



Synopsis and typification of the names published by Antonio Bertoloni in *Florula Guatimalensis* and in preceding publications

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Abstract

Bertoloni published *Florula guatimalensis* in 1840, which is commonly cited as the original publication. However, our findings show that previous publications of Alessandrini of 1838 and 1840 include the original descriptions by Bertoloni which predate *Florula guatimalensis*. Among the 60 new taxa authored by Bertoloni, 26 were published in 1838 and 34 in 1840 by Alessandrini. Additionally, original drawings were discovered inside an old copy of Bertoloni's *Florula guatimalensis*. Also a comparison between the original material from Bertoloni's herbarium and his original drawings is here reported for the first time. The collection of Guatemalan plants studied by Antonio Bertoloni preserved at BOLO was analysed and is here discussed. The new combinations *Odontonema corymbulosum* and *Lamourouxia barbata* are proposed. A neotype for *Aristolochia podocarpa* and an epitype for *Philadelphus myrtooides* are here designated.

Keywords: Carlo Luciano Bonaparte, Joaquín Velásquez, Guatemala, Mesoamerica, historical botanical collections, nomenclature, taxonomy

Introduction

Antonio Bertoloni (1840 a, b) published *Florula guatimalensis*, where he described numerous new taxa based on specimens collected by Joaquín Velásquez in Guatemala. The main set of the Guatemalan material used by Bertoloni is housed at BOLO, and, although several studies (e.g., Blake 1926; Duncan 1983; Cristofolini *et al.* 1987) addressed this collection, the specimens continue to be poorly studied. Therefore, we analyzed these specimens. Additionally, original drawings were discovered inside an old copy of Bertoloni's *Florula guatimalensis*, which were also studied. Also, our findings show that Bertoloni's names had been previously published in Alessandrini (1838, 1840), as explained below. As a final step, we proceeded to a complete typification of Bertoloni's names.

Biographical notes on Antonio Bertoloni

Antonio Bertoloni was born in Sarzana (Liguria, Northern Italy) on 12 February 1775 by Francesco Bertoloni and Griselda Ama Casoni. He started to study medicine at the University of Pavia, and revealed a significant interest in Botany. As a student, he began floristic investigations in the surroundings of Pavia, and assembled a herbarium, which is no longer extant. As a consequence of the Napoleonic War, he was forced to move to Genoa, where he graduated in medicine in 1796. His following activity as a physician did not prevent him from pursuing his floristic studies: botanizing on the Apennines and the Apuan Alps, and publishing a number of relevant contributions to the regional flora. Due to

the high reputation he achieved, in 1816 he was appointed Professor of Botany at the University of Bologna, and in 1817 he became Director of the Botanical Garden. During the following years, he remained in Bologna, except for a few short trips within Italy, and died in this city on 17 April 1868 (Parlatore 1869, Cesati 1881).

In spite of his sedentary life, Bertoloni assembled a large herbarium, thanks to the specimens exchanged with a great number of botanists, both Italians and foreigners. His *Hortus siccus florae Italicae*, the basis for the first complete treatment of the Italian flora, counted among the most relevant collections of his time. A second, important collection is the *Hortus siccus exoticus*, which includes ca. 11,000 specimens from around the world.

Bertoloni's contribution to the Flora of Guatemala

Knowledge of the flora of Guatemala was very poor at the time of Bertoloni's first contribution. The only floristic information available was the *Flora de Guatemala* by J.M. Mociño, resulting from the *Real Expedición Botánica* in Mesoamerica between 1787 and 1803 (McVaugh 2000). As reported in Frodin (2001: 231), "it was only through *Florula Guatimalensis* [...], by the Bologna botanist Antonio Bertoloni, that the Guatemalan flora was first seriously introduced to science".

Bertoloni's contribution was based on the collections made by Joaquín Velásquez de León (1803–1882), a commander of the Mexican army, who traveled to Rome in 1836, as a member of a Mexican delegation visiting the Holy See. Joaquín Velásquez was born in Mexico City on 16 March 1803 by an important Mexican family. Joaquín Velásquez Cárdenas y León, a cousin of his father, had been a renowned scientist and lawyer, and some of his mother's forefathers covered high positions by the Spanish Viceroy. As a young man, Joaquín Velásquez enrolled at the Royal College of Mining, but after four years he left the studies to join the Army; after then, he served as Royal Official for the rest of his life. Although not a professional scientist, Joaquín Velásquez was very keen in natural sciences, with a special interest in ornithology, and was a member of the Institute of Geography and Statistics. He passed away on 8 February 1882 in Tacuba (Ramírez 1885).

In 1836, when passing by Bologna (which in those days was part of the Vatican State) on his way to Rome, Velásquez gave Antonio Bertoloni a small sample of plants from Guatemala. At the same time, Velásquez also donated a remarkable collection of bird specimens to the Italian ornithologist Carlo Luciano Bonaparte (1803–1857), Prince of Musignano, which he collected during the same scientific expedition (Bonaparte 1838). Velásquez's plant collections became the topic of a number of publications by Bertoloni. A first set of 34 species, 26 of them described as new to science, was orally presented before the Academy of Sciences in Bologna on 25 January 1838; the communication, edited by the Secretary of the Academy, was printed the same year, in an unnumbered issue of "Rendiconto delle Sessioni dell'Accademia delle Scienze" with the date "*Maggio e Giugno 1840*" (Alessandrini 1838). A second set of 45 species, 34 of them new to science, was communicated before the Academy on 21 February 1839, and printed in the "Rendiconto" on 7 April 1840 (Alessandrini 1840). The entire set of taxa described hitherto, enriched with a wide discussion of each species and with beautiful color plates, was subsequently published in the "*Novi Commentarii*" (Bertoloni 1840a), and reprinted as a *separatum* (Bertoloni 1840b).

An intriguing problem concerns Bertoloni's publication dates. An accurate record of the Academy's activity (**Fig. 1**) compiled by D. Piani, the Academy Secretary at that time, reports the day of the oral presentations at the Academy, which was considered the only relevant reference for the sake of priority, and omits all printing dates. The memoranda of the sessions of the Academy were printed, as noted above, during April–May 1838, and on 7 April 1840, respectively. No record has been kept of the exact date of publication of the *Commentarii*. However, we may reasonably assume that the *Commentarii*, much more detailed in their contents, and presented in a splendid *in quarto* volume, whose publication was subject to the prior careful examination by the ecclesiastic authority, would have been published later. The reprint of the *Commentarii* (again, no publication date on the fascicle), was certainly successive to the main volume. Summing up, there is no evidence concerning the day of effective publication (i.e., distribution) of part of the names under discussion and, needless to say, no information is available about the distribution date, which was not usually recorded at the time. Nevertheless, based on the information discussed above, we can confidently assess the following succession:

- 25 January 1838: oral presentation of the names numbered 1 to 26 (List A, see below);
- May–June 1838: publication in print of the same names (Alessandrini 1838);
- 21 February 1839: oral presentation of the names numbered 27 to 60 (List B, see below);
- 7 April 1840: publication in print of the same names (Alessandrini 1840);

8. *Commentarius de itinere Neapolitano et statu anni 1834 suscepto* - Letto il 29. Genn. 1835 (Rendic. pag. 168). Stampato nel T. III. N. Commentar. pag. 155.
9. *Horti botanici Bononiensis Plantae novae vel minus cognitae descriptae* - Mem.^o letta il 10. Xbre 1835 (Rendic. pag. 211). Stampata nel T. III. N. Commentar. pag. 317. Fascic. I.
10. *Fasciculus Secundus Plantarum variorum, vel novarum horti botanici Bononiensis* - Letto il 16. Marzo 1837 (Rendic. pag. 302). Stampato nel T. IV. N. Commentar. pag. 11.
11. *Florula Guatimalensis* - Mem.^o letta il 25. Genn. 1838 (Rendic. pag. 48). Stampata nel T. IV. N. Commentar. pag. 403.
12. *Continuazione del N. 11.* Letta il 21. Febr. 1839 (Rendic. pag. 51). Stampata col N. 11.
13. *Miscellanea Botanica I* - Letta il 13. Febr. 1840 (Rendic. pag. 49). Stampata nel T. V. N. Commentar. pag. 413.

FIGURE 1. Page from the catalogue of the Library Archive of the Academy of Sciences of Bologna, where are reported the dates of the scientific communications and their related publication without dates.

- 1840, exact date unknown, later than April: republication of all the names numbered 1 to 60, enriched with color tables (Bertoloni 1840a);

- 1840, exact date unknown, successive to the preceding publication: reprint of the same text, as a separatum (Bertoloni 1840b);

- The names numbered 61 to 66 (List C, see below) were published in successive short reports (Bertoloni 1846, 1859, 1861).

The original herbarium specimens from Guatemala studied by Bertoloni have been analyzed by very few botanists. In 1925, Francis Blake visited it prior to being housed in a proper herbarium (Blake 1926). After moving Bertoloni's herbarium to BOLO, Duncan (1983) assembled a first list of the type specimens, noting that most of them were

missing. Fortunately this was not the case, and in 1987 a correction was published, stating that most original specimens were only misplaced and not lost (Cristofolini *et al.* 1987).

Recently, the staff at BOLO has undertaken the digitalization of all known types from Bertoloni's vast collections including those of his *Florula guatimalensis*. We revised all original specimens of *Florula guatimalensis* and proposed the name currently used for each image. This led to several discoveries, one of them being the finding of the above cited publications from Alessandrini (1838, 1840), which include many of the original descriptions of species by A. Bertoloni referenced later in the *Florula guatimalensis* and other short papers (Bertoloni 1840a, 1840b, 1846, 1859, 1861) (Fig. 2). Additionally, we discovered that the original drawings of all the plates from Bertoloni (1840a) are housed in the herbarium (FI) of the Natural History Museum of the University of Florence.

In this work we include a list of names that for almost two centuries have been erroneously cited as first published in "Novi Commentarii Academiae Scientiarum Institutii Bononiensis" (Bertoloni 1840a), which were previously published in the "Rendiconto delle sessioni dell'Accademia delle Scienze dell'Istituto di Bologna" Sessione 25 Gennaio 1838 and Sessione February 21, 1839" (Alessandrini 1838, 1840).

Furthermore, because of the attention drawn to the entire collection, we are now able to correct the errors in identification and nomenclature and to typify a number of Bertoloni's names.

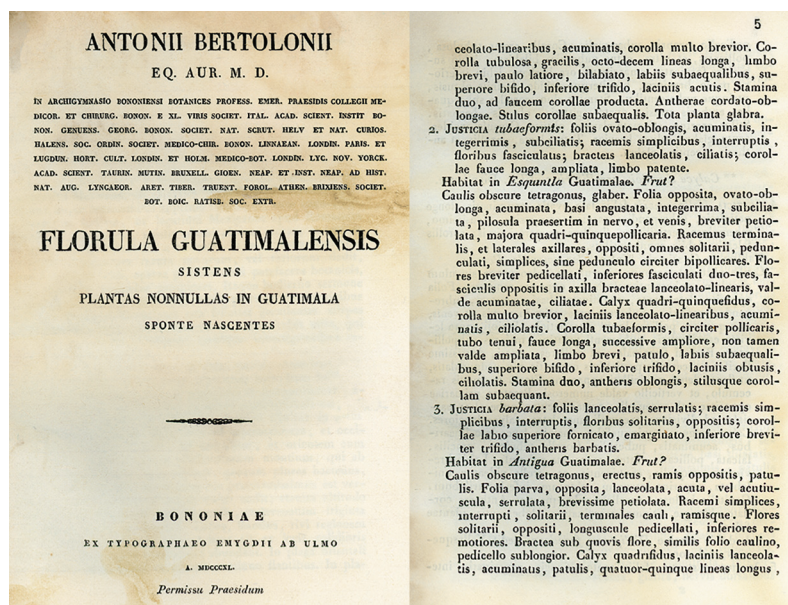


FIGURE 2. Front cover (left) and a page (right) from the reprint *Florula guatimalensis* (Bertoloni 1840b). Courtesy of the Natural History Museum of the University of Florence©.

Materials and methods

The present work consists of a complete revision of Bertoloni's original specimens from Guatemala housed at BOLO. The taxonomic and floristic Mesoamerican botanical literature such as *Flora Mesoamericana* (Davidse *et al.* 1994, 1995, 2009, 2012, 2015, 2018), and the series of *Flora of Guatemala* published in *Fieldiana: Botany* (Standley *et al.* 1946–1977), including specific monographs when available, such as those published in *Flora Neotropica Monographs*, have been consulted.

Furthermore, a comparison between the original material available from Bertoloni's herbarium and the original drawings published by Bertoloni (1840a, 1840b) led us to find in several cases a perfect correspondence among them, as reported here for some of the species for the first time, such as for the following taxa: *Piper patulum* Bertoloni in Alessandrini (1838: 410), *Lisianthus cuspidatus* Bertoloni in Alessandrini (1838: 411), *Ipomea peduncularis* Bertoloni in Alessandrini (1838: 411), *Smilacina flexuosa* Bertoloni in Alessandrini (1838: 412), *Paullinia glabra* Bertoloni in Alessandrini (1838: 412), *Euphorbia erithrophylla* Bertoloni in Alessandrini (1838: 414), *Arbutus rubescens* Bertoloni in Alessandrini (1840: 135), *Philadelphus myrtooides* Bertoloni in Alessandrini (1840: 135), *Psidium molle* Bertoloni in Alessandrini (1840: 136), *Polyclathra cucumerina* Bertoloni in Alessandrini (1840: 141), *Hibiscus cruentus* Bertoloni in Alessandrini (1840: 138), *Vellasquezia melaenodendron* Bertoloni in Alessandrini (1840: 142).

Bertoloni spelled the last name of the original collector “*Vellasquez*”, but the collector’s last name was Velásquez. Therefore, in the collections cited below the last name is correctly spelled *Velásquez*. All specimens cited have been directly examined, unless otherwise indicated by “*n.v.*” (not seen). No information on the dates of collection is given on the labels;

however, Bonaparte (1838: 340), in describing the ornithological collection, states that the specimens have been gathered by Velásquez in 1836, in just fifteen days of field work, a lapse of time that necessarily applies to the contemporary plant collection as well. In the same year 1836 Velásquez traveled to Rome, and the plants from Guatemala were acquired by Bertoloni (1840a: 403). In some specimens is reported the date 1836 or 1837, which presumably refer to the date that they were included in Bertoloni’s herbarium. For this reason each specimen reports “*s.d.*” (*sine die*; i.e., without day of collection). When the collection locality is not indicated on the original collection, “*s.l.*” (*sine loco*; i.e., without locality) is reported. In the cases when the name of the original collector is not reported (supposedly Velásquez) we report “*s. coll.*” (without collector). Barcode numbers of herbarium specimens are cited after the herbarium acronym.

Joaquín Velasquez collection localities

The flora of Guatemala is one of the richest and most diverse in Central America. This diversity is due to a combination of varied climates, soils, and altitudinal gradient, as well as a complex geological history. These characteristics allow for very different ecosystems to be present in such a relatively small country (MacVean 2009). Guatemalan topography is characterized by various isolated mountain ranges including many volcanoes of the western highlands. This topographic diversity contributes greatly to the patterns of endemism seen in insects, plants, salamanders, and birds (Schuster & Cano 2006; MacVean 2009; Campbell *et al.* 2010). The *Florula guatemalensis* includes rare and endemic plants, such as *Justicia corymbulosa* Bertoloni in Alessandrini (1838: 410) [= *Odontonema corymbulosum* (Bertoloni) MacVean, Cristofolini, Daniel & Baldini] and *Mimosa monilifera* Bertoloni in Alessandrini (1840: 142) [= *Pithecellobium bertolonii* Benth (1875: 588)]. The flora of the western volcanic chain in the Guatemalan highlands also threatened by volcanic activity, deforestation, overpopulation and extraction of forest products.

Even though the *Florula guatemalensis* provides us with botanical information, most of the locations where Joaquín Velásquez collected plants are incomplete and vague. The collecting locations in this florula include: Guatemala, Antigua Guatemala, Volcán Agua, Volcán Pacaya and Escuintla (**Fig. 3**). A brief description of each locality follows. In the 1800’s the capital had just moved from Antigua Guatemala to Guatemala City, which had numerous forested areas consisting primarily of pine and oak. To date there are still some small remnants of these forested areas, especially in the ravines of this congested city. The locality “Antigua Guatemala” (1,533 m) refers to the colonial town located in the highlands in the department of Sacatepéquez. Antigua Guatemala was an important city, past capital of the country and the main seat of the Spanish kingdom in Central America (1543–1775). Antigua Guatemala was surrounded by montane forest that was slowly converted to coffee farms.

Volcán de Agua is located 10 km South of Antigua Guatemala in the same department, and comprises a large area that slopes into the piedmont and the Pacific Ocean. Volcán de Agua with elevations that reach 3,760 m above sea level hosts a wide variety of forests that include broad leaf montane forests, pine-oak forest, and cloud forest. Volcán de Pacaya (2,552 m) is an active volcano located in department of Escuintla. The lower northern slopes are still covered with montane forests. Due to its constant volcanic activity and prevailing north winds, the southern slopes are mostly eroded with ash deposits and igneous rock. Montane forests have suffered destruction since the mid 1800’s when the lower slopes started to be cleared for coffee farms (Wagner 2001). Today, several areas of the upper slopes have been either partially burned or cleared for maize or fire wood for subsistence.

The locality “Escuintla” could refer to either or both the department of Escuintla or to its capital. This large department (4,384 km²) lies on the coastal lowland directly south of Guatemala City. Since the late 1600’s the area has been transformed from lush lowland forests into coffee, cotton, sugarcane and cattle farms with very few forest remnants (Fuentes & Guzmán 1932 [1680–1690]); Cal Montoya 2007). The *Florula* also includes a locality called “Salto de Forola”, see *Bignonia sarmentosa* Bertoloni in Alessandrini (1840: 137) (= *Cydista aequinoctialis* (Linnaeus 1753b: 623) Miers (1863: 191) which might be a locality also known as Torola (Eaton 1908).

Based on the interests of Joaquín Velásquez and on the current distribution of plants, one can presume the whereabouts of his collections used for the *Florula guatemalensis*; in particular, it is possible to infer that Velásquez did in fact hike the volcanoes de Agua and de Pacaya, at least partially. For example, *Cacalia cuspidata* Bertoloni in

Alessandrini (1840: 138) (= *Senecio doratophyllus* Benth (1841: 87) grows from 2,200 to 3,400 m above sea level, and that of *Lupinus flabellaris* Bertoloni in Alessandrini (1840: 138), (= *Lupinus montanus* Kunth (1824: 478–479) ranges between 2400 and 4400 m in elevation.

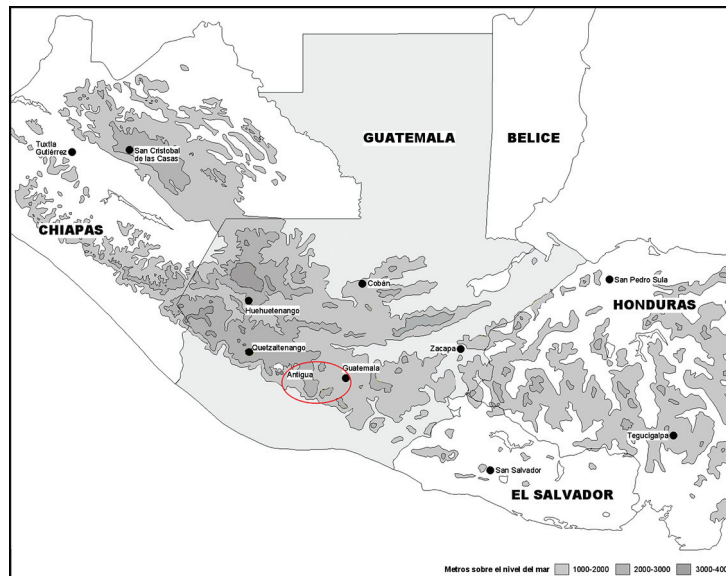


FIGURE 3. Map of the collecting area of Joaquín Velásquez in Guatemala.

Taxonomic treatment

In the present treatment, Bertoloni’s plant names are organized into three lists. List A includes names published by Bertoloni in Alessandrini (1838). List B includes names published by Bertoloni in Alessandrini (1840) and later by Bertoloni (1840a, b). List C includes names published after 1840 by Bertoloni. Accepted names are in ***Bold Italics***, and numbers in parenthesis are the species number in Bertoloni’s original publication.

List A. Names published in “Rendiconto delle sessioni dell’Accademia delle Scienze dell’Istituto di Bologna”, Sessione del 25 Gennaio 1838. *Nuovi Annali di Scienze Naturali* 1(1): 409–415 (1838).

1(1). *Justicia corymbulosa* Bertoloni in Alessandrini (1838: 410). Type: GUATEMALA. Escuintla de Guatemala, 1836, *Velásquez s.n.* (Holotype: BOLO 0507983).

Accepted name: ***Odontonema corymbulosum*** (Bertoloni 1838: 410) MacVean, Cristofolini, Daniel & Baldini, *comb. nov.*

Notes: Based solely on Bertoloni’s protologue, Gibson (1974: 416) treated *J. corymbulosa* as a synonym of a broadly circumscribed *Odontonema callistachyum* (Schlechtendal & Chamisso 1831a: 370) Kuntze (1891b: 494). Daniel (1995: 170; 2010: 373) rejected this taxonomic interpretation. Based on its lack of pubescence and conspicuously pedunculate dichasia, *J. corymbulosa* is herewith treated as conspecific with *O. steyermarkii* Leonard (1943: 71), which name becomes a later heterotypic synonym of *O. corymbulosum* (Bertoloni 1838: 410) MacVean, Cristofolini, Daniel & Baldini. The species had been reported, as *O. steyermarkii*, from six departments of Guatemala, including Escuintla (Daniel 2010: 351).

2(2). *Justicia tubaeformis* Bertoloni in Alessandrini (1838: 410). Type: GUATEMALA. Escuintla de Guatemala, 1836, *Velásquez s.n.* (Holotype: BOLO 0507984).

Accepted name: ***Odontonema tubaeforme*** (Bertoloni 1838: 410) Kuntze (1891b: 494)

Notes: Like the preceding species, Gibson (1974: 416) treated *O. tubaeforme* Bertoloni (1838: 410) as a synonym of *Odontonema callistachyum* (Schlechtendal & Chamisso 1831a: 370) Kuntze (1891b: 494). Distinctions among species and in the dichotomous keys to *Odontonema* in Mexico and northern Central America were provided by Daniel (1995b, 2010).

3(3). *Justicia barbata* Bertoloni in Alessandrini (1838: 410). Type: GUATEMALA. Antigua, 1836, *Velásquez s.n.* (Holotype: BOLO 0507985).

Accepted name: *Lamourouxia barbata* (Bertoloni 1838: 410) MacVean, Cristofolini, Daniel & Baldini, *comb. nov.*

Notes: Bertoloni (in Alessandrini 1838) treated this plant as pertaining to *Justicia* (Acanthaceae), and Gibson (1974: 380) suggested that it might pertain to *J. breviflora* (Nees) Rusby (1900: 78). The type is a good match for *Lamourouxia lanceolata* Benth (1846: 542), which is sometimes treated as a variety of *L. longiflora* Benth (1839: 22). Bertoloni's vs. Benth's name takes precedence at specific rank, but if treated as a variety the correct name for this taxon remains *L. longiflora* (Benth 1839: 22) var. *lanceolata* (Benth 1846: 542) L.O. Williams (1972: 121).

4(4). *Justicia vellasquezii* Bertoloni in Alessandrini (1838: 410). Type: GUATEMALA. *s.l., s.d., Velásquez s.n.* (Holotype: BOLO 0507986).

Accepted name: *Justicia aurea* Schlechtendal (1832: 393—394).

Notes: Gibson (1974: 381) indicated that *J. vellasquezii* (as “*velasquezii*”) was possibly synonymous with *J. aurea*, and Daniel (1995a: 52) treated it as such.

5(5). *Justicia rostrata* Bertoloni in Alessandrini (1838: 410). Type: GUATEMALA. Escuintla, *s.d., Velásquez s.n.* (Holotype: BOLO 0507987).

Accepted name: *Aphelandra scabra* (Vahl 1804: 120) Smith in Rees (1819: *Aphelandra* n. 3).

Notes: Gibson (1974: 381) thought that this name might pertain to a species of *Ruellia*. Based on the protologue and the microfiche of the type, and Daniel (1995a: 10) included it in the synonymy of *A. scabra* (Vahl 1804: 120).

6(6). *Piper patulum* Bertoloni in Alessandrini (1838: 410). Type: GUATEMALA. Escuintla de Guatemala, *s.d., Velásquez s.n.* (Holotype: BOLO 0507988). (**Fig. 4**).

Accepted name: *Piper patulum*

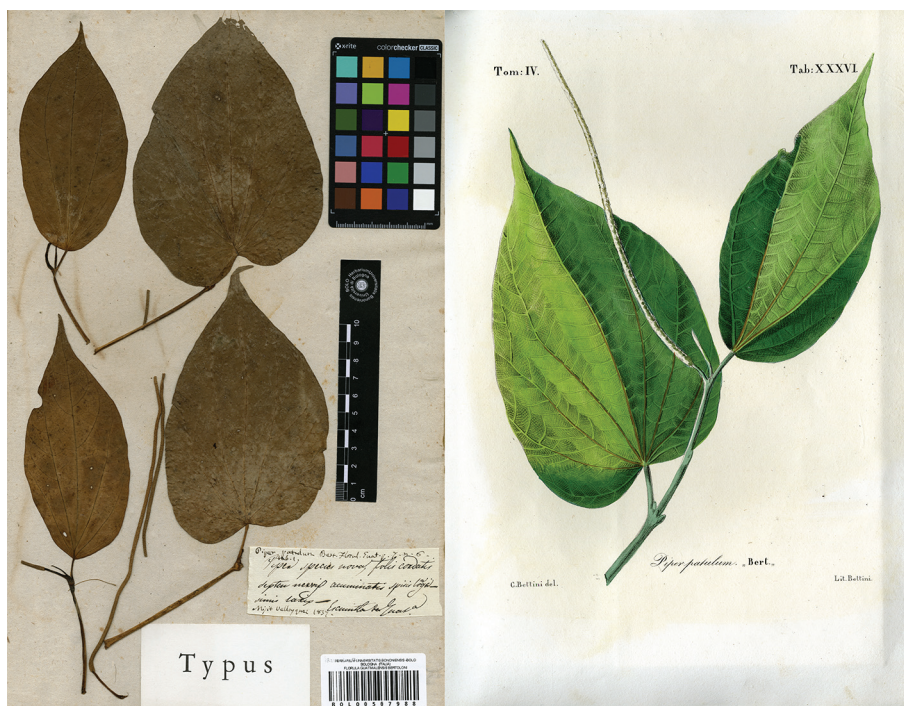


FIGURE 4. *Piper patulum* Bertoloni in Alessandrini (1838: 410). Left: holotype (BOLO). Right: Explicatio Tabula XXXVI (Bertoloni, 1840a).

7(7). *Lisianthus cuspidatus* Bertoloni in Alessandrini (1838: 411). \equiv *Lisianthus nigrescens* Schlechtendal & Chamisso (1831b: 388) var. *cuspidatus* (Bertoloni 1838: 411) L.O. Williams (1968: 408). Type: GUATEMALA. *s.l., s.d.*, Velásquez *s.n.* (Holotype: BOLO 0507989). (Fig. 5).

Accepted name: *Lisianthus cuspidatus*

Notes: Bertoloni's name was recently accepted by Wilbur (2009: 645).

8(8). *Ipomaea* (sic!) *peduncularis* Bertoloni in Alessandrini (1838: 411). Type: GUATEMALA. Escuintla de Guatemala, *s.d.*, Velásquez *s.n.* (Holotype: BOLO 0507990). (Fig. 6).

Accepted name: *Ipomoea neei* (Sprengel 1824: 593–594) O'Donell (1959: 69).



FIGURE 5. *Lisianthus cuspidatus* Bertoloni in Alessandrini (1838: 411). Left: holotype (BOLO). Right: Explicatio Tabula XXXVII (Bertoloni, 1840a).



FIGURE 6. *Ipomaea* (sic!) *peduncularis* Bertoloni in Alessandrini (1838: 411). (= *Ipomoea neei* (Sprengel 1824: 593–594) O'Donell (1959: 69)). Left: holotype (BOLO). Right: Explicatio Tabula XXXVIII (Bertoloni, 1840a).

9(9). *Lobelia calcarata* Bertoloni in Alessandrini (1838: 411). Type: Habitat a San Cristobal Guatimalae (Alessandrini 1838: 411). Original material lost. Neotype (designated by Ayers (1990: 309)): GUATEMALA, Pinula, 4200 ft., February 1890, *J.D. Smith 1925* (NY 00547127).

10(10). *Coffea corymbulosa* Bertoloni in Alessandrini (1838: 411). Type: lost.

Accepted name: *Coffea arabica* Linnaeus (1753a: 172).

Notes: The original material at BOLO is lost, and additional material such as illustration or drawing are not available. In spite of this, based on the diagnostic characters listed in the protologue, there is no doubt about the synonymy (see also Davis *et al.* 2006).

11(11). *Beureria grandiflora* Bertoloni in Alessandrini (1838: 411). Type: GUATEMALA. Escuintla de Guatemala, *s.d.*, Velásquez *s.n.* (Holotype: BOLO 0507991).

Accepted name: *Bourreria huanita* (Lexarza in La Llave & Lexarza 1824: 1–2) Hemsley (1882: 370).

Notes: The generic name *Bourreria* P. Browne (1756: 168–169) is a *nom. conserv.* against its orthographic variant *Beureria* Jacquin (1760: 14) and Sprengel (1824: 647), *nom. rej.*

12(12). *Vinca rosea* L. var. β *albiflora* Bertoloni in Alessandrini (1838: 411). \equiv *Catharanthus roseus* (Linnaeus 1759: 944) G. Don (1838: 95). Type: lost.

Accepted name: *Lochnera rosea* (Linnaeus 1759: 944) Reichenbach ex Spach (1838: 526)

Notes: The original material at BOLO is lost, and additional material such as illustration or drawing is missing. The protologue is restricted to a few words (“*foliis subtus molliter tomentosus*”) and the provenience of the original plant is uncertain (“*Habitat in Guatimala. An ex India introducta.*”). The taxonomic treatment follows Standley & Williams (1969: 358–359).

13(15). *Smilacina flexuosa* Bertoloni in Alessandrini (1838: 412). Type: GUATEMALA. *s.l.*, *s.d.*, Velásquez *s.n.* (Holotype: BOLO 0507994). (**Fig. 7**)

Accepted name: *Maianthemum flexuosum* (Bertoloni in Alessandrini 1838: 412) LaFrankie (1986: 588).

Notes: See comments in Vickery (1994: 34).

14(16). *Combretum argenteum* Bertoloni in Alessandrini (1838: 412). Type: GUATEMALA. *Vulcano d’Acqua in Guatimala*, *s.d.*, Velásquez *s.n.* (Holotype: BOLO 0507995).

Accepted name: *Combretum argenteum*

15(17). *Polygonum grandiflorum* Bertoloni in Alessandrini (1838: 412), *nom. illeg.* Type: GUATEMALA. Escuintla de Guatemala, *s.d.*, Velásquez *s.n.* (Holotype: BOLO 0507996).

Accepted name: *Antigonon guatemalense* Meisner (1856: 184).

Notes: *Polygonum grandiflorum* Bertoloni in Alessandrini (1838: 412) is an illegitimate later homonym of *P. grandiflorum* Willdenow (1799: 440). The name *Antigonon guatemalense* Meisner (1856: 184) is homotypic, and is a substitute name for Bertoloni’s illegitimate name.

16(18). *Paullinia glabra* Bertoloni in Alessandrini (1838: 412) (**Fig. 8**). Type: GUATEMALA. *s.l.*, *s.d.*, Velásquez *s.n.* (Holotype: BOLO 0508013).

Accepted name: *Serjania caracasana* (Jacquin 1797: 52, t. 99) Willdenow (1799: 465).

17(21). *Cassia fagifolia* Bertoloni in Alessandrini (1838: 413). Type: GUATEMALA. Mar del Sur en Guatemala, *s.d.*, *s. coll.* (Holotype: BOLO 0507998).

Accepted name: *Chamaefistula fagifolia* (Bertoloni 1838: 413) Britton & Rose (1930: 235).



FIGURE 7. *Smilacina flexuosa* Bertoloni in Alessandrini (1838: 412) (= *Maianthemum flexuosum* (Bertoloni in Alessandrini 1838: 412) LaFrankie (1986: 588)). Left: holotype (BOLO). Right: Explicatio Tabula XXXVIII (Bertoloni, 1840a).



FIGURE 8. *Paullinia glabra* Bertoloni in Alessandrini (1838: 412) (= *Serjania caracasana* (Jacquin 1797: 52, t. 99) Willdenow (1799: 465)). Left: holotype (BOLO). Right: Explicatio Tabula XXXX (Bertoloni, 1840a).

18(22). *Cassia xiphoidea* Bertoloni in Alessandrini (1838: 413). Type: GUATEMALA. Escuintla, Volcán de Pacaya, *s.d.*, *s. coll.* (Holotype: BOLO 0507999).

Accepted name: *Senna pallida* (Vahl 1807: 12) H.S. Irwin & Barneby (1982: 531).

19(26). *Rhexia glandulosa* Bertoloni in Alessandrini (1838: 413), *nom. illeg.* Type: GUATEMALA. Antigua, *s.d.*, Velásquez *s.n.* (Holotype: BOLO 0508004).

Accepted name: *Monochaetum floribundum* (Schlechtendal 1839: 431–432) Naudin (1850: 165)

Notes: Bertoloni's name was previously published in Alessandrini (1838) However, *Rhexia glandulosa* Bertoloni (1838: 413) is illegitimate, because is a later homonym of *Rhexia glandulosa* Bonpland (1813: 70).

20(27). *Rhexia fragilis* Bertoloni in Alessandrini (1838: 413). Type: GUATEMALA. Antigua, *s.d.*, Velásquez *s.n.* (Holotype: BOLO 0508005).

Accepted name: *Heterocentron subtriplinervium* (Link & Otto 1829, t. 24) A. Braun & C. D. Bouché, (1851: 14).

Notes: See comments in Almeda (2009).

21(28). *Melastoma umbilicatum* Bertoloni in Alessandrini (1838: 414). ≡ *Miconia umbilicata* (Bertoloni 1838: 414) Triana (1871: 131). Type: GUATEMALA. Escuintla de Guatemala, *s.d.*, Velásquez *s.n.* (Holotype: BOLO 0508007).

Accepted name: *Conostegia xalapensis* (Bonpland 1816: 126–127) D. Don ex A.P. de Candolle (1828: 175).

Notes: The original Latin termination of the specific epithet “*umbilicata*” published by Bertoloni in Alessandrini (1838: 414) must be corrected according to Art. 32.2 of the Code (Turland *et al.* 2018) in “*umbilicatum*”.

22(30). *Melastoma rostratum* Bertoloni in Alessandrini (1838: 414). Type: GUATEMALA. Antigua Guatemala, *s.d.*, Velásquez *s.n.* (Holotype: BOLO 0508008).

Accepted name: *Conostegia xalapensis* (Bonpland 1816: 126–127) D. Don ex A.P. de Candolle (1828: 175).

Notes: The original Latin termination of the specific epithet “*rostrata*” published by Bertoloni in Alessandrini (1838: 414) must be corrected according to Art. 32.2 of the Code (Turland *et al.* 2018) in “*rostratum*”.

23(31). *Byrsonima rufescens* Bertoloni in Alessandrini (1838: 414). Type: GUATEMALA. Esquintla de Guatemala, *s.d.*, Velásquez *s.n.* (Holotype: BOLO 0508009).

Accepted name: *Byrsonima crassifolia* (Linnaeus 1753a: 426) Kunth (1821: 149).

Notes: See comments in Standley & Steyermark (1946c: 478–479).

24(32). *Tetrapteris eriocarpa* Bertoloni in Alessandrini (1838: 414). Type: GUATEMALA. *s.d.*, *s.l.*, Velásquez *s.n.* (Holotype: BOLO 0508010).

Accepted name: *Tetrapterys schiedeana* Schlechtendal & Chamisso (1830b: 218).

Notes: See comments in Standley & Steyermark (1946c: 499) and Anderson (1995: 35–36).

25(33) *Tetrapteris argentea* Bertoloni in Alessandrini (1838: 414). Type: GUATEMALA. Antigua Guatemala, *s.d.*, Velásquez *s.n.* (Holotype: BOLO 0508011).

Accepted name: *Tetrapterys schiedeana* Schlechtendal & Chamisso (1830b: 218).

Notes: See Standley & Steyermark (1946c: 499).

26(34). *Euphorbia erithrophylla* Bertoloni in Alessandrini (1838: 414), (**Fig. 9**). Type: GUATEMALA. *s.l.*, *s.d.*, Velásquez *s.n.* (Holotype: BOLO 0508012).

Accepted name: *Euphorbia pulcherrima* Willdenow ex Klotzsch (1834: 27–28).

List B. Names published in Alessandrini, “Rendiconto delle sessioni dell’Accademia delle Scienze dell’Istituto di Bologna”, Sessione del 21 Febbraio 1839. *Nuovi Annali di Scienze Naturali* 3: 135–143 (Alessandrini, 1840).

27(1). *Arbutus rubescens* Bertoloni in Alessandrini (1840: 135), (**Fig. 10**), *postquam in* Bertoloni (1840a: 420–421, tab. XLII). Type: GUATEMALA. Antigua, *s.d.*, Velásquez *s.n.* (Holotype: BOLO 0508014).

Accepted name: *Arbutus xalapensis* Kunth (1819: 279–280).

Notes: See comments in Sørensen (1995).



FIGURE 9. *Euphorbia erithrophylla* Bertoloni in Alessandrini (1838: 414) (= *Euphorbia pulcherrima* Willdenow ex Klotzsch (1834: 27–28)). Left: holotype (BOLO). Right: Explicatio Tabula XVI (Bertoloni, 1840a).



FIGURE 10. *Arbutus rubescens* Bertoloni in Alessandrini (1840: 135) (= *Arbutus xalapensis* Kunth (1819: 279–280)). Left: holotype (BOLO). Right: Explicatio Tabula XLII (Bertoloni, 1840a).

28(2). *Philadelphus myrtoides* Bertoloni in Alessandrini (1840: 135) (**Fig. 11**), *postquam* in Bertoloni (1840a: 421–422, tab. XLIII). Type: GUATEMALA. *Volcán de Agua, s.d., Velásquez s.n.* (Holotype: BOLO 0508015). Epitype (**here designated**): tab. XLV in Bertoloni (1840a)).

Accepted name: *Philadelphus myrtoides*

Notes: Because only one leaflet of the type specimen is present at BOLO, an epitype is here designated to further characterize the original material. Taxonomic treatment follows Hu (1954).

29(3). *Psidium molle* Bertoloni in Alessandrini (1840: 136). (**Fig. 12**), *postquam* in Bertoloni (1840a: 422, tab. XLIV). Type: GUATEMALA. *s.l., s.d., Velásquez s.n.* (Holotype: BOLO 0508016).

Accepted name: *Psidium guineense* Swartz (1788: 77).

30(5). *Eugenia micrantha* Bertoloni in Alessandrini (1840: 136), *nom. illeg, postquam in Bertoloni* (1840a: 422–423). Type: GUATEMALA. *s.l., s.d., Velásquez s.n.* (Holotype: BOLO 0508018). Accepted name: *Pimenta dioica* (Linnaeus 1759: 1056) Merrill (1947: 37).

Notes: Bertoloni's binomial is a later homonym of *Eugenia micrantha* (Kunth 1823: 144–145) A.P. de Candolle (1828: 282) (\equiv *Myrtus micrantha* Kunth (1823: 144–145)).

Notes: See comments in Landrum (1986: 83–88).

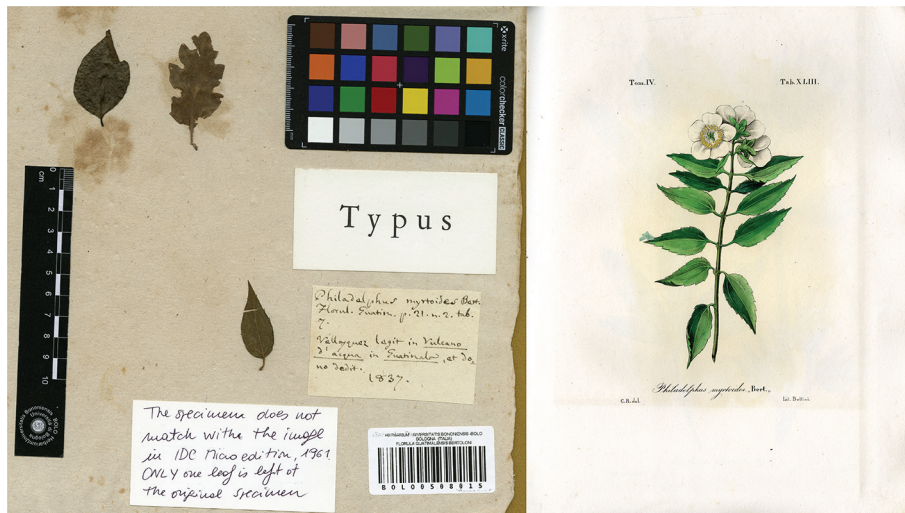


FIGURE 11. *Philadelphus myrtoides* Bertoloni in Alessandrini (1840: 135) Left: holotype (BOLO). Right: epitype, Explicatio Tabula XLIII (Bertoloni, 1840a).



FIGURE 12. *Psidium molle* Bertoloni in Alessandrini (1840: 136) (\equiv *Psidium guineense* Swartz (1788: 77)). Left: holotype (BOLO). Right: Explicatio Tabula XLIV (Bertoloni, 1840a).

31(7). *Clematis polycephala* Bertoloni in Alessandrini (1840: 136), *postquam in Bertoloni* (1840a: 424). Type: GUATEMALA. Volcán de Agua, *s.d., Velásquez s.n.* (Holotype: BOLO 0508019). Accepted name: *Clematis polygama* Jacquin (1760: 24).

32(8). *Ranunculus amarillo* Bertoloni in Alessandrini (1840: 136), *postquam in* Bertoloni (1840a: 424). Type: GUATEMALA. *s.l.*, *s.d.*, *Velásquez s.n.*. (Holotype: BOLO 0508020).
Accepted name: *Ranunculus pilosus* Kunth ex A.P. de Candolle (1818: 287).

Notes: The treatment proposed by Standley & Steyermark (1946a: 253) and Duncan (1983) is here followed.

33(11). *Bignonia sarmentosa* Bertoloni in Alessandrini (1840: 136), *postquam in* Bertoloni (1840a: 425). Type: GUATEMALA. Escuintla, Salto de Forola, *s.d.*, *s. coll.* (Holotype: BOLO 0508023).
Accepted name: *Cydista aequinoctialis* (Linnaeus 1753b: 623) Miers (1863: 191).

34(12). *Tecoma rosea* Bertoloni in Alessandrini (1840: 136), *postquam in* Bertoloni (1840a: 425–426). Type: GUATEMALA. Escuintla de Guatemala, *s.d.*, *Velásquez s.n.* (Holotype: BOLO 0508024).
Accepted name: *Tabebuia rosea* (Bertoloni in Alessandrini 1840: 136) A.P. de Candolle (1845: 215).

Notes: See comments in Sandwith (1954: 453–454) and Gentry (1992: 249).

35(14). *Buchnera tinctoria* Bertoloni in Alessandrini (1840: 137), *postquam in* Bertoloni (1840a: 426). Type: GUATEMALA. Volcán de Agua, *s.d.*, *Velásquez s.n.* (Holotype: BOLO 0508026).
Accepted name: *Buchnera longifolia* Kunth (1818: 340–341).

36(15). *Columnnea umbellata* Bertoloni in Alessandrini (1840: 137), *postquam in* Bertoloni (1840a: 426–427). Type: GUATEMALA. *s.l.*, *s.d.*, *Velásquez s.n.* (Holotype: BOLO 0508027).
Accepted name: *Moussonia deppeana* (Schlechtendal & Chamisso 1830a: 110–111) Klotzsch in Hanstein, (1865: 284).

Notes: See comments in Ramírez Roa & Chiang (2010).

37(17). *Passiflora hastata* Bertoloni in Alessandrini (1840: 137), *postquam in* Bertoloni (1840a: 427–428). Type: GUATEMALA. Escuintla, *s.d.*, *Velásquez s.n.* (Holotype: BOLO 0508029).
Accepted name: *Passiflora foetida* Linnaeus (1753b: 959) var. *hastata* (Bertoloni in Alessandrini 1840: 137) Masters (1871: 631).

Notes: See comments in Killip (1938: 499).

38(19). *Sida hibisciformis* Bertoloni in Alessandrini (1840: 137), *postquam in* Bertoloni (1840a: 428). Type: GUATEMALA. Volcán de Agua, *s.d.*, *Velásquez s.n.* (Holotype: BOLO 0508031).

Notes: According to Standley & Steyermark (1949: 377), the taxonomic status of the species remains unresolved.

39(20). *Hibiscus cuneatus* Bertoloni in Alessandrini (1840: 138), (**Fig. 13**), *postquam in* Bertoloni (1840a: 428, tab. XLV), sub *H. cruentus* Bertoloni, *nom. illeg.* (based on *H. cuneatus* Bertoloni in Alessandrini (1840: 138), non *Hibiscus cuneatus* (Bentham 1844b: 68) Kuntze (1891a: 69), *homon. illeg.* (based on *Fugosia cuneata* Bentham (1844b: 68)). Type: GUATEMALA. Escuintla, *s.d.*, *Velásquez s.n.* (Holotype: BOLO 0508032).
Accepted name: *Hibiscus sabdariffa* Linnaeus (1753b: 695).

Notes: See comments in Standley & Steyermark (1949: 351–352).

40(22). *Lupinus flabellaris* Bertoloni in Alessandrini (1840: 138), *postquam in* Bertoloni (1840a: 430). Type: GUATEMALA. Volcán de Agua, *s.d.*, *Velásquez s.n.* (Holotype: BOLO 0508035!).
Accepted name: *Lupinus montanus* Kunth (1823: 477).

Notes: See comments in Standley & Steyermark (1946b: 290).



FIGURE 13. *Hibiscus cruentus* Bertoloni in Alessandrini (1840: 138) (= *Hibiscus sabdariffa* Linnaeus (1753b: 695)). Left: holotype (BOLO). Right: Explicatio Tabula XLV (Bertoloni, 1840a).

41(23). *Carduus cernuus* Bertoloni in Alessandrini (1840: 138), *postquam in* Bertoloni (1840a: 431). Type: GUATEMALA. Volcán de Agua, *s.d.*, Velásquez *s.n.* (Holotype: BOLO 0508036).

Accepted name: *Lycoseris crocata* (Bertoloni 1840: 434) S.F. Blake (1926: 218).

Notes: Bertoloni described the male and female individuals of this shrub under different names. His *Carduus cernuus* refers to a pistillate plant, while his *Aster crocatus* refers to a staminate plant (Bertoloni in Alessandrini 1840: 434). These names are synonymous with the Central American plant known as *Lycoseris squarrosa* Benth (1844b: 121), which was originally described from “Nicoya, Gulf of Fonseca, Panama” (Blake 1926: 218). See also Pruski (2018a: 421–422).

42(24). *Bidens canescens* Bertoloni in Alessandrini (1840: 138), *postquam in* Bertoloni (1840a: 431–432). Type: GUATEMALA. Volcán de Agua, *s.d.*, Velásquez *s.n.* (Holotype: BOLO 0508037).

Accepted name: *Bidens triplinervia* Kunth (1820: 182).

Notes: See comments in Pruski (2018b: 102)

43(25). *Cacalia cuspidata* Bertoloni in Alessandrini (1840: 138), *postquam in* Bertoloni (1840 a: 432). Type: GUATEMALA. Volcán de Agua, *s.d.*, Velásquez *s.n.* (Lectotype, **here designated**: BOLO 0508038; isolectotype fragment US 00122967).

Accepted name: *Senecio doratophyllus* Benth (1841: 87)

Notes: *Cacalia cuspidata* Bertoloni in Alessandrini (1840: 138) has priority over *Senecio doratophyllus* Benth (1841: 87). However, the combination *Senecio cuspidatus* is not available, because of the pre-existing *S. cuspidatus* A.P. de Candolle (1838: 419), which refers to a different species (see also Blake 1926). The lectotype of Bertoloni’s name is preserved in BOLO. Blake (1926) stated that “a single head from Bertoloni’s type is in the National Herbarium US”. In fact, at US there is a fragment, barcode 00122967, which was regrettably extracted from the BOLO specimen by Blake in 1925. See also comments in Pruski (2018c: 463–464).

44(26). *Stevia polycephala* Bertoloni in Alessandrini (1840: 139), *postquam in* Bertoloni (1840a: 432–433). Type: GUATEMALA. Volcán de Agua, *s.d.*, *Velásquez s.n.* (Holotype: BOLO 0508039).

Accepted name: *Stevia polycephala*

Notes: Accepted by Robinson (2018: 211).

45(28). *Helichrysum salicifolium* Bertoloni in Alessandrini (1840: 139), *postquam in* Bertoloni (1840a: 433–434). Type: GUATEMALA. Volcán de Agua, *s.d.*, *Velásquez s.n.* (Holotype: BOLO 0508041).

Accepted name: *Chionolaena salicifolia* (Bertoloni in Alessandrini 1840: 139) G.L. Nesom (2001: 850).

Notes: See also Freire & Pruski (2018: 217).

46(29). *Aster crocatus* Bertoloni in Alessandrini (1840: 139), *postquam in* Bertoloni (1840a: 434). Type: GUATEMALA. Volcán de Agua, *s.d.*, *Velásquez s.n.* (Holotype: BOLO 0508042).

Accepted name: *Lycoseris crocata* (Bertoloni in Alessandrini 1840: 139) S.F. Blake (1926: 218).

Notes: See comments above [no. 41 (23)].

47(30). *Cineraria acutangula* Bertoloni in Alessandrini (1840: 139), *postquam in* Bertoloni (1840a: 435). ≡ *Senecio acutangulus* (Bertoloni in Alessandrini 1840: 139) Hemsley (1881: 235). Type: GUATEMALA. Volcán de Agua, *s.d.*, *Velásquez s.n.* (Lectotype, **here designated**: BOLO 0508043; isolectotype fragment US barcode 00122958).

Accepted name: *Roldana acutangula* (Bertoloni in Alessandrini 1840: 138) Funston (2008: 293).

Notes: As previously commented for *Cacalia cuspidata* (Bertoloni in Alessandrini 1840: 138), Blake (1926: 218) extracted a fragment from the BOLO specimen, which is preserved at US, barcode 00122958. The fragment consists of a single head preserved inside a small envelope. On the same sheet is glued a sketch of the leaf complemented by a detailed description signed “S.F. Blake 1925”. The taxonomic treatment follows Funston (2008) and Pruski & Funston (2018).

48(32). *Verbesina argentea* Bertoloni in Alessandrini (1840: 140), *nom. illeg.*, *postquam in* Bertoloni (1840a: 435–436); non Guadichaud-Beaupré (1829: 463). Type: GUATEMALA. Volcán de Agua, *s.d.*, *Velásquez s.n.* (Holotype: BOLO 0508045).

Accepted name: *Simsia ghiesbreghtii* (A. Gray 1873: 658–659) S.F. Blake (1913: 392).

Notes: Bertoloni’s *Verbesina argentea* (Bertoloni in Alessandrini 1840: 140) the first name that was given to this species; however, it is a later homonym because the binomial was previously used by Gaudichaud-Beaupré (1829: 463) for a different species, whose accepted name is *Melanthera biflora* (Linnaeus 1753b: 1272) Wild (1965: 4). See also Spooner & Pruski (2018).

49(33). *Helianthus longiradiatus* Bertoloni in Alessandrini (1840: 140), *postquam in* Bertoloni (1840a: 436). Type: GUATEMALA: Vulcano d’Acqua (Alessandrini 1840: 140). Original material lost; illustration not available. Neotype (designated by La Duke (1982: 511)): GUATEMALA. Sacatepequez, Volcan de Aqua, 7 Aug 1962, *G.L. Webster, K. Miller & L. Miller 12844* (MICH; isoneotypes F, LL, MO).

Accepted name: *Tithonia longiradiata* (Bertoloni in Alessandrini 1840: 140) S.F. Blake (1926: 217).

Notes: See comments on typification in La Duke (1982) and Pruski (2018d: 300).

50(34). *Coreopsis trifoliata* Bertoloni in Alessandrini (1840: 140), *postquam in* Bertoloni (1840a: 436–437). Type: GUATEMALA. Vulcano d’Acqua (Alessandrini 1840: 140). Original material lost; illustration not available.

Accepted name: *Bidens reptans* (Linnaeus 1759: 1228) G. Don in Sweet (1839: 360).

Notes: When proposing *Bidens squarrosa* as the correct name for this species, Blake (1926: 217) stated: “From Bertoloni’s description and my notes and sketches of the type, a mere scrap about 4 inches long, it is evident that *Coreopsis trifoliata* is merely one of the forms of the variable *Bidens squarrosa* H.B.K.” Unfortunately, the type specimen at BOLO examined by Blake was not located. According to Pruski (2018b: 100) the name used by Blake must be superseded by *Bidens reptans* (Linnaeus 1759: 1228) G. Don in Sweet (1839: 360).

51(35). *Artistolochia podocarpa* Bertoloni in Alessandrini (1840: 140), *postquam* in Bertoloni (1840a: 437). Original material lost; illustration not available. Type: GUATEMALA: Hab. in Esquintla (Alessandrini 1840). Neotype (**here designated**): GUATEMALA. Chiquimula, 18 April 1971, *R.A. Molina* 26825 (US 01181987).

Accepted name: *Aristolochia inflata* Kunth (1817: 145–146).

Notes: The comparison between Bertoloni's description and Kunth's iconography (Kunth 1817) strongly supports that these names are synonymous (Pfeifer 1966). However Bertoloni's name is not cited in Barringer (2015: 2–7).

52(36). *Begonia setulosa* Bertoloni in Alessandrini (1840: 140–141), *postquam* in Bertoloni (1840a: 437–438). Original material lost, and illustration or drawing not available. Locality: Vulcano d'acqua (Alessandrini 1840).

Accepted name: *Gireoudia setulosa* (Bertoloni in Alessandrini 1840: 140–141) Klotzsch (1854: 211).

Notes: According to in Burt-Utley (1985: 122; 2015: 210), Bertoloni's name needs more investigations and has to be considered as *species inquirenda*.

Polyclathra Bertoloni in Alessandrini (1840: 141). Type: *P. cucumerina* Bertoloni

53(37). *Polyclathra cucumerina* Bertoloni in Alessandrini (1840: 141), *postquam* in Bertoloni (1840a: 438–439, tab. XLVI). (**Fig. 14**). Type: GUATEMALA. Escuintla, *s.d.*, *Velásquez s.n.* (Holotype: BOLO 0508046; “*Ex horto bot. Bononiensi, e seminibus eductis ab hoc fructu, quem accepi a Vellasquezio / 1838*” (Paratype: BOLO 0508055).

Accepted name: *Polyclathra cucumerina*

Notes: See comments in Lira (2009: 30)



FIGURE 14. *Polyclathra cucumerina* Bertoloni in Alessandrini (1840: 141). Left: holotype (BOLO). Right: Explicatio Tabula XLVI (Bertoloni, 1840a).

54(38). *Cecropia obtusifolia* Bertoloni in Alessandrini (1840: 141), *postquam* in Bertoloni (1840a: 439). Type: GUATEMALA. Escuintla, *s.d.*, *Velásquez s.n.* (Holotype: BOLO 0508047).

Accepted name: *Cecropia obtusifolia*

Notes: See comments in Berg & Rosselli (2005: 128) and Berg (2015: 125).

Vellasquezia Bertoloni in Alessandrini (1840: 142). Type: *V. melaenodendron* Bertoloni

Accepted name: *Triplaris* Loeffling (1758: 229, 256)

55(39). *Vellasquezia melaenodendron* Bertoloni in Alessandrini (1840: 142) (**Fig. 15**), *postquam* in Bertoloni (1840a: 439–441, tab. XLVII). Type: GUATEMALA. Escuintla, *s.d.*, *Velásquez s.n.* (Holotype: BOLO 0508048). Accepted name: *Triplaris melaenodendron* (Bertoloni in Alessandrini 1840: 142) Standley & Steyermark (1943: 5).



FIGURE 15. *Vellasquezia melaenodendron* Bertoloni in Alessandrini (= *Triplaris melaenodendron* (Bertoloni in Alessandrini 1840: 142) Standley & Steyermark (1943: 5)). Left: holotype (BOLO). Right: Explicatio Tabula XLVII (Bertoloni, 1840a).

56(40). *Inga semicordata* Bertoloni in Alessandrini (1840: 142), *postquam* in Bertoloni (1840a: 441). Type: GUATEMALA. *s.l.*, *s.d.*, *s.coll.*” (Holotype: BOLO 0508049). Accepted name: *Calliandra tergemina* (Linnaeus 1753a: 517) Benth. var. *emarginata* (Humboldt & Bonpland ex Willdenow 1806: 1009–1010) Barneby (1998: 129).

57(41). *Mimosa monilifera* Bertoloni in Alessandrini (1840: 142), *postquam* in Bertoloni (1840a: 441–442). Type: GUATEMALA. Escuintla, *s.d.*, *s.coll.*”. (Holotype: BOLO 0508050). Accepted name: *Pithecellobium bertolonii* Benth. (1875: 588).

Notes: *Mimosa monilifera* Bertoloni in Alessandrini (1840: 142) is the first valid name for this species, but its combination under *Pithecellobium* is not available because this binomial has already been used by Benth. (1844a: 211). *Pithecellobium bertolonii* Benth. (1875: 588) is explicitly based on *Mimosa monilifera* Bertoloni in Alessandrini (1840: 142): “I have not seen this plant, but from Bertoloni’s very incomplete character, from which I have extracted the very essential points, it would appear to be nearly allied to the preceding and the following species [...]” (Benth. 1875: 588).

58(43). *Acacia angulosa* Bertoloni in Alessandrini (1840: 142), *postquam* in Bertoloni (1840a: 442). Type: GUATEMALA. Volcán de Agua, *s.d.*, *Velásquez s.n.* (Holotype: BOLO 0508052). Accepted name: *Acacia angustissima* (Miller 1768: no. 19) Kuntze (1898: 47)

59(44). *Asplenium blepharophorum* Bertoloni in Alessandrini (1840: 142), *postquam* in Bertoloni (1840a: 443). Type: GUATEMALA. Volcán de Agua, *s.d.*, *Velásquez s.n.* (Holotype: BOLO 0508053). Accepted name: *Asplenium blepharophorum*

Notes: See comments in Adams (1995: 298).

60 (45). *Asplenium polyphyllum* Bertoloni in Alessandrini (1840: 142), *postquam* in Bertoloni (1840a: 443). Type: GUATEMALA. Volcán de Agua, *s.d.*, *Velásquez s.n.* (Holotype: BOLO 0508054). Accepted name: *Asplenium polyphyllum*

Notes: See comments in Adams (1995: 314).

List C. Names published by Bertoloni after 1840.

61. *Sida discissa* Bertoloni (1846: 305–307, tab. V). Type: “*Nata in horto bot. Bononiensi e seminibus, quae Joachinus Vellasquez attulit ex Guatimala et mihi dono dedit / 1843*”. (Holotype: BOLO 0219027).

Accepted name: *Neobrittonia acerifolia* (G. Don 1831: 504) Hochreutiner (1905: 184).

Notes: See comments in Standley & Steyermark (1949: 365–366).

62. *Andropogon attenuatus* Bertoloni 1859: 34, tab. 6). Type: GUATEMALA. *s.l., s.d., Velásquez s.n.* (Holotype BOLO 0009169).

Accepted name: *Andropogon bicornis* Linnaeus (1753b: 1046), *nom. cons.*

63. *Convolvulus mollissimus* Bertoloni (1859: 35, tab. 7). Type: GUATEMALA. *s.l., s.d., Velásquez s.n.* (BOLO 0015359).

Notes: The type specimen is reduced to a few fragments, which prevent a reliable identification. The species is not mentioned in *Flora Mesoamericana* (Austin *et al.*, 2012). This name remains unresolved.

64. *Ficus gummifera* Bertoloni (1859: 40, tab. 5). Type: GUATEMALA. *s.l., s.d., Velásquez s.n.* (Holotype: BOLO 0009756).

Accepted name: *Castilla elastica* Sessé in Cervantes (1794: 7–10).

Notes: See comments in Berg (1972).

65. *Cordia tenuifolia* Bertoloni (1861: 199, tab. 11). Type: GUATEMALA. Volcán de Agua, *s.d., Velásquez s.n.* (Holotype: BOLO 0015876).

Accepted name: *Cordia dentata* Poiret (1806: 48).

Notes: See comments in Miller (2012: 297).

66. *Swartzia macrosperma* Bertoloni (1861: 202, tab. 14). Type: GUATEMALA. Volcán de Agua, *s.d., Velásquez s.n.* (Holotype: BOLO 11996).

Accepted name: *Swartzia simplex* (Swartz 1788: 82) Sprengel (1825: 567) var. *continentalis* Urban (1908: 364).

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