

Typification of *Primula* L. taxa names
(Primulaceae), described by A. Franchet in 1886
from China and Eastern Tibet

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COUVERTURE / *COVER* :

Lectotype of *Primula membranifolia* Franch. (P04544200).

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Typification of *Primula* L. taxa names (Primulaceae), described by A. Franchet in 1886 from China and Eastern Tibet

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ABSTRACT

French botanist A.R. Franchet (1834–1900) has described near 60 taxa in the genus *Primula* L., 16 taxa from them were discussed in a first publication. Our current paper will continue the researches devoted to the typification of *Primula* names, on the base of expert studying the specimens in herbaria BM, E, G, K, LE, MHA, MW, NS, NSK, P, W, WU, Z and open databases. In 1886 Franchet published an article: “Observations sur deux *Primula monocarpiques* de la Chine et descriptions d’espèces nouvelles de la Chine et du Thibet oriental” and described 11 new species: *P. davidii* Franch., *P. forbesii* Franch., *P. heucherifolia* Franch., *P. incisa* Franch., *P. malacoides* Franch., *P. malvacea* Franch., *P. membranifolia* Franch., *P. moupinensis* Franch., *P. oreodoxa* Franch., *P. ovalifolia* Franch. and *P. poissonii* Franch. For *P. davidii* and *P. heucherifolia* we found only one herbarium sheet for each and they will be holotypes. For eight species: *P. forbesii*, *P. malacoides*, *P. malvacea*, *P. membranifolia*, *P. moupinensis*, *P. oreodoxa*, *P. ovalifolia* and *P. poissonii* were selected lectotypes from several herbarium sheets. The name *Primula incisa* is later homonym and early was used by Lamarck (1779), so correct name for this taxon is *P. blinii* H. Lév.

KEY WORDS

E. Drake del Castillo,
A. David,
J.M. Delavay,
type specimens,
lectotypifications.

RÉSUMÉ

Typification des noms de taxons Primula L. (Primulaceae), décrits par A.R. Franchet en 1886 de Chine et du Tibet oriental.

Le botaniste français A.R. Franchet (1834–1900) a décrit près de 60 taxons dans le genre *Primula* L., dont 16 ont fait l’objet de discussions dans une première publication. Notre présent article poursuit les recherches consacrées à la typification des noms de *Primula*, sur la base de l’étude experte des spécimens dans les herbiers BM, E, G, K, LE, MHA, MW, NS, NSK, P, W, WU, Z et dans les bases de données en ligne. En 1886, A.R. Franchet publia un article : « Observations sur deux *Primula monocarpiques* de la Chine et descriptions d’espèces nouvelles de la Chine et du Thibet oriental » et y décrit 11 nouvelles espèces. Pour *P. davidii* et *P. heucherifolia*, nous avons trouvé seulement une part d’herbier, ce sont donc des holotypes. Pour huit espèces : *P. forbesii* Franch., *P. malacoides* Franch., *P. malvacea* Franch., *P. membranifolia* Franch., *P. moupinensis* Franch., *P. oreodoxa* Franch., *P. ovalifolia* Franch. et *P. poissonii* Franch., des lectotypes ont été désignés provenant de différents herbiers. Le nom *Primula incisa* est un homonyme postérieur et a été utilisé par Lamarck en 1779, le nom correct pour ce taxon est donc *P. blinii* H. Lév.

MOTS CLÉS

E. Drake del Castillo,
A. David,
J.M. Delavay,
spécimens types,
lectotypifications.

INTRODUCTION

The genus *Primula* L. has about 500 species, the biggest concentration of them was found in the Himalaya and western China (Richards 2003). The Herbarium of the Muséum national d'Histoire naturelle (MNHN, P) is estimated to hold about 8 million preserved specimens from around the world, but particularly in France, francophone Africa, New Caledonia, Madagascar, Southeast Asia (with China), and French Guiana. The scientific names of *Primula* plants are frequently misapplied to plants in cultivation. Although the application of scientific names is determined by the use of nomenclatural types, as stated in Art. 7.1 of the International Code of Nomenclature for Algae, Fungi, and Plants (ICN) (Turland *et al.* 2018), the requirement to indicate a type when publishing a new taxon applies only to names published on or after January 1st 1958. Consequently, many names published before then were not typified, thereby creating confusion for botanists and horticulturists in the identification and verification of taxa. Nevertheless, many herbarium specimens and other historical collections associated with plant names published before 1958 are now available via virtual herbaria, such as MNHN, assisting research on these taxa (Belyaeva *et al.* 2018).

French botanist Emmanuel Drake del Castillo (28 December 1855–14 May 1904) was born in Paris and studied with L.E. Bureau at the MNHN. Drake assembled a herbarium that contained more than 500 000 specimens from around the world. He acquired several important herbaria including that of Adrien Franchet in 1880, which contained plants collected in Japan by Dr. Savatier and material from Abbé David's travels in China and Mongolia. Drake's herbarium also included duplicates sent from the MNHN. He died in 1904 at Saint-Cyran-du-Jambot, bequeathing his collections to the Paris herbarium. As a consequence, the Paris herbarium can contain several sheets of the same gathering that unquestionably constitute duplicates but whose labels may not be identical.

Adrien René Franchet (1834–1900) was a French botanist, based at the Paris Muséum national d'Histoire naturelle. He is noted for his extensive work describing the flora of China and Japan, based on the collections made by French Catholic missionaries in China, Armand David, Pierre Jean Marie Delavay, Paul Guillaume Farges, Jean-André Soulié, and others. A.R. Franchet was the taxonomic author of many plants, including a 60 number of species from the genera *Primula* (Franchet 1885, 1886, 1887, 1898). In many cases, the original descriptions of *Primula* taxa were based on one or a few different gatherings, comprising several specimens which were sent to different herbaria. Consequently, a high number of isotypes and syntypes can be found for some names. The modern revision of various *Primula* taxa during the inspection of material in some important herbaria (BM, E, G, K, LE, MHA, MW, NS, NSK, P, W, WU, Z) and using Databases of herbarium collections through internet, have revealed the need to restrict the typifications of several names. In our first publication (Kovtonyuk 2017), devoted to Franchet's paper

“*Les Primula du Yun-nan*” Franchet (1885), 16 taxa were discussed and 11 of them were lectotypified.

In 1886, in “*Observations sur deux Primula monocarpiques de la Chine et descriptions d'espèces nouvelles de la Chine et du Thibet oriental*”, Franchet described again 11 new species of *Primula*. Many of these herbarium sheets have type status as “isotypus”, but instead in the protologue Franchet did not mark the first sheet as “typus”, he listed some collection points. As the protologue citation does not refer to a single specimen, all specimens that correspond to the original description have to be treated as syntypes. According to Art. 9.6 of the ICN: a syntype is any specimen cited in the protologue when there is no holotype, or any one of two or more specimens simultaneously designated in the protologue as types. Reference to an entire gathering or a part thereof, is considered citation of the included specimens (Turland *et al.* 2018). Since usually M. A. Franchet (1886) did not make any formal type designation when describing *Primula* taxa, the herbarium sheets kept at P Herbarium, where he worked during a long time, are designated here as the lectotypes, isolectotypes or syntypes.

LECTOTYPIFICATIONS

Primula davidii Franch.
(Fig. 1)

In *Bulletin de la Société botanique de France* 33: 66 (1886). — Franch., *Nouvelles Archives du Muséum d'Histoire naturelle, Paris*, sér. 2, X: 56, pl. 14, fig. A (1887). — Smith & Fletcher, *Transactions of the Royal Society of Edinburgh* 61: 309 (1944). — Hu & Kelso, *Flora of China* 15: 142 (1996). — Richards, *Primula*: 162 (2003). — In protologue: [China, West Sichuan] “Thibet oriental, Moupine, dans les parties fraîches des hautes montagnes, fin d'avril 1869 (Arm. David)”.

HOLOTYPE. — China. West Sichuan, “Moupine, Thibet or., fin d'avril 1869. *Primula*, fl. violettes, haute forêt fraîche”, *David s.n.* (holo-, P[P00649650]!).

REMARK

We found three herbarium sheets of *P. davidii* in P Herbarium, only one of them with the handwritten label which has almost full equal to protologue and collected by Armand David in April 1869, according to ICN, art. 9.1, this herbarium sheet may be holotype.

COMMENTS

The herbarium sheet of *P. davidii* P00649651, marked as “type” in P Herbarium database, has not handwritten label and date “avril 1869”, so it cannot be type specimen. The third herbarium sheet P04571715 without date and place is not type too. Herbarium specimen from the Royal Botanical Gardens Kew: “Herb. Mus. Paris, Chine (Tibet Oriental), Prov. de Moupin, Hautes prairies fraîches, mars 1869, M l'Abbé David”, K000750146! was collected in March 1869, so it cannot be type, as its photocopy in Royal Botanical Gardens Edinburgh E00024321!



Fig. 1. — Holotype of *Primula davidii* Franch. (P00649650).

W. W. Smith & H. R. Fletcher (1944: 309) wrote: “[...] the paucity of material of *P. davidii* in any herbarium is unfortunate [...] Franchet has given two descriptions and a figure: it is founding in moist shady alpine woods; it is ‘planta speciosissima’, it is one of the most ornamental species in the genus by reason of its large violet-purple flowers; its leaves recall those of *P. petiolaris* and calyx that of *P. obconica*. The data in this review are based on the statements of Franchet and on the co-type in the Kew Herbarium (the term “cotype” is not being used in ICN now, it is the old name for paratype and syntype – comment authors), which is, however, somewhat meager when compared with the Franchetian figure. It may be noted here that specimens collected by Farges and referred at Paris to *P. davidii* will be found under *P. fagosa* [...]”.

Primula forbesii Franch.
(Fig. 2)

In *Bulletin de la Société botanique de France* 33: 64 (1886). — Hu & Kelso, *Flora of China* 15: 116 (1996); Richards, *Primula*: 121 (2003). — In protologue: “[China] Yun-nan, Tapintze près de Tali, dans les marais et au bord des canaux – Avril 1884. (Delavay, nos 311 et 858).

SYNTYPES. — **France**. Herb. Mus. Paris, Plantes de Chine (Province Yun-nan), *Primula forbesii*, in orizetis prope Tapin-tze, IV.1884, *Delavay* 858 (syn-, E[E00024171]!; G[G00440585, G00440586]!; K[K000750036]!; LE[LE01031990]!; MPU[MPU022035, MPU022036]; NY[NY00329542]; P[P01029599]).

China (Yunnan). Lieux marécageux, bord des rizières (commune), fl. roses, fleurit tout l’hiver et le printemps. Ta-pin-tze, près de Ta-li, 6.II.1885, *Delavay* 858 (syn-, P[P04567401, P04567391]). — Terrains marécageux à Ta-pin-tze, 31.I.1883, *Delavay* 311 (syn-, P[P01029601, P01029602, P04567409, P05250285]). — *Sine loco*, *Delavay* 311 (syn-, P[P04567380, P04567403]).

China (Ta-pin-tze). III.1884, *Delavay* 311 (syn-, P[P04567379]).

LECTOTYPE (HERE DESIGNATED). — **China, Yunnan**. *Primula*, fl. roses, marais et bord des canaux, Ta-pintze près de Tali, IV.1884, *Delavay* s.n. (lecto-, P[P04567410]!; isolecto-, P[P04567405]!).

REMARKS

We found 54 herbarium sheets with *P. forbesii* in P herbarium database. Part of them with full handwritten text and no. 858, but date 1885 (P04567391, P04567401), some with no. 311 and short text according protologue, but date “mars 1884” (P04567379), or “janvier 1883” (P04567409, P05250285, P01029601 and P01029602), or just the no. 311, without locality and date (P04567380 and P04567403). Some others with n° 858 and date “avril 1884” but with text “in rizières prope Tapin-tze” (P01029599). There are also specimens which have no number but the locality, date and collector’s name correspond to the protologue exactly (P04567405, P04567410). All of them are syntypes. According to Art. 9.6 and Rec. 9A of the ICN (Turland *et al.* 2018) among syntypes one of the herbarium specimens may be chosen as lectotype.

Primula heucherifolia Franch.
(Fig. 3)

In *Bulletin de la Société botanique de France* 33: 65(1886). — Hu & Kelso, *Flora of China* 15: 124 (1996); Richards, *Primula*: 142 (2003). — In protologue: “[China] Thibet oriental, dans les lieux inondés des montagnes élevées – juin 1869 (A. David)”.

REMARK

We found only one herbarium sheet, the label text is fully consistent with the protologue. It is holotype P04567576!, photocopy in E (E00024801).

Primula malacoides Franch.
(Fig. 4)

In *Bulletin de la Société botanique de France* 33: 64(1886). — Hu & Kelso, *Flora of China* 15: 116 (1996); Richards, *Primula*: 121 (2003). — In protologue: “[China] Yun-nan, dans les champs cultivés à Tali. – 29 mars 1884. (Delavay, no. 119 et 312.)”.

SYNTYPES. — **China**. Yunnan, Les champs, dans la plaine de Ta-li, le 23.I.1883, *Delavay* 312 (syn-, P [P04544289]). — Enclos du jardin Le Guilcher à Ta-li, 23.I.1883, *Delavay* 312 (syn-, P[P04544291]); jardin de M. Le Guilcher à Ta-li, fl. roses, 29.III.1884, *Delavay* 1119 (syn-, P[P04544286]); bord des champs à Ta-li. Dans le jardin de M. Le Guilcher, fl. roses, 29.III.1884, *Delavay* s.n. (syn-, P[P04544287]). — *sine loco*, *Delavay* 312, (syn-, P[P04544290], MPU[MPU022030]); *Delavay* 1119 (syn-, L[L0006473]).

LECTOTYPE (HERE DESIGNATED). — **China, Yunnan**. *Primula*, fl. roses, les champs cultivés à Tali, 29.III.1884, *Delavay* 1119 (lecto-, P[P04544285]!; isolecto-, K[K000750029]!, P[P04544267]!).

COMMENTS

We found three sheets with *P. malacoides* no. 1119 (it was misprinted in number “119” in the protologue), and with date ‘29 mars 1884’ (P04544267, P04544285, P04544286) and one without date, but with no. 1119, collected by Delavay. Herbarium specimens with “no. 312” were collected on another date or have no date on the labels. All of them are syntypes. According to Art. 9 and Rec. 9A of the ICN (Turland *et al.* 2018) among syntypes one of the herbarium specimens may be chosen as lectotype. We chose as lectotype specimens with handwritten text of label more correspond to the protologue.

REMARK

We suggest that P04544286 and P04544287 are the same gathering, because these specimens were collected in the same locality (garden of M. Le Guilcher) and at the same date. And on P04544286, we have the impression that “*Primula*, fl. roses, no. 1119” was added further.

Primula malvacea Franch.
(Fig. 5)

Bulletin de la Société botanique de France 33: 65 (1886). — Pax, *Engler’s Botanische Jahrbücher für Systematik* 10: 167 (1889). — Pax & Knuth, *Primulaceae* in *Engler’s Pflanzenreich* IV: 26 (1905). — Hu &



FIG. 2. — Lectotype of *Primula forbesii* Franch. (P04567410).



FIG. 3. — Holotype of *Primula heucherifolia* Franch. (P04567576).



FIG. 4. — Lectotype of *Primula malacoides* Franch. (P04544285).

Kelso, *Flora of China* 15: 126 (1996). — Richards, *Primula*: 129 (2003). — In protologue: “[China] Yun-nan, rochers calcaires des hautes montagnes à Hee-gni-chao, au-dessus de Hokin, 24 juillet 1883 (Delavay, no. 82).”

LECTOTYPE (HERE DESIGNATED). — **China, Yunnan.** *Primula malvacea* Franch., fl. rouges, dans les rochers calcaires des hautes montagnes, Hee gni chao au-dessus de Ho Kin, 24.VII.1883, *Delavay* 82 (lecto-, P[P04544248]!; isolecto-, BM[BM000996819]!, E[E00024183]! G[G00440578, G00440579], MPU[MPU022028, MPU022029], NY[NY00329545], P[P01029606, P04544254, P04544256, P04544257, P05250363]!).

REMARK

In herbarium of Paris, there are five sheets of *P. malvacea* Franch., collected by J.M. Delavay on July 24, 1883 from the same place as in protologue and with no. 82: P01029606, P04544248, P04544256, P04544257 and P05250363.

Primula membranifolia Franch.

(Fig. 6)

In *Bulletin de la Société botanique de France* 33: 68 (1886). — Hu & Kelso, *Flora of China* 15: 169 (1996). — Richards, *Primula*: 262 (2003). — In protologue: “[China] Yun-nan, sur le mont Tsang-chan, au-dessus de Tali. – 4 juin 1883. (Delavay, no. 263).”

SYNTYPES. — **China.** Yunnan, Tsang-Chan près Tali, *Delavay* 263 (syn- BM[BM000996911], K[K000750068], LE[LE01032006], NY[NY00329546]; rochers de Tsang Chan près de Ta-li-fou, *Delavay* 263 (syn-, E[E00024149]!, P[P01029609]).

LECTOTYPE (HERE DESIGNATED). — **China,** *Primula*, Mont Tsang-chan, au-dessus de Tali (Yunnan). 4.VI.1883, *Delavay* 263 (lecto-, P[P04544200]!; isolecto-, G[G00440574]!, K[K000750070], MPU[MPU022026, MPU022027], P[P04544198, P04544201]!, LE[LE01032005]!).

REMARK

We found some herbarium sheets of *Primula membranifolia* with no. 263, the label text and date almost as in protologue in different herbarium collections, all of them are syntypes. We suggest to choose as lectotype a specimen with handwritten label.

Primula moupinensis Franch.

(Fig. 7)

In *Bulletin de la Société botanique de France* 33: 67(1886). — Hu & Kelso, *Flora of China* 15: 133 (1996). — Richards, *Primula*: 179 (2003). — In protologue: “[China] Thibet oriental, Moupine, au bord des ruisseaux dans les montagnes – Mars 1869 (Arm. David).”

LECTOTYPE (HERE DESIGNATED). — **China.** Moupine, Thibet or[ien-tal], *Primula*, fl. rose pâle, mont. près des ruisseaux, III.1869, *David s.n.* (lecto-, P[P04544171]!; isolecto-, P[P04544169]!).

REMARK

We found only two sheets in herbarium P with date and collector name as in protologue and short text of label.

Primula oreodoxa Franch.

(Fig. 8)

Bulletin de la Société botanique de France 33: 66 (1886). — Pax, *Engler's Botanische Jahrbücher für Systematik* 10: 167 (1889). — Pax & Knuth, *Primulaceae* in *Engler's Pflanzenreich* IV: 26 (1905). — Hu & Kelso, *Flora of China* 15: 117 (1996). — Richards, *Primula*: 128 (2003). — In protologue: “[China] Thibet oriental, Moupine, dans les parties fraîches des hautes montagnes – Avril 1869 (Arm. David).”

LECTOTYPE (HERE DESIGNATED). — **China.** Moupine, Thibet oriental, *Primula*, fl. rouge violet, haute mont., IV.1869, *David s.n.* (lecto-, P[P04567171]!; isolecto-, P[P04567170]!).

REMARK

We found two sheets in herbarium P with label text almost as in protologue.

Primula ovalifolia Franch.

(Fig. 9)

In *Bulletin de la Société botanique de France* 33: 67 (1886). — Hu & Kelso, *Flora of China* 15: 141 (1996). — Richards, *Primula*: 161 (2003). — In protologue: “[China] Thibet oriental, Moupine, dans les lieux frais des montagnes – Mars 1869 (Arm. David).”

LECTOTYPE (HERE DESIGNATED). — **China.** Moupine, Thibet oriental, *Primula*, fl.violet, lieux frais élevés, III.1869, *David s.n.* (lecto-, P[P04567168]!; isolecto- K[K000750135]!; syn-, E[E00024332]!, MPU[MPU022020], P[P04567162, P04567164]!).

REMARK

We found a specimen with text as in protologue (P04567168), and some sheets without any date. All of them are syntypes. We choose the herbarium sheet with full information as lectotype.

Primula poissonii Franch.

(Fig. 10)

Bulletin de la Société botanique de France 33: 67(1886). — Hu & Kelso, *Flora of China* 15: 144 (1996). — Richards, *Primula*: 230 (2003). — In protologue: “[China] Yunnan, près de Tali, échant. fructifère – Juin 1882 (Delavay); prairies marécageuses des montagnes, sur le mont Hee-chan-men, au-dessus de Lan-kong – 11 juillet 1883 (Delavay, n° 120).”

LECTOTYPE (DESIGNATED HERE). — **China.** Yunnan, *Primula*, prairies marécageuses des montagnes, Mont Hee-chan-men, au-dessus de Lan-kong, 11.VII.1883, *Delavay* 120 (lecto-, P[P00649672]!, syn-, E[E00265005, E00265006], LE[LE01032015], MPU[MPU022014, MPU022017, P[P01060607, P04544607, P05250277, P04544608]]).

REMARK

As Franchet (1886) cited two gatherings with different dates, all of them are syntypes. We found only one herbarium sheet with no. 120 and text as in protologue (P00649672), the next sheet with no. 120, but three labels with dates 1883 and 1886.



FIG. 5. — Lectotype of *Primula malvacea* Franch. (P04544248).



FIG. 6. — Lectotype of *Primula membranifolia* Franch. (P04544200).



Fig. 7. — Lectotype of *Primula moupinensis* Franch. (P04544171).



FIG. 8. — Lectotype of *Primula oreodoxa* Franch. (P04567171).



FIG. 9. — Lectotype of *Primula ovalifolia* Franch. (P04567168).



FIG. 10. — Lectotype of *Primula poissonii* Franch. (P00649672).

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