The discovery, naming and typification of Bougainvillea spectabilis (Nyctaginaceae)

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The discovery, naming and typification of *Bougainvillea spectabilis (Nyctaginaceae)*

Abstract

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The bougainvillea *(Bougainvillea spectabilis)* was first collected by Philibert Commerson on the Bougainville expedition in Brazil, subsequently by members of the party accompanying Joseph Banks on Cook's first voyage around the globe and later by Frei Velloso. A copper engraving published by Lamarck formed the basis for Willdenow's publication of the name *Bougainvillea spectabilis,* which is here typified with an epitype in the Muséum National d'Histoire Naturelle, Paris. A selective synonymy is given and early records on the introduction of this ornamental climber in Europe are critically analysed.

Additional key words: bougainvillea, Bougainville expedition, Cook's first voyage, Willdenow, Frei Velloso, Jardin du Roi Paris, nomenclature, Brazil

1. Introduction

The bougainvillea, *Bougainvillea spectabilis* Willd., a native of Brazil reported to be found wild in all provinces of that large country (Forzza & al. 2010), is an extremely popular ornamental, cultivated and traded today on all five continents. This paper deals only with the first records by Europeans, the first herbarium collections and the subsequent naming of a plant that has become almost synonymous with tropical and subtropical gardens, as well as with the typification of the name. The recently published account on the discovery of this climber (Ridley 2010) involving Jeanne Baret, the first woman to circumnavigate the globe, is analysed and found to be largely speculative. In addition, early records on bringing the bougainvillea into cultivation in Europe are discussed and summarised. Since Carl Ludwig Willdenow played a major role in this story, it seems appropriate to publish this contribution in Willdenowia.

Unless otherwise indicated biographical information is taken from reference works, notably Stafleu & Cowan (1976, 1979, 1981, 1983, 1986, 1988), Stafleu & Mennega (1992–93, 1995, 1997–98, 2000), Dorr & Nicolson (2008–09) and Urban (1906).

2. Commerson & Baret

The first circumnavigation by ships flying French colours was undertaken by two vessels: the newly built frigate Boudeuse, with Nicolas-Pierre Duclos-Guyot as captain, and the older and more reliable tender Étoile, with François Chenard de la Giroundais as captain (e.g. Taillemite 1977). Since Louis-Antoine de Bougainville (1729–1811) was the commander on this voyage, the undertaking became known as the Bougainville expedition. It was the first ever to include a professional naturalist paid for by a sovereign, in this case Louis XV, King of France. Philibert Commerson (spelled also Commerçon) (1727–1773) got this commission and was accompanied by his servant and assistant Jeanne Baret (spelled also Barret or Baré) (1740–1807), dressed as a man and calling herself Jean Baret (e.g. Dunmore 2002; Ridley 2010). Both travelled on the Étoile (Taillemite 1977). We are well informed about the sequence of events which unfolded during the voyage, since no less than six participants of this expedition kept diaries or narratives, albeit fragmentary, all of which have been published in an exemplary manner (Taillemite 1977). Among those leaving behind accounts were Bougainville himself, who

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sailed on the Boudeuse, as well as Commerson and the surgeon François Vivès, who with Commerson sailed on the Étoile, for which no log is known to have survived.

The Étoile arrived on 13 June 1767 in Rio de Janeiro and left this harbour on 15 July 1767 (Taillemite 1977). Reception by the Portuguese authorities was unfriendly from the start and excursions outside the city limits were not permitted to officers and crew.

The oldest herbarium specimens of *Bougainvillea spectabilis* Willd. were collected during the brief stop of the Étoile in Rio de Janeiro. Two are kept in the General Herbarium of the Muséum National d'Histoire Naturelle in Paris (P 00169376, images in Monnier & al. 1993: 176 and Jolinon 2004: 79; P 00307018), and two in the Jussieu Herbarium conserved in the same institution (P-Juss.; IDC 6206, No. 316, second row, third and fourth specimen; here called specimen A and B; an image of part of the latter published in Monnier & al. 1993: 58). A fifth specimen is kept in the General Herbarium of the Institut de Botanique of Montpellier University (MPU 018937; P. Schäfer, pers. comm.). On three specimens, i.e. P 00169376, P-Juss. specimen A and MPU 018937, the note "itin. Perisphaer. N.° 192" has been added by an anonymous hand, possible later, whereas the name "Bug-invillaea" on all three seems to be in Commerson's hand.

The specimen P 00169376 carries the locality and collector information "E Brasilia. Rio de janeiro & locis vicinis. Julio. 1767 Commerson" [From Brazil. Rio de Janeiro and neighbouring places. July 1767], P-Juss. specimen A has a label difficult to decipher including the information "Rio janeiro. Julio. 1767 in nemorib. civi [?] vicinis" [Rio de Janeiro. July 1767 in woods near the city (?)]; both texts are in the hand of Commerson (cf. Taillemite 1977, 2: 429). This does not necessarily mean that the two specimens must also have been collected by Commerson. On the basis of indications in Vivès's narrative (published in Taillemite 1977) the hypothesis has been put forward that Commerson was probably too ill because of varicose ulcers or gangrene to do any collecting during his stay in Rio de Janeiro and that the plant material was actually gathered by Jeanne Baret (Ridley 2010). A somewhat different impression of his situation is given in Commerson's letter to his brother-in-law Frère François Beau of 7 September 1767 where he mentioned having enjoyed the tropical vegetation (Dunmore 2002).

The assertion that Commerson's assistant seems to have followed the doctrine of signatures and that "the coloured bracts of the bougainvillea signalled to Baret their ability to calm and restore angry skin, while the green and black fruiting seed pods at the center of each cluster of bracts seemed a tangible representation of the necrosis attendant on gangrene" (Ridley 2010) is regarded as highly speculative, since no hard evidence is available as to what Baret did or did not do. This also applies to the statement "Baret must have collected as many boughs of bougainvillea as she could possibly carry, since Commerson's suppurating leg was going to require daily dressing with a fresh poultice (made from both bracts and seeds) to draw the infection" (Ridley 2010); no seeds or fruits are found in the specimens and there is no reference to a medicinal use in the text of the labels. In fact, the new biography of Baret, from which these quotations have been taken, has been rightly stated to feel more like fiction than non-fiction (Knapp 2011). In addition, the reference to "green and black fruiting seed pods" (Ridley 2010) may not even refer to *Bougainvillea spectabilis* at all (S. Knapp, pers. comm.).

The specimen P 00169376 carries also the following text "Cum inter octandras plantas nullâ Hoc charactere signata compareat, Liceat nobis novo condito Generi novam imponere nomen & Quidem juclytum ab Illstr. Dno de Bougainville ..." [Since among the Octandria no plant with this character has been reported, we are allowed to give to the newly founded genus a new name and derive it from the most famous Mr de Bougainville ...]. This is repeated in P-Juss. specimen A with the note "Historia Nat. omnium & Bonarum atrium & scientiar. aestimatore ..." [someone who appreciates all fields of natural history, the arts and sciences] added; both labels on both specimens are in the hand of Commerson. An even more extensive text including a description of the plant in Commerson's hand though no locality information is given on the labels accompanying MPU 018937.

The term "novissima plantâ" [the latest or last plant] written in Commerson's hand on one of the labels accompanying specimen P 00169376 has been seen by Ridley (2010) in a theological context. In Christian eschatology "novissimae res" [the last things] stand for the four last things, death, judgement, heaven and hell, and "novissima planta" was regarded by Ridley (2010) as indicative of the naturalist's bad health; again this is regarded as an over-interpretation.

The members of the Bougainville expedition did not include an illustrator and consequently it is not surprising that no illustration of the specimens of *Bougainvillea* collected in Rio de Janiero is known to exist. The numerous plant illustrations prepared by Paul Philippe Sauguin de Jossigny and traditionally associated with Commerson, originate from the latter's stay in Mauritius, Reunion and notably Madagascar (Monnier & al. 1993), after he and Baret had broken off from the Bougainville expedition.

3. Banks, Parkinson & Solander

More than a year later, from 13 November to 7 December 1768, the famous bark Endeavour, with Lieutenant James Cook (1728–1779) as commander, anchored near the harbour of Rio de Janeiro. The reception by the Portuguese authorities can only be called hostile: the vessel had to remain in the straits, only the captain was given permission to visit the city, not the officers, crew and "gentlemen." These comprised the naturalist Joseph Banks (1742–1820) and his party totalling eight, among them

the naturalist and surgeon Daniel Solander (1733–1782) and the illustrator Sydney Parkinson (1745–1771), all paid for by Banks, not the sovereign, then George III, King of Great Britain and Ireland. Since three diaries have been preserved and published either on paper or online, i.e. those kept by Cook, Banks and Parkinson (South Seas 2012), we are well informed about the events that occurred while the vessel was anchored near the capital of the Portuguese colony of Brazil.

On 14 November 1768 Cook stated that no permission was given to "the Gentlemen to reside a shore [sic], not permit Mr Banks to go into the Country to gather plants" and this restriction was not waived later at any time during the stay of the Endeavour near Rio de Janiero. In violation of the orders given by the Portuguese authorities, members of Banks's party nevertheless ventured ashore with Parkinson noting "we frequently, unknown to the centinel [sic] [who kept an eye on the Endeavour] stole out of the cabin window at midnight, letting ourselves down into a boat by a rope; and, driving away with the tide till we were out of hearing, we then rowed to some unfrequented part of the shore, where we landed, and made excursions up into the country" (Parkinson 1773). This report is substantiated in the diary kept by Banks, the latter stating that he had sent his servants ashore on 22–24 November and that on both occasions they brought back many plants. Banks went ashore only once on 26 November 1768 and noted in his diary for this day that "the countrey [sic] where I saw it abounded with vast variety of plants and animals, mostly such as have not been described by our naturalists as so few had an opportunity of coming here; indeed no one that I know of even tolerably curious has been here since Marcgrave and Piso about the year 1640, so it [is] easy to guess the state in which the nat hist of such a countrey must be." The published version of the diary kept by Cook (Hawkesworth 1773) corroborates the description of the sequence of events outlined above.

Only a few specimens from these clandestine excursions survive in the herbarium of the Natural History Museum London, among them the bromeliads *Aechmea nudicaulis* (L.) Griseb., *Tillandsia geminiflora* Brongn. and *T. stricta* Sol. ex Sims (Diment & al. 1987), but no material of *Bougainvillea spectabilis*. Nevertheless material of this species must have been collected at this occasion in or near Rio since a finished watercolour prepared by Parkinson is in the Natural History Museum London, annotated "*Calyxis ternaria* Sydney Parkinson pinx 1768" by Parkinson and "Brasil" by Banks showing this very plant (Diment & al. 1987). This illustration has been published twice (Beaglehole 1962: t. 1; Edwards 1983: t. 57), the name *"C. ternaria"* appears also in Banks's diary under the heading "Plantae Brasilienses", with "Msc. Fig. pict" added, the "msc." referring to Solander's manuscript slip catalogue and Banks's manuscript catalogue (Diment & al. 1987); a description of *"C. ternaria"*, however, was never published.

Back in London, Banks had Parkinson's finished watercolour engraved by Gabriel Smith and at least one proof avant la lettre taken, subsequently annotated *"Calyxis ternaria"* (Diment & al. 1987). Surprisingly no further action took place and Banks's grandiose project of publishing Parkinson's plant illustrations from the Endeavour voyage, of which the *Bougainvillea spectabilis* watercolour formed just one, was discontinued (e.g. Blunt 1983). The reasons, among them the early death of Solander, are of no relevance here. Upon Banks's death Parkinson's annotated watercolour, the proof and the copper plate passed to Robert Brown (1773–1858), Banks's last librarian, later to the British Museum London, and from there to the Natural History Museum London, where all three items are kept today in the Library (Diment & al. 1987). As a consequence, Parkinson's illustration also remained unpublished, until 1984, when it appeared as a large format line engraving in colour, forming t. 355 (Fig. 1) of the sumptuous Banks' Florilegium (Banks 1980–87; Diment & al. 1987). In short, about two centuries passed after the copper plate had been prepared. Soon afterwards an illustration of t. 355 also appeared in press (Diment & al. 1987: t. B 24).

4. Jussieu and Lamarck

Whereas we know that the botanical material collected during the Endeavour voyage, including the finished and unfinished watercolours prepared by Parkinson, arrived in 1771 in London and were kept in Banks's London residence at 10 Soho Square until their transfer to the British Museum (e.g. Carter 1988), much less is known about the arrival of the botanical specimens gathered during the Bougainville expedition in Paris. They may have reached France with the crew of the Étoile or with the materials sent after the death of Commerson in Mauritius aboard the La Victoire to Lorient (Monnier & al. 1993). In any case, they were regarded as property of the King of France (Monnier & al. 1993); the herbarium was entrusted in 1776 to Antoine Laurent de Jussieu (1748–1836), already adjoint-botaniste at the Académie des Sciences (Bidal 1934), who two years later succeeded his uncle Bernard de Jussieu as sous-démonstrateur aux Écoles botaniques at the Jardin du Roi in Paris. Commerson's field notes and related materials were passed on to the former in 1784 (Bidal 1934).

Five years later Antoine Laurent de Jussieu published a description of Commerson's specimen from Rio de Janeiro annotated *"Buginvillaea"* in his famous "Genera plantarum" (Jussieu 1789). He used exactly the same spelling, attributed the name to Commerson and added "Caracter ex sicco Commers. specimine Brasiliano. Nomen à D. de Bougainville itineris Commersoniani duce" [characters given from Commerson's Brazilian specimen. The name from Mr. de Bougainville, the leader of Commerson's voyage]. The description is very detailed and contains a few words, which are also found on the

Fig. 1. *Bougainvillea spectabilis* Willd. – copper engraving in colour by G. Smith based on a watercolour by S. Parkinson, published as Banks' Florilegium: t. 355. 1984 (Banks 1980–87). – Berlin, Botanischer Garten und Botanisches Museum Berlin-Dahlem, Library.

label of P-Juss. specimen B, possibly in Antoine Laurent de Jussieu's hand. Duplicate material of Commerson's *Bougainvillea* specimens, among them P 00169376, must have been passed on to the Muséum National d'Histoire Naturelle, which effectively became the successor of the Cabinet du Roi, and more precisely to the General Herbarium of that institution founded in 1793. At least one duplicate specimen ended up at the Institut de Botanique of Montpellier University (see above). It is possible that further material was given by Antoine Laurent de Jussieu to his correspondents and colleagues, among them René Louiche Desfontaines (1750–1833) and Jean Baptiste Antoine Pierre Monnet de Lamarck (1744–1829).

Lamarck, professeur de zoologie des insectes, vers et animaux microscopiques at the Jardin du Roi in Paris since 1790, published the first illustration of *Bougainvillea speciosa*. It forms the upper part of a copper engraving based on drawings by Fossier and is included in Lamarck's "Tableau encyclopédique et methodique botanique" (Lamarck 1793: t. 293; see Fig. 2). Labelled *Buginvillaea,* it shows a branch of this climber (l), a group of three flowers with their bracts (h), a single flower with one bract (i), a flower (a) and various flower parts (b–g). The respective legend is to be found on p. 411 of the same work, where also a French description of "Buginvillée" and of "Buginvillée élégante" are given. A scientific name at species level, however, is not formed in that work (Lamarck 1793).

It is of interest to note that Lamarck gives "Octandrie, Monogynie" in the heading of both t. 293 and p. 411 clearly following Linnaeus's sexual system, whereas Antoine Laurent de Jussieu (1789) applies his revolutionary natural system and puts the genus together with *Boerhavia* L., *Mirabilis* L. and *Pisonia* L. in his newly formed "Nyctagines", thereby creating the family name *Nyctaginaceae* Juss.

Before 1805, Karl Friedrich Gaertner (1772–1850), a physician in Calw (Stafleu 1974), gained access to the private herbarium of Desfontaines, professeur de botanique at the Jardin du Roi since 1786, and had a drawing of a flower and a bract of *Bougainvillea spectabilis* prepared, which was published together with a description in the supplement to his father's "De fructibus et seminibus plantarum" (Gaertner 1805–07). Although small in size, this is the second printed illustration of this ornamental plant with many more soon to follow (see 8, below).

5. Raeuschel and Willdenow

Antoine Laurent de Jussieu validated the generic name *Bougainvillea* but did not provide a specific epithet. In 1797 this was done by Ernst Adolph Raeuschel (fl. 1772–1797), a physician based in Wittenberg, in the third edition of a "Nomenclatur botanicus" (Raeuschel 1797), but being accompanied only by the classical symbol for a perennial plant and since (1) neither a diagnosis or description nor a reference to a previously published diagnosis or description, nor (2) an illustration with analysis was provided, his "*Buginvillaea brasiliensis* Raeuschel" has to be regarded as not validly published.

Two years later, Carl Ludwig Willdenow (1765–1812), then full professor at the Collegium medico-chirurgicum in Berlin, published the name *Buginvillaea spectabilis* in the second volume of the fourth edition of Linnaeus's "Species Plantarum" (Willdenow 1799). He gave a direct reference to Lamarck's copper engraving, a detailed description and the note "Ansehnliche Buginvillaea. W. Habitat in Brasilia" followed by the classical symbol for a perennial plant. This protologue appeared in March 1799.

Willdenow's description clearly referred only to the printed illustration, because he neither notes "v. v." standing for vidi vivam [I saw it as living plant] nor "v. s." standing for vidi siccam [I saw it as herbarium specimen]. Two specimens kept in the folder *Bougainvillea spectabilis* in the Willdenow Herbarium (B-W 7332/1, B-W 7332/2) could not have been in Willdenow's possession prior to the publication of the name and are therefore not eligible as lectotypes. Both specimens are associated with the expedition undertaken by Alexander Freiherr von Humboldt (1769–1859) and Aimé Bonpland (1773–1858) in the years 1799 to 1804 to the Americas, both are annotated by Bonpland. B-W 7332/1 has the locality information Madrid and the collection number 173, B-W 7332/2 has only the collection number 3579. Humboldt and Bonpland arrived in Madrid in late February 1799 (e.g. Jahn & Lange 1973), and B-W 7332/1, probably collected in the Real Jardín Botánico in Madrid, could not have reached Willdenow in Berlin in time for inclusion in his great work, which appeared already in March 1799. According to the botanical field notes prepared by Humboldt and Bonpland (Lack 2004), B-W 7332/2 was collected in 1802 at "Guancabamba [Huancabamba, cf. Sandwith 1926] propé Colapi [Chontali ?, cf. Sandwith 1926]" in what is now Peru. In addition, neither of the two specimens represents *B. spectabilis.*

6. Wied

No attempt is made here to deal in detail with latter circumnavigations, for example the first circumnavigation flying Russian colours undertaken by the vessel Nadescha under captain Adam Johann Baron von Krusenstern, which stopped in the harbour of Rio de Janeiro, and subsequent expeditions directed specifically to Brazil. Considering that this city was the capital of the Portuguese colony, it is not surprising that several specimens of *Bougainvillea spectabilis* arrived in Europe, in particular from the famous expedition to Brazil connected with the marriage of Leopoldine, archduchess of Austria, to Pedro, crown prince of the kingdom of Portugal, Algarve and Brazil, later as Pedro I the first emperor of Brazil, who was the eldest surviving son of João VI, King of Portugal. The project started after the marriage had taken place in Rio de Janiero in 1817, stood under the auspices of Clem-

Fig. 2. *Bougainvillea spectabilis* Willd. – upper part of copper engraving based on a drawing by Fossier in Lamarck, Tableau encyclopédique et methodique botanique 2: t. 294. 1792. For legends see text. – Berlin, Botanischer Garten und Botanisches Museum Berlin-Dahlem, Library

ens Prince Metternich, then the central figure of European politics, and was directed by Karl Franz Anton von Schreibers (1775–1852), director of the institution later to become the Natural History Museum in Vienna. Herbarium specimens of *Bougainvillea spectabilis* collected by Karl Friedrich Philipp Martius (1794–1868), Johann Christian Mikan (1769–1844), Johann Emanuel Pohl (1782–1834), Heinrich Wilhelm Schott (1794–1865), and Josef Schücht (fl. 1819–1822), all members of this expedition, are reported to have survived (Heimerl 1900).

In this context one later expedition to Brazil merits special attention, that undertaken by Maximilian Prince zu Wied-Neuwied (1782–1867), who had travelled from 1815 to 1817 along the eastern coast from Rio de Janeiro to Salvador (Moraes 2009). His published travelogue (Wied-Neuwied 1820–21) contains the publication of the name *Bougainvillea brasiliensis,* which although embedded in the text contains descriptive information. The fact that the name is printed in italics seems to indicate that Wied indeed intended to create a new scientific name, which has to be regarded as validly and effectively published. Wied calls his new taxon "etwas stachlichten, über und über mit sanftem Roth prachtvoll gefärbten, buschichten Baum" [a somewhat spiny, bushy tree, copiously covered in gentle red] adding the more precise information "Es ist jedoch nicht die Blume, sondern die großen, dieselbe bedeckenden Bracteen, welche diesen schönen Anblick gewähren ["However, it is not the flower, but the large bracts covering them, which produce this beautiful aspect"]. No locality is given, but the text refers to his tour from Praya Grande [now incorporated by the city of Niterói] to Cabo Frio which took place from 5 August to 8 September 1815 (Moraes 2009). Material suitable for typification is kept in the National Botanic Garden of Belgium in Meise, in the Herbarium of Göttingen University, in the Royal Botanic Garden Melbourne and in Prince Wied's herbarium preserved in the archives of the princely family in Neuwied in Germany (Moraes 2009).

7. Velloso

Surprisingly no botanist based in Portugal or its colony Brazil seems to have studied the genus *Bougainvillea,* with the exception of Frei José Mariano da Conceição Velloso (1742–1811), a Franciscan, first living in the monastery of São Paulo and later in Rio de Janeiro, before he moved in 1790 to Lisbon. Very recently (from 11 October to 30 November 2011), Velloso was the subject of an exhibition in the Biblioteca Nacional de Portugal, Lisbon (introductory text with background information, see BNP 2011).

His "Florae Fluminensis, seu descriptionum plantarum praefectura fluminensi sponte nascentium liber" [Book of the flora of Rio de Janiero or of the descriptions of plants spontaneously growing in the province of Rio de Janeiro] is reported to have been finished before he moved to Portugal and has 1790 in the lower half of the title page, but printing of the text up to p. 352 was completed only between May and December 1825 (Carauta 1973), to which the date on the bottom of the title page refers. The dedication "augustissimae dominae nostrae" is clearly to Maria I, in 1790 Queen Regnant of Portugal, the mother of the future king João VI, since it came from Luís de Vasconcelos e Sousa, Conde de Figueiró, viceroy of Brazil from 1778 to 1790. However, the "Florae Fluminensis liber" contains also a dedication sheet to Queen Maria I's grandson Dom Pedro, Emperor of Brazil and on the throne when the first part of the printing up to p. 352 finally took place.

Distribution of the incomplete printed text is reported to have been delayed until September to November 1829 because of political reasons (Carauta 1973). Frei Antônio de Arrábida, the instigator of the printing, had fallen out of favour with Dom Pedro I, since he had indicated that Domitília de Castro e Meló, Marquesa de Santos, the emperor's longterm-mistress, had been indirectly responsible for the death of the emperor's wife Leopoldine (Carauta 1973), probably a victim of a violent attack by her husband. Only in 1829 did Arrábida rise in favour again, when Pedro I. had married Amélie Beauharnais, Princess of Leuchtenberg, and his affair with the Marquesa de Santos started to be forgotten (Carauta 1973).

In the "Flora Fluminensis" we find among the Octandria monogynia the validation of the name *Josepha augusta* with characters that fall within the circumscription of *Bougainvillea spectabilis* Willd. This is corroborated by plate 16 of volume 4 of this Flora, a lithograph based on a drawing by Frei Francisco Solano, reported to be kept in the Biblioteca Nacional in Rio de Janeiro (Carauta 1969). All lithographs of the "Flora Fluminensis liber" had been prepared in Paris, and the complete print run was sent to Brazil, where distribution is reported to have started as late as October 1831 (Carauta 1969). In contrast to the double dedication of the text part of this Flora, all eleven volumes containing the illustrations are dedicated to Pedro I.

The generic name *Josepha* Vell. commemorates José Francisco Xavier of Portugal, Prince of Brazil and heir apparent to the throne (1761–88). He had died young and was the eldest brother of João VI, the future King of Portugal. According to the dedication the former is reported to have shown an early interest in natural history.

8. Introduction to cultivation

Although the hypothesis has been put forward that "a handful of the ... seeds [of *Bougainvillea spectabilis*] would be reserved [by Jeanne Baret] to take back to France, for cultivation in the hothouses of the Jardin du Roi, and in the homes of men like Buffon and Rousseau" (Ridley 2010), there is no evidence to support this assumption. A spectacular ornamental like *Bougainvillea spectabilis* cultivated in the Jardin du Roi in Paris

would have hardly escaped the attention of its director, the famous Georges Louis Leclerc, comte de Buffon (1707–1788), a key figure in the sciences of "la vieille France", who had his official residence in Paris on the grounds at what is now 36, rue Geoffroy Saint-Hilaire. Equally it is hard to believe that the botanical illustrators then working for Louis XVI, King of France, at the Jardin du Roi would have left the plant unrecorded. However, the extremely rich collection of plant illustrations preserved at the Bibliothèque Centrale of the Muséum National d'Histoire Naturelle in Paris, which are accessible online via the Portail documentaire / Images du Muséum of that institution, does not include a single pre-1836 illustration of this species (see below). Similar considerations also apply to the philosopher and writer Jean-Jacques Rousseau (1712–1778), who lived in his late years also in the French capital before moving to Ermenoville in the department of Oise, where he died. The famous landscape garden near this village is the most unlikely place for *Bougainvillea spectabilis* to have been cultivated. Therefore a later date of introduction seems more likely.

Although not correlated with herbarium specimens and therefore difficult to establish with certainty, four printed sources (Loudon 1832; Jacques 1834, referring to Loudon 1832; Paxton 1846; Hérincq 1850) agree in the year 1829 as the date for the first cultivation of the spectacular climber in Europe. They disagree, however, in the details: the first and second sources give South America as region of origin, the third Peru [possibly in error] and refers to a plant flowering since c. 1843 in the large conservatory in Chatsworth, the home of the Duke and Duchess of Devonshire, the fourth source indicates Brazil as country of origin, a Mr Claussen as collector [probably Peter Claussen, a Danish collector in Brazil; cf. Urban 1906] and the Jardin du Roi in Paris as place of cultivation. In a sense, the last interpretation (Hérincq 1850) is confirmed by the explicit statement "We understand it has been grown ... in the Jardin des Plantes [formerly the Jardin du Roi] in Paris, where it is planted in the border of a stove ... and in this situation has spread over a considerable space, and flowered copiously, for at least ten years [i.e. since c. 1835]" (Paxton 1846). The plants illustrated (Jacques 1834; Paxton 1846; Hérincq 1850) show *Bougainvillea spectabilis,* just like the watercolour painted by Adèle Riché reported to be dated 1836 and conserved in the Bibliothèque Centrale (Cote cliché V 27520). Since the first source (Loudon 1832) offers already recommendations for cultivation and since the second source (Jacques 1834) explicitly states that the plant has been introduced to England in 1829 from where it was passed on to the author in France in 1830, this period and England may be regarded for the time being as the most likely time and place for the first introduction to cultivation in Europe.

No attempt is made here to trace the further globalisation of this species, which is today very widely found in cultivation in frost-free climes or under glass.

9. Nomenclature

Since the name *Bougainvillea spectabilis* seems never to have been properly typified, the data presently available are summarised below with synonyms added.

Bougainvillea spectabilis Willd., Sp. Pl. 2: 348. 1799 ≡ *Bougainvillea bracteata* Pers., Syn. Pl. 1: 418. 1805, nom. illeg. ≡ *Tricycla spectabilis* (Willd.) Poir. in Lamarck, Encycl. Suppl. 5: 359. 1817. – Holotype: [icon] Lamarck, Tabl. Encycl. 2: t. 293. 1792 (upper part); epitype (here designated): Brazil, Rio de Janeiro, July 1767, *Commerson 192* (P 00169376, see http://coldb.mnhn.fr/Catalog-Number/MNHN/p/P00169376).

= *Bougainvillea brasiliensis* Wied, Reise 1: 44. 1820. – Syntypes: Brazil, [Rio de Janeiro], Praya Grande to Cabo Frio, August–September 1815, *Wied s.n.* (BR 6586652, BR 6590048, GOET, MEL 2331225; fide Moraes 2009); Brazil, [without locality and date], *Wied* [129] (20), archives of the Wied family in Neuwied, fide Moraes 2009). – Lectotype (here designated): Brazil, *Wied s.n.* (BR 6586652).

= *Josepha augusta* Vellozo, Fl. Flumin.: 154. 1829. – Type: Brazil, "prope Xistos", *Velloso s.n.* (R†, cf. Stafleu & Cowan 1986); lectotype (here designated): [icon] drawing by Frei Francisco Solano, before 1791, kept in the Biblioteca Nacional, Rio de Janiero (fide Carauta 1969), published as Florae Fluminensis liber 4: t. 16. 1831.

Notes. — Following Art. 14.11 of the Vienna Code, the orthographic variant *"Bougainvillea"* has been conserved against the original *"Buginvillaea"*, cf. Appendix III of that Code (McNeill & al. 2006).

Following Article 9.2. of the Vienna Code, the printed illustration in Florae Fluminensis liber 4: t. 16 published in 1831 is not eligible as lectotype for the name *Josepha augusta* Vell., because this name was published two years earlier.

9. Epilogue

The Bougainville expedition always remained in the shadow of Cook's first circumnavigation of the globe, and for good reason. The crew of the Endeavour managed to discover the eastern coast of Australia, made their first landfall at Botany Bay (just south of present day Sydney), and claimed the whole continent for Britain, whereas the crew of the Boudeuse and the Étoile missed the Australian coast. Confronted with a line of breakers indicating a reef now called the Bougainville Reef, behind which lay the Great Barrier Reef and the eastern coast of Australia, orders were given to turn northeast resulting in the two ships to make their next landfall on the coast of New Ireland. Thus a great chance was missed.

By contrast, the name *Cookia* Sonn. is known only to aficionados of *Rutaceae* taxonomy and the name *Captaincookia* Hallé only to *Rubiaceae* specialists, whereas

the name *Bougainvillea* is known to many million lovers of tropical and subtropical gardens, thereby immortalising the French commander of the less successful mission to the South Seas. Although he was buried together with many other French luminaries in the crypt of the grandiose Panthéon in Paris, it was the eponym created by Commerson which probably brought Bougainville the most lasting glory.

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Unpublished illustrations of *Bougainvillea spectabilis* Willd.

Paris, Muséum National d'Histoire Naturelle, Bibliothèque Centrale, Cliché V 27520. – Watercolour by Adèle Riché.

Rio de Janiero, Biblioteca Nacional. – Florae Fluminensis liber. Drawing by Frei Francisco Solano.

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