

# Systematic treatment of the Genus *Paeonia* L. with some nomenclatoric changes.

Systematické třídění rodu *Paeonia* s některými nomenklatorickými změnami

**Josef J. Halda**

Sedloňov 125, CZ-51782 Sedloňov, Česká republika

**Abstract.** An infrageneric classification of the genus *Paeonia* L. is presented. The genus is divided into 3 subgenera, 6 sections and 6 subsections. Key is given to the subgenera. Two new hybrids are described and many new combinations are made.

**Keywords:** *Paeonia*, system, taxonomy.

[*Paeoniaceae* Rudolphi, Syst. Orb. Veg. 61 (1830); *Ranunculaceae* Tribus V. *Paeoniaceae* DC. Prodr. 1:64 (1824)].

## Key to the subgenera:

- 1a** Stems woody, perennial; petals thin, much longer than sepals ..... **subg. Moutan**
- 1b** Stems herbaceous, annual, dying down at end of each growing season ..... **2**
- 2a** Petals coriaceous, not larger or only slightly larger than sepals;  
disc produced as fleshy lobes at the base of carpels ..... **subg. Onaepia**
- 2b** Petals thin, much larger than sepals; disc not produced  
as conspicuous outgrowths ..... **subg. Paeonia**

## *Paeonia* L., Spec. Plant. 539 (1753).

Perennial herbs dying down in the winter or deciduous shrubs with erect tuberous stock and fleshy roots. Leaves large, simply biternate or further divided. Flowers 6-20cm across; petals white, yellow, pink or red. Stamens numerous. Carpels 2-8, free, glabrous or pubescent. Fruit a group of horizontally spreading follicles; seeds in two rows.

## Subgenus *Paeonia*

[sect. *Paeon* DC., Prodr. 1:65 (1824); sect. *Albiflorae* Salm-Dyck, Hort. Dyck 365, 366 (1834); sect. *Compactae* Salm-Dyck, Hort. Dyck 365, 366 (1834); sect. *Corallinae* Salm-Dyck, Hort. Dyck 365, 366 (1834); sect. *Laciniatae* Salm-Dyck, Hort. Dyck 365, 366 (1834); sect. *Lobatae* Salm-Dyck, Hort. Dyck 365, 366 (1834); sect. *Macrocarpae* Salm-Dyck, Hort. Dyck 365, 366 (1834); sect. *Microcarpae* Salm-Dyck, Hort. Dyck 365, 366 (1834); sect. *Paeonia* Reichenbach, Repert. Herb. s. Nom. Gen. Pl. 191 (1841); sect. *Eupaeonia* Baillon, Adansonia 4:56 (1863); sect. *Tripaeonia* Baillon, Adansonia 4:56 (1863); sect. *Paelearcticae* & Herbaceae Huth in Engler, Bot. Jahrb. 14:265 (1891); subgen. *Paeonia* prop. Baker in Gard. Chron. N. Ser. 21:779 (1884); subgen. *Paeon* (DC.) Seringe, Fl. Jard. 3:193 (1849)].

Type species: *P. officinalis* L.

Stems herbaceous, annual, dying down at end of each growing season. Petals thin, much larger than sepals; disc not produced as conspicuous outgrowths.

### sect. *Paeonia*

[*Paeonia* subsect. *Dissectifoliae* Stern, A study of the genus *Paeonia* 1 (1946); *Paeonia* sect. *Sternia* Kem. - Nath., Trudy Tbil. Bot. Inst. 21:35 (1961)].

Leaves biternate or triternate; leaf-segments deeply cut to the lanceolate or lineate leaflets; petioles grooveform with interrupted ring of sclerenchym.

Typus: *P. officinalis* L.

### subsect. *Paeonia*

[*Paeonia* subsect. *Dissectifoliae* gr. *Officinalis* et gr. *Peregrina* Stern, A study of the genus *Paeonia* 99 (1946); *Paeonia* sect. *Paeonia* ser. *Officinalis* Kem. - Nath. ex Uspensk. in Bjull. Mosk. Obsch. Ispyt. Prir. otd. Biol. 92(3):84 (1987); *Paeonia* sect. *Sternia* ser. *Officinalis* et ser. *Peregrina* Kem. - Nath. in Trudy Tbil. Bot. Inst. 21:35 (1961)].

Leaf-segments dentate.

Typus: *P. officinalis* L.

### subsect. *Anomalae* (Kem. - Nath. ex Uspensk.) J. J. Halda stat. nov.

[*Paeonia* sect. *Paeonia* ser. *Anomalae* Kem. - Nath. ex Uspensk. in Bjull. Mosk. Ispyt. Prir. otd. Biol. 92(3):84 (1987); *Paeonia* sect. *Sternia* ser. *Anomalae* et ser. *Hybridae* Kem. - Nath. in Trudy Tbil. Bot. Inst. 21:35 (1961), nom. nud.; *Paeonia* subsect. *Dissectifoliae* gr. *Anomala* Stern, A study of the genus *Paeonia* 112 (1946), nom. nud.].

Leaf segments laciniate; leaflets lanceolate.

Typus: *P. anomala* L.

subsect. ***Tenuifoliae*** (Stern ex Uspensk.) J. J. Halda stat. nov.

[*Paeonia* sect. *Paeonia* ser. *Tenuifoliae* Stern ex Uspensk. in Bjull. Mosk. Ispyt. Prir. otd. Biol. 92(3):84 (1987); *Paeonia* subsect. *Dissectifoliae* gr. *Tenuifolia* et gr. *Anomala* Stern, A study of the genus *Paeonia* 110 (1946), nom. nud.; *Paeonia* ser. *Fissae* Komarov in Fl. SSSR 7:31 (1937), nom. inval.].

Leaf-segments pinnatisect.

Typus: *P. tenuifolia* L.

sect. ***Paearticae*** Huth emend. Uspensk. in Bjull. Mosk. Obsch. Ispyt. Prir. otd. Biol. 92(3):83 (1987).

[*Paeonia* sect. *Paearticae* Herbaceae Huth in Bot. Jahrb. 14:256 (1891), p. p.; *Paeonia* sect. *Paeonia* DC., Prodr. 1:56 (1824), p. p.; *Paeonia* sect. *Flavonia* Kem. - Nath. in Trudy Tbil. Bot. Inst. 21:14 (1961), nom. nud.; *Paeonia* sect. *Paeon* Kem. - Nath. l. c. 21:14 (1961); *Paeonia* subsect. *Foliolatae* Stern, A study of the gen. *Paeonia* 1 (1946)].

Leaves biternatisect; leaf-segments entire, rarely bilaciniate or trilaciniate; petioles cylindrical with continuous ring of sclerenchym.

Typus: *P. mascula* Mill.

subsect. ***Flavonia*** (Kem. - Nath.) Uspensk. in Bjull. Mosk. Obsch. Ispyt. Prir. otd. Biol. 92(3):83.

[*Paeonia* sect. *Flavonia* Kem. - Nath. et ser. *Macrophyllae* Kem. - Nath. et ser. *Wittmanniana* Stern ex Kem. - Nath. in Trudy Tbil. Bot. Inst. 21:18, 22 (1961); *Paeonia* ser. *Corallinae* Komarov in Fl. SSSR 7:28 (1937); *Paeonia* subsect. *Foliolatae* group *Wittmanniana* Stern, A study of the genus *Paeonia* 53 (1946)].

Flowers yellow, creamy or whitish-yellow. Leaf-segments entire.

Typus: *P. wittmanniana* Hartwiss ex Lindl.

subsect. ***Foliolatae*** Stern, A study of the genus *Paeonia* 1 (1946).

[*Paeonia* sect. *Paeon* ser. *Broteri* Kem. - Nath. in Trudy Tbil. Bot. Inst. 21:14 (1961), nom. nud.; *Paeonia* sect. *Paeon* ser. *Arietinae* Kem. - Nath. l. c. 21:14 (1961), nom. nud.; *Paeonia* sect. *Paeon* ser. *Masculae* Kem. - Nath. l. c. 21:14 (1961); *Paeonia* sect. *Paeon* ser. *Mairei* Kem. - Nath. l. c. 21:14 (1961), nom. nud.; *Paeonia* sect. *Russii* Kem. - Nath. l. c. 21:18 (1961), nom. nud.; *Paeonia* sect. *Paearticae* Huth emend. Uspensk. subsect. *Foliolatae* Stern ser. *Masculae* F. C. Stern ex Uspensk. et ser. *Arietinae* Stern ex Uspensk. in Bjull. Mosk. Obch. Prir. otd. Biol. 92(3):83 (1987); *Paeonia* gr. *Mascula* et gr. *Coriaceae* et gr. *Russii* et gr. *Arietinae* et gr. *Broteri* et gr. *Mairei* Stern, A study of the genus *Paeonia* 67-86 (1946); *Paeonia* ser. *Masculae* et ser. *Arietinae* Kem. - Nath. in Trudy Tbil. Bot. Inst. 21:28 (1961); *Paeonia* ser. *Corallinae* Komarov in Fl. SSSR 7:28 (1937); *Paeonia* sect. *Corallinae* Salm-Dyck in Hort. Dyck. 365 (1834)].

Flowers red; leaf-segments entire or deeply cut to 2-3 leaflets.

Typus: *P. mascula* Mill.

subsect. ***Obovatae*** Komarov ex Uspensk. in Bjull. Mosk. Obsch. Ispyt. Prir. otd. Biol. 92(3):84 (1987).

[*Paeonia* ser. *Obovatae* Komarov in Fl. SSSR 7:26 (1937), nom. inval.; *Paeonia* gr. *Obovata* Stern, A study of the genus *Paeonia* 21 (1946)].

Flowers rose or white; leaf-segments entire, orbiculate or oval.

Typus: *P. obovata* Maxim.

sect. ***Albiflorae*** Salm - Dyck, Hort. Dyck. 365, 366 (1834).

Leaf-edge cartilaginous, more or less dentate, gradually acute towards the apex.

Typus: *P. lactiflora* Pallas.

**Subgenus *Onaepia*** (Lindl.) Lynch in Journ. Roy. Hort. Soc., London, N. Ser. 12:431, 433 (1890).

sect. ***Onaepia***

[sect. *Onaepia* Lindl. in Bot. Reg. 25, sub t. 30 (1839); sect. *Nearcticae* Huth in Bot. Jahrb. 14:273 (1891)].

Type species: *P. brownii* Douglas ex Hooker.

Stems herbaceous, annual, dying down at end of each growing season. Petals coriaceous, not larger or only slightly larger than sepals; disc produced as fleshy lobes at the base of carpels.

**Subgenus *Moutan*** (DC.) Seringe, Fl. Jard. 3:187 (1849).

[section *Moutan* DC., Prodr. 1:65 (1824); sect. *Suffruticosae* Salm-Dyck, Hort. Dyck, 365, 366 (1834); sect. *Moutania* Reichenbach, Repert. Herb. s. Nom. Gen. Pl. 191 (1841); sect. *Paelearcticae* subsect. *Fruticosae* Huth in Engler, Bot. Jahrb. 14:272 (1891); sect. *Mutan* Ascherson & Graebner, Syn. Mitteleur. Fl. 5 (2):558 (1923); *Moutan* (DC.) Reichb. in Moessler, Handb. Gewachsk. Ed. 2 (1):55 (1827), pro gen.].

Typus: *P. suffruticosa* Andrews.

Stems woody, perennial; petals thin, much longer than sepals.

sect. ***Moutan***

[sect. *Moutan* DC. subsect. *Vaginatae* Stern in A Study of the Genus *Paeonia* p. 1 (1946); *Paeonia* sect. *Moutan* ser. *Suffruticosae* Kem. - Nath. in Trudy Tbil. Bot. Inst. 21:14 (1961), nom. inval.].

Disc produced as a thin leathery sheath which at first completely envelops the carpels; lower leaves bipinnate with some hairs on lower surface; pinnae entire or more often palmately 2-3-lobed.

Typus: *P. suffruticosa* Andrews.

**sect. *Delavayanae* (F. C. Stern) J. J. Halda stat. nov.**

[sect. *Moutan* DC. subsect. *Delavayanae* Stern in A Study of the Genus *Paeonia* p.1 (1946); *Paeonia* sect. *Flavonia* ser. *Lutea* Kem. - Nath. in Trudy Tbil. Bot. Inst. 21:14 (1961), nom. inval.; *Paeonia* sect. *Paeon* ser. *Delavayanae* Kem. - Nath. l. c. 21:14 (1961)].

Disc produced as conspicuous fleshy lobes around the base of carpels; lower leaves biternate, glabrous; leaflets pinnatipartite, with pinnae deeply lobed or toothed. Typus: *P. delavayi* Franch.

**New combinations and descriptions:*****P. mascula* (L.) Miller subsp. *kesrouanensis* (J. Thiebaut) J. J. Halda stat. nov.**

[bas: *P. kesrouanensis* J. Thiebaut in Mem. Inst. Egypte 31:37 (1936)].

Differs from subsp. *mascula* in having glabrous carpels and long stigma, coiled at the extreme apex. Syria, Lebanon, Turkey.

***P. daurica* Andrews subsp. *lagodechiana* (Kem.-Nath) J. J. Halda stat. nov.**

[bas: *P. lagodechiana* Kem.- Nath. in Trudy Tbil. Bot. Inst. 21:33 (1961)].

Differs from subsp. *daurica* in having glaucous narrowly elliptic leaflets and broadly open pink flowers up to 150mm across. Gruzia: Kachetia.

***P. tenuifolia* L. subsp. *biebersteiniana* (Ruprecht) J. J. Halda stat. nov.**

[bas: *P. biebersteiniana* Ruprecht, Flora Cauc. 47 (1869)].

Differs from subsp. *tenuifolia* in having leaflets much broader (up to 15mm wide). Caucasus: Stavropol.

***P. anomala* L. subsp. *hybrida* (Pallas) J. J. Halda stat. nov.**

[bas: *P. hybrida* Pallas, Fl. Ross. 1(2):94 (1788)].

Differs from subsp. *anomala* in having tomentose carpels. Finnish Lapponia, N. Russia, Altai, Turkestan.

***P. veitchii* Lynch subsp. *altaica* (K. M. Dai) J. J. Halda stat. nov.**

[bas: *P. altaica* K. M. Dai & T. H. Ying in Bull. Bot. Res. 10(4):33 (1990)].

Differs from subsp. *veitchii* in having broader leaflets, bigger (100-180mm across) emarginate flowers and subglobose, smaller pollen grains. China: Xinjiang.

***P. emodi* Wall. ex Royle subsp. *sterniana* (H. R. Fletcher) J. J. Halda stat. nov.**

[bas: *P. sterniana* H. R. Fletcher in Journ. Roy. Hort. Soc. Lond. 134:327 (1959)].

Differs from subsp. *emodi* in having smaller solitary flowers (up to 80mm across) and deeply lobed and toothed leaflets. SE Tibet:Kongbo.

***P. wittmanniana* Hartwiss ex Lindley subsp. *macrophylla* (Albow) J. J. Halda stat. nov.**

[bas: *P. corallina* Retz. var. *wittmanniana* forma *macrophylla* N. Albow, Prodr. Fl. Colchid. 15 (1895)].

Differs from subsp. *wittmanniana* in having larger leaflets and glabrous carpels. Gruzia, Adzharia, W Caucasus.

***P. obovata* Maximowicz subsp. *japonica* (Makino) J. J. Halda stat. nov.**

[bas: *P. obovata* Maximowicz var. *japonica* Makino in Bot. Mag. Tokyo 12:302 (1898)].

Differs from subsp. *obovata* in having glabrous leaves and white flowers with short stigmas and being diploid ( $2n=10$ ). Sachalin, Japan.

***P. suffruticosa* Andr. subsp. *rockii* S. G. Haw & L. A. Lauener var. *linyanshanii* (T. Hong et G. L. Osti) J. J. Halda stat. nov.**

[bas: *P. rockii* (S. G. Haw & L. A. Lauener) T. Hong et J. J. Li subsp. *linyanshanii* T. Hong et G. L. Osti in Bull. Bot. Res. 14(3):237 (1994)].

Differs from var. *rockii* having folioles lanceolate or narrowly ovate, entire. Gansu, Hubei.

***P. suffruticosa* Andr. subsp. *rockii* S. G. Haw & L. A. Lauener var. *yananensis* (T. Hong et M. R. Li) J. J. Halda stat. nov.**

[bas: *P. yananensis* T. Hong et M. R. Li in Bull. Bot. Res. 12(3):226 (1992)].

Differs from var. *rockii* having only few leaflets (up to 11); petals smaller, sometimes purplish and reddish purple stigma and disc. Shaanxi.

***P. suffruticosa* Andr. subsp. *ostii* (T. Hong et J. X. Zhang) J. J. Halda stat. nov.**

[bas: *P. ostii* T. Hong et J. X. Zhang in Bull. Bot. Res. 12(3):223 (1992)].

Differs from subsp. *rockii* having narrowly ovate-lanceolate, entire leaflets, which are glabrous beneath; terminal leaflets 1-3 lobed. Petals mostly white, without purple basal blotch; filaments, discs and styles purplish red. Gansu, Henan, Hunan, Shaanxi.

***P. suffruticosa* Andr. subsp. *spontanea* (Rehder) S. G. Haw & L. A. Lauener var. *jishanensis* (T. Hong et W. Z. Zhao) J. J. Halda stat. nov.**

[bas: *P. jishanensis* T. Hong et W. Z. Zhao in Bull. Bot. Res. 12(3):225 (1992)].

Differs from var. *spontanea* having white petals without petaloid stamens. Shanxi.

***P. suffruticosa* Andr. subsp. *spontanea* (Rehder) S. G. Haw & L. A. Lauener var. *qiui* (Y. L. Pei et Hong) J. J. Halda stat. nov.**

[bas: *P. qiui* Y. L. Pei et Hong in Acta Phytotaxonomica Sinica 33(1):91 (1995)].

Differs from var. *spontanea* having folioles ovate or ovate-rotundate, entire; the terminal one trifide or dentate. Hubei.

***P. x francheti* J. J. Halda hybr. nov.**

[*P. lutea* Franch. x *P. potaninii* Komarov].

**Descriptio:** Frutex 0.8-1 metralis, trunco 5mm diam., cortice bruneo-griseo in lamellas satis tenues soluto; ramuli teretes, viridiscetes, basi squamis persistentibus obtectis. Folia alterna, chartacea, 120-180mm longa, biternata; folia lanceolata vel oblongo-lanceolata, basi cuneata, dissecta; petioli 120-160mm longi. Flos 60-70mm diametro; bractee 5-7, virides; petala cuprea, orbiculata, emarginata; stamina numerosa, antheris flavis, linearibus; carpella 3-4, glabra, flavo-viridia, conica, stylis brevibus, stigmati plano, conico; discus lobulatus. Folliculi viridiscetes, bracteis et sepalis persistentibus suffulti.

**Holotypus:** China austro-occidentalis, provincia Sechuan: montes Haba Shan supra Daju; in clivis dumetosis meridionalis cca 2600m supra mare.

Coll. J. J. Halda 20.6. 1990 (JJH9006422). (PR).

***P. x handel-mazzettii* J. J. Halda hybr. nov.**

[*P. delavayi* Franchet x *P. lutea* Franchet].

**Descriptio:** Frutex 1-1.5 metralis, trunco 8mm diam., cortice nigro-griseo in lamellas satis tenues soluto; ramuli teretes, viridiscetes, basi squamis persistentibus obtectis. Folia alterna, chartacea, 140-200mm longa, biternata; foliola lanceolata vel oblongo-lanceolata, basi cuneata, superne 3-lobata; petioli 150-200mm longi. Flos 80-90mm diametro; bractee 5-6, virides; petala cuprea, obovata, crenato-marginata; stamina numerosa, antheris flavis, linearibus, filamentis albis, linearibus; carpella 3-4, flavo-viridia, conica, glabra, stylis brevibus, stigmati plano, recurvo; discus lobulatus. Folliculi viridiscetes, bracteis et sepalis persistentibus suffulti.

**Holotypus:** China austro-occidentalis, provincia Yunnan: montes Haba Shan prope Daju; in clivis dumetosis meridionalis cca 3400m supra mare.

Coll. J. J. Halda 12.6.1990 (JJH9006315). (PR)

***P. brownii* Douglas ex Hooker subsp. *californica* (Nutt. ex Torrey & Gray) J. J. Halda stat. nov.**

[bas: *P. californica* Nutt. ex Torrey & Gray, Fl. N. Amer. 1:41 (1838); *P. brownii* Douglas ex Hooker var. *californica* (Nutt. ex Torrey & Gray) Lynch in Journ. Roy. Hort. Soc. 12:433 (1890)].

Differs from subsp. *brownii* in having leaves less divided and less lobed; leaf-segments and lobes acute at apex; petals 17-20mm long, as long as or slightly longer than the inner sepals, which are 15-19mm long. DISTRIBUTION: USA [Central and Southern California].

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