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Typification of *Allium pallasii* Murr. var. *nitidulum* (Alliaceae)

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Summary. *Allium pallasii* Murr. var. *nitidulum* Fisch. et Regel was assigned species status (*A. nitidulum* Fisch.) in 1853 by Ledebour in “Flora Rossica”, being considered as a synonym of *Allium pallasii* but with no description. Then in 1887 E. Regel considered it as a variety: “*Allium pallasii* Murr. β *nitidulum* teste Rgl.” and highlighted its morphological differences, referring to a certain number of herbarium specimens. Herbarium specimens of *Allium pallasii* Murr. var. *nitidulum* Fisch. et Regel which have annotations made by F. B. Fischer, K. F. Ledebour, E. L. Regel and A. I. Schrenk are currently kept in the collections of the Herbarium of the Komarov Botanical Institute of the Russian Academy of Sciences (LE). The identification of the material that Ledebour and Regel studied gave us the opportunity to choose a lectotype and a series of *specimina authentica* of this variety.

Типификация *Allium pallasii* Murr. var. *nitidulum* (Alliaceae)

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Ключевые слова: Алтай, аутентичный образец, Гербарий Ботанического института им. В. Л. Комарова, Ледебур, лектотип, номенклатура, Фишер, флора России.

Аннотация. В 1853 г. во «Flora Rossica» Ледебур придал *Allium pallasii* Murr. var. *nitidulum* Fisch. et Regel статус вида (*A. nitidulum* Fisch.), считая его синонимом *Allium pallasii*, но без описания. Затем в 1887 г. Э. Регель рассматривал его как разновидность: «*Allium pallasii* Murr. β *nitidulum* teste Rgl.» и выделил его морфологические отличия, сославшись на определенное количество гербарных экземпляров. Гербарные образцы *Allium*

pallasii Murr. var. *nitidulum* Fisch. et Regel с аннотациями Ф. Б. Фишера, К. Ф. Ледебур, Э. Л. Регеля и А. И. Шренка в настоящее время хранятся в коллекциях Гербария Ботанического института им. В. Л. Комарова РАН (LE). Идентификация материала, изученного Ледебуром и Регелем, дала нам возможность выбрать лектотип и серию аутентичных образцов этой разновидности.

Introduction

The study of the genus *Allium* L. in the 19th century is closely connected with the study of the flora of Russia. During this time, special contributions to the revision of the genus were made by F. B. von Fischer (1812), C. F. Meyer, A. A. Bunge, K. F. Ledebour (Ledebour et al., 1830; Ledebour, 1852) and E. Regel (1875, 1887), who described a very large number of new species from Altai, Kazakhstan and Central Asia, including *Alliums*. During taxonomic and phylogenetic processing of the polymorphic species *Allium pallasii* Murr. from Kazakhstan and Altai, we faced the nomenclature problem of recognizing synonyms in this species. Below we present our considerations for validating the name *nitidulum*.

Material and methods

The study is based on an analysis of relevant literature (protologues of the names investigated and primary Flora, in which the studied names are listed) and examination of specimens in the Herbarium of the Komarov Botanical Institute RAS (LE).

Typification of *Allium pallasii* var. *nitidulum*

Allium nitidulum Fisch. (Alliaceae) was first introduced by Karl Friedrich Ledebour in the 4th volume of "Flora Rossica" in 1853 (Ledebour, 1853). This information was submitted to the public as a synonym of *A. pallasii* Murr. with reference to the material he saw: "*A. nitidulum*. Fisch. in *herb. reg. berol.*". In the same source, the following geographical information is provided for *A. pallasii*: "Hab. in Sibiria Altaica in collibus pr. Ustkamenogorsk ! inque deserto soongoro-kirghisico ! (Fl. Alt., Karel. et Kiril., Schrenk pl. exs.)", from which it follows that the herbarium from the collection of F. B. Fischer was studied in detail in Berlin, possibly by K. F. Ledebour.

Fortunately, in addition to materials labelled "Herb. Fischer.", a herbarium specimen with a comment by F. B. von Fischer himself was found in the LE collection: "*A. nitidulum* mihi, e Nord. Alt., comm. Fischer a. 1821". The last part of the information presented here on the green label apparently

belongs to the hand of Fyodor Konradovich Bieberstein (Friedrich Marschall von Bieberstein). This means that this material was sent to F. K. Bieberstein by F. B. Fischer in 1821. K. F. Ledebour is known to have examined the same herbarium specimen. This is indicated by a separate gray label, on which an authentic postscript was written by his hand: "Alli ... nitidul...". It is quite possible that this is part of the same material seen by K. F. Ledebour in the Berlin collection and about which he wrote in "Flora Rossica": "*in herb. reg. berol.*" (Fig. 1).

All other herbarium specimens of the collection of F. B. von Fischer do not have author's notes regarding the material belonging to this species, which is apparently intended for the description. Of course, the information provided is of crucial botanical and historical importance for clarifying the author's view of the taxon under discussion.

Although the name *Allium nitidulum* Fisch. ex Ledeb. (1853) is given in IPNI as a valid combination, we cannot recognize the publication of the species name in the "Flora Rossica" as valid. There are two main reasons for this: 1) the species combination is mentioned in synonymy and, in addition, 2) the name is presented in the multivolume as a *nomen nudum*. However, the latter thesis can be considered as ambiguous. Also, in Index Kewensis (1893: 81) this combination is clearly entered as a synonym for *A. pallasii* (*nitidulum*, Fisch. ex Ledeb. Fl. Ross. iv. 171 = Pallasii).

Allium nitidulum was known to the famous onion researcher of the 19th century, Eduard Ludvigovich [Ludwig] Regel, although it was recognized by him at the level of a lower taxonomic grade. Working with onions, E. Regel left his notes on some of Fischer's herbarium specimens in LE collections, where he indicated the taxonomic affiliation of the viewed material. Among them, we found herbarium specimens that belong to both the Russian Altai and the more western regions that now belong to Kazakhstan. On the specimen: "Herb. Fischer. № 127. Collected near the Chuya River in meadows. July of 10th day" (Fig. 2), he noted: "*Allium Pallasii* Murr. β *nitidulum* teste Rgl.". On another specimen with a label: "Herb. Fischer. Altai 1834. Gebler", he left the same information.



Fig. 1. Specimen authenticum of *Allium pallasii* Murr. var. *nitidulum* Fisch. et Regel, LE00018197.



Fig. 2. Lectotypus of *Allium pallasii* Murr. var. *nitidulum* Fisch. et Regel, LE00018198.

The herbarium specimens presented here from the Fischer collection can undoubtedly be designated as “specimen authenticum”.

In one of his publications E. Regel (1875: 102) repeated Ledebour's point of view on the problem

of independence of this species. He wrote in his monograph: “*Allium pallasii* Murr. in Comm. Goett. VI. 1775. pag. 32. tab. 3. – ... – *A. nitidulum* Fisch. herb. – ...”.

The actual disclosure of the mentioned taxon, although in the rank of a variety, occurred when in a monograph (Regel, 1887) devoted to onions, E. Regel wrote: *A. pallasii* Murr. β . *nitidulum* Fisch. [ex Regel, 1887, *Allii species Asia Centralis* : 39]. – *A. nitidulum* Fisch. in herbario horti petropolitani. – ...”, thus presenting a different point of view on the validity of Fischer’s point of view. In addition, he noted that materials of this variety were stored in the Imperial Botanical Garden of St. Petersburg (present time: Komarov Botanical Institute).

E. Regel provided a description of this variety: “Staminibus perigonium circiter aequantibus v. paulo tantum eo brevioribus. Cetera ut praecedentis” but did not give a geographical reference. But we can find some information on herbarium specimens of LE. There is Fischer’s Altai material among them: “Herb. Fischer. Loktj 1834. Gebler”, “Herb. Fischer. № 127. Collected near the river Chui [Chuya] in the meadows. July of the 10th day”, and Fischer’s material from Central Kazakhstan (Ulytau district of Karaganda region): “Herb. Fischer. *Allium nitidulum*. In solar im Ulutau”, signed by A. I. Schrenk in the form of the Russian letters “Шр”. On the labels of the material mentioned here, E. Regel left his standard notes: “*Allium Pallasii* Murr. β . *nitidulum*, teste Rgl.”. The latter one, apparently, was seen by Ledebour, since in “*Flora Rossica*”, he referred to herbarium material, including the specimen of A. I. Schrenk.

There is another very interesting herbarium specimen that was sent by Fischer to Marshall Bie-

berstein in 1821. Its green label says: “*Allium nitidulum* mihi, e Nord. Alt. comm. Fischer a. 1821”. In addition, on the same herbarium specimen, there is a grey label, on which Ledebour’s cursive notes appear: “Alli ... nitidul ...”.

Apparently, this latter specimen is part of the material that Ledebour wrote about in “*Flora Rossica*”, referring to “*herb. reg. berol.*”. All other herbarium specimens marked by Regel may be *specimena authentica* given that he mentioned in the monograph (Regel, 1887) the place of storage of authentic materials: “*A. nitidulum* Fisch. in herbario horti petropolitani”.

A. pallasii Murr. β . *nitidulum* Fisch. et Regel, 1887, *Allii species Asia Centralis* ... : 39.

Lectotypus (hoc loco): “Herb. Fischer. № 127. Собрано подле реки Чуй [Чуй] на лугах. Июль 10-го дня [Collected near the Chuya River in meadows. July of 10th day]” (LE00018198, Fig. 2).

Specimena authentica: “*Allium nitidulum* mihi, e Nord. Alt. comm. Fischer a. 1821” (LE00018197, Fig. 1), “Herb. Fischer. Loktj 1834. Gebler” (LE00018199), “Herb. Fischer. Loktj, Altai” (LE00018201), “Herb. Fischer. *Allium nitidulum*. In solar im Ulutau. Шр [A. I. Schrenk]” (LE00018200).

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REFERENCES

- Fischer F. B.** 1812. Descriptiones plantarum rariorum Sibiriae. *Mémoires de la Société imp. des naturalistes de Moscou* 3: 56–82.
- Index Kewensis* Plantarum Phanerogamarum ... [Index Kewensis: an enumeration of the genera and species of flowering plants from the time of Linnaeus to the year 1885 inclusive ...]. 1893. Vol. 1, part. 1. Oxford: at the Clarendon Press. Pp. 1–728. URL: <https://www.biodiversitylibrary.org/page/42382218#page/9/mode/1up>
- IPNI [2022]. *International Plant Names Index*. Kew: The Royal Botanic Gardens; Harvard University Herbaria; Libraries and Australian National Botanic Gardens. URL: <http://www.ipni.org> (Accessed 15 December 2021).
- Ledebour C. F.** 1853. *Flora Rossica*. Vol. 4. Stuttgartiae. 741 pp.
- Regel E.** 1875. *Alliorum adhuc cognitorum*. Monographia. Petropolis. 266 pp.
- Regel E.** 1887. *Allii species Asiae Centralis in Asia media a Turcomania desertisque Araliensibus et Caspicis usque ad Mongoliam crescents*. Petropoli. 88 pp.