

Russian Academy of Sciences, Far Eastern Branch
Botanical Garden-Institute

botanica Pacifica

A JOURNAL OF PLANT SCIENCE
AND CONSERVATION

VOLUME 9, No. 1 2020

VLADIVOSTOK 2020



Validation of two varieties of *Oxytropis tragacanthoides* (Fabaceae) from Southern Siberia

Denis A. Krivenko^{1,2,3*}, Ivan V. Tatanov⁴ & Irina V. Belyaeva^{5,6}

Denis A. Krivenko^{1,2,3*}
e-mail: krivenko.irk@gmail.com

Ivan V. Tatanov⁴
e-mail: tatanov@binran.ru

Irina V. Belyaeva^{5,6}
e-mail: i.belyaeva@kew.org

¹ Siberian Institute of Plant Physiology & Biochemistry SB RAS, Irkutsk, Russia

² Western Baikal Protected Areas, Irkutsk, Russia

³ National Research Tomsk State University, Tomsk, Russia

⁴ Komarov Botanical Institute RAS, St. Petersburg, Russia

⁵ Royal Botanic Gardens Kew, Richmond, United Kingdom

⁶ Botanic Garden UB RAS, Yekaterinburg, Russia

* corresponding author

Manuscript received: 25.11.2019

Review completed: 19.04.2020

Accepted for publication: 23.04.2020

Published online: 25.04.2020

ABSTRACT

Two names of varieties, *Oxytropis tragacanthoides* Fisch. ex DC. var. *parviflora* Polozhij ex Krivenko, var. nova, and *Oxytropis tragacanthoides* var. *glabra* Peschkova ex Krivenko, var. nova, are validated here according to the International Code of Nomenclature for Algae, Fungi, and Plants (Shenzhen Code). For each new variety provided description, illustration of holotype, distribution, and differences from *Oxytropis tragacanthoides* var. *tragacanthoides*.

Keywords: *Oxytropis tragacanthoides*, Fabaceae, new varieties, nomenclature, taxonomy, Russia, Mongolia, Southern Siberia

РЕЗЮМЕ

Кривенко Д.А., Татанов И.В., Беляева И.В. Валидизация двух разновидностей *Oxytropis tragacanthoides* (Fabaceae) из Южной Сибири. Действительно обнаружены две разновидности *Oxytropis tragacanthoides* Fisch. ex DC.: var. *parviflora* Polozhij ex Krivenko, var. nova и var. *glabra* Peschkova ex Krivenko, var. nova, в соответствии с Международным кодексом номенклатуры водорослей, грибов и растений (Шэньчжэньский кодекс). Для каждой новой разновидности приводятся описание, иллюстрация голотипа, распространение и отличие от *Oxytropis tragacanthoides* var. *tragacanthoides*.

Ключевые слова: *Oxytropis tragacanthoides*, Fabaceae, новые разновидности, номенклатура, таксономия, Россия, Монголия, Южная Сибирь

The genus *Oxytropis* DC. was established in 1802 (Fabaceae, seu Leguminosae; Faboideae ≡ Papilionoideae; Galegeae; Astragalinae) as one of the largest genera in Fabaceae. The genus includes about 400 species (Malyshev 2008), more than 370 of which are distributed mainly in Northern Eurasia (Yakovlev et al. 1996). The centre of diversity of *Oxytropis* is Central Asia where 175 species occur which is more than a half of all known species of the genus. This genus is extremely diverse and rich in endemics: 78 species of the total number are endemic to Central Asia (Vassilczenko 1965, Grubov 2003).

In Southern Siberia, *Oxytropis tragacanthoides* Fisch. ex DC. is a representative of the Central Asian section *Hystrix* Bunge. Here this species has the status of a tertiary relict, the main part of whose range is in Central Asia (Peschkova 2001). *Oxytropis tragacanthoides* is a very polymorphic species. Three varieties of the species, *O. tragacanthoides* var. *parviflora* Polozhij (1965), *O. tragacanthoides* var. *glabra* Peschkova (1972), and *O. tragacanthoides* var. *caraica* Revuschkin (1990), have been described from the territory of Southern Siberia. However, the first two names were never validly published according to the International Code of Nomenclature for Algae, Fungi, and Plants (Shenzhen Code) (ICN) (Turland et al. 2018). Thus, we validate the names *O. tragacanthoides*

var. *parviflora* and *O. tragacanthoides* var. *glabra* here, providing descriptions, diagnoses, illustrations of holotypes and distributions.

Taxonomic treatment

***Oxytropis tragacanthoides* Fisch. ex DC. var. *parviflora* Polozhij ex Krivenko, var. nova;** Polozhij, 1965, Sist. Zаметki Mater. Gerb. Krylova Tomsk. Gosud. Univ. Kuybysheva, 83: 6, nom. inval.; id. 2011, in Gureyeva, Balashova, Sist. Zаметki Mater. Gerb. Krylova Tomsk. Gosud. Univ. 103: 38, nom. inval.

Polozhij (1965), when the variety was published, did not indicate the type and did not quote the single specimen which contrary to Art. 40.1 of the ICN (Turland et al. 2018) means the name was not validly published. Gureyeva & Balashova (2011) were not successful in validating this name by choosing a lectotype, instead of citing the holotype, and using the words “holotype” or “type” which is contrary to Art. 40.6 and to Art. 9.10 Note 6 of the ICN (Turland et al. 2018).

Shrublet, forming hemispherical cushion, branching from a ligneous caudex. Dry leaf rachises modified as thorns. The thorns are not brittle. Peduncles 2–5 cm with inflorescences (racemes 2–5-flowered) shorter than leaves. Calyces cylindrical, 1.1–1.5 cm. Corollas purple or violet-

blue; standards (1.5)1.7–1.9 cm; wings 1.6–1.7 cm; keels are almost equal to wings, beaks 1–1.5 mm. Legumes sessile, ovoid to subspherical, inflated, dense, and pilose.

Holotype: “Tuvinskaya botanical expedition 1949. The vicinity of Erzin settlement, rocky steppe, 15 VII 1949, K. Sobolevskaya, S. Savinykh” (TK: TK000367!). Figure 1.

Affinity. Differs from *O. tragacanthoides* var. *tragacanthoides* in corolla features. In *O. tragacanthoides* var. *parviflora*: standards (1.5)1.7–1.9 cm, wings 1.6–1.7 cm, beaks 1–1.5 mm; in *O. tragacanthoides* var. *tragacanthoides*: standards 1.8–2.5 cm, wings 1.7–2.3 cm, beaks 2–2.5 mm.

Distribution. Mountain steppes in the Russian Republics of Tuva and Khakassia, as well as in Northern Mongolia.

***Oxytropis tragacanthoides* Fisch. ex DC. var. *glabra* Peschkova ex Krivenko, var. *nova*;** Peschkova, 1972, *Stepnaya Fl. Baikalskoi Sibiri*: 74, nom. inval.

Peshkova (1972), when publishing this variety, did not indicate the type and did not quote a single specimen, contrary to Art. 40.1 of the ICN (Turland et al. 2018) and thus the name was not validly published.

Shrublet, forming hemispherical cushion, branching from a ligneous caudex. Dry leaf rachises modified as thorns. The thorns are brittle. Peduncles with inflorescences (racemes 2–5-flowered) equal or longer than leaves. Calyces cylindrical, 1.1–1.4 cm. Corollas purple or violet-blue; standards 2–2.4(2.5) cm; wings 1.8–1.9(2.2) cm; keels 1.7–1.9 cm, beaks 2 mm. Legumes sessile, ovoid to subspherical, inflated, dense, and pubescent, balding with time.

Holotype: “Baikal, Olkhon Island, Khoboi Cape, rocks, 4 IX 1966, G. Peshkova” (NSK: NSK0008415!; isotype: NSK0008414!). Figure 2.

Affinity. Differs from *O. tragacanthoides* var. *tragacanthoides* in thorns, peduncles length, and pubescence of legumes. In *O. tragacanthoides* var. *glabra*: brittle thorns, peduncles equal or longer than leaves, balding legumes; in *O. tragacanthoides* var. *tragacanthoides*: not brittle thorns, peduncles shorter than leaves, not balding legumes.

Distribution. An endemic variety on rocky slopes of the northern tip of Olkhon Island, Baikal Lake, (Irkutsk Region, Russia).

The abbreviated authors names and places of publication are given according to the International Plant Names Index (IPNI 2019), and herbarium abbreviations are given in accordance with to the Index Herbariorum (Thiers 2019). Digital copies of the holotype and isotype of *Oxytropis tragacanthoides* var. *glabra* placed in the open access in the Digital herbarium of CSBG SB RAS (2019).

ACKNOWLEDGEMENTS

We are grateful to I.I. Gureyeva, curator of the TK Herbarium, and N.K. Kovtonyuk, curator of the NSK Herbarium, for making illustrations of holotypes for this article.

LITERATURE CITED

Digital herbarium of CSBG SB RAS 2019. [Continuously updated] Available from: <http://herb.csbg.nsc.ru:8081> Last accessed: 25 November 2019.

Grubov, V.I. 2003. *Plants of Central Asia – Plant Collection from China and Mongolia. Vol. 8b: Legumes, Genus: Oxytropis.*

CRC Press, Boca Raton, 124 pp.

Gureyeva, I.I., V.F. Balashova 2011. Type specimens of Fabaceae in the Krylov Herbarium (TK). *Sistematische skie zametki po materialam Gerbariya imeni P.N. Krylova pri Tomskom gosudarstvennom universite* 103:3–41 (in Russian). [Гуреева И.И., Балашова В.Ф. 2011. Типовые образцы Fabaceae в Гербарии им. П.Н. Крылова (ТК) // Систематические заметки по материалам Гербария им. П.Н. Крылова при Томском государственном университете. № 103. С. 3–41].

IPNI: International Plant Names Index 2019. [Continuously updated] <https://beta.ipni.org/> Last accessed: 29.10.2019.

Malyshev, L.I. 2008. Diversity of the genus *Oxytropis* in Asian Russia. *Turczaninowia* 11(4):5–141 (in Russian) [Мальшев Л.И. 2008. Разнообразие рода остролодка (*Oxytropis*) в Азиатской России // *Turczaninowia*. Т. 11, вып. 4. С. 5–141].

Peshkova, G.A. 1972. *Steppe flora of Baikal Siberia*. Nauka, Moscow, 207 pp. (in Russian). [Пешкова Г.А. 1972. Степная флора Байкальской Сибири. Москва: Наука. 207 с.].

Peshkova, G.A. 2001. *Florogenetic analysis of the steppe flora of the mountains of Southern Siberia*. Nauka, Novosibirsk, 192 pp. (in Russian). [Пешкова Г.А. Флорогенетический анализ степной флоры гор Южной Сибири. Новосибирск: Наука. 192 с.].

Polozhij, A.V. 1965. To the study of papilionaceous in the flora of Tuva. *Sistematische skie zametki po materialam Gerbariya imeni P.N. Krylova pri Tomskom gosudarstvennom universite imeni V.V. Kuybysheva* 83:5–7 (in Russian). [Положий А.В. 1965. К изучению мотыльковых во флоре Тувы // Систематические заметки по материалам Гербария им. П.Н. Крылова при Томском государственном университете им. В.В. Куйбышева. № 83. С. 5–7].

Revuschkin, A.S. 1990. New taxa of Altai mountain flora. *Sistematische skie zametki po materialam Gerbariya imeni P.N. Krylova pri Tomskom gosudarstvennom universite imeni V. V. Kuybysheva* 88:1–6 (in Russian). [Ревушкин А.С. 1990. Новые таксоны флоры горного Алтая // Систематические заметки по материалам Гербария им. П.Н. Крылова при Томском государственном университете им. В.В. Куйбышева. № 88. С. 1–6].

Thiers, B. 2019. [Continuously updated] Index Herbariorum: A global directory of public herbaria and associated staff. New York Botanical Garden’s Virtual Herbarium. Available from: <http://sweetgum.nybg.org/science/ih/> Last accessed 25 November 2019.

Turland, N.J., J.H. Wiersema, F.R. Barrie, W. Greuter, D.L. Hawksworth, P.S. Herendeen, S. Knapp, W.-H. Kusber, D.-Z. Li, K. Marhold, T.W. May, J. McNeill, A.M. Monro, J. Prado, M.J. Price & G.F. Smith (eds) 2018. International Code of Nomenclature for Algae, Fungi, and Plants (Shenzhen Code) adopted by the Nineteenth International Botanical Congress Shenzhen, China, July 2017. *Regnum Vegetabile* 159. Koeltz Botanical Books, Glashütten, 254 pp.

Vassilzenko, I.T. 1965. On the problem of the genesis of the genus *Oxytropis* DC. (Leguminosae). *Botanicheskie Zburnal* 50(3):313–323 (in Russian). [Васильченко И.Т. 1965. К вопросу о генезисе рода *Oxytropis* DC. // Ботанический журнал. Т. 50, № 3. С. 313–323].

Yakovlev, G.P., A.K. Sytin & Yu.R. Roskov 1996. *Legumes of Northern Eurasia: A checklist*. Royal Botanic Gardens, Kew, 724 pp.



Figure 1 Holotype of *Oxytropis tragacanthoides* var. *parviflora* (TK000367)



Figure 2 Holotype of *Oxytropis tragacanthoides* var. *glabra* (NSK0008415)