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Typha domingensis (Typhaceae) new to Serbia

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ABSTRACT: *Typha domingensis* (Pers.) Steud. was discovered as a species new to Serbia during the post-congress excursion of the 5th Balkan Botanical Congress (Belgrade), on the shore of Lake Oblačinsko in September 2009. A short morphological description and the general distribution and habitat traits of the species in Serbia are given.

Key words: *Typha domingensis*, *Typhaceae*, new record, flora of Serbia

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INTRODUCTION

During the post-congress excursion of the 5th Balkan Botanical Congress in Belgrade in September 2009 to East Serbia one of the localities visited was a small natural inland water body, Lake Oblačinsko in the Niš-Dobrič valley, neighbored by the Oblačina Salt area, at present largely cultivated fields. The lake is almost circular in outline and c. 450–500 m in diameter. It represents the vestige of a large Neogene Lake formerly situated between Aleksinac and Leskovac, being actually a reduced remain of one bay of that lake. The water level of Lake Oblačinsko was lowered c. twenty years ago due to hydromeliorative efforts in the surrounding agricultural grounds and the construction of an artificial lake 5 km upstream, and the mutated distance between the previous and present shoreline is c. 50 m.

At the present-day shore of Lake Oblačinsko we discovered a *Typha* colony which was immediately identified as being made up of *Typha domingensis*. In Flora of SR Serbia (Janković 1976, Budak 1986; Jovanović 1986), five other *Typha* species are recorded, viz. *Typha angustifolia* L., *Typha latifolia* L., *Typha laxmannii* Lepech., *Typha minima* Funck and *Typha shuttleworthii* W.D.J. Koch & Sond. No previous literature reference on the occurrence of *T. domingensis* in Serbia was found, and no specimen of the latter was traced in herbaria of Belgrade, thence we concluded that *T. domingensis* is a new species for the Serbian flora.

MATERIAL AND METHODS

The collected herbarium specimens are deposited in the Herbarium of Botanischer Garten und Botanisches Museum Berlin-Dahlem, Zentraleinrichtung der Freien Universität Berlin (B), the Herbarium of the Natural History Museum in Belgrade (BEO), the Herbarium of the Institute of Botany and Botanical Garden "Jevremovac",

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University of Belgrade (BEOU) and the Herbarium of the Finnish Museum of Natural History, University of Helsinki (H) (Holmgren *et al.* 1990; http://sciweb.nybg.org/science2/IndexHerbariorum.asp).

The morphological description of *T. domingensis* given hereunder is based on individuals collected by the authors from the local population, with some qualitative and quantitative characters added according to Flora Europaea (Cook 1980), Flora of Turkey (Baytop 1984) and Flora Iberica (Cirujano 2008). The location of the population is given in a map of Serbia with 10 x 10 km² UTM grid system (Lampinen 2001).

RESULTS AND DISCUSSION

Stem robust, up to 2(3) m or more. Leaf-sheaths usually open at throat; sheath-margins free, usually tapering into a pale to yellowish-green 5–12(14) mm wide lamina. Fleshy leaf sheaths provided with abundant brown mucilaginous glands. Flowering stems equaling or slightly shorter than leaves. Male and female spikes of inflorescence separated by 0.5–7 cm. Female spike (6)15–25(42) × 1.5–2.5 cm when ripe, 10 or more times as long as wide, light (cinnamon) brown. Female flowers with obovate-apiculate, pale brown, translucent, fragile scales; stigmas linear, darker than the scales, at least as long as scales and hairs. Male spike mostly 1.5 × as long as female, 12-38 cm. Male flowers with linear scales often laciniate at apex; some scales are simple, others dilated and forked at apex. Anthers 2–3 mm; pollen-grains usually single. Seeds 0.8–1.2 mm, dehiscent. 2n = 30. (Fig.1)

Typha domingensis is sometimes confused with *T. angustifolia*, which has on an average narrower leaves and spikes, and usually auriculate top of leaf sheaths without or with scattered glands. However, already from a distance *T. domingensis* is usually easy to recognize of the spike color: its spikes are light brown, whereas *T. angustifolia* has darker cinnamon brown (but not blackish brown) spikes. The most reliable character can be found from female spikes: the sterile spathulate scales of *T. angustifolia* are dark brown, opaque and obtuse at apex, those of *T. domingensis* are pale brown, translucent and acute or apiculate at apex.

General distribution. Distribution of *Typha domingensis* includes the Mediterranean and submediterranean areas of Europe, Macaronesia, tropical, subtropical and temperate Africa, Asia, America and Australia; the species is also naturalized in Hawaii. It is common in the Mediterranean

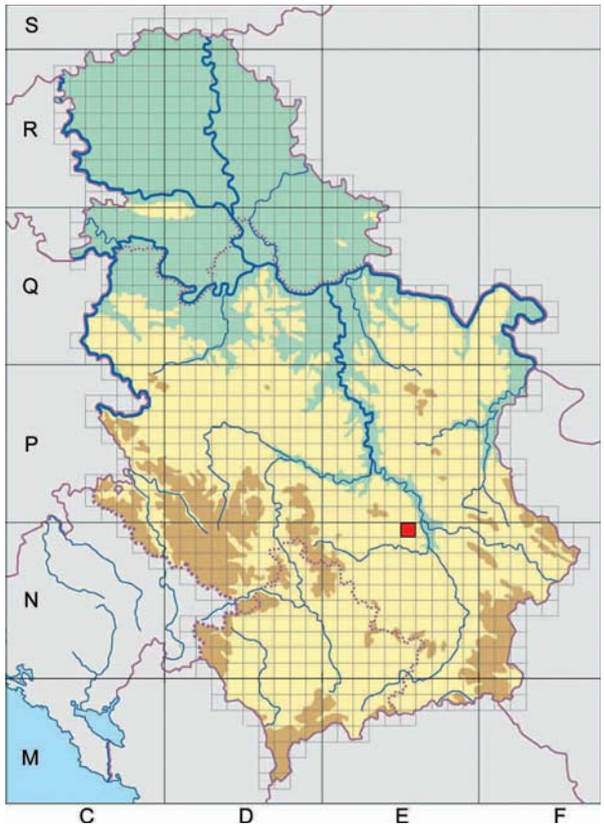

Fig. 2 Distribution of *Typha domingensis* in Serbia.

Fig. 1 *Typha domingensis* (Niš-Dobrič valley, Oblačina Salt area, relic remain of Lake Oblačinsko; photo P. Uotila)

Fig. 3 Habitat of *Typha domingensis* (Niš-Dobrič valley, Oblačina Salt area, relic remain of Lake Oblačinsko; photo P. Uotila)

area, where *T. angustifolia*, in contrast, is quite rare. According to Flora Europaea (Cook 1980), *T. domingensis* is distributed in all southern territories of Europe, except for Romania where it has been given with a question mark. However, according to Ţopa (1966: 100, sub *T. australis* Schumach. & Thonn.), it is recorded in several localities of that country.

For the former Yugoslavia, it is known from Croatia (Nikolić 2006), Montenegro (Rohlena 1942: 499, sub *T. angustata* Bory & Chaub.) and the Republic of Macedonia (Vandas 1909: 561 and Bornmüller 1928: 123, both sub *T. angustata*).

Distribution in Serbia. East Serbia, Niš-Dobrič valley, Oblačina Salt area, relic remains of Lake Oblačinsko, UTM EN59, (leg. *Raus 31089* (B), *Uotila, Raus, Niketić & Tomović 30276* (BEOU, BEO), *Uotila 48429* (H); all 14 Sept. 2009). (Fig.2)

Lake Oblačinsko is a part of the Serbian IPA region of the Niš-Dobrič valley. From a phytogeographic point of view, the Niš-Dobrič valley belongs to the Middle-European region, Balkan subregion and Western Moesian subprovince with strong submediterranean and pontic influences.

Habitat description. The shore of Lake Oblačinsko is very flat. The vegetation at the shoreline and in shallow water is formed by dense reed colonies of *Typha domingensis* and *Schoenoplectus tabernaemontani* (C.C. Gmel.) Palla and, to a lesser extent, *Bolboschoenus maritimus* (L.) Palla (s. lat.). Lakeward this belt follows a zone of dense submerged vegetation which, in reed gaps, stretches up to the shore line. The predominant species are *Myriophyllum spicatum* L. and *Stuckenia pectinata* (L.) Börner (syn. *Potamogeton pectinatus* L.). On the wide grazed meadow of the adjacent clayey geolitoral grow, e.g., *Atriplex prostrata* DC., *Chenopodium glaucum* L., *Crypsis alopecuroides* (Piller & Mitterp.) Schrad., *Cyperus flavescens* L., *Kickxia elatine* (L.) Dumort., *Cerastium fontanum* Baumg. and *Plantago major* subsp. *intermedia* (Gilib.) Lange. Behind the c. 1 m high lake shore bank there are saline vegetation patches with, e.g., *Festuca pseudovina* Wiesb., *Puccinellia distans* (Jacq.) Parl., *Limonium gmelinii* (Willd.) Kuntze, *Matricaria chamomilla* L., *Lotus corniculatus* L., *Bupleurum tenuissimum* L., *Camphorosma monspeliaca* L., *Lepidium perfoliatum* L., *Mentha pulegium* L., *Polygonum arenarium* Waldst. & Kit. etc. From the richness in halophytes or halotolerants among the vascular plant species locally accompanying *T. domingensis* one can assume a certain amount of salinity in the water body of Lake Oblačinsko which we consider to be slightly brackish although we had no immediate opportunity to carry out chemical analyses. (Fig. 3) This coincides with the observation easily made along the seashores and estuaries of the Ionian and Aegean Seas where *T. domingensis* is the species of the genus *Typha* which most successfully invades and colonizes tidal, brackish habitats.

CONCLUSIONS

In southern Europe, *Typha domingensis* is a predominantly Mediterranean geoelement and its finding in Eastern Serbia represents the most continental record within the species range in the central part of the Balkan Peninsula. The occurrences nearest to Lake Oblačinsko are in the Republic of Macedonia, in Rosomani (Vandas 1909: 561), in Montenegro near Novi Bar (Rohlena 1942: 499) and in Bulgaria in the Struma valley (Andreev 1992: 762). The presence of *T. domingensis* in Lake Oblačinsko is evidence of the noticeable impact of the Mediterranean-submediterranean climate in this region of Serbia.

The comparatively great similarity with other species of the genus *Typha* (especially with *T. angustifolia*) is the probable reason why the species has not been noted for the Serbian flora so far. Having in mind that there are similar salty habitats in the vicinity, such as Lalinačka salt marsh, as well as in southern Serbia (Aleksandrovačka salt marsh near the city of Vranje), additional finds of *T. domingensis* from these regions are to be expected.

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REZIME

Typha domingensis (Typhaceae) nova vrsta za floru Srbije

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Vrsta *Typha domingensis* otkrivena je tokom post-kongresne ekskurzije, a nakon V Balkanskog botaničkog kongresa (održanog u Beogradu, septembra 2009. godine) u regionu istočne Srbije (Oblačinsko jezero). Pregledom literaturnih podataka, utvrđeno je da ova vrsta do sada nije zabeležena na području Srbije. U ovom radu prezentujemo sledeće informacije: kratak opis, opšte rasprostranjenje, rasprostranjenje u Srbiji, kao i karakteristike staništa nove vrste za floru Srbije.

Ključne reči: *Typha domingensis*, *Typhaceae*, nov podatak, flora Srbije