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Original scientific paper

THE DISTRIBUTION OF THE SPECIES *RANUNCULUS CASSUBICUS* L. IN CROATIA

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The distribution of the species *Ranunculus cassubicus* L. in Croatia is analyzed and a new locality of this species is reported. Out of two localities (in the surroundings of Samobor) reported so far, the one along the stream Breganica was confirmed during 1993 while the other, located along the stream Gradna, was found to be considerably destroyed by construction works. An analysis of the herbarial specimens (ZA) has been made.

Introduction

The Euroasian species *Ranunculus cassubicus* L. is widely spread in the central and eastern parts of Europe. In the marginal regions of this range its localities are less frequent and not numerous, and, as such, they are given a special attention. For us, particularly interesting are localities in the north-western parts of Croatia which, together with those from northern Italy, make the south-western border of the range of this species.

Since this is the case of an absolutely rare species in the Croatian flora (Šugar 1972), seriously endangered or even completely extinct in some places, it is necessary to present some new facts about its localities and its importance for the Croatian flora.

Localities in Croatia

As it is visible from the European range of the species *R. cassubicus* (Jalas & Suominen 1989) the mark, entered into the map of Croatia, refers to two localities which, although located in separate valleys – along the streams

Gradna and Breganica (near Samobor), are only a few kilometers away from each other (Š u g a r 1972).

In 1993, during a visit to the marked localities it was found that the population in the Breganica valley was very well developed, while the locality along the stream Gradna has been rather destroyed due to the constructions works in this presently suburban part of Samobor.

R. cassubicus was found and collected as early as 1976 on another rather distant locality, in Hrvatsko Zagorje (Hb J. Trinajstić) – in a humid black alder forest on the left side of the road a few kilometers before Kumrovec, when coming from the direction of Tuheljske Toplice. In the last years this locality was confirmed, and it presents an absolutely isolated exclave in a series of similar localities in the south-western part of the range of this species, in the Subalpine region of northern Italy (Pignatti 1976, 1982; J alas & S u o m i n e n 1989).

In the herbarial collection ZA there are two specimens of the species *R. cassubicus* ex Herbarium Schlosser, with indication »In Sylvis ad Jurja Ves prope Zagreb«, without any data indication (they refer to the 2nd half of the 19th century). That is not in conformity with the quotation which refers precisely to these herbarial specimens: »Until now this species has neither been found in the Croatian herbarium nor determined with certainty so, practically, it does not exist at all in the Croatian flora.« (Š u g a r 1972).

It must be pointed out that in the Herbarium ZA there is another specimen designated as *R. cassubicus*, which was gathered by Hirc who indicated the locality of Kuželj (Gorski Kotar) but without a date. Careful examination (T u t i n 1964; T r i n a j s t i ć 1973) showed, beyond any doubt, that it was *R. auricomus* L., as it was determined later by Hirc himself, too (H i r c 1908).

From the above mentioned facts the following can be stated: 1. Nowadays, there are only three localities that may undoubtedly be considered as habitats of the species *R. cassubicus* in Croatia – the valley of the stream Breganica, at the foot of Žumberačko Gorje and along the stream Gradna, at the foot of Samoborsko Gorje (Š u g a r 1972), and then, along the road to Kumrovec, in Hrvatsko Zagorje (Fig. 1); 2. Due to urbanization, the locality in Jurja Ves (Maksimir, a part of Zagreb) has been destroyed, which, besides, was not confirmed in the last hundred years; 3. Hirc's specimen (ZA), designated as *R. cassubicus*, refers to *R. auricomus* and should, therefore, be put in its proper place.

Taxonomic position of populations of the species *R. cassubicus* in Croatia

R. cassubicus s.l. is a relict, tertiary species with very marked polymorphism manifested especially in the marginal parts of its range, in populations isolate from each other. This polymorphism is strenghtened in particular by a strongly marked apomixis, which is one of the essential characteristics of this species (Pignatti 1976, 1982), and which, among other things, explains the existence of numerous forms, many of which have been raised to the status of independent species (conf. Pignatti 1976). The isolated, apomixic populations are genetically uniform, and morphologically they differ between

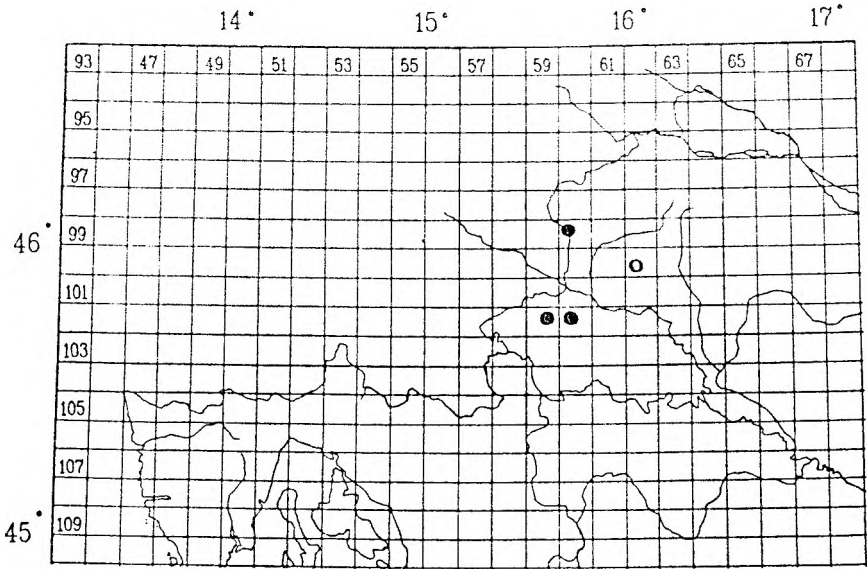


Fig. 1. Localities of the species *R. cassubicus* in Croatia:

- - reliable finds (9960/1 = Kumrovec, 10259/2 = Breganica, 10260/1 = Gradna)
- - most probably destroyed (10062/3 = Maksimir)

themselves, in the first place by the shape of their basal and cauline leaves – by the shape of its lamina and margin, which is used for the determination of »small« species (conf. Pignatti 1976).

From this aspect, all populations from Croatia correspond mostly to the species *R. cassubicus* s.s. (Tutin 1964, Pignatti 1976) – basal leaves are reniform, integral (neither incised nor divided!) with crenate margin while the cauline ones, developed at the base of a loosely branched inflorescence are palmate with lanceolate segments 3–5 times longer than their width, and with dentate margins. All in all, our plants are robust, 30 cm high and higher.

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RASPROSTRANJENOST VRSTE *RANUNCULUS CASSUBICUS* L. U HRVATSKOJ

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Dosada je *R. cassubicus* u hrvatskoj flori zabilježen na dva lokaliteta – uz potoke Gradnu i Breganicu u okolici Samobora (Š u g a r 1972). U ovom je radu objavljen novi nalaz – u vlažnom šumarku crne johe uz cestu kraj Kumrovca. Nalazišta uz Breganicu i Gradnu su potvrđena, ali je za ono uz potok Gradnu ustanovljeno da je građevinskim radovima djelomično uništeno, a u cijelosti vrlo ugroženo.

Analizom herbarske zbirke ZA ustanovljeno je da ipak postoje primjerci koje je u 2. polovici 19. stoljeća skupio Schlosser u Maksimiru, premda taj lokalitet nije nikada kasnije potvrđen. Za primjerak u ZA, koji je našao Hirc na lokalitetu Kuželj, definitivno je determinacijom utvrđeno da se odnosi na vrstu *R. auricomus* L.

Stoga možemo govoriti o tri lokaliteta na kojima u Hrvatskoj raste *R. cassubicus*, a četvrti je, najvjerojatnije, građevinskim radovima posve uništen (sl. 1).

R. cassubicus s.l. je vrlo polimorfna, u Europi široko rasprostranjena vrsta, a naši primjerci oblikom svojih listova i visinom ukazuju na pripadnost uže shvaćenoj vrsti *R. cassubicus* s.s. Posebno valja naglasiti da se radi o vrlo rijetkoj i naročito ugroženoj vrsti hrvatske flore.

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