

FUMARIA JUDAICA SUBSP. *INSIGNIS* (PUGSLEY) LIDÉN (*PAPAVERACEAE*): A NEW FLORISTIC RECORD IN THE FLORA OF BOSNIA AND HERZEGOVINA AND NEW DISTRIBUTION DATA FOR THE TERRITORY OF CROATIA

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F. judaica subsp. *insignis* is a rare taxon in Europe. So far, this taxon has been reported only in Croatia, from a few localities along the Eastern Adriatic coast. *F. judaica* subsp. *insignis* is now reported for the first time for the flora of Bosnia and Herzegovina, and its distribution is extended to three new localities in Dalmatia.

Key words: Dalmatia, distribution, flora, *Fumaria*, Herzegovina, new taxon

Maslo, S.: *Fumaria judaica* subsp. *insignis* (Pugsley) Lidén (*Papaveraceae*): novi floristički nalaz u flori Bosne i Hercegovine i novi podaci o rasprostranjenosti na području Hrvatske. *Nat. Croat.*, Vol. 29, No. 2, 307–311, 2020, Zagreb.

F. judaica subsp. *insignis* rijetka je svojta u Europi. Do sada je zabilježena samo u Hrvatskoj, na nekoliko lokaliteta uz obalu istočnog Jadrana. *F. judaica* subsp. *insignis* se ovdje prvi put navodi za floru Bosne i Hercegovine, a rasprostranjenost taksona se proširuje na tri nova lokaliteta u Dalmaciji.

Ključne riječi: Dalmacija, rasprostranjenost, flora, *Fumaria*, Hercegovina, nova svojta

INTRODUCTION

The genus *Fumaria* comprises approximately 60 predominantly Mediterranean species, some extending into central Europe, and others further west. Some may be found in India and a few in the mountains of East Africa (MURPHY, 2009). Most accounts of *Fumaria* place great emphasis on the need for fully developed flowers and ripe, dry fruits for identification. The genus is divided into two sections, *Capreolatae* and *Fumaria* (LIDÉN, 1986).

In the flora of Bosnia and Herzegovina, 11 taxa of the genus *Fumaria* have been recorded (*Fumaria capreolata* L., *F. densiflora* DC., *F. flabellata* Gasp., *F. gaillardotii* Boiss., *F. kralikii* Jord., *F. officinalis* L. subsp. *officinalis*, *F. officinalis* subsp. *wirtgenii* (W. D. J. Koch) Arcang., *F. parviflora* Lam., *F. petteri* Rchb. subsp. *petteri*, *F. rostellata* Knaf and *F. vaillantii* Loisel.) (BECK VON MANNAGETTA, 1916; MALÝ, 1927; TRINAJSTIĆ, 1973; MASLO, 2015).

Fumaria judaica Boiss. belongs to east Mediterranean floral element and its native distribution range is along the coast of the Eastern Mediterranean from Palestine to the Adriatic Sea, and to Egypt and Libya. It grows on walls, stony places, roadsides, but also penetrates into the garrigue. *F. judaica* belongs to the section *Capreolatae* (LIDÉN, 1986). According to LIDÉN (1986, 2011) *F. judaica* Boiss. is divided into three subspecies: *F. judaica* Boiss. subsp. *judaica*, *F. judaica* subsp. *amarysia* (Boiss. & Heldr.) Lidén and *F. judaica* subsp. *insignis* (Pugsley) Lidén. Focusing on these three subspecies, only *F. judaica* subsp. *judaica* has any very wide distribution in the Eastern Mediterranean. On the other hand, *F. judaica* subsp. *amarysia* is prevalent only in the territory of Greece, while *F. judaica* subsp. *insignis* is indicated only for the territory of Croatia.

So far, *F. judaica* subsp. *insignis* has not been recorded in the territory of Bosnia and Herzegovina. It was recorded in Croatia mostly on the Dalmatian islands of Dugi otok, Lastovo, the Palagruža archipelago and Vis (NIKOLIĆ, 2013), and has more recently been also reported from the Krka National Park (SEDLAR *et al.*, 2010) and from the Kvarner islands of Cres and Lošinj (FISCHER, 2015).

MATERIAL AND METHODS

During fieldwork conducted in Split (Dalmatia) and Počitelj (Herzegovina) in April 2018 and April 2019, several specimens of *F. judaica* subsp. *insignis* were collected. The specimens were identified according to LIDÉN (1986) and deposited in the Herbarium of the National Museum of Bosnia and Herzegovina (SARA 51998; 60018). Digital photographs and GPS coordinates were taken in the field. Plant taxonomy and nomenclature followed the Euro-Med checklist (EURO+MED 2006). The distribution of the taxon in Bosnia and Herzegovina and Croatia is shown on the map using standard 10 x 10 km UTM grid. Localities gathered from the literature are indicated in black on the map, while new data are indicated in red (Fig. 1).

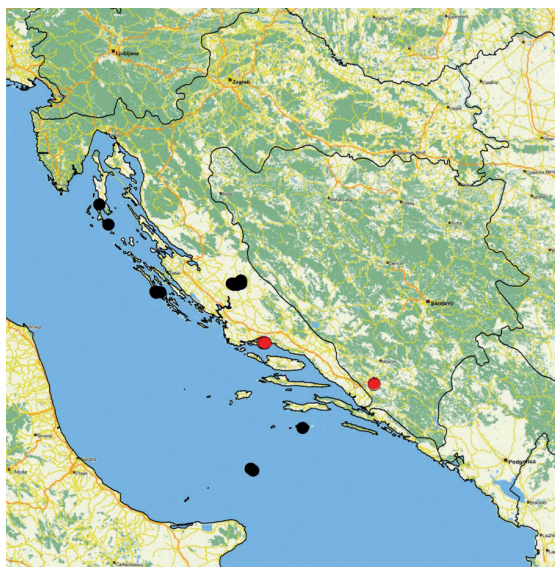


Fig. 1. Distribution of *Fumaria judaica* subsp. *insignis* in Bosnia and Herzegovina and Croatia (indication of localities: red circle - new chorological data; black circle - old literature data).

RESULTS AND DISCUSSION

In April 2019, four *Fumaria judaica* subsp. *insignis* plants were found in southern Herzegovina, in the old town of Počitelj, near Čapljina. Occurrence of this taxon has not been previously reported from Bosnia and Herzegovina. Likewise, no herbarium voucher of this taxon originating from Bosnia and Herzegovina was found in the Herbarium of the National Museum of Bosnia and Herzegovina during this study. The taxon was observed on April 16, 2019, on old walls at the entrance to the old town of Počitelj (43° 08' 06" N; 17° 43' 50" E, 16 m a.s.l.) (Fig. 2). Here, *F. judaica* subsp. *insignis* grows with characteristic wall-dwelling plants of the class *Parietarietea judaicae* Oberd. 1977 (BRULLO & GUARINO, 1998), such as *Arenaria leptoclados* (Rchb.) Guss., *Asplenium ceterach* L. subsp. *ceterach*, *Asplenium ruta-muraria* L., *Asplenium trichomanes* subsp. *quadriovalens* D. E. Mey., *Campanula erinus* L., *Cymbalaria muralis* P.Gaertn., B. Mey. & Scherb. subsp. *muralis*, *Parietaria judaica* L., *Umbilicus horizontalis* (Guss.) DC. and *Veronica cymbalaria* Bodard.

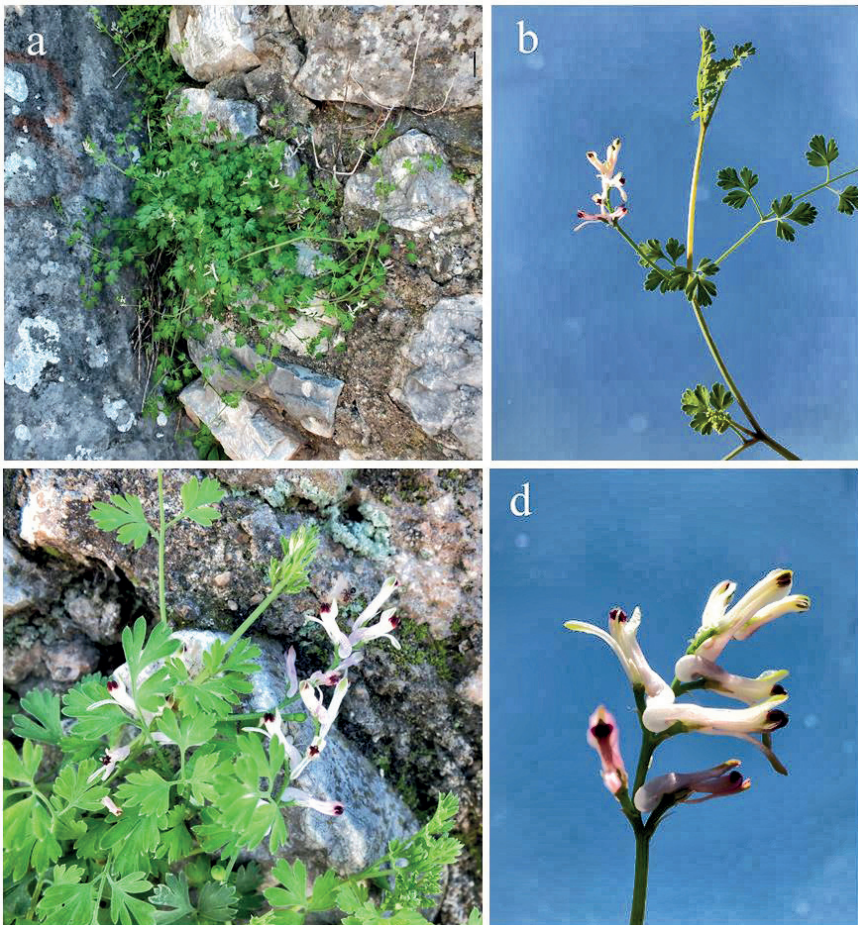


Fig. 2. *Fumaria judaica* subsp. *insignis* on the damp shaded walls in Počitelj, Herzegovina; a. habitat, b. whole plant, c, d. inflorescence (Photo by S. Maslo, April 16, 2019).

Recent chorological data were gathered from Dalmatia (South Croatia), all within the city of Split, on Marjan Peninsula, on April 06 2018. The first locality was at Sustipan (43°30'05" N, 16°25'36" E, 7 m a.s.l.), where five specimens were recorded on damp shaded walls and on surrounding rocks together with *Allium neapolitanum* Cirillo, *Anisantha madritensis* (L.) Nevski, *Mercurialis annua* L., *Parietaria judaica* L., *Stellaria media* (L.) Cirillo, *Veronica cymbalaria* Bodard, etc. (Fig. 3). The second locality was at Meje (43°30'19" N, 16°24'28" E, 16 m a.s.l.), where two specimens were recorded on the old stone walls along the Ivan Meštrović Promenade, across from the Villa Dalmacija facilities, together with *Anisantha madritensis* (L.) Nevski, *Fumaria gaillardotii* Boiss., *Mercurialis annua* L., *Parietaria judaica* L., *Umbilicus horizontalis* (Guss.) DC., *Veronica cymbalaria* Bodard, etc. The third locality was at Kašjuni (43°30'16" N, 16°24'09" E, 16 m a.s.l.), where four specimens were recorded on slopes of waste and soil piles near Kašjuni Bay, together with *Fumaria bastardii* Boreau, *F. capreolata* L., *F. officinalis* L. subsp. *officinalis*, *Mercurialis annua* L., *Rapistrum rugosum* (L.) All., *Stellaria media* (L.) Cirillo etc.

All specimens collected from Herzegovina as well as those from Split have all the characteristics of the subspecies *F. judaica* subsp. *insignis*, cited by LIDÉN (1986), which confirms that this taxon is present not only in Croatia, but also in Bosnia and Herzegovina. According to TRINAJSTIĆ (1973) and LIDÉN (2011), *F. judaica* subsp. *judaica* is not present in the flora of Croatia. FISCHER (2015), on the other hand, states the presence of this taxon on the two Kvarner islands.

CONCLUSION

The newly found sites with *F. judaica* subsp. *insignis* in Dalmatia are an important finding confirming the occurrence of this taxon in Dalmatia as well as first known site of this taxon for Bosnia and Herzegovina. It is very likely that *F. judaica* subsp. *insignis* is more widespread in both the coastal region of Croatia and southern Herzegovina. Given all the difficulties in determining the taxa of this genus, there is a high likelihood of confusion with other species. Further field researches as well as revision of the herbarium material are absolutely necessary.

Considering the low number of individuals and small extent of occurrence, *F. judaica* subsp. *insignis* should be treated as an insufficiently known taxon in the flora of Bosnia and Herzegovina.

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