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## NEW LOCALITIES OF THE *Sisyrinchium bermudiana* L. (*Iridaceae*) SPECIES IN CROATIA

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New, as well as already known localities of the *Sisyrinchium bermudiana* species in Croatia, are listed in the paper. The new localities are situated in Gornja Stubica (Hrvatsko Zagorje) and Rakov Potok, to the east of Samobor. The species grows in the scope of meadow and grass vegetation in these localities.

**Key words:** *Sisyrinchium bermudiana*, new localities, Croatia

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Navode se nova, kao i dosad poznata nalazišta vrste *Sisyrinchium bermudiana* u Hrvatskoj. Nova su nalazišta Gornja Stubica u Hrvatskom Zagorju i Rakov Potok istočno od Samobora. Na tim lokalitetima navedena vrsta raste u sastavu livadne i travnjačke vegetacije.

**Ključne riječi:** *Sisyrinchium bermudiana*, nova nalazišta, Hrvatska

### INTRODUCTION

In the course of floristic investigations in Hrvatsko Zagorje and Samobor in the spring of 1998, we encountered some new localities of *Sisyrinchium bermudiana* L. Since *S. bermudiana* is relatively rare in Croatian flora, each new locality of this most interesting species deserves due attention.

According to ASCHERSON & GRAEBNER (1905–1907), the genus *Sisyrinchium* encompasses 60 species, while, according to MELCHIOR (1964), it encompasses 80 species spread across both the Americas. According to INGRAM (1980), three Northern American species are spread in Europe: *Sisyrinchium bermudiana* L., *S. montanum* E. L. Greene, and *S. californicum* (Ker-Gawler) Aiton fil.

For a rather long time (PEVALEK, 1915; PAVLETIĆ *et al.*, 1980; HULINA, 1998), the opinion prevailed that the species found in Europe was *Sisyrinchium angustifolium* Miller. However, it turned out that the morphological description according to ASCHERSON & GRAEBNER (1905–1907) fully corresponded to *Sisyrinchium bermudiana* described by Linné.

As regards relations between the two taxa: *Sisyrinchium bermudiana* L. and *Sisyrinchium angustifolium* Miller, there are two opinions. According to INGRAM (1980), *Sisyrinchium angustifolium* Miller is a synonym for the species *Sisyrinchium bermudiana* L. However, PIGNATTI (1982) is of the opinion that the two taxa: *Sisyrinchium bermudiana* L. and *Sisyrinchium angustifolium* Miller are not synonymous, and that, as regards nomenclature, their relation would be as follows: *Sisyrinchium bermudiana* L. (= *Sisyrinchium angustifolium* Auct. Fl. Europ. vix Miller).

### Morphological characteristics of *Sisyrinchium bermudiana* L.

*Sisyrinchium bermudiana* is a perennial with a trailing rhizome. It has a delicate green winged stalk 20–30 i.e. 35 cm high, and narrow leaves, very similar to the leaves of grass. The inflorescence contains several (1–4) small flowers. The perianth segment is light blue, whitish-ashen on the outside, its diameter being up to 15 mm, with a very short tube (Fig. 1). The plant flourishes from the end of May to mid June, with its modest and barely noticeable flowers. It is interesting that the flowers open around 10 a.m. and close as soon as the early afternoon hours. The fruits of *S. bermudiana* are spherical capsules 3–4 mm in diameter, located in the upper part of the stalk on longer or shorter peduncles.

Due to its morphological characteristics, the plant is very easily overlooked, particularly if it has no inflorescence.

### *Sisyrinchium bermudiana* in Croatian flora

The species *Sisyrinchium bermudiana* was, under the name of *Sisyrinchium angustifolium*, discovered in the flora of Croatia as early as 1915 by Ivo Pevalek, near the former Samobor railway station in Podsused (PEVALEK, 1915). For a long time, it remained the only locality of the species in Croatia – probably, among other things, because the data on the new localities of *S. bermudiana* were never published. The Botanical Garden Herbarium of the Faculty of Natural Sciences and Mathematics University of Zagreb (ZA) holds specimens of species from Sutinska vrela near Podsused, picked by Vale Vouk (PAVLETIĆ *et al.*, 1980).

More recently, in the list of all known localities of the *Sisyrinchium bermudiana* taxon, also under the name of *Sisyrinchium angustifolium* Miller, PAVLETIĆ *et al.* (1980) and HULINA (1998), besides the two aforementioned localities near Samobor, also mention the following localities: Ludvić potok near Samobor, Stojdraga in Žumberak, Rauhova lugarnica and Kraljev Vrh on Mount Medvednica, Kupjak in Gorski Kotar, Mali Troglav on Mount Dinara, as well as two localities in the hills surrounding Samobor (Lavova draga, Draginja brdo).



Fig. 1. *Sisyrrinchium bermudiana* L. (Photo: I. Trinajstić)

## RESULTS & DISCUSSION

In the course of our floristic investigations in spring 1998, we found the *Sisyrrinchium bermudiana* species in the area of Gornja Stubica, formerly unknown in this particular locality. The species was also present, if poorly developed, in the area of Rakov Potok near Samobor.

All the hitherto known, as well as new, locations of *Sisyrrinchium bermudiana*, are shown in Fig. 2, based on the network for the floristic mapping of Croatia (NIKOLIĆ *et al.*, 1998).

By studying the known localities, it can be ascertained that *Sisyrrinchium bermudiana* is found and spread in the scope of meadow vegetation. According to the data supplied by OBERDORFER (1970) and ROTHMALER (1971), *S. bermudiana* is developed in the periodically wet meadows of the *Molinion* alliance.

On the territory of Croatia, *Sisyrrinchium bermudiana* grows within very different vegetation types. Thus, in the wider Zagreb area (Podsused and Kraljev Vrh), it

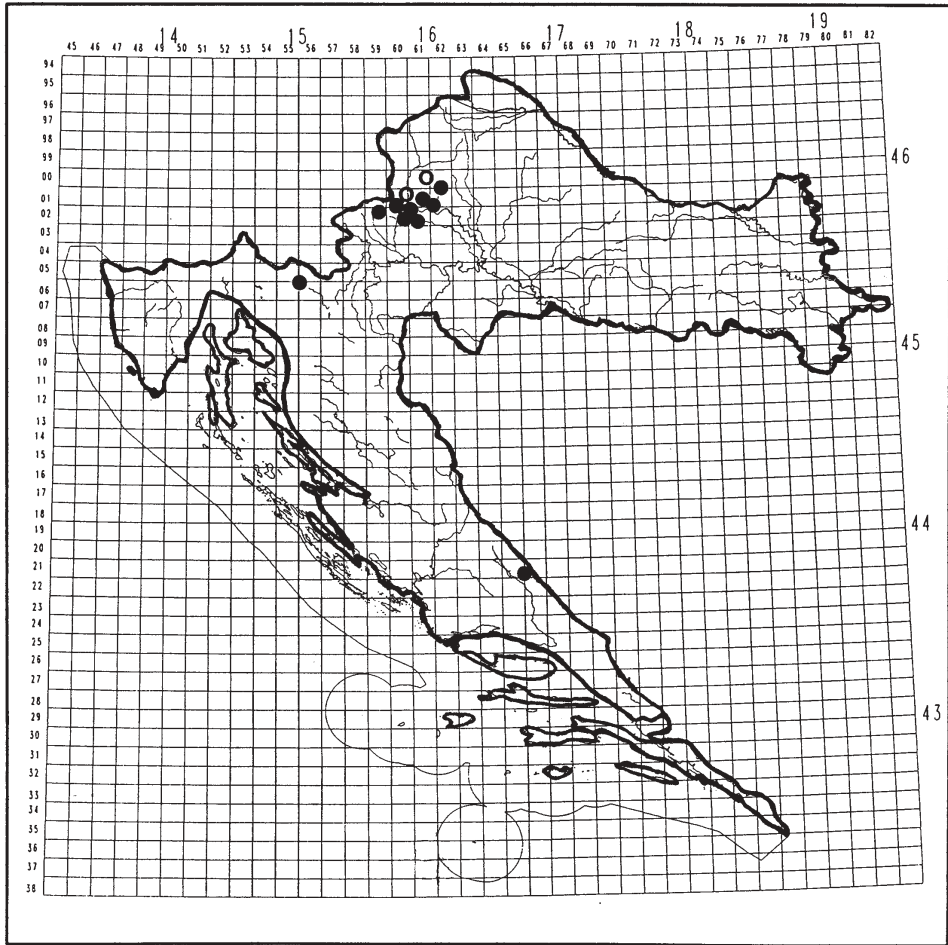


Fig. 2. Distribution of *Sisyrinchium bermudiana* L. species in the Republic of Croatia  
 ● The already known localities; ○ The new localities

appears within the Ass. *Bromo-Cynosuretum cristati*, while in Samobor Hills (Draginja brdo), it appears within the Ass. *Bromo-Plantaginetum mediae* or Ass. *Festuco-Agroseti*. In the new locality in Gornja Stubica, *Sisyrinchium bermudiana* grows within the Ass. *Arrhenatheretum elatioris*.

According to the above data, we may conclude that *S. bermudiana* has a relatively wide ecological appearance and is quite widespread in Croatia, while it reaches optimal development on the moderately wet meadows of the lowland and mountainous regions.

Since, in Europe, *Sisyrinchium bermudiana* constitutes an anthropochoric species, according to the chronological classification of anthropochors (TRINAJSTIĆ, 1975,

1977), it pertains to the group of americanoneophytes. According to SÜSSENGUTH (1939) *Sisyrinchium bermudiana* appears and behaves in certain localities as an ephemerophyte. However, by studying the morphological properties of the species, and particularly its most characteristic inflorescence, we could say that the latter seems highly improbable.

## CONCLUSION

The *Sisyrinchium bermudiana* L. species is a relatively rare plant in the flora of Croatia, with only a small number of known localities.

The paper deals with two new localities of *S. bermudiana* in Croatia (Gornja Stubica, Rakov Potok). Explorations of its distribution in Croatia so far carried out have shown that it is spreading anthropogenically to the northwest.

The presence of *Sisyrinchium bermudiana* in various types of meadow and grass vegetation points to the wide environmental range of the species in Croatia.

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## REFERENCES

- ASCHERSON, P. & P. GRAEBNER, 1905–1907: Synopsis der Mitteleuropäischen Flora. *Sisyrinchium*. 528–531. Verlag von Wilhelm Engelmann. Leipzig
- HULINA, N., 1998: Nova nalazišta i rasprostranjenost nekih rijetkih biljnih vrsta u flori Hrvatske. *Acta Bot. Croat.* **55/56**, 41–51.
- INGRAM, R., 1980: *Sisyrinchium* L. In: TUTIN T. G., W. H. HEYWOOD, N. A. BURGESS, D. H. VALENTINE, S. M. WALTERS & D. A. WEBB (Eds.) 1964–1980: *Flora Europaea*, **5**, 86–87. Cambridge Univ. Press. Cambridge.
- MELCHIOR, H., 1964: A. Engler's Sylabus der Pflanzennamen, **2**, Gebrüder Borntraeger. Berlin.
- NIKOLIĆ, T., D. BUKOVEC, J. ŠOPF & S.-D. JELASKA, 1998: Kartiranje flore Hrvatske-mogućnosti i standardi, *Nat. Croat.* **7(1)**, 1–62.
- OBERDORFER, E., 1970: *Pflanzensoziologische Exkursionsflora für Süddeutschland und die angrenzenden Gebiete*. Stuttgart.
- PAVLETIĆ, ZL., I. TRINAJSTIĆ & I. ŠUGAR, 1980: O rasprostranjenosti vrste *Sisyrinchium angustifolium* Mill. u Hrvatskoj., *Acta Bot. Croat.* **39**, 171–174.
- PEVALEK, I., 1915: *Sisyrinchium angustifolium* Mill. u Hrvatskoj. *Prir. istraž. Jugosl. Akad.* **7**, 1–2.
- PIGNATTI, S., 1982: *Flora d'Italia*. *Edagricole* **3**, 411.
- ROTHMALER, W., 1972: *Exkursionflora*. Berlin.
- SÜSSENGUTH, K., 1939: *Monocotyledones*. – In: HEGI, G., III *Fl. Mitteleurop.* **2**, München.
- TRINAJSTIĆ, I., 1975: Kronološka klasifikacija antropohora s osvrtom na helenpaleofite Jadranskog primorja Jugoslavije. *Biosistematika* **1**, 79–85.
- TRINAJSTIĆ, I., 1977: Chronological classification of the Athropochors. *Fragm. Herbol. Jugosl.* **2**, 27–31.

## SAŽETAK

### Nova nalazišta *Sisyrinchium bermudiana* L. (*Iridaceae*) u Hrvatskoj

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Tijekom florističkih istraživanja u proljeće 1998. godine na području Gornje Stubice pronađena je vrsta *Sisyrinchium bermudiana* L., koja na tom lokalitetu dosad nije bila poznata. Navedena vrsta nađena je i na području Rakovog Potoka kraj Samobora. Budući da je *S. bermudiana* relativno rijetka biljka hrvatske flore, svaki novi nalaz te zanimljive vrste zaslužuje pozornost.

Iz dosadašnjih se istraživanja rasprostranjenosti navedene biljke može zaključiti da se ona u Hrvatskoj širi antropohorno prema sjeverozapadu.

Prisutnost *Sisyrinchium bermudiana* u sastavu livadne i travnjačke vegetacije različitih biljnih zajednica, ukazuje na široki ekološki raspon ove vrste u Hrvatskoj.