

Typification of names in *Primula* L. (Primulaceae), described by A.R. Franchet

Nataliya KOVTONYUK

Plant Systematics Laboratory, M. G. Popov Herbarium (NSK)
Central Siberian Botanical Garden,
Siberian Branch, Russian Academy of Sciences,
Zolotodolinskaya St. 101, Novosibirsk 630090 (Russia)
nkovtonyuk@csbg.nsc.ru

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ABSTRACT

In the end of the XIXth century French botanist A.R. Franchet has described near 60 taxa in the genus *Primula* L. 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) and using Databases of herbarium collections through internet, have revealed the need to restrict the typifications of several names. 16 taxa were discussed, 14 names of taxa were typified, 11 of them (*P. amethystina*, *P. bella*, *P. cernua*, *P. dryadifolia*, *P. pinnatifida*, *P. secundiflora*, *P. septemloba*, *P. sonchifolia*, *P. spicata*, *P. yunnanensis* and *P. delavayi*) were lectotypified here, also five isolectotypes and 51 syntypes were listed.

KEY WORDS
Primulaceae,
A. R. Franchet,
herbarium collections,
type specimens,
lectotypification.

RÉSUMÉ

Typification des noms de Primula L. (Primulaceae), décrits par A. R. Franchet.

À la fin du XIX^e siècle, le botaniste français A. R. Franchet a décrit près de 60 taxons du genre *Primula* L. Dans de nombreux cas, les descriptions originales des taxons de *Primula* ont été fondées sur un ou quelques-uns des différents rassemblements, composés de plusieurs échantillons distribués à différents herbiers. Par conséquent, un grand nombre d'isotypes et de syntypes peut être repéré pour certains noms. L'examen récent et la révision critique d'une grande partie du matériel de *Primula* conservé dans certains herbiers importants (BM, E, G, K, LE, MHA, MW, NS, NSK, P, W, WU), ainsi que l'utilisation de bases de données d'herbier par le biais d'internet, ont révélé la nécessité de circonscrire les typifications de plusieurs noms. 16 taxons ont été discutés, 14 noms de taxons ont été caractérisés, 11 d'entre eux (*P. amethystina*, *P. bella*, *P. cernua*, *P. dryadifolia*, *P. pinnatifida*, *P. secundiflora*, *P. septemloba*, *P. sonchifolia*, *P. spicata*, *P. yunnanensis* et *P. delavayi*) ont été lectotypifiés ici, cinq isolectotypes et 51 syntypes ont été également répertoriés.

MOTS CLÉS
Primulaceae,
A. R. Franchet,
collections en herbier,
spécimens types,
lectotypification.

INTRODUCTION

According to art. 7.1 of the ICN (McNeill *et al.* 2012), the application of scientific names of taxa at the rank of family and below is determined by the use of nomenclatural types. Therefore, typification of the names of taxa is an important step in the process of taxonomic research. Understanding of the original material that was in the possession of the author of the names helps not only in making correct decisions on typification but also in unambiguous placement of the taxa (Kovtonyuk & Belyaeva 2015). The genus *Primula* L. was described by C. Linnaeus (1753), now it has about 500 species, distributed in the moister and cooler regions of the northern hemisphere. *Primula* taxa are widely distributed throughout Asia and Europe and have comparatively few representatives in North America. The biggest concentration of *Primula* species was found in the great mountains of the Himalaya and western China, more than 300 species were found there (Hu & Kelso 1996; Richards 2003).

Adrien René Franchet (1834–1900) was a French botanist, who worked at the Muséum national d'Histoire naturelle (MNHN) in Paris (L'Herbier du Muséum, 2013). He is noted for his extensive work describing the flora of China and Japan, based on the collections made by the French Catholic missionaries: P. J. M. Delavay, A. David, P. G. Farges, J. A. Soulié and others. One of them, Père Jean Marie Delavay (1834–1895) was sent to China in 1867, serving first in Guangdong, then moving to Kunming, Yunnan, where he remained until his death. He was an avid plant collector, sending over 200,000 herbarium specimens back to France, from which numerous new genera and over 1500 new species were described, mainly by A. R. Franchet.

More than 60 *Primula* species were described by Franchet or connected with his name. In one of his papers “Les *Primula* du Yun-nan” Franchet (1885) wrote: “Parmi les genres les mieux représentés dans la flore des montagnes du Yun-nan, il faut compter le genre *Primula*, dont M. l'abbé Delavay vient d'envoyer au Muséum 20 espèces, presque toutes récoltées autour du lac de Tali [...] 16 sont absolument inconnues”. So, Franchet (1885) described 16 *Primula* taxa, type status of which will be discussed in this paper. Herbarium sheets sent by Franchet to different Herbarium collections in various countries are kept now in BM, E, G, LE, K, P and others. In particular, A.R. Franchet exchanged herbarium collections with K. I. Maximovich. Maximovich (1827–1891) worked at the Saint Petersburg Botanical Gardens from 1852 as curator of the herbarium collection, becoming Director in 1869, now it is the Komarov Botanical Institute, Herbarium LE. Many of these sheets have type status as “isotypus”, but instead in the protologue Franchet did not mark the one 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. 9.5 and 9.12 of ICN (McNeill *et al.* 2012).

LECTOTYPIFICATION

Since M. A. Franchet (1885) 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.

Primula amethystina Franch.

(Fig. 1)

Bulletin de la Société botanique de France 32: 268 (1885). — Hu & Kelso, *Flora of China* 15: 147 (1996). — In protologue: “Yun-nan, dans les prairies humides du mont Tsan-Chan, près du sommet, au-dessus de Tali, à 4000 mètres environ. — 20 juin 1884. (Delavay, n° 108).”

LECTOTYPE (designated here). — **China**. Yunnan, Fleurs violettes. Prairies humides du mont Tsan Chan, près du sommet (au-dessus de Tali), 4000 mètres d'altitude, 20.VI.1884, *Delavay* 108 (lecto-, P[P04571334]!; isolecto-, P[P01060619]!).

SYNTYPES. — BM[BM000996935]!, E[E00024038]!, K[K000732910]!, LE[LE01031955]!, P[P04571173, P04571177, P04571185, P05250281]!

COMMENTS

Text on the field herbarium label in the sheets (P04571334 and P01060619) fully corresponds to the protologue text. Short text on syntype's labels corresponds to protologue too. In database of P Herbarium specimens (P00649624, P00649625) marked as “Type” really are not type specimens, because the collection date (4th August) on the label does not correspond to protologue date (20th June).

Primula bella Franch.

(Fig. 2)

Bulletin de la Société botanique de France 32: 268 (1885). — Hu & Kelso, *Flora of China* 15: 175 (1996). — In protologue: “[China] Yun-nan, au sommet du mont Tsang-chan. — 4 août 1884”.

LECTOTYPE (designated here). — **China**. Yunnan, au sommet du mont Tsang-chan, au-dessus de Tali, 4.VIII.1884, *Delavay s.n.* (lecto-, LE[LE011031965]!; syntypes-, P[P04571422, P04571424, P05250283, P01060620]!; LE[LE01031966]!).

COMMENTS

In his protologue Franchet (1885) did not mark collection number. There are 21 herbarium sheets in P herbarium, all of them are in database and 4 from them have labels which partially correspond to protologue, they are syntypes, only in LE herbarium sheet with label corresponding to the protologue in locality, date and without number of gathering was found.

Primula bracteata Franch.

Bulletin de la Société botanique de France 32: 266 (1885). — Hu & Kelso, *Flora of China* 15: 130 (1996). — In protologue: “Yun-nan, dans les fentes des rochers calcaires et ombragés, à Lan-Kong. — Mars 1883. (Delavay, *Primula*, n° 2.)”.



FIG. 1. — Lectotype of *Primula amethystina* Franch. (P04571334).



FIG. 2. — Lectotype of *Primula bella* Franch. (LE011031965), at left of the sheet.



FIG. 3. — Lectotype of *Primula cernua* Franch. (P04571825).

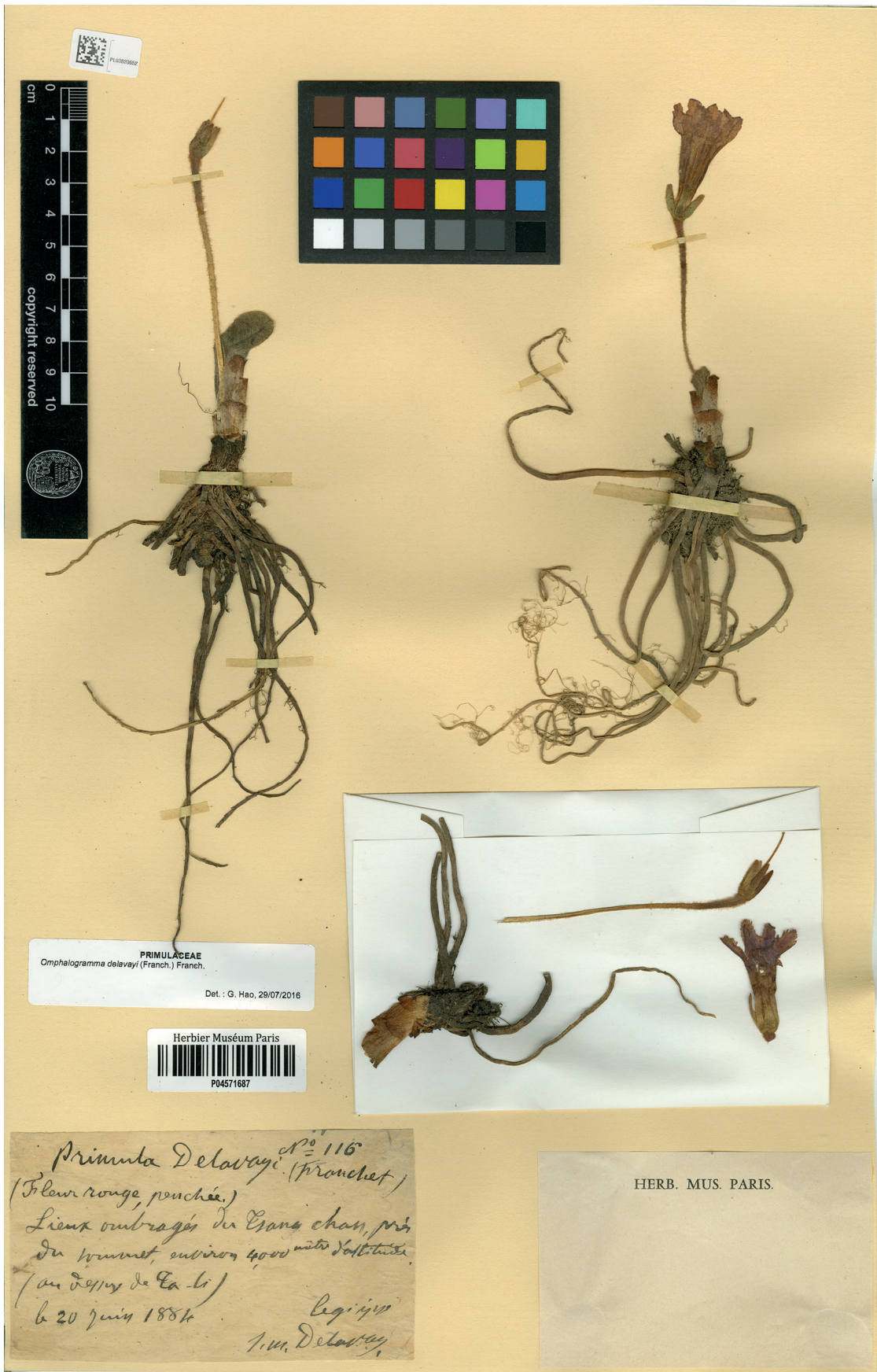


Fig. 4. — Lectotype of *Primula delavayi* Franch. (P04571687).



FIG. 5. — Lectotype of *Primula dryadifolia* Franch. (P04571953).

LECTOTYPE (designated by Eveleigh *et al.* 2014). — **China**. Yunnan (*Primula*) no. 233. Fente des rochers calcaires et ombragés à Lan Kong, Yunnan, III.1883 and V.1884, *Delavay s.n.* (lecto-, P[P04571601]!; isolecto-, E[E00024050]!).

COMMENTS

In P04571601 label “*Primula* n 2” is written in bold font and numbers “33” are added in thin font (Eveleigh 2000).

Primula bullata Franch.

Bulletin de la Société botanique de France 32: 265 (1885). — Hu & Kelso, *Flora of China* 15: 130 (1996). — In protologue: “Yun-nan, sur les rochers calcaires, au col du mont Hee-chan-men. — 21 avril 1884. (Delavay, n° 114.)”.

LECTOTYPE (designated by Eveleigh *et al.* 2014). — **China**. Yunnan, rochers calcaires au col du Hèe Chan Men (Lan Kong) à 3000 m d’altitude, 21.IV.1884. *Delavay 114* (lecto-, P[P04571678]!; isolecto-, E[E00024054], K[K000732890, K000732893], NY[NY329536]!).

COMMENTS

Authors of paper (Eveleigh *et al.* 2014) had made lectotypification without work in Herbarium P; they saw MNHN Herbarium database through internet. I can add as isolectotype: “Herb. Mus. Paris. Plantes de CHINE (Province du Yun-nan), via calcaris ad collum montis Hee-cha-men, 21 avril 1884, *Delavay 114*, LE[LE01031969]!”.

Primula calliantha Franch.

Bulletin de la Société botanique de France 32: 268 (1885). — Hu & Kelso, *Flora of China* 15: 156 (1996). — In protologue: “[China] Yun-nan, sur la montagne Tsang-chan, près de Tali, sous les Sapins, dans les lieux très ombragés. — 26 juin 1883. (N° 112.)”.

SYNTYPES. — “*Primula calliantha* Franch. Plantes de Chine (Province du Yun-nan), in monte Tsang-Chan, prope Tali, 26 juin 1883, M. l’Abbé Delavay” (syn-, MPU[MPU022046, MPU022047]!; LE[LE01031973]!).

COMMENTS

We found only three herbarium sheets in MPU, LE with date as in protologue, but they are without number 112. There are some sheets in Herbarium collections [P04571641, P04571642, P04571643]!, LE [LE01031970]! with locality text in labels and number 112 as in protologue but with another date “Delavay, n° 112, 16 juin 1884”, or “Delavay n° 112, 6 juin 1884” (K000732976) ! and “Delavay, n° 112. 1883-1885” (K000732977)! All of them will be syntypes.

Primula cernua Franch. (Fig. 3)

Bulletin de la Société botanique de France 32: 271 (1885). — Hu & Kelso, *Flora of China* 15: 182 (1996). — In protologue: “Yun-nan, dans les prairies calcaires des montagnes à Hee-gni-chan, au-dessus de Ho-kin, au N. de Tali. — 24 juillet 1883”.

LECTOTYPE (designated here). — **China**. Yunnan, Yun-nan, prairies des montagnes [...] calcaires. Hee gni-chan, au-dessus de Ho-kin, 140 km nord de Tali, 24.VII.1883, *Delavay 232* (lecto-, P[P04571825]!; syn-, K[K000750008]!, P[P04571816, P04571822, P04571823, P04571824]!).

COMMENTS

Specimen P04571825 has full handwritten label corresponding to protologue, syntypes have short text on the labels.

Primula delavayi Franch. (Fig. 4)

Bulletin de la Société botanique de France 32: 272 (1885). — Halda, *Gen. Primula*: 37 (1992). — *Omphalogramma delavayi* (Franch.) Franch., *Bulletin de la Société botanique de France* 45: 179. (1898). — Hu & Kelso, *Flora of China* 15: 187 (1996). — In protologue: “Yun-nan, dans les lieux frais et un peu humides des terrains argileux, à une altitude de 3500 à 4900 mètres, sur le Tsang-chan, au-dessus de Tali. — Fleurs, le 19 août; feuilles développées le 19 du même mois. (Delavay, n° 116)”.

LECTOTYPE (DESIGNATED HERE). — **China**. Yunnan, *Primula delavayi* Franchet n 116. Fl. rouge, hampe développée, de 40 [...] 50 centim. Lieux frais et un peu humides des terrains argileux, à une altitude de 3500 à 4000 mètres, sur le Tsang-chan, au-dessus de Ta-li, fl., XIX.VIII.1884, fr. develop., V.VIII.1884, leg. M. Delavay (lecto-, P[P04571697]!; syn-, P[P04571680, P04571681, P04571682, P04571683, P04571686, P04571687, P04571688, P04571689, P04571692, P04571693, P04571702]!; LE[“Ex Herbario Musei Parisiensis. N 116. *Primula delavayi* Franch., Mt. Tsang-chan, au dessus de Tali, alt. 4000 m. Plantes Yunnan, M. l’abbé Delavay”], LE[LE1032038]!, K[K000750399]!).

COMMENTS

There are 12 specimens in DB of P herbarium with name *Primula delavayi*, text on the labels contains “Tsang-chan, Delavay, no 116”, all of them can be syntypes. We choose one with full text on field label (P04571697) and it will be lectotype. Originally, *P. delavayi* was included to new subgenus *Omphalogramma* Franch. in the genus *Primula* (Franchet 1885: 272), in the modern literature only J. Halda (1992: 37) agreed with this opinion. Later Franchet (1898: 179) described *Omphalogramma* as a new genus with 4 species, involving *O. delavayi* (Franch.) Franch.

Primula glacialis Franch.

Bulletin de la Société botanique de France 32: 270 (1885). — Nom. illeg. later homonym *non* Willdenow ex Roem. & Schult, *Systema vegetabilium*, ed. 15, 4: 785 (1819).

Primula diantha Bureau & Franch, *Journal de Botanique* (Morot) 5: 97 (1891). — Hu & Kelso, *Flora of China* 15: 151 (1996). — In protologue *Primula diantha*: “Chine, province du Se-tchuen, sommet des passes après Batang, 4300 m, 12 juin 1860 (= 1890).”

TYPUS. — **China**. Se-tchuen entre Batang et Litang, 12.VI.1890, *Bonvalot & Prince Henri d’Orléans s.n.*, P(P00649653)!

COMMENTS

It is misprinted in date ‘1860’ in protologue, because the correct date ‘1890’ was in the title of protologue (Bureau & Franchet 1891). Type status will be discussed in the next publication.



FIG. 6. — Lectotype of *Primula pinnatifida* Franch. (P04544591).



Fig. 7. — Lectotype of *Primula secundiflora* Franch. (P04544817).



FIG. 8. — Lectotype of *Primula septemloba* Franch. (P04544807).



FIG. 9. — Lectotype of *Primula sonchifolia* Franch. (P04908453).

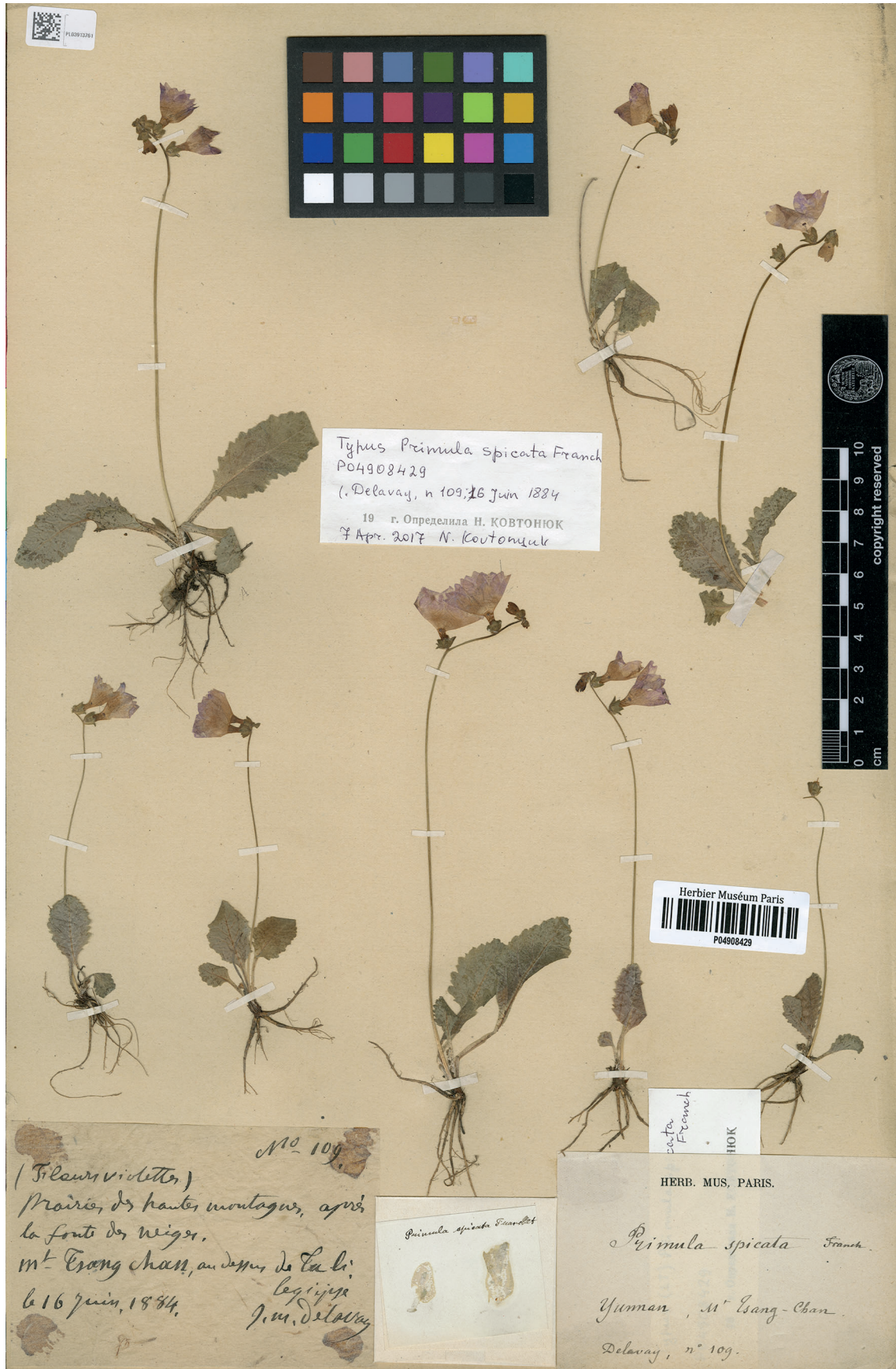


FIG. 10. — Lectotype of *Primula spicata* Franch. (P04908429).

Primula dryadifolia Franch.
(Fig. 5)

Bulletin de la Société botanique de France 32: 270 (1885). — Hu & Kelso, *Flora of China* 15: 177 (1996). — In protologue: “[China] Yun-nan, glacier de Li-kiang, à quatre journées au nord de Tali, près des neiges perpétuelles; alt. 4000 mètres. — Juillet 1884. (Delavay, *Primula*, n° 4.)”.

LECTOTYPE (designated here). — **China**. Yunnan. *Primula dryadifolia* (Franchet), no 1. Fleurs rouges très-élégantes, près des neiges au glacier de Li-kiang, à 4000 mètres et plus d'altitude, 11.VII.1884, legi M. Delavay (lecto-, P[P04571953]!; isolecto-, P[P04571949]!; syn-, G[G00440587]!, K[K000750087]!).

COMMENTS

We found only two herbarium sheets in P with label corresponding to the protologue, but with “Delavay, *Primula* n° 1”, it looks like it was misprinted in protologue. The label at sheet [K000750087] has short text while at [G00440587] it is without number.

Primula pinnatifida Franch.
(Fig. 6)

Bulletin de la Société botanique de France 32: 271 (1885). — Hu & Kelso, *Flora of China* 15: 183 (1996). — In protologue: “China, Yun-nan, glacier de Li-kiang, après la fonte des neiges; alt. 3580 mètres. — 11 juillet 1884. (Delavay, *Primula*, n° 9).”.

LECTOTYPE (designated here). — **China**. Yunnan, *Primula* n° 9, glacier de Li-kiang, après la fonte des neiges, 3500 m, 11.VII.1884, *Delavay* 9 (lecto-, P[P04544591]!; syn-, Province du Yun-nan, Li-kiang, ad nives perpetuas, alt. 3580 m, 1884, *Delavay* s.n. (NY[NY00329553]!, MPU[MPU022018]!).

Primula secundiflora Franch.
(Fig. 7)

Bulletin de la Société botanique de France 32: 267 (1885). — Hu & Kelso, *Flora of China* 15: 142 (1996). — In protologue: “Yun-nan, glacier de Li-kiang, près des sources; alt. 3500 à 4000 mètres. — 11 juillet 1884. (Delavay, *Primula*, n° 3.)”.

LECTOTYPE (designated here). — **China**. Yunnan, les bois, au pied du glacier de Li-kiang, 11.VII.1884, *Delavay* 3 (lecto-, P[P04544817]!, found in common folder).

Primula septemloba Franch.
(Fig. 8)

Bulletin de la Société botanique de France 32: 265 (1885). — Hu & Kelso, *Flora of China* 15: 123 (1996). — In protologue: “Yun-nan, dans les bois, au pied du glacier de Li-kiang. — 9 juillet 1884. (Delavay, *Primula*, n° 12.)”.

LECTOTYPE (designated here). — **China**. Yunnan, les bois, au pied du glacier de Li-kiang, 9.VII.1884, *Delavay* 12 (lecto-, P[P04544807]!).

COMMENTS

There are 16 digital copies of *P. septemloba* in MNHN-P database and 16 herbarium sheets in P Herbarium collec-

tion, but only one of them is type specimen with handwritten label, that fully corresponds to protologue. It was found in common folder in Herbarium collection (photo made by Dr L. V. Kovtonyuk during our visit to P Herbarium).

Primula serratifolia Franch.

Bulletin de la Société botanique de France 32: 268 (1885), nom. illeg. later homonym *non* Gandoger, *Decades plantarum novarum praesertim ad floram Europae spectantes* 2: 26 (1876).

Primula biserrata Forrest, *Notes from the Royal Botanic Garden, Edinburgh* 4 (19): 230 (1908). — Hu & Kelso, *Flora of China* 15: 146 (1996).

COMMENTS

Franchet (1885) named this *Primula* “*serratifolia*”, an epithet previously used by M. Gandoger (1876), so correct name is *P. biserrata* Forrest for this taxon (Eveleigh 2000).

Primula sonchifolia Franch.
(Fig. 9)

Bulletin de la Société botanique de France 32: 266 (1885). — Hu & Kelso, *Flora of China* 15: 138 (1996). — In protologue: “[China] Yun-nan, au sommet du mont Tsang-chan; alt. 3500 à 4000 mètres. Il fleurit aussitôt après la fonte des neiges. — 20 juin 1884. (Delavay, n° 110.)”.

LECTOTYPE (designated here). — **China**. Yunnan, *Primula*? (fleur violette) au sommet du mont Tsang-chan; alt. 3500 à 4000 mètres. Il fleurit aussitôt après la fonte des neiges, 20.VI.1884, *Delavay* 110 (lecto-, P[P04908453]!; syn-, “Ex Herbario Musei Parisiensis. In cacumine montis Tsang-chan, alt. 3500 m, 20.VI.1884, *Delavay* 110”, P[P05250290]!, G[G00440566]!, MPU[MPU022002, MPU022003]!, “Ex Herbario Musei Parisiensis. Tsang-chan, 20.VI.1884, *M. l'abbé Delavay*, 110”, E[E00024302]!, “Plantes du Yunnan, Ex Herbario Musei Parisiensis, au sommet du mont Tchan-chan, près de Tali, alt. 3500-4000, 20.VI.1884, *M. l'abbé Delavay* 110”, LE[LE1032038]!).

COMMENTS

There are 47 specimens in P Herbarium, label text at one of them fully corresponds to protologue involving date and number. Duplicates in other Herbaria marked as “isotypus” really are syntypes.

Primula spicata Franch.
(Fig. 10)

Bulletin de la Société botanique de France 32: 269 (1885). — Hu & Kelso, *Flora of China* 15: 184 (1996). — In protologue: “[China] Yun-nan, dans les prairies, des hautes montagnes après la fonte des neiges, sur le mont Tsang-chan, au dessus de Tali. — 16 juin 1884. (Delavay, n° 109.)”.

LECTOTYPE (designated here). — **China**. Yunnan (Fleur violette), prairies, des hautes montagnes, après la fonte des neiges, Mt Tsang-chan, au-dessus de Tali, 16.VI.1884, *Delavay* 109 (lecto-, P[P04908429]!; isolecto-, P[P04908428, P04908433]!; syn-, K[K000750110]!).



Fig. 11. — Lectotype of *Primula yunnanensis* Franch. (P04595422).

COMMENTS

Three herbarium sheets with labels fully corresponding to the protologue are kept in P Herbarium, while one sheet with text on the label almost as in protologue is at RBG Kew.

Primula yunnanensis Franch. (Fig. 11)

Bulletin de la Société botanique de France 32: 269 (1885). — Hu & Kelso, *Flora of China* 15: 169 (1996). — In protologue: “[China] Yun-nan, dans les fentes des rochers calcaires, au pied du glacier de Li-Kiang. — 9 juillet 1884. (Delavay, *Primula*, n° 20.)”.

LECTOTYPE (designated here). — China. Yunnan, fleurs rouges, au pied du glacier de Li-Kiang, à 3500 m d'alt., 9.VII.1884, *Delavay* 20 (lecto-, P[P04595422]!; syn-, P[P04595427, P04595430]!).

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