

LECTOTYPIFICATIONS, NEOTYPIFICATIONS, AND EPITYPIFICATION IN THE GENUS *AEGIPHILA* JACQ.

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ABSTRACT

Lectotypes, neotypes and an epitype are designated for 58 names in the genus *Aegiphila* Jacq. (Lamiaceae, formerly included in Verbenaceae). Comments about each typification are provided.

INTRODUCTION

The genus *Aegiphila* Jacq. (Lamiaceae, formerly included in Verbenaceae) is a relatively large Neotropical genus. Since Jacquin (1767) described *Ae. martinicensis* Jacq. more than 350 taxa, including species, varieties and forms, were described. Moldenke (1934) presented a review of the genus and recognized 125 species, including four dubious species and França (2003) accepted 102 species. The object of this paper is to update the nomenclature of some names traditionally included in *Aegiphila*, for the publication of a complete synopsis of the genus.

NOMENCLATRURAL TREATMENT

Aegiphila australis Moldenke, Phytologia 1: 187, 1937. Lectotype (designated here): Brazil: Santa Catarina, Laguna, Campo d'Una, Dec 1889 (fl), *E.H. Ule 1520* (P!).

Since the holotype in the herbarium B was destroyed and the isotype in NY consists only of fragments, the isotype in P is elected here as the lectotype.

Aegiphila brachiata Vell., Fl. flumin. p. 38, 1825 [i.e. 1829], Icones 1: 93, 1827 [i.e. 1831] – Lectotype (designated by Coimbra & Santos, 2000): [icon] Vellozo, Fl. flumin. icones 1: 93, 1827 [i.e. 1831]. Epitype

(designated here): Brazil, Paraná, Laranjeiras do Sul, Capoeira, 24 Oct 1975 (fl), *G. Hatschbach 37343* (MBM!).

The material used by Vellozo to describe his species has been lost, most likely destroyed. Since drawings designated as lectotype limits access to the species morphology, we elect here the material *Hatschbach 37343* in MBM, with duplicates held in many herbaria (C, M, LL), as the epitype for this name.

Aegiphila bracteolosa Moldenke, Feddes Repert. Spec. Nov. Regni. Veg.: 33: 115, 1933. Type: Guiana, Kurupunz, 29 Nov 1922 (fl), *H. Lang & A. Persaud 253* [Holotype: NY!]

= *Aegiphila arborescens* (Aubl.) Gmelin f. *longiflora* Schauer in DC., Prodr. 11: 649, 1847. Lectotype (designated here): Brazil, Amazonas, Rio Negro, Porto dos Miranhas, Dec. without year (fl), *C.P. Martius s.n.* (M!).

See the commentary for *Ae. arborescens* (Aubl.) Gmel. f. *breviflora* Schauer in *Ae. integrifolia* (Jacq.) Moldenke

Aegiphila cordata Poepp. ex Walpers, Repert. Bot. Syst. 4: 118, 1845. Lectotype (designated here): Peru: Loreto, Yurimaguas, Dec 1830 (fl), *E.F. Poeppig 2158* (W!).

Walpers (1845) examined a specimen collected in Peru ("Maynas"), but he did not cite the collection number or the herbarium in which it was stored. Moldenke (1934) stated that the specimen *Poeppig 2158* deposited at W was the nomenclatural type of "*Aegiphila cordata* Poepp." There are two specimens of *Poeppig 2158* at W. Moldenke wrote "Isotype" on the label of one and "Type" on the label of the other. Although he (Moldenke 1934) stated that *Poeppig 2158* is the nomenclatural type, the lectotype remains undesignated. As such, the lectotype elected here for this name is the specimen of *Poeppig 2158* deposited at W with Moldenke's identification of "Type" on the label.

Aegiphila cordifolia (Ruiz & Pav.) Moldenke, Brittonia 1: 185, 1932. ≡ *Callicarpa cordifolia* Ruiz & Pav., Fl. Peruv. 1: 50, tab. 77a. 1798. Lectotype (designated here): [icon] Ruiz & Pavon, Fl. Peruv. 1: tab. 77a. 1798.

Ruiz & Pavon (1798) described *Callicarpa cordifolia* based on material collected "in Provinciae Panatahuarum nemoribus ad Muña", which was supposed to be stored at MA (Stafleu & Cowan, 1983). The type collection of *Callicarpa* at MA was not seen, but the duplicates were seen at K. Based on a material at B (now destroyed), Schauer (1847) stated that *Callicarpa cordifolia* is a synonym of *Ae. mutisii* Kunth (now synonymous with *Ae. mollis* Kunth). Moldenke (1932) agreed with the transference of *Callicarpa cordifolia* to *Aegiphila*, but as an independent species from *Ae. mollis*, making the combination *Ae. cordifolia*. Moldenke (1934) stated that *Ae. cordifolia* is similar to *Ae. salutaris* Kunth (now synonym of *Ae. mollis*), and cited the specimen Ruiz & Pavon s.n. at B as the "Type", and another at G as the "Isotype". The material stored at B was destroyed and the material deposited at G has a label prepared by Moldenke in February 1934

(after the conclusion of his monograph of *Aegiphila*). This label identifies this sheet as the "Isotype" of *Ae. cordifolia*; but there are two more apocrypha labels: on the first label, the material was identified originally as *Callicarpa cordifolia* Ruiz & Pavon and later as *Ae. mutisii* Kunth; on the second label it is written "*Callicarpa cordifolia* ...illegible...I Ex Y T. 77 A.". It is possible that Moldenke considered the second sheet as the type collection of *C. cordifolia*, for the expression "...I Ex Y T. 77 A." is a clear reference to the illustration published in Ruiz & Pavon (1798, tab. 77a). However, there is no strong evidence that this really is the material cited by Ruiz & Pavon (1798), because it is not from the same locality and does not have any notes or marks suggesting that these authors handled the material. Moldenke (1940) cited an "Isotype", Ruiz & Pavon s.n. at MICH (n.v.). Afterwards, he studied two sheets of *H. Ruiz & J.A. Pavon 12/68* deposited at BM, attaching one of his labels with the word "Type" to one example, and "Isotype" on the other. We know that part of Ruiz & Pavon's collections were sold to Lambert, and are now stored at BM (Stafleu & Cowan, 1983). However, the material H. Ruiz & J.A. Pavon 12/68 is not cited in Ruiz & Pavon (1798). The best way to resolve this confusion is to elect the illustration in Ruiz & Pavon (1798) as the lectotype of *Callicarpa cordifolia*.

Aegiphila deppeana Steud., Nomencl. Bot. ed. 2, 1: 29, 1840. ≡ *Aegiphila brachiata* Schldl. & Cham., Linnaea 6: 371, 1831, *nom. illeg.* (not *Ae. brachiata* Vell.). - Neotype (designated here): Mexico, Estero, no locality indicated, Jan (?) 1830 (fl), *Schiede & Deppe 259* (W!).

= *Aegiphila pacifica* Greenman, Proc. Amer. Acad. Arts, 33: 485, 1898 - Lectotype (designated here): Mexico, Ilha Maria Madre, Nayarit, s.d., *Nelson 4245* (GH!).

Schlechtendal & Chamisso (1831) cited

only *Schiede & Deppe 1165* in the protologue of *Ae. brachiata*. The only example known from the type collection of this species was in B but it was destroyed. Since no other duplicate was found, we therefore designate here the specimen *Schiede 259 & Deppe* at W, that was studied by Moldenke (1934) as the neotype of this name.

Greenman (1898) cited *Nelson 4245* and *Nelson 4254* (n.v.) in his description of *Ae. pacifica*; the former being a flowering material, and the latter having fruits. The material *Nelson 4245*, which is deposited at GH, is consistent with the original description and by this reason is selected here as the lectotype of this name.

Aegiphila falcata Donn. Sm., Bot. Gaz., 18: 7, 1893 – Lectotype (designated here): Guatemala, Escuintla, Apr 1890, *J. Donnell Smith 2111* (US!).

Donnel Smith (1893) cited the specimens *Smith 2111* and *Smith 1479* in his original description of *Ae. falcata*. Moldenke (1934) cites only *Smith 2111*. In the herbarium US there are two duplicates of *Smith 2111*. Moldenke placed a label with the word "Type" on one of them; the other he labeled as "Co-Type". Although Pool (1987, In Herb. US) placed a label on the "Type" sheet, stating that it was the holotype of *Ae. falcata*, it is actually a syntype. Additionally, there are other duplicates of that same material in this herbarium. Nonetheless, the sheet *Smith 2111* designated as "Type" by Moldenke is given preference in the designation of lectotype, as was done here.

Aegiphila ferruginea Hayek & Spruce In Hayek, Bot. Jahrb. Syst., 42: 171, 1909. - Lectotype (designated here): Ecuador, Andes de Pichincha, Cordillera Titaicúm, Riobamba, Nov 1858 (fl), *R. Spruce 5473* (K!).

Hayek & Spruce in Hayek (1909) cited four different collections in their original description of *Ae. ferruginea*: *Lehmann*

4700, *Sodiolo 125/22* (n.v.), *Spruce 5473*, and *Spruce 9473*. Moldenke (1934) considered only *Spruce 5473* as the type-material. He also stated that *Spruce 9473* is, in fact, a typing error. The material actually seen by Hayek was destroyed in B, and in K there are two specimens of *Spruce 5473*, one in the Herbarium "Benthamianum", and the other in the Herbarium "Hookerianum". The specimen in the Herbarium "Benthamianum" is composed of only two small branches. One branch occupies the top portion of the herbarium sheet, with one leaf separated from the others. This branch originated from *Spruce 5473*, collected in November 1858. Moldenke fixed a label to it in 1935, classifying it as a "cotype" of *Ae. ferruginea*. On the lower half of the herbarium sheet is another fertile branch of the same species, without a collection number. The label leads us to believe that it is part of Spruce's collection, although it cannot belong to *Spruce 5473*, as it was collected in August 1858. The sheet in the Herbarium "Hookerianum" is composed of the apical section of a fertile branch (four nodes), as well as another apical fragment of another fertile branch (only two nodes), as well as a leaf from the inhibition zone of synflorescence. Both fragments belong to the *Spruce 5473* collection. Moldenke saw this material in 1930-31, and classified it as the "Cotype" of *Ae. ferruginea*. We elected here the material *Spruce 5473*, deposited in the Herbarium "Hookerianum" (now incorporated in K) as lectotype of *Ae. ferruginea*.

Aegiphila fluminensis Vell., Fl. flumin., p. 38, 1825 (i.e. 1829). Icones, t. 95, 1827 (i.e. 1831). – Lectotype (designated by Coimbra & Santos, 2000): [icon] Vellozo, Fl. Flumin. Icones, t. 95, 1827. Epitype (designated here): Brazil, Paraná, Antonina, forest, 4 Jan 1979 (fl), *G. Hatschbach 41829* (MBM!).

The material examined by Vellozo to

describe and illustrate this species has been lost, probably destroyed. The illustration designated as lectotype does not allow us to access all the features of this species. To aid in their characterization, we designate here *Hatschbach 41829*, deposited in MBM, with duplicates distributed in a several herbaria (C, LL, MEXU, SPF), as the epitype for this name.

Aegiphila foetida Sw., Prodr., 32, 1788.- Lectotype (designated here): Jamaica, *O. Swartz s.n.* (S!).

Swartz (1788) did not cite the specific material used in his diagnosis of *Ae. foetida*. In Swartz's collection, deposited in S, there are various specimens of the species. Moldenke affixed a label to one of these in 1930, stating that it should be the "Type" of *Ae. foetida* Sw., and it is elected here as the lectotype of *Ae. foetida*.

Aegiphila graveolens Mart. & Schauer, in DC. Prodr. 11: 651. 1847. Lectotype (designated here): Brazil: São Paulo, Mogi das Cruzes, Nov 1833 (fl), *Lund 796* (G-DC!).

Martius and Schauer (Schauer, 1847) cited *Martius s.n.*, *Riedel s.n.*, and *Lund 796*. In the herbarium of De Candolle (incorporated to G), the sheet *Lund 796* has a label left by Moldenke in 1936 identifying it as the "Type" for *Ae. graveolens*. This specimen is elected here as the lectotype of this name.

Aegiphila insignis Moldenke, Brittonia 1: 188, 1932.- Lectotype (designated here): Peru, Chicoplaya, 1737 (fl), *J. Tafalla s.n.* (K!).

Moldenke (1932) indicated that the "Type" of *Ae. insignis* was housed at the herbarium G, which was destroyed. For this motive, we elect here as the lectotype for this species the sample deposited in K (Herbarium Hookerianum).

Aegiphila integrifolia (Jacq.) Moldenke, Brittonia, 1: 337-338, 1934 \equiv *Callicarpa integrifolia* Jacq., Select. Stirp. Amer. Hist.: tab. 173, fig. 7. 1763. Lectotype (designated here): [icon] Jacquin, Select. Stirp. Amer. Hist., tab. 173, fig. 7. 1763. Epitype (designated here): Venezuela, Amazonas, Rio Atabapo, near Yavita, 10 Jun 1959 (fl), *J.J. Wurdack & L.S. Adderley 42905* (RB!).

= *Manabea arborescens* Aubl., Hist. Pl. Guiane, 1: 64. 1775 – Lectotype (designated here): [icon] Aublet, Hist. Pl. Guiane, t. 24, 1775].

= *Manabea villosa* Aubl., Hist. Pl. Guian. 1: 62. 1775 – Lectotype (designated here): [icon] Aublet, Hist. Pl. Guiane, t. 23. *syn. nov.*

= *Callicarpa globiflora* Ruiz & Pav., Fl. Peruv. 1: 49, pl. 77b. 1798. Lectotype (designated here): [icon] Ruiz & Pavon, Fl. Peruv. pl. 77b. 1798.

= *Aegiphila sellowiana* Cham., Linnaea 7: 111. 1832. Lectotype (designated here): Brasilia reliquie d. *Sello 5058-489* (K!), *syn. nov.*

= *Aegiphila arborescens* (Aubl.) J.F.Gmel. f. *breviflora* Schauer in DC., Prodr. 11: 650. 1847. Lectotype (designated here): Peru, Puchero, shrub vegetation, Dec 1829 (fl), *Poeppig 1615* (K!).

Jacquin (1760) published only a succinct description of *C. integrifolia*. Jacquin (1763) prepared a more complete description together with an illustration showing an infundibuliform corolla, without further analysis, and an exerted androecium. This illustration is designated here as the lectotype of this species. This lectotype is, however, limited to only the corolla of the species. Therefore, we elect *Wurdack & Adderley 42905* deposited in RB with a duplicate in G as the epitype.

Schauer (1847) distinguished two forms of *Ae. arborescens*: α : *longiflora* and β : *breviflora*, but he did not cite any specific collection in his description of forms (Schauer 1847, 1851). As such, all the

material cited in his descriptions of *Ae. arborescens* (Schauer, 1847) must be considered syntypes of both forms, being: "In Peruvia ad panatahuas et Chinchao (Ruiz!), ad flumen amazonum (*Poeppig!* exs. n. 1615, *Mart.*!), in silvis Orinocensibus (H. et B.!) et pr. Carthagenam (Jacq.), in Guiana (*Aubl., Schomb!* 404), et in ins. Trinitatis (h. reg. berol.!)". The material collected "in ins. Trinitatis" and deposited in B was destroyed. *Schomburgk 404* is the nomenclatural type of *Ae. guianensis* Moldenke. The material *Poeppig 1615* corresponds to that described by Schauer (1847) as *Ae. arborescens* f. *breviflora*, and must be considered the lectotype of this form. Moldenke examined the material corresponding to *Martius s.n.* deposited in M. He considered the material the "cotype" of *Ae. arborescens* var. *longiflora* (sic) and, as such, it must be considered the lectotype of *Ae. arborescens* f. *longiflora*, as it represents the material deposited by Schauer (1847).

Chamisso (1832) described *Ae. sellowiana* based on floral and fruiting material collected in different locations by *Sellow* ("E Brasilia misit Sellow fructiferam et utranque formam florentem aliis locis collectas"), but cited examples collected by *Lhotzky* as well. The syntypes deposited in B were destroyed. There are three herbarium sheets attributed to *Sellow* in K. Labels attached by *Moldenke* in 1935 state that they are "cotypes" of *Ae. sellowiana*. These include two flowering and one fruiting sample. The two flowering samples have a blue label stating that they are "reliquiae d. Sello". One of these samples bears the number 5358-489, and is herein elected as the lectotype of *Ae. sellowiana*.

The two sheets deposited at the herbarium BM and attributed to *Ruiz & Pavón* were considered by *Moldenke* to be the "Cotypes" of *Callicarpa globiflora*. On one sheet there is a very old label on which is written: "*Callicarpa globiflora* Peru". The

other sheet bears another old label with the words: "*Callicarpa globiflora* Flora Per. Habitat in Chinchas nemoribus in Peruvia". The two sheets were composed by plant fragments, although their origins were not clearly indicated. They may have originated from samples purchased by *Lambert* and deposited in BM (cf. *Staffleu & Cowan 1983*), although there is no proof for that supposition. As such, we prefer to elect the illustration published by *Ruiz & Pavón (1798)* as the lectotype of *C. globiflora*. *Moldenke* selected a specimen attributed to *Aublet* and deposited at BM as the "Type" of *Manabea arborescens*. There is no indication that this specimen is directly related to the protologue of *M. arborescens*, except for an annotation on the reverse side of the sheet that reads: "Aublet, Guiane". This annotation was probably not made by *Aublet* himself, but rather by a herbarium worker, and would not seem to be the material used by this author. As such, we elected the illustration cited by *Aublet (1775)*, and unequivocally linked to the name *M. arborescens*, as the lectotype of this name. The same procedure was adopted with *Manabea villosa* and *M. laevis* for the same reasons.

Aegiphila laeta *Kunth* in *Humboldt, Bonpland & Kunth, Nov. Gen. Sp. 2: 249. 1818. Lectotype* (designated here): Colombia, Rio Magdalena, Buena Vista, June 1801 (fr), *F.A. von Humboldt & A. Bonpland 1664* (P!).

Kunth (1818) reported that the species "Crescit locis celidissimis in ripa Magdalenae fluminis juxta villam Buena-Vista. Floret Junio". In the herbarium P there are two collections of the species collected at the Rio Magdalena by *Humboldt & Bonpland*. One of these sheets contains information stating that it was collected in Buena Vista in June 1801, and has the number "1664". The other example is probably a duplicate of the first.

Moldenke placed a label with the word "Type" on this latter sheet, and labeled the former as the "isotype". In the present work, we elect the first sheet as the lectotype, for it seems to have the greater part of the information contained in the protologue.

Aegiphila laevis (Aubl.) J.F.Gmel. ≡ *Manabea laevis* Aubl., Hist. Pl. Guiane 1: 66, pl. 25. 1775. Lectotype (designated here): [icon] Aublet, Hist. Pl. Guiane, pl. 25, 1775.

= *Aegiphila elata* Sw., Prodr.: 31. 1788. Lectotype (designated here): Type: Jamaica, s.d., *O. Swartz s.n.* (S!). *syn. nov.*

Regarding the lectotypification of *Ae. laevis* (Aubl.) Gmel., see commentaries under *M. arborescens*.

Swartz (1788, 1797) did not cite a specific specimen of *Ae. elata* neither in his brief description in 1788 nor in a more detailed work in 1797. There are a several collections by *Swartz s.n.* in S. Two of them have identification labels written by Moldenke stating that they are isotypes of *Ae. elata*: one of them is dated 1933, and the other 1948. The former specimen is elected here as the lectotype for *Ae. elata*.

Aegiphila luschnathii Schauer in DC., Prodr. 11: 651. 1847 (as "*Ae. luschnathi*"). Lectotype (designated here): Brazil, Rio de Janeiro, Copacabana, s.d. (fl), *B. Luschnath* Herb. *Martius 1040* (BR!).

Schauer (1847) cited several collections of *Ae. luschnathii*: *Luschnath* in Mart. fl.bras. exs. 1040, *Riedel s.n.*, and *Blanchet s.n.* Moldenke analyzed *Luschnath* in Mart. fl.bras. exs. 1040 deposited in NY (in 1931), the material deposited in BR (in 1936), as well as the material deposited in G-DC (in 1949), and he affixed labels to them all with the word "cotype". The specimen in BR (the herbarium housing the collection of Martius) was chosen here as the lectotype.

Aegiphila martinicensis Jacq., Observ. Bot. 2: 3, tab. 27. 1767. Lectotype (designated here): [icon] Jacquin, Observ. Bot. 2: tab. 27. 1767.

= *Aegiphila boliviana* Moldenke, Feddes Repert. Spec. Nov. Regni Veg. 33: 114. 1933. Lectotype (designated here): Bolivia, Santa Cruz, Sara, Buena Vista 500m, 17 Sept 1924 (fl), *J. Steinbach 6437* (K!). *syn. nov.*

= *Aegiphila diffusa* Andrews, Bot. Repos. 9: pl. 578, fig. 1. 1809. Lectotype (designated here): [icon] Andrews, Bot. Repos. 9, pl. 578, fig. 1, 1809.

= *Aegiphila filipes* Mart. ex Schauer in DC., Prodr. 11: 652. 1847. Lectotype (designated here): Brazil, Amazonas River, s.d., *Martius s.n.* (M!). *syn. nov.*

= *Aegiphila oblongifolia* Rusby, Bull. Torrey Bot. Club. 27: 81. 1900. Lectotype (designated here): Bolivia, Reis, c. 500 m, Jun 1886 (fl), *H.H. Rusby 2472* (NY!). *syn. nov.*

= *Aegiphila obovata* Andrews, Bot. Repos. 9: pl. 578, fig. 2, 1809. Lectotype (designated here): [icon] Andrews, Bot. Repos. 9, pl. 578, fig. 2, 1809. *syn. nov.*

= *Aegiphila oligoneura* Urban, Feddes Repert. Spec. Nov. Regni Veg. 16: 40. 1919. Lectotype (designated here): Jamaica, Plowden Hill, 270 m, 22 Nov 1901 (fl), *Harris 8166* (NY!).

The collections of Jacquin were acquired by Joseph Banks, but later incorporated in the herbarium BM (cf. Stafleu & Cowan 1979). This herbarium houses a sheet of *Ae. martinicensis*, and notes written on its reverse side indicate that it was part of the Jacquin's collection. This sheet contains three branches, numbered 1 to 3. Moldenke attached a label to branch 1 identifying it as *Ae. martinicensis*, designating it as the "Type". However, we cannot be confident that this material was really part of the original collection of Jacquin. The illustration in Jacquin (1767), on the other hand, is unequivocally associated to *Ae.*

martinicensis and should be preferentially considered as the lectotype of this name. Moldenke (1933) cited two collections in the protologue of *Ae. boliviana*: *Steinbach 5066* (with fruits), deposited in US; and *Steinbach 6437* (with flowers) deposited in B. In order to choose the lectotype, preference should be given to the collection with flowers, but the sample referred by Moldenke in the protologue was destroyed. The specimen *Steinbach 6437* deposited in K will therefore be referred here as the lectotype of *Ae. boliviana*. Andrews (1809) described and illustrated *Ae. diffusa* and *Ae. obovata* from plants cultivated in England. Moldenke (1934) stated that Andrews' illustrations were drawn based on collections made in the "East Indies" by Lord Seaforth. After the revision, Moldenke identified the material attributed to Lord Seaforth and deposited in G as the "Isotype" of *Aegiphila diffusa*; those specimens deposited at G and NY were considered the "Isotype(s)" of *Ae. obovata*. Stafleu & Cowan (1976) stated that the illustrations produced by Andrews were based on live material and, as such, there is no herbarium sheet for the specimens deposited in these herbaria. As a result of these doubts, it would seem appropriate to elect the illustrations prepared by Andrews (1809), which clearly show the form and analysis of their flowers, as the lectotype for *Ae. diffusa* and *Ae. obovata*. Schauer (1847) cited a specimen from Riedel and another from Martius in describing *Ae. filipes*. There are two sheets collected by Martius with the name "*Ae. filipes* Mart." in the herbarium M. They both correspond to the material described by Schauer (1847). In 1936, Moldenke attached a label with the word "Type" to one sheet, and labeled the second as "Isotype". The former was chosen here as the lectotype of *Ae. filipes*. Rusby (1900) cited the collections *Rusby 2472* and *Rusby 2473* in his description of *Ae. oblongifolia*. *Rusby 2472* was designated as the lectotype as it corresponds perfectly to the description

prepared by him. Moldenke (1934) stated that the type of *Ae. oligoneura* was deposited at B. Since this specimen was destroyed, the isotype deposited in NY is adequate to be the lectotype for this name.

Aegiphila mediterranea Vell., Fl. flumin. 38, 1825 (1829). Icones, 1: 94, 1827 (1831). – Lectotype (designated by Coimbra & Santos, 2000): [icon] Vellozo, Fl. flumin. Icones, 1: 94, 1827 (1831). Epitype (designated here): Brazil, Rio de Janeiro, Jacarepaguá, Estrada da Boiuna, 1 Oct 1958 (fl), *E. Pereira et al. 4367* (RB!).

= *Aegiphila cestrifolia* Gardn., J. Bot. (Hooker) 1: 184. 1842. Lectotype (designated here): Brazil, Rio de Janeiro, Rio de Janeiro, Corcovado, 1836 (fl), *Gardner 100* (K!).

Coimbra & Santos (2000) elected the illustration in Vellozo (1831) as the lectotype of *Ae. mediterranea*. This illustration does not, however, allow us to access all the important characters of this species. Therefore, we elect here *E. Pereira et al. 4367* deposited at RB as the epitype for this species. Gardner (1842) only cited his collection number 100 in the description of *Ae. cestrifolia*. This material can be found in several herbaria, but the author did not specify the herbarium that held the material used in the description. Stafleu & Cowan (1976) pointed out that most of Gardner's collections are at BM, although various duplicates are housed in other herbaria (K, B, BR, E, LE, OXF, P, and US). Since the holotype cannot be detected with confidence or probably it does not exist, we elect here the material deposited at K, belonging to the old "Herbarium Hookerianum" which perfectly represents the protologue of *Ae. cestrifolia*, as the lectotype for this species.

Aegiphila membranacea Turcz., Bull. Soc. Imp. Naturalistes Moscou. 36: 219. 1863. Lectotype (designated here): Suriname, 1843, (fl) *F.W. Hostmann 89* (K!).

Turczaninow (1863) described *Ae. membranacea* based on two different specimens: *Hostmann 89* and *Spruce 1761*. *Hostmann 89* shows the main characters of *Ae. membranacea*, whereas *Spruce 1761* is in fact a collection of *Ae. martinicensis*. The material examined at K, however, perfectly represents this species. There are three duplicates in K: one in the "Herbarium Hookerianum", and two in the "Herbarium Benthamianum". The sheet from the "Herbarium Benthamianum" has a label prepared by Moldenke (dated 1930-1931) and was cited in his monograph (1934). This material was elected as the lectotype for this name.

Aegiphila mollis Kunth in Humboldt, Bonpland & Kunth, Nov. Gen. Sp. 2: 250, t. 130. 1818. Lectotype (designated here): Humboldt, Bonpland & Kunth, Nov. Gen. Sp. 2: t. 130. 1818.

= *Aegiphila mutisii* Kunth in Humboldt, Bonpland & Kunth, Nov. Gen. Sp. 2: 230, t. 131. 1818. Lectotype (designated here): Humboldt, Bonpland & Kunth, Nov. Gen. Sp. 2: t. 131. 1818.

= *Aegiphila salutaris* Kunth in Humboldt, Bonpland & Kunth, Nov. Gen. Sp. 2: 249. 1818. Lectotype (designated here): São Carlos do Rio Negro, s.d. (fl), *Humboldt 983* (herb. *Willdenow no. 2834*) (B!).

= *Cornutia velutina* Hayek., Bot. Jahrb. Syst., 42: 172. 1909. Lectotype (designated here): Colombia, Jaga, 1500-2000 m, Aug (fl), *F.C. Lehmann 6692* (K!).

The type material of *Ae. mollis* was deposited at B but was destroyed. Therefore, the illustration prepared by Kunth (1818) is designated here as the lectotype for this species.

Kunth (1818) cited "A Mutisio cum Bonplandio communicata". Moldenke (1934) stated that *Ae. mutisii* was originally described based on two collections: *Mutis 423* ("305") and *Mutis 3660*. Moldenke elected the specimen at P as the isotype of

Ae. mutisii Kunth (the erased Moldenke's suggest that is the holotype; there is also a label belonging to the herbarium itself indicating the sheet as the holotype). Moldenke identified the duplicates of this material in 1936, but he did not indicate that they were types. The label of the "Type" specimen bears an illegible number. In the lower left hand corner of the sheet there is a label with a description written by Bonpland, and above this label there is yet another label, apparently older, on which is written "*Callicarpa*" and "Mut (...)". Not only is it doubtful that this is the type material for *Ae. mutisii*, but it is doubtful, too, that Mutis made this collection. The material collected by Mutis that Kunth most likely used in his original description was destroyed in Berlin. In light of the difficulty of being able to identify the type material for this species, we choose to lectotype *Ae. mutisii* based on a very good illustration prepared by Kunth (1818, tab. 131). Kunth (1818) cited two sets of materials in his original description of *Ae. salutaris*: "crescit locis sylvaticis in ripa Orinosensi juxta Santo Thomás de Angostura et Prope San Carlos del Rio Negro in confinibus Guayanae et Brasilia". Moldenke (1934) stated that the "Type" for *Ae. salutaris* was the example from Santo Thomás de Angostura (Venezuela, Amazonas, nowadays Ciudad Bolívar), deposited in the Willdenow herbarium under number 2834. In July 1934, Moldenke placed a label with the word "type" on the material *Humboldt & Bonpland 983* deposited in P. Analysis of the material deposited in the Willdenow Herbarium (later incorporated into B) reveals that a label written by Willdenow himself points out that *Humboldt's* number 983 (he does not cite Bonpland) was collected along the Rio Negro. As such, it represents the second specimen referred to in the protologue, and not the first. The specimen deposited in the Willdenow Herbarium with the number 2834 is elected

here as the lectotype for this species. Hayek (1909) cited only the collection of *Lehmann 6692* as the holotype of *Cornutia velutina*. As this specimen was destroyed in Berlin, the duplicate deposited at K is elected here as the lectotype.

Aegiphila multiflora Ruiz & Pav., Flora Peruv. 1: 50. 1798. Lectotype (designated here): [icon] Ruiz & Pavón, Flora Peruv. Icone 76, fig. b.

Ruiz & Pavón (1798) did not cite any specific material with the description of *Ae. multiflora*. There are several collections of this species distributed among herbaria, and they are designated by Moldenke as "Isotypes". There are very old labels associated with the material stored at G, but nothing that indicates precisely that these specimens were examined by these two authors in preparing the species description. In view of this uncertainty, it would seem appropriate to elect the drawing of Ruiz & Pavón (Icone 76, fig. b) as the lectotype for this species.

Aegiphila nervosa Urb., Symb. Antill. 3: 366. 1903. Lectotype (designated here): Jamaica, *O. P. Swartz s.n.* (S!).

Urban (1903) cited three different collections used to describe *Ae. nervosa*: a) *Swartz* (Mus. Holm.= Herbarium S), b) *Picarda 171* (n.v.), and c) *Picarda 1418* (n.v.). Moldenke (1934) considered only Swartz's material as the "Type" for this species, which is elected here as the lectotype.

Aegiphila obducta Vell., Fl. flumin. 38, 1825 (1829); Icones 1: 97, 1827 (1831). – Lectotype (designated in Coimbra & Santos, 2000): [icon] Vellozo, Fl. Flumin. Icones 1: 97, 1827. Epitype (designated here): Brazil, Minas Gerais, Jaboticatubas, Rod. MG 2, Campo Redondo, Capoeira, 8 Aug 1972 (fl), *G. Hatschbach 30078* (MBM!).

= *Aegiphila lanuginosa* Gardner, Hooker's

J. Bot. Kew Gard. Misc 4: 134. 1845. Lectotype (designated here): Brazil, Rio de Janeiro, Serra dos Órgãos, 1300 m, Mar (fl), *G. Gardner 5830* (K!).

Coimbra & Santos (2000) elected the illustration prepared by Vellozo (t. 97) as the lectotype of *Ae. obducta*, although this drawing does not present details of all of the important features of the species. Thus we considered it necessary to designate an epitype for this name, and elected *Hatschbach 30078*, which is distributed among many herbaria (C, LL, M, MBM, RB, S, and UPCB). Gardner (1845) cited only the material no. 5830, duplicates of which are deposited in various herbaria, without referring to a specific institution. This situation is therefore similar to that encountered with *Ae. cestrifolia* Gardner, above. There are two duplicates of this material at K, one in the "Herbarium Benthamianum", and the other in the "Herbarium Hookerianum". We elect here the sheet deposited in the "Herbarium Benthamianum" as lectotype of this species because it perfectly reflects the original description of *Ae. lanuginosa*.

Aegiphila obtusa Urb., Symb. Antill. 5: 486. 1908. Lectotype (designated here): Type: Jamaica, Monte Diablo, 900m, 29 Aug 1905 (fl), *W. Harris 8996* (K!).

Urban (1908) cited only the collection *Harris 8996* with his description of *Ae. obtusa*. One of the specimens was deposited in B and was subsequently lost. There is a duplicate in K, which is elected here as the lectotype of this name.

Aegiphila plicata Urb., Symb. Antill. 3: 365. 1903. Lectotype (designated here): Jamaica, 1822 (fl), *C.G. Bertero 2105* (G-DC!).

The material *Bertero 2105* was destroyed in Berlin. Moldenke (1934) stated that he analyzed only a fragment of the type collection of *Ae. plicata* as well as two

photographs. We were able to analyze the more complete material available in the De Candolle's Herbarium (G), and elected this as the best choice for the lectotype of this name.

Aegiphila quinduensis (Kunth) Moldenke Feddes Repert. Spec. Nov. Regni Veg. 33: 138. 1933. ≡ *Petitia quinduensis* Kunth in Humboldt, Bonpland & Kunth, Nov. Gen. Sp. 2: 248. 1818. Neotype (designated here): Colombia, Quindiu, s.d. (bo), *Goudot s.n.* (K!).

Kunth (1818) stated that this species "Crescit in scopulosis temperatis Andium Quinduensium juxta El Moral, alt. 1065, Hex.". The material that was deposited in B was destroyed, and no isotype is available. Therefore, we elect the material *Goudot s.n.*, deposited in K and collected in more or less the same geographic region, as the neotype for this name.

Aegiphila racemosa Vell., Fl. Flumin. p. 37. 1829 ("1825"); Icones 1: 88. 1831 ("1827"). Lectotype (designated here): [icon] Vellozo, Fl. Flumin. Icones 1: 88. 1831. Epitype (designated here): Brazil, Pará, Paragominas, open secondary vegetation, 2 Mar 1980 (fl), *T. Plowman, G. Davidse, N.A. Rosa, C.S. Rosário & M.R. dos Santos 9444* (MG!).

The specimen examined by Vellozo to describe this species has been lost, most probably destroyed. The illustration prepared by this author has therefore been selected as the lectotype. While this drawing shows the habit of the plant as well as an open corolla (sufficient to allow it to be chosen as the lectotype), it is not sufficiently detailed to assess important characters of the species. We therefore elect the specimen *Plowman 9444 et al. 10719* (MG) as the epitype, which has duplicates distributed in at least two herbaria (LL, NEBC).

Aegiphila riedeliana Schauer in DC, Prodr. 11: 649. 1847. Lectotype (designated here): Brazil, s.l., s.d., *Pohl 4392* (W!).

Schauer (1847) cited two different collections in his description of *Ae. riedeliana*: *Riedel s.n.* and *Pohl s.n.* This author further declared that these examples were deposited in W ("vindobonensis"), and LE ("Petro."). In 1851, Schauer again cited these two collections, adding that *Pohl s.n.* was the pistilate form and that *Riedel s.n.* was the staminate form. The material at LE was not seen. The only material of this species and collected by Pohl were found at W. The specimen had an old handwritten label with the number 4392, and was identified as an example of the pistilate of *Ae. riedeliana*. Moldenke saw this same material in 1930-1931, and added another identification label declaring that it was a "cotypte". We elect it here as the lectotype of this species.

Aegiphila schimpffii Moldenke, Phytologia 1: 265, 1937b. – Lectotype (designated here): Ecuador, Buscay, forest, 18 Apr 1934 (fl, fr), *H.J.F. Schimpff 1003* [NY (frag.)!]. Epitype (designated here): Ecuador, Junction of the provinces Guayas, Cañar, Chimborazo & Bolivar, near Bucay (Buscay ?), 340-430 m, 8-15 Jun 1945, *W.R. Camp E-3737* (NY!).

The holotype *Schimpff 1003* deposited in B was destroyed. The only duplicate localized consisted of fragments of the holotype deposited in NY, herein designated as the lectotype. These fragments do not demonstrate all of the characters of this species, however. We therefore propose that the material *Camp E-3737* deposited in NY, with duplicates in K and P, be considered the epitype of this name.

Aegiphila ternifolia (Kunth) Moldenke, Feddes Repert Spec. Nov. Regni Veg. 33: 141, 1933. ≡ *Ehretia ternifolia* Kunth in Humboldt, Bonpland & Kunth, Nov. Gen.

Sp. 3: 66. 1818. *Amerina ternifolia* (Kunth) DC., Prodr. 9: 513, 1845. Type: Venezuela, San Pedro de Los Altos, s.d., *Humboldt & Bonpland 703* (Holotype: P n.v.).

= *Aegiphila verrucosa* Schauer in DC. Prodr. 11: 650. 1847. Lectotype (designated here): Venezuela, Aragua, Colônia Tovar, s.d., *J.W. Moritz 897* (K!).

= *Brueckea grandifolia* Klotzsch & Karst. in Karsten, Ausw. Gew. Venez.: 31, t. 10, 1848 - Lectotype (designated here): [icon] Karsten, Ausw. Gew. Venez. t. 10. 1848.

Schauer (1847) cited only the herbarium sheet *Moritz 897* in the protologue of *Ae. verrucosa*. This material was deposited at B, and was destroyed. There are two specimens of *Moritz 897* at K, one in the "Herbarium Benthamianum", and the other in the "Herbarium Hookerianum". We elect here the example in the "Herbarium Benthamianum" as the lectotype of this species. Klotzsch & Karsten in Karsten (1848) did not cite any collection of Karsten in the original description of *Brueckea grandifolia*. The material *Karsten s.n.*, deposited in W, has an older label from Karsten (with his name embossed on it) with notations to the effect that it is a sample of *Brueckea grandifolia*. Nothing more, however, indicates that this was the herbarium sheet seen by Klotzsch & Karsten when describing *B. grandifolia*. Nonetheless, Moldenke attached a label selecting it as the "Type" of *B. grandifolia*. In light of this uncertainty, we prefer to elect the drawing found in Karsten (1848) as the lectotype for this species.

Aegiphila trifida Sw., Prodr.: 32. 1788. Lectotype (designated here): Jamaica, s.l., s.d., *Swartz s.n.* (S!).

= *Aegiphila uniflora* Urb., Symb. Antill. 3: 365, 1903. Lectotype (designated here): Jamaica, Silver Hill., 1200 m, 25 Jan 1895, *W. Harris 5533* (NY!). *syn. nov.*

Swartz (1788) cited the material *Swartz s.n.* without presenting any illustration of it. In the Swartz Herbarium (now included in

S) there are several specimens identified as *Ae. trifida* that were analyzed by Moldenke in 1930 and in 1948. One of the herbarium sheets has three branches affixed to it in different positions: a) in the mid upper left, b) in the lower center, c) in the mid upper right. In 1930, Moldenke chose the branches "a" and "b" as the "type" of *Ae. trifida*. In the present work we elect branch "a" (located in the mid upper left of the sheet) as the lectotype of *Ae. trifida*. Since the holotype of *Ae. uniflora*, *Harris 5533* (B), was destroyed, we elected here its duplicate in NY as the lectotype of this name.

Aegiphila verticillata Vell., Fl. flumin. 38. 1829 ("1825"); Icones 1: 91. 1831 ("1827"). Lectotype (designated by Coimbra & Santos 2000): [icon] Vellozo, Fl. Flumin. Icones 1: 91. 1831. Epitype (designated here): Brazil, Paraná, Bocaiúva do Sul, Cerrado, 05 Dec 1978 (fl), *G. Hatschbach 41838* (MBM!).

= *Aegiphila lhotzkiana* Cham., Linnaea 7:112-113, 1832. Lectotype (designated here): Brazil, Bahia, s.l., Apr 1831 (fl), *J. Lhotzky s.n.* (G-DC!). *syn. nov.*

= *Aegiphila tomentosa* Chamisso, Linnaea 7: 110. 1832. Lectotype (designated here): Brazil, *Sellow s.n.* (5122) (K!).

Coimbra & Santos (2000) elected the illustration by Vellozo (t. 91) as the lectotype, although this drawing does not allow access to all the important features of this species. Therefore, we elected the material *Hatschbach 41838* (MBM), which has duplicates distributed in C and LL, as the epitype. Chamisso (1832) referred to only one collection of *Lhotzky s.n.* in describing *Ae. lhotzkiana*. Moldenke (1934) stated that he saw an specimen in B, although this specimen is now destroyed. The only sheet we were able to locate was at G (herbarium GC), and it had a red label with the word "TYPUS" written on it. This sheet was chosen as the lectotype of *Ae. lhotzkiana*. Chamisso (1832) cited a single

specimen that was collected by *Sellow s.n.*, and did not refer to any illustrations. Moldenke (1934) stated that the type material for *Ae. tomentosa* was *Sellow 5122*, deposited at B and now destroyed. There is a specimen identified as *Ae. tomentosa* in K, which corresponds perfectly to the description made by Chamisso (1832), including the observation that the material was collected in "sub anthesi". The identification is hand-written on a label from the herbarium B, and includes the number (also hand written) 5122. The name of the species and the number are written in different manners: the former in ink, and the latter in pencil (and this apparently more recently than the first). We conclude that the number 5122 is not a sequential number of the Sellow collection, and that this sheet is actually an example of *Sellow s.n.* from B, identified as *Ae. tomentosa* most probably by Chamisso himself. Moldenke saw a herbarium sheet deposited at K in 1930-1931, and elected it as the "Isotype" of *Ae. tomentosa*. We agree that the material *Sellow s.n.* (5122), deposited at K ("Herbarium Hookerianum") is a duplicate of the material seen by Chamisso in the herbarium B and elected it here as the lectotype of *Ae. tomentosa*.

Aegiphila vitelliniflora Klotzsch ex Walpers, Repert. Bot. Syst. 4: 123, 1845. Neotype (designated here): Brazil, Bahia, Ilhéus, Centro de Pesquisas do Cacau, cacao plantation, 31 May 1979 (fr), *L.A. Mattos-Silva 407* (CEPEC!).

= *Aegiphila chrysantha* Hayek, Bot. Jahrb. Syst. 42: 171. 1909. Lectotype designated here): Peru, Loreto Yurimaguas, Maynas, 1831 (fl), *Poeppig 2314* (W!). *syn. nov.*

= *Aegiphila cuspidata* Mart. ex Schauer in DC., Prodr. 11: 653, 1847. Lectotype (designated here): Brazil, Bahia, Ilhéus, s.d., *B. Luschnath Mart. Herb. 1041* (M!).

= *Aegiphila cuspidata* Mart. ex Schauer f.

parviflora Schauer in DC., Prodr. 11: 653. 1847. Lectotype: Brazil, Bahia, Muritiba, s.d. (fl), *Blanchet 3269* (BR!).

Walpers (1845) did not cite a specific sample when he first described *Ae. vitelliniflora*. Moldenke (1934) stated that the species description was based on material deposited at B, which is now destroyed. No other collection of this material was located, only photographs stored at S and PH. The best solution to this problem was the designation of a neotype, and we have elected here the material *Mattos-Silva 407* (CEPEC), with duplicates at LL, for this purpose. Hayek (1909) cited the following collections for this species: *Hassler 2886*, *Weberbauer 4667 n.v.*, *Eggers 14348*, *Poeppig 2314*, and *Warming s.n.* Moldenke (1934) stated that *Warming s.n.* is a representative of *Ae. vitelliniflora*, that *Hassler 2886* is *Ae. candelabrum*, and that *Weberbauer 4667* is the type for *Ae. longipetiolata* Moldenke. Moldenke (1934) designated the material *Poeppig 2314*, deposited in the herbarium W, as the "type collection" of *Ae. chrysantha*. There are two duplicates of *Poeppig 2314* in W. In on one sheet, there is a label written by Moldenke identifying it as *Ae. chrysantha*, with the word "Type". In the other sheet, there is the designation "Isotype". In the present work, the specimen *Poeppig 2314* housed at K and labeled "Type" by Moldenke is elected here as the lectotype of *Ae. chrysantha*. Schauer (1847) cited several collections in his description of *Ae. cuspidata*: *Luschnath Herb Martius 1041*, *Gaudichaud s.n.*, *Schott s.n.*, *Riedel s.n.*, *Blanchet 3269*, *Martius s.n.*, and *R. Schomburgk 146*. These specimens are deposited in different herbaria cited by him: W, LE, Martius Herbarium (incorporated into BR), and Herbarium DC (incorporated into G). When Moldenke analyzed material from herbarium M in 1936, he attached a label indicating that it was the "Type" of *Ae. cuspidata*. This material is elected here as

the lectotype of *Ae. cuspidata*. Schauer (1847) cited *Blanchet 3269* linked to "*forma parviflora*". Schauer (1851) used the term "*grandiflora*" in describing "Typi foeminei suppetit nobis forma: Prior, *grandiflora* (*Ae. aequinoctialis* Mart. herb.)...", followed by a different description of "typo masculo (...) parviflora". Later in the same work, the author links the term "*grandiflora*" to a collection of *Luschnath s.n.* that we were not able to locate. There exist various specimens of *Blanchet 3269*, and the material in the herbarium BR is elected here as the lectotype, as it belongs to the Martius Herbarium, which Schauer almost certainly saw.

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