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New synonymies in the genus Peperomia Ruiz & Pav. (Piperaceae) – an annotated checklist

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ABSTRACT

MATHIEU, G. & R. CALLEJAS POSADA (2006). New synonymies in the genus Peperomia Ruiz & Pav. (Piperaceae) – an annotated checklist. *Candollea* 61: 331-363. In English, English and French abstracts.

In this annotated checklist, 111 names of taxa of *Peperomia* Ruiz & Pav. *(Piperaceae)* are placed into synonymies, 26 former synonymized names are re-established, and 10 existing synonyms are transferred and placed under a different accepted name of taxon. In addition, 43 lectotypes are designated. Appropriate nomenclatural as well as taxonomic justification is provided.

RÉSUMÉ

MATHIEU, G. & R. CALLEJAS POSADA (2006). Nouvelles synonymies dans le genre Peperomia Ruiz & Pav. (Piperaceae) – une liste annotée. *Candollea* 61: 331-363. En anglais, résumés anglais et français.

Dans cette liste annotée, 111 noms de taxa de *Peperomia* Ruiz & Pav. *(Piperaceae)* sont placés en synonymies, 26 anciens noms synonymes sont ré-établis, et 10 synonymes existants sont transferrés et placés sous un nom de taxon différent. En addition, 43 lectotypes sont désignés. La nomenclature appropriée ainsi que la justification taxonomique est donnée.

KEY-WORDS: PIPERACEAE – Peperomia – Synonymy – TRGP database

Introduction

Taxonomy underlies every biological concept. Any formulation of hypothesis in ecology, systematics, biogeography and comparative biology in general is based on taxonomic decisions. A choice of areas for conservation relies on abundance, population structure and geographical distribution of a targeted species, whose taxonomy is of critical importance for final considerations on its real status.

In our age of genomics, nomenclatural issues may seem irrelevant for many, but yet are crucial for maintaining a clear and rigid perspective on the taxonomy of a particular group. Nomenclatural decisions however, to be sound, should be based on a critical examination of facts and relevant data, more important they should be backed by a knowledge of the concerning species in the field.

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In the genus *Peperomia* Ruiz & Pav., as it seems to be the case in the whole *Piperaceae*, poor collecting, cryptic descriptions and the distortion of several architectural features of living plants when pressed and dried, have driven the taxonomy of the genus to a chaos. Few specialists in the group have paid any attention to the general architecture of species in *Peperomia*, and consequently fragmented parts tend to distort the taxonomy in a complex of closely related species. Here we update the nomenclatural status of several names in *Peperomia* taking care that when we provide arguments, they are based at least in part on the knowledge of the plants in the field.

There certainly has been an overdescription of species of *Peperomia* in the past, which is, once more, illustrated by the new synonyms presented here. However, we worry that in several treatments there has been a tendency to lump a number of names in a too indiscriminate fashion. Just reducing the number of names is not to be considered as a reflection of nomenclatural stability or good taxonomy. Yet and despite the fragmentary first descriptions of William Trelease for so many taxa of *Peperomia* from the neotropics, a close examination, both in herbarum and type localities, discloses a rather refined and adequate knowledge of the taxonomy of *Peperomia* by this notorious, but often neglected, specialist.

The Taxonomic Repertory of the Genus Peperomia (TRGP) [http://www.peperomia.net/ repertory.asp] provides extensive synonymy treatment for taxa in the genus *Peperomia*. However, new synonymies listed by the TRGP are often not adopted because a printed publication cannot be readily cited. To allow for authors and researchers to adopt the correct name for the taxa in *Peperomia* a list is published here below with an annexe (see Annexe 1) that includes synonyms, which, to our knowledge, were not published elsewhere. In addition, this list includes formerly established synonyms that have to be withdrawn for taxonomic reasons (erroneous synonyms are indicated using the symbol "≠"). When a clear concept of the taxon circumscription exists, we cite only the synonymized name, its publication reference and its type, in many of these cases with a more exhaustive list of isotypes than usual. In some instances we draw attention to particular characters or nomenclatural aspects for justification. When formerly synonymized taxa deserve to be re-established, appropriate arguments are provided. Lectotypes are also designated where necessary.

New synonyms

Peperomia aceramarcana Trel. in Bull. Torrey Bot. Club 55: 169. 1928.

Typus: Bolivia: *Tate 713* (holo-: NY!; iso-: ILL [fragment]!, NY!).

= *Peperomia pseudosilvarum* Yunck. in Lilloa 27: 200. 1955. **Typus: Bolivia:** *Buchtien 798* (holo-: US!; iso-: G-DC!, UPS!, W!).

In a key Yuncker distinguishes both species by their spadices: 2 cm or less and stout in *P. pseudosilvarum* and 2 cm or more and slender in *P. aceramarcana*. However, the spadices of the type collections of *P. aceramarcana* and *P. pseudosilvarum*, although not completely identical, do not support a clear distinction. Specimens with distinct longer and slender spadices should be considered as *P. aceramarcana* var. *variifolia* Yunck.

Peperomia acuminata Ruiz & Pav., Fl. Peruv. 1: 32, tab. 51, fig. a. 1798.

≡ *Piper nemorosum* Vahl, Enum. Pl. 1: 341. 1804.

≡ *Peperomia nemorosa* (Vahl) Dahlst. in Kongl. Svenska Vetensk. Acad. Handl. 33: 49. 1900.

Typus: Peru: *Ruiz & Pavón s.n.* (holo-: MA!).

The holotype has been numbered "1/69" by Krauze in 1929 (see also *P. adscendens*).

Dahlstedt published the superfluous combination *P. nemorosa* based on Vahl's *Piper nemorosum* (Vahl, 1805). Vahl had published *Piper nemorosum* as a new name for *Peperomia acuminata* because *Piper acuminatum* was pre-occupied on the basis of a different species described by

Linnaeus in 1753. When Dahlstedt, as well as Candolle for that matter, concluded that this really was a species of *Peperomia*, he referred back to the publication of Vahl rather than to the correct earlier name of Ruiz & Pavón.

= *Peperomia huacachiana* Trel. in Publ. Field Mus. Nat. Hist., Bot. Ser. 13: 53. 1936. **Typus: Peru:** *Macbride 3899* (holo-: F!; iso-: G!, G [fragment]!, ILL!).

= *Peperomia larecajana* C. DC. in A. DC., Prodr. 16(1): 406. 1869. **Typus: Bolivia:** *Mandon 1115 bis* (holo-: G-DC!; iso-: G!, K!, P!).

Although all the specimens of this collection were originally numbered *1115 bis*, it is referred to as *1115* in the protologue; that number is the type of *P. soratana* C. DC., a different species.

= *Peperomia larecajana* var. *angustifolia* Yunck. in Lilloa 27: 170. 1955. **Typus: Bolivia:** *Steinbach 9225* (holo-: NY!; iso-: BM!, K!, S!).

Peperomia adscendens C. DC. in J. Bot. 4: 140. 1866.

Typus: Venezuela: *Fendler 1153* ((holo-: G-DC!; iso-: GH!, K!, MO!, NY!, PH!).

The type is wrongly mentioned as *Fendler 6153* in the protologue.

= *Peperomia queserana* Trel. in Contr. U.S. Natl. Herb. 26: 210. 1929. **Typus: Costa Rica:** *Tonduz 12184* (holo-: US!; iso-: BR!, F!, G-DC!, K!, W!).

Peperomia queserana was formerly listed as a synonym of *P. acuminata* (Burger, 1971) because Burger did not consider *P. acuminata* and *P. adscendens* as being different. He mentioned: "Despite their different appearance I believe that these are different forms of a single species". As did Trelease & Yuncker (1950) formerly and Steyermark (1984) afterwards we prefer to keep *P. adscendens* as a distinct species. If one collects the species in the field and does not restrict his observations to herbarium specimens, he will be able to distinguish the two taxa rather easily. *Peperomia acuminata* is a succulent, distally branched herb, with fleshy but often translucid leaves. It grows in very shadowy areas, in the understory of *Quercus* forests or montane disturbed forests in the andean region. It gives off a strong aroma of culantro, difficult to get rid off even by washing hands. *Peperomia adscendens*, on the other hand, rarely branches distally and its leaves are thicker and opaque. It is more common in pluvial or very humid montane forests, in more or less exposed areas, but never in the understory. It does not give off any aromatic odor. Inflorescences in *P. acuminata* as in *P. adscendens* are erect at anthesis, but deflex entirely when fruiting in *P. adscendens*, remaining erect in *P. acuminata*. Fruits in *P. acuminata* are twice as large as those in *P. adscendens*. Collected specimens of *P. acuminata* often show single stemmed inmature plants or just the distal portion of the stem, which upon drying exhibits a blackish colour and is very thick, almost leathery (due to the presence of a thick layer of collenchyma surrounding the cortex). *Peperomia adscendes* has much thicker leaves, single unbranched stems and often roots at the nodes.

Despite the above, it is often difficult to distinguish herbarium collections, mostly because the specimens are fragmented plants, show immature inflorescences or lack fruits. The leaves of *P. adscendens*, appearing wrinkled and adaxially glossy when dry, may help in distinguishing the species.

= *Peperomia sarcodes* Trel. in Ann. Missouri Bot. Gard. 27: 304. 1940. **Typus: Panama:** *Allen 1452* (holo-: ILL!; iso-: GH!, MO!, NY!, US!).

Also *P. sarcodes* was formerly listed as synonym of *P. acuminata* (Burger, 1971) but has to be considered as *P. adscendens* for the same reasons as mentioned sub *P. queserana*.

Peperomia alata Ruiz & Pav., Fl. Peruv. 1: 31, tab. 48, fig. b. 1798.

Lectotypus (designated by Saralegui Boza, 2004): **Peru:** *Ruiz & Pavón 254* (MA!; iso-: BM [2 specimens]!, F!, ILL [fragment]!, MA [2 specimens]!, P!).

The Ruiz and Pavón expedition lasted from 1777 until 1788. The holotype has been labeled and numbered *254* by Tafalla in 1795. Juan José Tafalla worked with Ruiz and Pavón from 1785 to 1788 and, when they returned to Spain, stayed in Peru, sorting collections and shipping material to Madrid.

= *Peperomia dyscrita* Trel. in Contr. U.S. Natl. Herb. 26: 198. 1929. **Typus: Costa Rica:** *Tonduz 7518* (holo-: BR!).

Peperomia dyscrita is not to be considered as a synonym of *P. glabella* (Sw.) A. Dietr. (as in Burger, 1971). In habit, leaf shape, glands, floral bracts, number and position of inflorescences it is identical to the type collection of *P. alata*. *Peperomia glabella* has larger, dark glands, more densely covering the vegetative parts. Also the floral bracts, much larger than those of *P. alata*, are almost entirely covered by glands. The stamens are at least 2 times larger than those of *P. alata*. The solitary or numerous terminal spadices are quite different from the pair of axillary spadices in *P. alata*. Finally, *P. glabella* lacks the prominent internodal wings after which *P. alata* has been named.

Several paratypes of *P. dyscrita* belong to other species. *Tonduz 7512* is a mixed collection containing *P. alata* (BR 849516!) and *P. portobellensis* Beurl. (BR 822382!). *Standley 47270* (ILL!, US!) is the type of *P. versicolor* Trel.

Peperomia angustata Kunth in Humb. & Bonpl., Nov. Gen. Sp. 1, ed. folio: 56; ed. quarto: 68. 1816.

Lectotypus (designated here): Venezuela: *Humboldt & Bonpland 1171* (B-W [*Willd. 745*]!; iso-: P!).

Kunth travelled between Paris and Berlin when he described the collections resulting from the Humboldt & Bonpland expedition. It is likely that he has studied the *P. angustata* specimens at both locations. We designate the B (Willd.) specimen, already cited in the *Systema Piperacearum* (Miquel, 1843), as the lectotype.

= *Peperomia crassiuscula* Millsp. in Publ. Field Columb. Mus., Bot. Ser. 2: 33. 1900. **Typus: Mexico:** *Millspaugh 1628* (holo-: F).

= *Peperomia friabilis* Trel. in Repert. Spec. Nov. Regni Veg. 23: 23. 1926. **Typus: Cuba:** *Britton & al. 15452* (holo-: US!; iso-: CM!, GH!, MO!, NY!, P!, S!).

Peperomia friabilis is not to be considered as a synonym of *P. pseudopereskiifolia* C. DC. (as in Saralegui Boza, 2004). The leaves in *P. friabilis* are leathery and somewhat fleshy, somewhat rhombic, shorter than 5 cm, and less prominently 3-nerved, which is characteristic for *P. angustata*, whereas in *P. pseudopereskiifolia* the leaves are leathery but not fleshy, elliptic to obovate or oblanceolate, up to 10 cm long, and prominently 5-7-nerved. *Peperomia friabilis* also shows longer, more trailing stems, corresponding with these of *P. angustata*.

= *Peperomia wagneri* Trel. in Publ. Field Mus. Nat. Hist., Bot. Ser. 19: 276. 1940. **Typus: Honduras:** *Yuncker & al. 8127* (holo-: ILL!; iso-: BM!, F!, G!, GH!, K!, MICH!, MO!, S!, US!).

Peperomia argyroneura Lauterb. & K. Schum., Fl. Deutsch. Schutzgeb. Südsee: 237. 1905.

Typus: Bismarck Island: *Schlechter 13695* (holo-: B!).

= *Peperomia palauensis* C. DC. in Bot. Jahrb. Syst. 56: 505. 1921. **Typus: Caroline Island:** *Ledermann 14102* (holo-: B!; iso-: B!, G-DC [fragment]!, K!).

Peperomia asarifolia Schltdl. & Cham. in Linnaea 5: 75. 1830.

Lectotypus (designated here): Mexico: *Galeotti 6022* (G!; iso-: BR!, P!, U!).

Two syntypes were designated in the protologue: *Schiede s.n.* (B) and *Galeotti 6022* (G). The Schiede syntype is missing since a major part of the B collections has been destroyed during World War II. Therefore we designate *Galeotti 6022* (G) as the lectotype.

= *Peperomia brevipeduncula* var. *major* Trel. in Ann. Missouri Bot. Gard. 27: 301. 1940. **Typus: Panama:** *Allen 2037* (holo-: ILL!; iso-: F!, GH!; MICH!, MO!, NY!, US!).

= *Peperomia jaliscana* S. Watson in Proc. Amer. Acad. Arts 26: 145. 1891. **Lectotypus (designated here): Mexico:** *Pringle 2953* (GH!; iso-: B!, BKL, ENCB, F!, LY!, NY!, US!).

The new name is printed on the labels of all duplicates. No handwritten annotations indicate the material seen by the author. Watson studied his collections at Harvard where he was curator (1888-1892) when this species was published. Therefore we designate the GH specimen as the lectotype. In addition, the protologue saying "spadices 2 to 4" fits best with this specimen.

= *Peperomia langlassei* C. DC. in Annuaire Conserv. Jard. Bot. Genève 21: 320. 1920. **Typus: Mexico:** *Langlassé 306* (holo-: G-DC!; iso-: B!, G!, GH!, K!, P!, US!).

Peperomia biformis C. DC. in Denkschr. Kaiserl. Akad. Wiss., Wien. Math.-Naturwiss. Kl. 85: 266. 1910.

Lectotypus (designated here): Samoa: *K. & L. Rechinger 1873* (W!; iso-: G-DC!).

Four syntype collections were designated in the protologue: *K. & L. Rechinger 1788* (a typographical error for *1708*), *K. & L. Rechinger 1873*, *K. & L. Rechinger s.n.* and *K. & L. Rechinger 673*. All collections have been examined at W. *K. & L. Rechinger 1788* is chosen as the lectotype. It is a representative specimen, bearing an annotation in Candolle's handwriting and having a duplicate at G-DC.

= *Peperomia mniophila* C. DC. in Denkschr. Kaiserl. Akad. Wiss., Wien. Math.-Naturwiss. 85: 267. 1910. **Typus: Samoa:** *K. & L. Rechinger 1759* (holo-: W; iso-: W).

Peperomia boivinii C. DC. in J. Bot. 4: 146. 1866.

Typus: Comores: *Boivin s.n.* (holo-: BM!).

= *Peperomia humblotii* C. DC. in Annuaire Conserv. Jard. Bot. Genève 2: 284. 1898. **Typus: Comores:** *Humblot 312* (holo-: B!; iso-: BM!, K!, P!, W!).

Peperomia cachabiana C. DC. in Annuaire Conserv. Jard. Bot. Genève 21: 267. 1920.

Typus: Ecuador: VIII.1924, *Sodiro (35)58* (holo-: G-DC!).

What is mentioned in the protologue as the type collection number *(35) 58* is actually a reference to Sodiro's taxon numbering system. These numbers often consist of a *2* (*Peperomia* being the second genus treated in *Piperaceae*) and a species number that follows Sodiro's monograph (Sodiro, 1900, 1901, 1902); *35* refers to the initial identification *P. dendrophila*, overruled by *58* an identification as *P. guayaquilensis* proposed later on. Often the numbers concern preliminary identifications which do not match the proper taxon name. As these numbers do not refer to "collections" we prefer referring to Sodiro's specimens by collection date.

= *Peperomia phrymatopsis* var. *brevipedunculata* Trel. & Yunck., Piperac. N. South Amer. 2: 707. 1950. **Typus: Colombia:** *Cuatrecasas 9088* (holo-: US!; iso-: COL, F!).

Peperomia caucana C. DC. in Bot. Jahrb. Syst. 40: 259. 1908.

Typus: Colombia: *Lehmann 5409* (holo-: B!; iso-: F!, K!).

Peperomia caucana is a re-established name (see *P. succulenta* under the section "Withdrawn synonyms").

= *Peperomia deodorata* Trel. in Publ. Field Mus. Nat. Hist., Bot. Ser. 13: 39. 1936. **Typus: Peru:** *Schunke 381* (holo-: F!; iso-: G [fragment]!).

Peperomia chimboana C. DC. in Bull. Herb. Boissier 6: 508. 1898.

Lectotypus (designated here): Ecuador: S.d., *Sodiro 2/25* (G-DC; iso-: G-DC [2 specimens]!, Q!, QPLS!).

The number *2/25*, mentioned in the protologue, is not a collection number. It is one of Sodiro's taxon numbers, preliminarily assigned and referring to *P. saxatilis* C. DC., the proper taxon number referring to *P. chimboana* being *2/13* (see discussion of Sodiro's numbers under *P. cachabiana*). The type locality, mentioned by Sodiro (1900, 1901, 1902) as well as on the lectotype but not in the protologue, is Puente de Chimbo. Comparing with specimens from Sodiro's first set (at Q and QPLS) revealed that this collection has been made during Sep 1891.

Peperomia chimboana is a re-established name (see *P. emarginulata* under the section "Withdrawn synonyms").

= *Peperomia albispica* C. DC. in Bot. Jahrb. Syst. 40: 263. 1908. **Typus: Ecuador:** *Lehmann 7883* (holo-: B [missing], G-DC [drawing]!; iso-: F!, K!, US!).

Peperomia albispica is not to be considered as a synonym of *P. emarginulata* C. DC. (as in Trelease & Yuncker, 1950) (see that name under the section "Withdrawn synonyms").

Peperomia crassicaulis Fawc. & Rendle in J. Bot. 50: 177. 1912.

Syntypi: Jamaica: *Macfadyen s.n.* (K!); *Hart s.n.*; *Harris 8104* (BM!), *Harris 8321*, *Harris 10140* [*pro parte*] (BM!); *Nichols 32* (K!, US!). **Cuba:** *Wright 1689* (G-DC!, K!).

= *Peperomia percrassicaulis* Trel. in Repert. Spec. Nov. Regni Veg. 25: 54. 1928. **Lectotypus (designated here): Haiti:** *Ekman H7993* (ILL!; iso-: B!, G!, K!, S!).

Two of the mentioned duplicates (B, ILL) bear the new name in Trelease's handwriting. The ILL specimen also bears a preliminary name that Trelease intended to give to this taxon. The B specimen is in bad shape as it was temporarily stored in humid conditions during World War II.

Peperomia dendrophila Schltdl. & Cham. in Linnaea 5: 74. 1830.

Lectotypus (designated here): Mexico: VIII.1828, *Schiede s.n.* (HAL!).

The lectotypified HAL collection is the only one matching the collection date cited as "Aug" in the protologue. Two topotypes at HAL were collected in May and June 1829, respectively. Schiede duplicates at NY!, P! and W! do not mention any collection date. They mention a later added number *5* while the lectotype shows numbers *9*, *14* and *852*. A conclusion whether these duplicates are isolectotypes or topotypes cannot be made.

= *Peperomia duartensis* Trel. in Repert. Spec. Nov. Regni Veg. 29: 25. 1931. **Lectotypus** (designated by Jones, 1986): **Dominican Republic:** *Ekman H12281* (ILL!; iso-: B!, S!).

= *Peperomia leonardi* Trel. in Repert. Spec. Nov. Regni Veg. 23: 322, 329. 1927. **Typus: Haiti:** *Leonard 4028* (holo-: US!; iso-: EHH, NY!).

= *Peperomia leonardi* var. *acuminata* Trel. in Repert. Spec. Nov. Regni Veg. 23: 322. 1927. **Typus: Haiti:** *Ekman H1108* (holo-: S!; iso-: US!).

= *Peperomia maxonii* C. DC. in Urb., Symb. Antill. 7: 186. 1912. **Typus: Cuba:** *Maxon 4043* (holo-: US!; iso-: NY!).

Peperomia maxonii is not to be considered as a synonym of *P. alata* Ruiz & Pav. (as in Saralegui Boza, 2004). The lateral margins of the petiole cross the node in *P. alata* and extend below the node into two internodal wings (which are more evident in living plants), not so in *P. dendrophila* where the lateral margins of the petiole do not extend further than the node. Inflorescences are thinner and flexuous in *P. alata*, not as thick and erect as in *P. dendrophila*. Minute stamens and anthers are distinctive for *P. alata*. In *P. dendrophila* they are at least two times bigger. *Peperomia dendrophila* has very asymmetric fruits partially sunken in the rachis, different from those of *P. alata*. In the mentioned characters *P. maxonii* matches *P. dendrophila*, not *P. alata*.

= *Peperomia montis-verticis* Trel. in Publ. Field Mus. Nat. Hist., Bot. Ser. 17: 336. 1938. **Typus: Honduras:** *Yuncker & al. 6244* (holo-: ILL!; iso-: K!, MO!, NY!).

= *Peperomia novae-helvetiae* Trel. in Ann. Missouri Bot. Gard. 27: 304. 1940. **Typus: Panama:** *Allen 1417* (holo-: ILL!; iso-: GH!, MO!, NY!, US!).

= *Peperomia turquinana* Trel. in Repert. Spec. Nov. Regni Veg. 23: 20, 28. 1926. **Lectotypus** (designated by Saralegui Boza, 2004)**: Cuba:** *Ekman 14530* (ILL!; iso-: S!).

Peperomia turquinana is not to be considered as a synonym of *P. alata* (as in Saralegui Boza, 2004).

Peperomia deppeana Schltdl. & Cham. in Linnaea 5: 75. 1830.

Lectotypus (designated here): Mexico: *Deppe 12* (HAL!).

A black & white photo of a B specimen is present in several herbaria (F!, G!, MICH!, US!) and a sketch of it can still be seen at G-DC. The original at B is missing however. Therefore we designate the HAL specimen as the lectotype.

= *Peperomia polochicana* Trel. in Publ. Carnegie Inst. Washington 478: 57. 1937 [nomen nudum]. **Designated specimens: Guatemala:** *Bartlett 12150* (ILL!, MICH!), *Barlett 12316* (ILL!, K!, MICH!), *Lundell 1626, Lundell 2191* (ILL!, MICH!).

Peperomia distachya (L.) A. Dietr., Sp. Pl. 1: 156. 1831.

≡ *Piper distachyon* L., Sp. Pl.: 130. 1753.

Lectotypus (designated by Saralegui Boza, 2004): Plum., Descr. Pl. Amér.: tab. 67. 1693.

= *Peperomia elegans* C. DC. in A. DC., Prodr. 16(1): 430. 1869. **Typus: Peru:** *Spruce 4871* (holo-: G!; iso-: BM!, BR!, E!, K!, NY!, TCD!, W!).

Peperomia edulis Miq. in Linnaea 18: 711. 1844.

Lectotypus (designated here): Mexico: V.1829, *Schiede s.n.* (HAL!; iso-: BM!, U!).

The HAL and U specimens are annotated by Miquel. The collection site is mentioned exactly as in the protologue. The BM specimen mentions the same collection site but there is no indication that Miquel has seen it. There is also a specimen at B, acquired from the Baschant Herbarium in 1959, that might belong to this collection. It is attributed to Schiede but mentions no collection site.

Peperomia edulis is a re-established taxon name (see *P. quadrifolia* under the section "Withdrawn synonyms").

= *Peperomia calderoniae* Barrios, Cota & Medina-Cota in Phytologia 62: 54. 1987. **Typus: Mexico:** *Medina-Cota & al. 2572* (holo-: ENCB; iso-: MO!, NY!).

The illustration in the protologue overemphasizes an obovate leaf shape and an emarginate apex. This does not agree with the MO and NY isotypes.

Peperomia exigua (Blume) Miq., Syst. Piperac.: 77. 1843.

≡ *Piper exiguum* Blume in Verh. Batav. Genootsch. Kunst. 11: 232. 1826.

Typus: Indonesia: *Blume s.n.* (holo-: L!).

= *Peperomia freireifolia* A. Rich., Tent. Fl. Abyss. 2: 274. 1850. **Typus: Ethiopia:** *Schimper 1942* (BM!, BR!, G [2 specimens]!, G-DC!, GOET, K!, L!, LY!, M [3 specimens]!, P [5 specimens]!, PR!, S!, UPS!, W [2 specimens]!).

Although not designated in the protologue, a P specimen has been mentioned as the holotype (Verdcourt, 1996). The P holdings contain 5 duplicates of *Schimper 1942* from different acquisitions. As none of them seems to have been annotated by Richard, it is unclear which of them he might have seen.

Peperomia freireifolia was published as *freireaefolia*, corrected according to art. 60.8 of the ICBN. It is a re-established taxon name and is not to be considered as a synonym of *P. pellucida* (L.) Kunth (as in Düll, 1973) (see *P. pellucida* under the section "Withdrawn synonyms").

Peperomia fragrans C. DC. in J. Bot. 4: 140. 1866.

Typus: Venezuela: *Fendler 1156* (holo-: G!; iso-: GH!, K!).

= *Peperomia binispica* Trel. in Publ. Field Mus. Nat. Hist., Bot. Ser. 13: 25. 1936. **Typus: Peru:** *Schunke 358* (holo-: F!; iso-: G [fragment]!).

Peperomia galioides Kunth in Humb. & Bonpl., Nov. Gen. Sp. 1, ed. folio: 58; ed. quarto: 71. 1816.

Lectotypus (designated by Saralegui Boza, 2004): **Colombia:** *Humboldt s.n.* (P; iso-: B).

= *Peperomia brachyiula* Trel. in Publ. Field Mus. Nat. Hist., Bot. Ser. 13: 26. 1936. **Typus: Peru:** *Macbride & Featherstone 129* (holo-: F!; iso-: G!, ILL!).

= *Peperomia chillonensis* Trel. in Publ. Field Mus. Nat. Hist., Bot. Ser. 13: 30. 1936. **Typus: Peru:** *Pennell 14413* (holo-: F!; iso-: G [fragment]!, ILL [fragment]!, PH!).

= *Peperomia dendroides* Trel. in Publ. Field Mus. Nat. Hist., Bot. Ser. 13: 38. 1936. **Typus: Peru:** *Macbride 3640* (holo-: F!; iso-: G!, G [fragment]!, ILL!, US!).

= *Peperomia dendromorphis* Trel. in Publ. Field Mus. Nat. Hist., Bot. Ser. 13: 39. 1936. **Typus: Peru:** *Weberbauer 7800* (holo-: F!; iso-: G [fragment]!, ILL!).

= *Peperomia longispica* Trel. in Publ. Field Mus. Nat. Hist., Bot. Ser. 13: 59. 1936. **Typus: Peru:** *Macbride 3928* (holo-: F!; iso-: B!, BM!, G [fragment]!, ILL!, US!).

= *Peperomia medianiana* Trel. in Repert. Spec. Nov. Regni Veg. 29: 25. 1931. **Lectotypus** (designated by Jones, 1986): **Dominican Republic:** *Ekman H13605* (ILL!; iso-: B!, C!, G!, GH, K!, S!, US!).

Peperomia glabella (Sw.) A. Dietr., Sp. Pl. 1: 156. 1831.

≡ *Piper glabellum* Sw., Prodr.: 16. 1788.

Lectotypus (designated by Howard, 1973): **Jamaica:** *Swartz s.n.* (S!; iso-: G-DC!, M!).

= *Peperomia buchii* C. DC. in Urb., Symb. Antill. 5: 296. 1907. **Typus: Haiti:** *Buch 611* (holo-: B!).

Peperomia gleicheniiformis Trel. in Publ. Field Mus. Nat. Hist., Bot. Ser. 18: 315. 1937.

Typus: Costa Rica: *Skutch 2287* (holo-: US!; iso-: K!, NY!, S!).

Peperomia gleicheniiformis is a re-established name (see *P. candelaber* under the section "Withdrawn synonyms"). It has been published as *gleicheniaeformis*, corrected according to art. 60.8 of the ICBN.

= *Peperomia calimana* Trel. & Yunck., Piperac. N. South Amer. 2: 617. 1950. **Typus: Colombia:** *Killip 11225* (holo-: GH!; iso-: ILL!, NY!, PH!, US!).

Peperomia calimana is not to be considered as a synonym of *P. ouabianae* C. DC. (as in Steyermark, 1984). Its indument on the stem abruptly ends at the petiole. In *P. ouabianae*, it continues on the petiole and the leaf blade.

Peperomia granulosa Trel. in J. Washington Acad. Sci. 19: 328. 1929.

Typus: Honduras: *Standley 54360* (holo-: F!; iso-: ILL!, US!).

= *Peperomia perplexa* Trel. in Publ. Field Mus. Nat. Hist., Bot. Ser. 17: 337. 1938 [nomen nudum]. **Designated specimens: Honduras:** *Yuncker 4865* (F!, ILL!, MICH!, MO!).

Peperomia hirta C. DC. in A. DC., Prodr. 16(1): 412. 1869.

Typus: Cuba: *Wright 512* (holo-: G-DC!; iso-: B!, G!, GH, GOET, HAC, K!, MA!, P!, TCD!, W!).

= *Peperomia mollipubis* Trel. in Publ. Field Mus. Nat. Hist., Bot. Ser. 17: 335. 1938. **Typus: Honduras:** *Yuncker & al. 6367* (holo-: ILL!; iso-: NY!).

Peperomia hydrocotyloides var. ***prolifera*** Trel. in Ciencia (Mexico) 2: 206. 1941.

Typus: Brazil: *Isern 6449a* [as *Isern 6669a* in protologue] (holo-: MA!).

= *Peperomia hydrocotyloides* var. *major* Yunck. in Bol. Inst. Bot. (São Paulo) 3: 144. 1966. **Typus: Brazil:** *Isern 6449* (holo-: ILL!; iso-: MA!).

The type is as *Isern 6669* in the protologue.

Cuatrecasas, curator at MA, assigned the number *6449* to the concerning Isern specimens before shipping them on loan from Madrid to the USA. Due to Cuatrecasas's less clear handwriting, Trelease annotated and referred to these specimens as *Isern 6669* and *Isern 6669a*. Yuncker had to follow this error. The ILL specimen that he used as the holotype of *P. hydrocotyloides* var. *major* only bears a label transcribed by Trelease from the original MA specimen and consequently it was not longer possible to interpret Cuatrecasas handwriting.

Besides the long, obviously recumbent stem of *Isern 6449a*, there is no difference with the other specimens of *Isern 6449*. The presence of one etiolate specimen is not sufficient to assign a new name and *Isern 6449* and *Isern 6449a* have to be considered as the same taxon. Trelease's name is the oldest one and has priority. Yuncker was apparently not aware of the publication of *P. hydrocotyloides* var. *prolifera* Trel. In his treatment of the *Piperaceae* of Brazil, Yuncker mentioned *P. hydrocotyloides* as well as varieties *major* and *setosa*, but paid no attention to var. *prolifera* (Yuncker, 1974). This is not surprising because *P. hydrocotyloides* var. *prolifera* was published in the 1941 edition of the Mexican journal *Ciencia*, of which only a limited number of copies were distributed.

Peperomia imerinae C. DC. in Bot. Jahrb. Syst. 19: 228. 1894.

Typus: **Madagascar:** *Hildebrandt 4041* (holo-: G-DC!; iso-: BM!, G!, K!, M!, P!).

= *Peperomia imerinae* f. *subacutifolia* C. DC. in Notul. Syst. (Paris) 2: 49. 1911. **Typus: Madagascar:** *Hildebrandt 4045* (holo-: G!).

Peperomia kalimatina C. DC. in Meded. Rijks-Herb. 22: 5. 1914.

Lectotypus (designated here): Indonesia: *Elbert 1433* (L!).

The L specimen has been annotated by Candolle in 1913.

= *Peperomia elbertii* C. DC. in Candollea 1: 314. 1923. **Lectotypus (designated here):** **Indonesia:** *Elbert 945* (L!; iso-: G-DC!).

The L specimen has been annotated by Candolle in 1913. The G-DC specimen is fragmentary and bears several identifications, including *P. elbertii*, which have been crossed out. The new species was initially published as *P. tenuipeduncula* C. DC. in Meded. Rijks-Herb. 22: 5. 1914 (a junior homonym for *P. tenuipeduncula* C. DC. in Repert. Spec. Nov. Regni Veg. 13: 306. 1914). **Typus:** **Bolivia:** *Buchtien 2338*) but this has been corrected later (Candolle, 1923).

Peperomia lanceolata C. DC. in J. Bot. 4: 145. 1866.

Lectotypus (designated here): Ecuador: *Spruce 6110* (G-DC!; iso-: BM!, E!, G!, K!, P!, W!).

Two syntypes were designated in the protologue: *Spruce 6110* (G-DC) and *Jameson 343* (G-DC). The Spruce specimen is well preserved, complete and agrees in all details with the protologue.

= *Peperomia chiqueroana* Trel. in Ann. Missouri Bot. Gard. 27: 301. 1940. **Typus: Panama:** *Woodson & al. 1025* (holo-: ILL!; iso-: GH!, MO!, NY!, US!).

Peperomia lignescens C. DC. in J. Bot. 4: 137. 1866.

Typus: Costa Rica: *Hoffmann s.n.* (holo-: B [missing]).

= *Peperomia carlosiana* C. DC. in J. Bot. 4: 140. 1866. ≡ *Peperomia lanceolatopeltata* var. *carlosiana* (C. DC.) Trel. & Yunck., Piperac. N. South Amer. 2: 599. 1950. **Typus: Venezuela:** *Fendler 1148* (holo-: G-DC!).

Peperomia lanceolatopeltata var. *carlosiana* has been published *as lanceolato-peltata*, corrected according to art. 60.9 of the ICBN. *Peperomia carlosiana* C. DC. has been synonymized with *P. lignescens* by Grayum (1996).

Peperomia macrostachya (Vahl) A. Dietr., Sp. Pl. 1: 149. 1831.

≡ *Piper macrostachyon* Vahl, Enum. Pl. 1: 341. 1804.

Typus: French Guiana: *Richard s.n.* (holo-: P!).

= *Peperomia apodostachya* Yunck. in Lilloa 27: 251. 1955. **Typus: Bolivia:** *Buchtien 627* (holo-: US!; iso-: ILL!).

= *Peperomia defluens* Trel. in Publ. Field Mus. Nat. Hist., Bot. Ser. 17: 333. 1938. **Typus: Honduras:** *Yuncker 4916* (holo-: ILL!; iso-: MICH!, NY!).

= *Peperomia quatrometralis* Trel. in Publ. Field Mus. Nat. Hist., Bot. Ser. 13: 83. 1936. **Typus: Peru:** *Killip & Smith 26330* (holo-: US!; iso-: G!, ILL!).

Peperomia magnoliifolia (Jacq.) A. Dietr., Sp. Pl. 1: 153. 1831.

≡ *Piper magnoliifolium* Jacq., Collectanea 3: 210. 1791.

Lectotypus (designated here): *Jacquin s.n.*, material cultivated at Schönbrunn (Vienna) (W!).

Although never designated as the type, several publications refer to the colour drawing published in Jacq., Icon. Pl. Rar. 2: tab. 213. 1792. This drawing is made based on living material from Venezuela cultivated at the Royal Botanical Garden at Schönbrunn (Vienna). However, there is also a herbarium specimen from this cultivated material. It is annotated in Jacquin's handwriting as *Piper magnoliaefolium*. It is annotated also as from plants cultivated at Schönbrunn and from Jacquin's herbarium.

Peperomia magnoliifolia published as *magnoliaefolia*, corrected according to article 60.8 of the ICBN. *Peperomia petenensis* is not to be considered as a synonym of *P. obtusifolia* (L.) A. Dietr. (as in STANDLEY & STEYERMARK, 1952). The fruits of *P. petenensis* have the characteristics of those of *P. magnoliifolia* (see this name under the section "Withdrawn synonyms").

= *Peperomia obtusifolia* var. *longibracteata* Yunck. in Ann. Missouri Bot. Gard. 37: 109. 1950. **Typus: PANAMA:** *Allen 3730* (holo-: MO!).

= *Peperomia petenensis* Trel. in Publ. Field Mus. Nat. Hist., Bot. Ser. 17: 230. 1937. **Typus: GUATEMALA:** *Lundell 2129* (holo-: MICH!).

= *Peperomia petenensis* var. *hondurensis* Trel. in Publ. Field Mus. Nat. Hist., Bot. Ser. 17: 337. 1938. **Typus: HONDURAS:** *Yuncker & al. 5922* (holo-: ILL!; iso-: F!, G!, GH!, K!, MICH!, MO!, S!, U!).

Peperomia matlalucaensis C. DC. in Linnaea 37: 375. 1872.

Typus: MEXICO: *Liebmann 130* (holo-: C!; iso-: G-DC [fragment]).

= *Peperomia punctatifolia* var. *munyecoana* Trel. in Contr. U.S. Natl. Herb. 26: 204. 1929. **Typus: COSTA RICA:** *Standley 33432* (holo-: US!).

Peperomia punctatifolia var. *munyecoana* has been published as *punctataefolia*, corrected according to art. 60.8 of the ICBN. It is not to be considered as a synonym of *P. rotundifolia* (L.) Kunth (as in BURGER, 1971). *Peperomia matlalucaensis* is more profusely branched and shows much shorter internodes. It has oblong to obovate leaves, apically obtuse to rounded, very uniform in shape and size along the stem and with longer petioles. Appressed trichomes of the same type cover all parts of the plant equidensely. In *P. rotundifolia* the leaves are orbicular with trichomes distinctly longer but less densely distributed than those along the stems.

Peperomia microphylla Kunth in Humb. & Bonpl., Nov. Gen. Sp. 1, ed. folio: 57; ed. quarto: 69. 1816.

Lectotypus (designated here): COLOMBIA: *Humboldt & Bonpland s.n.* (B-W [*Willd. 749*]!; iso-: P [2 specimens]!).

Kunth travelled between Paris and Berlin when he described the collections resulting from the Humboldt & Bonpland expedition. It is likely that he has studied the *P. microphylla* specimens at both locations. We designate the B specimen, already cited in the *Systema Piperacearum* (MIQUEL, 1843), as the lectotype.

= *Peperomia gilbertii* Trel. in Publ. Field Mus. Nat. Hist., Bot. Ser. 13: 50. 1936. **Typus: PERU:** *Cook & Gilbert 740* (holo-: US!; iso-: ILL [fragment]!).

Peperomia gilbertii has been published as *gilberti*, corrected according to art. 60.11 of the ICBN.

Peperomia miqueliana C. DC. in J. Bot. 4: 138. 1866.

Typus: ECUADOR: *Jameson 737* (holo-: K!; iso-: BM [2 specimens]!).

= *Peperomia cordilimba* C. DC. in Annuaire Conserv. Jard. Bot. Genève 21: 266. 1920. **Typus: ECUADOR:** *Jameson 691* [*pro parte*] (holo-: P!). The same number assigned to a collection of *Peperomia tetraphylla* Hook. & Arn. (BM!, P [2 specimens]!, PH!).

= *Peperomia crassilimba* C. DC. in Bull. Herb. Boissier 6: 516. 1898. **Lectotypus (designated here): ECUADOR:** I.1876, *Sodiro 2/64* (G-DC!).

The G-DC specimen bears the new name in Candolle's handwriting. The number *2/64*, mentioned on the type specimen as well as in the protologue, is not a collection number. It is one of Sodiro's taxon numbers, preliminarily assigned and referring to *P. emarginata* Ruiz & Pav., the proper taxon number referring to *P. crassilimba* being *2/30* (see discussion of Sodiro's numbers under *P. cachabiana*).

Peperomia crassilimba has been published as *crassilimbus*, corrected according to art. 23.5 of the ICBN.

Peperomia nizaitoensis C. DC. in Urb., Symb. Antill. 7: 185. 1912.

Typus: Dominican Republic: *Fuertes 717* (holo-: B!; iso-: BR!).

= *Peperomia densibacca* C. DC. in Urb., Symb. Antill. 7: 186. 1912. **Typus: Dominican Republic:** *von Türckheim 3179* (holo-: B!).

Peperomia obtusifolia (L.) A. Dietr., Sp. Pl. 1: 154. 1831.

≡ *Piper obtusifolium* L., Sp. Pl.: 30. 1753.

Lectotypus (designated by Howard, 1973): Plum., Descr. Pl. Amér.: tab. 70. 1693.

= *Peperomia cruciata* Trel. in Publ. Field Mus. Nat. Hist., Bot. Ser. 13: 34. 1936. **Typus: Peru:** *Schunke 343* (holo-: F!; iso-: G [fragment]!, ILL [fragment]!).

= *Peperomia fieldiana* Trel. in Publ. Field Mus. Nat. Hist., Bot. Ser. 13: 45. 1936. **Typus: Peru:** *Macbride 4684* (holo-: F!; iso-: B!, G!, G [fragment]!, US!).

Peperomia oerstedii C. DC. in Linnaea 37: 375. 1872.

Typus: Costa Rica: *Ørsted 977* (holo-: C!).

= *Peperomia nievecitana* Trel. in Ann. Missouri Bot. Gard. 27: 304. 1940. **Typus: Panama:** *Woodson & al. 1865* (holo-: ILL!; iso-: MO!, NY!, US!).

Peperomia olivacea C. DC. in J. Bot. 4: 146. 1866.

Typus: Costa Rica: *Hoffmann 810* (holo-: B [missing], G-DC [drawing]!).

= *Peperomia bifrons* Trel. in Ann. Missouri Bot. Gard. 27: 300. 1940. **Typus: Panama:** *Woodson & al. 1132* (holo-: MO!; iso-: GH!).

= *Peperomia novella* Trel. in Publ. Field Mus. Nat. Hist., Bot. Ser. 17: 336. 1938. **Typus: Honduras:** *Yuncker & al. 6139* (holo-: ILL!; iso-: GH!, MO!, NY!).

Peperomia pedicellata Dahlst. in Kongl. Svenska Vetensk. Acad. Handl. 33: 35. 1900.

≡ *Peperomia peltata* C. DC. in Annuaire Conserv. Jard. Bot. Genève 2: 277. 1898 [nomen illeg.].

Typus: Guatemala: *Heyde & Lux 3829* (holo-: G-DC!; iso-: G!, GH!, K!, S!, US!).

Peperomia pedicellata is a re-established name (see *P. claytonioides* under the section "Withdrawn synonyms").

Because of its earlier publication date, *P. peltata* has been cited as the legitimate name and *P. pedicellata* Dahlst. as its synonym (Standley & Steyermark, 1952). However, *P. peltata* C. DC. is illegitimate as it is a junior homonym of *P. peltata* (L.) A. Dietr., Sp. Pl. 1: 142. 1831. The latter is not a *Peperomia* and has to retain its original name *Piper peltatum* L. (Trelease & Yuncker, 1950).

Peperomia pellucida (L.) Kunth in Humb. & Bonpl., Nov. Gen. Sp. 1, ed. folio: 53; ed. quarto: 64. 1816.

≡ *Piper pellucidum* L., Sp. Pl.: 30. 1753.

Lectotypus (designated by STEARN, 1957-1959): L., Hort. Cliff.: tab. 4. 1739.

= *Peperomia ephemera* Ekman in Ark. Bot. 22A(9): 20. 1929 [nomen nudum]. **Designated specimens: HAITI:** *Ekman H9755* (EHH, ILL!, S!)

Peperomia pereskiifolia (Jacq.) Kunth in Humb. & Bonpl., Nov. Gen. Sp. 1, ed. folio: 56; ed. quarto: 68. 1816.

≡ *Piper pereskiifolium* Jacq., Collectanea 4: 126. 1790.

Lectotypus (designated here): *Jacquin s.n.*, material cultivated at Schönbrunn (Vienna) (W!).

Although never designated as the type, several publications refer to the colour drawing published in Jacq., Icon. Pl. Rar. 2: tab. 219. 1792. This drawing is made based on living material from Venezuela cultivated at the Royal Botanical Garden at Schönbrunn (Vienna). However, there is a also a herbarium specimen from this cultivated material. It is annotated in Jacquin's handwriting as *Piper pereskiaefolium*. It is annotated also as from plants cultivated at Schönbrunn and from Jacquin's herbarium.

Peperomia pereskiifolia has been published as *pereskiaefolia*, corrected according to art. 60.8 of the ICBN.

= *Peperomia quicheensis* Trel. in Publ. Carnegie Inst. Washington 478: 57. 1937 [nomen nudum]. **Designated specimens: GUATEMALA:** *Bartlett 12206* (ILL!, MICH!).

Peperomia pernambucensis Miq. in London J. Bot. 4: 420. 1845.

Lectotypus (designated here): BRAZIL: *Gardner 1157* (K!).

The K specimen bears the new name in Miquel's handwriting.

= *Peperomia aphanoneura* C. DC. in Bull. Herb. Boissier 6: 507. 1898. **Lectotypus (designated here): ECUADOR:** IX.1875, *Sodiro s.n.* (G-DC!; iso-: QPLS [2 specimens]!).

The G-DC specimen bears the new name in Candolle's handwriting. The lectotype shows only fragmentary inflorescence material. One of the QPLS duplicates shows the characteristic *P. pernambucensis* inflorescence in good shape, but has not been seen by the taxon author. The number *2/61*, mentioned in the protologue, is not a collection number. It is a preliminary identification according to Sodiro's taxon numbering and refers to *P. lancifolia* Kunth (see discussion of Sodiro's numbers under *P. cachabiana*).

= *Peperomia balsapuertana* Trel. in Publ. Field Mus. Nat. Hist., Bot. Ser. 13: 24. 1936. **Typus: PERU:** *Killip & Smith 28632* (holo-: US!).

= *Peperomia lechleriana* Trel. in Publ. Field Mus. Nat. Hist., Bot. Ser. 13: 58. 1936. **Typus: PERU:** *Lechler 2375* (holo-: K!).

Peperomia pilifera Trel. in Publ. Field Mus. Nat. Hist., Bot. Ser. 13: 74. 1936.

≡ *Peperomia yananoensis* var. *caniana* Trel. in Publ. Field Mus. Nat. Hist., Bot. Ser. 13: 106. 1936.

Typus: PERU: *Macbride 3460* (holo-: F!; iso-: B!, G!, ILL!).

These homotypic taxa have the same publication date. *Peperomia pilifera* is herewith designated as the correct name, following art. 11.5 of the ICBN.

Peperomia portulacoides (Lam.) A. Dietr., Sp. Pl. 1: 172. 1831.

≡ *Piper portulacoides* Lam., Tabl. Encycl. 1: 82. 1791.

Typus: Mauritius: *Commerson s.n.* (holo-: P!; iso-: P!).

= *Peperomia candolleana* Miq., Syst. Piperac.: 146. 1843. **Typus: India:** *Richard s.n.* (holo-: G!; iso-: TCD!).

Peperomia pseudopereskiifolia C. DC. in A. DC., Prodr. 16(1): 448. 1869.

Lectotypus (designated by Saralegui Boza, 2004): **Cuba:** *Wright 507* (G-DC!; iso-: BM!, BR!, G [2 specimens]!, GH!, MA!, MO!, PH!, TCD!).

Peperomia pseudopereskiifolia has been published as *pseudo-pereskiaefolia*, corrected according to art. 60.8 and 60.9 of the ICBN.

= *Peperomia chartacea* Trel. in Publ. Field Mus. Nat. Hist., Bot. Ser. 13: 30. 1936. **Typus: Peru:** *Killip & Smith 26636* (holo-: US!; iso-: G!, ILL!, NY!).

Peperomia pseudorhynchophora C. DC. in A. DC., Prodr. 16(1): 425. 1869.

Typus: Peru: *Poeppig s.n.* (holo-: G!; iso-: W).

Peperomia pseudorhynchophora has been published as *pseudorhynchophoron*, corrected according to principle V and art. 23.5 of the ICBN.

= *Peperomia pergamentacea* Trel. in Publ. Field Mus. Nat. Hist., Bot. Ser. 13: 72. 1936. **Typus: Peru:** *Killip & Smith 26063* (holo-: US!; iso-: NY!).

Peperomia quadrangularis (J. V. Thomps.) A. Dietr., Sp. Pl. 1: 169. 1831.

≡ *Piper quadrangulare* J. V. Thomps. in Trans. Linn. Soc. London 9: 202, tab. 21, fig. 1. 1808.

Lectotypus (designated by Saralegui Boza, 2004): Trans. Linn. Soc. London 9: 202, tab. 21, fig. 1. 1808.

= *Peperomia muscosa* Link in Bot. Jaarb. 1: 64. 1820. **Typus: Brazil:** *Hoffmannsegg s.n.* (holo-: B!; iso-: BR!, HAL!, W!).

Dahlstedt (1900) mentioned the close alliance of both species and Yuncker (1974) noticed their resemblance but proposed to continue considering them as different because of the longer than wide leaves of *P. muscosa* and the almost round leaves of *P. quadrangularis*. In the meantime, sufficient herbarium specimens have been examined where leaves of both types were present on the same plant. This illustrates that their length-width ratio may be quite variable in this species.

Peperomia quadrifolia (L.) Kunth in Humb. & Bonpl., Nov. Gen. Sp. 1, ed. folio: 57; ed. quarto: 69. 1816.

≡ *Piper quadrifolium* L., Sp. Pl. ed. 2: 43. 1762.

Lectotypus (designated by Saralegui Boza, 2004): Plum., Pl. Amer.: tab. 242, fig. 3. 1760.

= *Peperomia pseudotetraphylla* var. *dodgei* Trel. in Publ. Field Mus. Nat. Hist., Bot. Ser. 18: 322. 1937. **Typus: Costa Rica:** *Dodge 4715* (holo-: GH!; iso-: ILL!).

Peperomia reineckei C. DC. in Lauterb. & K. Schum., Fl. Deutsch. Schutzgeb. Südsee: 254. 1905.

Typus: Samoa: *Reinecke 434* (holo-: B!; iso-: G!).

= *Peperomia parvispica* C. DC. in Denkschr. Kaiserl. Akad. Wiss., Wien. Math.-Naturwiss. Kl. 85: 267. 1910. **Typus: Samoa:** *K. & L. Rechinger 427* (holo-: W!).

Peperomia reptans C. DC. in J. Bot. 4: 143. 1866.

Typus: Colombia: *Triana 58* (holo-: G-DC!; iso-: BM!, COL!, US!).

= *Peperomia duidana* Trel. in Bull. Torrey Bot. Club 58: 354. 1931. **Typus: Venezuela:** *Tate 438* (holo-: NY!; iso-: ILL!).

Peperomia duidana is a name frequently seen on herbarium labels and in publications. From *P. reptans* on the other hand, very few collections are known and published references are also rare. However, it is the oldest of both names and has priority.

Peperomia spathophylla Dahlst. in Kongl. Svenska Vetensk. Acad. Handl. 33: 105. 1900.

Lectotypus (designated by Saralegui Boza, 2004): **Cuba:** *Wright 2262* [*pro parte*] (GOET; iso-: G-DC!, HAC, K!, MA!, MO!, P!, US!, W!).

= *Peperomia michelensis* Trel. in Repert. Spec. Nov. Regni Veg. 24: 360. 1928. **Lectotypus** (designated by Jones, 1986): **Haiti:** *Ekman H6606* (ILL!; iso-: B!, S!).

= *Peperomia truncata* Trel. in Repert. Spec. Nov. Regni Veg. 23: 322, 330. 1927. **Typus: Haiti:** *Leonard 3831* (holo-: US!).

Peperomia spathulifolia Small in Britton & Millsp., Bahama Fl.: 101. 1920.

Lectotypus (designated here): Bahamas: *Brace 1876* (NY!; iso-: F!, K!, NY!, US [fragment]!).

Although Boufford (1982) suggested two collections, he did not designate a definite lectotype. Only the Brace collection fits with the type locality cited in the protologue.

Peperomia spathulifolia is a re-established name (see *P. magnoliifolia* (Jacq.) A. Dietr. under the section "Withdrawn synonyms").

= *Peperomia lancetillana* Trel. in Publ. Field Mus. Nat. Hist., Bot. Ser. 17: 334. 1938. **Typus: Honduras:** *Yuncker 4943* (holo-: ILL!; iso-: F!, MICH!, MO [2 specimens]!).

= *Peperomia lancetillana* var. *spathifolia* Trel. in Publ. Field Mus. Nat. Hist., Bot. Ser. 17: 335. 1938. **Typus: Honduras:** *Yuncker 5040* (holo-: ILL!; iso-: NY!).

= *Peperomia romaensis* Trel. in Publ. Field Mus. Nat. Hist., Bot. Ser. 19: 275. 1940. **Typus: Honduras:** *Yuncker & al. 8585* (holo-: ILL!; iso-: GH!, MO!, NY!, S!, US!).

= *Peperomia yousei* Trel. in Publ. Field Mus. Nat. Hist., Bot. Ser. 17: 339. 1938. **Typus: Honduras:** *Yuncker & al. 5995* (holo-: ILL!; iso-: G!, GH!, K!, MO!, NY!, S!, U!, US!).

Peperomia stelechophila C. DC. in A. DC., Prodr. 16(1): 433. 1869.

Typus: Ecuador: *Jameson 400* [*pro parte*] (holo-: G-DC!; iso-: E [*pro parte*]!).

Under this collection number specimens representing a different taxon may be found (BM!, E [*pro parte*]!, K!, P!). This was already recognized by Candolle himself. However, he never published the name he proposed for it (on the label of the specimen at P).

= *Peperomia chromatogena* Yunck. in Lilloa 27: 278. 1955. **Typus: Bolivia:** *Buchtien 5382* (holo-: US!).

= *Peperomia chromatogena* var. *subpeltata* Yunck. in Lilloa 27: 279. 1955. **Typus: Bolivia:** *Buchtien 4556* (holo-: US!).

= *Peperomia ponthieui* var. *parvifolia* C. DC. in Kuntze, Revis. Gen. Pl. 3: 273. 1898. **Lectotypus (designated here): Bolivia:** *Kuntze s.n.* (NY!; iso-: G-DC!, NY!).

Of the two specimens at NY, only one bears the taxon name in Candolle's handwriting and mentions the collection locality as cited in the protologue. This specimen, of which the specimen at G-DC is likely to be a fragment, is designated as the lectotype.

= *Peperomia tropeolifolia* Sodiro, Piperac. Ecuator. Adic.: 171. 1901. **Lectotypus (designated here):** IV.1900, *Sodiro s.n.* (Q!; iso-: P!).

Sodiro mentioned in the protologue to have made the description based on the observation of living plants (D.s.m.v. = Descripción sobre muestras vivas). One collection has been found among Sodiro's first set (at Q and QPLS) mentioning a collection date before the date of publication of this taxon. Although the collection site is mentioned as between Nono and Gualea whereas the protologue mentions between Alaspungo and Gualea, it concerns exactly the same area.

Peperomia striata Ruiz & Pav., Fl. Peruv. 1: 32, tab. 52, fig. b. 1798.

Lectotypus (designated here): Peru: *Ruiz & Pavón s.n.* (MA!).

No type is designated in the protologue and most later publications refer to its illustration. The *P. striata* specimen in the Ruiz & Pavón herbarium (MA) is designated as the lectotype.

= *Peperomia frigidula* Trel. & Standl. in Fieldiana, Bot. 24: 246. 1952. **Typus: Guatemala:** *Standley 89493* (holo-: F!).

= *Peperomia helminthostachya* Sodiro, Piperac. Ecuator. Adic.: 153. 1901. **Lectotypus (designated here): Ecuador:** XI.1900, *Sodiro s.n.* (G-DC!; iso-: B!, S!).

Sodiro's main set can be found at Q or QPLS. However, specimens of *P. helmintostachya* mentioning the collection site and date as in the protologue are only found at G-DC, B and S. It is possible that the concerning specimen at Q or QPLS has been lost. Because also the G-DC specimen bears a label in Sodiro's handwriting there is no objection designating it as the lectotype.

= *Peperomia spectabilis* Miq. in Lond. Journ. Bot. 4: 417. 1845. **Lectotypus (designated here): Peru:** *Mathews 1685* (K!; iso-: E!, K, L!, P!).

There are two specimens at K, one of them bearing the original annotation label in Miquel's handwriting. That specimen is designated as the lectotype.

Peperomia succulenta C. DC. in J. Bot. 4: 142. 1866.

Lectotypus (designated here): Venezuela: *Fendler 1157* (G-DC!; iso-: K!).

Two syntypes are mentioned in the protologue: *Fendler 1157* (G-DC) and *Fendler 1155* (G-DC). *Fendler 1155* is rejected as it belongs to *P. acuminata* Ruiz & Pav.

= *Peperomia defracta* Trel. in Publ. Field Mus. Nat. Hist., Bot. Ser. 18: 312. 1937. **Typus: Costa Rica:** *Skutch 2851* (holo-: US!; iso-: GH!, K!, MICH!, MO!, NY!, S!).

Peperomia defracta is not to be considered as a synonym of *P. reptabunda* Trel. (as in Burger, 1971), which is now put in synonymy of *P. martiana* Miq. (Callejas, 2001). *Peperomia martiana* is a prostrate herb that exhibits leaves of equal size and form along one stem while *P. succulenta* is an erect herb with very variable leaves, the basal ones small and obovate with an obtuse apex, the apical ones 2-3 times as large, more oblanceolate and with a more acuminate apex. In addition, leaves of *P. martiana* are apically ciliate.

Peperomia tenelliformis Trel. in Contr. U.S. Natl. Herb. 26: 203. 1929.

Typus: Costa Rica: *Standley 33135* (holo-: US!).

Peperomia tenelliformis has been published as *tenellaeformis*, corrected according to art. 60.8 of the ICBN.

= *Peperomia chiriquiensis* Yunck. in Ann. Missouri Bot. Gard. 37: 93. 1950. **Typus: Panama:** *Killip 3564* (holo-: US!; iso-: ILL!).

Peperomia tenuipes Trel. in Contr. U.S. Natl. Herb. 26: 192. 1929.

Typus: Costa Rica: *Pittier 14042* (holo-: US!).

Peperomia tenuipes is a reestablished taxon name (see *P. tenella* under the section "Withdrawn synonyms").

= *Peperomia sphagnicola* Trel. in Publ. Field Mus. Nat. Hist., Bot. Ser. 18: 326. 1937. **Typus: Costa Rica:** *Skutch 3047* (holo-: US!; iso-: GH!, K!, MO!, NY!, S!).

= *Peperomia tyleri* Trel. in Bull. Torrey Bot. Club 58: 355. 1931. ≡ *Peperomia tenella* var. *tyleri* (Trel.) Steyerm., Fl. Venezuela 2: 246. 1984. **Typus: Venezuela:** *Tate 476* (holo-: NY; iso-: ILL [fragm.]).

Peperomia tetragona Ruiz & Pav., Fl. Peruv. 1: 31, tab. 47, fig. a. 1798.

Lectotypus (designated here): Peru: *Ruiz & Pavón 246* (MA!).

No type is designated in the protologue and most later publications refer to its illustration. The *P. tetragona* specimen in the Ruiz & Pavón herbarium (MA), although showing leaves slightly smaller in size, agrees well with the illustration and the protologue and is designated as the lectotype.

= *Peperomia puteolata* Trel. in Publ. Field Mus. Nat. Hist., Bot. Ser. 13: 82. 1936. **Typus: Peru:** *Stevens 66* (holo-: ILL!).

Peperomia tequendamana Trel. in J. Washington Acad. Sci. 16: 207. 1926.

≡ *Peperomia rotundata* var. *tequendamana* (Trel.) Steyerm., Fl. Venezuela 2: 217. 1984.

Typus: Colombia: *Bro. Ariste Joseph B92* (holo-: US!).

For two decades, *P. tequendamana* has been considered as a variety of *P. rotundata* Kunth. However, the alternate leaves and the long golden hairs of *P. tequendamana* are a unique combination of characters and quite distinctive from the opposite leaves and white, shorter, and sub-erect trichomes in *P. rotundata*. We prefer to maintain the specific rank as originally meant by Trelease.

Peperomia tetraphylla Hook. & Arn., Bot. Beechey Voy. 2: 97. 1832.

Lectotypus (designated by Florence, 1997): **Society Island:** *Forster s.n.* (K!; iso-: C!, LE).

It was suggested (Green, 1994) not to consider *Piper tetraphyllum* G. Forst. as the basionym of this taxon because it was cited with doubt. Although disagreement was expressed later on (Nicolson & Fosberg, 2004), there is agreement among nomenclaturists now not to consider as a basionym any name that is cited with doubt.

= *Peperomia berroi* Trel. in Revista Sudamer. Bot. 6: 67. 1939. **Typus: Uruguay:** *Berro 5753* (holo-: K!).

= *Peperomia diehliana* Trel. in Publ. Field Mus. Nat. Hist., Bot. Ser. 13: 39. 1936. **Typus: Peru:** *Diehl 2526* (holo-: F!; iso-: G [fragment]!, ILL[fragment]!).

Peperomia tominana C. DC. in Bull. Torrey Bot. Club 25: 572. 1898.

Typus: Bolivia: *Weddell 3109* (holo-: P!).

= *Peperomia fiebrigii* C. DC. in Repert. Spec. Nov. Regni Veg. 14: 396. 1916. **Typus: Bolivia:** *Fiebrig 2241* (holo-: B!; iso-: B!, BM!, F [fragment]!, G!, NY!, S!, SI, U!, S, W!, Z!).

= *Peperomia fiebrigii* f. *glabrata* Yunck. in Lilloa 27: 185. 1955. **Typus: Bolivia:** *Buchtien 2339* (holo-: US!; iso-: GH!).

= *Peperomia tominana* f. *pubifolia* Yunck. in Lilloa 27: 186. 1955. **Typus: Bolivia:** *Steinbach 9616* (holo-: GH!; iso-: LIL).

In a key to species (Yuncker, 1955), *P. tominana* and *P. fiebrigii* are distinguished by the size of their leaves though these sizes form a continuous range. In *P. tominana*, the length is mentioned as 4-6 mm versus 6-10 mm in *P. fiebrigii*, while the width in *P. tominana* is 3-4 mm versus 4-5 mm in *P. fiebrigii*. In our opinion it is not possible to draw a clear borderline separating both taxa. In the protologue Yuncker mentions this form as very similar to *P. fiebrigii* but showing somewhat smaller leaves. He also states that more abundant material may eventually indicate that they are the same.

In the protologue, Yuncker mentions *P. fiebrigii* f. *glabrata* as very closely resembling *P. tominana*, which shows somewhat smaller leaves.

Besides by the size of the leaves *P. tominana* f. *pubifolia* have been distinguished by the presence of some indument. Based on the collections examined it is our impression that young leaves may show some indument but become glabrous when maturing.

Peperomia trianae C. DC. in J. Bot. 4: 135. 1866.

Typus: Colombia: *Triana 65* (holo-: G!; iso-: BM!, COL, US!).

= *Peperomia discistila* C. DC. in Bot. Jahrb. Syst. 40: 257. 1908. **Lectotypus (designated here): Colombia:** *Triana 811* (B!; iso-: G-DC [fragment]!, K!).

Two syntypes were mentioned in the protologue: *Lehmann 6301* (B) and *Triana 811* (B). We designate the Lehmann specimen as the lectotype because *Triana 811* (B) is the holotype of *P. sublaxiflora* C. DC. in Bot. Jahrb. Syst. 40: 262. 1908, which is put in synonymy of *P. glabella* (Sw.) A. Dietr. in the meantime (Trelease & Yuncker, 1950).

= *Peperomia enantiostachya* C. DC. in Bull. Herb. Boissier 6: 514. 1898. **Lectotypus (designated here): Ecuador:** s.d., *Sodiro s.n.* (G-DC!).

The number *2/33*, mentioned in the protologue, is not a collection number. It is one of Sodiro's taxon numbers, preliminarily assigned and referring to *P. melanostigma* Miq. The proper taxon number referring to *P. enantiostachya* should have been *2/27* (see discussion of Sodiro's numbers under *P. cachabiana*). There is only one specimen at G-DC that shows no collection date or site but only Sodiro's number *2/33*. This specimen, annotated by Candolle, is designated as the lectotype. We have compared this specimen with specimens from Sodiro's first set (at Q and QPLS). We found one collection made May 1882 (Q!, duplicate at P!) and another made May 1885 (QPLS!, duplicate at G-DC!). Both collections were made near Canzacoto and this is also the only locality Sodiro listed for this taxon (Sodiro, 1900, 1901, 1902). Only the 1882 specimens bear Sodiro's preliminary *2/33* number and the addition "N. Sp." in his handwriting. We may conclude that the lectotype has been collected near Canzacoto anyway and that it is likely to have been collected in 1882.

It was already suggested (Trelease & Yuncker, 1950) that *P. enantiostachya* and *P. trianae* might turn out to be the same species.

Peperomia trichophylla Baker in J. Linn. Soc., Bot. 21: 436. 1885.

Lectotypus (designated here): Madagascar: *Baron 3190* (K; iso-: P).

Two syntypes were designated in the protologue: *Baron 500* (K) and *Baron 3190* (K). We designate the latter as the lectotype because *Baron 500* is the type of *P. trichopoda* C. DC. (see below).

= *Peperomia forsythii* C. DC. in Notul. Syst. (Paris) 2: 50. 1911. **Typus: Madagascar:** *Forsyth Major 108* [*pro parte*] (holo-: G-DC!; iso-: BM!, G!, P!).

Forsyth Major 108 is a mixed collection representing 3 different species. Other duplicates represent the types of *P. estaminea* C. DC. and *P. pubipetiola* C. DC.

= *Peperomia trichopoda* C. DC. in Notul. Syst. (Paris) 2: 50. 1911. **Typus: Madagascar:** *Baron 500* (holo-: P!; iso-: K!).

Casimir de Candolle described *P. trichopoda* based on the P specimen of *Baron 500,* whereas the K duplicate was already designated by Baker as a syntype *of P. trichophylla*. Both specimens clearly belong to the same species.

Peperomia tropeoloides Sodiro, Piperac. Ecuator. Adic.: 163. 1901.

Lectotypus (designated here): Ecuador: II.1901, *Sodiro s.n.* (QPLS!; iso-: B!, G-DC [2 specimens]!, P!, S!).

The lectotype bears a label in Sodiro's handwriting and belongs to the holdings of QPLS, one of both herbaria where Sodiro's main set is deposited.

= *Peperomia gazauntana* Yunck. in Trel. & Yunck., Piperac. N. South Amer. 2: 715. 1950. **Typus: Colombia:** *Grant 10347* (holo-: US!; iso-: NA, NY!).

= *Peperomia villibacca* Yunck. in Trel. & Yunck., Piperac. N. South Amer. 2: 715. 1950. **Typus: Colombia:** *Cuatrecasas 18107* (holo-: US!; iso-: BC, F!, MA!, U!).

Peperomia unduavina C. DC. in Repert. Spec. Nov. Regni Veg. 13: 306. 1914.

Typus: Bolivia: *Buchtien 2790* (holo-: US!).

= *Peperomia subopposititifolia* Yunck. in Bol. Inst. Bot. (São Paulo) 3: 186. 1966. **Typus: Brazil:** *Brade & al. 18076* (holo-: RB; iso-: NY [fragment]!).

Peperomia urocarpa Fisch. & C. A. Mey., Ind. Sem. Hort. Petrop. 4: 42. 1838.

Typus: cultivated from plants from Brazil (LE).

= *Peperomia novae-hispaniae* Trel. in Publ. Field Mus. Nat. Hist., Bot. Ser. 17: 336. 1938 [nomen nudum]. **Designated specimen: Honduras:** *Yuncker 4848* (ILL!).

Peperomia verschaffeltii Lem. in Ill. Hort. 16: tab. 598. 1869.

Typus: protologue illustration.

Peperomia verschaffeltii is a re-established taxon name (see *P. marmorata* under the section "Withdrawn synonyms").

= *Peperomia sarcostachya* Trel. in Publ. Field Mus. Nat. Hist., Bot. Ser. 13: 92. 1936. **Typus: Peru:** *Killip & Smith 28889* (holo-: US!; iso-: G!, ILL!, NY!).

= *Peperomia sarcostachya* var. *repens* Trel. in Publ. Field Mus. Nat. Hist., Bot. Ser. 13: 92. 1936. **Typus: Peru:** *Killip & Smith 25307* (holo-: US!; iso-: G!, ILL!, NY!).

Withdrawn synonyms (re-established original names)

(erroneous synonyms are indicated using the symbol "≠")

Peperomia abnormis Trel. in Ciencia (Mexico) 2: 206. 1941.

Lectotypus (designated here): Ecuador: *Isern 1053a* (MA!; iso-: ILL!, NY!).

No type collection was designated in the protologue. The MA specimen of *Isern 1053* bears the new name in Trelease's handwriting and the annotation "Type". The ILL and NY specimen are parts taken from the MA original. It has to be noticed that on the MA specimen a small specimen of *P. nivalis* Miq. has been mounted. We have assigned *1053a* to the *P. abnormis* specimens and *1053b* to the *P. nivalis* specimen.

≠ *Peperomia jamesoniana* var. *longifolia* Trel. & Yunck., Piperac. N. South Amer. 2: 605. 1950. **Typus: Colombia:** *Klug 1743* (holo-: US!; iso-: BM!, GH!, ILL!, K!, MICH!, NY!, S!). [Synonymized by Callejas, 1999].

Peperomia abnormis is a glabrous species whereas *P. jamesoniana* var. *longifolia* has pubescent stems.

Peperomia alata Ruiz & Pav., Fl. Peruv. 1: 31, tab. 48, fig. b. 1798.

Lectotypus (designated by Saralegui Boza, 2004): **Peru:** *Ruiz & Pavón 254* (MA!; iso-: BM [2 specimens]!, F!, ILL [fragment]!, MA [2 specimens]!, P!).

≠ *Peperomia versicolor* Trel. in Contr. U.S. Natl. Herb. 26: 200. 1929. **Typus: Costa Rica:** *Standley & Valerio 47270* (holo-: US!; iso-: ILL!). [Synonymized by Burger, 1971].

Peperomia versicolor exhibits straight stems, with leaves often increasing in size towards the end. Leaves are distinctively purple-red abaxially. *Peperomia alata* exhibits zigzag stems with two distinct internodal wings. Leaves are more uniform in size and lack the characteristic abaxial colour.

Peperomia candelaber Trel. in Contr. U.S. Natl. Herb. 26: 207. 1929.

Typus: Costa Rica: *Standley 33010* (holo-: US!; iso-: F!, G[fragment]!).

≠ *Peperomia gleicheniiformis* Trel. in Publ. Field Mus. Nat. Hist., Bot. Ser. 18: 315. 1937. **Typus: Costa Rica:** *Skutch 2287* (holo-: US!; iso-: K!, NY!, S!). [Synonymized by Burger, 1971].

Peperomia gleicheniiformis has been published as *gleicheniaeformis*, corrected according to art. 60.8 of the ICBN).

Peperomia gleicheniiformis is profusely branched basally. It shows repent stems with leaves unevenly distributed along them and short erect branches with almost distichous leaves. Indument along the creeping stems is distinctly larger (trichomes with 12-13 cells) and more dense than the short almost rigid trichomes of erect branches. Leaves show trichomes on both sides. Petioles are glabrous, rather thick and widened toward the base, not clearly clasping the stems. Spadices occur solitary. *Peperomia candelaber* is a much more robust plant, poorly branched basally with erect branches 10-15 cm tall. All stems exhibit the same type of indument: short trichomes with 2-3 cells of extension. The leaves tend to be restricted toward the distal portion of the branches and clearly are not distichous. Leaves are glabrous above. Petioles are pubescent, clasping the stems. Spadices occur solitary or grouped.

Peperomia claytonioides Kunth in Link & al., Ind. Sem. Hort. Berol. 1847: 11. 1847.

Typus: Guatemala: *Sauer s.n.* (B [missing], F [photo]!).

≠ *Peperomia ovatopeltata* C. DC. in J. Bot. 4: 132. 1866. **Lectotypus (designated here): Mexico:** *Pavón s.n.* (G!; iso-: G!). [Synonymized by Standley & Steyermark, 1952].

Peperomia ovatopeltata has been published as *ovato-peltata*, corrected according to art. 60.9 of the ICBN. *Peperomia ovatopeltata* has simple, stout inflorescences. Those of *P. claytonioides* are fragile and composed.

The two syntypes mentioned in the protologue belong to different taxa. *Hoffmann 521* from Costa Rica (syntype at B destroyed during World War II; drawing of this specimen at G-DC) definitely represents *P. claytonioides* and possibly has inspired Standley to synonymize this taxon. The Pavón specimens are different in their robust simple inflorescences. The G specimen acquired form the Herbarium Boissier (mentioned in the protologue) is designated as the lectotype of *P. ovatopeltata* C. DC. whereas the one acquired from the Herbarium Moricand is considered as an isolectotype.

≠ *Peperomia pedicellata* Dahlst. in Kongl. Svenska Vetensk. Acad. Handl. 33: 35. 1900. **Typus: Guatemala:** *Heyde & Lux 3829* (holo-: G-DC!; iso-: G!, K!, S!, US!). [Synonymized by Nyffeler & Rowley, 2002].

Peperomia pedicellata is distinct in its deltoid leaves, which are peltate closer to the base than those of *P. claytonioides*, and by its simple inflorescences.

Peperomia emarginulata C. DC. in A. DC., Prodr. 16(1): 433. 1869.

Lectotypus (designated here): Peru: *Mathews 1687* (K!; iso-: E!, K!).

Three syntypes were designated in the protologue: *Pavón s.n.* (G), *Mathews 1687* (K) and *Jameson 837* (G). The Pavón and Mathews collection seem to concern similar plants with an obtuse to broadly acute leaf apex and the spadices as a terminal pair or solitary from the uppermost leaf axils. *Jameson 837*, however, shows shortly acuminate leaf apexes and numerous clustered terminal spadices. The description of the inflorescences in the protologue does not agree with *Jameson 837*, which turned out to be a specimen of *P. chimboana* C. DC. *Mathews 1687* (K) is designated as the lectotype. It has to be noticed that this collection was already chosen as the type of *P. obtusifolia* f. *pusilla* Miq. (Miquel, 1845), but the value of this publication is questionable as the species is cited with doubt.

≠ *Peperomia chimboana* C. DC. in Bull. Herb. Boissier 6: 508. 1898. **Lectotypus: Ecuador:** S.d., *Sodiro 2/25* (G-DC; iso-: G-DC [2 specimens]!, Q!, QPLS!). [Synonymized by Trelease & Yuncker, 1950].

For the lectotypification details, see this name under the section "New Synonyms".

Peperomia chimboana was synonymized because of its similarity with *Jameson 837*, a syntype of *P. emarginulata*. As indicated before, *Jameson 837* differs from the lectotype and the first description of that species.

Peperomia fraseri C. DC. in J. Bot. 4: 134. 1866.

Lectotypus (designated here): Ecuador: 1860, *Fraser s.n.* (G-DC!; iso-: BM!, G-DC!).

In the protologue two syntypes were designated: *Fraser s.n.* (G-DC) and *Spruce 5532* (G-DC). According to Spruce's field books, *nr 5532* concerns a *Barnadesia*, later published as *B. lehmannii* Hieron. (*Asteraceae*). The closest number for which the protologue number is likely to be an error is *5552*, which is indeed a *Peperomia* with some resemblance to *P. fraseri*. However, 32 years later that number is designated as the type of *P. costulata* C. DC., which in the meantime has been put in synonymy of *P. sodiroi* C. DC. (Trelease & Yuncker, 1950). It is obvious that only the Fraser collection is a good candidate to serve as the lectotype.

≠ *Peperomia resediflora* Lindl. & André in Ill. Hort. 17: 135. 1870. **Typus:** Ill. Hort. 17: fig. 26. 1870. [Synonymized by Candolle, 1923].

Peperomia resediflora has been published as *resedaeflora*, corrected according to art. 60.8 of the ICBN. It is obviously closely related to *P. fraseri*. However, differences in general architecture, leaf form, colour of stem and petioles, and fruit morphology are sufficiently large to maintain

both as separate taxa. *Peperomia resediflora*, from Colombian origin, is more robust and may be up to 60 cm tall. It shows a well developed rosette of basal leaves from which one ore more flowering shoots arise. Leaves along the stem of the flowering shoot are round to broadly elliptic with an obtuse or shortly acute apex and a length-width ratio of 1:1 to 1.5:1. Stem and petioles are markedly red. Fruits have a cone-shaped style bearing the apical stigma. *P. resediflora* is the species usually seen in horticulture. A living specimen was collected by Braam in Colombia in the forests surrounding the Bogotá plateau. It was cultivated since 1865 in the greenhouses of the Belgian horticulturist J. Linden, introduced in the trade shortly after its description in 1870 and has been widely distributed since. Herbarium specimens of Braam's plant do not seem to exist. However, cultivated plants pressed before 1900, likely belong to the same clone. The cultivated plant used as the type of *P. treleasei* Standl. & Steyerm. (an illegitimate later homonym of *P. treleasei* Yunck. = *P. eekana* C. DC.) (*Steyermark 46298* – holotype at F!) is a *P. resediflora* specimen.

Peperomia fraseri is a smaller plant of Ecuadorian origin. It usually shows a small rosette of basal leaves compared to the size of the flowering shoots that arise from it. Leaves along the stem of the flowering shoot are elliptic to ovate with a long acute to acuminate apex and a length-width ratio of 2:1 to 4:1. Stem and petioles are usually green, sometimes slightly reddish. Fruits have a broad cap-like style bearing the apical stigma.

To help in distinguishing *P. fraseri* from *P. resediflora*, a number of illustrative specimens is listed here:

Peperomia fraseri: A. Freire 1066 (AAU!, F!, GB!, QCA!); *B. Øllgaard 90932* (AAU!, BR!, LOJA!, QCA!, QCNE!)

Peperomia resediflora: M. Dillon 4308 (F!, GB!, HUA!); *F. Fagerlind 207* (MICH!, MO!, S!, UPS!); *P. Hutchison 6307* (K!, MO!, UC!, USM!); *T. Plowman 14327* (F!, HUA!, K!, QCA!); *H. Schimpf 537* (G!, M!, MO!).

Peperomia hylophila C. DC. in Pittier, Prim. Fl. Costaric. 2: 284. 1898.

Lectotypus (designated here): Costa Rica: *Tonduz 4406* (BR!; iso-: BR!, G!, P!, US!).

Three syntype collections were designated in the protologue: *Pittier 4406, Pittier 4407*, and *Donnell-Smith 6744*. The Donnell-Smith collection is later designated as the type of *P. hylophila* var. *personata* Trel. From the two Pittier collections, the number *4406* shows better developed inflorescences. One of the two BR specimens (BR-851851), annotated by Candolle, is chosen as the lectotype. It is the specimen still bearing the original Tonduz field label. Although specimens of this collection were distributed by Pittier and are usually attributed to him, citing them as *Tonduz 4406* may be more accurate.

≠ *Peperomia erythrophlebia* Trel. in Contr. U.S. Natl. Herb. 26: 200. 1929. **Typus: Costa Rica:** *Standley 33418* (holo-: US!; iso-: ILL [fragment]!). [Synonymized by Burger, 1971].

The inflorescences in *P. erythrophlebia* are rather thick and erect, showing peduncles of several cm long whereas in *P. hylophila* they are flexuous and slender with peduncles shorter than 1cm.

Peperomia lanceolatopeltata C. DC. in J. Bot. 4: 136. 1866.

Lectotypus (designated here): Venezuela: *Fendler 1149* (G-DC!; iso-: G!, GH, GOET, K!, MO!, NY!, PH!).

Three syntypes were designated in the protologue: *Hoffmann 414* (B), *Fendler 1149* (G-DC) and *Moritz 1979* (P). *Fendler 1149* is chosen as the lectotype. It agrees well with the first description and has the largest number of duplicates.

≠ *Peperomia hispidorhachis* Yunck. in Ann. Missouri Bot. Gard. 37: 112. 1950. **Typus: Panama:** *Allen 31* (holo-: MO!; iso-: ILL!). [Synonymized by Burger, 1971].

Peperomia lanceolatopeltata has been published *as lanceolato-peltata*, corrected according to art. 60.9 of the ICBN. In *P. lanceolatopeltata*, the upper surface of the leaves as well as the rachis are glabrous, in contrast with those of *P. hispidorhachis*. The leaves in *P. hispidorhachis* arise from a very short tumid stem, often less than 0.5 cm long, only exhibiting the uniting nodes and no distinct internodes, whereas in *P. lanceolatopeltata* they originate alternately from a distinct, often contorted stem with short internodes.

Peperomia lignescens C. DC. in J. Bot. 4: 137. 1866.

Typus: Costa Rica: *Hoffmann s.n.* (holo-: B [missing]).

≠ *Peperomia tenuifolia* C. DC. in Linnaea 37: 371. 1872. **Typus: Costa Rica:** *Ørsted 1001* (holo-: C!; iso-: G-DC [fragment]!). [Synonymized by Burger, 1971].

Peperomia tenuifolia shows short stems with the leaves disposed at the end. Leaf apices are acute or very slightly acuminate. In *P. lignescens*, stems are stout and distinctly longer with leaves disposed often more evenly along them. Leaf apices are clearly acuminate. Spadices in *P. lignescens* are usually thicker and tapering at the end whereas in *P. tenuifolia* they are slender but showing the same diameter along their entire length.

Peperomia magnoliifolia (Jacq.) A. Dietr., Sp. Pl. 1: 153. 1831.

≡ *Piper magnoliifolium* Jacq., Collectanea 3: 210. 1791.

Lectotypus: *Jacquin s.n.*, material cultivated at Schönbrunn (Vienna) (W!).

For orthography and lectotypification see this name under the section "New synonyms".

≠ *Peperomia spathulifolia* Small in Britton & Millsp., Bahama Fl.: 101. 1920. **Lectotypus: Bahamas:** *Brace 1876* (NY!; iso-: US [fragment]!). [Synonymized by Boufford, 1982].

For lectotypification see this name under the section "New synonyms".

Many botanists have tried to fit *P. spathulifolia* and its synonyms in *P. magnoliifolia* or *P. obtusifolia* and a large number of *P. spathulifolia* specimens can still be found among collections of those two taxa. *Peperomia magnoliifolia* and *P. obtusifolia* can be distinguished most easily by their fruit morphology. Fruits of *P. magnoliifolia* are ellipsoid and show a short beak. Fruits of *P. obtusifolia* have an urn-like shape and show a long slender beak with a distinct curl at the end. The fruits of *P. spathulifolia* are somewhat between these extremes and this explains why specimens are often identified as one of these two species. The fruit body of *P. spathulifolia* is ellipsoid like in *P. magnoliifolia* but its beak is longer and curved. However, it lacks the curl at the end as in *P. obtusifolia*.

Peperomia marmorata Hook. f. in Bot. Mag.: tab. 5568. 1866.

Typus: protologue illustration.

≠ *Peperomia verschaffeltii* Lem. in Ill. Hort. 16: tab. 598. 1869. [Synonymized by Yuncker, 1974].

Both species have been described based on cultivated plants. *Peperomia marmorata* has been cultivated at Kew Gardens from specimens collected by Weir in south-eastern Brazil. *Peperomia verschaffeltii* was cultivated at the greenhouses of Ambroise Verschaffelt in Ghent, Belgium, where it was introduced in 1867 by Arsène Baraquin who collected it in north-western Brazil.

Although in general *P. verschaffeltii* has elliptic leaves with an obtuse to rounded apex and *P. marmorata* has ovate leaves with an acuminate apex, it might be difficult to distinguish both species solely by the leaf shape because there may be some variation in the apex. In addition, both species show a similar variegation pattern of white zones between the main nerves. When

it comes to the inflorescences however there is a distinct difference. *Peperomia marmorata* has slender spadices, up to 20 cm long and not more than 0.5 cm in diameter. *Peperomia verschaffeltii* has quite distinct cigar shaped spadices, up to 10 cm long and up to 2 cm in diameter. The mentioned differences are well illustrated by the iconotypes of both species.

Peperomia medianiana Trel. in Repert. Spec. Nov. Regni Veg. 29: 25. 1931.

Lectotypus (designated by JONES, 1986): **DOMINICAN REPUBLIC:** *Ekman H13605* (ILL!; iso-: B!, C!, G!, GH, K!, S!, US!).

Peperomia medianiana is now synonymized under *P. galioides* Kunth (see this name under the section "New synonyms").

≠ *Peperomia brouetiana* Trel. in Repert. Spec. Nov. Regni Veg. 23: 321, 328. 1927. **Lectotypus (designated here): HAITI:** *Ekman H1197* (B!; iso-: EHH, G!, GH!, ILL!, S!, US!). [Synonymized by LIOGIER, 1996].

The B and ILL specimens were annotated by Trelease. The B specimen bears the original collection label, the ILL specimen is obviously a split off with a transcribed label.

Peperomia brouetiana shows elliptic leaves somewhat variable in size but uniform in shape. In *P. galioides* the basal leaves may be ovate or elliptic-ovate but more apically they are distinctly oblong-lanceolate.

Peperomia parasitica C. DC. in A. DC., Prodr. 16(1): 421. 1869.

Typus: ECUADOR: *Jameson 721* (holo-: G!; iso-: BM!, K!, TCD!, US!).

≠ *Peperomia tumida* Sodiro, Piperac. Ecuator. Adic.: 164. 1901. **Lectotypus (designated here): ECUADOR:** XII.1899, *Sodiro s.n.* (Q!; iso-: P!). [Synonymized by CALLEJAS, 1999].

Sodiro mentioned in the protologue to have made his description based on the observation of living plants (D.s.m.v. = Descripción sobre muestras vivas). Nevertheless he mentioned a collection site and date (Dec 1900). No Sodiro collection of *P. tumida* matching this date has been found. There is however a gathering of Dec 1899 matching the collection site and 1900 is likely to be an error.

As mentioned in the protologue, the leaves of *P. tumida* are more fleshy, usually even biconcave, than those of *P. parasitica*. It is evident that this character is more easily interpreted on living plants. Herbarium specimens of *P. tumida* may be distinguished by their fragile filiform creeping stems. Although the type collection of *P. parasitica*, which is less "bushy" than many other *P. parasitca* specimens, shows somewhat creeping stems, they are not filiform.

Peperomia pellucida (L.) Kunth in Humb. & Bonpl., Nov. Gen. Sp. 1, ed. folio: 53; ed. quarto: 64. 1816.

≡ *Piper pellucidum* L., Sp. Pl.: 30. 1753.

Lectotypus (designated by STEARN, 1957-1959): Linnaeus, Hort. Cliff.: tab. 4. 1739.

≠ *Peperomia exigua* (Blume) Miq., Syst. Piperac.: 77. 1843. **Typus: INDONESIA:** *Blume s.n.* (holo-: L!). [Synonymized by DÜLL, 1973].

Düll considered *P. exigua* as an environmentally induced depauperate form of *P. pellucida*. He noticed as main differences with normally developed plants: a much smaller size, mostly with simple stem and solitary inflorescence less than 1 cm long, leaves wider than long, usually reniform, lacking the acute apex and the cordate base of a well-developed *P. pellucida* leaf. It makes sense that pauperate plants would be of smaller size and that they would be less branched and bear less inflorescences. However, there is no good explanation why they would consistently develop leaves of a different shape. There are numerous examples of small *P. pellucida* specimens distinctly

showing the deltoid leaves typical for this species. However, the main argument to consider *P. exigua* as a distinct species comes from distribution data. We have classified more than 1000 herbarium specimens as showing the "well-developed" *P. pellucida* habit or the "depauperate" *P. exigua* habit. Only with 0.5% of the specimens it was impossible to place them definitely in one of these groups due to poor preservation of the specimen or a limited amount of available material. In all other specimens it was obvious at first sight to which group they belonged. The absence of a continuous series from "depauperate" to "well developed" is an indication that habitat influences might not be involved. Confirmation came when the specimens of both groups were arranged by country. We found the *P. exigua* habit in Oman (100%), Yemen (100%), Ethiopia (100%), Malawi (100%), Zimbabwe (100%), Kenya (80%), Madagascar (75%), Tanzania (60%), Indonesia (40%), and Philippines (18%). In Central and South America and the Caribbean and Pacific Islands we found 0%. This kind of distribution cannot be explained just by environmental conditions for it would mean that in the New World no habitats are present that would induce depauperate specimens. These distribution data indicate that a distinct gene pool is involved, spreading from East Africa mainly eastwards along the coasts of the Indian Ocean.

It might require some additional experimental data concerning population ecology to support the above argument, but fieldwork in many areas in the neotropics during several decades reveals a consistency within species of *Peperomia* for characters of leaf shape, indument and inflorescence architecture. In most cases the so-called depauperate forms are really poor quality samples.

The delicate plants were described from Ethiopia as *P. freireifolia* ["*freireaefolia*"] A. Rich. in 1851 and from Indonesia as *P. exigua* (Blume) Miq. in 1843. *Piper freireifolium* ["*freireaefolium*"] Hochst., cited as the basionym but *nomen nudum*, and *Piper exiguum* Blume, a legitimate basionym, were published in 1841 and 1826 respectively. *Peperomia exigua* var. *freireifolia* (A. Rich.) C. DC. was published as a new combination for *P. freireifolia* in 1869. We have to consider *P. exigua*, the oldest name, as the only correct one. This has already been proposed by DAHLSTEDT (1900), but has been rejected by later authors. In the view of the currently available data it is a sound taxonomic concept.

Most African collections are from East-Africa but some are known from Angola and Cameroon. The East African occurrence is connected with West Africa by some Central African collections, which refer to relict patches of suitable habitat remaining from a more continuous East-West band. This trans-African distribution is shown also by other *Peperomia* species (*P. fernandopoiana* C. DC., *P. molleri* C. DC., *P. thomeana* C. DC.).

Peperomia pseudopereskiifolia C. DC. in A. DC., Prodr. 16(1): 448. 1869.

Lectotypus (designated by SARALEGUI BOZA, 2004): **CUBA:** *Wright 507* (G-DC!; iso-: BM!, BR!, G [2 specimens]!, GH!, MA!, MO!, PH!, TCD!).

≠ *Peperomia perlongipes* C. DC. in Repert. Spec. Nov. Regni Veg. 13: 308. 1914. **Lectotypus (designated here): BOLIVIA:** *Buchtien 2344* (US!; iso-: G-DC [fragment]!, GH!). [Synonymized by CALLEJAS, 1999].

The US specimen, annotated by Candolle in 1913, is designated as the lectotype.

Peperomia pseudopereskiifolia has been published as *pseudo-pereskiaefolia*, corrected according to art. 60.8 and 60.9 of the ICBN. *Peperomia perlongipes* has alternate leaves whereas *P. pseudopereskiifolia* has opposite or triverticillate leaves.

Peperomia quadrifolia (L.) Kunth in Humb. & Bonpl., Nov. Gen. Sp. 1, ed. folio: 57; ed. quarto: 69. 1816.

≡ *Piper quadrifolium* L., Sp. Pl. ed. 2: 43. 1762.

Lectotypus (designated by SARALEGUI BOZA, 2004): Plum., Pl. Amer.: tab. 242, fig. 3. 1760.

≠ *Peperomia crassispica* Trel. in Repert. Spec. Nov. Regni Veg. 23: 321, 328. 1927. **Lectotypus (designated here): Haiti:** *Ekman H4762* (ILL!; iso-: B!, G!, GH!, K!, S!, US!). [Synonymized by Liogier, 1996].

From all the mentioned duplicates, only the B and ILL specimen bear the new name in Trelease's handwriting. Although the B specimen has been cleaned up it clearly bears the traces of being moulded due to its temporary storage in humid conditions during World War II. Therefore we prefer to designate the ILL specimen, showing plenty of vegetative and fertile parts in good condition, as the lectotype.

As suggested by its epithet, *P. crassispica* has sturdier spadices than *P. quadrifolia*. In addition, its leaves are grouped (2-)3(-4) per node and show a rounded apex whereas in *P. quadrifolia* the leaves are grouped (3-)4 per node and show a distinctly emarginate apex.

≠ *Peperomia edulis* Miq. in Linnaea 18: 711. 1844. **Lectotypus: Mexico:** V.1829, *Schiede s.n.* (HAL!; iso-: BM!, U!). [Synonymized by Standley & Steyermark, 1952].

Lectotypification: see this name under the section "New synonyms".

As far as we know, *P. edulis* is an endemic of Mexico where it grows epiphytically, forming dense mats on *Quercus* in forests at high elevations (J. Wolff, pers. comm.). Plants are much shorter and less branched than *P. quadrifolia*. *Peperomia edulis* hardly shows the emarginate apex which is typical for *P. quadrifolia*. Its leaves are also much more round than those of *P. quadrifolia*. Type material of *P. edulis* is scarce and some widely distributed collections often used as a reference for *P. edulis* (e.g. *Pringle 3805* and *Pringle 8811*) in fact belong to *P. quadrifolia*. These circumstances certainly have contributed to the synonymization of this taxon.

Peperomia reflexa Kunth in Humb. & Bonpl., Nov. Gen. Sp. 1, ed. folio: 58; ed. quarto: 70. 1816.

Lectotypus (designated here): Peru: *Humboldt & Bonpland 3633* (B-W [*Willd. 758*]!; iso-: P!).

Kunth travelled between Paris and Berlin when he described the collections resulting from the Humboldt & Bonpland expedition. It is likely that he has studied the *P. reflexa* specimens at both locations. We designate the B (Willd.) specimen as the lectotype.

≠ *Peperomia tetraphylla* Hook. & Arn., Bot. Beechey Voy. 2: 97. 1832. **Lectotypus** (designated by Florence, 1997): **Society Island:** *Forster s.n.* (K!; iso-: C!, LE). [Synonymized in Gibbs Russell & al., 1985, 1987].

For the author citation, see this name under the section "New synonyms".

The mentioned synonymization obviously has occurred by confusion with the junior homonym *P. reflexa* (L. f.) A. Dietr., which indeed is a synonym of *P. tetraphylla*. Kunth's *P. reflexa* has been far less collected and documented, but can be easily distinguished from the ubiquitous *P. tetraphylla* on the basis of its lanceolate, acuminate leaves.

Peperomia rotundifolia (L.) Kunth in Humb. & Bonpl., Nov. Gen. Sp. 1, ed. folio: 54; ed. quarto: 65. 1816.

≡ *Piper rotundifolium* L., Sp. Pl.: 30. 1753.

Lectotypus (designated by Howard, 1973): Plum., Descr. Pl. Amér.: tab. 69. 1693.

≠ *Peperomia bangroana* C. DC. in J. Bot. 4: 134. 1866. **Typus: Sierra Leone:** *Mann 905* (holo-: K!). [Synonymized by Hutchinson & Dalziel, 1954].

Vegetative branches of *P. rotundifolia* and *P. bangroana* can hardly be distinguished. Both species are creeping epiphytic or epilithic herbs with filiform stems and alternate, orbicular, fleshy leaves. When it comes to the inflorescences however, there is a marked and constant difference between the American *P. rotundifolia* and the African *P. bangroana*. In *P. rotundifolia* the length

of the peduncle is short (less than 1 cm) in comparison with the length of the rachis (up to 6 cm). The terminal or axillary spadices often have a slightly curved form, more obvious in longer spadices. *Peperomia bangroana*, in contrast, has peduncles mostly as long as or longer than the rachis. The rachis itself is only 0,2-1 cm long. The small terminal inflorescences have a straight appearance. The observations as described were completely consistent in 172 herbarium specimens of *P. bangroana* (from the Comoros, Cameroon, Congo, Ethiopia, Gabon, Ivory Coast, Kenya, Liberia, Madagascar, Malawi, Mozambique, Sierra Leone, South Africa, Tanzania, Togo, Zimbabwe), which have been compared to 152 specimens of *P. rotundifolia* (from Brazil, Colombia, Ecuador, the Greater and Lesser Antilles, the Guyanas, Peru, USA, Venezuela).

Since the first publication the orthography of this taxon's epithet has been rather chaotic. In 1866, Casimir de Candolle named the species *P. bangroana*, based on the type locality. It concerns the Bagru river in Sierra Leone at the south border of the Moyamba district and just north of the Sherbro Island. Although Mann wrote "River Bagroo" on the label of his specimen, it is evident that the most preferable spelling should have been *P. bagruana*. However, this spelling has never been used. In later publications the author changed the epithet to *bangrooana*, probably to bring it more in accordance with the spelling on the label of the type specimen. Some authors have corrected the epithet by omitting the "n", changing it to *bagroana*. Others stuck to the originally published name or to the alternative proposed by the author himself. Art. 60.1. of the ICBN states that typographical and orthographical errors have to be corrected. Although the current Code provides ample rules concerning the spelling of epithets derived from personal names, there are very few directions for the spelling of geography-based epithets. As long as a name is not in conflict with the rules of the Code, the author may freely choose the specific epithet and its spelling. Deciding to use the type locality as a basis, he can, regarding the lack of current restrictions, add and omit letters for any reason whatsoever or he might even form an anagram. Regardless, if a particular spelling is chosen deliberately or by accident (which is sometimes difficult to judge), once it is fixed by the first publication even the author is not free to change it. For those reasons the taxon name has to be written as originally published: *P. bangroana* C. DC. Alternatives such as *P. bangrooana*, *P. bagroana*, *P. bagruana*... have to be considered as illegitimate.

≠ *Peperomia tenuicaulis* C. DC. in Pittier, Prim. Fl. Costaric. 2: 286. 1899. **Lectotypus (designated here): Costa Rica:** *Tonduz 9986* (BR; iso-: US). [Synonymized by Burger, 1971].

Peperomia tenuicaulis has deltoid leaves, which dry quite thick. *Peperomia rotundifolia* has rounded leaves, which dry thinner, almost transparent. More important, *P. tenuicaulis* has a distinct indument of short erect trichomes that cover the stems, and a pair of distinctive bracteoles (underdeveloped foliage leaves) on the peduncle of every single inflorescence. *Peperomia rotundifolia*, in contrast, exhibits longer, curved and often appressed trichomes along stems while on the leaves they are also longer but more widely spaced. Peduncles have one or two bracteoles, often unequal in size and shape.

Candolle mentioned *Pittier 9986* and *Pittier 10089* as syntypes. Both are in fact Tonduz collections distributed by Pittier. The *9986* collection is selected as the lectotype because it clearly shows the acute apex as described in the protologue. This is less obvious in the *10089* collection. The BR specimen is annotated by Candolle.

≠ *Peperomia prostrata* Williams in Gard. Chron. 11: 716, fig. 102. 1879. **Typus:** protologue illustration. [Synonymized by Callejas, 1999].

Typical for *P. prostrata* are the dark green leaves with the distinct lighter reticulate nervation pattern. Although this feature tends to fade in herbarium specimens it still may be observed in most cases. The internodes in *P. prostrata* are usually shorter than in *P. rotundifolia*, giving *P. prostrata* specimens a sturdier look.

Peperomia sancarlosiana C. DC. in J. Bot. 4: 138. 1866.

Typus: Venezuela: *Fendler 1151* (holo-: G-DC!).

≠ *Peperomia foraminum* C. DC. in Urb., Symb. Antill. 7: 188. 1912. **Typus: Dominican Republic:** *Fuertes 612* (holo-: B!; iso-: G-DC!). [Synonymized by Callejas, 2001].

Peperomia foraminum is a hirsute plant with sturdy stems and 2 or more shortly petiolate leaves per node. *Peperomia sancarlosiana* is a glabrous plant with slender stems and alternate leaves with long petioles.

Peperomia subalata C. DC. in Bull. Herb. Boissier 6: 508. 1898.

Typus: Ecuador: *Sodiro 2/3* (holo-: G-DC).

See discussion of Sodiro's numbers under *P. cachabiana*.

≠ *Peperomia camposii* Sodiro, Piperac. Ecuator. Nuevas Adic.: 2. 1902. **Lectotypus (designated here): Ecuador:** I.1902. *Sodiro s.n.* (II.1902 in protologue) (QPLS!; iso-: G-DC!, P!). [Synonymized by Callejas, 1999].

Sodiro's holotype collections may be found in Q or QPLS, while most isotypes are in B, G, ILL, P, S and some in F and US. As Sodiro did not use collection numbers, the collection dates are most useful in identifying his types. In all mentioned herbaria not more than three Sodiro collections of *P. camposii* specimens were traced. The QPLS and P specimens mention "Jan 1902" as the collection date. "Feb. 1902", as mentioned in the protologue, is obviously an error. Although the G-DC specimen bears no collection date, the collection site (Nanegal) and the characters of this specimen do not differ from both other specimens.

Peperomia camposii is poorly branched and usually shows a limited number of rather large leaves. It has also a limited number of stout spadices mostly organized in pairs with a large bracteole at the base of the common peduncle as well as at the base of each of the secondary peduncles. Living plants often show silvery zones between the nerves adaxially. *Peperomia subalata* is a taller, branched and densely leafed plant. It exhibits a large number of slender spadices. Living plants often show purple nerves abaxially.

Peperomia succulenta C. DC. in J. Bot. 4: 142. 1866.

Lectotypus: Venezuela: *Fendler 1157* (G-DC!; iso-: K!).

Lectotypification: see this name under the section "New synonyms".

≠ *Peperomia caucana* C. DC. in Bot. Jahrb. Syst. 40: 259. 1908. **Typus: Colombia:** *Lehmann 5409* (holo-: B!; iso-: F!, K!). [Synonymized by Steyermark, 1984].

Peperomia succulenta is a densely caespitose terrestrial herb with leaves along the stem exhibiting extremes in shape and size. The leaves dry rather thin, almost translucid. *Peperomia caucana* is more laxly branched and often grows epiphytically. It lacks the graduality in size and shape of the leaves, which are also very thick, drying almost chartaceous.

Peperomia tenella (Sw.) A. Dietr., Sp. Pl. 1: 153. 1831.

≡ *Piper tenellum* Sw., Prodr.: 16. 1788.

Lectotypus (designated by Howard, 1988): **Jamaica:** *Swartz s.n.* (S!; iso-: BM!).

≠ *Peperomia tenuipes* Trel. in Contr. U.S. Natl. Herb. 26: 192. 1929. **Typus: Costa Rica:** *Pittier 14042* (holo-: US!). [Synonymized by Burger, 1971].

Peperomia tenuipes is a stoloniferous, glabrous herb with simple erect branches whereas *P. tenella* is a more profusely branching plant with smaller, delicate branches, and with a distinct indument of stem and leaves.

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Annexe 1. – Index of mentioned *Peperomia* names

Names in boldface type are accepted names; those listed in italics are synonyms. Underlined names indicate new lecto-typifications.

A. New synonyms

B. Re-established names

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