

## OROBANCHE ALBA SUBSP. MAJOR IN HUNGARY

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The presence of the little known *Orobanche alba* subsp. *major* in Hungary, not treated in existing Hungarian botanical literature, is discussed in context of the known range of the taxon in Europe. The actual distribution in Hungary is also shown based on data including the herbarium of BP. A brief taxonomic history with synonyms and its morphological and phenological features of the subspecies are also provided.

Key words: broomrape, distribution, host plant, taxonomy

### INTRODUCTION

*Orobanche alba* Willd. is a widely distributed and variable broomrape species with a range including most of Europe, occurring northward even to Sweden (ROSVALL 1979). There is no clear-cut infraspecific division of the species shown by disagreement in treatments of the species in the broad sense. For example, CHATER and WEBB (1972: 290) do not give any intraspecific taxa, while BECK (1890) discusses a number of them. Hungarian flora works (*e.g.* SIMON 1992, 2000) also do not mention any infraspecific taxon.

Literature sources mention various species as host plants of *O. alba*; its hosts are mainly *Thymus* species, but it may be a parasite of *Clinopodium*, *Calamintha*, *Origanum* and *Salvia* species, and BECK (1890) mentions it even from species of *Euphorbia* and *Potentilla*.

### RESULTS

#### Brief taxonomic history of *Orobanche alba* subsp. *major*

*Orobanche alba* subsp. *major* was recognised and described by ČELAKOVSKÝ (1871) under the name *Orobanche epithymum* DC. var. *major*

Čelak. Later BECK (1890), together with many other varieties of *O. alba*, also listed “(*Orobanche maxima*”, and *O. epithymum* DC. var. *major* as its synonym. The description of Beck is not very detailed, and it does not refer to any localities or collected specimens. Zázvorka (in KIRSCHNER and ZÁZVORKA 2000) elevated Čelakovský’s variety to subspecific level, with the name *Orobanche alba* Willd. subsp. *major* (Čelak.) Zázv.

SOÓ (1968) treated the plant under *O. a.* var. *epithymoides* (Duby) Rouy as f. *maxima* (Čelak.) Rouy: “flowers 25–30 mm long, inflorescence dense and many flowered, cylindrical”, and does not mention any other differences against *O. alba* subsp. *alba*.

SĂVULESCU (1961: 50) discussed the plant as *O. alba* f. *maxima* Beck, and highlights the fact, that it is a parasite of *Salvia* spp.

#### Distribution of *Orobanche alba* subsp. *major*

The locus classicus of *O. alba* subsp. *major* is in the Czech Republic, from where Zázvorka published additional occurrences from the area of České středohoří and Bílé Karpaty; also highlighted that *Orobanche alba* had occurrences in Slovakia in locations where *Salvia* species were present and gave a few localities for subsp. *major* from there (e.g. near Párkány/Šturovo) (ZÁZVORKA 1997).

SĂVULESCU (1961: 50) mentions the taxon from Transsylvania citing only one occurrence: Földra [Feldru] between Óradna and Naszód (Fig. 1). JOSIFOVIĆ (1974: 296) and FISCHER *et al.* (2005) do not mention any occurrences of *O. alba* subsp. *major* either in Serbia or in Austria.

From Hungary SOÓ (1968) mentions it from the Buda and Gerecse Mts, but does not provide any exact location. In the herbarium of the Hungarian Natural History Museum (BP) a few specimens of *Orobanche alba* subsp. *major* (rev. Z. Barina) were located, with their original identification only giving as *Orobanche alba* Willd., collected in the surroundings of Hármashatár-hegy (Buda Mts). Supposedly, these have given the basis of their records in the Buda Mts in SOÓ (1968); the source of the record of the Gerecse Mts is unknown (BARINA 2006). Specimens of *Orobanche* from early collectors include those of Julius Tauscher near Ercsi (labelled as *Orobanche rubens*), and from Boros near Lovasberény; all these belong also to *O. alba* subsp. *major* (rev. Z. Barina) (Appendix 1).

In 2001 vigorous populations of this subspecies have been found by the author in several locations of the eastern part of the Gerecse Mts (Bajna, Epöl, Gyermely) and at the foot of the Pilis Mts (Kesztlöc). In the following years many additional occurrences became known in this region (Appendix 2, Fig. 2).



Fig. 1. Known occurrences of *O. alba* subsp. *major* in Europe

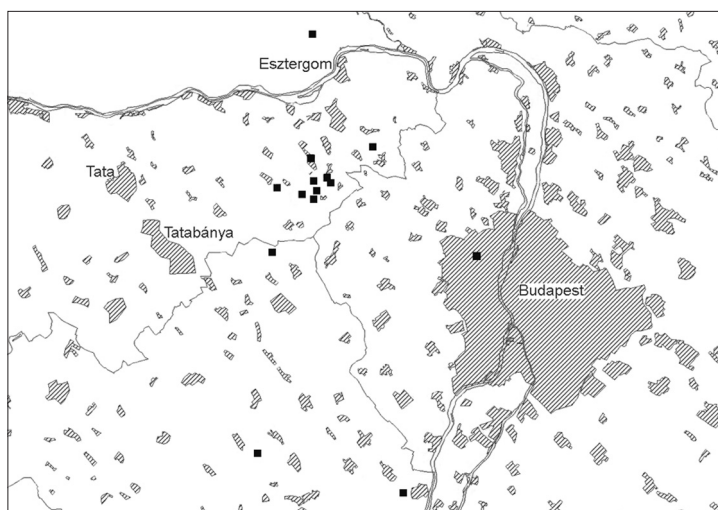


Fig. 2. Actually known distribution of *Orobanche alba* subsp. *major* in Hungary

### Characteristics of *Orobanche alba* subsp. *major*

While *Orobanche alba* subsp. *alba* is a small plant, usually 8–25 cm tall, subsp. *major* is more robust: 30–65 cm tall. Flowers of subsp. *alba* are smaller, while those of subsp. *major* larger (cf. SOÓ 1968). In Hungary subsp. *alba* flowers from the beginning of May to the beginning or middle June, with main flowering time in middle May; subsp. *major* usually flowers from the beginning of June (some specimens in some years already at the end of May), with a mean flowering time in the middle and end of June, but the flowering time may last until middle August.

Main host plants of *Orobanche alba* subsp. *alba* in Hungary are thyme species, but based on our observation it exclusively occurs on the species of *Thymus*, so other hosts in Hungary need to be verified. *Orobanche alba* subsp. *major* grows on *Salvia* species; according to our observations mainly on *S. nemorosa*, rarely on *S. pratensis*, but ZÁZVORKA (1997) mentions it also on *S. verticillata*.

### Habitat

In Hungary *Orobanche alba* subsp. *alba* occurs in dry – frequently rocky – grasslands, while subsp. *major* in less dry, sometimes semi-dry–humid places, e.g. in loess valley bottoms (e.g. Gyermely, Keszölc, Máriahalom), in forest clearings on Sarmatian limestone (Csabdi), but sometimes also in arid loess hillsides (Garamkövesd, Sárísáp).

### DISCUSSION

It is concluded that besides the relatively common *Orobanche alba* subsp. *alba*, another – lesser known – taxon is present in Hungary, namely *Orobanche alba* subsp. *major*. The two subspecies are distinctive in many morphological characters, they have different host plants, different flowering seasons and they grow in different habitats.

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**Appendix 1.** Specimens of *Orobanche alba* Willd subsp. *major*  
(Čelakovský) Zázvorka in BP (rev. Z. Barina)

1. Hármashatár-hegy, leg.: Vajda, L. 14.07.1932. BP 285512
2. Hármashatár-hegy, leg.: Papp, J. 06.07.1944. BP 471432
3. Comit. Fejér. In locis ad marginem silvae vallis Mária-völgy prope Lovasberény, leg.: Boros, Á. 06.06.1937. BP 458916
4. Comit. Alb. E radice Thymi ... prope oppidum Ercsi (*O. rubens*), leg.: Tauscher, Gy. 06.1868
5. Comit. Alb. ... Peucedanii prope Ercsi Komlós Kert, leg.: Tauscher, Gy. 06.1870
6. Budapest, Vihar-hegy. Gazdanövény: *Stachys*. Párta rózaszínbe játszó fehér, sötétebb pontozással [Host plant: *Stachys*. Corolla pinkish white with darker points], leg.: Vajda, E. 26.06.1949. BP 234588

**Appendix 2.** Observed occurrences of *Orobanche alba* Willd  
subsp. *major* (Čelakovský) Zázvorka in Hungary

Bajna: Öreg-Őr-hegy (13.06.2001; on *Salvia pratensis*)  
Csabdi (Vasztély): Bükkös-tető (08.07.2004; on *Salvia pratensis*)  
Epöl: Hegyen-át (30.06.2001; on *Salvia nemorosa*)  
Gyermely: "Siklóernyő-hegy" (12.07.2001; on *Salvia nemorosa*)  
Kesztlőc: Tatárszállás (08.07.2001; on *Salvia pratensis*)  
Máriaalom: Ördög-völgy (16.06.2002; on *Salvia nemorosa*)  
Sárisáp: Falu fölött (04.07.2003)  
Úny: Haraszti-dűlő (16.06.2002; on *Salvia nemorosa*)