

## New floristic records from Central Europe 11 (reports 149-163)

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**Abstract:** The presented 11<sup>th</sup> part of the series includes 15 new records of vascular plants from Hungary, Slovakia and Ukrainian Carpathians. In Hungary, second country record of *Rapistrum rugosum*, *Amaranthus emarginatus* subsp. *emarginatus* and *Pyrus betulifolia* were reported. In Slovakia, new localities of *Lathyrus hirsutus* and seven alien *Euphorbia maculata*, *Nigella damascena*, *Geranium macrorrhizum*, *G. purpureum*, *Pseudofumaria lutea*, *Ruta graveolens* and *Salvia sclarea* were recorded. *Guizotia abyssinica* and *Lupinus angustifolius* are new aliens for the flora of Slovakia. From the Ukrainian Carpathians new findings of *Arabidopsis neglecta* and *Scorzonerooides pseudotaraxaci* were recorded.

**Keywords:** alien, chorology, Hungary, native species, new records, Slovakia, Ukrainian Carpathians, vascular plants.

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This is an ongoing report in the established series dealing with new chorological data on higher vascular plants in Central Europe (for details, see *Thaiszia – J. Bot.* 28 (1), pp. 79–80, 2018). The nomenclature of taxa follows the Euro+Med PlantBase (Euro+Med 2006+) and/or Chromosome number survey of the ferns and flowering plants of Slovakia (Marhold et al. 2007), herbarium acronyms follow Thiers (2023+).

The publication includes contributions by M. Dudáš (149-152), P. Eliáš Jr. & N. Kotlářová (153-154), R. Hrivnák (155), G. Király & A. Király (156-158), Y. Kobiv (159-160), D. Slabejová & I. Jarolímek (161-162) and V. Taraška (163), arranged alphabetically.

## **Matej Dudáš (reports 149-152)**

### **Slovakia**

**149. *Pseudofumaria lutea* (L.) Medik:** the Slovenské rudohorie Mts., Košice, Horný Bankov, gardening settlement Barasky, parking area at the edge of the oak forest, 10 flowering bunches, naturalised, 415 m, 7293c, 48°44'52.8"N 21°12'54.1"E, 26. 5. 2022, M. Dudáš, KO 36881.

*Pseudofumaria lutea* is a perennial plant with the origin in southern foothills of central and western Alps. As a garden escapee it spreads sporadically throughout Western and Central Europe (Lidén 2011+), especially on old city walls, walls and retaining terraces. In the Czech Republic it escaped from gardens frequently throughout the country (Kaplan et al. 2022). In Slovakia, five records from Bratislava and single one from Košice (Mártonfi 2002), Nitra (Bacsa 2013) and Pezinok (Bacsa 2015) have been recorded.

**150. *Nigella damascena* L.:** the Východoslovenská nížina lowland, Zemplín, Hlavná ulica St., over 50 flowering individuals along the road, between the paving stones on the sidewalk and in cracks at the foot of the wall, naturalised, 103 m, 7596d, 48°26'30.53"N 21°48'33.48"E, 28. 5. 2022, M. Dudáš, KO 36883.

*Nigella damascena* is an annual plant with the origin in the Mediterranean area and introduced in central, eastern and northern Europe (Raab-Straube et al. 2014+). In Slovakia, *N. damascena* is infrequently found escaped from gardens in western Slovakia (Bagin 2020). In eastern Slovakia, a single record was reported in the Zoo Košice (Dudáš et al. 2022).

**151. *Geranium macrorrhizum* L.:** the Slanské vrchy Mts., Bohdanovce, poplar windbreak on the western edge of the village, garden waste, ca. 195 m, 7394a, 48°39'25.59"N 21°23'21.29"E, 1. 6. 2022, M. Dudáš, KO 36901, 36906.

*Geranium macrorrhizum* is a species native to southern Europe growing on rocky and stony slopes, mostly on limestone. Recently, the species was recorded as an escapee in Austria, Germany, Finland and Turkey, while in the Czech Republic and Great Britain it is considered a naturalised neophyte and in Hungary a rare casual

neophyte (Eliáš et al. 2023 and references cited herein). In Slovakia, it was found escaped in Bratislava-Karlova Ves in the cemetery Slávičie údolie.

**152. *Lathyrus hirsutus* L.:** the Šarišská vrchovina hill area, Veľký Šariš, Kanaš, hill Šarišská hora (420 m), S slope over the road towards Kanaš, moved meadow, small population with ca 20 individuals, 307 m, 6993c, 49°02'43.0"N 21°12'52.5"E, 10. 6. 2022, M. Dudáš, KO 36815.

*Lathyrus hirsutus* grows predominantly in southwestern and southern parts of Slovakia in steppe meadows, on margins of oak forests and in bushy hillsides, but records from eastern Slovakia were missing (Chrtková 1988). Recently, only four findings were recorded in southern parts of the Východoslovenská nížina lowland (Mártonfi 2014). The exact distribution in eastern Slovakia is not known, revision of the material from public Slovak herbaria and further field research is needed.

#### **Pavol Eliáš Jr. & Nikola Kotlárová (reports 153-154)**

##### **Slovakia**

**153. *Ruta graveolens* L.:** the Podunajská nížina Lowland, Nové Zámky, Nesvadská Street, abandoned place (former garden waste deposit?) near the crossroad with J. Murgaša Street, 2 individuals, 113 m, 8075a, 47°58'30.79"N, 18°10'35.41"E, 30. 6. 2022, P. Eliáš Jr. & Nikola Kotlárová, NI.

The native range of *Ruta graveolens* is the Northern Balkan Peninsula to Krym (Towsend 1968). The species occasionally escapes from cultivation in Central Europe; Raab-Straube (2018+) reported it from Austria, Germany, Hungary, the Czech Republic, and Slovakia. In Slovakia, *R. graveolens* has been sporadically cultivated (Zahradníková 1982). The first data of escape was found in 1830 in the vicinity of Bratislava; however, the taxon, evaluated as a casual neophyte, is considered extinct (not recorded for the last 50 years) nowadays (Medvecká et al. 2012).

**154. *Salvia sclarea* L.:** the Podunajská nížina Lowland, Nové Zámky, Nesvadská Street, abandoned place (former garden waste deposit?) near the crossroad with J. Murgaša Street, about 15 individuals, 113 m, 8075a, 47°58'30.79"N, 18°10'35.41"E, 30. 6. 2022, P. Eliáš Jr. & Nikola Kotlárová, NI.

*Salvia sclarea* is native to the Mediterranean area, extending eastward throughout Ukraine, the Caucasus, and Turkey to Afghanistan (Kaplan et al. 2018). It has also been cultivated in other parts of Europe. Secondary occurrences have been found in the British Isles, Belgium, Lithuania, the Czech Republic, Austria, Hungary, and Romania (Kaplan et al. 2018; Király & Király 2018). According to Medvecká et al. (2012), *Salvia sclarea* was first found in Slovakia at the end of the 19<sup>th</sup> century (1888) and belongs to the group of casual neophytes recorded at 1–4 localities up to now. Recently, the species was found to escape from cultivation in the central part of the Topoľčianky settlement in 2018 (Eliáš sen. 2018).

## Richard Hrivnák (report 155)

### Slovakia

**155.** *Euphorbia maculata* L.: the Lučenská kotlina basin, Lučenec town, Hviezdoslavova 10 street, path margin, 188 m, 7684c, 48°19'40.99"N 19°40'17.29"E, 16. 8. 2022, R. Hrivnák, Fig. 1. – the Lučenská kotlina basin, Lučenec, railway station, railway embankment, 186 m, 7683d, 48°20'18.36"N, 19°39'49.30"E, 16. 8. 2022, R. Hrivnák, observation. – the Rožňavská kotlina basin, Rožňava, Námestie baníkov town square, margin of the fountain with the statue of Františka Andrássy, 311 m, 7389a, 48°39'43.32"N, 20°31'57.71"E, 23. 8. 2022, M. Dudáš & R. Hrivnák, Fig. 1, KO 37062.

*Euphorbia maculata* is native to North America (Gleason & Cronquist 1991), naturalised in southern and central Europe, Middle and South America, the Middle East, eastern Asia, New Zealand and Australia (Smith & Tutin 1968; Holm et al. 1979; Esler & Astridge 1987). *E. maculata* was recorded for the first time in Slovakia by Eliáš (2009a) near the Chatam Sófer memorial in Bratislava in July 2007. This herb species was later found in several localities, mainly in the southern regions of Slovakia (e.g. Eliáš 2009b; Eliáš 2019, 2020; Májeková et al. 2021; Čahojová et al. 2022; Kantor 2022). Its habitat preference suggests that *E. maculata* grows in ruderal vegetation of trampled sites, less frequently in ornamental weed communities (Rendeková et al. 2014; Eliáš 2019). This contribution provides new distribution records of the species in artificial habitats from the southern part of the central Slovakia.



**Fig. 1** *Euphorbia maculata* in the new localities in Lučenec, Hviezdoslavova St. (left) and Rožňava (right) towns (photos by R. Hrivnák).

## Gergely Király & Angéla Király (reports 156-158)

### Hungary

**156.** *Rapistrum ruqosum* (L.) All.: NW Hungary, Győr-Moson-Sopron County, Mosonmagyaróvár, 2 km SE of Mosonudvar, ruderal vegetation along a dirt road,

116 m, 8169c, 47°50'04.3"N, 17°14'07.0"E, 15. 6. 2021, G. Király (herb. Király + photodocumented).

Widespread Mediterranean species, with a strong invasive behaviour in the temperate regions of Europe and Asia, as well as in the Americas and Australia. Polymorphic, three subspecies have been recognised by several authors, however, with great overlap and variability, therefore they are often considered to be conspecific. Significant part of its occurrences out of the native range has proven as ephemeral, pathway is ballast and wool, sometimes grain (Steven 1992; Warwick 2010; Verloove 2023). In Hungary there is a single historical record from the industrial area of Győr, where it was reported as a rare, occasional weed probably introduced by the transportation of cereals (Polgár 1918). According to Fischer et al. (2008), it is present in all eastern federal states of Austria, it has likely been introduced to Mosonmagyaróvár from this direction. On the newly discovered site, *R. rugosum* grows in a species rich ruderal weed community (e.g. *Anthemis austriaca*, *Berteroa incana*, *Cardaria draba*, *Carduus acanthoides*, *C. crispus*, *Crepis pulchra*, *Daucus carota*, *Elymus repens*, *Erigeron annuus*, *Euphorbia esula*, *Falcaria vulgaris*, *Knautia arvensis*, *Lactuca serriola* and *Rumex crispus*).

**157. *Amaranthus emarginatus* Salzm. ex Uline & W.L.Bray. subsp. *emarginatus*.**: NW Hungary, Győr-Moson-Sopron County, 0,8 km SE of Fertőd, on the shore of a small pit, 120 m, 8367c, 47°37'10.6"N, 16°54'35.5"E, 12. 8. 2021, G. Király (herb. Király + photodocumented).

*Amaranthus emarginatus*, a subtropical species of the *A. blitum* agg. has been naturalised in the Central European countries over the past decades. It colonises riverbanks and ruderal sites, with a growing frequency in connection with warming climate and uncontrolled trade of crops and container plants. The majority of verified individuals belong to subsp. *pseudogracilis*, whereas the nominate subspecies is considered very rare in Central Europe (Hügin 1987; Dřevojan & Letz 2016). In accordance with that above, most of the Hungarian data refer to subsp. *pseudogracilis*, and merely a single record (Visegrád, leg. Barina Z. BP 659238) represents subsp. *gracilis* (Király et al. 2010; Dřevojan & Letz 2016). Here we report on the second country record of subsp. *gracilis* from north-west Hungary, where it grows on the bank of a newly established gravel pit accompanied by *Amaranthus blitum*, *Anagallis arvensis*, *Chenopodium chenopodioides*, *Cyperus fuscus* and *Potentilla supina*.

**158. *Pyrus betulifolia* Bunge.**: Central Hungary, Pest County, 0,7 km SW of Farnos, two old trees and several young specimens in the sandy grasslands N of the road 311, close to the bridge of the Hajta River, 97 m, 8684bc, 47°21'24.1"N, 19°49'34.9"E, 5. 8. 2022, G. Király (herb. Király), Fig. 2.

*Pyrus betulifolia* (sect. *Pashia*), native to northern China is a small tree with spinescent branchlets, tomentose leaves when young, and subglobose pomes 5-10 mm in diameter. It prefers plains with sunny, dry, sandy soils, and (both in the native

and secondary range) it is usually used as a grafting stock for pear cultivars, furthermore as an ornamental or medicinal plant (Duke & Ayensu 1985; Cuizhi & Spongberg 2003). Despite its frequent use in horticulture, there is only a single report of its presence in Central Europe: it was found as a stock plant with few seedlings in an abandoned orchard on the foothills of the North Hungarian Mts (Északi-középhegység) near Andornaktálya (Schmotzer & Táborská 2021). Latter authors considered the species being naturalised in this locality, however, they found only a few seedlings and several root suckers. Our recent finding is the first from the Great Plain in Hungary. This small stand composed by two old trees and a few younger specimens probably originated from vegetative sprouts and is on the verge to be classified as naturalized.



**Fig. 2** *Pyrus betulifolia* in Central Hunagry (photo by G. Király).

### **Yuriy Kobiv (reports 159-160)**

#### **Transcarpathian Ukraine**

**159.** *Arbidopsis neglecta* (Schult.) O'Kane & Al-Shehbaz: Rakhiv District, 11 km SE of Bohdan village, the Marmarosh (Maramureş) Mts., Mt. Nenieska, steep rocky couloir, N slope, 1750 m, 47°58'07.0"N, 24°27'09.7"E, 21. 7. 2006, Y. Kobiv, LW 215445.

*Arbidopsis neglecta* is a West-East-South-Carpathian endemic (Kliment et al. 2016). It is an alpine species, restricted to poor vegetation of siliceous screes and

rocks covered with snow until early summer. Vegetation in its habitats belongs to the alliance *Androsacion alpinae*. In the Ukrainian Carpathians, *A. neglecta* is rare and occurs only above 1500 m a.s.l. This short-lived species is prone to decline due to the climate-driven overgrowth of its habitats by graminoids and shrubs (Kobiv 2018). In Transcarpathia, the species occurs mainly in the Svydovets Mts, where it is known from several localities (Domin 1929, 1930a; Kobiv et al. 2009; Pachschröll & Pachschröll 2019) and in the Chornohora Mts (Margittai 1935). It was also reported from the Marmarosch Mts, namely from Mt. Petros Marmaroskyi by Deyl (1940: p. 79), but several thorough surveys of the mentioned locality performed in the 2000–2010s revealed that the species does not occur there anymore. Therefore, the reported finding of *A. neglecta* from Mt. Nenieska is the first reliable evidence of the current species' occurrence in the Marmarosch Mts including their Romanian part, where it has not been mentioned (Nyárády 1955; Ciocârlan 2009). The discovered population is low-numbered and covers only several m<sup>2</sup>. The calcium-rich sandstone rocks in Mt. Nenieska are a remarkable biodiversity hotspot of the Ukrainian Carpathians and the reported data on occurrence of *A. neglecta* there contribute to the knowledge of floristic composition of that locality and to the information about the species distribution in the Carpathians.

**160.** *Scorzoneroides pseudotaraxaci* (Schur) Holub: Rakhiv District, 8 km W of Yasynia village, the Svydovets Mts, W spur of Mt. Drahobrat, North-Western Komyn cliffs, steep scree, NW slope, 1690 m, 48°13'40.2"N, 24°13'00.4"E, 14. 7. 2018, Y. Kobiv, LW 215601.

*Scorzoneroides pseudotaraxaci* is a West-East-South-Carpathian endemic (Kliment et al. 2016), which occurs mostly in the calcium-rich screes in the alpine zone (Chopyk 1976; Kobiv 2018). The species distribution is highly disjunct and its closest to Ukraine localities are situated in the Rodna Mts, Romania (Nyárády 1965; Chopyk 1976). In Ukraine, its confirmed occurrence refers only to the Svydovets Mts, namely to Mt. Blyznytisia, the closest slope of Mt. Drahobrat and the cirque between these mountains within 1600–1800 m a.s.l. (Domin 1930a, b; Popov 1949; Chopyk 1976). However, the unverified mentions concern also the Chornohora and Hryniava Mts (Novikov 2018). The discovered locality of *S. pseudotaraxaci* lies ca. 1100 m westwards from the above-mentioned site on the opposite slope of Mt. Drahobrat. The population is small and includes about 100 flowering individuals. Though that locality is situated not far from the main rocky ridge of the Blyznytisia-Drahobrat massif, which is a well-known biodiversity hotspot (Domin 1930a, b; Bedey 2006), the NW Komyn cliffs on the W spur of Mt. Drahobrat lie clearly away and constitute a separate saxicolous habitat. It harbours a number of rare species including *Saussurea alpina* that occurs nowhere else within the Svydovets Mts (Kyyak 2013; Pachschröll & Pachschröll 2019). This proves the peculiarity of the site, and the report of *S. pseudotaraxaci* on NW Komyn cliffs adds a new datum to the floristic composition of the locality and the species occurrence in the Ukrainian Carpathians.

## Denisa Slabejová & Ivan Jarolímek (reports 161-162)

### Slovakia

**161.** *Guizotia abyssinica* (L.f.) Cass.: the Záhorská nížina Lowland, Stupava, W 1,2 km, between the localities "Pod hájom" and "Za potokmi", *Phacelia tanacetifolia* field, 4 sterile plants, 170 m, 7767b, 48°15'52,2"N, 16°59'53,4"E, 21. 10. 2022, D. Slabejová & I. Jarolímek, SAV.

*Guizotia abyssinica* is a yellow flowering erect annual herb which reaches the height of about 1 meter. It is native to the north-eastern part of tropical Africa, in the highlands of Ethiopia and Eritrea. It produces the seeds which contain a high proportion of quality edible oil and therefore it is grown in other countries, e.g. in India. Secondarily it occurs in nearly all of the countries of central and west Europe, mostly as casual alien. The seeds are also used in compound feed for birds and this is likely to promote the spread of the plants. In Ukraine, it was cultivated and in Italy and Spain it is naturalised (Euro+Med 2006+). It was included in the list of alien plants of Slovakia (Medvecká et al. 2012) based on the unpublished personal information from Tibor Baranec. It was classified as casual neophyte. From that time it has not been found.

**162.** *Lupinus angustifolius* L.: the Záhorská nížina Lowland, Stupava, W 1,2 km, between the localities "Pod hájom" and "Za potokmi", *Phacelia tanacetifolia* field, tens of plants, 170 m, 7767b, 48°15'52,2"N, 16°59'53,4"E, 21. 10. 2022, D. Slabejová & I. Jarolímek, SAV.

*Lupinus angustifolius* as a member of the family Fabaceae fixes nitrogen in interaction with bacteria. In the past it was cultivated as a food crop for its edible seeds, as a fodder for livestock and for green manure. It is native to the Mediterranean and introduced to many European countries (Euro+Med 2006+). In Slovakia it has not been found up to now, this is the first record. Currently, it would be classified as casual alien in the Slovak flora.

Both species, *Guizotia abyssinica* and *Lupinus angustifolius*, were found in the field with *Phacelia tanacetifolia* planted as green manure. We assume that both species may have entered the field with insufficiently purified *Phacelia* seed. Species composition of the vegetation in the field is shown by the phytocoenological relevé:

Relevé 1. *Phacelia tanacetifolia* sown field at the sandy soil, flat area, 170 m, 10 × 10 m, E<sub>1</sub>: 90%, E<sub>0</sub>: 0%, height E<sub>1</sub>: 35-90 cm.

E<sub>1</sub>: *Amaranthus retroflexus* +, *Capsella bursa-pastoris* +, *Chenopodium album* +, *Digitaria sanguinalis* 1, *Echinochloa crus-galli* 1, *Erodium cicutarium* +, *Geranium pusillum* +, *Guizotia abyssinica* r, *Hordeum vulgare* 3, *Lupinus angustifolius* +, *Phacelia tanacetifolia* 5, *Pisum sativum* +, *Plantago major* +, *Ranunculus* sp. juv. +, *Raphanus raphanistrum* +, *Setaria pumila* +, *Stellaria media* 1, *Stenactis annua* r, *Taraxacum* sect. *Ruderalia* +, *Thlaspi arvense* 1.



## Vojtěch Taraška (report 163)

### Slovakia

**163.** *Geranium purpureum* Vill.: the Podunajská nížina Lowland, Nové Mesto nad Váhom, train station, railway track, several tens of plants, 180 m, 7273a, 48°45'04.6"N, 17°50'10.5"E, 28. 5. 2022, V. Taraška & K. Vojtěchová, BRNM 837301.

*Geranium purpureum* is recently spreading along railways in Central Europe (e. g. Melzer 1990; Růžička & Koblížek 2009; Kocián & Hlisenikovsky 2014). In Slovakia, it is an alien species (Medvecká et al. 2012) first observed in 2000 (Zaliberová & Májeková 2014). Since then, it has been found at several tens of train stations, mostly in the south-west, but also in the east part of the state territory (e. g. Eliáš 2011; Dudáš 2022). Previous dynamics of the species spreading allows presuming that east and south-west Slovakia have been settled via two independent migration routes by *G. purpureum*. The locality in Nové Mesto nad Váhom is the northernmost occurrence of the species in south-western Slovakia so far, with the nearest populations in Križovany nad Dudváhom (Eliáš 2017) and Piešťany (Bača 2019). Further expansion of the species should be carefully monitored in order to identify the place and time of prospective contacts between the west and east migration routes.

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