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Typification of the Linnean names of the genus *Paeonia* L.

ERIC SCHMITT

ABSTRACT

SCHMITT, E. (2003). Typification of the Linnean names of the genus *Paeonia* L. *Candollea* 58: 183-188. In English, English and French abstracts.

Linnaeus published five names (three species and two varieties) in *Paeonia*. These names are lectotypified after the study of the Linnean herbaria kept at BM, LINN and UPS, and the Haller Herbarium in P.

RÉSUMÉ

SCHMITT, E. (2003). Typification des noms publiés par Linné dans le genre *Paeonia* L. *Candollea* 58: 183-188. En anglais, résumés anglais et français.

Linné a publié cinq noms dans le genre *Paeonia* (trois noms d'espèces et deux noms de variétés). Ces noms sont lectotypifiés suite à l'étude des herbiers linnéens conservés à BM, LINN et UPS, et de l'herbier de Haller de P.

KEY-WORDS: *Paeonia* – Linnean names – Typification – Lectotypes.

The genus *Paeonia* L. (*Paeoniaceae*) comprises nearly forty species, but only three species and two varieties were described and named by Linnaeus. After a study of the Linnean material kept at BM, LINN and UPS (microfiches at BM), and of Haller herbarium at P, these five names are lectotypified, including the name of the type species of the genus.

1. *Paeonia officinalis* L., Sp. Pl.: 530. 1753.

Protologue:

Hort. cliff. 212. *Hort. ups.* 149. *Mat. med.* 267. *Sauv. monsp.* 307.

Lectotype (designated here): n° 692.1 (LINN !).

2. *Paeonia officinalis* var. *feminea* L., Sp. Pl.: 530. 1753.

Protologue:

feminea. α . *Paeonia* foliis difformiter lobatis. *Hall. helv.* 311.

Paeonia communis f. *femina*. *Bauh. pin.* 323.

Paeonia femina. *Fuchs. hist.* 202. *Lob. ic.* 602.

Lectotype (designated here): “*Paeonia femina altera* C.B. p.”, n° 211.1.C (Clifford Herbarium, BM !).

Epitype (designated here): “in pascuis M. Generosi”, vol. 30 n° 122 [down] (Haller Herbarium, P !).

3. *Paeonia officinalis* var. *mascula* L., Sp. Pl.: 530. 1753.

Protologue:

mascula. β. *Paeonia* foliis lobatis ex ovato lanceolatis. *Hall. helv.* 311.

Paeonia folio nigricante splendido quae mas. *Bauh. pin.* 323.

Paeonia mas. *Lob. ic.* 684.

Lectotype (designated here): “*Paeonia* mas altera, quae tardior J.B. 3. 492”, n° 211.1.A (Clifford Herbarium, BM !).

Epitype (designated here): “*Paeonia corallina* Retz. Savigny les Beaune (Côte d’Or) bois, taillis pierreux calcaire, vers la partie supérieure de la Combe Vauteloy alt. 400 m env. 24 mai 1911 Legi Ldevergnès” (P !).

The name *Paeonia officinalis* was first established by Linnaeus in 1753, without a phrase-name as this is the only species in the genus at this date. The name is defined by four references:

Hortus Cliffortianus [1738]

Hortus Upsaliensis [1748]

Materia Medica [1749]

Sauvage, *Methodus Foliorum* [1751]

The main reference is evidently *Hortus Cliffortianus*, page 212. At this page, the single name *Paeonia* is quoted without a species name, under the authority of CESALPINO (1583). In this book, the two kinds of peonies (the male and female peonies of the ancients) are described, following Dioscorides. In conclusion, Linnaeus wrote “non nisi meris varietatibus constare”; so, he didn’t recognized distinct species or varieties.

However, the entire genus is defined at the previous page, where Linnaeus quotes nine authors as references, comprising all their species-names. So, under the name *Paeonia*, Linnaeus included all the peonies known by the ancient authors.

There are six specimens of peonies in the Clifford Herbarium which may be in connection with the treatment of the genus in *Hortus Cliffortianus*. The first sheet is named following Jean Bauhin, the five others are named following Gaspar Bauhin.

These names are representative of the diversity of peonies in the pre-linnean literature. They are listed with their equivalent in modern literature and with our identification:

<i>P. mas aestiva quae tardior</i>	<i>P. mascula</i>	<i>P. mascula</i> subsp. <i>mascula</i>
<i>P. folio nigricante splendido quae mas</i>	<i>P. mascula</i>	<i>P. mascula</i> subsp. <i>mascula</i>
<i>P. foemina altera</i>	<i>P. officinalis</i>	<i>P. officinalis</i> subsp. <i>officinalis</i>
<i>P. communis vel foemina</i>	<i>P. officinalis</i>	<i>P. mascula</i> subsp. <i>mascula</i> ?
<i>P. peregrina flore sature rubente</i>	<i>P. peregrina</i>	<i>P. officinalis</i>
<i>P. folio subtus incano flore albo vel pallido</i>	<i>P. clusii</i>	<i>P. officinalis</i> cv. with double flowers
	<i>P. mascula</i> (white-flower forms)	

Concerning the handwriting of the labels, there are little doubts. RENDLE (1923) and STEARN (1957) consider that they are from an unknown writer. But WIJNANDS & HENIGER (1991) compared several labels with known authors’ handwriting. The comparison of the label with a handwriting attributed to Adriaan van Royen (*Verbena* 6) with those of the peony-specimens leads to the conclusion that the peony-names are written by van Royen. Most of these sheets are presented with the same urn and label.

These sheets are also annotated with Linnaeus’s binomials. Following WIJNANDS & HENIGER (1991), these names are in Clifford’s hand. The first four sheets of peonies are annotated with “*officinalis*”, the last two with “*anomala*”. But this latter name appears in the second volume of *Mantissa plantarum* published in 1771, many years after Clifford’s death in 1760. As

it is stated that Linnaeus did not work on Clifford Herbarium after 1738 (STEARN, 1957), the writer of this annotation remains unknown.

In conclusion, in *Hortus Cliffortianus* Linnaeus included all the peonies described by the earlier authors under the single name *Paeonia*, without distincting species or varieties, although a great number of species were recognized in the past: BAUHIN (1623) described 14 species, TOURNEFORT (1700) 22 species, BOERHAAVE (1719) (to whom Linnaeus dedicated the preface of *Hortus Cliffortianus*) 12 species. This very restricted point of view is due probably to the fact that most of the plants bearing these different names in herbaria are often the same species.

In *Hortus Upsaliensis* (1748) and *Materia Medica* (1749), Linnaeus changed his concept. The main reference for the genus *Paeonia* is always *Hortus Cliffortianus* (page 211), but he recognized two distinct varieties:

- α *Paeonia foliis lobatis ex ovato lanceolatis*, *Hall. helv.* 311 (*Hort. Ups.*: 149)
Paeonia folio nigricante splendido s. mas, *Bauh. pin.* 323 (*Mat. Med.*: 94)
- β *Paeonia communis vel femina*, *Bauh. pin.* 323 (*Hort. Ups.*: 149, *Mat. Med.*: 94)

This concept is finally the one adopted in the *Species Plantarum* with one restriction, the inversion of the two varieties (var. α in *Hortus Upsaliensis* became var. β in *Species Plantarum*).

In *Species Plantarum*, *P. officinalis* becomes the name to define *Paeonia* in its wide sense, including all the polynomials quoted in *Hortus Cliffortianus* under the bibliographic references. But two distinct varieties have been distinguished:

- α *Paeonia foliis difformiter lobatis* *Hall. helv.* 311
- β *Paeonia foliis lobatis ex ovato lanceolatis*, *Hall. helv.* 311

The status of varieties in the works of Linnaeus is not always clear (cf. SPRAGUE, 1955). Linnaeus adopted several manners to quote them. In most cases (*Lilium*, *Linum*, *Statice*...), varieties are enumerated with greek letters (β, γ, δ...) and a phrase-name; var. α (not indicated) corresponding to the species itself, designated by a trivial name. In other cases like in *Paeonia*, varieties α and β are distinguished and designated by a trivial name (the binomial) to consider them as distinct from the species. So, it is reasonable to consider *P. officinalis* and its var. *feminea* as two distinct taxa.

The type-locality is “Habitat in Nemoribus montium Idae, Helvetiae”. Linnaeus quotes two distinct countries for the same species.

In *Hortus Cliffortianus* (page 212), Linnaeus states “Crescit in umbrosis alpinis; in Helveticis a Gesnero relatum” and in *Materia Medica* (1749), the provenance is “Alpes Helveticae”. But, in *Hortus Upsaliensis* (1748), the citation is “Habitat in umbrosis Helvetiae & Idae in Creta vallibus montium”. So, this last locality (“Idae in Creta”), is quite different from those in “Helvetia” and is referable to a white-flowered peony, endemic to the island of Crete, first described under the name *Paeonia cretica* by L'ECLUSE (1601). This peony was subsequently included by BAUHIN (1623) in his *Paeonia folio subtus incano, flore albo vel pallido*; a name which included all the white-flowered peonies known at this time.

As the two varieties described by Linnaeus are based on synonyms referring to the “male” and the “female” peonies which do not occurs in Crete, the name *Paeonia officinalis* must only be accepted in the sense of the Swiss peony. But the acceptance of the type-locality “Helvetia” for *P. officinalis* in its wide sense, is also problematic.

The two protologues for the varieties *feminea* and *mascula* are based on the two polynomials in HALLER (1742). This author quotes the variety *feminea* (*Paeonia foliis difformiter lobatis*) “in montibus supra Glaronam (Glarus)” and “prope Luganum”, following GESNER (1561). The variety *mascula* (*Paeonia foliis lobatis ex ovato lanceolatis*) is also quoted near Lugano, in Monte Generoso, following the same author. But this citation is quite doubtful, since

P. mascula was never quoted in Monte Generoso, the classic and only locality of peonies in Switzerland (LAUBER & WAGNER, 1998).

A study of Haller's herbarium (P) shows very little material, with only one specimen from Monte Generoso, which is a typical *P. officinalis*. The only specimen of *P. mascula* is annotated with "*Paeonia mas*", following the name given by many authors quoted by Haller (Gesner, Mattioli, Lobel, Dodoens, Ray, Blackwell). So, it's not possible to verify if the polynomial given by Haller, with all the synonyms corresponding to Linnaeus's var. *mascula*, is clearly *P. mascula* or a form of *P. officinalis* with leaves differing from the "*Paeonia foliis difformiter lobatis*".

Although no types appear to have been formally selected for the two varieties of *P. officinalis*, some authors have suggested illustrations as potential type choices. Linnaeus cites in the protologue of var. *foemina*, plate 202 in FUCHS's *De Historia Stirpium* (1542). This plate was the first woodcut of the female peony printed in a book by "modern authors" in the 16th century. The other citation is the plate 682 (misprinted 602 in *Species Plantarum*) in PLANTIN's *Plantarum seu Stirpium Icones* (1581).

STERN (1946: 126) suggested that plates 914 (*Paeonia mas*) and 915 (*Paeonia foemina*) in MATTIOLI (1565) might be the types for the two varieties in Linnaeus's mind. However, Linnaeus did not directly cite these plates from Mattioli (even if they have an indirect link via Haller or Bauhin's works, themselves cited as references by Linnaeus), so they cannot serve as lectotypes. Stern considered Mattioli's plates as fine or magnificent, certainly from an artistic point of view. But they are taxonomically doubtful as they display plants with multiflorous stems, a character which does not exist in the European species of peony.

MEIKLE (1977) suggested that plate 684, tab. 832 in PLANTIN (1581) might be "probably" the type for *P. mascula* but his uncertainty means this suggestion cannot be accepted as a formal typification.

STEARNS & DAVIS (1984: 63) indicate that the lectotype of the genus *Paeonia* is "*Paeonia officinalis* L. sensu stricto (var. α *feminea*)" but they did not formally designate a specimen as lectotype.

Finally, a lectotype is designated for the name *P. officinalis* in the sense of Linnaeus (a whole of different kinds of peonies). This is a specimen (n° 692.1) in Linnaeus's own herbarium (LINN). This specimen is just annotated "*officinalis*" by Linnaeus's handwriting, a name which appears for the first time in the first edition of *Species plantarum*. As there is no other species name of *Paeonia* in *Species Plantarum*, *P. officinalis* is the type of the name of the genus.

The lectotype of var. *feminea* designated here is a specimen in the Clifford Herbarium (n° 211.1.C). Although it seems clear that, in Linnaeus's mind, *P. officinalis* is a different taxon from var. *feminea*, in a modern concept of the name *P. officinalis*, var. *feminea* is a taxonomic synonym of the type-variety, var. *officinalis* (Art. 26.1 of the St. Louis Code).

Another typical specimen is the "*Paeonia communis vel foemina* Bauh." in the Burser Herbarium, vol. XVIII (1): 87 (UPS, microfiche !).

As the lectotypes designated for *P. officinalis* and for var. *feminea* have no exact origin, to avoid taxonomic problems with the other subspecies of *P. officinalis*, the specimen in the Haller Herbarium (P !) is designated as an epitype (Art. 9.7 of the St. Louis Code). It is an original collection from Monte Generoso, the locality cited since Gesner, which is the base of the type-locality quoted by Linnaeus. Monte Generoso (Switzerland) is the *locus classicus* for *P. officinalis*.

The lectotype of var. *mascula* designated here is a specimen in the Clifford herbarium (n° 211.1.A), as there is no original material in Linnaeus's own herbarium (LINN). The name on the label "*Paeonia mas altera quae tardior*" follows Jean BAUHIN's nomenclature (1651) and is correct in the conception of Linnaeus's var. *mascula*. Unfortunately, this label is annotated "*officinalis*" by a later handwriting (probably George Clifford). But this specimen is quite typical to *P. mascula* with its ovate basal leaflets.

Another good specimen is the “*Paeonia folio nigricante splendido quae mas Bauh.*” in the Burser Herbarium, vol. XVIII (1): 85 (UPS microfiche !). But this sample is just two parts of a leaf, with eleven leaflets.

As for var. *feminea*, to avoid taxonomic problems due to the wide geographical range of *P. officinalis* var. *mascula* (AKEYROYD in WEBB, 1993: 294 under *P. mascula* subsp. *mascula*) a specimen collected in a classic locality in France is designated as the epitype (Art. 9.7 of the St. Louis Code). Burgundy (France) is the *locus classicus* for *P. mascula*, since the type-locality quoted by Linnaeus must be considered as doubtful.

4. *Paeonia tenuifolia* L., Syst. Nat. ed. 10: 1079. 1759.

Protologue:

tenuifol. 2. P. foliolis linearibus

Lectotype (designated here): n° 692.4 (LINN !).

The type-locality appears only in Sp. Pl. ed. 2, 1: 748, 1762 with the following protologue:

tenuifolia. 2. PAEONIA foliolis linearibus multipartitis

Paeonia laciniis foliorum linearibus. Zinn. Goett. 127.

Habitat in Ucraina. Gorter.

This species is quoted and described for the first time in ZINN’s Catalogue (1757) but with a polynomial name. Linnaeus named it with a binomial name in 1759.

Specimen n° 692.4 (LINN) is the sole original material for this name. It is quite typical and annotated with “*tenuifolia*” by Linnaeus.

In Haller’s herbarium (P !) a specimen annotated “*Paeonia laciniis foliorum linearibus* Cat. nostr. p. 127” is a true *P. tenuifolia*. The indication “*Cat. nostr.*” is evidently for Zinn’s catalogue as Haller was the curator of the Botanic Garden at Goettingen. So, this specimen was certainly from this garden and confirms the identity of the plant described by Zinn.

5. *Paeonia anomala* L., Mant. Pl. 2: 247. 1771.

Protologue:

anomala. PAEONIA capsulis glabris, calyce folioso petalis longiore.

Paeonia fructibus quinque glabris patentibus. Gmel. Sib. 4. p. 184. t. 72.

Habitat in omnia Sibiria.

Lectotype (designated here): n° 692.3 (LINN !).

This species was first described by J. G. GMELIN in 1769 along with a good illustration but with a polynomial name. It was subsequently named by Linnaeus as *P. anomala*.

Specimen n° 692.3 (LINN) is the only original specimen in existence and it is quite typical. There is, on the sheet, recto, the initials “H.U.” for “*Hortus Upsaliensis*”, which indicate that the specimen was cultivated at the Botanical Garden, Uppsala. On the verso there is also a short sentence, which one can read “*fructus divaricati depresso glabri*”. These words of Linnaeus’s hand indicate clearly that the plants with glabrous carpels are the typical form of *P. anomala*. This annotation is not mentioned by SAVAGE (1945).

In the Clifford Herbarium (BM), two specimens named “*Paeonia peregrina flore sature rubente* CBp (212.1)” and “*P. folio subtus niveo flore albo vel pallido* CBp (212.2)”, have been annotated as “*P. anomala*”. These two specimens are identifiable as *P. officinalis*.

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Images of the six specimens in Clifford herbarium can be seen on the web at the address:

www.nhm.ac.uk/botany/databases/