10 (1831). – Brazil, Rio de Janeiro State, Paraty Muncipality, Estrada Paraty-Cunha, 23°12'12"S, 44°49'40"W, 22 vi 2023, *E.L. Jacques & P.W. Moonlight* 2115 (epitype RBR [RBR00058620], designated here; isoepitypes RB, TCD). **Figures 12D, 15.**

Begonia rotunda Vell., Fl. Flumin. Icon. 10: 38 (1831), *nom. nud.*

Begonia vellozoana Brade, Arq. Jard. Bot. Rio de Janeiro 8: 233 (1948), *nom. illeg.* [later homonym], non Walp. (1843). – *Begonia olsoniae* L.B.Sm. & B.G.Schub., Phytologia 12: 250 (1965). – Type: Brazil, Rio de Janeiro State, Serra do Itatiaia, [22°27'S, 44°36'W], 800 m, 20 ii 1936, *A.C. Brade* 15048 (holotype RB [00536749]; isotypes B [B100243092], K [K000820674], RB [2: 00536749, 00536735], SP [SP000359]), **syn. nov.**

Notes. We lectotypify *Begonia rotunda* Vell. ex Walp. based on the published plate in Vellozo's *FF* (**Figure 15A**, Vellozo, 1831). This plate shows a plant with a thickened, likely rhizomatous rootstock with persistent stipules and broadly ovate leaves with an overlapping cordate base clustered towards the apex of the rhizome. No flowers or fruits are present on the illustration. This is a good match for Walper's description (Walpers, 1843), but Vellozo's description further clarifies that the leaves were shining green above, purple below, and that the stipules were white. The plate and description are a good match for the current circumscription of *Begonia olsoniae* L.B.Sm. & B.G.Schub.

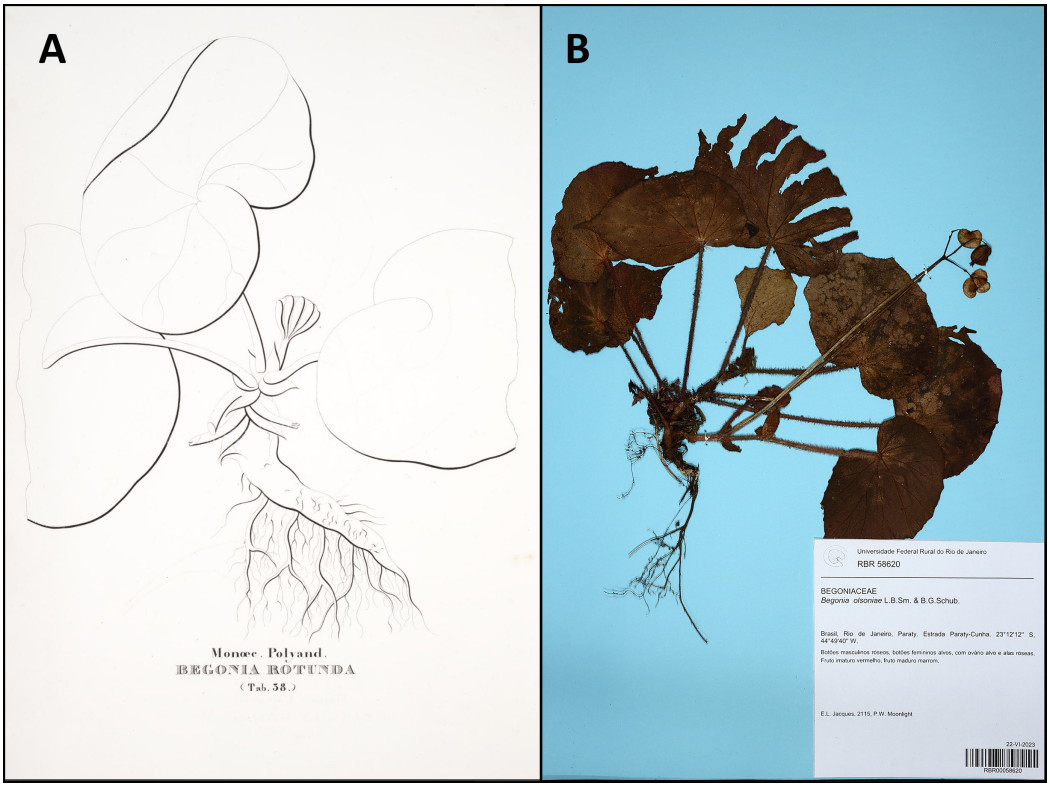

Figure 15. *Begonia rotunda* Vell. ex Walp. A, Lectotype illustration, Tab. 38 [‘*Begonia rotunda*’], Fl. Flumin. Icon. 10, 1831; B, epitype, *Jacques & Moonlight* 2115 (RBR [RBR00058620]).

Begonia olsoniae as currently circumscribed forms a complex, with three centres of distribution. The type collection was made in Serra da Itatiaia on the borders of Rio de Janeiro, São Paulo, and Minas Gerais States. It has also been collected in Serra dos Orgãos (the Organ Mountains) in Rio de Janeiro State, and in the coastal Mata Atlântica from Ubatuba Municipality, São Paulo State, to Angra dos Reis Municipality, Rio de Janeiro State. Across its range, the species differs markedly in its indumentum, the colouration of the leaves, and the size of its flowers, such that it may in the future be considered multiple species. Our treatment here is primarily nomenclatural in nature, so we refrain from making any changes to the current circumscription of *Begonia olsoniae*. Accordingly, we synonymise *Begonia olsoniae* with *Begonia rotunda*, which now refers to the entire complex. We designate *Marquete* et al. 927 (RB [00053569]) as the epitype of this name (**Figure 15B**). This is the only specimen of this concept from Paraty Municipality that has both flowers and fruits and is a good match for Vellozo’s illustration in terms of its indumentum.

Selected specimens examined. Brazil. **Rio de Janeiro State**. **Paraty Municipality**: Estrada Paraty-Cunha, entre km 14 e 15, na estrada, encosta na pedra, [23°12'S, 44°50'W], 16 iii 1989, *A.L. Almeida* et al. 13 (RB [00053388]); Estrada Paraty-Cunha, Estrada do Carrisquino, 23°12'29"S, 44°49'21"W, 686 m, 22 vi 2023, *E.L. Jacques & P.W. Moonlight* 2104 (RBR [RBR00058609]); Estrada Paraty-Cunha, 592 m, 23°12'30"S, 44°49'11"W, *E.L. Jacques & P.W. Moonlight* 2094 (RBR [RBR00058599]); Passando a ponte, entre a direita (sentido RJ/SP) a c.13 km do Trevo de Paraty, [23°17'S, 44°37'W], 380–440 m, 29 vi 1993, *T. Konno, R. Marquete, M.C. Marques, R.C.C. Reis, J. Caruzo & J.C. Silva* 173 (RB [00053629]); ibid., *T. Konno, R. Marquete, M.C. Marques, R.C.C. Reis, J. Caruzo & J.C. Silva* 174 (RB [00053465]); Morro do Carrapato, atrás do Sítio da D. Nadir, acesso pela Rio-Santos, [23°18'S, 44°36'W], 155 m, 17 iii 1993, *E.A. Filho, M.C. Marques, M. Valle & J. Caruso* 140 (RB [00053674]); Mata do lado direto da trilha para Praia de Martim de Sá, [23°18'S, 44°33'W], 10 xi 1990, *R. Marquete, D.P. Costa, L.C. Giordano & A.L. Toscano* 264 (RB [00053551]); Parati-Mirim, c.4.2 km da estrada Rio/Santos, [23°18'S, 44°42'W], 25 ix 1991, *R. Marquete et al.* 380 (IBGE [IBGE00029388], RB [00053506]); Morro da Pedra Rolada, 140 m, [23°18'S, 44°47'W], 8 iii 1994, *A.P.S. Ribeiro, R. Marquete, M.C. Marques, S.B. Costa, M.D. Campos* et al. 5 (RB [00053613]); Subida para o Morro do Corisco, [23°18'S, 44°47'W], 800 m, 13 v 1991, *L. Sylvestre, D.P. Costa, J.C. Gomes & A.S. Mesquita* 558 (RB [00053532]); ibid., *L. Sylvestre, D.P. Costa, J.C. Gomes & A.S. Mesquita* 560 (RB [00053520]); Ponta Negra, trilha para o Pico do Cairuçu, 300 m, [23°19'S, 44°37'W], 15 iii 2006, *M.G. Boivini, J.F. Baumgrautz, L.C. Giordano & M. Vignoli* 2547 (RB [00371309], RBR [RBR00026972]); Trilha para o Morro do Cuscuzeiro, proxima a divisa RJ/SP, [23°19'S, 44°37'W], 690 m, 28 iii 1995, *L.C. Guirdano, M.G. Boivini, J.R. Miguel & J.C. Silva* 1844 (RB [00053658]); Corisquinho, c.500 m, [23°20'S, 44°37'W], *M.G. Boivini, M.C.M. Marques, R. Marquete* et al. 827 (RB [00053443]); Margem do rio Coriosco, c.440 m, [23°20'S, 44°37'W], 22 viii 1995, *M.G. Boivini, L.C. Giordano, A. Castellar, J.Q. Melo & M. Bonche* 865 (RB [00053831]); Laranjeiras, caminho para a Praia do Sono, Fazenda Santa Marta, c.100 m, [23°20'S, 44°40'W], 4 vii 1992, *L.C. Giordano, E.F. Guimarães, J. Caruso & J.C. Silva* 1381 (RB [00053323]); Próximo a divisa de Cunha, estrada Paraty-Cunha, [23°21'S, 44°45'W], 1100 m, 19 vi 1978, *G. Martinelli* 4651 (RB [00053397]); c.22 km do trevo de Paraty, entrada a direita da Rio/Santos, subindo o Córrego dos Micos, [23°21'S, 44°45'W], c.100 m, 28 iv 1993, *R. Marquete, N. Marquete, F. Silva, M.C. Valente, Abreu & J. Caruso* 927 (RB [00053569]).

Begonia dimidiata Vell. ex Walp. Repert. Bot. Syst. 2: 216 (1843). – Type: Tab. 46 [lectotype '*Begonia dimidiata*', designated here], Fl. Flumin. Icon. 10 (1831). – Brazil, Rio de Janeiro State: Paraty Municipality, Fazenda São Roque, [23°4'S, 44°42'W], 29 xi 1988, *L.C. Giodano, R. Marquete, N. Marquete, F. da Silva & M.C. Valente* 506 (epitype RB [0053991], designated here). **Figures 16, 20A.**

Begonia dimidiata Vell., Fl. Flumin. Icon. 10: 46 (1831), *nom. nud.*

Begonia hookeriana Gardner, London J. Bot. 4: 135 (1845). – Type: Brazil, [Rio de Janeiro State] Organ Mountains, iv 1837, *G. Gardner* 606 (lectotype K [K000536651], designated here; isolectotypes: BM, G, K [K000536652]), **syn. nov.**

Riessia ferruginea Klotzsch, Ber. Bekanntm. Verh. Konigl. Presuss. Akad. Wiss. Berlin. 124 (1854), *nom. nud.*

Steineria ferruginea Klotzsch, Abh. Kon. Akad. WIss. Berlin 1854: 185 (1855). – Type: Brazil, *F. Sellow* 2183 c 2180 (lectotype B [B101195568], designated here; isolectotype B

Figure 16. *Begonia dimidiata* Vell. ex Walp. A, Lectotype illustration, Tab. 38 ['*Begonia dimidiata*'], Fl. Flumin. Icon. 10, 1831; B, epitype, *Giodano* et al. 506 (RB [0053991]).

[B101195583]); syntype: Brazil, *F. Sellow* 2183 (syntypes B [5: B101195478, B101195493, B101195508, B101195523, B101195538]), **syn. nov.**

Notes. We lectotypify *Begonia dimidiata* Vell. ex Walp. based on the published plate in Vellozo's *FF* (**Figure 16A**, Vellozo, 1831). This plate shows an upright species with deciduous stipules and oblong to falcate leaves with pinnate secondary venation and almost reticulate tertiary venation and an old inflorescence lacking flowers or fruits. Vellozo (1881) clarified that this species was encountered within Paraty Municipality. Of the species found in this area, it is an unambiguous match for the current concept of *Begonia hookeriana* Gardner. Accordingly, we synonymise *Begonia hookeriana* with *B. dimidiata* and designate *Giodana* et al. 506 (RB [0053991]) as the epitype of *B. dimidiata* (**Figure 16B**).

Our current treatment of *Begonia dimidiata* is at odds with previous treatments of the name. It was treated as a synonym of *Begonia arborescens* var. *arborescens* by de Candolle (1861, 1864), and later authors have followed these treatments. *Begonia arborescens* is superficially similar to *B. hookeriana* but is not found in Paraty Muncipality. It is known only

from the Serra dos Órgãos around Petrópolis and Teresópolis and Corcovado in Rio de Janeiro City. Further, *Begonia arborescens* lacks the reticulate venation shown on the type illustration of *B. dimidiata*.

During the preparation of the present treatment, it became clear that lectotypes were required for *Begonia hookeriana* and *Steineria ferruginea*. *Begonia hookeriana* was described based on specimens of plants flowering in February at c.3000 ft in the Organ Mountains. We have been unable to locate any specimens that are a perfect match for this description, but the sheet *G. Gardner* 606 (K [K000536651]) was collected in the correct locality, and an unknown author has written the protologue citation of *Begonia hookeriana* on the label. We designate *Gardner* 606 (K [K000536651]) as the lectotype of *B. hookeriana*.

Steineria ferruginea was described based on collections made by von Sellow in Brazil. There are seven sheets in Berlin herbarium that are annotated as *S. ferruginea* by Klotzsch, five numbered as "*2183*" and two numbered as "*2183 c 2180*". We designate *F. Sellow* 2183 c 2180 (B [B101195568]) as the lectotype, because it is the highest quality flowering specimen.

Selected specimens examined. Brazil. **Rio de Janeiro State**. **Paraty Municipality**: Estrada de Angra dos Reis-Paraty, [23°3'S, 44°39'W], c.10 m, 30 iii 1974, *D. Sucre, R. Burle Marx & L.C. Araujo* 10687 (RB [00054111]); Fazenda Taquari, [23°3'S, 44°41'W], 28 ix 1989, *M.F. Freitas & L.C.S. Silva* 140 (RB [00053888]); Fazenda São Roque, [23°4'S, 44°42'W], c.250 m, 2 viii 1988, *E.L. Jacques, M.C.M. Marques, A.L. Almeida, J. Caruso, P.R. Rocha & Pedro* 19 (RB [00054089]); ibid., c.150 m, 4 viii 1988, *E.L. Jacques* et al. 30 (RB [00054056]); Estrada Paraty-Cunha, Estrada do Carrasquino, 23°12'20"S, 44°47'35"W, 592 m, 22 vi 2023, *E.L. Jacques & P.W. Moonlight* 2095 (RBR [RBR00058600]); Morro da Pedra Rolada, [23°18'S, 44°42'W], 180–200 m, 8 iii 1994, *A.P.S. Ribeiro, R. Marquete, M.C.M. Marques, S.B. Costa, M.D. Campos* et al. 7 (RB [00053932]); Camino à cachoeira do Véu da Novia, Próximo do rio, 23°18'55"S, 44°45'45"W, 224 m, 24 vi 2023, *E.L. Jacques & P.W. Moonlight* 2120 (RBR [RBR00058625]); Patrimônio, final da estrada para a comunidade indígena, 23°18'S, 44°45'W, c.170 m, 19 xii 2007, *L.C. Giordana, J.F.A. Baumgratz, M.G. Boivini & L.A.F. dos Santos Filho* (RB [00681541]); Trilha para o Morro do Corisquinho, [23°19'S, 44°36'W], 580 m, 27 vi 1995, *M.D. Campos* et al. 35 (RB [00053918]); Floresta de encota, praia das Larenjeiras, 23°19'42"S, 44°39'25"W, 15 xi 1993, *M.R. Barbosa* et al. 29152 (UEC [UEC005854]); Estrada aberta pela prefeitura do Condomínio Laranjeiras para Pria do Sono, [23°20'S, 44°38'W, 8 xii 1993, *A.C.B. Remón, R. Marquete, M.C. Marques, J. Konz* 8 (RB [00053902]).

Begonia herbacea Vell. ex Walp., ex Walp., Repert. Bot. Syst. 2: 216 (1843). – Type: Tab. 53 [lectotype '*Begonia herbacea*', designated here], Fl. Flumin. Icon. 10 (1831). – Brazil, São Paulo State, Cunha Municipality, Parque Estadual Serra do Mar, Núcleo Cunha, 23°15'20"S, 45°2'30"W, 14 xii 1996, *A.P. Bertoncini, F.R. Dário, R.F. Lopes, R.R. Rodrigues, V.C. Souza, J.Y. Tamashiro, N.M. Ivanauskas & J.P. Souza* 776 (epitype ESA [ESA034185], designated here; isoepitypes SPF [SPF121993], UEC [UEC041842]). **Figures 17, 20B.**

Begonia herbacea Vell., Fl. Flumin. Icon. 10: 53 (1831), *nom. nud.*

Figure 17. *Begonia herbacea* Vell. ex Walp. A, Lectotype illustration, Tab. 53 [‘*Begonia herbacea*’], Fl. Flumin. Icon. 10, 1831; B, epitype, *Bertoncini* et al. 776 (ESA [ESA034185]).

Notes. We lectotypify *Begonia herbacea* Vell. ex Walp. based on the published figure in the *FF* (**Figure 17A**, Vellozo, 1831). The figure shows a species with a thickened, probably rhizomatous rootstock, pinnately nerved leaves with elongated, narrowly oblanceolate laminae, and few-flowered inflorescences. Walpers’ validating description (Walpers, 1843) is a good match for the published figure. Vellozo’s published description provides no further details, but his habitat description “*habitat campis apricis mediterraneis*” (Vellozo, 1881) implies the species was collected in Cunha Municipality, São Paulo State (Pastore *et al.*, 2021). The published plate is an excellent match for the current concept of *Begonia herbacea*, which has been commonly collected in Cunha Municipality. We designate *Bertoncini* et al. 776 (ESA [ESA034185]) as the epitype of *B. lanceolata*, an excellent-quality specimen from Cunha Municipality (**Figure 17B**).

Selected specimens examined. Brazil. **Rio de Janeiro State**. **Paraty Municipality**: APA-Cairuçu, Trilha para a Pedra Rolada, [23°17'S, 44°41'W], c.300 m, 28 vi 1995, *M.G. Boivini, M.C.M. Marques, R. Marquete* et al. 837 (RB [00053813]); APA-Cairuçu, Mata na trilha para a praia da Mantiha de la tem direção

ao Cairuçu na APA-Cairuçu, [23°17'S, 44°41'W], 10 xi 1990, *R. Marquete* et al. 270 (RB [00053834]); APA-Cairuçu, Descendo o Morro da Pedra Rolada-Córrego dos Micos, [23°17'S, 44°41'W], 260 m, 19 x 1993, *B.A. Moreira, T. Konno, M.C.M. Marques & R. Marquete* 17 (RB [00053887]); Camino à cachoeira do Véu da Novia, Planta sobre árvore caída, 23°18'55"S, 44°45'47"W, 229 m, 24 vi 2023, *E.L. Jacques & P.W. Moonlight* 2121 (RBR [RBR00058626]); Subida para o Morra da Pedra solada, 23°18'50"S, 44°44'30"W, 148 m, 8 vi 2006, *M.M. Silva-Castro, T.S. Nunes, C. Azevedo & B. Marques* 1015 (HUEFS [HUEFS000029551]); APA-Cairuçu, Reserva Ecológica de Juatinga, caminho novo para a praia do sono, [23°19'S, 44°39'W], 4 xii 1995, *J.Q. de Melo* et al. 54 (RB [00052913]); APA-Cairuçu, Trilha para a praia Brava, [23°20'S, 44°42'W], 23 xi 1994, *M.G. Bovini, L.C. Giordano & I. Fernandes* 612 (RB [00053797]); a c.18 km do Trevo de Paraty até a entrada de Laranjeiras, mais 9 km em direçao a Faz. do Sr. Gibrail, [23°20'S, 44°43'W], 70–290 m, 30 vi 1993, *T. Konno, R. Marquete, M.C. Marques, R.C.C. Reis, J. Caruzo & J.C. Silva* 198 (RB [00052893]); Estrada para Laranjeiras, antes da bifurcação para Trindade lado esquerdo, [23°20'S, 44°43'W], 27 xi 1991, *R. Marquete* et al. 393 (RB [00052902]); Ponta de Trindade, [23°21'S, 44°43'W], 13 iv 1978, 100–150 m, *H.C.d. Lima* 353 (RB [00053868]); ibid., 13 iv 1978, *G. Martinelli* et al. 4196 (RB [00053856]). **São Paulo State**. **Cunha Municipality**: Parque Estadual Serra do Mar, Núcleo Cunha, 23°15'20"S, 45°2'30"W,, 12 xii 1996, *J.P. Souza, V.C. Souza, R.R. Rodrigues, J.Y. Yamashiro & N.M. Ivanauskas* 777 (ESA [ESA34593]).

Begonia convolvulacea (Klotzsch) A.DC., Fl. Bras. 4 (1): 367 (1861). – *Wageneria convolvulacea* Klotzsch, Abh. Kon. Akad. WIss. Berlin 1854: 236 (1855). – Type: Brazil, *F. Sellow* c.2186 (lectotype B [B100242153, F #20837], designated here). **Figures 18, 20C.**

Begonia geniculata Vell., Fl. Flumin. Icon. 10: 51 (1831), *nom. illeg.* [later homonym], non Jack (1822). – Type: [icon ined.] "Monoec. Polyand. BEGONIA geniculata, Tab. 51" (lectotype Manuscript Sect., Bibliot. Nac., Rio de Janeiro mss1198659_055, designated here). – Brazil, Rio de Janeiro State, Paraty Municipality, Fazenda São Roque, [23°4'S, 44°42'W], 4 viii 1988, *E.L. Jacques, M.C.M. Marques, A.A. Almeida, J.C. Gomes, P.R. Rocha & Pedro* 34 RB [epitype 00052540, designated here]).

Notes. We lectotypify *Begonia geniculata* Vell. based on the original illustration in the Biblioteca Nacional do Rio de Janeiro, Brazil (**Figure 18A**). This plate shows a species with persistent stipules, broadly ovate leaves with palmate venation, and inflorescences branching c.7 times. This illustration is an excellent match for the current circumscription of *Begonia convolvulacea* (Klotzsch) A.DC., which is consistent with past treatments of the name. *Begonia geniculata* was first treated as a synonym of *B. convolvulacea* by de Candolle (1861) and this synonymy has been followed by most previous authors (e.g. Jacques, 2024) with few exceptions (e.g. Smith & Smith, 1971). Accordingly, we designate *Jacques* et al. 34 (RB [00052540]) as the epitype of *Begonia geniculata* (**Figure 18B**), which is an excellent flowering specimen from Paraty Municipality. We note that *Begonia geniculata* is an older name than both *B. convolulacea* and its basionym, but it remains a synonym because it is an older name than *B. geniculata* Jack (Jack, 1822).

During the present treatment, it became apparent that a lectotype was required for *Wageneria convolvulacea* Klotzsch. This name was published based on specimens

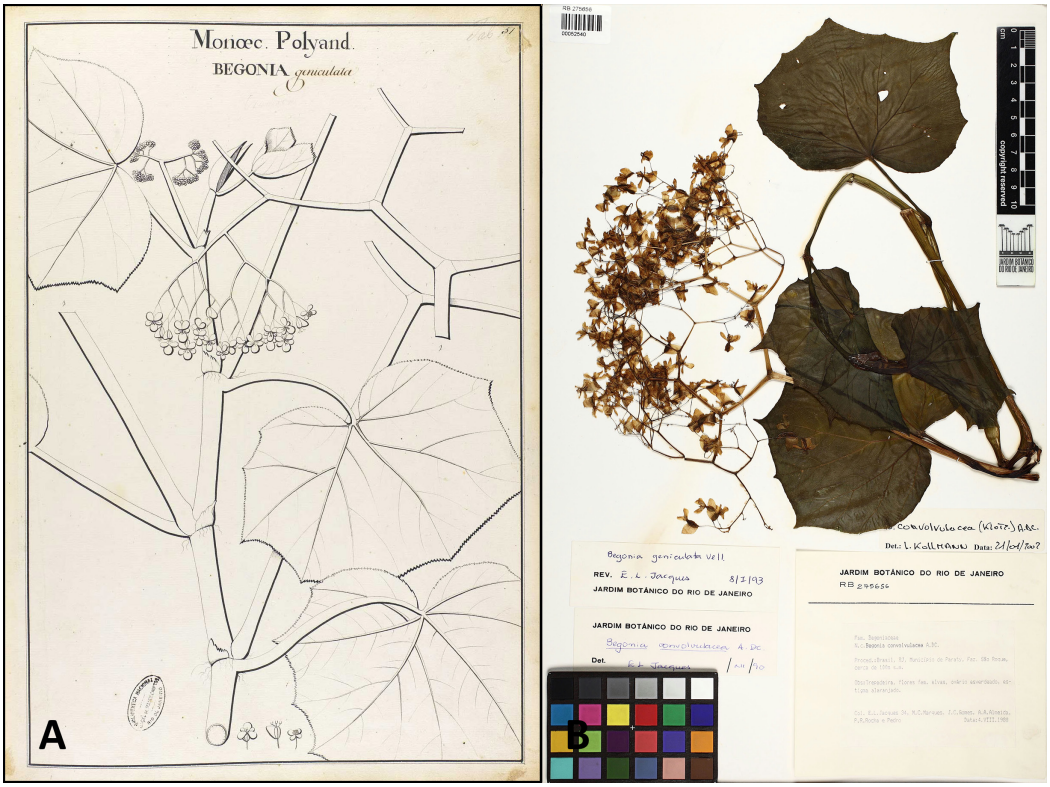

Figure 18. *Begonia convolvulacea* (Klotzsch) A.DC. A, Lectotype illustration of *Begonia geniculata* Vell., Manuscript mss1198659_055 in the National Library of Brazil; B, epitype, *Jacques* et al. 34 (RB [00052540]).

collected by Sellow in Guidawald, Mandioca, and Paraíba, Brazil. We know of at least 19 sheets collected by Sellow in Brazil but the localities of all are either “Brasilia” or another locality elsewhere in Brazil. We designate a sheet in B (B100242153) as the lectotype of *Wageneria convolvulacea*, because it is an excellent specimen and does not have a locality conflicting with the protologue. Further, black-and-white photographs of this sheet and part of a second sheet (B100242158) were taken in the 1940s and have been distributed to several herbaria (F#28037), so this sheet may have been treated as a de facto type since then.

Selected specimens examined. Brazil. **Rio de Janeiro State**. **Paraty Municipality**: Estrada para o Toco do Ouro, [23°14'S, 44°49'W], c.100 m, 3 viii 1988, *E.L. Jacques, M.C.M. Marques, A.A. Almeida, J.C. Gomes, P.R. Rocha & Pedro* 24 (RB [00052530]); Trilha a esquerda do Rio dos Meros, [23°15'S, 44°42'W], 3 viii 1994, *R. Marquete* 1904 (RB [00052484]); Local Estrada do Rio dos Meros, [23°15'S, 44°42'W], 60 m, 3 viii 1994, *A.P.S. Riberao* et al. 25 (RB [00052298]); Trilha para o Rio Corisquinho, [23°19'S, 44°36'W], 215 m, 4 viii 1994, *T. Barbará* et al. 16 (RB [00052397]); APA-Cairuçu, Morro do Coriscquinho,

[23°19'S, 44°37'W], 280–520 m, 9 iii 1994, *C. Duarte* et al. 34 (RB [00052287]); ibid., 550 m, 13 v 1991, *L. Sylvestre, D.P. Costa, J.C. Gomes & A.C. Mesquita* 550 (RB [00052320]).

Begonia fruticosa (Klotzsch) A.DC., Fl. Bras. 4 (1): 377 (1861). – *Trendelenburgia fruticosa* Klotzsch, Abh. Kon. Akad. Wiss. Berlin. 1854: 172 (1855). – Type: Brazil, *F. Sellow* 2184 (lectotype B [B100244016] designated by Kollmann [2020: 92], isolectotypes B [B100244013, B100244015, B100244017, B100244018, B100244019 [F #20821], B100244020, B100244021]).

Begonia scandens Vell., Fl. Flumin. Icon. 10: 41 (1831), *nom. illeg*. [later homonym], non Swartz (1788). – *Begonia cerasiphylla* L.B.Sm. & Wassh., Phytologia 52: 446 (1983). – Type: [icon ined.] "Monoec. Polyand. BEGONIA scandens, Tab. 41" (lectotype Manuscript Sect., Bibliot. Nac., Rio de Janeiro mss1198659_045, designated here). – Brazil, Rio de Janeiro State, Paraty Municipality, APA-Cairuçu, Coriscão, [23°19'S, 44°37'W], *M.G. Boivini & L.C. Giordano* 640 (epitype RB [00052821], designated here), **syn. nov.** **Figures 19**, **20D**.

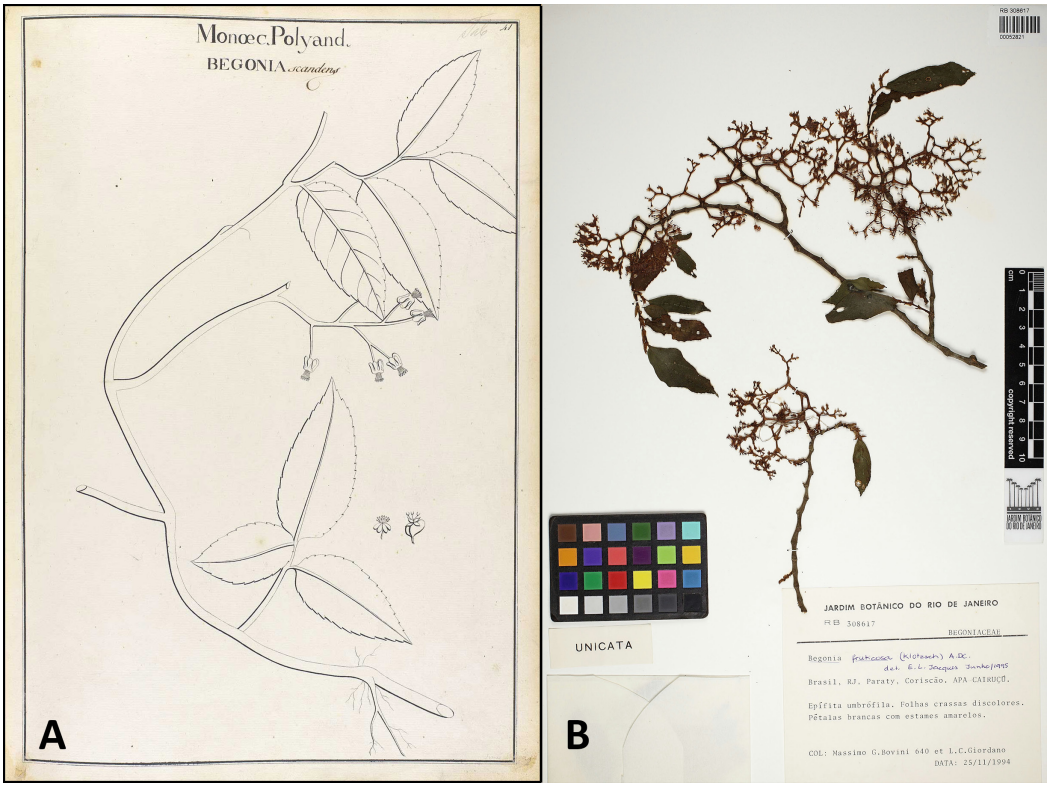

Figure 19. *Begonia fruticosa* (Klotzsch) A.DC. A, Lectotype illustration of *Begonia scandens* Vell., Manuscript mss1198659_045 in the National Library of Brazil; B, epitype, *Boivini & Giordano* 640 (RB [00052821]).

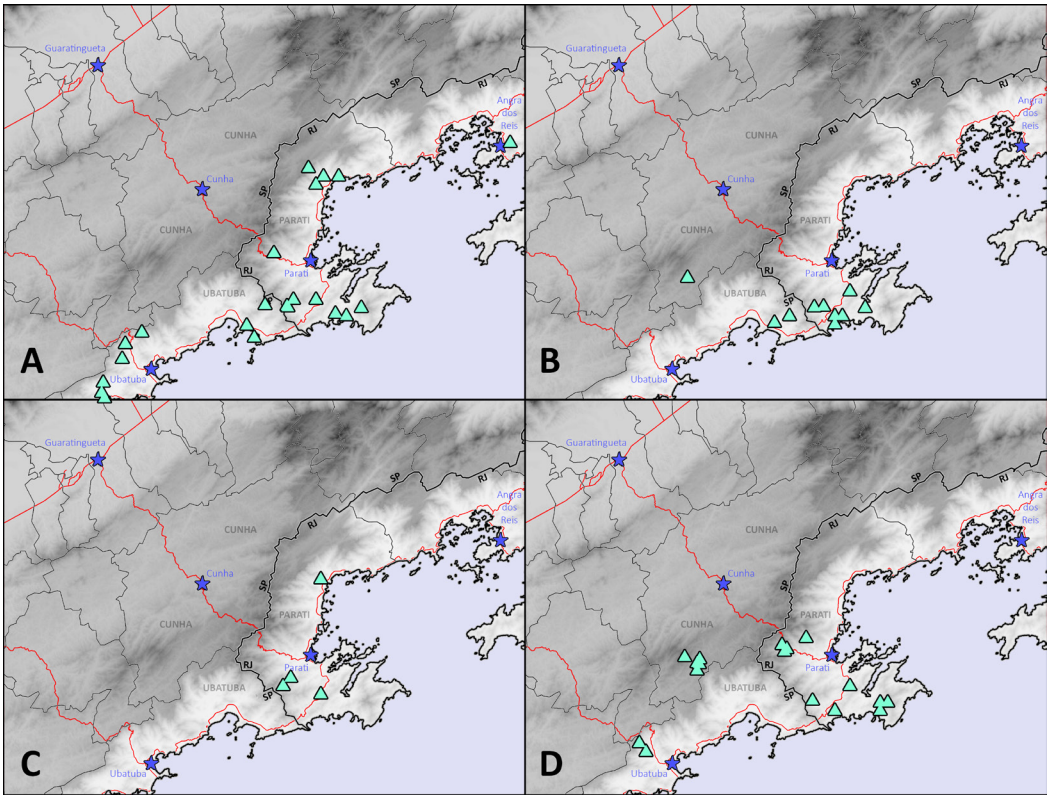

Figure 20. Distribution of *Begonia dimidiata* Vell. ex Walp. (A), *B. herbacea* Vell. ex Walp. (B), *B. convolvulacea* (Klotzsch) A.DC. (C) and *B. fruticosa* (Klotzsch) A.DC. (D) in Paraty Municipality, Rio de Janeiro State, and surrounding municipalities (triangles). Thick black lines indicate state borders; thin black lines, municipality borders; red lines, major roads; and blue stars, major settlements.

Notes. We lectotypify *Begonia scandens* Vell. based on the original illustration held in the Biblioteca Nacional do Rio de Janeiro, Brazil (**Figure 19A**). The plate shows an upright species with elliptic, pinnately nerved leaves with serrate margins, staminate flowers with four, reflexed tepals, and pistillate flowers with four tepals. The description in Vellozo (1881) is a good match for the illustration and also clarifies that the corolla of the staminate and pistillate flowers are red to white. The habitat description provided by Vellozo is usually vague, "*Habitat ad loca umbrosa collibus saxosis, qui mari eminent*", and this species may have been collected in Paraty Municipality or elsewhere. Irrespective, the type illustration and description of *Begonia scandens* are an excellent match for *B. fruticosa* (Klotzsch) A.DC., particularly in its highly unusual, reflexed tepals. The only inconsistency is that *Begonia fruticosa* has five tepals on the pistillate flower rather than four, but Vellozo's illustrations contain many such inaccuracies (Pastore, 2013). We epitypify *Begonia scandens* based on *Boivini* 640 (RB [00052821]; **Figure 19B**).

Selected specimens examined. Brazil. **Rio de Janeiro State**. **Paraty Municipality**: 15 km from praça da Paraty on road from Paraty to Cunha, [23°12'S, 44°50'W], 26 iv 1972, *J.H. Kirkbride Jr.* 1727 (US [00313801]); Estrada Paraty-Cunha, entre km 16 e 15, [23°12'S, 44°50'W], 16 iii 1989, *A.L. Almeida, B.C. Kurtz, J.C. Silva, L.C. Giordano & M. Nadruz* 11 (RB [00053851]); Estrada Paraty-Cunha, 23°12'29"S, 44°49'21"W, 686 m, 22 vi 2023, *E.L. Jacques & P.W. Moonlight* 2103 (RBR [RBR00058608]); APA-Cairuçu, Morro do Curralinho, margem de Rio, [23°17'S, 44°41'W], 20 xii 2007, *M.G. Boivini, L.C. Giordano, J.F. Baumgratz & Luiz* 2714 (RB [00542232]); Parque Nacional da Serra da Bocaina, estrada da cachoeira das sete quedas, 23°11'9"S, 44°46'48"W, 28 xi 1994, *M.G.Bovini, J.F. Maumgratz, T. Meneguzzo & M.S. Wängler* 4058 (NY [NY03066065]; RB [01003976]); Próximo à cachoeira do Véu da Novia, 23°18'46"S, 44°45'57"W, 333 m, 24 vi 2023, *E.L. Jacques & P.W. Moonlight* 2127 (RBR [RBR00058623]); APA-Cairuçu, Morro do Corisquinho, Trilha em direção ao Pico do Cuscuzeiro, [23°19'S, 44°36'W], 620 m, 7 xi 1995, *A.C.B. Remón, M.G. Boivini, D.P. Campos, M.C. Marques* et al. 34 (RB [R00052690]); APA-Cairuçu, Morro do Corisquinho, [23°19'S, 44°37'W], 200–300 m, *M.G. Boivini & L.C. Giordano* 626 (RB [00052447]); ibid., *M.G. Boivini & L.C. Giordano* 627 (RB [0052657]); ibid., 400–650 m, 7 xi 1995, *M.G. Boivini, M.C.M. Marques, A.C. Ramon, D. Campos, L.C. da Silva & Manoel* 912 (RB [00052672]); APA-Cairuçu, margem do rio Corisco, [23°20'S, 44°37'W], 440 m, 22 viii 1995, *M.G. Boivini, L.C. Giordano, A. Castellar, J.Q. Melo & M. Boruche* 869 (RB [00052700]); APA-Cairuçu, Laranjeiras, estrada à direita, tendo como origem a estrada que dá acesso à praia do sono, [23°20'S, 44°43'W], 18 x 1990, *V.L.G. Klein* et al. 965 (RB [00052683]). **São Paulo State**. **Cunha Municipality**: Parque Estadual da Serra do Mar, Núcleo Cunha, Trilha da Barra do Rio, 12 xii 1996, *J.P. Souza, V.C. Souza, R.R. Rodrigues, J.Y. Tamashiro, N.M. Ivanauskas* 796 (ESA [ESA035791]); Parque Estadual da Serra do Mar, Núcleo Cunha, Trilha do Cravvino, 23°13'28"–16'10"S, 45°2'53"-5'15"W, 1100 m, 21 iii 1996, *A. Rapini, C.B. Costa & M. Kirizawa* 108 (UEC [UEC053264]); Borda, 23°13'43"S, 45°0'53"W, 1099 m, 26 viii 2016, *A. Maruyama* 528 (HEPH [HEPH00008028]); Parque Estadual da Serra do Mar, trilha do Rio Bonito, próximo à Sede, 25°14.34'S, 45°0.95'W, 1075 m, 17 xi 2006, *E.J. Lucas, F.F. Mazine, N.A. Brummitt, C.P. Caliari, T.B. Flores, L.V.S. Jennings, R.P.M. Souza, V.C. Souza & M.T.G. Lima* 384 (ESA [ESA53384], K); ibid., *E.J. Lucas, F.F. Mazine, N.A. Brummitt, C.P. Caliari, T.B. Flores, L.V.S. Jennings, R.P.M. Souza, V.C. Souza & M.T.G. Lima* 385 (ESA [ESA53385], K); ibid., 19 viii 1994, *G.A.D.C. Franco & M.L. Kawazaki* 1275 (UEC [UEC053292], NY [NY03038509]).

Begonia limmingheiana É.Morren, Belgique Hort. XVI: 21 (1866). – *Begonia liminghii* C.Koch, *Orthographic Variant*, Wochenschr. Vereines Beförd. Gartenbaues Konigl. Preuss. Staaten, 10: 101 (1867). – *Begonia limminghi* Pynaert, *Orthographic Variant*, Rev. Hort. Belge Étrangère 1: 259 (1875). – Type: [lectotype icon., designated here] *Begonia limmingheiana*, Belgique Hort. XVI, pl. IV.

Begonia glaucophylla var. *scandens* Hort., P. Henderson Spring Catalogue [No. 24] of New, Rare and Beautiful Plants for 1872: 2 (1872), *nom. inval.*

Begonia glaucophylla var. *splendens* W. Robinson, The Garden 19: 166 (1881), *nom. inval.*

Begonia glaucophylla Hook.f., Bot. Mag. 118, t. 7219 (1892). – Lectotype, designated Jacques and Mamede (2005: 573): [icon.] *Begonia glaucophylla*, Bot. Mag. 118, t. 7219.

Begonia fritz-muelleri Brade, Bol. Mus. Nac. Rio de Janeiro 1: 12 (1944). – Holotype: Brazil, Santa Catarina State, Itajahy [Itajahí Municipality], *F. Muller* 101 (R [R000037054]).

Notes. In the present treatment, we demonstrate that the name *Begonia radicans* Vell. has been misapplied. The species concept previously known as *Begonia radicans* is widespread and common in coastal São Paulo, Paraná, and Santa Catarina States. It is also reported from Rio de Janeiro, Espírito Santo and Bahia States (Jacques, 2024), but all specimens we have thus far examined from either state fall under our current concept of *Begonia radicans* (i.e. the old concept of *B. solananthera*).

The oldest name that can be applied to the previous concept of *Begonia radicans* is *B. limmingheiana* É.Morren, so we reinstate this name from synonymy. This name lacks a type and no specimens were cited in the original publication, so we designate the excellent original plate in the protologue as the lectotype. We transfer all synonyms of the former concept of *Begonia radicans* into synonymy with *B. limmingheiana*.

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