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Geranium phaeum L. (Geraniaceae) and *Scabiosa rhodopensis* Stoj. & Stef. (Dipsacaceae) in the flora of the Republic of Macedonia

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Abstract

In this paper, new data of two, rather rare species in the flora of the Republic of Macedonia - *Geranium phaeum* and *Scabiosa rhodopensis*, are presented. *G. phaeum,* so far known only from literature data was found on Osogovo Mountains. That confirms the data of Urumov (1923), for the same mountains, but on other location. The only literature data for the presence of *S. rhodopensis* in the flora of the Republic of Macedonia, we find in the work of Soška (1939), for the locality "Lubenica" (=Labinica), in the region of Mariovo. In the same region, but on different location – Melnička Skrka (v. Melnica), we found well-developed population of *S. rhodopensis*.

Key words: distribution, new data, flora, rare species

Introduction

Although the flora of the Republic of Macedonia has been continuously studied by many botanists, for more than one and a half century, still data for new, rare or insufficiently known species appear. During the field-researches on Osogovo Mt, conducted in 2016, and, in the region of Mariovo, in 2010, populations of two rare species - *Geranium phaeum* and *Scabiosa rhodopensis* were found.

Material and methods

The material, collected during the field-researches, was processed by the standard methods. A relevant literature (Stojanoff and Stefanoff 1924, Hayek 1931, Tutin et al. 1968, Kokkini 1986, Micevski 2005, Petrova 2012) was consulted by the determination of the plant material. For the chorological data, the available floristic literature that considers the flora of the Republic of Macedonia, was checked out. Voucher specimens are deposited in the herbarium of the Macedonian Museum of Natural History (HMMNH).

Results and discussion

***Geranium phaeum* L.**

Mk: Osogovo Mountains (Kriva Palanka): village Stanci, along Stanečka River, 926 m a.s.l., N 42º10'41.2", E 22º22'56.2", 22.05.2016; Leg./Det. Z. Nikolov (HMMNH).

The genus *Geranium* L., in the flora of the Republic of Macedonia, is represented by 22 species (Micevski 2005). There are also some species of this genus that, according to the literature data, come on the territory of the Republic of Macedonia but their occurrence, during the investigations, was not confirmed. Consequently, those species were not listed in the Flora of the Republic of Macedonia. One of them is *G. phaeum* (Fig. 1, 2), recorded for the following mountains: Pelister (Jovanović 1904), Dautica (Petrović 1913), Osogovo Mt (Urumov 1923), Galičica (Černjavski 1943) and Bistra (Rizovski and Djekov, 1990). Beside the immense field-researches conducted on the whole territory of the Republic of Macedonia, Micevski (2005) did not confirmed the presence of the species. He assumed that *G. phaeum* might be confused by two, rather closely related species – *G. reflexum* L. and *G. aristatum*



Fig. 1. *Geranium phaeum* (Photo: Z. Nikolov)



Fig. 3. *Scabiosa rhodopensis* (Photo: Z. Nikolov)

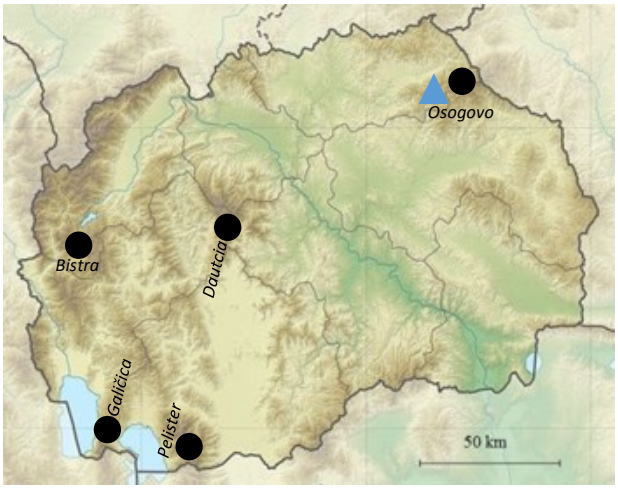


Fig. 2. Distribution of *Geranium phaeum* in the R. of Macedonia

▲ - new data ● - literature data

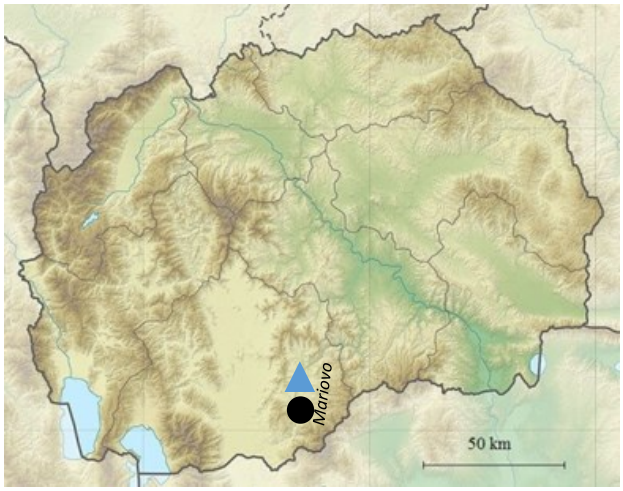


Fig. 4. Distribution of *Scabiosa rhodopensis* in the R. of Macedonia

▲ - new data ● - literature data

Freyn. & Sint. In addition, all three species come on the same above-mentioned mountains.

During the field-researches in 2016, a vigorous population of *G. phaeum* was found on the Osogovo Mt. It grows mostly on shady and moisture places, along Stanečka River (v. Stanci, Kriva Palanka). This finding is actually a conformation of the data obtained by Urumov (1923) about the presence of this species on the Osogovo Mt, but on other location.

G. phaeum is a wide-spread species in most of Europe, including all Balkan countries, except Greece (Aedo 2009).

***Scabiosa rhodopensis* Stoj. & Stef.**

[Syn.: *Lomelosia rhodopensis* (Stoj. & Stef.) Greuter & Burdet; *S. graminifolia* subsp. *rhodopensis* (Stoj. & Stef.) Verlaque].

Mk: Mariovo: on the marble blocks of the locality "Melnička Skrka", in the vicinity of the abandoned village Melnica; N 41°10'39.9", E 021°47'06.7", 897 m.a.s.l, 18.06.2016; Leg./Det.: Z. Nikolov (HMMNH).

In the flora of the Republic of Macedonia, the genus *Scabiosa* is represented by several species. Among them, *S. rhodopensis* deserves special attention (Fig. 3, 4). This species, described by Stojanoff & Stefanoff (1924) for the Rhodopi Mt (Bulgaria) was so far considered to be endemic only for Bulgaria and Greece (Jasievič 1976; Kokkini 1986; Petrova 2012; Domina 2017). The only data of Soška (1939, locality "Lubenica" = Labinica, Mariovo) that *S. rhodopensis* comes on the territory of the Republic of Macedonia was not considered by the above-mentioned authors. The field-researches, conducted in the region of Mariovo, in 2010, when for the first time, well-developed population of this species was found on the locality "Melnička Skrka", in the vicinity of the abandoned v. Melnica (Fig. 4), confirmed the data of Soška (1939), about the presence of this species in the flora of the Republic of Macedonia. This finding was also confirmed in the years later, 2014 and 2016.

The distribution of *S. rhodopensis,* based on our new finding, that is, as we have already mentioned, confirmation of the data of Soška (1939), extends now from S. Bulgaria (Rhodopi Mt) and NE Greece (Falakron) to S. Macedonia (Mariovo).

It is interesting to mention that the latest investigations of the flora, in the region of Mariovo, also revealed data, for some other species, that match the case of *S. rhodopensis* (Matevski and Kostadinovski 1997, Matevski 2000-2001). Namely, the species *Chondrilla urumoffii* Degen and *Verbascum roripifolium* (Halacsy) I.K. Ferguson, considered to be endemic only for Bulgaria and Greece, were found in Mariovo, as well.

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Geranium phaeum L. (Geraniaceae) и *Scabiosa rhodopensis* Stoj. & Stef. (Dipsacaceae) во флората на Република Македонија

Зоран Николов

И покрај тоа што флората на Република Македонија е предмет на проучување на поголем број ботаничари, во период подолг од 150 години, сепак податоци за нови, ретки или малку познати видови постојано се појавуваат. Во текот на теренските истражувања на Осоговските Планини (2016) и регионот на Мариово (2010), пронајдовме добро развиени популации од два, ретки за флората на Република Македонија, вида – *Geranium phaeum* и *Scabiosa rhodopensis*. Според Мицевски (2005), присуството на *G. phaeum,* и покрај интензивните теренски истражувања, особено на локалитетите за кои се наведува овој вид, не било потврдено. Тоа го поврзува со можноста овој вид да бил заменет со некој од блиските до него видови како *G. reflexum* L. и *G. aristatum* Freyn. & Sint., кои се развиваат, исто така, на наведените локалитети. Пронаоѓањето на *G. phaeum* на Осоговските планини е всушност потврда на податокот на Урумов (1923), за присуството на овој вид, на истиот планински масив. Единствениот податок за присуството на *S. rhodopensis*, на територијата на Република Македонија, го наоѓаме кај Soška (1939), за локалитетот "Лубеница" (= Лабиница), во регионот на Мариово. Во текот на нашите истражувања, на мермерните блокови на локалитетот Мелничка Скрка (с. Мелница), во регионот Мариово, пронајдовме добро развиена популација од *S. rhodopensis*, со што го потврдивме податокот на Soška (1939), за неговото присуство во флората на Република Македонија. *S. rhodopensis* е балкански енедемит, досега познат само за флорите на Бугарија и Грција. Со нашиот нов податок, кој е потврда на податокот на Soška (1939), ареалот на овој вид се проширува од јужниот дел на Бугарија и североисточниот на Грција, до јужниот дел на Република Македонија.

Клучни зборови: нови податоци, распространување, ретки видови, флора