

VICIA DALMATICA A. KERNER IN HUNGARY

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Vicia dalmatica, a rare plant of the Hungarian flora, has long been known from a single location in the northern part of the Buda Mts (with vouchers collected in the 1940s and 1950s). The presence of this species from the site, belonging to the agglomeration of Budapest, has not been confirmed for decades, thus some authors regarded it as a non-native species. The paper reports on a newly discovered occurrence in the Eastern Bakony Mts (Hajmáskér: Aszó-völgy), an area that can be characterised as phytogeographically very similar to the one in the Buda Mts. Related to the exploration the author overviewed the Hungarian herbaria. All data of the species documented by vouchers are published in this paper. The author concludes that *Vicia dalmatica*, having its main distribution on the Balkans, is reaching its northern natural limits in Hungary.

Key words: Bakony Mts, Buda Mts, distribution, Hungary, *Vicia dalmatica*, Visegrád Mts

INTRODUCTION

Vicia dalmatica A. Kerner (syn. *Vicia stenophylla* (Boiss.) Grecescu, *V. tenuifolia* Roth subsp. *stenophylla* Velen.) is a very rare species in Hungary, previously only known from a single location at the northern margin of the Buda Mts (KÁRPÁTI 1950). The taxon, recognised by Anton Kerner (KERNER 1886), is a member of the *Vicia cracca* agg. Some authors (ANON. 2009, GREUTER and RAUS 1986, SIMON 2000) treat *Vicia dalmatica* as a subspecies of the polymorphic *Vicia tenuifolia* Roth, but most experts (e.g. ASSYOV and PETROVA 2006, BALL 1968, CIOCÂRLAN 2009, DIKLIĆ 1972, EHRENDORFER 1973, KERGUÉLEN 1987, MICEVSKI 2001, QOSJA *et al.* 1992, SOÓ 1970) discuss it at species level.

The most important characteristics of *Vicia dalmatica* are: leaflets linear to setaceous, 1–1.5 mm wide or narrower (with incurved margins so they appear even narrower). Leaflets of the lower leaves are also less than 2 mm wide. Number of flowers in the flower-clusters (7–)8–15(–17), looser than in *V. tenuifolia*, corolla is light purple-red, limb of the standard *ca* 1.5

times longer than claw. *Vicia dalmatica* differs from *V. tenuifolia* also in its dense, globose, bushy habit.

Vicia cracca agg. has a confused taxonomy, and is cytologically a well-studied species complex (CHRTKOVÁ-ŽERTOVÁ 1973, HEITZ 1931, ROUSI 1961, RYKA 1954, SEIDENBINDER-RONDON 1989, SVESCHNIKOWA 1927, TRÁVNÍČEK *et al.* 2010). In Hungary, BAKSAY (1954) was the first to cytologically examine *Vicia dalmatica* ($2n = 12$). Analyses of *Vicia cracca* agg. have proved its hybrid origin, consequently *Vicia tenuifolia* ($2n = 24$) is presumably tetraploid. Its transitional features can also be recognised morphologically (see COULOT and RABAUTE 2002). *Vicia tenuifolia* is assumed to have derived in the contact zone (South Balkans) of two southern, vicariant diploid taxa of the aggregate: 1) *Vicia dalmatica* having an east-southeast centre in Europe and 2) *Vicia incana* having a European Mediterranean centre, distributed from the Mediterranean zone of South France to Greece (BOSC and DESCHATRES 1986, COULOT and RABAUTE 2002).

According to MEUSEL *et al.* (1965), *Vicia dalmatica* A. Kerner is an east-Mediterranean–Caucasian taxon. As to BALL (1968), the species is distributed from Italy through the Balkans to Russia; according to GREUTER *et al.* (1989) it occurs in the Mediterranean countries (the Balkans, the Crimean Peninsula, Asia Minor, Cyprus, and the eastern coast of the Mediterranean Sea). KOMAROV *et al.* (1948) state that *Vicia dalmatica* occurs in the Crimea and in the Caucasus region of the Former Soviet Union. Newer Ukrainian and Russian publications (FEDORONCHUK and MOSYAKIN 1999, FEDOROV 1987, KAGALO 1999, YAKOVLEV *et al.* 1996) disagree with this, citing other taxa of *Vicia* being native to the Crimea and the Caucasus: *Vicia elegans* Guss. and *Vicia heracleotica* Juz. According to BALL (1968) the current territory of Hungary is in the northern margin of the natural distribution of *Vicia dalmatica*. In Romania, the species occurs in Tulcea and Constanta counties (OPREA 2005), meaning that Hungarian data are the only ones referred to the entire Carpathian Basin. PIGNATTI (1982) listed the species in Italy, but this reference is taken as doubtful (GREUTER and RAUS 1986). In Western Europe its occurrences are known as invasive. It occurs in France (Provance) (BOSC and DESCHATRES 1986, COULOT and RABAUTE 2002, GREUTER *et al.* 1989, KERGUÉLEN 1987), in Germany (SCHEUERER and AHLMER 2003, WÖRZ and BÄSSLER 1990) and in Belgium (VERLOOVE 2010). VERLOOVE (2010) refers to it as “invaders in disguise”,

presumably coming from the thermophytic grasslands of the mentioned West and Central European territories, outside its original range of distribution. Dilatory recognition of the taxon *V. dalmatica* is probably due to misidentifications. It can be safely stated that the native occurrences of *Vicia dalmatica* are mainly confined to the Balkans.

Habitat preferences of *Vicia dalmatica* are poorly known, but based on the above mentioned synthetic works, and on vegetation studies that contain the species (ADAMOVIĆ 1909, BECK 1901, DIHORU and DONITĂ 1970, HORVAT *et al.* 1974, THEODOROPOULOS *et al.* 1995), it prefers steppe-like dry grasslands, open xerophytic scrubs, and oak or pine forests.

MATERIAL AND METHODS

To collect Hungarian records of *Vicia dalmatica* the following herbaria were checked: Hungarian Natural History Museum, Budapest (BP), Debrecen University, Debrecen (DE), Eötvös Loránd University, Budapest (ELTE), Pécs University, Pécs (JPU), Savaria Museum, Szombathely (SAMU) and Bakony Natural History Museum, Zirc. Data recorded in the following chronology have been taken from the label information, i.e. the name of the collector, collecting date, acronym of the collection, and accession number (if present).

RESULTS

Distribution of *Vicia dalmatica* in Hungary

Buda Mts

Budapest: Csúcs-hegy (and its surroundings). – “Buda: Csúcs-hegy keleti lejtője, dombtetőn a menedékházhoz vezető út mentén, a kápolnán túl (az ürömi vasúti állomással szemben a hegylejtő villasorában)”, leg. S. Jávorka, 14.06.1944 [BP 192739]; “Buda: Csúcs-hegy keleti lejtője, dombtetőn út mellett”, leg. S. Jávorka, 14.06.1944 [BP 192737]; “Buda: a Csúcs-hegy keleti oldalán, útmenti dombtetőn, a kápolnán túl, *V. tenuifolia* társaságában”, leg. S. Jávorka, 30.06.1944 [BP 192740]; “Comit. Pest. Budapest. In declivibus graminosis montis Csucshegy versus Üröm. alt. cca 200 m.s.m.”, leg. Z. Kárpáti, 05.06.1949 [BP 480243, BP 582542]; “Comit. Pest. Budapest. In declivibus graminosis montis Csucshegy versus Üröm. alt. cca 200 m.s.m.”, leg. Z. Kárpáti, 11.06.1949 [BP 217532, BP 439716]; “Comit. Pest. Budapest. In declivibus graminosis montis Csucshegy versus Üröm. alt. cca 200 m.s.m.”, leg. Z. Kárpáti, 19.07.1949 [BP 480242]; “Obuda, Csúcs-hegy alatt, Testvér-hegy.”, leg. S. Jávorka, 01.07.1951 [BP 192741, BP 192742]; “Buda, Csucshegy alatt, a

Testvér-hegy egyik gerincén (részben gombás)”, leg. S. Jávorka, 27.07.1952 [BP 192743]; “Prope opp. Budapest, in Festucetum sulcatae in declive ‘Testvérhegy’ sub monte ‘Hármashatárhegy’ ad lateram septentrionalem”, leg. L. Baksay, 16.06.1952 [ELTE 2500]; “Budai hegys. Táborhegy”, leg. L. Vajda, 30.06.1953 [BP 196767]; “Budapest III. Óbuda, ad viam in declivibus dumetosis montis Táborhegy”, leg. L. Vajda, 30.06.1953 [ELTE 013962]; “Buda, Csúcshegy alatt, a kápolna közelében, füves dombtetőn”, leg. Jávorka et Csapody, 15.08.1954 [BP 299824]; “Budapest, Csúcs-hegy Solo loessaceo”, leg. A. Péntzes, 26.06.1956 [BP 362371, BP 362373, BP 371267, BP 371268]; “Budapest, Csúcs-hegy Solo loessaceo”, leg. A. Péntzes, 16.07.1956 [BP 362372]; “Buda, Testvérhegy–Csúcshegy keleti lejtőjén kevés”, leg. S. Jávorka, 04.08.1957 [BP 208529].

In Hungary, *Vicia dalmatica* A. Kerner was first collected (14 June, 1944) by Sándor Jávorka in the northern part of the Buda Mts (Budapest: in some places on the eastern flank of Csúcs-hegy–Testvér-hegy ridge; CEU 8479.2, 8480.1). It was identified at variety rank (“*V. tenuifolia* Roth var. *stenophylla* Boiss.”) by the collector; exploration of the occurrences was abandoned by Jávorka maybe for the simple fact of a subspecific taxon. On 5 June, 1949 at the same place Zoltán Kárpáti also collected the plant. Apparently, Kárpáti was unaware of the previous collection by Jávorka, so he published it as a new Hungarian taxon (KÁRPÁTI 1950), listing detailed arguments about the plant deserving species level, and about the name usage of *Vicia dalmatica*. Later, accepting the arguments of Kárpáti, Jávorka had revised his own specimens as *V. dalmatica*.

Soon after the plant was collected on several occasions at the same habitat: the Csúcs-hegy–Testvér-hegy ridge (Zoltán Kárpáti, Sándor Jávorka, Antal Péntzes, László Vajda), last time on 4 August, 1957 (Jávorka), which is also the last date of confirmation of the species in Hungary.

Former localities of the species are well identifiable based on the data of the herbarium sheets. Reference to the shrinking population is seen in the label of the sheet last collected by Jávorka (4 August, 1957): “Buda, a few specimens on the eastern slope of Testvérhegy–Csúcshegy”. Nowadays, this slope mostly has been built in, and any recent occurrence of the plant on the remaining patches of potential vegetation could not be verified (L. Somlyay, ex verb.). Presently, the status of *Vicia dalmatica* in Hungary is “probably extinct” (ANON. 2009).

Visegrád Mts

Pomáz: Kő-hegy. – “Pomáz, Kőhegy, útszélén”, leg. Z. Siroki, 02.06.1952, sub nom.: *Vicia cracca* L. var. *stenophylla* Boiss. [DE]; “Pomáz, Kőhegy, vetés szélén”, leg. Z. Siroki, 02.06.1952, sub nom.: *Vicia cracca* L. subsp. *tenuifolia* (Roth) Gaud. [DE].

Two specimens of the taxon collected by Zoltán Siroki and found in the Herbarium of the Debrecen University represent a previously unknown occurrence. The rich flora of the Kő-hegy (Pomáz) (CEU 8380.1) belonging to the southeastern margin of the Visegrád Mts is well documented by botanists caused by the nearness of Budapest.

Bakony Mts

Hajmáskér: Aszó-völgy, – “Hajmáskér: Aszó-völgy, rara in fruticetis, 47,17237500°/18,00859000°, Veszprém megye, Keleti-Bakony”, leg. N. Bauer, 11.06.2010 [BP 705924, BP 705925]; “Hajmáskér: Aszó-völgy, rara in fruticetis, 47,17239833°/18,00861667°, Veszprém megye, Keleti-Bakony”, leg. N. Bauer, 06.07.2010 [BP 705926, BP 705927].

On 11 June, 2010 near Hajmáskér, in the central part of the Aszó-völgy (CEU 8874.1, 200 m above sea level), in a scrub and dry grassland mosaic of the loess valley foot the author observed *Vicia* specimens of peculiar appearance (dense frutescent habit, very narrow leaflets) and identified them as *Vicia dalmatica*. This record is a proof of the species as being new to the Bakony Region, from where the species has not been mentioned by any flora works (PILLITZ 1910, RÉDL 1942), and has not been documented by herbarium voucher.

The secondary, steppe grassland-like dry grassland habitat with dense scrubby vegetation (Hajmáskér: Aszó-völgy) was then thoroughly documented and apart from *Vicia dalmatica* the following species were recorded: *Achillea pannonica* Scheele, *Agrimonia eupatoria* L., *Crataegus monogyna* Jacq., *Elymus repens* (L.) Gould., *Festuca rupicola* Heuff., *Galium molugo* agg., *G. verum* L., *Knautia arvensis* (L.) Coult., *Medicago falcata* L., *Nepeta pannonica* L., *Phleum phleoides* (L.) H. Karst., *Pimpinella saxifraga* L., *Poa angustifolia* L., *Potentilla recta* L., *Salvia nemorosa* L., *Securigera varia* (L.) Lassen, and *Tordylium maximum* L.

The flora of the Aszó-völgy is particularly rich in several sub-Mediterranean (sub-Mediterranean, Pontic-Mediterranean, Pannonian-Balkan) and eastern (continental, Pontic, Pontic-Pannonian) elements. Floristical connections to the East are recognisable in the presence of several typical forest-steppe species (e.g. the Pontic *Amygdalus nana* L., *Cerasus fruticosa* (Pall.) Woronow, *Hypericum elegans* Stephan ex Willd., *Linum flavum* L., *Silene bupleuroides* L., *Trinia ramosissima* (Fisch.) W. D. J. Koch; also the Pontic-Pannonian *Astragalus vesicarius* L. subsp. *albidus* (W. et K.) Br.-Bl., *Pulsatilla grandis* Wender, *Serratula radiata* (W. et K.) M. Bieb., *Stipa tirsia* Steven emend. Čelak., and *Taraxacum serotinum* (W. et K.) Poir.). The strong sub-Mediterranean character of the flora is reflected by species including *Aethionema saxatile* (L.) R. Br., *Anacamptis pyramidalis* (L.) Rich., *Artemisia alba* Turra, *Carex halleriana* Asso, *Colutea arborescens* L., *Convolvulus cantabrica* L., *Coronilla coronata* L., *Ononis pusilla* L., *Ophrys apifera* Huds., *Plantago argentea* Chaix in Vill., *Tordylium maximum* L.; in addition, several southeastern, Pontic-sub-Mediterranean species (e.g. *Allium moschatum* L., *Cotinus coggygia* Scop., *Iris graminea* L., *Scorzonera hispanica* L., *Seseli pallasii* Besser) are also present in this valley.

The quest of nativity in Hungary

According to KÁRPÁTI (1950) this species is a native member of our flora. The Flora Europaea (BALL 1968) agrees, based on the fact that the Hungarian occurrence fits into the general range of distribution of the species. Previously, some authors were unsure of the nativity (see ANON. 2009, SOÓ 1966, 1970). The newly discovered population of *Vicia dalmatica* in the Bakony Mts (Aszó-völgy) provides an impetus to us to undertake a thorough examination of the true status of the species in Hungary.

Despite the fact that the Aszó-völgy was a military area for several decades, this place and the surrounding dry valleys, characterised by significant natural vegetation and especially rich flora, has remained in a relatively good state for continued research. Nowadays, the large valleys of the Eastern Bakony Mts are not affected seriously by military operations (drilling), but previous disturbances to the natural vegetation (with signs of fire and other damage in some scrubs and forests segments) are obvious in the area. Getting back to the local population of *Vicia dalmatica* in the

Aszó-völgy, based on the land-use history of the area the anthropogenic origin cannot be excluded, but it has a limited probability. Its previously collected specimens also come from secondary or at least disturbed habitats (reflected by information on the herbarium sheets), which leaves open the possibility of the plant being introduced in the area.

The marginal zones of the Eastern Bakony Mts and the Buda Mts are phytogeographically similar, both areas belong to the Hungarian forest-steppe zone (BORHIDI 1961), where the flora is rich in sub-Mediterranean and eastern elements. In these areas *Vicia dalmatica* is just one of the several southern and eastern floristical elements. The low southeastern marginal zone of the Visegrád Mts near Pomáz and Szentendre is an area with a rich flora and elements of floristical history importance. The three, currently known Hungarian localities fit well into the known range of distribution of the species, and several other taxa (as listed above) with similar distributional pattern are characteristic in the southeastern margin of the Transdanubian Mountain Range. Based on the above, the author can confirm the opinion of KÁRPÁTI (1950) that it is correct to treat *Vicia dalmatica* as species native to Hungary. Based on the here summarised data of this little-known taxon, additional occurrences are expected in the marginal zone of the Hungarian Middle Mountain Range.

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