

The pink flowering *Crepis rubra* (Asteraceae) – new for the Bulgarian flora

Dimitar Peev, Stoyan Stoyanov, Malina Delcheva & Natalia Valyovska

Institute of Botany, Bulgarian Academy of Sciences, Acad. Georgi Bonchev St., bl. 23, 1113 Sofia, Bulgaria; e-mail: dpeev@bio.bas.bg; stoyanov@bio.bas.bg

Received: January 19, 2009 ▷ Accepted: February 02, 2009

Abstract. *Crepis rubra* is reported for the first time for the Bulgarian flora. The species was discovered near Madzharovo town, in the floristic region of the Eastern Rhodopi Mts. The article contains information about its morphology, general distribution, habitat, and population.

Key words: Bulgaria, chorology, *Crepis*, population

Introduction

Genus *Crepis* L. in Bulgaria was subject to biosystematic study less than a decade ago. The taxonomic scheme of the Bulgarian representatives comprises 17 species belonging to 13 sections (Dimitrova 2001).

In mid-April 2008, during a field work in the Eastern Rhodopes for the identification of important plant areas in Bulgaria, an unfamiliar to us annual pink flowering representative of tribe *Cichorieae* from *Asteraceae* was found. During the intentional second visit of the locality in mid-May 2008, the authors gathered individuals with well developed achenes. Their characteristics corresponded to those of genus *Crepis*, irrespective of the fact that the so far known Bulgarian species are yellow flowering. In *Flora Europaea*, genus *Crepis* comprises 70 species (Sell 1976), but only four taxa are pink flowering: *C. incana* Sm., *C. praemorsa* subsp. *dinarica* (Beck) P.D.Sell., *C. purpurea* (Willd.) M. Bieb., and *C. rubra* L. The collected specimens were determined as belonging to *C. rubra*. Contrary to it, the other three taxa are characteristic with their perennial life cycle and formation of uniform and close in size achenes.

Results and discussions

Crepis rubra is the only pink flowering representative of genus *Crepis* in Bulgaria. In the tribe *Cichorieae* predominate the yellow flowering species. The pink or pink-purplish colour of the ligules is rare as in *Crepis* so in other genera of the tribe: *Tragopogon*, *Scorzoneria*, *Lactuca*, etc.

Crepis rubra is referred to sect. *Barkhausia* (Moench) Gaudin. So far the only representative of this section in Bulgaria was *C. foetida* L. (yellow flowering). Both species (*C. rubra* and *C. foetida*) are characterized with their nodding capitulum prior to flowering and the presence of two types of achenes: marginal with a short beak and central with a longer slender beak, equal or exceeding in length the fertile part of the achene.

Crepis rubra L. (Fig. 1)

The morphological description of individuals collected by the authors from the local population fits the general characteristic of the species. For comparison, in brackets, some qualitative and quantitative characteristics are given according to *Flora Europaea* (Sell 1976) and *Flora of Turkey* (Lamond 1975).



Fig. 1. *Crepis rubra*:
A – whole plant;
B – achenes.

Annual, with slender root, 20–30 cm (4–40 cm). Stems 1 to many, simple or with 1 branch, \pm glabrous. Leaves with pale simple eglandular hairs, basal 2–7 \times 0.5–2 cm (2–15 \times 0.5–3 cm), oblanceolate, pinnatifid, with several pairs of lanceolate or triangular acute segments; cauline few mostly bract-like, the lower sometimes like the basal. Capitulum solitary (1 or 2), drooping before anthesis, 3–4 cm in diameter when flowering. Involucre 8–15 \times 5–8 mm (11–15 \times 4–10 mm), outer phyllaries lanceolate, pale or scarious, $\frac{1}{4}$ – $\frac{1}{2}$ as long as inner, \pm glabrous, inner phyllaries pubescent, with pale glandular and eglandular hairs. Ligules pink (pink or white). Achenes 6–18 mm (8.5–21 mm), dark brown, fusiform, spinulose, 10–20 ribbed, 2-morphic. Inner achenes 13–18 mm (12–21 mm), with a long, slender beak, marginal achenes 6–9 mm (8.5–9 mm), short-beaked, narrowly enclosed in the bracts. Pappus white, 5–7 mm.

General distribution

Crepis rubra is an autochthonous species for the European East Mediterranean. Its area extends to the southernmost parts of the Apennine Peninsula, southwestern (the Adriatic) and southern parts of the Balkan Peninsula, the Aegean islands and the Aegean coastline of Asia Minor. The species is mentioned as rare for the flora of Turkey and is known only from the region of Çanakkale (Lamond 1975). According to Euro+Med Plantbase, *C. rubra* occurs in Albania, Montenegro,

Croatia, Greece (including Crete and the East Aegean islands), Italy, Republic of Macedonia, and Asiatic Turkey. In phytogeographical aspect, the species is determined as steno-Mediterranean (Pignatti 1982).

Distribution in Bulgaria (Fig. 2)

Rhodopi Mts (*Eastern*): 2 km northwest from Madzharovo town. Eroded silicate terrain with southeastern exposition and approximate incline of 30°, west from the road between the Madzharovo town and Gorni Glavanak village (Haskovo district), 41.65205° N, 25.84088° E, 280 m, MG-01: 1. With flowers, 13.04.2008 (SOM 164523; 164524); 2. With fruits, 17.05.2008 (SOM 164525); coll. D. Peev, M. Delcheva & N. Valyovska; det. S. Stoyanov.

Habitat and population characteristics (Fig. 3)

The region is part of the volcanic crater of Madzharovo, which comprises agglomerations of volcanic rocks (tuffs), silicate scree, thinned out forests and shrubs, rocky pastures with variable humidity: ample in spring and insufficient in summer. The soils are Umbric Leptosols (LPu) and Chromic Luvisols (LVx) (Ninov 2002). Mixed xerothermic forests prevail, mainly dominated by *Quercus pubescens* and to a lesser extent by *Quercus frainetto*. Characteristic are also the communities of *Carpinus orientalis* and especially of *Acer monspessulanum*. There are vast stony terrains under *Paliurus spina-christi* communities (Mireva 2007).

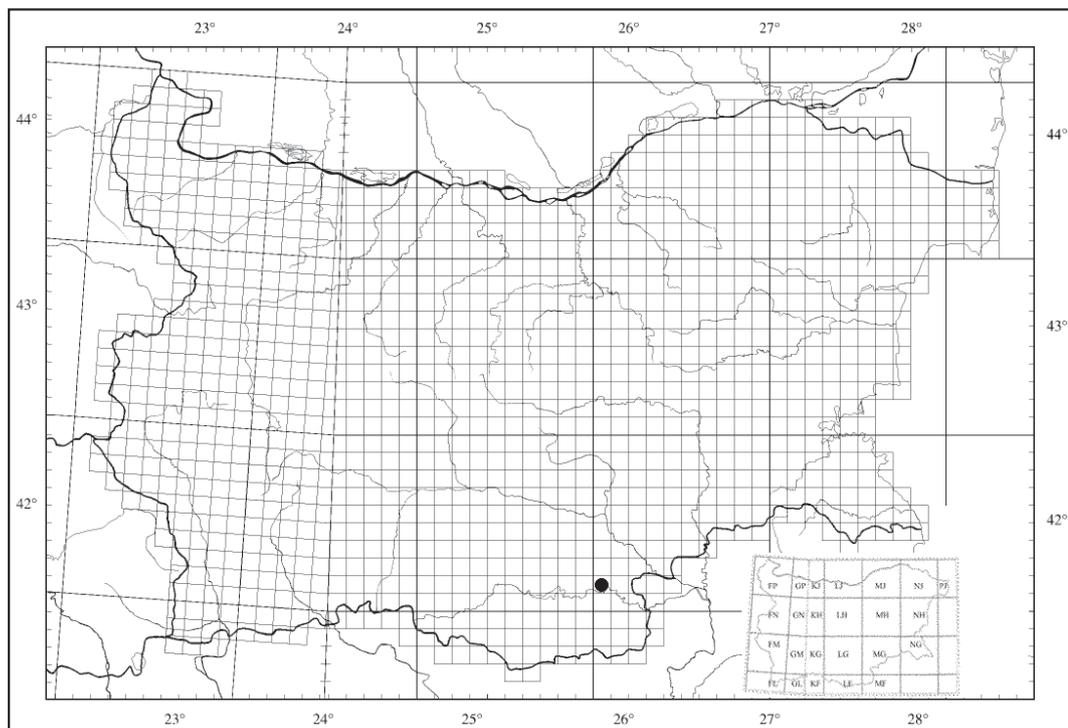


Fig. 2. UTM distribution map of *Crepis rubra* in Bulgaria.

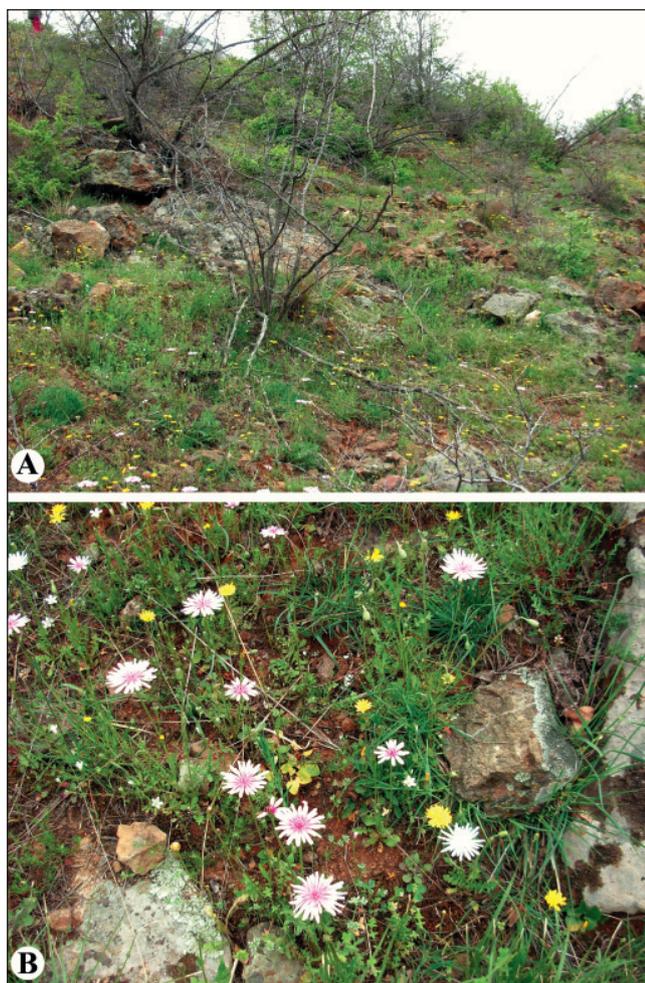


Fig. 3. Habitat (A) and population (B) of *Crepis rubra*.

The locality of the species is situated on the left-side bank of the river Arda, at the foot of the peak Yumurchal. In our opinion, it is a part of impoverished fragment of the habitat 91AA Eastern White Oak Forests (Kavrakova & al. 2005). The Submediterranean character of the habitat corresponds to the main (Mediterranean) zone of distribution of *C. rubra*. The population covers an area of 300 m² and numbers about 1000 individuals, which form several micro groups of 20 to 150 individuals, in a distance from each other of 5–10 m.

There are no direct threats impacting the population. Possible fragmentation of the habitat and the population may be caused by the natural erosion processes in the region.

Conclusion

Crepis rubra is a typical Mediterranean species and its finding in the Eastern Rhodopes confirms once again the tangible impact of the Mediterranean climate in this region. Its comparatively early flowering (the first half of April) and short life cycle are the probable reasons for the species not to be found and described for the Bulgarian flora so far. Some additional investigations in the region will specify its distribution in Bulgaria and the need of conservation measures.

Acknowledgements. The authors are grateful for the financial support of the project “Assessment and evaluation of Important Plant Areas in Bulgaria” (Plantlife International) and to Mrs Daniela Popova (Regional Head of the Rhodopi Project) for the help during the field work. Special thanks are extended to the anonymous reviewer for the critical notes.

References

- Dimitrova, D.** 2001. Biosystematic study of the genus *Crepis* L. (*Asteraceae*) in Bulgaria. *PhD Thesis*. Inst. Bot., Bulg. Acad. Sci., Sofia (in Bulgarian, unpubl.).
- Euro+Med Plantbase.** <http://www.emplantbase.org/home.html> (access: 19.01.2009).
- Kavrakova, V., Dimova, D., Dimitrov, M., Tzonev, R. & Belev, T.** 2005. Manual for Determination of Habitats with European Importance in Bulgaria. WWF–Danube Carpathian Programme & Green Balkan Federation, Sofia (in Bulgarian).
- Lamond, J. M.** 1975. *Crepis* L. – In: **Davis, P.H.** (ed.), Flora of Turkey and the East Aegean Islands. Vol. 5, pp. 814-841. Edinburgh Univ. Press, Edinburgh.
- Mireva, E.** (ed.). 2007. Biodiversity of the Rhodopes. UNDP, Sofia (in Bulgarian).
- Ninov, N.** 2002. Soils. – In: **Koprarev, I.** (ed.), Geography of Bulgaria. Physical Geography. Socio-economic Geography. Pp. 277-315. FarCom, Sofia (in Bulgarian).
- Pignatti, S.** 1982. *Crepis* L. – In: **Pignatti, S.** (ed.), Flora d'Italia. Vol. 3, pp. 269-282. Edagricole, Bologna.
- Sell, P.D.** 1976. *Crepis* L. – In: **Tutin T.G. & al.** (eds), Flora Europaea. Vol. 4, pp. 344-357. Cambridge Univ. Press, Cambridge.
-