

## A NEW LOCALITY OF THE SPECIES *Degenia velebitica* (DEGEN) HAYEK (*Brassicaceae*) IN CROATIA

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In this short communication the authors present information about a new locality for the endemic species *Degenia velebitica* (Degen) Hayek. The new locality was found a few kilometres above Sibenik, on the sides of the hill Veliki vrh, between Veliki vrh and Tomišina draga. This region belongs to the Croatian littoral. This new locality establishes the fact that *Degenia velebitica* (Degen) Hayek does not grow only on Velebit mountain, as considered till now.

**Key words:** *Degenia velebitica* (Degen) Hayek, new locality, endemic species, Sibenik, Croatian flora

Matijević, M., Mihelj, D., Plazibat, M., Matijević, Ž. & Randić, M.: Novo nalazište vrste *Degenia velebitica* (Degen) Hayek (*Brassicaceae*) u Hrvatskoj. *Nat. Croat.*, Vol. 8, No. 2., 147–154, 1999, Zagreb

U ovom kratkom priopćenju govori se o novom nalazištu endemične vrste *Degenia velebitica* (Degen) Hayek. Novo nalazište se nalazi nekoliko kilometara iznad Sibenika, na padinama Velikog vrha, između Velikog vrha i Tomišine drage. To područje geografski pripada Hrvatskom primorju. Novi nalaz pokazuje da *Degenia velebitica* (Degen) Hayek ne raste samo na Velebitu kako se smatralo dosad.

**Ključne riječi:** *Degenia velebitica* (Degen) Hayek, novo nalazište, endemična vrsta, Sibenik, flora Hrvatske

Hiking along the sides of Veliki vrh (512 m a.s.l.), on the 11<sup>th</sup> of April 1999, M. MATIJEVIĆ, in company with some colleagues, found a very interesting plant. In connection with this fact, on May 22 1999, we visited this locality and determined the interesting plant to be the species *Degenia velebitica* (Degen) Hayek (Fig. 2). The new locality is situated a few kilometres above Sibinj, on the south-west slopes of the hill Veliki vrh, between Veliki vrh and Tomišina draga, approx. 350 m a.s.l. It lies circa 1 km as the crow flies from the Adriatic Sea at co-ordinates 45° 04' N, 14° 53' E, MTB grid (Fig. 1). The specimens grow over an area of about one km<sup>2</sup>, rectangular in shape. The habitat is a typical karstic region in which carbonate rock predominates (ROGLIĆ, 1974; HORVATIĆ, 1928).

In spite of fact that this locality is very close to the sea and also is not at a high altitude, the climatic characteristics, by reason of strong sunshine and very strong winds (bora), are extreme (Fig. 3).

The species *Degenia velebitica* (Degen) Hayek was first discovered in 1907, described and named as *Lesquerella velebitica* (syn. *Alyssum velebiticum*, *Vesicaria velebitica*) by DEGEN (1909). The species was revised by HAYEK (1910) to become *Degenia velebitica* (Degen) Hayek. Hayek established this species as monotypic genus *Degenia* Hayek.

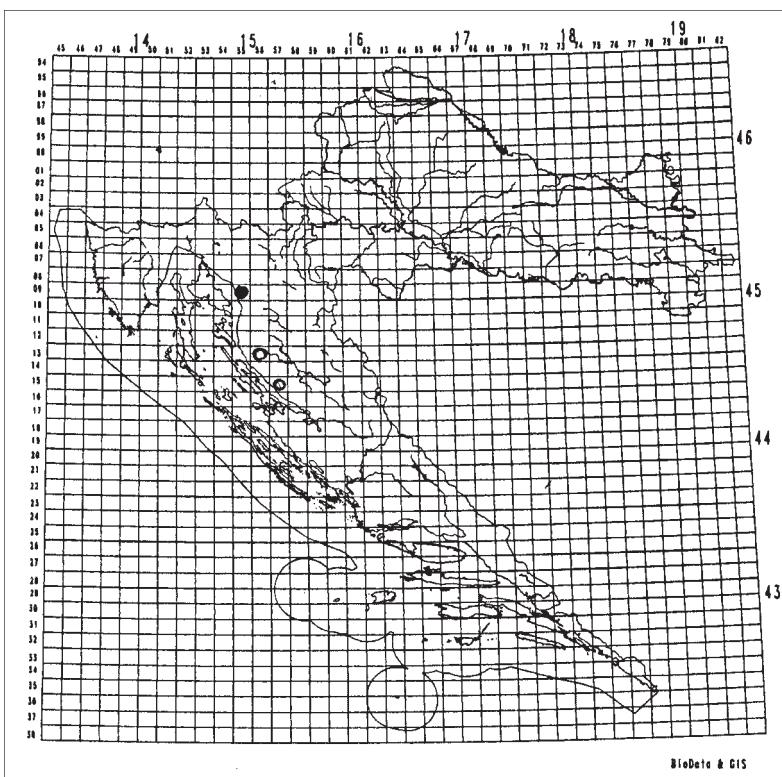
*Degenia* Hayek belongs among the most important taxa of Velebit flora and the flora of the world (LUCAS, 1983). Many authors have written about *Degenia* Hayek from floristic, taxonomic, cytological, horticultural and other aspects (DEGEN, 1937; DOMAC, 1993; FORENBACHER, 1990; HAYEK, 1911, 1927; HIRC, 1912; HORVAT, 1930, 1931, 1952; JANCHEN, 1942; JÁVORKA, 1924; JÁVORKA & CSAPODY, 1934; KUŠAN, 1963, 1964a, 1964b; MAYER, 1981; ROSSI, 1930; STEVANOVIĆ & VUJNOVIĆ, 1990; STRGAR, 1977, 1979, 1983; ŠILIĆ, 1984; ŠILIĆ & ABADŽIĆ, 1991; UNGAR & REGULA-BEVILACQUA, 1994; TRINAJSTIĆ, 1985; VARIČAK, 1941). The previously known localities of *Degenia* Hayek are in the Šugarska duliba region (Krug, Miljkovića Kuk, Plana) and in Bačić kosa (Soline) on limestone screes at an altitude of 1200–1300 m a.s.l. The new locality is about 40 km away from the nearest locality, Soline, on Velebit.

The populations of the species *Degenia velebitica* (Degen) Hayek in new locality consisted of about one hundred and fifty specimens. About one third of the populations are at the fruiting stage. This specimen's vitality is very vigorous.

On this locality, *Degenia velebitica* (Degen) Hayek grows in an open habitat with the following species:

- Alyssum montanum* L. subsp. *montanum*
- Arabis turrita* L.
- Biscutella cichoriifolia* Loisel.
- Campanula pyramidalis* L.
- Centaurea triumfetti* All. subsp. *triumfetti*
- Cephalaria leucantha* (L.) Roemer et Schultes
- Convolvulus cantabricus* L.
- Dictamnus albus* L.
- Dorycnium pentaphyllum* Scop. subsp. *germanicum* (Greml) Gams
- Drypis spinosa* L.

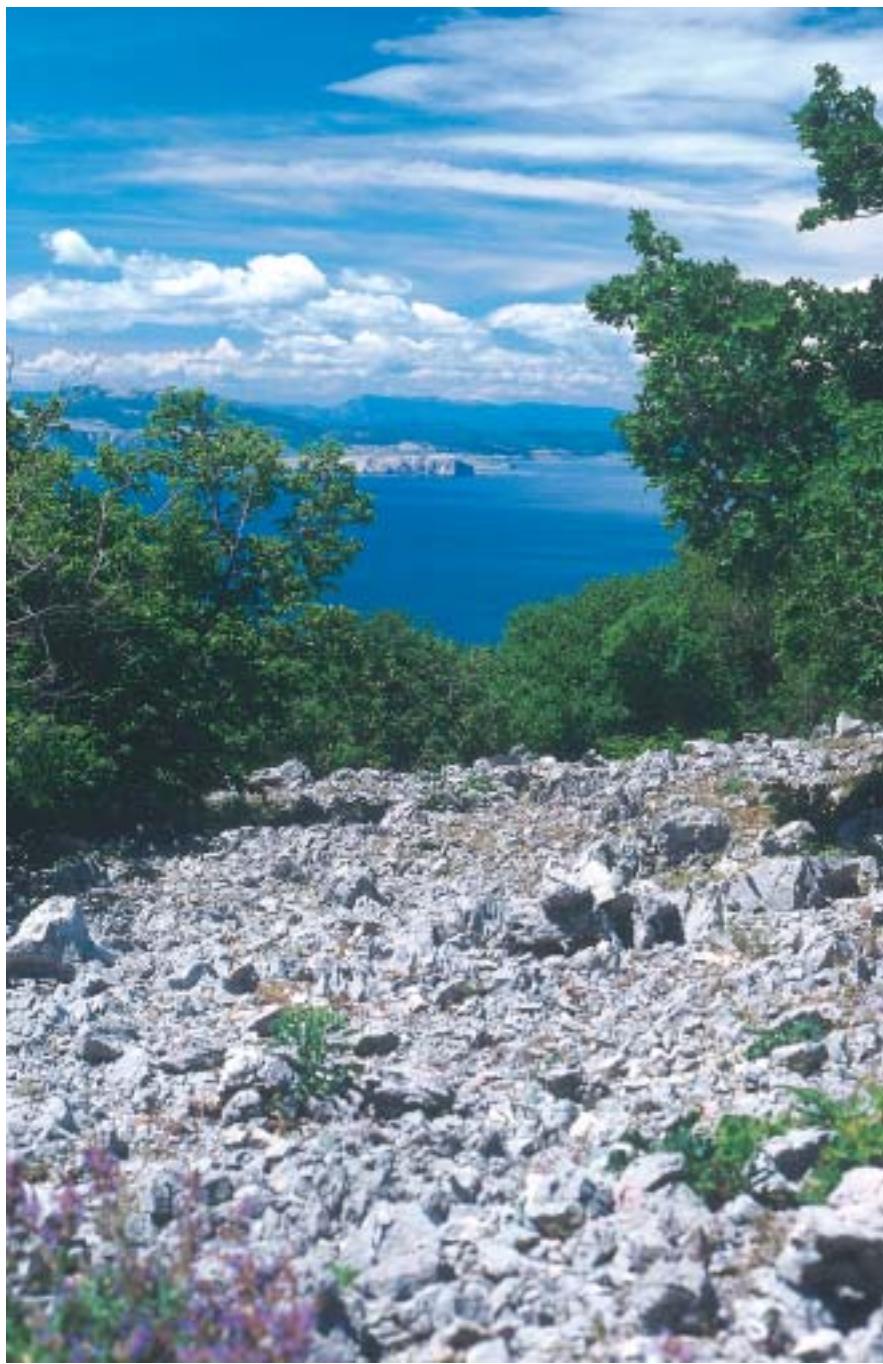
*Euphorbia fragifera* Jan  
*Galium lucidum* All.  
*Geranium purpureum* Vill.  
*Helianthemum nummularium* (L.) Mill. subsp. *grandiflorum* (Scop.) Schinz et Thell.  
*Koeleria splendens* Presl  
*Lotus corniculatus* L.  
*Melittis melisophyllum* L. subsp. *meliophyllum*  
*Peltaria alliacea* Jacq.  
*Potentilla recta* L.  
*Salvia officinalis* L.  
*Satureja montana* L. subsp. *montana*  
*Sedum album* L.  
*Seseli montanum* L. subsp. *tommasinii* (Rchb. f.) Arcangeli  
*Silene vulgaris* (Moench.) Garcke subsp. *angustifolia* Hayek  
*Valeriana officinalis* L. subsp. *officinalis*  
*Vincetoxicum hirundinaria* Medik. subsp. *adriaticum* (Beck) Markgraf



**Fig. 1.** Localities of the species *Degenia velebitica* (Degen) Hayek  
 (○ previously found localities, ● new locality)



Fig. 2. *Degenia velebitica* (Degen) Hayek at flowering and at stage of fructification on new locality



**Fig. 3.** The habitat of species *Degenia velebitica* (Degen) Hayek on new locality

This open habitat is surrounded by small trees, shrubs and climbers of the following species:

- Acer monspessulanum* L.
- Clematis vitalba* L.
- Cotinus coggygria* Scop.
- Frangula rupestris* (Scop.) Schur
- Fraxinus ornus* L.
- Lonicera etrusca* G. Santi
- Ostrya carpinifolia* Scop.
- Prunus mahaleb* L.
- Quercus pubescens* Willd. subsp. *pubescens*
- Rosa canina* L.

The mentioned trees, shrubs and climbers have infiltrated the open habitats of *Degenia velebitica* (Degen) Hayek and other herbaceous companions. The neighbouring villages of Krmpote and Bile, with small populations and little influence on the surrounding forest vegetation, may be neglected.

The material of the species collected from this locality is deposited in *Herbarium Croaticum* (ZA).

The finding of this new locality establishes the interesting fact that the species *Degenia velebitica* (Degen) Hayek is not an endemic species only to Velebit, because Velebit mountain begins about 12 km away to the south-east. From this degree of examination we can say nothing about the differences between the specimens from new locality and those found earlier. Morphologically, the specimens are very similar, despite growing in ecologically very different conditions.

In the future, this locality must be given extensive legislative protection. We appeal to all government institutions involved in the area of the protection of nature to take prompt action.

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## REFERENCES

- DEGEN, A., 1909: Bemerkungen über einige orientalische Pflanzarten. LIII. Über die Entdeckung eines Vertreters der Gattung *Lesquerella* im Velebitgebirge. Magyar Bot. Lapok 8, 3–24.
- DEGEN, A., 1937: Flora Velebitica II. Verlag der Ungar. Akademie der Wissenschaften, Budapest.
- DOMAC, R., 1993: *Degenia* Hayek. In TUTIN, T. G. et al., (Eds.): Flora Europaea, Vol. 1, pp. 359, 2<sup>nd</sup> ed; Cambridge University Press, Cambridge.

- FORENBACHER, S., 1990: Velebit i njegov biljni svijet. Školska knjiga, Zagreb.
- HAYEK, A., 1910: Die systematische Stellung von *Lesquerella velebitica* Degen. Oesterr. Bot. Z. **60**, 89–93.
- HAYEK, A., 1911: Entwurf eines Cruciferen-Systems auf phylogenetischer Grundlage. Beih. Bot. Centralbl. **27**(I, 2), 127–335.
- HAYEK, A., 1927: Prodromus Florae Peninsulae Balcanicae. Band I, Verlag des Repertoriums, Dahlem bei Berlin.
- HIRC, D., 1912: Revizija hrvatske flore (Revisio Flora Croatica). Rad Jugoslav. Akad. Znan., **190**, 171–172 (809–810).
- HORVAT, I., 1930: Vegetacijske studije o hrvatskim planinama. Zadruge na planinskim goletima. Rad Jugoslav. Akad. Znan., **238**, 1–96.
- HORVAT, I., 1931: Vegetacijske studije o hrvatskim planinama. II. Zadruge na planinskim stijenama i točilima. Rad Jugoslav. Akad. Znan., **241**, 147–206.
- HORVAT, I., 1952: Prilog poznavanju raširenja nekih planinskih biljaka u jugoistočnoj Evropi. God. Biol. Inst. u Sarajevu **5**, 199–218.
- HORVATIĆ, S., 1928: Karakteristika flore i vegetacije krša. Šumarski List **52**(10), 399–419.
- JANCHEN, E., 1942: Das System der Cruciferen. Oesterr. Bot. Z. **91**, 1–28.
- JÁVORKA, S., 1924: Magyar Flóra (Flora hungarica). Budapest.
- JÁVORKA, S. & CSAPODY, V., 1934: A magyar flóra képekben (Iconographia Flora Hungaricae). Budapest.
- KUŠAN, F., 1963: Über die Lebensverhältnisse der endemischen Art *Degenia velebitica* (Deg.) Hay. auf dem Velebit in Kroatien. Informationes Hort. Bot. Fac. Pharmac. Univ. Zagreb **2**, 21–26.
- KUŠAN, F., 1964a: Izumiranje nekih rijetkih biljaka. (Uz slučaj naše endemične vrste *Degenia velebitica*). Priroda **51**(2), 33–36.
- KUŠAN, F., 1964b: Kako su nastale neke rijetke endemične i reliktne biljke? Biološki list, **12**(8, 9), 117–119, 129–132.
- LUCAS, G., L., 1983: List of rare, threatened and endemic plants in Europe. Council of Europe Nature and Environment, Strasbourg.
- MAYER, E., 1981: *Degenia velebitica* (Deg.) Hay. in *Fibigia triquetra* (DC.) Boiss. – Morfološko taksonomska paralela. Acta Biokovica **1**, 283–290.
- ROGLIĆ, J., 1974: Prilog hrvatskoj krškoj terminologiji. Krš Jugoslavije **9**(1), 1–72.
- ROSSI, LJ., 1930: Pregled flore Hrvatskog primorja. Prir. Istraž. Kral. Jugoslavije **17**, 1–368.
- STEVANOVIĆ, B. & VUJNOVIĆ, K., 1990: Morpho-anatomical adaptations of the endemic species *Degenia velebitica* (Deg.) Hay. Feddes Repert. **101**(7–8), 385–389.
- STRGAR, V., 1977: *Degenia velebitica*. Bull. Alpine Gard. Soc. Gr. Brit. **45**, 4–5.
- STRGAR, V., 1979: Trying to conserve the rare and endangered *Degenia*. Royal Botanic Gardens, Kew, London. Survival and Extinction, 211–214.
- STRGAR, V., 1983: Velebitska degenija je zares ogrožena. Proteus (Ljubljana) **2**, 75–79.
- ŠILIĆ, Č., 1984: Endemične biljke. Svjetlost, Sarajevo.
- ŠILIĆ, Č. & ABADŽIĆ, S., 1991: Endemične biljne vrste Dinarija i mogućnost primjene nekih vrsta u hortikulturi (I). Glasn. Zemaljsk. Muz. Bosni Hercegovini **30**, 47–127.
- TRINAJSTIĆ, I., 1985: Velebitska degenija – *Degenia velebitica*, dragulj hrvatske flore. Priroda **73**(9/10), 292–293.

UNGAR, S. & REGULA-BEVILACQUA, Lj., 1994: *Degenia velebitica* (Deg.) Hay. In ŠUGAR, I. (ed.): Crvena knjiga biljnih vrsta Republike Hrvatske, 152–153. Ministarstvo graditeljstva i okoliša i Zavod za zaštitu prirode Zagreb.

VARIČAK, B., 1941: Citološka i embriološka ispitivanja degenije (*Degenia velebitica* Degen Hayek). Prir. Istraž. Nezav. Države Hrvatske 271, 1–20.

## S A Ž E T A K

### **Novo nalazište vrste *Degenia velebitica* (Degen) Hayek (Brassicaceae) u Hrvatskoj**

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Pri istraživanju flore okolice Senja u području Velikog vrha nedaleko Sibinja, otkrili smo novo nalazište vrste *Degenia velebitica* (Degen) Hayek koje se izdvaja po svojoj udaljenosti kao i karakteristikama staništa od do sada utvrđenih nalazišta u samom Velebitu. S obzirom na ovu činjenicu vrsta *Degenia velebitica* (Degen) Hayek više nije endem samo velebitske flore. Novo nalazište nalazi se oko 40 km daleko od najbližeg prethodno utvrđenoga nalazišta Soline kod Baći kuka. Zbog značaja degenije za hrvatsku i svjetsku prirodnu baštinu potrebno je što prije poduzeti odgovarajuće mjere zaštite ovog iznimnog lokaliteta.