Новости систематики высших растений | 2021
Novitates Systematicae Plantarum Vascularium | 52: 33–37

ISSN 0568-5443 (print)
ISSN 2687-1564 (online)

Salix ledebouriana forma *fastigiata* (*Salicaceae*), a new form

Salix ledebouriana forma *fastigiata* (*Salicaceae*) — новая форма

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https://doi.org/10.31111/novitates/2021.52.33

Abstract. A new form, *Salix ledebouriana* f. *fastigiata* I. V. Belyaeva, V. V. Byalt, O. V. Epanch. et Firsov, is described and its characteristics in cultivation in Yekaterinburg and St. Petersburg are given.

Keywords: *Salicaceae*, *Salix ledebouriana*, cultivation, new form.

Аннотация. Приводится описание новой формы *Salix ledebouriana* f. *fastigiata* I. V. Belyaeva, V. V. Byalt, O. V. Epanch. et Firsov, даются ее характеристики в условиях культивирования в Екатеринбурге и Санкт-Петербурге.

Ключевые слова: *Salicaceae*, *Salix ledebouriana*, культивирование, новая форма.

During a visit in 1997 to the Central Siberian Botanical Garden, Siberian Branch of the Russian Academy of Sciences (CSBG SB RAS) in Novosibirsk, cuttings from two clones of *Salix ledebouriana* Trautv. that had been cultivated there were obtained by the authors of this paper for future introduction of these willows to the Middle Urals. One clone was a widely cultivated semi-pendulous form, *S. ledebouriana* f. *kuraica* Liss., described by Lissavenko (1970) and the other clone that attracted our attention had long straight stems forming a fastigiate crown. Both clones are successfully growing in the Salicetum of the Institute Botanic Garden, Ural Branch of the Russian Academy of Sciences (BG UB RAS), Yekaterinburg. The fastigiate form was originally growing as a tree, later was cut down and now it is growing as a multi-stemmed shrub, 4 m high and is very ornamental (Fig. 1: A, B).

In November 2005, cuttings of the fastigiate clone were shared with colleagues in the Botanical Garden of the Komarov Botanical Institute of the Russian Academy of Sciences, St. Petersburg. Even though the introduction of woody plants, including willows, began in St. Petersburg more than 300 years ago (Nekrasova, 1959; Byalt et al., 2019), *S. ledebouriana* had not been tested here before 2005. In St. Petersburg, there are two individuals growing in different plots, one as a multi-stemmed shrub and the other as a tree, now 7.5 m tall. Shoots of *S. ledebouriana* continue growing until late autumn and do not have time to lignify, as a result of which, in some years, the ends of the shoots may freeze slightly. The same thing was observed for *S. ledebouriana* in Novosibirsk (Vstovskaya, 1986; Koropachinskiy, 2015), while in Yekaterinburg, *S. ledebouriana* was not similarly damaged by frost.

Поступила в редакцию | Submitted: 05.07.2021 *Принята к публикации | Accepted: 04.12.2021*

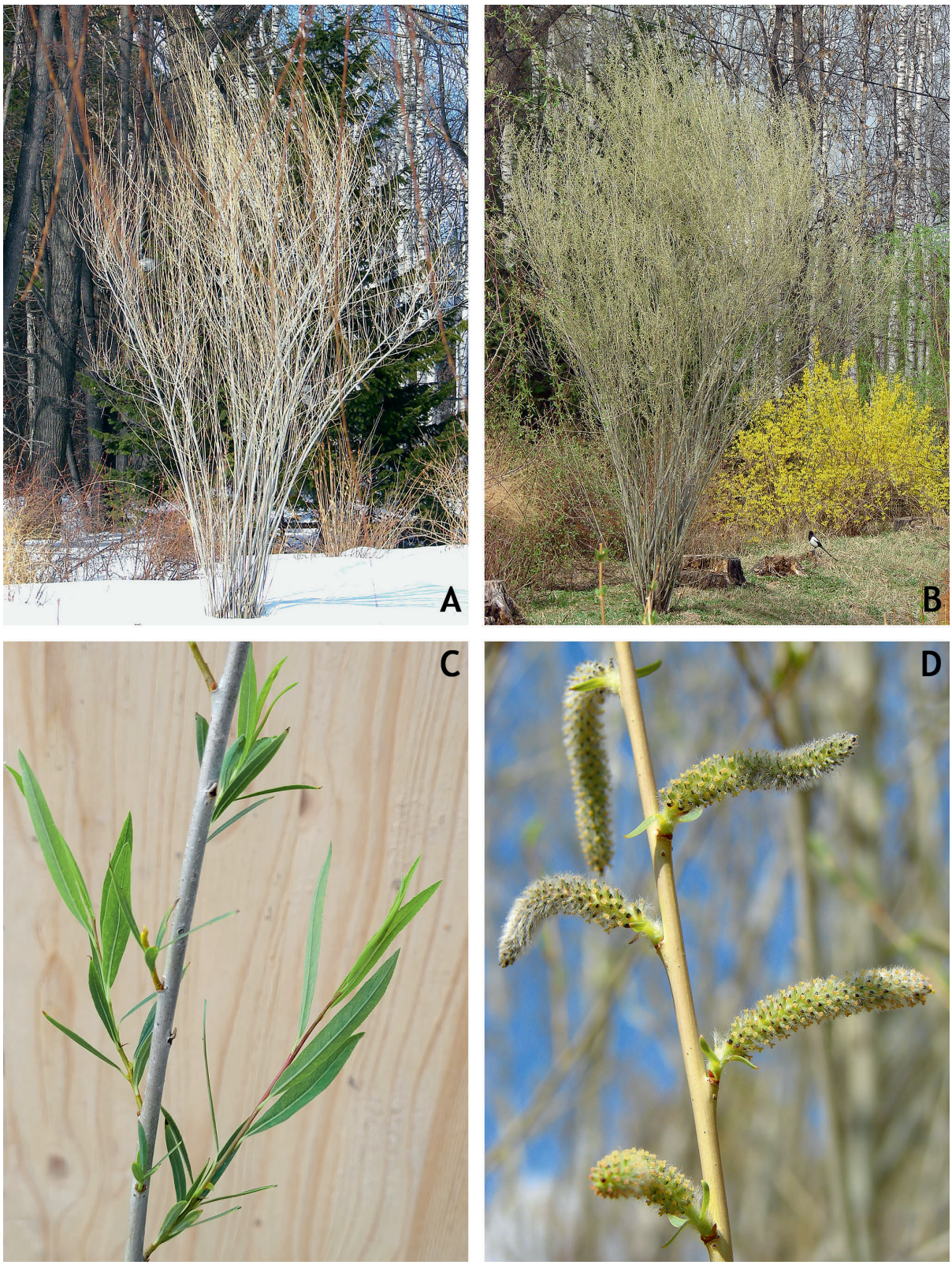


Fig. 1. *Salix ledebouriana* f. *fastigiata*.
A, B — habit in the Botanic Garden UB RAS, Yekaterinburg, Russia: A — in winter, B — in spring; C — branchlets with leaves; D — catkins. Photos by O. V. Epanchintseva (A, B, D) and I. V. Belyaeva (C).



Fig. 2. Holotype of *Salix ledebouriana* f. *fastigiata* (SVER0554276).



Fig. 3. The colour of new shoots (rods) of *Salix ledebouriana* f. *fastigiata* growing after pruning. Photo by O. V. Epanchintseva.

Since January 2020, the fastigiate form of *S. ledebouriana* has been cultivated at the private garden, Willow Mount, UK; the plant that was grown from a cutting is 1.5 m high and already demonstrates fastigiate habit.

After a long period of successful cultivation of the fastigiate clone (since 1997 in Yekaterinburg and since 2005 in St. Petersburg), the authors of the current paper decided to give this willow a proper scientific name.

Varieties and forms with fastigiate crowns are not common in the genus *Salix* and have been described only for two other species, *S. humboldtiana* Willd. and *S. viminalis* L. There are three records in the International Plant Names Index (IPNI, 2021) and World Checklist of Vascular Plants (WCVP, 2021) of varieties, *S. humboldtiana* var. *fastigiata* André, *S. humboldtiana* var. *pyramidalis* Kuntze and *S. viminalis* var. *pyramidalis* I. V. Belyaeva. There is in IPNI and WCVP also an unplaced species name, *S. pyramidalis* Budishch., described from Manchuria, the distribution and description of which suggest that the latter belongs to *S. rorida* Laksch.

The morphological characteristics of the fastigiate form have been compared to those of herbarium specimens of *S. ledebouriana* at K, LE, MHA, MW, and NSK (Herbarium acronyms follow Thiers, 2021).

Salix ledebouriana Trautv. f. **fastigiata** I. V. Belyaeva, V. V. Byalt, O. V. Epanch. et Firsov, forma nova.

Tree or multiple stemmed shrub 4–7.5 m tall with long thin straight branches growing up from the trunk at angles of less than 60° (Fig. 1: A–B). The largest trunk's diameter 8 cm, bark greyish. Branchlets and branches yellowish whitish or purple turning whitish or whitish grey with dense glaucous bloom, glabrous (Fig. 1: C). Buds dimorphic, ovate, glabrous, adpressed to shoot, carinate with patches of bloom. Generative buds 0.4–0.7 cm long with a blunt apex, vegetative 0.3–0.4 cm long, slightly acuminate. Leaves alternate, narrowly ovate to linear, 4–12 cm long and 0.4–1 cm wide, with acute apex and narrowly cuneate base, thin-leathery, glabrous, finely serrate on margin, both sides light green, dull, glaucous, do not blacken when dry (Fig. 1: C). Stipules rudimentary, minute. Petioles 0.2–0.7 cm long, yellowish, glabrous. Catkins, female, loosely flowered, subsessile on stalks 0.2–0.4 cm with 2 leaflets at the base 2–4 cm long (Fig. 1: D). Floral bracts 1–1.2 mm long, rounded, pale with dark blunt apex and long hairs. Ovary ovate-conical, blunt on top, hairy, reddish, semi-sessile or sessile on 0.5 mm stalk; styles connate, 0.3 mm; stigmas bifid, to 0.3 mm long. Nectary 1, adaxial, 0.2–0.3 mm long. Capsules 0.4–0.6 mm long; number of seed scars in capsule 6.

Holotype (Fig. 2): Russia, Yekaterinburg, Botanic Garden, Ural Branch RAS, *Salix* collection, 10 VII 2020, O. V. Epanchintseva, 1-2020, cultivated in the BG UB RAS since 1997 under accession number 19597 (SVER: SVER0554276!; isotypes — LE 01145685!, LE 01145686!, MHA!, NSK!, PERM!, WSY!).

Paratype. Russia, St. Petersburg, Botanical Garden of Peter the Great, Komarov Botanical Institute RAS, plot 92, cultivated, 28 VI 2021, G. A. Firsov, V. V. Byalt, 2021-1 (LE 01145681!).

Diagnosis. *Salix ledebouriana* f. *fastigiata* differs from *S. ledebouriana* f. *ledebouriana* (see descriptions by Trautvetter, 1836; Bolshakov, 1992; Valyagina-Malyutina, 2018) in having long clustered branches and fastigiate form of crown.

Etymology. The epithet "fastigiata" derives from Latin "fastigiatus" that means "with branches clustered, parallel and erect, giving a narrow-elongated habit" (Stearn, 2004: 411) and refers to the fastigiate form of the crown of this willow.

Distribution. Described from cultivated plant. Naturally occurs in Siberia. Currently, it is culti-

vated in Novosibirsk, Yekaterinburg and St. Petersburg (Russia), and Lydbrook (United Kingdom).

U s e . This willow is considered salt, drought and pollution tolerant and is used in landscaping in the Asian part of Russia, in large cities such as Barnaul, Krasnoyarsk, Leninogorsk (now Riddersk, Kazakhstan) and Novosibirsk (Koropachinskiy, Vstovskaya, 2012). Also, it has been used in basketry. It tolerates pruning well and new shoots (rods) growing after pruning are purple (Fig. 3).

Acknowledgments

The authors are grateful to Igor Yu. Koropachinskiy and Tatyana N. Vstovskaya from CSBG SB RAS for sharing plant material, Nina P. Salmina, Nikolai G. Erokhin and Alexander A. Vorobiev for preparation and scanning of the herbarium specimen of the holotype. The work of staff of the digital herbarium group CSBG SB RAS in scanning herbarium specimens of *Salix ledebouriana* is greatly appreciated.

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