

# New chorological data on *Hieracium* (Asteraceae) in North Macedonia

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## Abstract

*Hieracium maculatum* and *H. jankae* are reported for the first time in North Macedonia while one or more new records are added for the following rare taxa: *H. jurassicum*, *H. olympicum*, *H. praecurrens* and *H. villosum*.

**Keywords:** first records, *Hieracium*, new records, North Macedonia

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## Sažetak

*Hieracium maculatum* i *H. jankae* navode se po prvi puta za floru Sjeverne Makedonije dok je za vrste: *H. jurassicum*, *H. olympicum*, *H. praecurrens* i *H. villosum*, navedeno jedno ili više novih nalazišta u flori.

**Ključne riječi:** prva nalazišta, *Hieracium*, nova nalazišta, Sjeverna Makedonija

## Introduction

*Hieracium* L. (Asteraceae) is a genus with a significant diversity and wide distribution in the mountains of North Macedonia. The most valuable data regarding its taxonomy and chorology were published in the first half of the 20<sup>th</sup> century, mainly from the area west of the Vardar River (Zahn 1921-1923, 1922-1938, 1931-1935, 1936-1938, Behr et al. 1937, 1939, 1939a). Since then only a relatively small research progress was done. Among the recent data worthy to be mentioned is the publishing

of one species new for the science (Szeląg 2010) and two species and one subspecies new for the country (Teofilovski 2011, Vladimirov et al. 2014, Duraki & Niketić 2018). Having in consideration the insufficiency of the knowledge of this genus in the country, during the author's floristic researches in the recent years a special attention was paid to its representatives. A selection of some interesting findings are reported in this article.

## Materials and methods

During the field work appropriate specimens of each taxon were collected and herbarized. Herbarium sheets are labeled with specific data regarding the location, habitat and size of the populations and stored in the personal herbarium of the author. Identification was performed according to: Zahn 1921-1922, 1922-1930, 1931-1935, and 1936-1938. The nomenclature follows Euro + Med Plantbase (Greuter 2006+).

## Results and discussion

### *Hieracium jankae* R. Uechtr. (Fig. 1)

Nidže Mountain, Vir, 40°59'53"N, 21°48'36"E, stony place, limestone, 1850 m a.s.l., 28.7.2010, leg. A. Teofilovski;

Jablanica Mountain, above Labuništa village, 1560 m a.s.l., limestone, 41°16'21"N, 20°33'3"E, 4.7.2017, leg. A. Teofilovski.

This is a new species of North Macedonia. It is considered hybridogenous species between *H. pannosum* Boiss. and *H. sparsum* Friv. with a supposed morphological formula  $H. pannosum \geq H. sparsum$  (Zahn 1936-1938). Both assumed parental species also occur on these mountains. The range of distribution of *H. jankae* comprises Turkey and Balkan Peninsula (NC & NE Greece, Bulgaria, E & C Serbia and SW Romania) (Zahn 1936-1938, Gajić 1975, Dimopoulos et al. 2013). The locality near Labuništa village on Jablanica Mountain in the western part of North Macedonia represents a new westernmost point of the species distributional range with nearest one being situated in North-Central floristic region of Greece.

### *Hieracium jurassicum* Griseb.

Jablanica Mountain, Boroec village, beech forest, 1550-1600 m a.s.l., 41°17'6"N, 20°33'18"E, 11.7.2017, leg. A. Teofilovski.

Until now this species was known only from the upper forest belt of Suva Gora and Šar Planina



**Figure 1.** *Hieracium jankae*, Nidže Mountain, Vir, herbarium specimens.

Mountains (Teofilovski 2014). The new locality represents the southernmost point of the species range in Balkan Peninsula, situated 85 km southwest-south from the closest one on Suva Gora Mountain.

### *Hieracium maculatum* Schrank (Fig. 2)

Probištip, canyon of Probištipska River, near a forest road, silicate, 950 m a.s.l., 42°2'1"N, 22°9'36"E, 25.6.2017, leg. A. Teofilovski;

Makedonski Brod, near the road to Blizansko village, stony place, limestone, 480 m a.s.l., 41°46'25"N, 21°9'17"E, 12.5.2016, leg. A. Teofilovski;

Makedonski Brod, near the road to Zvečan village, roadside excavation, silicate, 920 m a.s.l., 41°42'1"N, 21°7'43"E, 8.6.2016, leg. A. Teofilovski;

Makedonski Brod, near the road to Lokvica village, roadside excavation, limestone, 595 m a.s.l., 41°33'7"N, 21°14'57"E, 9.6.2016, leg. A. Teofilovski;



**Figure 2.** *Hieracium maculatum*, Makedonski Brod, Blizansko village, herbarium specimens.

Makedonski Brod, 1,3 km NW-N from Ramne village, oak forest, limestone, 1080 m a.s.l., 41°41'21"N, 21°9'56"E, 31.5.2016, leg. A. Teofilovski;

Kavadarci: Mrežičko village, roadside excavation, 588 m a.s.l., 41°12'19"N, 21°59'50"E, 1.6.2019, leg. A. Teofilovski.

A new species in the flora of North Macedonia. It grows on various open and forest habitats, often on roadside excavation, on carbonate and siliceous substrate, at 480 - 1080 m a.s.l.

According to Zhan (1931-1935) *H. maculatum* is a hybridogenous species with the morphological formula  $H. praecox \geq lachenlii$  (Zahn 1931-1935). It is distributed in temperate areas of Eurasia, from Spain and England to Himalaya, with particularly common occurrence in W Europe (Zahn 1931-1935). In Balkan Peninsula it is a rare species so far known from Croatia, ?Montenegro, Bulgaria (Stara Planina) and Greece (Khalkidhiki) (Zahn

1931-1935, Greuter 2006+, Assyov 2012, Melikoki 2013). The discovery of its sites in North Macedonia is of a phytogeographical significance as they fill up a part of the large distributional gap existing in central and southwestern part of Balkan Peninsula, up to 200 km northwest from the closest localities on Khalkidhiki peninsula in north Greece.

### *Hieracium olympicum* Boiss. (Fig. 3)

Ogražden Mountain, 2.0 km NE-E from Sušica village, oak forest and forest margins, silicate, 470-570 m a.s.l., 41°28'39"N, 22°49'47"E, 27.8.2016, leg. A. Teofilovski.

An endemic species to southeastern part of Balkan Peninsula and Turkey with one unconfirmed report from west Albania (Jablanica Mountain) (Kitanov 1948) which is omitted in the recent check list of Albanian flora (Barina et al. 2018). In North Macedonia apparently restricted to mountains of its southeastern part with the only previous record originating from Belasica Mountains (Vladimirov et al. 2014).

### *Hieracium praecurrens* Vuk. (Fig. 4)

Šar Planina Mountains, 2.7 km NW-N from Staro Selo village, beech forest, silicate, 1370 m a.s.l., 42°10'25"N, 21°6'60"E, 15.6.2015, leg. A. Teofilovski;



**Figure 3.** *Hieracium olympicum* (Photo A. Teofilovski).



**Figure 4.** *Hieracium praecurrens*, Šar Planina Mountains, Belovište village (Photo A. Teofilovski).

Šar Planina Mountains, above Belovište village, beech forest, silicate, 980 m a.s.l., 42°8'19"N, 21°5'39"E, 9.6.2018, leg. A. Teofilovski.

Following localities were previously reported: Prilep (Drenska Planina) (Stojanoff 1928), Jakupica Mountains (Pepelak) (Behr et al. 1937, sub *H. praecurrens* subsp. *pseudopleiophylloides* K. Malý & Zahn), canyon of Treska River (Behr et al. 1937, sub *H. praecurrens* subsp. *subserratifolium* Zahn). Recently reported from the Kosovo part of Šar Planina Mountains (Duraki et al. 2017).

#### *Hieracium villosum* Jacq. (Fig. 5)

Jablanica Mountain, Čuma, limestone rocks, 1720 m a.s.l., 41°13'20"N, 20°32'15"E, 14.6.2017, leg. A. Teofilovski.

There is only one reliable report of this species, referring to Veles, in central part of the country (Zahn 1921-1923, sub *H. villosum* subsp. *villosum*). The locality is insufficiently specified, but most probably situated on the mountains west of this town. One another report, referring to a sub-Mediterranean forest with *Carpinus orientalis* and *Phillyrea latifolia* on Dub Mountain (697 m a.s.l.) near Dojran (Cirimotić 1958), is rather dubious as such habitat and altitude seems not to be suitable for this orophyte.

#### Conclusions

*Hieracium jankae* and *H. maculatum* are reported for the first time in North Macedonia. The second locality in the country is reported for *H. olympicum* and *H. villosum*. New locality or localities are added for *H. jurassicum* and *H. praecurrens*. Some of the records are of phytogeographical significance. A new westernmost point of the entire species range for *H. jankae* and a new southernmost point of the species range in Balkan Peninsula for *H. jurassicum* are established on Jablanica Mountain. The new records of *H. maculatum* fill up a part of the distributional gap in the central and southwestern part of Balkan Peninsula.

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**Figure 5.** *Hieracium villosum*, inflorescences of three herbarium specimens.

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