

**NEW COMBINATIONS IN *PRIMULA* SECT. *CORTUSOIDES* SUBSECT.
CORTUSA (PRIMULACEAE)**

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A number of new combinations of names in the tribe Primuleae are required to bring species nomenclature for *Primula* L. into alignment with the results of recent phylogenetic analyses. We proposed here twelve name transfers from *Cortusa* L. to *Primula* sect. *Cortusoides* Balf.f.

Primula L. (1753) is one of the largest genera in the Primulaceae, comprising more than 500 species in temperate and arctic zones of the northern hemisphere (Fedorov, 1952; Hu, 1994; Hu and Kelso, 1996; Richards, 1993, 2002; POWO, 2024), with a modern centre of diversity in southwestern China, which harbours about 300 species (Hu, 1990, 1994; Hu and Kelso, 1996; Richards, 1993). The genus *Primula* consists of perennial herbs, sometimes monocarpic, and can be explicitly recognised by its perennial habit, basal rosette of leaves, heterostylous flowers with an obvious tube, and capsular fruits (Hu, 1994; Hu and Kelso, 1996; Xu *et al.*, 2016). The species are economically important as ornamental plants and have been used to breed numerous cultivars of garden primroses (Kovtonyuk, 2006).

Recent phylogenetic studies have demonstrated that the genus *Cortusa* L. (1753) is nested within the clade of *Primula* L. sect. *Cortusoides* Balf.f. (Martins *et al.*, 2003; Kovtonyuk and Goncharova, 2009), hence *Cortusa* is embedded in *Primula*. Like most sections of *Primula* subgenus *Auganthus*, *Cortusa* has a chromosome base number of $x=12$, revolute vernation, articulated hairs, and lobed leaves (Mast *et al.*, 2001). New combinations and lectotypifications have been made for *Primula matthioli* (L.) V.A. Richt. (1894) (Kovtonyuk, 2011; Sennikov, 2018), and its subspecies in *Primula* sect. *Cortusoides* subsect. *Cortusa* (L.) Kovt. (Kovtonyuk, 2011), and this placement was further affirmed by morphological characters (Lozina-Lozinskaya, 1936; Kovanda, 2003; Kovtonyuk, 2011, 2013; Sennikov, 2021).

We found twelve infraspecific names, *Cortusa matthioli* f. *alpina* Podp. (1921), *C. matthioli* f. *cenisia* Podp. (1921), *C. matthioli* f. *engadinensis* Podp. (1921), *C. matthioli* f. *freyunii* Podp. (1921), *C. matthioli* subf. *glabrescens* Podp. (1922), *C. matthioli* subsp. *hazarica* Y.J. Nasir (1984), *C. matthioli* subsp. *iranica* Iranshahr & Wendelbo (1976), *C. matthioli* subf. *latidens* Podp. (1922), *C. matthioli* subf. *longecalycina* Podp. (1922), *C. matthioli* subf. *subcanescens* Podp. (1922), *C. matthioli* f. *tatrensis* Podp. (1921), and *C. matthioli* subf. *villosula* Podp. (1922) that need to be transfer to *Primula*; all of these names are not currently listed in online database, such as Tropicos (2024; <http://www.tropicos.org/>), IPNI (2024; <http://ipni.org/>), POWO (2024; <http://powo.science.kew.org/>), and WFO (2024; <https://wfoplantlist.org/>) except *C. matthioli* subsp. *hazarica* Y.J. Nasir, *C. matthioli* subsp. *iranica* Iranshahr & Wendelbo. However, in view of horticultural usage and usefulness in ecological and conservation studies, we provide combinations to formally transfer all the above cited names to the genus *Primula* L. sect. *Cortusoides* Balf.f. (1913: 140) subsect. *Cortusa* (L.) Kovt. (2011: 962).

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Taxonomy

1. ***Primula matthioli f. alpina*** (Podp.) Idrees & J.M.H. Shaw, *comb. nov.*
Basionym: *Cortusa matthioli f. alpina* Podp. in Sborn. Klubu Přír. v Brně **3**: 67 (1921).
Type: Austria Inferior. “am Obersberge in der Schwarzau in [sic!] Gebirge”, June 1872, *E. brandmayer s.n.* (BRNM11626/37–holotype).
Distribution: Central Europe (Austria).
2. ***Primula matthioli f. cenisia*** (Podp.) Idrees & J.M.H. Shaw, *comb. nov.*
Basionym: *Cortusa matthioli f. cenisia* Podp. in Sborn. Klubu Přír. v Brně **3**: 67 (1921).
Type: Gallia: Mont Cenis à Savalain, alt. 2000 m, Août, 1886, *Arvet-Touvet s.n.* (BRNM 11628/37–lectotype, designated by K. Sutorý 2010).
Distribution: Western Europe (France, Tirolia).
3. ***Primula matthioli f. engadinensis*** (Podp.) Idrees & J.M.H. Shaw, *comb. nov.*
Basionym: *Cortusa matthioli f. engadinensis* Podp. in Sborn. Klubu Přír. v Brně **3**: 67 (1921).
Type: Helvetia. Engadin: Bachufer in den Wäldern um die Hochwiesen Plan d’Ors am Piz Mondin ober Martinsbrack zahlreich. 28. 7. 1886, Kalkschiefer, 1600 [m], *Freyn s.n.* (BRNM 11630/37–lectotype, designated by K. Sutorý 2010:).
Distribution: Central Europe (Switzerland, N. Italy, Slovenia).
4. ***Primula matthioli f. freynii*** (Podp.) Idrees & J.M.H. Shaw, *comb. nov.*
Basionym: *Cortusa matthioli f. freynii* Podp. in Sborn. Klubu Přír. v Brně **3**: 68 (1921).
Type: Romania. Schattige Bachufer beim Kloster Skit la Jalomniza auf der Südseite der Alpe Bucsecs: Kalkkonglomerat, 1500 m, 3 Aug. 1873, *J. Freyn s.n.* (*C. pubens* Sch. N. et Ky cum nota: Originalstandort) (BRNM11644/37–holotype).
Distribution: Southeastern Europe (Romania).
5. ***Primula matthioli subsp. brotheri f. glabrescens*** (Podp.) Idrees & J.M.H. Shaw, *comb. nov.*
Basionym: *Cortusa matthioli f. brotheri* subf. *glabrescens* Podp. in Beih. Bot. Centralbl., Abt. 2, **39**: 287 (1922).
Type: India. Lahal: Apud rivulos umbrosos in septentrionali montis declivitate Kardang, Tugjiling, *H.A. Jäschke s.n.* (WU0064467–lectotype designated by K. Sutorý 2010).
Distribution: Asia (N.W. India).
6. ***Primula matthioli subsp. hazarica*** (Y.J.Nasir) Idrees & J.M.H. Shaw, *comb. nov.*
Basionym: *Cortusa matthioli subsp. hazarica* Y.J. Nasir in Fl. Pakistan **157**: 80 (1984).
Type: Pakistan. Hazara, Miranjani, 9000 m, in rich forest, 23 June 1955, *R.R. Stewart s.n.* (RAW–holotype).
Distribution: Asia (Pakistan and India).
7. ***Primula matthioli subsp. iranica*** (Iranshahr & Wendelbo) Idrees & J.M.H. Shaw, *comb. nov.*
Basionym: *Cortusa matthioli subsp. iranica* Iranshahr & Wendelbo in Iran. J. Bot. **1**(1): 58 (1976).
Type: Iran. Mazandaran: above Sang-Deh c. 30 km SE of Pol-e Sefid, 2500-3000 m, 11 VII 1974, J. Renz and M. Iranshahr 16804 (in einem Wäldchen am, “todten Hengsten” zwischen Unterlauhsa und Windischgarsten, May 1882, *H. Steininger s.n.* (TARI: Herbarium of the Ministry of Agriculture, Evin, Tehran–holotype; GB, TARI–isotypes).
Distribution: Asia (Iran).

- 8. *Primula matthioli* f. *latidens*** (Podp.) Idrees & J.M.H. Shaw, *comb. nov.*
Basionym: *Cortusa matthioli* (f. *matthioli*) subf. *latidens* Podp. in Beih. Bot. Centralbl., Abt. 2, **39**: 283 (1922).
Type: Romania. Siebenbürgen, Transsylvanische Alpen: Königstein, Crepatura bei Zernest, Kalk, 25 July 1909, *F.K.M. Vierhapper s.n.* (WU0064476–lectotype designated by K. Sutorý 2010).
Distribution: Central Europe (Austria, Transylvania).
- 9. *Primula matthioli* f. *longecalycina*** (Podp.) Idrees & J.M.H. Shaw, *comb. nov.*
Basionym: *Cortusa matthioli* (f. *matthioli*) subf. *longecalycina* Podp. in Beih. Bot. Centralbl., Abt. 2, **39**: 283 (1922).
Type: Austria. In einem Wäldchen am, “todten Hengsten” zwischen Unterlauhsa und Windischgarsten, May 1882, *H. Steininger s.n.* (WU0064479–lectotype designated by K. Sutorý 2010).
Distribution: Central Europe (Austria, Slovenia).
- 10. *Primula matthioli* subsp. *brotheri* f. *subcanescens*** (Podp.) Idrees & J.M.H. Shaw, *comb. nov.*
Basionym: *Cortusa matthioli* f. *brotheri* subf. *subcanescens* Podp. in Beih. Bot. Centralbl., Abt. 2, **39**: 287 (1922).
Type: Pakistan. Lowári Pass, 21 June 1895, *S.A. Harris 16353* (WU006468–lectotype designated by K. Sutorý 2010).
Distribution: Asia (Pakistan and India).
- 11. *Primula matthioli* f. *tatrenis*** (Podp.) Idrees & J.M.H. Shaw, *comb. nov.*
Basionym: *Cortusa matthioli* f. *tatrenis* Podp. in Sborn. Klubu Přír. v Brně **3**: 67 (1921).
Type: Slovakia. Liptau-Sohler Alpen, Sümpfe am Kozí vrch: Kalk, 1100 m, 29.5.1870, *J. Freyn s.n.* (BRNM11637/37–lectotype, designated by K. Sutorý 2010).
Distribution: Central Europe (Slovakia, Austria, N. Italy).
- 12. *Primula matthioli* subsp. *brotheri* f. *villosula*** (Podp.) Idrees & J.M.H. Shaw, *comb. nov.*
Basionym: *Cortusa matthioli* f. *brotheri* subf. *villosula* Podp. in Beih. Bot. Centralbl. Abt. 2, **39**: 287 (1922).
Type: India. Jammu and Kashmir. Near Gulmarg, 9-10000 ft., 3 June 1892, *J.F. Duthie 11366* (WU0064470–lectotype designated by K. Sutorý 2010).
Distribution: Asia, India (Jammu and Kashmir).

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