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RESEARCH ARTICLE

## Nomenclatural notes on South American *Gentianella* (*Gentianaceae*, *Gentianeae*, *Swertiinae*): *G. meyeniana*

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**Abstract.** There is no known original material linked to the name *Gentiana meyeniana* Griseb. [≡ *Gentianella meyeniana* (Griseb.) Fabris]. The uncertainty about the correct application of the name, the discrepancies among the published descriptions of the species, and the high affinity in descriptive morphology with the type material of the name *Gentianella boliviana* support a proposal that the name *Gentiana meyeniana* be rejected, since the specific epithet of the latter name has priority over *boliviana*.

**Keywords:** *Gentianaceae*, *Gentianella meyeniana*, nomenclature, Peru, taxonomy

The *Catalogue of the Flowering Plants and Gymnosperms of Peru* (Zarucchi, 1993), *Vascular Plants of the Americas* (Ulloa Ulloa et al., 2018–onward), and *Plants of the World Online* (POWO, 2023–onward) all list *Gentianella meyeniana* (Griseb.) Fabris (*Gentianaceae*, tribe *Gentianeae*, subtribe *Swertiinae*) as an accepted name, and all include Peru in the range given for the species, as the basionym, *Gentiana meyeniana* Griseb., was based only on specimens from Peru. However, no specimens or images of specimens from Peru to which either of those names is currently or has formerly been applied are known. Despite our searching we have found no evidence that the name has been properly typified.

When Grisebach (1838) described *Gentiana meyeniana*, he stated that he had seen specimens "in coll. Meyen. et in herb. Hook." Grisebach had prepared the treatment of the *Gentianaceae* for a work on the plants collected by F.J.F. Meyen during the latter's world travels, and the contrast in Grisebach's wording indicates that the first of the specimens that he cited as *G. meyeniana*, from the vicinity of Lake Titicaca (Departamento Puno) in southern Peru, was probably in Meyen's personal possession when Grisebach saw it. The specimen in W.J. Hooker's herbarium was evidently collected by Andrew Mathews, as elsewhere in the protologue Grisebach mentioned a specimen collected at an unspecified locality in the Peruvian

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Andes by Mathews. Although the eponymy and the organization of the protologue suggest that Grisebach based his description of *G. meyeniana* primarily on the specimen collected by Meyen, his citation of both the Meyen and Mathews collections in the protologue requires that they be considered syntypes.

Whether Mathews, who is known to botanical history for collecting plant specimens in northern and central Peru (Wurdack, 1964), would have collected a specimen of a species not otherwise known north of Departamento Puno, in southern Peru, seems unlikely. Most of Mathews' South American specimens were deposited in Hooker's herbarium, now at K (Luteyn, 2019; see also Stafleu, Cowan, 1981; abbreviations for herbaria follow Thiers, 2008–onward), and no specimen of Peruvian *Gentianaceae* collected by Mathews is now recognized at K as a syntype of the name *Gentiana meyeniana*. In the online Kew database, the only Mathews collection from Peru listed that is now referable to *Gentianella* is *Mathews 690*, collected between Cerro Pasco and Junín in the central Peruvian Andes. It comprises small plants with crowded, narrow basal leaves and solitary flowers terminating stems mostly with a single pair of leaves above the basal cluster. It typifies the name *Gentiana saxicola* Griseb., which was published in the same work as *G. meyeniana* and is now included in the heterotypic synonymy of *Gentianella vaginalis* (Griseb.) J.S. Pringle (Ho, Liu, 1993). Wurdack (1964; see also Stafleu, Cowan, 1981) noted OXF as another significant repository of Mathews' specimens, but its online database lists no specimens collected by Mathews referable to *Gentianella*.

When Grisebach (1845) later again described *Gentiana meyeniana*, he did not mention Mathews' collection. No reason was given, but if in 1838 he had inadvertently cited the same Mathews collection under both names, *G. meyeniana* and *G. saxicola*, by 1845 he may have realized that he had done so. Or he may have identified the Mathews specimen as some other species. Nevertheless, because Grisebach did not explicitly exclude a Mathews collection from *G. meyeniana* at this time, under the provisions of Art. 7.11 of the *International Code of Nomenclature for Algae, Fungi, and Plants* (Turland et al., 2018), this omission does not constitute typification.

Weddell (1859) published a description of *Gentiana meyeniana* similar in wording to Grisebach's protologue, and, further following Grisebach's 1838 publication, cited collections by Meyen and Mathews. He did not indicate repositories.

As noted by Macbride (1959), there are discrepancies between Grisebach's descriptions of *Gentiana meyeniana* and those by Weddell (1859) and Gilg (1916: key). Grisebach (1838, 1845) described the corollas of *G. meyeniana* as 6 lines long, i.e., ca. 13 mm. The descriptions by Weddell and Gilg otherwise followed Grisebach's, but Weddell, inadvertently in Macbride's opinion, and Gilg, who followed Weddell, described the corollas as being at most 6–8 mm long. Macbride stated that Grisebach described them as 18 mm long, but, although the equivalents of "lines" in modern measurements vary somewhat (see Stearn, 1983; Cardarelli, 2003), it is unlikely that this is a correct interpretation of Grisebach's 6 lines. The discrepancy between Grisebach's and Gilg's descriptions of *G. meyeniana* suggests that Gilg had not seen the specimens on which Grisebach had based the name. Gilg did not cite a repository of any specimen cited or identified as *G. meyeniana* by Grisebach, nor did he cite any specimens that he himself accepted as representing *G. meyeniana*, collected by anyone.

Macbride (1959), in writing "Puno: Lake Titicaca, 4300 m, *Meyen*, type," thereby designated one of the two syntypes as the lectotype. He presumably took the locality information from Grisebach (1838), as he had found no such specimen in his search for type specimens at B and elsewhere. Consequently, he cited no repository. He did not mention a collection by Mathews, nor did he cite any other specimens or photographs of specimens of plants identified as *Gentiana meyeniana*.

Zarucchi (1993), in listing the *Gentianaceae* of Peru, cited "*Meyen s.n.* (B)" as the type of the name *Gentianella meyeniana*, with an indication that he had not seen the specimen. This appears to be the first time that the Meyen collection was explicitly associated with the Berlin herbarium, but it was undoubtedly speculative, as Zarucchi's work was written long after the destruction of specimens at B during World War II (Sleumer, 1949). As the negative results of Macbride's search indicate, it is questionable whether there ever was a specimen at B that could have been considered a syntype or appropriately be designated a lectotype of the name *G. meyeniana*. Zarucchi cited no other specimens as *G. meyeniana*.

At GOET, where Grisebach had been director of the botanical garden, Marc Appelhans, in a search on behalf of this study, found no specimens that had been identified as *Gentiana meyeniana* or

*G. meyenii* (a name published by Grisebach in 1843, which he acknowledged in 1845 was synonymous with *Gentiana meyeniana*) currently or formerly filed under either of those names.

Although no Peruvian plants are now identified as *Gentianella meyeniana*, that name has been applied in recent decades to plants from Argentina and Bolivia. The earliest such application of this name was probably by Fabris (1983), in the *Flora de la Provincia de Jujuy* (Argentina), published in 1983 but written earlier, as Fabris died in 1976. In this flora, Fabris included Bolivia in the range given for the species, but he cited only Argentinian specimens and did not give the basis for his inclusion of Bolivia in the range. Later, Ángel Cabrera, who as editor of the *Flora de la Provincia de Jujuy* would have seen Fabris's manuscript for the flora prior to its publication, applied the name *Gentianella meyeniana* on the herbarium label, with no authorship given, to Ceballos *et al.* 653 (SI), from Departamento La Paz, Bolivia. This specimen was collected in 1979; the identification was not dated.

Fabris (1983) and Filippa and Barboza (2006, 2008) applied the name *Gentianella meyeniana* (Griseb.) Fabris to two collections from Departamento Rinconada, Prov. Jujuy, Argentina, or perhaps to only one, as indicated in Filippa and Barboza (2021); only one could be found in 2023. This specimen, Schwabe *et al.* 1076 (LP), had been identified by Fabris in 1968 as *Gentianella boliviana*, a combination unpublished at the time, based on *Gentiana boliviana* Pax. In 2003 it was annotated as "*Gentianella meyeniana* Fabris in Fl. Jujuy" by Eva Filippa.

Grisebach's (1838, 1845) descriptions of *Gentiana meyeniana* do not suffice to distinguish it from the species later described by Pax (in Lingelsheim *et al.*, 1909) as *Gentiana boliviana*. Pax did not mention *G. meyeniana*, and the discrepancies in the works of later authors indicate that no consensus has been reached as to how these taxa might differ. Schwabe *et al.* 1076 resembles specimens now identified as *Gentianella boliviana* (Pax) J.S. Pringle, including the type of that name, Buchtien 1482 (original type B, destroyed; images F and MO, isotype US). Schwabe *et al.* 1076, Buchtien 1482, and the Meyen specimen on which Grisebach based the name *Gentiana meyeniana* were all collected in the area where the boundaries of Argentina, Bolivia, and Peru meet. The plants in both Schwabe *et al.* 1076 and Buchtien 1482 are small, with the lengths of the stem/peduncle combinations being 1.8–8 cm

in the former, 1.4–3.5 cm in the extant replicate of the latter. The leaves of both are linear-oblong, mostly 5–10 mm long, with the apices obtuse, all closely spaced at or near the base of the stems or with one or two pairs higher. The flowers are solitary, with corollas 10–13 mm long, corolla lobes nearly as long as the tube, rounded at the apex, and calyces about as long as the corolla tube, with oblong, apically obtuse lobes about as long as the calyx tube. In these respects, these specimens are compatible with Grisebach's (1838, 1845) descriptions of *G. meyeniana*, although most of the leaves are longer than ca. 4–6 mm (as 2–3 lines) as they were described by Grisebach, and most of the peduncles of Schwabe *et al.* 1076 are longer than those of the plants seen by Grisebach, who described those of *G. meyeniana* as about as long as the flowers. Although Fabris (1983) and Filippa and Barboza (2006, 2021) described the corollas of the plants that they identified as *Gentianella meyeniana* as having lobes longer than the tube, in Schwabe *et al.* 1076 the corolla lobes are approximately equal in length to the tube, as those of *Gentiana meyeniana* had been described by Grisebach.

In summary of the foregoing, it appears that the name *Gentiana meyeniana* Griseb. may have been based primarily on material belonging to the species now generally known as *Gentianella boliviana*, but no type or otherwise nomenclaturally significant original specimens are known to exist. Grisebach's (1838, 1845) descriptions of *Gentiana meyeniana* suffice neither to confirm unequivocally nor to negate this or any other conspecificity. The name *Gentianella boliviana* is unequivocally typified and has been widely used in recent decades in herbarium identifications and in publications, including the treatment of *Gentianella* in the *Catálogo de las Plantas Vasculares de Bolivia* (Pringle, 2014). The specific epithet *meyeniana* has 71 years' priority over *boliviana* in this context, but the species epithet *boliviana*, dating from 1909, has priority over *lobelioides* and other epithets for species that might be considered taxonomically inseparable from *G. boliviana* (Ho, Liu, 1993). In view of the absence of a type specimen for the name *Gentiana meyeniana*, the likelihood that the original description was based on mixed material, the long history of uncertainty as to the correct application of the name and its homotypic synonym *Gentianella meyeniana*, the variation in published descriptions of the species, and the undesirability of displacing the familiar and

well-typified name *Gentianella boliviana*, it seems desirable to propose the name *Gentiana meyeniana* for rejection as a *nomen utique rejiciendum* (Art. 56 of the ICN: Turland et al., 2018). Such a proposal is planned for a separate publication, which should be officially published in *Taxon* and thus constitute the submission to the General Committee required under Art. 56.2 of the ICN (see McNeill et al., 2015).

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## ETHICS DECLARATION

The authors declare no conflict of interest.

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#### Notas sobre la nomenclatura

##### de *Gentianella* (*Gentianaceae*, *Gentianeae*, *Swertiinae*) sudamericana: *G. meyeniana*

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**Resumen:** No existe material original que se encuentre ligado al nombre de *Gentiana meyeniana* Griseb. [≡ *Gentianella meyeniana* (Griseb.) Fabris]. La incertitudumbre sobre la aplicación correcta del nombre, las discrepancias en torno a las descripciones publicadas de la especie, y su alta afinidad morfológica descriptiva con los materiales tipo de *Gentianella boliviana*, son evidencias para proponer el rechazo del nombre *Gentiana meyeniana*, ya que este último tiene prioridad sobre *boliviana*.

**Palabras claves:** *Gentianaceae*, *Gentianella meyeniana*, nomenclatura, Perú, taxonomía

#### Номенклатурні нотатки щодо південноамериканських видів

##### роду *Gentianella* (*Gentianaceae*, *Gentianeae*, *Swertiinae*): *G. meyeniana*

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**Реферат.** Оригінальний матеріал, пов'язаний з назвою *Gentiana meyeniana* Griseb. [≡ *Gentianella meyeniana* (Griseb.) Fabris], невідомий. Невизначеність щодо правильного застосування цієї назви, розбіжності між опублікованими описами виду і значна морфологічна відповідність описів типовому матеріалу *Gentianella boliviana* свідчать на користь номенклатурної пропозиції щодо відхилення назви *Gentiana meyeniana*, оскільки епітет цієї назви у ранзі виду має пріоритет над епітетом *boliviana*.

**Ключові слова:** *Gentianaceae*, *Gentianella meyeniana*, номенклатура, Перу, таксономія