



# Typification of the name *Nitraria komarovii* (Nitrariaceae)

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## ABSTRACT

*Nitraria komarovii*, the name of a species of the Nitrariaceae family, is not typified yet. The species is known from only 3 habitats—Western (Absheron Peninsula, Azerbaijan) and Eastern (Turkmenbashi, locus classicus) coasts of the Caspian Sea and the coast of Lake Balkhash (Kazakhstan). Its economic potential may be commercially exploited, as a promising ornamental, ameliorative, food and medicinal plant of desert and saline areas. Here, a lectotype is designated for *Nitraria komarovii* and a historical background for typification of this name is provided.

**Key words:** lectotypification, nomenclature, digital herbarium, Central Asia, flora of Russia, Siberia, *Nitraria komarovii*, Zygophyllaceae

## РЕЗЮМЕ

**Ковтонок Н.К., Томошевич М.А., Банаев Е.В. Типификация имени *Nitraria komarovii*.** Название вида *Nitraria komarovii* из семейства Nitrariaceae до сих пор не типифицировано. Вид известен всего из 3 местообитаний: западное (п-ов Апшерон, Азербайджан) и восточное (Туркменбаши, классическое местообитание) побережья Каспийского моря и побережье оз. Балхаш (Казахстан). Его экономический потенциал может быть коммерчески использован, как перспективное декоративное, мелiorативное, пищевое и лекарственное растение пустынных и засоленных районов. В статье дано историческое обоснование для типификации и обозначен лектотип названия *Nitraria komarovii*.

**Ключевые слова:** лектотипификация, номенклатура, цифровой гербарий, Центральная Азия, флора России, Сибирь, *Nitraria komarovii*, Zygophyllaceae

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The genus *Nitraria* L., described by Linnaeus (1759), includes 9 species (Bobrov 1949, Wilson 1992). Previously *Nitraria* was included in the family Zygophyllaceae (Bobrov 1949, Nikitin 1950), but in the last taxonomic treatment (Wilson 1992) and the most recent phylogenetic assessment (APG IV 2016) it was placed in a family of its own Nitrariaceae. Plants of the genus are common in the steppe and desert regions of Central Asia, in the mountainous regions of South Siberia, Southeastern Europe, in North Africa and in Southeast Australia. The species grow on saline desert soils and semi-deserts, on saline gypsum soils, on clay-sandy soils of the coasts and on the shores of salt lakes.

*Nitraria komarovii* Iljin & Lava ex Bobrov (1946: 28) is the name of a native for the western and eastern coasts of the Caspian Sea and for Western Turkmenistan that is not typified yet. Its economic potential may be commercially exploited as a promising ornamental, ameliorative, food and medicinal plant of desert and saline areas (Banaev et al. 2015, Voronkova et al. 2017, Tomoshevich et al. 2019a).

## MATERIAL AND METHODS

Our study is based on an analysis of relevant literature (Linnaeus 1759, Trautvetter 1871, Iljin 1944, Bobrov 1946, 1949, 1965, 1974, Lava 1948, Nikitin 1950, Wilson 1992). Banaev and Tomoshevich have examined living populations of *Nitraria* species in the field on the coasts of the Caspian

Sea, in Crimea, Tajikistan, Kazakhstan and Siberia as well as herbarium specimens stored in the NSK collections (Thiers 2019) as vouchers (NSK3000924, NSK3000925, NSK3000927, NSK3000939, NSK3000959, NSK3000986, NSK3000995). Their digital copies placed in the open access in the Digital herbarium of CSBG SB RAS (<http://herb.csbg.nsc.ru:8081>). We have studied *Nitraria* herbarium specimens that belong to the original material from the Komarov Botanical institute of the Russian Academy of Sciences (LE) and other *Nitraria* specimens native to the flora of Russia using online herbarium databases at E, K, LINN, MW and P. The protologues, type specimens of all *Nitraria* species and information from POWO (2019) database were analyzed during our research.

## RESULTS AND DISCUSSION

### Historical background

The name *Nitraria komarovii* was first used in Ilyin (1944: 117), but without a diagnosis in Latin: “*Nitraria Komarovii* Iljin et Lava, sp. nov. (typus Krasnovodsk, littora maris Caspii, 22 X 1900, leg. Freyn). Этот изящный вид с узкими листьями, легко отличимый от других видов *Nitraria* исключительно связан с морским побережьем Каспия и особенно распространен в южной части.” [This elegant species with narrow leaves, easily distinguishable from other species of *Nitraria* is solely associated with the

coast of the Caspian Sea and is particularly common in the southern part – translated by N.K.]. According to Art. 39.1 (ICN, Turland et al. 2018) the name *Nitraria komarovii* was therefore not validly published. Later Bobrov (1946: 28) validated the name, *Nitraria komarovii*, by providing a Latin description: “Folia longiora lineari-spathulata basi longius angustata, cyma gracilior. Habitat in Turkomania occidentali et in peninsula Apscheron” and providing a direct reference to *Nitraria schoberi* var. *polygama* Trautvetter (1871: 25) that was included by Bobrov in its synonymy and based on plants collected by Radde in Krasnowodsk, Turkomania in 1870. Thus the name, *Nitraria komarovii*, was not explicitly proposed as a substitute for an earlier name *N. schoberi* var. *polygama* and according to Art. 6.13 of the ICN (Turland et al. 2018) “may be treated either as a replacement name or as the name of a new taxon” as “in the protologue both (a) a potential replaced synonym is cited and (b) all requirements for valid publication of the name of a new taxon are independently met. Decision on the status of such is to be based on predominant usage and is to be effected by means of appropriate type designation”.

### Typification of the name, *Nitraria komarovii*

When validating the name Bobrov (1946: 24) intentionally mentioned that *N. komarovii* “habitat in Turkomania occidentali et in peninsula Apscheron” and stated the same twice (Bobrov, 1946: 28) while referring to the replaced synonym, *N. schoberi* var. *polygama*: “Описан по сборам Рададе в Западной Туркмении. [Described from Radde’s collections in Western Turkmenia – Translated by N.K.]” and while giving the distribution of this species: “Установленная первоначально из окр. Красноводска (G. Radde, 1870) [Found originally near Krasnowodsk (G. Radde, 1870)].” These two phrases are evidence that Bobrov meant *N. schoberi* var. *polygama* when he described *N. komarovii*. However, Bobrov politely mentioned also his predecessor: “В качестве типа Ильиным избраны образцы Фрейна из Красноводска. Тип в Ленинграде. [Ilyin has chosen as type Freyn’s herbarium specimens from Krasnowodsk. Type in Leningrad. Translated by N.K.]”. Bobrov does not discuss this phrase further and does not cite any specimens by Freyn. In his later works on the genus *Nitraria* Bobrov (1949: 198 and 1965: 1053) follows his earlier statement and intentionally refers to *N. schoberi* var. *polygama* as the replaced synonym.

Interestingly, Ilyin & Lava (1944: 117) did not mention the variety *N. schoberi* var. *polygama*, although later Lava (1948: 54–57) cited *N. schoberi* var. *polygama* in the synonymy of *N. komarovii*, accepting the opinion of Bobrov published two years earlier (Bobrov 1946). When the taxonomic treatment for genus *Nitraria* was published by Bobrov in Flora of USSR (1949) and translated into English (1974), *N. komarovii* was accepted by Nikitin (1950) and is treated as a replacement name in IPNI (2019) and accepted as such in POWO (2019).

This name is also accepted by Tomoshevich et al. (2019a) and treated by them as a replacement name for *N. schoberi* var. *polygama*. Following a short history of the use of the name, *N. komarovii*, as described above, the predominant usage of the name was and is as a replacement name

for *N. schoberi* var. *polygama* and thus following Art. 6.13 of the ICN (Turland et al. 2018) should be typified by the type of the replaced synonym (Art. 7.4 of ICN, Turland et al. 2018). Based on this, the lectotype is selected here from the material cited by Trautvetter as ‘In Turkomania, prope Krasnowodsk (Radde)’.

At the Komarov botanical institute (LE) we found 8 herbarium sheets of *Nitraria schoberi* var. *polygama* Trautv., (LE00050757, LE00050758, LE00050759, LE00050760, LE00050761, LE00050762, LE00050763, LE00050764); all being syntypes (Art. 9.3 ICN) and we have chosen the specimen (LE00050757) as the lectotype (Fig. 1).

***Nitraria komarovii*** Ilyin & Lava ex Bobrov Sovetskaya Botanica 14(1):28, 1946

≡ *Nitraria schoberi* var. *polygama* Trautv. Trudy Imp. S.-Peterburgsk. Bot. Sada 1:25, 1871. – *Nitraria komarovii* Ilyin & Lava, Priroda 5–6:117, 1944, nom. inval.

**Lectotype (designated here):** – WESTERN TURKMENISTAN: Turkomania, Krasnowodsk, Juni [1870], Radde, 395/467 (LE00050757!). Figure 1.

**Remaining syntypes:** WESTERN TURKMENISTAN: Turkomania, Krasnowodsk, Junio 1870, Leg. D. Radde, 396/468, 397/469. Herbarium Trautvetter, (LE 00050758!); Turkomania, Krasnowodsk, Juni [1870], Radde, 467, ob...464, (LE 00050759!); Krasnowodsk, Juni [1870], Radde, 396/468, 394/469. and label Turkomania, Krasnowodsk, im Junio 1870, Leg. D. Radde, 396/468, 397/469. Herbarium Trautvetter (LE 00050760!); Krasnowodsk, Radde, 468, 469, (LE 00050761!); Krasnowodsk, Juni [1870], Radde, 464, (LE 00050762!); Turkomania, Krasnowodsk, Juni, Radde, 392/464, Herbarium Trautvetter (LE 00050763!); Turkomania, Krasnowodsk, im Junio 1870, Leg. D. Radde, 396/468, 397/469. Herbarium Trautvetter (LE 00050764!).

**Note:** One of the syntypes preserved at LE (LE00050757), was annotated by V.P. Botschantzev in 1960 as type of *Nitraria komarovii* (Fig. 1): “Тип – растения Рададе, т.к. они [по]служили Траутветтеру для описания подвида, а не растения Фрейна, как это утверждает Ильин (Природа 5–6, 1944, 117), потому что здесь вид приведен без латинского описания, опр. Бочанцев 13.01.1960.” [Type – plants of Radde, because they have served Trautvetter in description of the variation, but not the plants of Freyn, as claimed by Ilyin (Priroda, 5–6, 1944: 117) since here the species are given without Latin description, det. Botschantzev, 13.01.1960. – translated by N.K.]. Since this has not been formally published, we designated the corresponding specimen as the lectotype here.

### Distribution

Distribution of *N. komarovii* according to the literature (Bobrov 1946, 1949): Maritime saline clayey and sandy-clayey deserts. – Caucasus: (Apscheron near Balakhany); Central Asia: Kara-Kum, West Turkmenistan in the area adjacent to Krasnowodsk Gulf (= Turkmenbashi), Cheleken. Endemic. During field trips in 2012–2015 by E. Banaev and M. Tomoshevich *N. komarovii* and *N. schoberi* plants were studied and specimens collected in Kazakhstan on the shores of lake Balkhash. Herbarium specimens deposited at the Central Siberian Botanical garden SB RAS and visible on-line in GBIF (Tomoshevich et al. 2019b). *N. komarovii* is close to *N. schoberi*, but this species differs by habit, shape and color of leaf blade, color of drupe and fruit sap (Tomoshevich et al. 2019a).



Figure 1 Lectotype of *Nitraria komarovii* Iljin & Lava ex Bobrov (LE00050757)

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