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A NEW SPECIES OF THE SECTION *ENGLERIA* (LEONOVA) TZVEL. OF THE HYDROPHILIC GENUS *TYPHA* L. (TYPHACEAE)

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The paper describes a new species of section *Engleria* (Leonova) Tzvel. from the Rostov region, the delta of the Don River. The new species is different from *Typha laxmannii* in narrowly linear, grooved stem leaves, the pear-shaped shape of the pistil part, petal-shaped stigma with a broadly membranous-wavy edge, a cellular pericarp with rafides, a spindle-shaped fruit (seed).

Keywords: genus *Typha* L., section *Engleria* (Leonova) Tzvel., comparative and morphological analysis, delta of the Don River, Don Island, new species, *Typha ledebourii*

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INTRODUCTION

In the Flora of the European part of the USSR in the genus *Typha* L. Section *Typha* T.G. Leonova cited 2 subsect. *Typha* and *Engleria*. In the second subsect., it listed two species of *T. laxmannii* Lepech. and *T. caspica* Pobed. [Leonova, 1979]. In 1984 N.N. Tzvelev raises the status of the *Engleria* subsect. to section [Tzvelev, 1984, 1996]. In 1999 A.N. Krasnova identified two subsect. in that section – *Mandshuriae* and *Laxmanii* with species *T. laxmannii*, *T. stenophylla* Fisch. & Mey. comb. nova, *T. zerovii* Klok. fil. & Krasnova, *T. veresczaginii* Kryl. & Schischk. [Krasnova, 1999]. In 2011 species of subsect. *Laxmanii* with a narrowly cylindrical pistil spadix were isolated by her in a separate subsect. *Stenophyllae* [Krasnova, 2010, 2011]. This made it possible to conduct an in-depth study of *T. laxmannii* in the coastal reaches of the Don Island (the delta of the Don River). A stunted cattail 90–100 cm tall, with a non-elliptical of the pistil part, which differed from *T. laxmannii* given for the southern regions of Russia, including the Lower Don from the delta of the Don River [Dorofeev, 1964; Flora of the Lower Don, 1985; Khlyzova, 1989]. In the botanical literature, there were cases when the "low-growing" plants of *T. laxmannii* were attributed to the cattail small [Ledebour, 1853; Leonova, 1979]. They may have survived in the Don Delta as a result of the migration of populations of the Central Asian-Mongolian *Typha* species in the Pliocene (Sarmatian period). [Akhmetyev, 2007; Velichko, 2012; Dorofeev, 1964]. The purpose of the work is to find out the systematic position of the *T. ledebourii* in the southern regions of the Rostov region.

RESULTS

The material was the herbarium of the genus *Typha*, from the Rostov region of T.N. Pol´china stored in the Herbarium of the Papanin institute for Biology of Inland Waters (IBIW). The comparative-morphological method was used in the work. The pistil flowers were examined a USB Electronic eyepiece 5 MP digital camera. During the processing of herbarium material, a low-growing cattail with a non-elliptical pistil part of the inflorescence was discovered. The plants were attributed to the section *Engleria* (Leonova) Tzvel., subsections of *Laxmanniae*. However, in a number of ways they differed from the type of the section *T. laxmannii* given for the southern regions of Russia (Leonova, 1979; Khlyzova, 1989; Demina, 1996). It should be noted that the studied cattail differed from *T. laxmannii* in the gray-green color of the stem leaves, in the shape and color of the pistillate part of the inflorescence. They appear to have survived in the delta as a result of the migration of populations of the Central Asian-Mongolian *Typha* species in the Pliocene (Sarmatian period) [Akhmetyev, 2007; Velichko, 2012; Dorofeev, 1964]. The description of the new type is given below.

Typha ledebourii A. Krasnova *&* T. Pol´china. sp. new. Perennial. The rhizome short. Cauline is 90–100 cm altitude. Cauline leaves with sheath 0.8 cm wide, is narrow line 0.4 cm, the edges are raised by 1 mm, from below is convex, on top gradually long-sharp. A sheath long, with raphides, on the edge of the film-waving, with ears, opened to the ground. The staminate and pistillate parts cum interval ≥1.5 cm.

Staminate parts is 8 cm long (falls after flowering). Pistillate parts of the inflorescence is 7 cm long, 2 cm in diameter, pear form (in the form ampule), brown. The sterile of flowers is 0.8 cm long. The stigma of petal-shaped along film- waving. The ovary is spindle-shaped. Infertile of pestle flowers (carpodia) 0.7 cm long, clavate, with short of the edge. Hairs of the ginophore are numerous, reach the stigma. Pericarp with raphides. The fruit is fusiform, truncated at the top, narrowed at the bottom. Flowering III–V, fruiting VI–VIII. (The species is named after Karl Friedrichovich Ledebour (1785–1851) – the first publisher of Flora of Russia (Flora Rossica).

Type: Rostov Region, Azov District, Don River Delta, Donskoy Island, 26.08.2020, T.N. Pol´china (fig. 1) (IBIW).

Differ from *T. laxmannii* narrow linear, grooved cauline leaves with raphides, pear forms pistillate part inflorescence, the stigma with film-waving is petal-shaped, the cellular pericarp with rafides. *T. ledebourii* was formed in the environment of an arid climate and hard marine regressions, which were in the Paleogene of Central Asia. It seems that *T. ledebourii* is older than *T. laxmannii*. It is possible that in the coast of The Don Island (fig. 2), the species migrated from Central Asia in the Pliocene and may belong to the hydrophytes of the "Sarmatian" complex, which was associated with mongolian flora [Akhmetyev, 2007]. Modern *T. ledeburii* play a minor role in the vegetation cover of the Don Delta. However, of some interest, since they preserve ancient features in the complex history and evolution of the genus Typha.

Fig. 1. The commonplace of the region of the study: 1 – island Donskoy; 2 – Type: Russia. Rostovskaya oblast, Azov district, island Donskoy, Don River, 26.08.2020, T.N. Pol´china (IBIW).

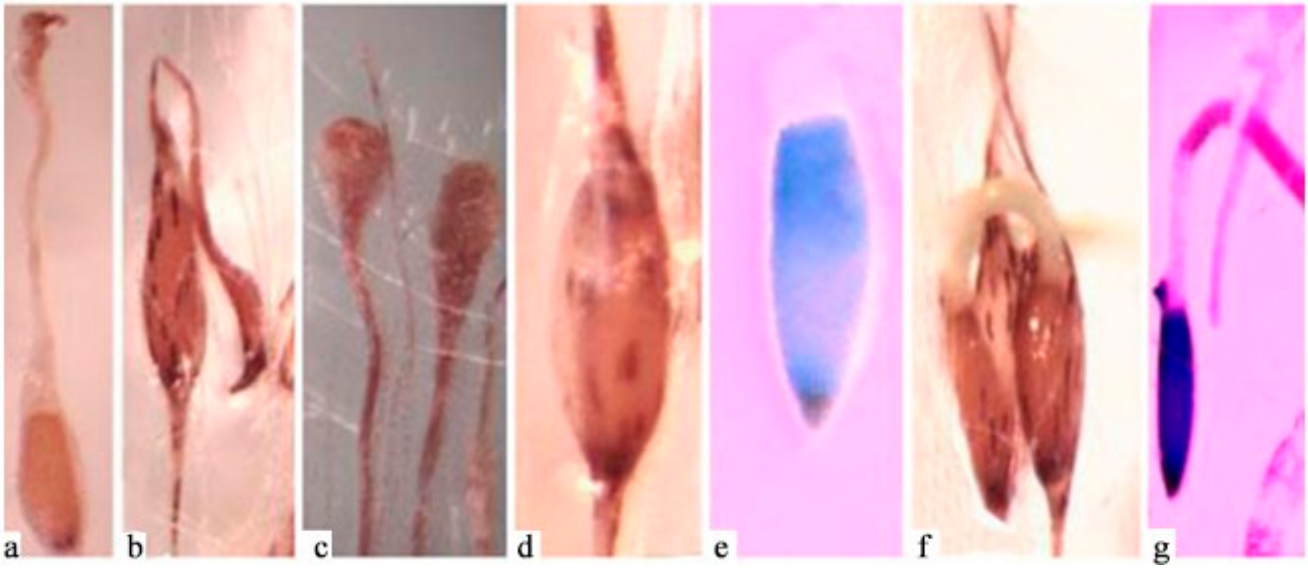

Fig. 2. Digital micros-file of the elements of the pistillate flower *Typha ledebourii* A. Krasnova & T. Pol´china: a, b – pistillate flower (ovary, column, stigma); c – the clavate carpodia; d – the fruit in pericarp; e – the pericarp; f, g – the germination of fruit in the Petri dish with 30°C.

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НОВЫЙ ВИД СЕКЦИИ *ENGLERIA* (LEONOVA) TZVEL. ГИДРОФИЛЬНОГО РОДА *TYPHA* L. (TYPHACEAE)

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В работе приведено описание нового вида секции *Engleria* (Leonova) Tzvel. из Ростовской области, о. Донского, дельты р. Дон. Обнаружено отличие от *Typha laxmannii* по узколинейным, желобчатым стеблевым листьям, по грушевидной форме пестичной части, по пестичным цветкам, лепестковидному рыльцу с широко-пленчато-волнистым краем, ячеистому околоплоднику с рафидами, веретеновидному плодику (семени).

Ключевые слова: род *Typha* L., секция *Engleria* (Leonova) Tzvel., сравнительно-морфологический анализ, дельта р. Дон, о. Донской, новый вид, *Typha ledeburii*.