

A framework for untangling Linnaean names based on Plumier's *Nova plantarum americanarum* genera: Revised typification of *Duranta erecta*

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Abstract The typification of the Linnaean name *Duranta erecta* is revised. The previous lectotypification by Caro, who proposed a Burman illustration in *Plantarum americanarum* as lectotype, must be superseded since that element was not available to Linnaeus before the publication of the first edition of *Species plantarum*. We conclude that Boerhaave's tracing no. 212 of Plumier's original drawing, currently held at the Library of the Rijksuniversiteit in Groningen, The Netherlands, was studied by Linnaeus during his stay in Leiden. As a result, this drawing is therefore selected as lectotype of the species name.

Keywords Charles Plumier; Codex Boerhaavianus; Johannes Burman; Linnaeus; lectotype; Verbenaceae

■ INTRODUCTION

Duranta L. (Verbenaceae: Duranteae) is a New World genus of about 23 species of shrubs and small trees native to a region extending from southern North America and the Caribbean to northern Argentina in South America (Sanders, 1984; Múlgura & al., 2012; Moroni & O'Leary, in prep.). The genus is morphologically characterized by fruits that are drupes with four or five 2-seeded pyrenes, enclosed by an adherent, accrescent fruiting calyx that is usually connivent (Caro, 1956; Múlgura & al., 2012).

Duranta erecta L. is the most variable and commonly cultivated species of the genus. It is widely distributed from the Florida peninsula in North America through Central America and the Caribbean to northern South America in Colombia, Venezuela and the Guianas (Sanders, 1984; Múlgura & al., 2012; Moroni & O'Leary, in prep.). The species was introduced in other continents especially for ornamental purposes due to its showy lilacine flowers and fleshy orange fruits. It has been identified as naturalized in Thailand (Wu & al., 2004) and Zimbabwe (Fernandes, 2005). Also, it is recognized a weed in Australia (Batianoff & Butler, 2002), China and South Africa (Wells & al., 1986; Henderson & Musil, 1987), and as an alien invasive species in Hawaii, (Staples & al., 2000), Pakistan (Qureshi & al., 2014), Polynesia (Space & Flynn, 2001) and Europe (DAISIE, 2009).

Faced with the morphological variation, as well as the wide distribution of the species, botanists (e.g., Linnaeus, 1759; Desfontaines, 1804; Todaro, 1860; Moldenke, 1941) have described a number of varieties and species-level taxa that are currently considered heterotypic synonyms of *Duranta erecta* (Sanders, 1984; Munir, 1995). In spite of the worldwide use of the name and occurrence of the species, the typification of *D. erecta* remained unsolved until the second half of the

twentieth century. As part of a taxonomic revision of *Duranta* in Argentina, Caro (1956) lectotypified this name with a plate included in the fourth fascicle of Burman's *Plantarum americanarum* (Burman, 1756). This lectotypification is here revisited since it can be shown that the plate selected by Caro was studied by Linnaeus after 1753, therefore it cannot be original material.

■ HISTORICAL BACKGROUND

Linnaeus (1753) described 239 species from the Caribbean in his first edition of *Species plantarum* (Acevedo-Rodríguez & Strong, 2012) of which about 116 appear to be partially or exclusively based on Plumier's (1703) *Nova plantarum americanarum* genera (see Appendix 1). Effective typifications exist for 95 of these, while 21 names remain untypified. Much has been written on the original material linked to those species names based on Plumier's (1703) work, and as is outlined below, some confusion remains.

The French priest and botanist Charles Plumier published the *Nova plantarum americanarum* genera (Plumier, 1703) to report the plant diversity he had observed in the Antilles. Plumier travelled three times to the West Indies between 1689 and 1697 (Stafleu & Cowan, 1983: 301). On the first expedition Plumier visited Martinique and Haiti (1698–1690), where he drew a large number of botanical sketches along with J.D. Surian, who devoted his time to collecting plant specimens. In 1693, Plumier travelled again in Haiti and finally, on a more extended trip (1695–1697), he visited Guadeloupe and some other islands of the Lesser Antilles (Urban, 1920; Mottram, 2002).

A large set of drawings made by Plumier during his trips, as well as many handwritten texts that have never been published, have been preserved since 1793 in the Muséum d'Histoire naturelle, Paris. This material is arranged in a set of

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eight volumes entitled “Botanicon americanum”, which encompasses 1219 figures and also includes many detailed botanical descriptions written by Plumier. At least three sets of copies of Plumier’s original drawings were made on different occasions (Stafleu & Cowan, 1983). In 1733, under the supervision of the French botanist S. Vaillant, the Royal painter C. Aubriet produced a set of 508 tracings from Plumier’s original drawings for the Dutch botanist H. Boerhaave, which is known as the “Codex Boerhaavianus”. This work is currently preserved in the Library of the Rijksuniversiteit in Groningen, The Netherlands, and has been discussed by several authors (Polhill & Stearn, 1976; Golding, 1980; Barrie & al., 1991; Bittrich & Stevens, 1998; Rankin Rodríguez & Greuter, 1999) as the source from which Linnaeus outlined the Caribbean plant diversity that Plumier had previously studied.

Linnaeus lived for approximately four years in The Netherlands from 1735, when he landed in Amsterdam, until 1739 (Rutgers, 2008). During that period, he was well regarded by Boerhaave, who allowed him to see and study the copy of Plumier’s work deposited with A. van Royen in Leiden in 1738 (Polhill & Stearn, 1976). Since Linnaeus did not write notes on this copy, the details of this account remained unsubstantiated until Polhill & Stearn (1976) highlighted the connection between Boerhaave’s tracings in Groningen and an interleaved copy of *Species plantarum*, dated 1746, which contained the species accounts of several genera that were not published until a few years later in 1753.

After Boerhaave’s death in 1738, his copy of Plumier’s work was purchased by J. Burman at an auction. Subsequently, Burman decided to engrave a series of copper plates and published a selection of 256 as *Plantarum americanarum* (Burman, 1755–1760). Over the following years, great attention was given to this manifestation of Plumier’s work since authors such as Linnaeus cited Burman’s plates in the later editions of *Species plantarum* (Linnaeus, 1763, 1764). The widely held supposition that Burman’s plates were studied by Linnaeus before the publication of the first edition of *Species plantarum* (Linnaeus, 1753) has caused much confusion about the original material of many Linnaean names. Of the 95 effective lectotypifications, 15 names were typified by Burman’s plates (see Appendix 2) while only three names were properly typified by traces included in the “Codex Boerhaavianus”: *Caesalpinia brasiliensis* L. (Lewis & Reveal, 1993), *Clusia major* L. (Bittrich & Stevens, 1998) and *Malpighia coccigera* L. (Anderson, 1988). Thus, it becomes evident that this problem has spread over decades and, in line with this, many authors (e.g., Miller, 2004; Yuan & al., 2010) have overlooked the fact that Linnaeus did not actually study Burman’s plates before 1753.

■ THE HISTORY OF *DURANTA ERECTA*

Beyond a simple nomenclature. — In the first edition of *Genera plantarum* Linnaeus (1737: 522) published *Duranta* based on the earliest description of the genus “Castorea” from Plumier’s *Nova plantarum americanarum genera* (1703). He included it in the section “Fragmenta Plumeri” since the genus

was known to him only from that Plumerian source. Then, in the first edition of *Species plantarum* (1753: 637) Linnaeus ascribed two species to the genus, *D. repens* L. and *D. erecta*, based on the polynomials that Plumier (1703) had previously published, i.e., “Castorea repens, spinosa”, and “Castorea racemosa, flore caeruleo, fructu croceo”, respectively.

After Linnaeus, a second contribution to the taxonomy of *Duranta* was made by N.J. Jacquin, who explored the West Indies and Central America between 1755 and 1759 (Madriñán, 2013). On his return to Europe, Jacquin (1760) published the concise *Enumeratio systematica plantarum* and, although he followed Linnaean nomenclature, he was not consistent in accepting Linnaeus’s names (Howard, 1973). Indeed, Jacquin (1760) published *D. plumieri* Jacq. as a new species, based on a merger of both *D. erecta*, and *D. repens*. Since Jacquin (1760) did not mention any Linnaean name, *D. plumieri* was not illegitimate until Greuter’s (2016) proposal was recently accepted (Turland & al., 2017). Therefore, *D. plumieri* is an illegitimate and superfluous name based on Arts. 52.1 and 52.2 of the *ICN* (Turland & al., 2018).

Subsequently, Jacquin (1763) published the *Selectarum stirpium americanarum historia* in which *D. plumieri* was described at length. The species treatment included a detailed synonymy, as well as an illustration and the localities where it was found. It is worth mentioning, as Bromley (1984) had previously warned, that Jacquin (1763) failed to cite Linnaeus’s epithets, which were picked up as “inermis” for *D. erecta* and “spinosa” for *D. repens*. As a result, he (Jacquin, 1763) cited “*Duranta inermis*” and “*Duranta spinosa*” as synonyms of *D. plumieri*. Oddly, Jacquin’s delimitation and misapplication of names evidently had a profound impact on Linnaeus himself, who adopted it in the subsequent editions of *Species plantarum* (Linnaeus, 1763, 1764). Concurrently, Linnaeus (1763, 1764) also added a new reference to Plumier’s polynomial “Castorea racemosa, flore caeruleo, fructu croceo”: “*Plum. gen. 30. ic. 79*”. This reference actually links to two works, given that “*Plum. gen. 30*” refers to *Nova plantarum americanarum genera* (Plumier, 1703) and “*ic. 79*” to a plate from Burman’s (1756) *Plantarum americanarum*.

Previous typification. — The first typification of *Duranta erecta* was proposed by Caro (1956: 5), who asserted that plate number 79 included in the fourth fascicle of Burman’s (1756) *Plantarum americanarum* was studied by Linnaeus when compiling *Species plantarum*. According to Bromley (1984), Caro’s choice was endorsed by N.Y. Sandwith, then curator of the Linnaean collection at LINN. This lectotypification was then accepted by subsequent authors who have worked on the genus (Bromley, 1984; Jansen-Jacobs, 1988; Sanders, 1989; Verdcourt, 1992).

Thirty-nine years later, the typification was questioned by Munir (1995), who undertook a detailed study of the story behind both the Burman plates and the Boerhaave set of copies. Munir (1995) asserted, as Gillis & Stearn (1974) and Polhill & Stearn (1976) had previously done, that the “Codex Boerhaavianus” was seen and studied by Linnaeus during his stay in Leiden, and that the Boerhaave tracings could be considered original material for many species names based on *Nova plantarum*

americanarum genera (Plumier, 1703). This led Munir to study the material held at the Library of the Rijksuniversiteit, which consists of two drawings, the Boerhaave original tracing and the copy of it engraved by Burman, “each with almost identical habit sketch of a branch with flowers and fruits” (Munir, 1995). Consequently, Munir (1995) considered both of them to possibly have been studied by Linnaeus while describing the species and thus *D. erecta* was newly typified on the more detailed plate which includes an analytical drawing of the flower and fruit (Fig. 1).

However, Jarvis (2007) argued that “there is evidence that proof copies of Burman’s plates were available to Linnaeus before 1753” and thus, he accepted Caro’s choice of lectotype. In contrast, Polhill & Stearn (1976) outlined two strong arguments as to why the “Codex Boerhaavianus” was the main source from which Linnaeus described many of the species associated with Plumier’s *Nova plantarum americanarum genera*.

This led to renewed study of the subject and, to clarify it, the correspondence between Linnaeus and Burman (SLS, 2016) was studied by the present authors. Burman corresponded with Linnaeus over a period of nearly 40 years; in one of the letters (L1910), dated 15 May 1755, Burman stated that after having acquired the “Codex Boerhaavianus”, he had in mind to reproduce the rarest and most elegant Boerhaave copies at his own expense, and thus he asked Linnaeus, who had already seen them during his stay in Leiden (Burman, 1755; Polhill & Stearn,

1976), to examine and review the proof copies before the publication. Linnaeus kindly accepted this proposal and, therefore, he received proof copies of Burman’s plates as well as copies of several fascicles of the work. In a later letter (L2058), dated 4 June 1756, Burman enclosed fifteen proof copies belonging to the fourth fascicle of his *Plantarum americanarum* (i.e., the fascicle containing the engraving of *D. erecta*). However, on 20 July 1756, Burman (letter L2072) expressed concern that Linnaeus had evidently not yet received those proofs. Even though details are lacking as to the specific identity of the proofs, the Linnaean correspondence reveals that proofs of the fourth fascicle of Burman’s *Plantarum americanarum* were not studied by Linnaeus before 1753 and therefore cannot be considered original material for *D. erecta*.

■ TYPIFICATION

The protologue of *Duranta erecta* (Linnaeus, 1753: 637) includes the brief diagnostic phrase-name “DURANTA inermis”, and the citation of one synonym from Plumier’s *Nova plantarum americanarum genera* (1703). The provenance of the species was given as “Habitat in America”, and a detailed description of vegetative features of the species was also provided: “Caulis erectus, ramosus. Folia oblonga: inferiora opposita, suprema quaterna s. cruciatim posita”. Therefore, the protologue encompasses three relevant elements to take into consideration for typification: the Linnaean description, the diagnostic phrase-name and the citation of the synonym from Plumier (1703).

Although Linnaeus (1753) cited no illustration in the protologue but included a quite detailed description of *D. erecta*, it would seem plausible that he based his species concept on studied material rather than only on Plumier’s (1703) polynomial. Although Plumier (1703) includes an illustration, it only depicts floral features and therefore cannot be the source used by Linnaeus when describing the vegetative morphology of *D. erecta*. Nonetheless, Linnaeus did not study herbarium specimens to arrive at his concept of the species, since he very clearly stated in a letter to J. Ellis, dated 23 November 1762 (Smith, 1821: 157–158), that “Having never seen the *Duranta* myself, I requested of Jacquin to send me one of its flowers in a letter.”

Study of the “Codex Boerhaavianus” revealed the presence of a tracing, no. 212 (Fig. 2), associated with the name “Castorea racemosa, flore caeruleo, fructu croceo”, and in agreement with Linnaeus’s (1753) treatment of *D. erecta* in *Species plantarum*. On the double-page spread containing this drawing, the left-hand page was annotated with Plumier’s polynomial in Boerhaave’s hand, and there are later additions attributable to Burman and Urban. Thus, this tracing would be appropriate for typification purposes if it could be definitively established that Linnaeus studied it.

Following Polhill & Stearn (1976), the manuscript copy of *Species plantarum* interleaved with the “Codex Boerhaavianus” was examined. Linnaeus’s manuscript, dated ca. 1746, contains a sketch of the *Duranta* treatment (Fig. 3). Despite the lack of

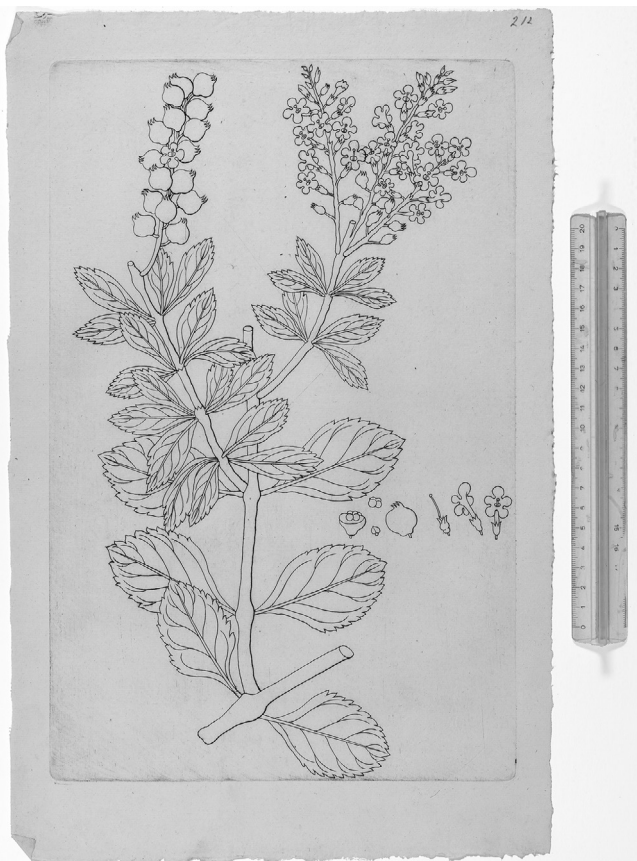


Fig. 1. Burman’s printed proof of plate no. 79 (image by permission of the Special Collections of the University Library of Groningen).

epithets, Linnaeus clearly had prepared a protologue of what was later to become *D. erecta* and the manuscript includes the description of vegetative characters which correspond to those later published in the first edition of *Species plantarum*. Closer scrutiny of Linnaeus's description revealed that it certainly applies to Boerhaave's tracing and corresponds to the current usage of the species. The plant depicted shows an erect, branched stem with oblong, rather elliptic leaves, whose arrangement is opposite in the lower portion and what seems to be a whorled pattern in the upper portion. Plants of *D. erecta* are characterized by decussate-opposite leaves, often born in fascicles on greatly abbreviated twigs, to which Linnaeus likely referred by using the sentence "tetramer in the upper portion" ("*suprema quaterna*"). All these features agree with the Linnaean description and allow us to undoubtedly identify the tracing as *Duranta erecta* in its current usage. Thus, there is strong evidence that this element was studied by Linnaeus prior to the publication of the name, was used by him to prepare the description, and as such constitutes original material.

On the other hand, the page of the "Codex Boerhaavianus" which contains the trace no. 212 has a printed proof of Burman's plate no. 79 which corresponds to the element selected by Munir (1995) as the lectotype. Surprisingly, however, Munir overlooked that the more detailed plate chosen as the lectotype of *D. erecta* is a printed proof of Burman's plate no. 79. The

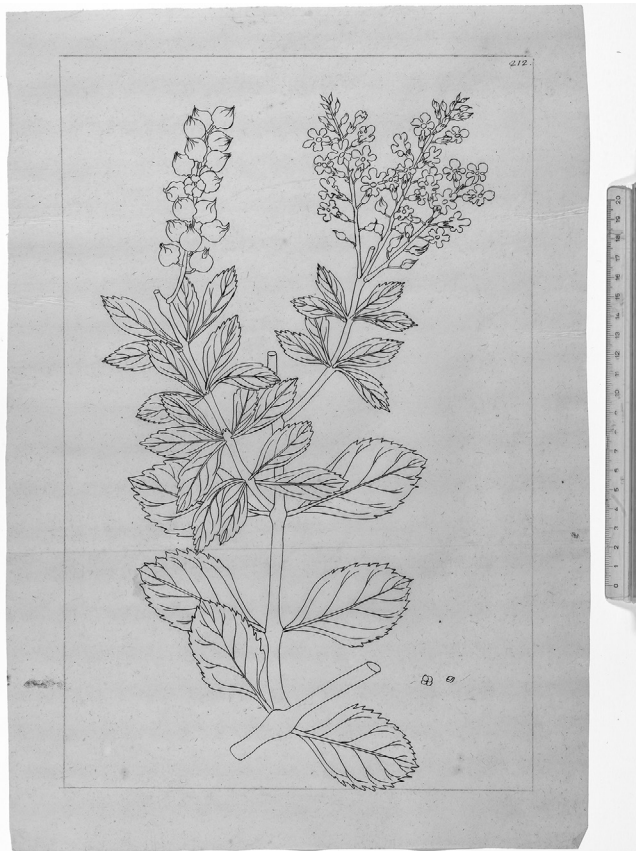


Fig. 2. Boerhaave's original trace of "Castorea racemosa, flore caeruleo, fructu croceo" (image by permission of the Special Collections of the University Library of Groningen).

analytical drawing of the flower and fruit was actually reproduced by Burman from Plumier's *Nova plantarum americanarum genera* (1703). It is also worth mentioning that the Boerhaave's trace proves that Burman's plate contains three errors made by Burman: (1) a fruit in the upper portion of the infructescence was replaced by a flower, (2) pistils were depicted as exerted, and (3) fruiting-calyces were sketched as free at the apex. Such inaccuracies, which Burman had in his plates, have already been reported (Urban, 1920; Rankin Rodríguez & Greuter, 1999). Thus, even though Munir asserted that Caro's choice of lectotype was a mistake because the plate does not comprise original material, he also failed to distinguish the pertinent element among the material held in Groningen.

In light of the above, we conclude that Linnaeus's protologue of *D. erecta* was based not only on Plumier's *Nova plantarum americanarum genera* but also on the trace no. 212 of the "Codex Boerhaavianus". Moreover, the Linnaean correspondence proves that Linnaeus studied the proof copies for the fourth fascicle of the *Plantarum americanarum* (Burman, 1756) after the publication of *Species plantarum*. Therefore, Caro's lectotype must be overturned since it is not original material. As such, Boerhaave's tracing no. 212, is designated here as the lectotype of *D. erecta*.

***Duranta erecta* L., Sp. Pl.: 637. 1753 ≡ *Duranta plumieri* Jacq., Enum. Syst. Pl.: 26. 1760, nom. illeg. (Art. 52.1) – Lectotype (designated here): "Codex Boerhaavianus", trace no. 212 (Bibliotheek Rijksuniversiteit Groningen!).** For an image of the lectotype, see Fig. 2.

CONCLUSION

The publication of *Species plantarum* serves as the starting point for botanical nomenclature. Many species included in

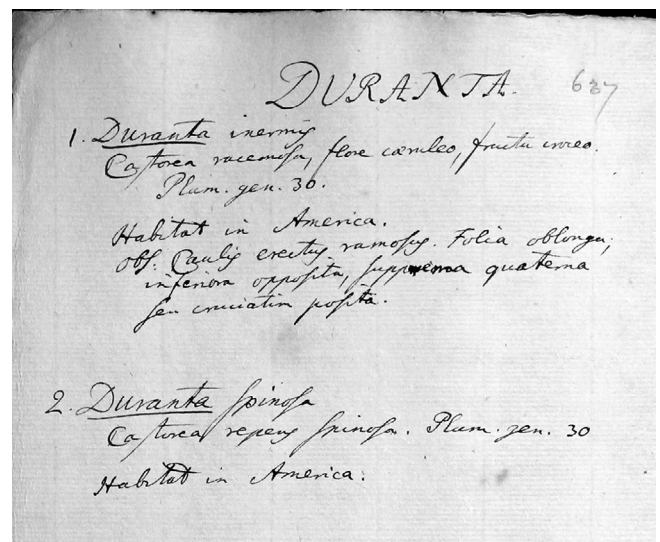


Fig. 3. Account of *Duranta* L. species in Linnaeus's manuscript of *Species plantarum*. *Duranta erecta* L. was based on no. 1 (image by permission of the Linnean Society of London).

this work were known to Linnaeus solely from the accounts of other, earlier authors. Even though Linnaean names have been studied for over many decades, many remain incompletely or incorrectly typified. Linnaeus's observations on the “Codex Boerhaavianus” had a profound impact on his compilation of the *Species plantarum* specifically because it allowed him to incorporate the plants described by Plumier. Of the about 31 names exclusively based on Plumier's (1703) *Nova plantarum americanarum genera*, 10 were typified based on Burman's plates and, in addition, five names partially based on Plumier's work were also typified based on non-original material. As a result, at least 15 Linnaean names are impacted by the fact that Linnaeus did not actually study Burman's plates, revealing how widespread this problem is. Thus, researchers dealing with Linnaean names based on Plumier's *Nova plantarum americanarum genera* should consider the chance the original material may be located in the Department of Old and Rare Books at the Library of the Rijksuniversiteit in Groningen, Netherlands.

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■ AUTHOR CONTRIBUTIONS

PM conceived the idea as part of his Ph.D. thesis, gathered the relevant literature and consulted the “Codex Boerhaavianus” at the Library of the Rijksuniversiteit in Groningen, The Netherlands. LS managed and acquired the translation of Linnaeus's correspondence. All authors discussed the results. PM wrote the manuscript, with help and comments by LS and NO. NO, as Ph.D. advisor of PM, supervised the findings of this work.

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Appendix 1. List of the species/varieties names from *Species plantarum* based on Plumier's *Nova plantarum americanarum genera*. (0) refers to names whose protologues only cite Plumier's work, while (1) to names whose protologue includes Plumier's work as well as other sources.

Species/Variety name	Source	Status	Species/Variety name	Source	Status
<i>Achras zapota</i> L.	1	Typified	<i>Caesalpinia brasiliensis</i> L.	1	Typified
<i>Alpinia racemosa</i> L.	1	Typified	<i>Cameraria latifolia</i> L.	1	Typified
<i>Annona muricata</i> L.	1	Typified	<i>Cameraria angustifolia</i> L.	0	Type not designated
<i>Arachis hypogaea</i> L.	1	Typified	<i>Chrysobalanus icaco</i> L.	1	Typified
<i>Barleria coccinea</i> L.	0	Type not designated	<i>Chrysophyllum cainito</i> L.	1	Typified
<i>Bauhinia aculeata</i> L.	1	Typified	<i>Cissampelos pareira</i> L.	1	Typified
<i>Bellonia aspera</i> L.	0	Typified	<i>Cissampelos caepeba</i> L.	0	Type not designated
<i>Bocconia frutescens</i> L.	1	Typified	<i>Clusia major</i> L.	1	Typified
<i>Bontia daphnoides</i> L.	1	Typified	<i>Clusia minor</i> L.	0	Typified
<i>Breynia indica</i> L.	1	Typified	<i>Columnnea scandens</i> L.	1	Typified
<i>Bromelia ananas</i> L.	1	Type not designated	<i>Commelina zanonina</i> L.	0	Typified
<i>Bromelia nudicaulis</i> L.	0	Type not designated	<i>Corchorus hirsutus</i> L.	1	Type not designated
<i>Bromelia karatas</i> L.	1	Typified	<i>Cordia glabra</i> L.	0	Typified
<i>Brossaea coccinea</i> L.	0	Typified	<i>Cornutia pyramidata</i> L.	1	Typified
<i>Brunfelsia americana</i> L.	0	Typified	<i>Craniolaria fruticosa</i> L.	0	Type not designated
<i>Bucephalon racemosum</i> L.	0	Typified	<i>Crecentia cujete</i> L.	1	Typified
<i>Cactus pereskia</i> L.	1	Typified	<i>Cupania americana</i> L.	0	Typified

Appendix 1. Continued.

Species/Variety name	Source	Status	Species/Variety name	Source	Status
<i>Dalechampia scandens</i> L.	1	Typified	<i>Paullinia polyphylla</i> L.	1	Type not designated
<i>Dioscorea sativa</i> L.	1	Typified	<i>Paullinia seriana</i> L.	1	Type not designated
<i>Dorstenia contrajerva</i> L.	1	Typified	<i>Piper pellucidum</i> L.	1	Typified
<i>Duranta repens</i> L.	0	Typified	<i>Pisonia aculeata</i> L.	1	Typified
<i>Duranta erecta</i> L.	0	Typified	<i>Pistia stratiotes</i> L.	1	Typified
<i>Fevillea cordifolia</i> L.	0	Typified	<i>Plinia pinnata</i> L.	0	Typified
<i>Fuchsia triphylla</i> L.	0	Typified	<i>Plukenetia volubilis</i> L.	1	Typified
<i>Gerardia tuberosa</i> L.	0	Type not designated	<i>Polygala penaea</i> L.	1	Type not designated
<i>Guaiacum officinale</i> L.	1	Typified	<i>Rajania hastata</i> L.	1	Type not designated
<i>Guaiacum sanctum</i> L.	1	Typified	<i>Rajania cordata</i> L.	0	Typified
<i>Guilandina bonduc</i> L.	1	Typified	<i>Rajania quinquefolia</i> L.	0	Type not designated
<i>Hernandia sonora</i> L.	1	Typified	<i>Rauvolfia tetraphylla</i> L.	1	Typified
<i>Hippocratea volubilis</i> L.	1	Typified	<i>Renealmia polystachia</i> L.	1	Typified
<i>Hippomane glandulosa</i> L.	1	Typified	<i>Renealmia monostachia</i> L.	0	Type not designated
<i>Hippomane mancinella</i> L.	1	Typified	<i>Renealmia paniculata</i> L.	0	Typified
<i>Hippomane spinosa</i> L.	1	Type not designated	<i>Rheedia laterifolia</i> L.	0	Typified
<i>Ilex dodonaea</i> L.	0	Typified	<i>Rhizophora mangle</i> L.	1	Typified
<i>Lantana trifolia</i> L.	1	Typified	<i>Rivina humilis</i> var. <i>canescens</i> L.	1	Typified
<i>Lobelia plumieri</i> L.	1	Typified	<i>Rivina humilis</i> var. <i>scandens</i>	0	Typified
<i>Loranthus americanus</i> L.	1	Type not designated	<i>Rondeletia americana</i> L.	0	Typified
<i>Magnolia virginiana</i> var. <i>foetida</i> L.	1	Typified	<i>Ruellia tuberosa</i> L.	1	Typified
<i>Malpighia urens</i> L.	1	Typified	<i>Samyda guidonia</i> L.	1	Typified
<i>Malpighia aquifolia</i> L.	0	Type not designated	<i>Sloanea dentata</i> L.	1	Typified
<i>Malpighia coccigera</i> L.	0	Typified	<i>Spigelia anthelmia</i> L.	1	Typified
<i>Mammea americana</i> L.	1	Typified	<i>Spondias mombin</i> L.	1	Typified
<i>Maranta arundinacea</i> L.	1	Typified	<i>Suriana maritima</i> L.	1	Typified
<i>Marcgravia umbellata</i> L.	0	Typified	<i>Tabernaemontana citrifolia</i> L.	1	Typified
<i>Matthiola scabra</i> L.	1	Type not designated	<i>Thalia geniculata</i> L.	1	Typified
<i>Mentzelia aspera</i> L.	1	Typified	<i>Theobroma guazuma</i> L.	1	Typified
<i>Morinda royoc</i> L.	1	Typified	<i>Tillandsia lingulata</i> L.	1	Typified
<i>Morisonia americana</i> L.	0	Typified	<i>Tillandsia utriculata</i> L.	1	Typified
<i>Muntingia calabura</i> L.	1	Typified	<i>Tillandsia tenuifolia</i> L.	1	Typified
<i>Musa bihai</i> L.	0	Typified	<i>Tillandsia serrata</i> L.	0	Typified
<i>Ochna jabotapita</i> L.	1	Typified	<i>Tournefortia volubilis</i> L.	1	Typified
<i>Oldenlandia corymbosa</i> L.	1	Typified	<i>Tournefortia serrata</i> L.	0	Typified
<i>Ovieda spinosa</i> L.	0	Typified	<i>Tournefortia hirsutissima</i> L.	0	Typified
<i>Parkinsonia aculeata</i> L.	1	Typified	<i>Tournefortia humilis</i> L.	0	Typified
<i>Paullinia curassavica</i> L.	1	Type not designated	<i>Tournefortia serrata</i> L.	0	Typified
<i>Paullinia cururu</i> L.	1	Type not designated	<i>Tragia volubilis</i> L.	1	Typified
<i>Paullinia mexicana</i> L.	1	Type not designated	<i>Turnera ulmifolia</i> L.	1	Typified
<i>Paullinia pinnata</i> L.	1	Typified	<i>Ximenia americana</i> L.	1	Typified

Appendix 2. List of the species names from *Species plantarum* typified by a Burman's illustration in *Plantarum americanarum*. (0) refers to names whose protologues only cite Plumier's work, while (1) to names whose protologue includes Plumier's work as well as other sources.

Species name	Source	Type
<i>Alpinia racemosa</i> L.	1	Lectotype: Burman, Pl. Amer.: t. 20. 1755 [Gagnepain in Bull. Soc. Bot France 50: 190. 1903]
<i>Bellonia aspera</i> L.	0	Lectotype: Burman, Pl. Amer.: t. 47. 1756 [Lourteig in Phytologia 54: 156. 1983]
<i>Bucephalon racemosum</i> L.	0	Lectotype: Burman, Pl. Amer.: t. 67, fig. 1. 1756 [Burger in Regnum Veg. 127: 26. 1993]
<i>Columnea scandens</i> L.	1	Lectotype: Burman, Pl. Amer.: t. 89, fig. 1. 1756 [Leeuwenberg in Acta Bot. Neerl. 7: 390. 1958]
<i>Cupania americana</i> L.	0	Lectotype: Burman, Pl. Amer.: 101, t. 110. 1757 [Pennington in Regnum Veg. 127: 40. 1993]
<i>Duranta erecta</i> L.	0	Lectotype: Burman, Pl. Amer.: t. 79. 1756 [Caro in Revista Argent. Agron. 23: 5. 1956]
<i>Mentzelia aspera</i> L.	1	Lectotype: Burman, Pl. Amer.: 167, t. 174, fig. 1. 1758 [Weigend in Bot. Jahrb. Syst. 118: 235. 1996]
<i>Ovieda spinosa</i> L.	0	Lectotype: Burman, Pl. Amer.: 254, t. 256. 1760 [Yuan & al. in Taxon 59: 131. 2010]
<i>Renealmia paniculata</i> L.	0	Lectotype: Burman, Pl. Amer.: 233, t. 237. 1760 [Smith & Downs in Fl. Neotrop. Monogr. 14: 1018. 1977]
<i>Rondeletia americana</i> L.	0	Lectotype: Burman, Pl. Amer.: 237, t. 242, fig. 1. 1760 [Howard, Fl. Lesser Antilles 6: 455. 1989]
<i>Samyda guidonia</i> L.	1	Lectotype: Burman, Pl. Amer.: 139, t. 147, fig. 2. 1757 [Pennington in Fl. Neotrop. Monogr. 28: 265. 1981]
<i>Thalia geniculata</i> L.	1	Lectotype: Burman, Pl. Amer.: 98, t. 108, fig. 1. 1757 [Andersson in Nordic J. Bot. 1: 55 (1981)]
<i>Tillandsia serrata</i> L.	0	Lectotype: Burman, Pl. Amer.: 63, t. 75, fig. 1. 1756 [Howard, Fl. Lesser Antilles 3: 406. 1979]
<i>Tournefortia hirsutissima</i> L.	0	Conserved Type: Burman, Pl. Amer.: 226, t. 229. 1760 [Johnston in J. Arnold Arbor. 30: 133. 1949]
<i>Tournefortia humilis</i> L.	0	Lectotype: Burman, Pl. Amer.: 224, t. 227, fig. 2. 1760 [Miller in Taxon 53: 804. 2004]