

Systematic and phytogeographic analysis of the vascular flora of Mt Zemenska, West Bulgaria

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Abstract. Mt Zemenska has ample plant diversity, with strong participation of southern and steppe elements. The plant list contains 1354 vascular plants, which account for one-third of the Bulgarian vascular flora. They belong to 89 families and 482 genera. *Magnoliophyta* are the dominant group. More than half of families and genera of the Bulgarian *Magnoliopsida* and *Liliopsida* are present in the flora of Mt Zemenska. The indicator families for the North Temperate Floras assess Mt Zemenska's flora as North Temperate. Generally, Mt Zemenska has a transitional climate between the continental and the Mediterranean climate which explains the domination of sub-Mediterranean floristic elements.

Key words: Balkan Peninsula, Bulgaria, flora, floristic analysis, limestone, Mt Zemenska

Introduction

Floristically, calcareous terrains are the richest in Europe, which is due to the thermal and water characteristics of limestones. They are very important for the formation of the genetic fund and provide refuges for relicts and newer species of different origin (Kozhuharov 1981).

Many authors wrote about the physical specificities of calcareous terrains. Adamović (1909) and Stranski (1921) paid attention to the structure of limestones, which are gray in color and grainy in structure. This is a reason for better heating and slower cooling. That is why limestones are warmer and calcareous terrains in the temperate climatic areas have comparatively rich plant diversity and strong participation of southern and steppe elements. The authors regard them as a Mediterranean oasis on this latitude. Calcareous terrains strongly attract the attention of botanist.

A specific form-differentiation takes place on the Bulgarian calcareous terrains, resulting in the formation of a specific flora and plant communities (Velchev 1998). The entire Balkan Peninsula is a great refuge

formed of different parts. The Znepole Floristic Region in general and Mt Zemenska in particular form one of the endemic speciation centers in Bulgaria (Asenov 2006).

Limestone is the base rock of Mt Zemenska (Fig. 1). Dry valleys, karst, whirlpools, pot-holes, and rocks shape out the relief of this low (1295 m) mountain. Zemenski Prolom gorge (about 20 km long and



Fig. 1. Calcareous terrain of Mt Zemenska.



Fig. 2. Position of Mt Zemenska on the Balkan Peninsula (in red dot).

600 m deep) separates Mt Zemenska from the neighboring limestone Mt Konyavska. One of the longest and greatest Bulgarian rivers, Struma, flows through this gorge, and runs into the Aegean Sea (Thracian Sea) at the Orphano Gulf, North Greece. The meridional orientation of Struma River Valley and the short distance to the Aegean Sea (205 km) are the reason for a slight Mediterranean climatic influence via the Zemenski Prolom gorge and up to the southern slopes of Mt Zemenska. The position of Mt Zemenska in the Balkan Peninsula is marked by red in Fig. 2.

The flora of Mt Zemenska comprises 68 species protected by different categories, 38 Balkan endemics and five Bulgarian endemics. Tertiary flora is presented by *Astragalus wilmottianus*, *Morina persica*, *Ostrya carpinifolia* and other species, a total of 26 Tertiary relict plants, which contributes to regarding the moun-

tain as one of the Tertiary refuges in Bulgaria (Asenov & Dimitrov 2012). The family *Orchidaceae* numbers 22 species. Some protected plants, such as *Himantoglossum caprinum*, *Echium russicum* and *Cachrys alpina* (Fig. 3), etc., have vast and numerous populations, while other as *Ophrys apifera*, *Orchis papilionacea* and *Centaurea immanuelis-loewii* are presented by single individuals.

Vegetation of Mt Zemenska is presented by forest, shrub, grassy, and rocky communities, belonging to *Aestilignosa*, *Aestifruticeta*, *Aciculifruticeta*, *Aestiduriherbosa*, *Pratoherbosa*, and *Theroherbosa*. Belt distribution of the plant cover divides into:

- belt of xerothermal oak deciduous forest *Quercetum mixtum*, with development of *Quercus pubescens*, *Q. frainetto*, *Q. cerris*, *Q. virgiliana*, *Carpinus orientalis*, *Acer campestre*, *Fraxinus ornus*, *Syringa vulgaris*, etc.;
- belt of xeromesophilic hornbeam forest, with development of *Carpinus betulus*, *Quercus dalechampii*, *Fagus sylvatica*, *Acer campestre*, *A. platanoides*, *A. pseudoplatanus*, *Fraxinus ornus*, *F. excelsior*, *Tilia tomentosa*, *T. cordata*, etc.;
- belt of mesophilic forest (beech belt) – mostly monodominant communities of *Fagus sylvatica*, as well as mixed communities with the participation of *Carpinus betulus* and small spots of *Populus tremula* as a dominant species. Tertiary relict *Ostrya carpinifolia* falls into this belt.

The tops of the hills are covered by grassy and shrubby communities of steppe character. Some steppe elements are presented in plant cover: *Amygdalus nana*, *Astragalus angustifolius*, *Artemisia alba*, *Comandra ele-*



Fig. 3. *Cachrys alpina*.

gans, *Koeleria* spp., *Melica ciliata*, *Rosa pimpinellifolia*, *Stipa* spp., *Thymus* spp., *Satureja montana*, etc.

Some pot-holes are covered by tree vegetation, with development of *Fagus sylvatica*, *Carpinus betulus*, *Ulmus glabra*, *Pyrus amygdaliformis*, and *P. pyraeaster*.

Peaks and hills are vast and flat. That is why in the past (until the 1990s) they were used for animal husbandry, livestock grazing, haymaking, and agriculture. After the political and economical changes in 1989, no such activities have been carried out in the northern part. The southern part, however, is still strongly anthropogenically affected. Therefore, the percentage of anthropophytes on Mt Zemenska (25.3%) is almost twice higher than that in the Bulgarian flora (Asenov & Dimitrov 2013).

Floristic researches of Mt Zemenska were sporadic and fragmentary until 2006. Practically, there exist mainly chorological data, published by Urumov (1912, 1913, 1917, 1930 etc.), Popov (1975), Dimitrov (1995), Vutov & Dimitrov (2000), Dimitrov & Stoyanov (2002), and Vassilev (2009). Populations of some medicinal species were investigated by Genova & al. (1996).

The first comprehensive investigation was carried out by Asenov (2009a, b, 2010, 2012a; b, 2013, 2014) and Asenov & Dimitrov (2012, 2013).

Vegetation of Mt Zemenska was investigated by Vassilev (2013) and Vassilev & al. (2013).

The Zemenski Prolom gorge was studied out better by Adamović (1909), Stojanov (1922), Urumov (1935), Velchev & Stoychev (1981), Ančev (1983), Asenov (1993), Ančev (2007), and Bancheva (2006).

The present investigation comes to fill in this blank spot in the European flora. The study is aimed at presenting the species list and floristic analysis of Mt Zemenska's vascular flora.

Physical and geographic characteristics of the survey area

According to the geobotanical division of Bulgaria, the vegetation of Mt Zemenska belongs to the Holarctic Kingdom, European Deciduous Forest Zone, Illyrian (Balkan) Province, Sofia district, Koniavsko-Zemenski region (Bondev 2002).

Mt Zemenska is low, well differentiated, asymmetrical massif, about 19 km long and 5–13 km wide, localized in Kraishte, Znepole Floristic Region, West Bulgaria, in quadrants FN-30, FN-40, FN-41, FM-39, between

the towns of Kyustendil and Zemen and the valleys of rivers Struma, Treklyanska and Dragovishtitsa. Its area is about 170 km². It is divided to a northern (higher) and southern (lower) part. The average altitude of the northern part is 1100 m, and in the southern part it is 800 m. The highest peaks are Tichak (1295 m), Silni Vrah (1245 m), Glamen (1212 m), Ivanov Kamak (1208), Vilna Mogila (1200), Bandera (1199), Chirenets (1167 m), Mechka (1168 m), etc. (Petrov 1986).

According to the geographical division of Bulgaria, our study area belongs to the Central Mountain-Pangeographic Zone, Kraishte-Ichtiman Divide (Stefanov 2002).

Climatically, Mt Zemenska belongs to the Transitional Continental Climatic Region. The transitional character is expressed in a warm summer and warmer winter, smaller amplitude of the temperatures, a summer-autumn maximum (July and November) and a summer-winter minimum (August and February) of precipitation, and annual, but not constant snow cover. The annual temperature in Kyustendil (close to Mt Zemenska) is 10.8 °C. The annual precipitation in Kyustendil is 553 mm (Velev 2010).

According to the accepted hydrological division of Bulgaria, Mt Zemenska belongs to the Kraishte-Srednogie region of a district with a middle-continental flow influence; Hydrological Zone B; and Hydrological Subzone BII. Mt Zemenska is drained out by rivers Struma, Treklyanska and Dragovishtitsa. All water streams in the mountain have temporary character, because of the calcareous base rock. The only permanent stream and waterfall is Polska Skakavitsa (50 m) (Jordanova 2002).

According to the soil division, the study area falls into the Mediterranean Soil District, Balkan-Apenine Subdistrict, Sofia-Kraishte Province (Ninov 2002).

A calcareous base rock composition is one of the most typical specificities. It is the most important factor for the existing ecological conditions. Mt Zemenska is deeply karst, bare and dry. Sedimentary rocks (Triassic limestones, dolomites and sandstones), compose the geological base. Furthermore, the southern slopes are composed of breccias, conglomerates, argillites, tuffs and marls (Nikolov & Jordanova 1997).

A combination of continental climate and Mediterranean influence with the calcareous base rock and low mountain relief has led to the formation of *rendzina* soils (humus-carbonate) of the *Leprosols* class. A

humus horizon is characteristically situated immediately above the primary unconsolidated materials (AC profile). These soils are sandy-clay up to slightly clay, dark-gray in color. The soil is insufficiently humid (dry to fresh), owing to the fast seep-down of water to a great depth. Soil susceptibility to erosion is a serious problem (Donov 1993).

Mt. Zemenska falls into the area of the maximum evolutionary “productivity” of the Balkan Peninsula (Peev & al. 2009).

Parts of Mt Zemenska are included in the Important Plant Area network (IPA, code BGIPA043) (Gusev 2012) and NATURA 2000 project (code BG0001012).

Material and methods

Field trips were performed from 2006 to 2014. Specimens were determined according to the *Flora of P.R. Bulgaria*, resp *Flora of R. Bulgaria* (Jordanov 1963–1979; Velchev 1982, 1985; Kozuharov 1995). *Field Guide to the Vascular Plants in Bulgaria* (Kozuharov 1992), *Flora Europaea* (Tutin & al. 1963–1980, 1993), and *Key to the Plants in Bulgaria* (Delipavlov & Cheshmedziev 2003) were also used. The family *Brassicaceae* was checked according to Ančev (2007) and Ančev & Goranova (2009). Genus *Galium* was checked according to Ančev & Krendl (2011). The family *Orobanchaceae* was checked after Stoyanov (2005, 2009). Taxonomical structure was presented by Delipavlov & Cheshmedziev (2003). Authors of the plant names were verified after The Euro+Med PlantBase (<http://ww2.bgbm.org/EuroPlusMed/query.asp>) and abbreviated in conformity with Brummitt & Powell (1992). Life forms based on Raunkiaer (1934) were determined using *Flora of P.R. Bulgaria*, resp. *Flora of R. Bulgaria*.

Data on the biological spectra of the Balkan Peninsula, Mediterranean domain (Crete, Libya), Central European domain (Serbia), North European domain (Denmark) and the World, are according to Turrill (1929). Data on the life forms of the Bulgarian vascular flora are according to Bondev (1991). Data on the life forms of dry grassy communities with prevalence of *Poaceae* and forests in the temperate cold zone are according to Apostolova-Stoyanova & Stoyanov (2009).

Data on the number of species, genera and families in the Bulgarian vascular flora are presented by Assyov & Petrova (2012): 3997 species, 889 genera, 147

families. The total number of species in the families and genera was presented according to Delipavlov & Cheshmedziev (2003).

Floristic analysis was carried out in accordance with Sprague (1925 in Turrill 1929), Kamelin (1973) and Tolmachev (1974), on the basis of an inventory, list of leading 10–15 families, taxonomic structure, Indicator Families, biological spectra, and phytogeographical spectra.

Sprague (1925 in Turrill 1929) pointed out that the families *Asteraceae*, *Fabaceae*, *Poaceae*, and *Cyperaceae* constitute a high percentage in most floras, while some sets of other families, termed Indicator Families, are in high number only in particular types of floras. On the basis of this Turrill (1929) defined the flora of the Balkan Peninsula as North Temperate, since the Indicator Families chosen by Sprague for this category all have high species number, although they are not dominant in an order given by him. Indicator Families mentioned by Sprague for the North Temperate Flora are: *Ranunculaceae*, *Rosaceae*, *Brassicaceae*, *Caryophyllaceae*, and *Apiaceae*. They account for 12–25 % of it and take the first 9–19 positions.

The species-genus index shows the distribution of taxa in the family. It was calculated by dividing the number of species into the number of genera. The high value of this index shows a higher number of species in the genera, which is a precondition for different evolutionary mechanisms.

The geoelement characteristic was checked according to Assyov & Petrova (2012). The geoelement characteristic of *Koeleria fenziiana* Schur., *K. mitrushii* Ujhelyi, *K. penzesii* Ujhelyi, and *K. schurii* Ujhelyi is according to Josifovich (1976).

Steppe elements are according to Stojanov (1922), Keller (1923), Georgiev (1928), Turrill (1929) and Jordanov (1936).

One coefficient is formed, the coefficient of relevant taxonomic diversity (RTD). The values of this coefficient are formed as a sum of the number of families, number of genera, and number of species and subspecies, divided into the area of the investigated site, where $RTD = \Sigma \text{taxa} / \text{territory}$. The higher is its value is, the greater is the diversity of taxa. The lower is its value is, the lower is taxonomic diversity – the flora is formed by a low number of families, genera, species, and subspecies (Peev & al. 2009).

The conservation status, endemics, relicts, the anthropophyte and invasive flora were investigated in

separate studies by the author (Asenov & Dimitrov 2012, 2013).

A floristic list is arranged alphabetically in the Supplement. The photos are taken by the author.

Results and discussion

The species list of Mt Zemenska comprises 1354 species, belonging to 89 families and 482 genera (Supplement).

Magnoliophyta are the dominant group. They are presented by 91 % of the families, 98.1 % of the genera and 98.9 % of the species (Table 1). More than half of families and genera of the Bulgarian *Magnoliophyta* are presented on Mt Zemenska.

Second comes the class *Magnoliopsida* (*Dicotyledone*). It comprises 77.5 % of the families, 79.1 % of the genera and 81.2 % of the species. It is followed by class *Liliopsida* (*Monocotyledone*) presented by 13.5 % of the families, 18.9 % of the genera and 17.7 % of the species. This value is higher than the value for the Balkan Peninsula (15.9 %) given by Turrill (1929). The increased percentage of *Monocotyledone* (which is stronger presented in the Mediterranean by therophytes and the terrestrial geophytic species of *Liliaceae*, *Iridaceae* and *Orchidaceae*) is due to the slight Mediterranean influence, limestone terrain and anthropogenic degradation. Vast terrains on the ridges and the tops are taken by grassy vegetation, where terrestrial geophytes and therophytes grow. The destroyed forests have been overgrown just like by grassy vegetation, which increased the percentage of this groups.

The richest families are: *Asteraceae*, *Fabaceae*, *Poaceae*, *Lamiaceae*, *Caryophyllaceae*, *Brassicaceae*, *Apiaceae*, *Rosaceae*, *Scrophulariaceae*, *Boraginaceae*, *Liliaceae*, *Cyperaceae*, and *Ranunculaceae* (Table 2).

As it was mentioned above, the families *Asteraceae*, *Fabaceae* and *Poaceae* are leading in most floras. The *Indicator Families* mentioned above account for 22.3 %, rate in the 5–13 position and define Mt Zemenska's flora as North Temperate.

Owing to the limited diversity of habitats, most families are presented below 50 % by their total species number known for the Bulgarian flora: *Fabaceae* – 44.8 %, *Brassicaceae* – 36.7 %, *Poaceae* – 34.9 %, *Asteraceae* – 33.1 %, *Caryophyllaceae* – 30 %, and *Rosaceae* – 30 %. Only *Lamiaceae* is presented by more than half of its species – 54.9 %.

There is a concentration of species in some genera, which is characteristic for the genetic basins. This is a precondition for different evolutionary mechanisms, such as hybridization, apomixes and apomixes-related cloning and ploidy. This is verified by the wealth of polymorphous genera: *Trifolium* (30 species), *Carex* (21), *Veronica* (21), *Centaurea* (18), *Vicia* (17), *Silene* (16), *Galium* (16), *Euphorbia* (16), *Lathyrus* (16), *Potentilla* (15), *Bromus* (14), *Chenopodium* (13), *Achillea* (13), *Ranunculus* (13), *Campanula* (12), *Dianthus* (12), *Thymus* (11), *Rosa* (11), *Allium* (10), *Myosotis* (10), *Festuca* (10), *Orchis* (10), *Salvia* (10), *Poa* (9), *Inula* (9), *Ornithogalum* (9), etc.

The genus/species index is higher in *Cyperaceae* (6.6), *Chenopodiaceae* (6.3), *Geraniaceae* (6), *Euphorbiaceae* (5.6), *Rubiaceae* (5.6), *Salicaceae* (5.5), *Fabaceae* (5.4), *Scrophulariaceae* (4.1), *Rosaceae* (3.7), *Caryophyllaceae* (3.5), *Campanulaceae* (3.4), *Polygonaceae* (3.2), *Lamiaceae* (2.9), *Asteraceae* (2.7), *Boraginaceae* (2.6), *Dipsacaceae* (2.6), *Poaceae* (2.3), *Liliaceae* (1.9), *Ranunculaceae* (2.3), *Brassicaceae* (2), *Orchidaceae* (2), *Liliaceae* (1.9), and *Apiaceae* (1.8).

On the basis of these data Mt Zemenska can be considered an effective speciation centre. The coefficient of relevant taxonomical diversity (RTD) is 0.012.

Table 1. Taxonomical structure.

Taxon	Families			Genus			Species		
	Total	Percent for:		Total	Percent for:		Total	Percent for:	
		Mt Zemenska	Bulgaria		Mt Zemenska	Bulgaria		Mt Zemenska	Bulgaria
<i>Equisetophyta</i>	1	1.1	100	1	0.2	100	4	0.3	50
<i>Polypodiophyta</i>	5	5.6	33.3	6	1.2	25	7	0.5	15.9
<i>Spermatophyta</i>	2	2.2	50	2	0.4	25	4	0.3	19.4
<i>Pinophyta</i>									
<i>Magnoliophyta</i>	81	91	61.8	473	98.1	53.7	1339	98.9	33.2
<i>Magnoliopsida</i>	69	77.5	53.4	382	79.1	56.4	1099	81.2	33
<i>Liliopsida</i>	12	13.5	44	91	18.9	44.8	240	17.7	36.3
Count / %	89	100	57.4	482	100	52.4	1354	100	33.9

Table 2. The richest families.

Families	Species				Genus				Index species/genus
	Bg	Mt Zemenska	Percent for	Percent for	Bg	Mt Zemenska	Percent for	Percent for	
			Bg	Mt Zemenska			Bg	Mt Zemenska	
<i>Asteraceae</i>	480	159	33.1	11.8	106	58	54.7	12	2.7
<i>Fabaceae</i>	290	130	44.8	9.6	61	24	39.3	5	5.4
<i>Poaceae</i>	330	115	34.8	8.5	99	49	49.5	10.2	2.3
<i>Lamiaceae</i>	153	84	54.9	6.2	37	29	78.4	6	2.9
<i>Caryophyllaceae</i>	260	78	30	5.8	30	22	73.3	4.6	3.5
<i>Brassicaceae</i>	183	69	37.7	5.1	74	35	47.3	7.3	2
<i>Apiaceae</i>	138	63	46.4	4.7	77	35	45.5	7.3	1.8
<i>Rosaceae</i>	210	64	30	4.7	44	17	38.6	3.1	3.7
<i>Scrophulariaceae</i>	156	62	39.7	4.6	27	15	55.5	2.9	4.1
<i>Boraginaceae</i>	91	42	46.1	3.1	21	16	76.2	3.3	2.6
<i>Liliaceae</i>	89	35	39.3	2.6	23	16	69.6	3.3	1.9
<i>Cyperaceae</i>	107	33	30.8	2.4	16	5	31.2	1	6.6
<i>Ranunculaceae</i>	106	28	26.4	2.1	21	12	57.1	2.5	2.3
<i>Rubiaceae</i>	60	28	46.6	2.1	6	5	83.3	1	5.6
<i>Orchidaceae</i>	56	22	37.5	1.5	26	11	42.3	2.5	2
<i>Chenopodiaceae</i>	46	19	41.3	1.4	15	3	20	0.6	6.3
<i>Euphorbiaceae</i>	38	17	44.7	1.2	5	3	60	0.6	5.6
<i>Campanulaceae</i>	46	17	36.9	1.2	9	5	55.5	1	3.4
<i>Polygonaceae</i>	48	16	33.3	1.2	10	5	50	1	3.2
<i>Dipsacaceae</i>	36	13	36.1	0.9	7	5	71.4	1	2.6
<i>Geraniaceae</i>	27	12	44.4	0.9	2	2	100	0.4	6
<i>Salicaceae</i>	25	11	44	0.8	2	2	100	0.4	5.5

The spectrum of life forms is an indicator of the specific ecological conditions. Mt Zemenska in general has a hemicyptophytic climate. Some of its areas have a thermophilous stony ground – natural or secondary, originating from long-term anthropogenic degradation of potential vegetation. Such thermophilous and xerophilous habitats provide the necessary conditions for spread and colonization of xerothermophilous plants.

Prevailing life form is hemicyptophytes (59%, Table 3), characteristic for the temperate climatic floras.

Dry limestone terrains, transitional continental climate and anthropogenic degradation, are preconditions for significant participation of therophytes (better presented in the Mediterranean). The therophytes on Mt Zemenska claim 24.5 %.

Table 3. Life forms.

Life forms/percent	Ph	Ch	H	G	Th	HH
Mt Zemenska	7	2.1	59	7	24.5	0.4
Forests in the temperate cold zone	10	17	54	12	7	
Dry grassy communities with prevalence of <i>Poaceae</i>	1	12	63	10	14	
Bulgaria		11.6	55.3	6	27	
Balkan peninsula	7.8	16.2	47.5	9.7	22.7	2.8
North-European domain (Denmark)	7	3	50	11	18	11
Central-European domain (Serbia)	7.9	11.3	46.2	9.1	20.7	4.7
Mediterranean domain (Crete)	9	13.3	27.1	10.2	38.3	2
South-Mediterranean domain (Tripoli)	6	13	19	9	51	2
World flora	43	9	27	3	13	1

Legend: Ph – Phanerophytes; Ch – Chamaephytes; H – Hemicyptophytes; G – Geophytes; Th – Therophytes; HH – Helophytes.

The area of forest habitats is vast, but the species composition is poor. The phanerophytes are presented poorly (7%) which is typical of the temperate climate zone.

Geophytes on Mt Zemenska account for 7%. Vast areas are covered by habitat HD 6210 (Directive 92/43/EEC) – an important habitat for *Orchidaceae*.

Chamaephytes constitute 2%. This group is well presented on xerophilous and xeromesophilous terrains similar to the Mediterranean.

There is a low number of helophytes and hydrophytes growing in riverside and river areas at the foothills. They are 0.4% (6) and 0.2% (3), respectively.

The flora of Mt Zemenska is a combination of different floristic elements which originate from different regions (Table 4).

Table 4. Basic floristic elements.

Elements	Count	Percent
subMed	210	15.5
Eur-As	200	14.8
Eur-Med	169	12.5
Eur	106	7.8
Eur-Sib	88	6.5
Med	77	5.7
Boreal	66	4.9
Pont-Med	57	4.2
Bal	56	4.1
subBoreal	51	3.8
Kos	49	3.6
Eur-subMed	21	1.5
others	204	15.1
63 elements	1354	100 %

Sub-Mediterranean elements prevail: 15.5% (210). The short distance from the Mediterranean (205 km), Mediterranean climatic influence, calcareous warm and dry base rock, and anthropogenic degradation explain the strong presence of sub-Mediterranean elements. The flora of Mt Zemenska is sub-Mediterranean.

Eurasian elements rate second, presented by 14.9% (200). They have a wide ecological valency enabling them to survive in the most varied types of habitats, mostly developed through degradation of forests. They reach optimal development in the vegetation of oak forests, hillside meadows, mountain tops, and also among ruderal vegetation.

Euro-Mediterranean elements come third: 12.5% (169). They also have a wide ecological valency and could be found in different habitats: mesophilous, meso-xerophilous and xerophilous grassy habitats, and among ruderal vegetation.

European elements constitute 7.8% (106) and Euro-Siberian elements account for 6.5% (88). These plants inhabit colder and moister grassy and forest habitats in the belts of xeromesophilic and mesophilic deciduous forests (beech belt) and in ruderal areas.

Mediterranean elements are 5.7% (77). They inhabit warm and dry calcareous terrains and anthropogenically degraded places.

Boreal elements account for 4.9% (66). The poor representation of this group is due to the lack of proper habitats for the development of plants characteristic of the cold and humid northern regions. Boreal species were recorded in the beech belt and more humid sites in the higher zones.

Balkan elements claim 4.1% (56). Thirty-nine Balkan endemics fall within this group – taxa with distribution limited only to the territory of the Balkan Peninsula (Figs. 4, 5).

There are five Bulgarian elements – Bulgarian endemic species: *Aubrieta columnae* subsp. *bulgarica*, *Bromus moesiacus*, *Jurinea bulgarica*, *Medicago bondevii*, *Tulipa urumoffii* (Fig. 6), and *Verbascum urumoffii*.

Cosmopolitan elements are 3.6% (49). Their presence indicates secondary habitats formed by human activity. Most of them are antropophytes.

The railway tracks through the gorge, roads and anthropogenic activities precondition the penetration of adventive elements. They are 12, and eight of them are invasive species: *Amaranthus albus*, *A. hybridus*, *Bidens frondosus*, *Cuscuta campestris*, *Galinsoga parv-*



Fig. 4. *Astragalus wilmottianus*.



Fig. 5. *Edraianthus serbicus*.



Fig. 6. *Tulipa urumoffii*.

iflora, *Datura stramonium*, *Robinia pseudoacacia*, and *Xanthium italicum*.

Vast areas covered by grassy vegetation (primary or secondary) provide a proper habitat for steppe elements,

belonging to a wide spectrum of floristic elements: *Achillea clypeolata*, *Berteroa incana*, *Cachrys alpina*, *Dactylis glomerata*, *Draba muralis*, *Euphorbia taurinensis*, *Ferulago campestris*, *Hyacinthella leucophaea*, *Inula ensifolia*, *Linum flavum*, *Medicago falcata*, *Melica ciliata*, *Onobrychis alba*, *Onosma echioides*, *Peucedanum alsaticum*, *Phleum pratense*, *Picris hieracioides*, *Poa bulbosa*, *Phleum phleoides*, *Phlomis tuberosa*, *Rosa pimpinellifolia*, *Salvia aethiopsis*, *S. argentea*, *Seseli rigidum*, *Sesleria rigida*, *Silene flavescens*, *Stipa capillata*, *Teucrium montanum*, *Thalictrum minus*, *Thymus pulegioides*, *Tragus racemosus*, *Trifolium pratense*, *Veronica chamaedrys*, *Vinca herbacea*, *Vincetoxicum hirundinaria*, etc.

Conclusions

Mt Zemenska has ample plant diversity, due to its limestone terrain. One-third of the national flora, 39 Balkan endemics, 5 Bulgarian endemics, 68 protected plants,

26 Tertiary and one Glacial relicts are concentrated on an area of 170 km². The species list contains 1354 species, which belong to 89 families and 482 genera. The investigated flora is representative of the Znepole Floristic Region and the xerophytic flora of Bulgaria.

Mt Zemenska in general has hemicryptophytic climate and a North Temperate flora, with strong participation of sub-Mediterranean elements, due to the calcareous terrains and Mediterranean climatic influence. It is a Mediterranean oasis at the latitude of temperate climate.

The flora of Mt Zemenska constitutes a significant and important part of Bulgarian and European biodiversity, a Tertiary refuge and an effective speciation center in Europe.

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Supplement. Floristic list.

Taxon	Floristic elements according to Assyov & Petrova (2012)	Life forms according to Raunkiaer (1934)
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Equisetophyta

Equisetaceae

<i>Equisetum arvense</i> L.	Boreal	H
<i>E. hiemale</i> L.	Boreal	H
<i>E. ramosissimum</i> Desf.	Boreal	H
<i>E. palustre</i> L.	Boreal	H

Polypodiophyta

Aspidiaceae

<i>Dryopteris filix-mas</i> (L.) Schott	Boreal	H
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Aspleniaceae

<i>Asplenium ruta-muraria</i> L.	Boreal	H
<i>A. trichomanes</i> L.	Kos	H
<i>Ceterach officinarum</i> DC.	subMed	H

Anthyriaceae

<i>Cystopteris fragilis</i> (L.) Bernh.	Kos	H
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Hypolepidaceae

<i>Pteridium aquilinum</i> (L.) Kuhn	Kos	H
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Polypodiaceae

<i>Polypodium vulgare</i> L.	Boreal	H
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Taxon	Floristic elements according to Assyov & Petrova (2012)	Life forms according to Raunkiaer (1934)
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Spermatophyta

Pinophyta

Cupressaceae

<i>Juniperus communis</i> L.	subBoreal	Ph
<i>J. oxycedrus</i> L.	Med	Ph
<i>J. sibirica</i> Burgsd.	Boreal	Ph

Pinaceae

<i>Pinus nigra</i> J.F. Arnold	subMed	Ph
subsp. <i>pallasiana</i> (D. Don) Holmboe		

Magnoliophyta

Magnoliopsida

Aceraceae

<i>Acer campestre</i> L.	Eur-OT	Ph
subsp. <i>campestre</i>		
<i>A. hyrcanum</i> Fisch. & C.A. Mey.	subMed	Ph
subsp. <i>hyrcanum</i>		
<i>A. platanoides</i> L.	subMed	Ph
<i>A. pseudoplatanus</i> L.	subMed	Ph

Taxon	Floristic elements according to Assyov & Petrova (2012)	Life forms according to Raunkjær (1934)
Amaranthaceae		
<i>Amaranthus albus</i> L.	CAM(Adv)	Th
<i>A. blitoides</i> S. Watson	SAM(Adv)	Th
<i>A. graecizans</i> L.	Med	Th
<i>A. hybridus</i> L.	SAM(Adv)	Th
<i>A. lividus</i> L.	CAM(Adv)	Th
<i>A. retroflexus</i> L.	Kos	Th
Anacardiaceae		
<i>Cotinus coggygria</i> Scop.	Med-As	Ph
Apiaceae		
<i>Aegopodium podagraria</i> L.	Eur-Sib	H
<i>Aethusa cynapium</i> L.	Eur-Sib	H
<i>Angelica sylvestris</i> L.	Eur-Sib	H
<i>Anthriscus caucalis</i> M. Bieb.	Eur-Med	Th
<i>A. cereifolium</i> (L.) Hoffm.	Eur-Med	Th
<i>Bifora radians</i> M. Bieb.	Eur-Med	Th
<i>Bupleurum affine</i> Sadler	subMed	Th
<i>B. apiculatum</i> Friv.	Bal	Th
<i>B. commutatum</i> Boiss. & Balansa subsp. <i>glaucoarpum</i> (Borbás) Hayek	Pont-Med	Th
<i>B. falcatum</i> L.	subMed	H
<i>B. praealtum</i> L.	subMed	Th
<i>B. rotundifolium</i> L.	Eur-As	Th
<i>Cachrys alpina</i> M. Bieb.	Pont	H
<i>Carum carvi</i> L.	Eur-As	H
<i>Caucalis platycarpus</i> L.	Eur-CAs	Th
<i>Chaerophyllum aureum</i> L.	Eur-Med	H
<i>Ch. temulentum</i> L.	Eur-Med	H
<i>Cnidium silaifolium</i> (Jacq.) Simonk. subsp. <i>silaifolium</i>	Med-Sib	H
<i>Conium maculatum</i> L.	Eur-As	H
<i>Daucus carota</i> L. subsp. <i>carota</i>	Eur-As	H
<i>Eryngium campestre</i> L.	Pont-Med	H
<i>Falcaria vulgaris</i> Bernh.	Eur-As	H
<i>Ferulago campestris</i> (Besser) Grecescu	Eur-Sib	H
<i>F. sylvatica</i> (Besser) Rchb. subsp. <i>sylvatica</i>	subMed	H
<i>Foeniculum vulgare</i> Mill.	subMed	H
<i>Heracleum sibiricum</i> L.	Eur-As	H
<i>H. ternatum</i> Velen.	Med	H
<i>Laser trilobum</i> (L.) Borkh.	Eur-Med	H
<i>Laserpitium siler</i> L. subsp. <i>garganicum</i> (Ten.) Arcang.	subMed	H
<i>Myrrhoides nodosa</i> (L.) Cannon	Eur-As	Th
<i>Oenanthe silaifolia</i> M. Bieb.	Eur-Med	H
<i>O. stenoloba</i> Schur	subMed	H
<i>Orlaya grandiflora</i> (L.) Hoffm.	Ap-Bal	Th
<i>O. kochii</i> Heywood	Eur-As	Th

Taxon	Floristic elements according to Assyov & Petrova (2012)	Life forms according to Raunkjær (1934)
<i>Pastinaca hirsuta</i> Pančić	Bal	H
<i>P. sativa</i> L. subsp. <i>urens</i> (Gordan) Čelak.	Eur-Sib	H
<i>Peucedanum alsaticum</i> L.	subMed	H
<i>P. arenarium</i> Waldst. & Kit. subsp. <i>neumayeri</i> (Vis.) Stoj. & Stef.	Eur-Med	H
<i>P. austriacum</i> (Jacq.) Koch	Pont	H
<i>P. cervaria</i> (L.) Lapeyr	subMed	H
<i>Physospermum cornubiense</i> (L.) DC.	Eur-Med	H
<i>Pimpinella saxifraga</i> L.	Eur-As	H
<i>P. tragium</i> Vill. subsp. <i>lithophyla</i> (Schischk.) Tutin	Pont-subMed	H
<i>Scandix pecten-veneris</i> L. subsp. <i>pecten-veneris</i>	Eur-As	Th
<i>Sanicula europaea</i> L.	Eur-Sib	H
<i>Seseli annuum</i> L.	Eur-As	Th
<i>S. libanotis</i> (L.) Koch	Eur-Sib	H
<i>S. peucedanoides</i> (M. Bieb.) Koso-Pol.	Med-OT	H
<i>S. pallasii</i> Besser	Eur	H
<i>S. rigidum</i> Waldst. & Kit. subsp. <i>hirtulum</i> Peev	subMed	H
<i>Smyrniium perfoliatum</i> L.	Med	H
<i>Tordylium maximum</i> L.	subMed	H
<i>Torilis arvensis</i> (Huds.) Link subsp. <i>arvensis</i>	Eur-As	Th
<i>T. nodosa</i> (L.) Gartn.	Eur-As	Th
<i>T. japonica</i> (Houtt.) DC.	SPont	H
<i>Trinia glauca</i> (L.) Dumort. subsp. <i>glauca</i>	subMed	H
<i>Turgenia latifolia</i> (L.) Hoffm.	Eur-As	Th
Apocynaceae		
<i>Vinca herbacea</i> Waldst. & Kit.	Eur-Med	Ch
Araliaceae		
<i>Hedera helix</i> L.	Eur-As	Ph
Aristolochiaceae		
<i>Asarum europaeum</i> L.	Eur-Sib	H
<i>A. clematitis</i> L.	Eur-Med	G
Asclepiadaceae		
<i>Vincetoxicum hirundinaria</i> Medik. subsp. <i>hirundinaria</i>	Eur-Sib	H
Asteraceae		
<i>Achillea ageratifolia</i> (Sm.) Benth. & Hook. f. subsp. <i>aizoon</i> (Griseb.) Heimerl	Bal	H
<i>A. clypeolata</i> Sm.	Bal	H
<i>A. coarctata</i> Poir.	Pont-Med	H
<i>A. collina</i> (Wirtg.) Heimerl	Eur-subMed	H
<i>A. critmifolia</i> Waldst. & Kit.	Pann-Bal	H
<i>A. distans</i> Willd. subsp. <i>tanacetifolia</i> (Fiori) Janch.	Alp-Carp-Bal	H
<i>A. grandifolia</i> Friv.	Bal-Anat	H

Taxon	Floristic elements according to Assyov & Petrova (2012)	Life forms according to Raunkiaer (1934)
<i>A. millefolium</i> L.	Eur-Sib	H
<i>A. nobilis</i> L.	Eur-WAs	H
subsp. <i>neilreichii</i> (A. Kern.) Velen.		
<i>A. pannonica</i> Scheele	Pann-Bal	H
<i>A. pseudopectinata</i> Janka	Bal	H
<i>A. setacea</i> Waldst. & Kit.	subMed	H
<i>Anthemis arvensis</i> L.	Eur-Med	Th
<i>A. austriaca</i> Jacq.	Eur-Med	Th
<i>A. cotula</i> L.	Med	Th
<i>A. ruthenica</i> M. Bieb.	subMed	Th
<i>A. tinctoria</i> L.	Eur-Sib	H
<i>Arctium lappa</i> L.	Eur-Med	H
<i>A. minus</i> Bernh.	Eur-As	H
<i>A. tomentosum</i> Mill.	Eur-Med	H
<i>Artemisia absinthium</i> L.	Pont-Med	H
<i>A. alba</i> Turra	subMed	H
<i>A. annua</i> L.	Eur-Med	Th
<i>A. austriaca</i> Jacq.	Eur-Sib	H
<i>A. campestris</i> L.	Eur-Sib	H
<i>A. scoparia</i> Waldst. & Kit.	Eur-As	H
<i>A. vulgaris</i> L.	subBoreal	H
<i>Aster amellus</i> L.	Eur-Med	H
<i>A. linosyris</i> (L.) Bernh.	Eur-Med	H
<i>Bellis perennis</i> L.	Eur-As	H
<i>Bidens cernua</i> L.	Boreal	Th
<i>B. frondosa</i> L.	NAm (Adv)	Th
<i>B. tripartita</i> L.	Boreal	Th
<i>Bombycilaena erecta</i> (L.) Smoljan.	Eur-Med	Th
<i>Carduus acanthoides</i> L.	Eur	H
<i>C. candicans</i> Waldst. & Kit.	Bal-Dac	H
subsp. <i>globifer</i> (Velen.) Kazmi		
<i>C. nutans</i> L.	Eur-Med	H
<i>C. personata</i> (L.) Jacq.	Eur	H
<i>C. thoermeri</i> Weinm.	Pont-Pann-Bal	H
<i>Carlina acanthifolia</i> All.	Eur	H
<i>C. vulgaris</i> L.	Eur-Med	H
subsp. <i>vulgaris</i>		
<i>Carthamus lanatus</i> L.	subMed	Th
<i>Centaurea affinis</i> Friv.	Bal-Dac	H
subsp. <i>affinis</i>		
<i>C. biebersteinii</i> DC.	subMed	H
subsp. <i>australis</i> (Pančić) Dostál		
<i>C. calcitrapa</i> L.	Med	H
<i>C. chrysolepis</i> Vis.	Bal	H
<i>C. cuneifolia</i> Sm.	Bal	H
subsp. <i>cuneifolia</i>		
<i>C. cyanus</i> L.	Eur-Med	Th
<i>C. diffusa</i> Lam.	Pont-Med	H

Taxon	Floristic elements according to Assyov & Petrova (2012)	Life forms according to Raunkiaer (1934)
<i>C. immanuelis-loewii</i> Degen	Bal	H
<i>C. finazeri</i> Adamovič	Bal	H
<i>C. jacea</i> L.	Eur-Sib	H
<i>C. orientalis</i> L.	Pont-Med	H
<i>C. phrygia</i> L.	Eur	H
subsp. <i>moesiaca</i> (Urum. & J. Wagner) Hayek		
<i>C. rocheliana</i> (Heuff.) Dostál	Eur	H
<i>C. rutifolia</i> Sm.	Pont	H
subsp. <i>rutifolia</i>		
<i>C. salonitana</i> Vis.	Pont-Med	H
<i>C. scabiosa</i> L.	Eur-Sib	H
<i>C. solstitialis</i> L.	Eur-Med	H
<i>C. stoebe</i> L.	subMed	H
<i>C. triumfetti</i> All.	subMed	H
subsp. <i>adscendens</i> (Bartl.) Dostál		
<i>Chamomilla recutita</i> (L.) Rauschert	Eur-As	Th
<i>Chondrilla juncea</i> L.	Eur-Sib	H
<i>Cichorium inthybus</i> L.	Eur-Sib	H
<i>Cirsium arvense</i> (L.) Scop.	Eur-As	H
<i>C. canum</i> (L.) All.	Eur-Med	H
<i>C. creticum</i> (Lam.) D'Urv.	Med	H
<i>C. italicum</i> (Savi) DC.	Med	Th
<i>C. ligulare</i> Boiss.	Med	H
<i>C. vulgare</i> (Savi) Ten.	Eur-Med	H
<i>Conyza canadensis</i> (L.) Cronquist	NAm (Adv)	Th
<i>Crepis biennis</i> L.	subMed	H
<i>C. foetida</i> L.	Eur-Med	Th
subsp. <i>foetida</i>		
<i>C. pulchra</i> L.	Eur-Med	Th
<i>C. sancta</i> (L.) Bornm.	subMed	Th
<i>C. setosa</i> Haller f.	Eur-Med	Th
<i>C. tectorum</i> L.	Eur-Sib	Th
<i>Crupina vulgaris</i> Cass.	subMed	Th
<i>Doronicum columnae</i> Ten.	Pont-Med	H
<i>Echinops banaticus</i> Schrad.	subMed	H
<i>E. microcephalus</i> Sm.	subMed	H
<i>E. ritro</i> L.	Eur-Sib	H
subsp. <i>ritro</i>		
<i>E. sphaerocephalus</i> L.	Eur-Med	H
subsp. <i>sphaerocephalus</i>		
<i>Erigeron acer</i> L.	Boreal	H
<i>Eupatotium cannabinum</i> L.	Eur-As	H
<i>Filago lutescens</i> Jord.	Boreal	Th
<i>F. vulgaris</i> Lam.	Eur-As	Th
<i>Galinsoga parviflora</i> Cav.	SAm(Adv)	Th
<i>Gnaphalium luteo-album</i> L.	Kos	Th
<i>Hieracium cymosum</i> L.	Eur-Sib	H
<i>H. neodivergens</i> Gottschl.	Bal	H
<i>H. echiodes</i> Lumn.	subMed	H

Taxon	Floristic elements according to Assyov & Petrova (2012)	Life forms according to Raunkjær (1934)
<i>H. heterogynum</i> (Froel.) Gutermann	Bal	H
<i>H. pilosella</i> L.	Eur-Med	H
<i>Hypochaeris radicata</i> L.	Eur-Med	H
<i>Inula achersoniana</i> Janka	Bal	H
<i>I. bifrons</i> (L.) L.	Eur-Med	H
<i>I. conyza</i> L.	Eur-Med	H
<i>I. ensifolia</i> L.	Eur-Med	H
<i>I. germanica</i> L.	subMed	H
<i>I. helenium</i> L.	Eur-Med	H
<i>I. hirta</i> L.	Eur-Sib	H
<i>I. oculus-christi</i> L.	Eur-Med	H
<i>I. salicina</i> L. subsp. <i>salicina</i>	Eur-As	H
<i>Jurinea bulgarica</i> Velen.	Bul	H
<i>J. consanguinea</i> DC. subsp. <i>arachnoidea</i> (Bunge) Kožuharov	subMed-Sib	H
<i>Lactuca perennis</i> L.	Eur	H
<i>L. quercina</i> L.	Eur	H
<i>L. saligna</i> L.	Pont-OT	H
<i>L. serriola</i> L.	Eur-As	H
<i>L. viminea</i> (L.) J. Presl & C. Presl	Eur-Med	H
<i>Lapsana communis</i> L.	Eur-Sib	Th
<i>Leontodon crispus</i> Vill.	Eur-Med	H
<i>L. hispidus</i> L. subsp. <i>hispidus</i>	Pont-Med	H
<i>Leucanthemum vulgare</i> Lam.	Eur-Sib	H
<i>Logfia arvensis</i> (L.) Holub	Eur-Med	Th
<i>L. minima</i> (Sm.) Dumort.	Eur-Sib	Th
<i>Matricaria perforata</i> Mèrat	Eur-Med	Th
<i>M. trichophylla</i> (Boiss.) Boiss.	Med	H
<i>Mycelis muralis</i> (L.) Dumort.	Med	H
<i>Onopordum acanthium</i> L.	Eur-Med	Th
<i>O. tauricum</i> Willd.	Med	Th
<i>Petasites hybridus</i> (L.) Gaertn. subsp. <i>hybridus</i>	Eur	H
<i>Picnomon acarna</i> (L.) Cass.	Med	Th
<i>Picris hieracioides</i> L. subsp. <i>hieracioides</i>	Eur-As	H
<i>P. pauciflora</i> Willd.	Med	Th
<i>Ptilostemon afer</i> (Jacq.) Greuter	Med	Th
<i>Pulicaria dysenterica</i> (L.) Bernh.	Eur-Med	Th
<i>P. vulgaris</i> Gaertn.	Eur-As	Th
<i>Scolymus hispanicus</i> L.	Med	H
<i>Scorzonera cana</i> (C.A. Mey.) Griseb.	Med	H
<i>S. hispanica</i> L.	Med	H
<i>S. laciniata</i> L.	Med	H
<i>S. mollis</i> M. Bieb.	Med	H
<i>Senecio papposus</i> (Rchb.) Less. subsp. <i>congestus</i> (Stoj.) Peev	Carp-Bal	H

Taxon	Floristic elements according to Assyov & Petrova (2012)	Life forms according to Raunkjær (1934)
<i>S. sylvaticus</i> L.	Eur-Sib	Th
<i>S. vernalis</i> Waldst. & Kit.	Eur-Med	Th
<i>S. vulgaris</i> L.	Eur-As	Th
<i>Serratula radiata</i> (Waldst. & Kit) M. Bieb.	SPont	H
<i>Silybum marianum</i> (L.) Gaertn.	Med	Th
<i>Solidago canadensis</i> L.	NAm (Adv)	H
<i>Sonchus arvensis</i> L. subsp. <i>arvensis</i>	Eur-As	H
<i>S. asper</i> (L.) Hill. subsp. <i>asper</i>	Eur	H
<i>S. oleraceus</i> L.	Kos	H
<i>Tanacetum corymbosum</i> (L.) Sch. Bip.	Eur-Med	H
<i>T. macrophyllum</i> (Waldst. & Kit) Sch. Bip.	Eur	H
<i>T. parthenium</i> (L.) Sch. Bip.	Eur-OT	H
<i>T. vulgare</i> L.	Eur-Sib	H
<i>Taraxacum officinale</i> L.	Eur-Med	H
<i>T. serotinum</i> (Waldst. & Kit.) Poir.	Pont	H
<i>Telekia speciosa</i> (Schreb.) Baumg.	subMed	H
<i>Tragopogon balcanicus</i> Velen.	Bal	H
<i>T. dubius</i> Scop.	Eur-Med	H
<i>T. orientalis</i> L.	Eur-Med	H
<i>T. porrifolius</i> L.	Med	H
<i>T. pratensis</i> L.	Eur-Med	H
<i>Tussilago farfara</i> L.	Eur-As	G
<i>Xanthium italicum</i> Moretti	NAm (Adv)	Th
<i>X. spinosum</i> L.	Kos	Th
<i>X. strumarium</i> L.	Eur	Th
<i>Xeranthemum annuum</i> L.	subMed	Th
Berberidaceae		
<i>Berberis vulgaris</i> L.	Eur-Med	Ph
Betulaceae		
<i>Alnus glutinosa</i> (L.) Gaertn.	Med-CAs	Ph
<i>Carpinus betulus</i> L.	Eur-subMed	Ph
<i>C. orientalis</i> Mill.	subMed	Ph
Boraginaceae		
<i>Anchusa azurea</i> Mill.	subMed	H
<i>A. barrelieri</i> (All.) Vitman subsp. <i>barrelieri</i>	subMed	H
<i>A. officinalis</i> L.	Pont-Med	H
<i>A. procera</i> Besser	Pont-Bal	H
<i>Asperugo procumbens</i> L.	Eur-As	Th
<i>Buglossoides arvensis</i> (L.) I.M. Johnst.	Eur-As	Th
<i>B. purpureoerulea</i> (L.) I.M. Johnst.	Eur-As	H
<i>Cerinth minor</i> L.	Pont-Med	H
<i>Cynoglossum creticum</i> Mill.	Med-CAs	Th
<i>C. hungaricum</i> Simonk.	subMed	H
<i>Echium italicum</i> L.	subMed	H
<i>E. russicum</i> J.F. Gmel.	subMed	H
<i>E. vulgare</i> L.	Eur-As	H

Taxon	Floristic elements according to Assyov & Petrova (2012)	Life forms according to Raunkiaer (1934)
<i>Heliotropium europaeum</i> L.	subMed	Th
<i>H. suaveolens</i> M. Bieb.	subMed	Th
<i>Lithospermum officinale</i> L.	Eur-As	H
<i>Lappula barbata</i> (M. Bieb.) Gürke	Med-CAs	Th
<i>Lappula squarrosa</i> (Retz.) Dumort.	subBoreal	Th
<i>Lycopsis arvensis</i> L. subsp. <i>arvensis</i>	Eur-As	Th
<i>Myosotis arvensis</i> (L.) Hill	Eur-As	Th
<i>M. cyanea</i> (Boiss. & Heldr.) Peev & N. Andreev	Med-CAs	H
<i>M. incrassata</i> Guss.	subMed	Th
<i>M. laxa</i> Lehm.	subBoreal	H
<i>M. ramosissima</i> Rochel	subMed	Th
<i>M. scorpioides</i> L.	Eur-NAM	H
<i>M. sicula</i> Guss.	Eur-As	H
<i>M. sparsiflora</i> Pohl	Eur-Sib	Th
<i>M. stricta</i> Roem. & Schult.	Eur-As	Th
<i>M. sylvatica</i> Hoffm.	Eur-As	H
<i>Nonea pulla</i> (L.) DC.	subMed	H
<i>Onosma aucherana</i> DC.	subMed	H
<i>O. echioides</i> L.	Med	H
<i>O. heterophylla</i> Griseb.	subMed	H
<i>O. taurica</i> Willd.	subMed	H
<i>O. visianii</i> Clementi	Pont-Med	H
<i>Pulmonaria mollis</i> Hornem.	Eur	H
<i>P. officinalis</i> L.	Eur	H
<i>P. rubra</i> Schott	Carp-Bal	H
<i>Symphytum bulbosum</i> K.F. Schimp.	Eur-Med	H
<i>S. officinale</i> L.	Eur-As	H
<i>S. ottomanum</i> Friv.	Bal-Anat	H
<i>S. tuberosum</i> L. subsp. <i>nodosum</i> (Schur) Soó	Eur-Med	H
Brassicaceae		
<i>Aethionema saxatile</i> (L.) R. Br.	subMed	H
<i>Alliaria petiolata</i> (M. Bieb.) Cavara & Grande	Eur-As	H
<i>Alyssoides utriculata</i> (L.) Medik.	subMed	H
<i>Alyssum alyssoides</i> (L.) L.	Eur-Med	H
<i>A. campestre</i> L.	Eur-As	Th
<i>A. hirsutum</i> M. Bieb.	subMed	Th
<i>A. montanum</i> L. subsp. <i>montanum</i>	Eur-Med	H
<i>A. murale</i> Waldst. & Kit.	Eur-subMed	H
<i>A. strigosum</i> Banks & Sol.	subMed	Th
<i>A. tortuosum</i> Willd.	subMed	H
<i>Arabis auriculata</i> Lam.	Eur-As	H
<i>A. glabra</i> (L.) Bernh.	Boreal	H
<i>A. procurrens</i> Waldst. & Kit.	Eur	H
<i>A. sagittata</i> (Bertol.) DC. subsp. <i>sagittata</i>	Eur-Med	H
<i>A. turrita</i> L.	subMed	H

Taxon	Floristic elements according to Assyov & Petrova (2012)	Life forms according to Raunkiaer (1934)
<i>Arabidopsis thaliana</i> (L.) Heynh.	subBoreal	H
<i>Aubrieta columnae</i> Guss. subsp. <i>bulgarica</i> Ančev	subMed	H
<i>Barbarea vulgaris</i> R. Br.	Eur-As	H
<i>Berteroa incana</i> (L.) DC. subsp. <i>stricta</i> (Boiss. & Heldr.) Stoj. & Stef.	SPont	H
<i>Brassica nigra</i> (L.) W.D.J. Koch	Kos	Th
<i>B. rapa</i> L.	Med-Atl	H
<i>Calepina irregularis</i> (Asso) Thell.	Med	Th
<i>Camelina rumelica</i> Velen.	Pont-CAs	H
<i>C. sativa</i> (L.) Crantz subsp. <i>sativa</i>	Pont-CAs	H
<i>Capsella bursa-pastoris</i> (L.) Medik. subsp. <i>bursa-pastoris</i>	Kos	H
<i>Cardamine bulbifera</i> (L.) Crantz	subBoreal	H
<i>C. graeca</i> L.	Med	H
<i>C. hirsuta</i> L.	Eur-As	Th
<i>Cardaminopsis arenosa</i> (L.) Hayek	Eur	H
<i>Cardaria draba</i> (L.) Desv.	Eur-Med	H
<i>Clypeola jonthlaspi</i> L. subsp. <i>jonthlaspi</i>	Med	Th
<i>Conringia austriaca</i> (Jacq.) Sweet	subMed	H
<i>C. orientalis</i> (L.) Dumort.	Eur-As	Th
<i>Coronopus squamatum</i> (Forssk.) Asch.	Eur-Med	H
<i>Diplotaxis muralis</i> (L.) DC.	Eur-Med	H
<i>D. tenuifolia</i> (L.) DC.	Eur-Med	H
<i>Draba lasiocarpa</i> Rochel	Eur-Med	H
<i>D. muralis</i> L.	Eur-Med	Th
<i>Erophila verna</i> (L.) Chevall. subsp. <i>verna</i>	Eur-Med-CAs	Th
<i>Erysimum cuspidatum</i> (M. Bieb.) DC.	Eur-OT	H
<i>E. diffusum</i> Ehrh.	CSEur	H
<i>E. odoratum</i> Ehrh.	Pont-Med	H
<i>E. repandum</i> L.	Eur-As	Th
<i>Fibigia clypeata</i> (L.) Medik.	Med	H
<i>Hesperis sylvestris</i> Crantz subsp. <i>sylvestris</i>	Eur	H
<i>H. tristis</i> L.	Eur	H
<i>Hornungia petraea</i> (L.) Rchb.	Eur-SMed	Th
<i>Lepidium campestre</i> (L.) W.T. Aiton	Eur-SMed	H
<i>L. graminifolium</i> L.	Eur-Med	H
<i>L. perfoliatum</i> L.	Eur-CAs	H
<i>L. ruderale</i> L.	Eur-as	H
<i>Myagrum perfoliatum</i> L.	Eur-Med	Th
<i>Nasturtium officinale</i> R. Br.	Eur-As	H
<i>Neslia paniculata</i> (L.) Desv.	As	Th
<i>Raphanus raphanistrum</i> L. subsp. <i>raphanistrum</i>	Eur-Sib	Th
<i>Rorippa prolifera</i> (Heuff.) Neilr.	Bal-Dac	H
<i>R. pyreinaica</i> (L.) Rchb.	subMed	H

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<i>R. thracica</i> (Griseb.) Fritsch	Bal	H
<i>Sinapis arvensis</i> L.	Med	Th
<i>Sisymbrium altissimum</i> L.	Pont-subMed	H
<i>S. loeselii</i> L.	Eur-As	Th
<i>S. officinale</i> (L.) Scop.	Eur-Sib	H
<i>S. orientale</i> L.	Eur-As	H
<i>S. strictissimum</i> L.	Eur	H
<i>Thlaspi alliaceum</i> L.	subMed	Th
<i>T. arvense</i> L.	Eur-As	H
<i>T. goesingense</i> Halácsy	Pont	H
<i>T. perfoliatum</i> L.	Eur-Med	Th
Campanulaceae		
<i>Asyneuma canescens</i> (Waldst. & Kit.) Griseb. & Schenk	Pont-Bal	H
<i>A. limonifolium</i> (L.) Janch. subsp. <i>limonifolium</i>	Ap-Bal	H
<i>Campanula bononiensis</i> L.	Eur	H
<i>C. cervicaria</i> L.	SPont	H
<i>C. glomerata</i> L. subsp. <i>glomerata</i>	Eur-OT	H
<i>C. grossekii</i> Heuff.	Bal-Dac	H
<i>C. lingulata</i> Waldst. & Kit.	Ap-Bal	H
<i>C. patula</i> L. subsp. <i>patula</i> subsp. <i>epigaea</i> (Degen) Hayek	Eur	H
<i>C. persicifolia</i> L.	Eur-Sib	H
<i>C. rapunculoides</i> L.	Eur	H
<i>C. rapunculus</i> L.	Eur-Sib	H
<i>C. sparsa</i> Friv.	Bal	Th
<i>C. trachelium</i> L. subsp. <i>trachelium</i>	Boreal	H
<i>C. versicolor</i> Andrews	EMed	H
<i>Edraianthus serbicus</i> Petrovič	Bal	H
<i>Jasione heldrechii</i> Boiss. & Orph.	Eur-Med	H
<i>Legousia speculum-veneris</i> (L.) Chaix	Eur-Med	Th
Cannabinaceae		
<i>Humulus lupulus</i> L.	Eur-Sib	H
Caprifoliaceae		
<i>Lonicera xylosteum</i> L.	Eur-Sib	Ph
<i>Sambucus ebulus</i> L.	Eur-Med	Ch
<i>S. nigra</i> L.	Eur-Med	Ph
<i>Viburnum lantana</i> L.	Eur-Med	Ph
Caryophyllaceae		
<i>Agrostemma githago</i> L.	Eur-As	Th
<i>Arenaria filicaulis</i> Fenzl	Bal-Anat	H
<i>A. leptoclados</i> (Rchb.) Guss.	Eur-As	Th
<i>A. serpyllifolia</i> L. subsp. <i>serpyllifolia</i>	Eur-As	H
<i>Cerastium arvense</i> L. subsp. <i>arvense</i>	Boreal	H

Taxon	Floristic elements according to Assyov & Petrova (2012)	Life forms according to Raunkjær (1934)
<i>C. banaticum</i> (Rochel) Heuff.	subMed	H
<i>C. dubium</i> (Bastard) Guépin	Eur	Th
<i>C. glomeratum</i> Thuill.	Kos	Th
<i>C. petricola</i> Pančić	Bal	H
<i>C. pumilum</i> Curtis	Eur-Med	Th
<i>Cucubalus baccifer</i> L.	Eur-As	H
<i>Dianthus armeria</i> L. subsp. <i>armeriastrum</i> (Wolfner) Velen.	Eur	H
<i>D. capitatus</i> DC. subsp. <i>andrzejowskianus</i> Zapall.	Pont	H
<i>D. cartusianorum</i> L.	Eur	H
<i>D. cruentus</i> Griseb. subsp. <i>cruentus</i>	Bal	H
<i>D. giganteus</i> D'Urv. subsp. <i>giganteus</i>	subMed	H
<i>D. moesiacus</i> Vis. & Pančić subsp. <i>moesiacus</i>	Bal	H
<i>D. pelviformis</i> Heuff.	Bal	H
<i>D. petraeus</i> Waldst. & Kit. subsp. <i>kitaibelii</i> (Janka) Stoj.	Bal-Dac	H
<i>D. quadrangulus</i> Velen.	Bal	H
<i>D. stenopetalus</i> Griseb.	Bal	H
<i>D. strybrnyi</i> Velen.	Bal	H
<i>D. tristis</i> Velen.	Bal	H
<i>Herniaria glabra</i> L. subsp. <i>glabra</i>	Eur-As	H
<i>H. incana</i> Lam.	Eur-Med	H
<i>H. hirsuta</i> L.	Eur-As	H
<i>Holosteum umbellatum</i> L.	Eur-As	Th
<i>Lychnis coronaria</i> (L.) Desr.	Med-OT	H
<i>Gypsophila glomerata</i> M. Bieb.	subMed	H
<i>G. muralis</i> L.	Eur-As	Th
<i>Minuartia attica</i> (Boiss & Spruner) Vierh.	Med	H
<i>M. bosniaca</i> (Beck) K. Malý	Bal	H
<i>M. caespitosa</i> (Ehrh.) Degen	Eur-Med	H
<i>M. glomerata</i> (M. Bieb.) Degen	Eur-Med	H
<i>M. hirsuta</i> (M. Bieb.) Hand.-Mazz. subsp. <i>falcata</i> (Griseb.) Mattf.	subMed	H
<i>M. hybrida</i> (Vill.) Schischk.	Med-CAs	Th
<i>M. mesogitana</i> (Boiss.) Hand.-Mazz.	Med	Th
<i>M. mutabilis</i> (Lapeyr.) Bech.	Eur	H
<i>M. setacea</i> (Thuill.) Hayek subsp. <i>setacea</i>	Pont	H
<i>Paronychia cephalotes</i> (M. Bieb.) Besser	Pont	H
<i>P. kapela</i> (Hacq.) A. Kern.	subMed	H
<i>Petrorhagia illyrica</i> (Ard.) P.W. Ball & Heywood subsp. <i>haynaldiana</i> (Janka) P.W. Ball & Heywood	Pont-Med	H
<i>P. saxifraga</i> (L.) Link.	subMed	H
<i>P. prolifera</i> (L.) P.W. Ball. & Heywood	Pont-Med	Th
<i>Queria hispanica</i> L.	subMed	Th

Taxon	Floristic elements according to Assyov & Petrova (2012)	Life forms according to Raunkiaer (1934)
<i>Sagina procumbens</i> L.	Boreal	H
<i>Saponaria glutinosa</i> M. Bieb.	subMed	H
<i>S. officinalis</i> L.	Eur-Sib	H
<i>Scleranthus annuus</i> L.	Eur-Sib	H
<i>S. dichotomus</i> Schur	subMed	H
<i>S. polycarpus</i> L.	subMed	H
<i>S. perennis</i> L.	Eur-Med	H
<i>Silene alba</i> (Mill.) E.H.L. Krause	Eur-Sib	H
<i>S. armeria</i> L.	Eur	H
<i>S. bupleuroides</i> L. subsp. <i>bupleuroides</i>	Pont-subMed	H
<i>S. conica</i> L. subsp. <i>dichotoma</i>	subMed-As	Th
<i>S. dichotoma</i> Ehrh. subsp. <i>dichotoma</i>	Eur-Med	Th
<i>S. fabarioides</i> Hauskn.	Bal	H
<i>S. flavescens</i> Waldst. & Kit. subsp. <i>flavescens</i>	Carp-Bal	H
<i>S. frivaldszkyana</i> Hampe	Bal	H
<i>S. gigantea</i> L. subsp. <i>gigantea</i>	Bal	H
<i>S. italica</i> (L.) Pers.	Eur-Med	H
<i>S. noctiflora</i> L.	Eur-Sib	Th
<i>S. otites</i> (L.) Wibel	Eur-Med	H
<i>S. subconica</i> Friv.	subMed	Th
<i>S. supina</i> M. Bieb	Pont-Med	H
<i>S. viridiflora</i> L.	Med	H
<i>S. vulgaris</i> (Moench) Garcke subsp. <i>vulgaris</i>	Eur-As	H
<i>Spergula arvensis</i> L.	Kos	Th
<i>Spergularia rubra</i> (L.) J. Presl & C. Presl	subBoreal	H
<i>Stellaria graminea</i> L.	Eur-as	H
<i>S. holostea</i> L.	Eur-Sib	H
<i>S. media</i> (L.) Cirillo	Kos	H
<i>S. pallida</i> (Dumort.) Pirè	subMed-CAs	H
<i>Vaccaria hispanica</i> (Mill.) Rauschert	Kos	Th
<i>Viscaria vulgaris</i> Röhl. subsp. <i>atropurpurea</i> (Griseb.) Stoj.	Eur-Sib	H
Celastraceae		
<i>Evonymus europaeus</i> L.	Eur-As	Ph
<i>E. verrucosus</i> Scop.	Eur-Med	Ph
Chenopodiaceae		
<i>Atriplex hastata</i> L.	Boreal	Th
<i>A. nitens</i> Schkuhr	Eur-As	Th
<i>A. oblongifolia</i> Waldst. & Kit.	Eur-As	Th
<i>A. patula</i> L.	Boreal	Th
<i>A. rosea</i> L.	Eur-As	Th
<i>A. atarica</i> L.	Eur-As	Th
<i>Chenopodium album</i> L.	Kos	Th
<i>Ch. bonus-henricus</i> L.	Alp-Med	H

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<i>Ch. botrys</i> L.	Boreal	Th
<i>Ch. ficifolium</i> Sm.	Eur-As	Th
<i>Ch. glaucum</i> L.	Eur-As	Th
<i>Ch. hybridum</i> L.	Boreal	Th
<i>Ch. murale</i> L.	Kos	Th
<i>Ch. opulifolium</i> W.D.J. Koch & Ziz	Med-CAs	Th
<i>Ch. polyspermum</i> L.	Eur-Sib	Th
<i>Ch. rubrum</i> L.	subBoreal	Th
<i>Ch. urbicum</i> L.	Eur-As	Th
<i>Ch. virgatum</i> L.	Eur	Th
<i>Ch. vulvaria</i> L.	Eur-As	Th
<i>Polycnemum arvense</i> L.	Eur-Sib	Th
<i>P. majus</i> A. Braun	Eur-As	Th
Cistaceae		
<i>Helianthemum nummularium</i> (L.) Mill.	Alp-Med	Ch
<i>Fumana procumbens</i> (Dunal) Gren. & Godr.	Pont-Med	Ph
<i>Rhodax canus</i> (L.) Fuss.	Pont	Ph
Convolvulaceae		
<i>Calystegia sepium</i> (L.) R. Br.	Med	H
<i>C. silvatica</i> (Kit.) Griseb.	Med	H
<i>Convolvulus arvensis</i> L.	Kos	H
<i>C. cantabrica</i> L.	Pont	H
Corylaceae		
<i>Corylus avellana</i> L.	Med-CAs	Ph
<i>C. colurna</i> L.	Pont-CAs	Ph
<i>Ostrya carpinifolia</i> Scop.	subMed	Ph
Cornaceae		
<i>Cornus mas</i> L.	subMed	Ph
<i>C. sanguinea</i> L.	subMed	Ph
Crassulaceae		
<i>Sedum acre</i> L.	Eur-Med	H
<i>S. album</i> L.	subMed	H
<i>S. anopetalum</i> DC.	subMed	H
<i>S. caespitosum</i> (Cav.) DC.	Med	Th
<i>S. cepaea</i> L.	subMed	H
<i>S. hispanicum</i> L.	Eur-Med	H
<i>S. maximum</i> (L.) Suter	subBoreal	H
<i>S. urvillei</i> DC.	Eur	H
<i>Sempervivum marmoreum</i> Griseb.	subMed	H
Cucurbitaceae		
<i>Bryonia alba</i> L.	Eur-OT	H
Cuscutaceae		
<i>Cuscuta approximata</i> Bab.	Med-NAm	Th
<i>C. campestris</i> Yunck.	NAm (Adv)	Th
<i>C. epithymum</i> (L.) L. subsp. <i>epithymum</i>	Eur	Th
<i>C. europaea</i> L.	subBoreal	Th
<i>C. monogyna</i> Vahl	Eur-As	Th

Taxon	Floristic elements according to Assyov & Petrova (2012)	Life forms according to Raunkjær (1934)
Dioscoreaceae		
<i>Tamus communis</i> L.	subMed	H
Dipsacaceae		
<i>Cephalaria flava</i> (Sm.) Szabó	Bal	H
<i>C. laevigata</i> (Waldst. & Kit.) Schrad.	subMed	H
<i>C. transsylvanica</i> (L.) Roem. & Schult.	Pont-Med	Th
<i>C. uralensis</i> (Murray) Roem. & Schult.	Pont-Med	H
<i>Dipsacus laciniatus</i> L.	Eur-Med	H
<i>Knautia arvensis</i> (L.) Coult.	Eur-Sib	H
<i>K. drymeja</i> Heuff.	Alp-Carp-Bal	H
<i>K. integrifolia</i> (L.) Bertol.	Med	Th
<i>K. macedonica</i> Griseb.	Bal	H
<i>Scabiosa argentea</i> L.	Bal-Anat	H
<i>S. ochroleuca</i> L.	Eur-Sib	H
<i>S. triniifolia</i> Friv.	Bal	H
<i>Succisa pratensis</i> Moench	Eur	H
Euphorbiaceae		
<i>Acalypha virginica</i> L.	NAm (Adv)	Th
<i>Euphorbia agraria</i> M. Bieb	subMed	H
<i>E. barrelieri</i> Savi	Med	H
subsp. <i>thessala</i> (Form.) Bornm.		
<i>E. chamaecyse</i> L.	Eur-As	Th
subsp. <i>massilensis</i> (DC.) Thell.		
<i>E. cyparissias</i> L.	Eur	H
<i>E. esula</i> L.	Eur-as	H
subsp. <i>tommasiniana</i> (Bertol.) KuzmanOV		
<i>E. falcata</i> L.	Med-As	Th
<i>E. helioscopia</i> L.	Eur-As	Th
<i>E. myrsinites</i> L.	subMed	H
<i>E. nicaeensis</i> All.	Eur-Med	H
subsp. <i>nicæensis</i>		
<i>E. niciana</i> Borbás	Med	H
<i>E. plathyphyllos</i> L.	Eur-Med	Th
<i>E. polychroma</i> A. Kern.	Eur	H
<i>E. salicifolia</i> Host	subMed	H
<i>E. seguieriana</i> Neck.	Eur-As	H
<i>E. serrulata</i> Thuill.	sMed-As	Th
<i>E. taurinensis</i> All.	subMed	Th
<i>Mercurialis perennis</i> L.	subMed	H
Fabaceae		
<i>Anthyllis aurea</i> Host	Bal	H
<i>A. montana</i> L.	Alp-Med	H
subsp. <i>jacquinii</i> (A. Kern.) Hayek		
<i>A. vulneraria</i> L.	Eur-Med	H
subsp. <i>polyphylla</i> (DC.) Nyman		
<i>Astragalus angustifolius</i> Lam.	subMed	Ch
subsp. <i>angustifolius</i>		
<i>A. cicer</i> L.	Eur-Sib	H
<i>A. depressus</i> L.	subMed	H

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<i>A. glycyphylloides</i> DC.	subMed	H
<i>A. glycyphyllos</i> L.	SPont	H
<i>A. monspessulanus</i> L.	Pont-Med	H
subsp. <i>illyricus</i> (Bernh.) Chater		
<i>A. onobrychis</i> L.	Eur-As	H
subsp. <i>chlorocarpus</i> (Griseb.) Kožuharov & D. Pavlova		
<i>A. spruneri</i> Boiss.	Bal	H
<i>A. vesicarius</i> L.	Eur-Med	H
subsp. <i>pastellianus</i> (Pollini) Arcang.		
<i>A. wilmottianus</i> Stoj.	Bal	H
<i>Chamaecytisus austriacus</i> (L.) Link.	Eur-Med	Ph
subsp. <i>austriacus</i>		
<i>C. glaber</i> (L. f.) Rothm.	Bal-Dac	Ch
<i>C. banaticus</i> (Griseb. & Schenk) Rothm.	Pann-Bal	Ph
<i>C. calcareus</i> (Velen.) Kuzmanov	Bal	Ch
<i>C. hirsutus</i> (L.) Link.	Eur-Sib	Ph
<i>C. jankae</i> (Velen.) Rothm.	Bal	Ch
<i>C. rochelii</i> (Griseb. & Schenk) Rothm.	Pont-Med	Ph
<i>C. supinus</i> (L.) Link.	Eur-Med	Ph
<i>Chamaespartium sagittale</i> (L.) P.E. Gibbs	Eur	Ch
<i>Colutea arborescens</i> L.	subMed	Ph
<i>Corothismus agnipilus</i> (Velen.) Klásk.	Bal	Ch
<i>C. procumbens</i> (Waldst. & Kit.) C. Presl	Eur-Med	Ch
<i>C. retipilosus</i> (Adamovič) Skalická	Bal	Ch
<i>Coronilla emerus</i> L.	subMed	Ph
subsp. <i>emeroides</i> (Boiss. & Spruner) Holmboe		
<i>C. scorpioides</i> (L.) W.D.J. Koch	subMed	Th
<i>C. varia</i> L.	Eur-Med	H
<i>Dorycnium germanicum</i> (Gremli) Rikli	Eur	H
<i>D. herbaceum</i> Vill.	Eur-Med	H
<i>Galega officinalis</i> L.	Pont-Med	H
<i>Genista carinalis</i> Griseb.	Bal-Anat	Ch
<i>G. depressa</i> M. Bieb	subMed	Ch
subsp. <i>depressa</i>		
<i>G. januensis</i> Viv.	subMed	Ch
<i>G. ovata</i> Waidst. & Kit.	Eur	Ch
<i>G. sessilifolia</i> DC.	subMed	Ch
subsp. <i>trifoliata</i> (Janka) Kuzmanov		
<i>G. subcapitata</i> Pančić	Bal	Ch
<i>G. tinctoria</i> L.	Eur-Sib	Ph
<i>Hippocrepis comosa</i> L.	subMed	H
subsp. <i>comosa</i>		
<i>Lathyrus aphaca</i> L.	subBoreal	Th
<i>L. cicera</i> L.	subMed	Th
<i>L. hirsutus</i> L.	Eur-Med	Th
<i>L. latifolius</i> L.	Eur-Med	H
<i>L. laxiflorus</i> (Desf.) Kuntze	subMed	H
<i>L. niger</i> (L.) Bernh.	Eur-Med	H
<i>L. nissolia</i> L.	Eur-SMed	Th

Taxon	Floristic elements according to Assyov & Petrova (2012)	Life forms according to Raunkjær (1934)
<i>L. pallescens</i> (M. Bieb.) K. Koch	subMed	H
<i>L. pannonicus</i> (Jacq.) Garcke subsp. <i>varius</i> (Hill) P.W. Ball	sMed-Sib	H
<i>L. pratensis</i> L.	subBoreal	H
<i>L. sativus</i> L.	subMed	Th
<i>L. sphaericus</i> Retz.	Eur-As	Th
<i>L. sylvestris</i> L.	Eur-SMed	H
<i>L. tuberosus</i> L.	Eur-As	H
<i>L. venetus</i> (Mill.) Wohlfl.	Eur-Med	H
<i>L. vernus</i> Bernh.	Eur-Sib	H
<i>Lens nigricans</i> (M. Bieb.) Godr.	Pont-Med	Th
<i>Lotus tenuis</i> Waldst. & Kit.	Eur-CAs	H
<i>L. corniculatus</i> L.	Eur-Med	H
<i>Medicago arabica</i> (L.) Huds.	Eur-Med	Th
<i>M. bondevii</i> Kožuharov	Bul	Th
<i>M. falcata</i> L. subsp. <i>falcata</i>	Eur-As	H
<i>M. lupulina</i> L.	Eur-As	H
<i>M. minima</i> (L.) L.	Eur-As	Th
<i>M. orbicularis</i> Bartal.	Eur-Med	Th
<i>M. polymorpha</i> L.	Kos	Th
<i>M. rigidula</i> (L.) All.	Eur-Med	Th
<i>M. sativa</i> L.	CAs(Adv)	H
<i>Melilotus alba</i> Medik.	subBoreal	Th
<i>M. officinalis</i> (L.) Lam.	Eur-As	Th
<i>Onobrychis alba</i> (Waldst. & Kit.) Desv. subsp. <i>alba</i>	subMed	H
<i>O. arenaria</i> (Kit.) DC.	SPont	Th
<i>O. gracilis</i> Besser subsp. <i>gracilis</i>	Pont-Med	H
<i>O. lasiostachya</i> Boiss.	Bal-Anat	H
<i>Ononis adenotricha</i> Boiss.	Med	H
<i>O. arvensis</i> L.	subMed	H
<i>O. pusilla</i> L.	subMed	Ch
<i>Oxytropis pilosa</i> (L.) DC.	Eur-CAs	H
<i>Pisum elatius</i> M. Bieb.	Eur	Th
<i>Robinia pseudoacacia</i> L.	NAm (Adv)	Ph
<i>Trifolium alpestre</i> L.	Eur-Sib	H
<i>T. angustifolium</i> L. subsp. <i>angustifolium</i>	Med	Th
<i>T. arvense</i> L.	Eur-Sib	Th
<i>T. aureum</i> Pollich	Eur-Sib	Th
<i>T. campestre</i> Schreb	Eur-Med	H
<i>T. diffusum</i> Ehrh.	subMed	H
<i>T. dubium</i> Sibth.	Eur-Med	Th
<i>T. echinatum</i> M. Bieb.	Med	Th
<i>T. fragiferum</i> L. subsp. <i>bonannii</i> (C. Presl.) Soják	Eur-As	H
<i>T. hirtum</i> All.	Med	Th

Taxon	Floristic elements according to Assyov & Petrova (2012)	Life forms according to Raunkjær (1934)
<i>T. hybridum</i> L. subsp. <i>elegans</i> (Savi) Asch. & Graebn.	Eur-Med	H
<i>T. incarnatum</i> L. subsp. <i>incarnatum</i>	subMed	H
<i>T. leucanthum</i> M. Bieb	Pont-Med	Th
<i>T. medium</i> L. subsp. <i>balcanicum</i> Velen.	Eur-As	H
<i>T. micranthum</i> Viv.	Eur-Med	Th
<i>T. montanum</i> L.	SPont	H
<i>T. ochroleucon</i> Huds. subsp. <i>ochroleucon</i>	Eur	H
<i>T. pallidum</i> Waldst. & Kit.	subMed	H
<i>T. pannonicum</i> Jacq. subsp. <i>pannonicum</i>	subMed	H
<i>T. patens</i> Schreb.	subMed	Th
<i>T. pratense</i> L.	subBoreal	H
<i>T. purpureum</i> Loisel. subsp. <i>purpureum</i>	Med	Th
<i>T. resupinatum</i> L.	Med	Th
<i>T. retusum</i> L.	Med	H
<i>T. repens</i> L.	Eur-Sib	H
<i>T. scabrum</i> L. subsp. <i>scabrum</i>	Med-As	Th
<i>T. striatum</i> L. subsp. <i>striatum</i>	Eur-Med	Th
<i>T. strictum</i> L.	Eur-Sib	Th
<i>T. trichopterum</i> Pančić	Bal	Th
<i>T. velenovskyi</i> Vandas	Bal	H
<i>Trigonella caerulea</i> (L.) Ser.	Eur-Med	Th
<i>T. monspeliaca</i> L.	subMed	Th
<i>T. procumbens</i> (Besser) Rchb.	Pont-Med	Th
<i>T. striata</i> L.	Pont-Bal	Th
<i>Vicia angustifolia</i> L. subsp. <i>angustifolia</i>	Eur-As	Th
<i>V. cassubica</i> L.	Eur-Med	H
<i>V. cracca</i> L.	Eur-As	H
<i>V. dalmatica</i> A. Kern.	subMed	H
<i>V. grandiflora</i> Scop.	subMed	H
<i>V. hirsuta</i> (L.) Gray	Eur-Med	Th
<i>V. lathyroides</i> L.	Eur-Med	Th
<i>V. melanops</i> Sm.	subMed	Th
<i>V. onobrychioides</i> L.	Med	H
<i>V. pannonica</i> Crantz	Eur-Med	Th
<i>V. peregrina</i> L.	Eur-As	Th
<i>V. sativa</i> L.	Eur-Med	Th
<i>V. sepium</i> L.	Eur-As	H
<i>V. tenuifolia</i> Roth	Eur-As	H
<i>V. tetrasperma</i> (L.) Schreb.	Eur-Med	Th
<i>V. varia</i> Host	Eur-Med	Th
<i>V. villosa</i> Roth	Eur-CAs	Th

Taxon	Floristic elements according to Assyov & Petrova (2012)	Life forms according to Raunkjær (1934)
Fagaceae		
<i>Fagus sylvatica</i> L.	Eur	Ph
subsp. <i>moesiaca</i> (K. Malý) Szafer		
subsp. <i>sylvatica</i>		
<i>Quercus cerris</i> L.	Eur-subMed	Ph
<i>Q. dalechampii</i> Ten.	subMed	Ph
<i>Q. fraineto</i> Ten.	Eur	Ph
<i>Q. petraea</i> (Matt.) Liebl.	Eur	Ph
<i>Q. polycarpa</i> Schur	SEux	Ph
<i>Q. pubescens</i> Willd.	Eur-subMed	Ph
subsp. <i>pubescens</i>		
<i>Q. virgiliana</i> (Ten.) Ten.	subMed	Ph
Fumariaceae		
<i>Corydalis solida</i> (L.) Clairv.	Eur-Med-CAs	G
<i>C. slivenensis</i> Velen.	subMed	G
<i>Fumaria officinalis</i> L.	Eur-Sib	Th
<i>F. rostellata</i> Knaf	Eur-Med	Th
<i>F. vaillantii</i> Loisel.	Eur-CAs	Th
Gentianaceae		
<i>Centaurium erythraea</i> Rafn	subMed	H
subsp. <i>erythraea</i>		
<i>Gentiana cruciata</i> L.	Eur-Sib	H
Geraniaceae		
<i>Erodium ciconium</i> (L.) L' Hér.	subMed	Th
<i>E. cicutarium</i> (L.) L' Hér.	subBoreal	Th
<i>Geranium columbinum</i> L.	subMed	Th
<i>G. dissectum</i> L.	Eur-As	Th
<i>G. lucidum</i> L.	Eur-As	Th
<i>G. molle</i> L.	Eur-Med	H
<i>G. phaeum</i> L.	Eur	G
<i>G. pusillum</i> L.	Eur-Med	G
<i>G. pyrenaicum</i> Burm. f.	subMed	H
<i>G. robertianum</i> L.	subBoreal	H
<i>G. rotundifolium</i> L.	Eur-As	Th
<i>G. sanguineum</i> L.	Eur	G
Globulariaceae		
<i>Globularia aphyllanthes</i> Crantz	Eur	H
Grossulariaceae		
<i>Ribes uva-crispa</i> L.	subMed	Ph
Juglandaceae		
<i>Juglans regia</i> L.	Eur-As/Paleo	Ph
Juncaginaceae		
<i>Triglochin palustris</i> L.	Boreal	H
Hypericaceae		
<i>Hypericum barbatum</i> Jacq.	subMed	H
subsp. <i>barbatum</i>		
<i>H. hirsutum</i> L.	Eur-Sib	H
<i>H. maculatum</i> Crantz	Boreal	H

Taxon	Floristic elements according to Assyov & Petrova (2012)	Life forms according to Raunkjær (1934)
<i>H. perforatum</i> L.	Kos	H
<i>H. rumeliacum</i> Boiss.	Bal	H
Lamiaceae		
<i>Acinos arvensis</i> (Schur) Dandy	Eur-Med	H
<i>A. suaveolens</i> (Sm.) G. Don	subMed	Th
<i>Ajuga chamaepitys</i> (L.) Schreb.	Pont-Med	H
<i>A. genevensis</i> L.	SPont	H
<i>A. laxmannii</i> (Murray) Benth.	sSib	H
<i>Ballota nigra</i> L.	Eur-Med	H
<i>Betonica officinalis</i> L.	subMed	H
<i>Calamintha nepeta</i> (L.) Savi	Eur-Med	H
<i>C. sylvatica</i> Bromf.	Eur-OT	H
subsp. <i>ascendens</i> (Jordan) P.W. Ball		
<i>Clinopodium vulgare</i> L.	subBoreal	H
<i>Galeopsis bifida</i> Boenn.	Eur-As	Th
<i>G. ladanum</i> L.	Eur-As	Th
<i>G. tetrahit</i> L.	Eur-As	Th
<i>Glechoma hederaceae</i> L.	Eur-As	H
<i>G. hirsuta</i> Waldst. & Kit.	Eur-Med	H
<i>Hyssopus officinalis</i> L.	Eur-As	H
subsp. <i>aristatus</i>		
<i>Lamium amplexicaule</i> L.	Eur-As	Th
<i>L. galeobdolon</i> (L.) L.	Med	H
subsp. <i>montanum</i> (Pers.) Hayek		
<i>L. garganicum</i> L.	Med	H
subsp. <i>laevigatum</i> (Ces., Pass. & Gibelli) Arcang.		
<i>L. maculatum</i> L.	subBoreal	H
<i>L. purpureum</i> L.	Eur-Med	Th
<i>Leonurus cardiaca</i> L.	Eur-As	H
<i>Lycopus europaeus</i> L.	Eur-As	H
<i>L. exaltatus</i> L. f.	Eur-As	H
<i>Marrubium peregrinum</i> L.	subMed	H
<i>M. vulgare</i> L.	Eur-As	H
<i>Melissa officinalis</i> L.	subMed	H
subsp. <i>officinalis</i>		
<i>Melittis melissophyllum</i> L.	Eur	H
subsp. <i>albida</i> (Guss.) P.W. Ball		
<i>Mentha aquatica</i> L.	Boreal	H
<i>M. arvensis</i> L.	Eur-As	H
<i>M. longifolia</i> (L.) Huds.	Eur-Sib	H
<i>M. pulegium</i> L.	Eur-As	H
<i>M. spicata</i> L.	Eur	H
subsp. <i>spicata</i>		
<i>Micromeria cristata</i> (Hampe) Griseb.	Bal-Anat	H
<i>Nepeta cataria</i> L.	Eur-As	H
<i>N. nuda</i> L.	Eur-As	H
subsp. <i>nuda</i>		
<i>Origanum vulgare</i> L.	Eur-As	H
subsp. <i>vulgare</i>		
<i>Phlomis herba-venti</i> L.	Eur-As	H
subsp. <i>pungens</i> (Willd.) DeFilipps		

Taxon	Floristic elements according to Assyov & Petrova (2012)	Life forms according to Raunkjær (1934)
<i>Ph. tuberosa</i> L.	Eur-Sib	H
<i>Prunella grandiflora</i> (L.) Scholler	subMed	H
<i>P. laciniata</i> (L.) L.	Eur	H
<i>P. vulgaris</i> L.	Kos	H
<i>Salvia aethiopsis</i> L.	Eur-As	H
<i>S. amplexicaulis</i> Lam.	Bal-Dac	H
<i>S. argentea</i> L.	Med	H
<i>S. glutinosa</i> L.	Eur-As	H
<i>S. nemorosa</i> L.	Eur-OT	H
<i>S. nutans</i> L.	Eur-Sib	H
<i>S. pratensis</i> L.	Eur-Med	H
<i>S. sclarea</i> L.	Med-As	H
<i>S. verticillata</i> L.	subMed	H
<i>S. virgata</i> Jacq.	Med-CAs	H
<i>Satureja coerulea</i> Janka	subMed	H
<i>S. montana</i> L.	Pont-Med	Ch
subsp. <i>kitaibelii</i> (Heuff.) P.W. Ball.		
<i>Scutellaria altissima</i> L.	Eur	H
<i>S. columnae</i> All.	subMed	H
<i>S. orientalis</i> L.	Pont-Med	H
subsp. <i>pinnatifida</i> J.R. Edm.		
<i>Sideritis montana</i> L.	subMed	Th
<i>Stachys angustifolia</i> M. Bieb.	Pont-Med	H
<i>S. annua</i> (L.) L.	Eur-As	Th
<i>S. cassia</i> (Boiss.) Boiss.	Pont-Med	H
<i>S. germanica</i> L.	Eur-subMed	H
subsp. <i>germanica</i>		
<i>S. plumosa</i> Griseb.	Bal	H
<i>S. recta</i> L.	Eur-Med	H
subsp. <i>recta</i>		
<i>S. serbica</i> Pančić	Bal	Th
<i>Teucrium chamaedrys</i> L.	subMed	H
<i>T. montanum</i> L.	subMed	H
<i>T. polium</i> L.	Pont-Med	H
subsp. <i>capitatum</i> (L.) Arcang.		
<i>Thymus atticus</i> Čelak.	Bal	H
<i>Th. callieri</i> Velen.	Pont	H
subsp. <i>urumovii</i> Velen.		
<i>Th. glabrescens</i> Willd.	Eur	H
<i>Th. jankae</i> Čelak.	subMed	H
<i>Th. longedentatus</i> (Degen & Urum.) Ronniger	Bal	Ch
<i>Th. longicaulis</i> C. Presl	Med	H
<i>Th. moesiacus</i> Velen.	Bal-Anat	H
<i>Th. pannonicus</i> All.	Eur	H
<i>Th. pulegioides</i> L.	Eur	Ch
<i>Th. sibthorpii</i> Benth.	Bal-Dac	H
<i>Th. striatus</i> Vahl	subMed	H
<i>Ziziphora capitata</i> L.	Med	Th

Taxon	Floristic elements according to Assyov & Petrova (2012)	Life forms according to Raunkjær (1934)
Linaceae		
<i>Linum austriacum</i> L.	subMed	H
subsp. <i>austriacum</i>		
subsp. <i>austriacum</i>		
<i>L. bienne</i> Mill	Med	H
<i>L. catharticum</i> L.	subBoreal	Th
<i>L. flavum</i> L.	subMed	H
subsp. <i>flavum</i>		
<i>L. hirsutum</i> L.	subMed	H
subsp. <i>hirsutum</i>		
<i>L. nervosum</i> Waldst. & Kit.	subMed	H
<i>L. tauricum</i> Willd.	Pont-Med	H
subsp. <i>serbicum</i> (Podp.) Petrova		
<i>L. tenuifolium</i> L.	Pont-Med	H
Lythraceae		
<i>Lythrum salicaria</i> L.	subBoreal	H
<i>L. virgatum</i> L.	Eur-As	H
Malvaceae		
<i>Alcea pallida</i> (Willd.) Waldst. & Kit.	subMed	H
<i>A. rosea</i> L.	Med	H
<i>Althaea hirsuta</i> L.	Med-As	Th
<i>A. officinalis</i> L.	Boreal	H
<i>Hibiscus trionum</i> L.	Kos	H
<i>Lavatera thuringiaca</i> L.	Pont-Med	H
<i>Malva neglecta</i> Wallr.	subMed	H
<i>M. pusilla</i> Sm.	Eur-As	H
Morinaceae		
<i>Morina persica</i> L.	Med-OT	H
Oleaceae		
<i>Fraxinus exelsior</i> L.	Eur-Med	Ph
<i>F. ornus</i> L.	subMed	Ph
<i>Ligustrum vulgare</i> L.	subMed	Ph
<i>Syringa vulgaris</i> L.	Carp-Bal	Ph
Onagraceae		
<i>Epilobium angustifolium</i> L.	subBoreal	H
<i>E. hirsutum</i> L.	Boreal	H
<i>E. montanum</i> L.	Eur-OT	H
<i>Circaea luteciana</i> L.	Boreal	H
Orobanchaceae		
<i>Orobanche alba</i> Willd.	Eur-Med	H
<i>O. caryophyllacea</i> Sm.	Eur	H
<i>O. cumana</i> Wallr.	Med-Sib	H
<i>O. gracilis</i> Sm.	Eur-Med	H
<i>O. serbica</i> Beck & Petrovič	Bal	H
<i>O. teucris</i> Holandre	subMed	H
<i>Phelipanche oxyloba</i> (Reut.) Soják	Med-CAs	Th
<i>Ph. purpurea</i> (Jack.) Soják	Eur	H
<i>Ph. ramosa</i> (L.) Pomel	Eur-Med	Th

Taxon	Floristic elements according to Assyov & Petrova (2012)	Life forms according to Raunkjær (1934)
Paeoniaceae		
<i>Paeonia mascula</i> (L.) Mill.	Pont-Med	H
Papaveraceae		
<i>Chelidonium majus</i> L.	Eur-As	H
<i>Glaucium corniculatum</i> (L.) Rudolph	Eur-As	H
<i>Papaver dubium</i> L.	Med	Th
<i>P. laevigatum</i> M. Bieb.	subMed	Th
<i>P. rhoeas</i> L.	Eur-Sib	Th
Plantaginaceae		
<i>Plantago altissima</i> L.	Eur-Sib	H
<i>P. argentea</i> Chaix	subMed	H
<i>P. lanceolata</i> L.	Kos	H
<i>P. major</i> L.	Boreal	H
<i>P. media</i> L.	Boreal	H
<i>P. scabra</i> Moench	Eur-Sib	Th
<i>P. subulata</i> L.	Med	H
Polygalaceae		
<i>Polygala anatolica</i> Boiss. & Heldr.	Med	H
<i>P. comosa</i> Schkuhr.	subMed	H
<i>P. major</i> Jacq.	Eur-Sib	H
<i>P. vulgaris</i> L.	Eur-Med	H
Polygonaceae		
<i>Bilderdykia convolvulus</i> (L.) Dumort.	Eur-As	Th
<i>B. dumetorum</i> (L.) Dumort.	Eur-Med	Th
<i>Bistorta mayor</i> Gray	Eur-As	H
<i>Rumex acetosella</i> L.	Eur-subMed	H
<i>R. conglomeratus</i> Murray	Eur-As	H
<i>R. pulcher</i> L.	Eur-As	H
<i>Persicaria amphibia</i> (L.) Gray	Kos	He
<i>P. hydroppiper</i> (L.) Opiz	Eur-as	Th
<i>P. lapathifolia</i> (L.) Gray	Boreal	Th
<i>P. maculata</i> (Raf.) Gray	Boreal	Th
<i>P. mitis</i> (Schrank) Assenov	Eur-Med	Th
<i>Polygonum arenastrum</i> Boreau	Kos	Th
<i>P. aviculare</i> L.	Kos	Th
<i>P. patulum</i> M. Bieb.	Boreal	Th
<i>P. pulchellum</i> Loisel.	subMed	Th
<i>P. rurivagum</i> Boreau	subBoreal	Th
Primulaceae		
<i>Anagalis arvensis</i> L. subsp. <i>arvensis</i>	Kos	H
<i>A. minima</i> (L.) Krause	Eur	Th
<i>Androsace elongata</i> L.	Eur-Sib	Th
<i>A. maxima</i> L.	Eur-As	Th
<i>Lysimachia nummularia</i> L. subsp. <i>glandulosovillosa</i> (Beck) Peev	Eur	H
<i>L. vulgaris</i> L.	Eur-As	H
<i>Primula veris</i> L. subsp. <i>columnae</i> (Ten.) Lüdi	Eur-Med	H

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Ranunculaceae		
<i>Actaea spicata</i> L.	Eur-As	H
<i>Adonis aestivalis</i> L.	Eur-subMed	Th
<i>A. flammea</i> Jacq.	Eur-subMed	Th
<i>Anemone ranunculoides</i> L.	Eur-subMed	G
<i>A. nemorosa</i> L.	subBoreal	G
<i>A. sylvestris</i> L.	Eur-As	G
<i>Consolida regalis</i> Gray	Eur-Med	Th
<i>Clematis recta</i> L.	subMed	H
<i>C. vitalba</i> L.	Eur	Ph
<i>Delphinium fissum</i> Waldst. & Kit. subsp. <i>fissum</i>	subMed	H
<i>Isopyrum thalictroides</i> L.	Eur	G
<i>Helleborus odoratus</i> Willd.	Eur-SMed	H
<i>Nigella arvensis</i> L.	subMed	Th
<i>Pulsatilla montana</i> (Hoppe) Rchb. subsp. <i>bulgarica</i> Rummelsp.	Eur	G
<i>Ranunculus acris</i> L.	Kos	H
<i>R. arvensis</i> L.	Eur-Med	Th
<i>R. auricomus</i> L.	Eur-Med	H
<i>R. fallax</i> (Wimm. & Grab.) Sloboda	Eur	H
<i>R. ficaria</i> L. subsp. <i>ficaria</i>	Eur-Sib	G
<i>R. millefoliatus</i> Vahl	subMed	G
<i>R. nemorosus</i> DC.	Eur	H
<i>R. illyricus</i> L.	Eur-subMed	G
<i>R. oxyspermus</i> M. Bieb.	Med-CAs	H
<i>R. polyanthemus</i> L.	Eur-subMed	H
<i>R. rumelicus</i> Griseb.	Med	H
<i>R. sardous</i> Crantz	Eur-Med	H
<i>R. sceleratus</i> L.	Eur-Med	H
<i>Thalictrum minus</i> L. subsp. <i>majus</i> (Crantz) Hook. f.	Eur-Sib	H
Rhamnaceae		
<i>Rhamnus catharticus</i> L.	Eur-As	Ph
<i>Rh. saxatilis</i> Jacq. subsp. <i>saxatilis</i>	Eur-Med	Ph
Resedaceae		
<i>Reseda lutea</i> L.	subBoreal	H
<i>R. luteola</i> L.	Eur-Med	H
Rosaceae		
<i>Agrimonia eupatoria</i> L. subsp. <i>eupatoria</i>	Eur-Med	H
<i>Aremonia agrimonoides</i> (L.) DC. subsp. <i>agrimonoides</i>	subMed	H
<i>Amelanchier ovalis</i> Medik.	Pont-Med	Ph
<i>Amygdalus nana</i> L.	Eur-As	Ch
<i>Cotoneaster nebrodensis</i> (Guss.) K. Koch.	subMed	Ch
<i>C. niger</i> (Fr.) Fr.	Eur-As	Ch
<i>Crataegus monogyna</i> Jacq.	subBoreal	Ph

Taxon	Floristic elements according to Assyov & Petrova (2012)	Life forms according to Raunkiaer (1934)
<i>C. pentagyna</i> Willd.	subMed	Ph
<i>Filipendula vulgaris</i> Moench	Eur-Med	H
<i>Fragaria moschata</i> Weston	Eur-Pont	H
<i>F. vesca</i> L.	subBoreal	H
<i>F. viridis</i> Weston	Eur-Sib	H
<i>Geum urbanum</i> L.	subBoreal	H
<i>Malus dasyphylla</i> Borkh.	Pann-Pont	Ph
<i>M. praecox</i> (Pall.) Borkh.	Pont-CAs	Ph
<i>M. sylvestris</i> (L.) Mill.	Eur	Ph
<i>Potentilla argentea</i> L.	SPont	H
<i>P. cinerea</i> Vill.	Eur	H
<i>P. detommasii</i> Ten.	subMed	H
<i>P. erecta</i> (L.) Rausch.	subBoreal	H
<i>P. inclinata</i> Vill.	Eur-As	H
<i>P. micrantha</i> DC.	Eur-subMed	H
<i>P. mollicrinis</i> (Borbás) Stankov	Pont-Med	H
<i>P. neglecta</i> Baumg.	subBoreal	H
<i>P. obscura</i> Willd.	Eur	H
<i>P. patula</i> Waldst. & Kit.	Eur	H
<i>P. pedata</i> Willd.	Med	H
<i>P. pilosa</i> Willd.	Eur	H
<i>P. reptans</i> L.	Kos	H
<i>P. rupestris</i> L.	Boreal	H
<i>P. sulphurea</i> Lam. subsp. <i>sulphurea</i>	subMed	H
<i>P. supina</i> L.	subBoreal	H
<i>Prunus avium</i> L.	subMed	Ph
<i>P. cerasifera</i> Ehrh. subsp. <i>cerasifera</i>	Eur-As	Ph
<i>P. fruticosa</i> Pall.	Eur-Sib	Ph
<i>P. mahaleb</i> L.	Eur-Med	Ph
<i>P. spinosa</i> L.	SPont	Ph
<i>Pyrus amygdaliformis</i> Vill.	Med	Ph
<i>P. nivalis</i> Jacq.	Eur-As	Ph
<i>P. pyraister</i> (L.) Burgsd.	subMed	Ph
<i>Rosa caesia</i> Sm.	Eur	Ph
<i>R. canina</i> L.	subMed	Ph
<i>R. corymbifera</i> Borkh.	Eur-As	Ph
<i>R. dumalis</i> Bechst.	Eur-As	Ph
<i>R. gallica</i> L.	Eur-Med	Ph
<i>R. micrantha</i> Sm.	subMed	Ph
<i>R. mollis</i> Sm.	Eur-Med	Ph
<i>R. myriacantha</i> Lam. & DC.	subMed	Ch
<i>R. pimpinellifolia</i> L.	subMed	Ch
<i>R. tomentosa</i> Sm.	subMed	Ph
<i>R. vosagiaca</i> N.H.F. Desp.	subMed	Ph
<i>Rubus caesius</i> L.	Eur-As	Ph
<i>R. canescens</i> DC.	Eur-Med	Ph

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<i>R. discolor</i> Weihe & Nees	subMed	Ph
<i>R. idaeus</i> L.	subBoreal	Ph
<i>R. lloydianus</i> Genev.	Eur	Ph
<i>R. thyranthus</i> Focke	Eur	Ph
<i>Sanguisorba minor</i> Scop. subsp. <i>muricata</i> Briq.	subBoreal	Ch
<i>S. officinalis</i> L.	subBoreal	H
<i>Sorbus aria</i> (L.) Crantz	Eur	Ph
<i>S. domestica</i> L.	Eur-Med	Ph
<i>S. torminalis</i> (L.) Crantz	Pont-Med	Ph
<i>S. umbellata</i> (Desf.) Fritsch subsp. <i>umbelata</i>	subMed	Ph
<i>Waldsetinia</i> Willd.	Pann-Bal	H
Rubiaceae		
<i>Asperula aristata</i> L. f.	subMed	H
<i>A. arvensis</i> L.	Eur-Med	Th
<i>A. cynanchica</i> L.	Eur-Med	H
<i>A. purpurea</i> (L.) Ehrend.	subMed	H
<i>A. taurina</i> L. subsp. <i>leucanthera</i> (G. Beck) Hayek	Pont-Med	H
<i>A. tenella</i> Degen	subMed	H
<i>Crucianella angustifolia</i> L.	Med	Th
<i>C. graeca</i> Boiss.	Bal	Th
<i>Cruciata glabra</i> (L.) Ehrend.	Med-CAs	H
<i>C. laevipes</i> Opiz	Med-CAs	H
<i>C. pedemontana</i> (Bellardi) Ehrend.	Med-CAs	Th
<i>Galium album</i> Mill. subsp. <i>album</i>	Eur-As	H
<i>G. aparine</i> L.	Eur-As	Th
<i>G. debile</i> Desv.	subMed	H
<i>G. divaricatum</i> Lam.	Med	Th
<i>G. flavescens</i> Borbás	Bal-Dac	H
<i>G. glaucum</i> L.	subMed	H
<i>G. lovcense</i> Urum.	Bal-Anat	H
<i>G. lucidum</i> All.	subMed	H
<i>G. odoratum</i> (L.) Scop.	Eur-As	H
<i>G. palustre</i> L.	Boreal	H
<i>G. pseudoaristatum</i> Schur	Pann-Bal	H
<i>G. schultesii</i> Vest	subMed	H
<i>G. spurium</i> L.	Eur-As	Th
<i>G. tenuissimum</i> M. Bieb.	Pont-CAs	Th
<i>G. tricornutum</i> Dandy subsp. <i>teniusimum</i>	Eur-As	Th
<i>G. verum</i> L.	Eur-As	H
<i>Sherardia arvensis</i> L.	Med	Th
Rutaceae		
<i>Dictamnus albus</i> L.	Eur-As	H
<i>Haplophyllum suaveolens</i> (DC.) G. Don	Med	H

Taxon	Floristic elements according to Assyov & Petrova (2012)	Life forms according to Raunkjær (1934)
Salicaceae		
<i>Populus nigra</i> L.	Eur-As	Ph
<i>P. tremula</i> L.	subBoreal	Ph
<i>Salix alba</i> L. subsp. <i>alba</i>	Eur-As	Ph
<i>S. caprea</i> L.	subBoreal	Ph
<i>S. cinerea</i> L.	Eur-As	Ph
<i>S. fragilis</i> L.	Eur-As	Ph
<i>S. purpurea</i> L. subsp. <i>amplexicaulis</i> (Bory) Hayek	Eur-Med-CAs	Ph
<i>S. triandra</i> L.	subBoreal	Ph
Santalaceae		
<i>Comandra elegans</i> (Spreng.) Rchb.	Bal-Dac-Anat	Ch
<i>Thesium arvense</i> Horv.	Med-CAs	H
<i>Th. bavarum</i> Schrank	subMed	H
<i>Th. divaricatum</i> Mert & W.D.J. Koch	Eur-Med	H
<i>Th. linophyllum</i> L.	subMed	H
<i>Th. simplex</i> Velen. subsp. <i>simpex</i>	Bal-Dac	H
Saxifragaceae		
<i>Saxifraga bulbifera</i> L.	subMed	H
<i>S. rotundifolia</i> L. subsp. <i>rotundifolia</i>	subMed	H
<i>S. tridactylites</i> L.	subBoreal	H
Scrophulariaceae		
<i>Chaenorhinum minus</i> (L.) Lange	Eur-Med	Th
<i>Digitalis ferruginea</i> L.	subMed	H
<i>D. grandiflora</i> Mill.	Eur-Sib	H
<i>D. lanata</i> Ehrh.	subMed	H
<i>Euphrasia liburnica</i> Wettst.	Carp-Bal	Th
<i>E. rostkoviana</i> Hayne subsp. <i>montana</i> (Jord.) Wettst.	Eur-As	Th
<i>E. stricta</i> J.F. Lehm.	Eur-Med	Th
<i>Gratiola officinalis</i> L.	Eur-Med	H
<i>Lathraea squamaria</i> L.	Eur-As	G
<i>Linaria dalmatica</i> (L.) Mill.	Med	H
<i>L. genistifolia</i> (L.) Mill. subsp. <i>genistifolia</i>	Pont-Sib	H
<i>L. grandiflora</i> Desf.	Bal-Anat	H
<i>L. vulgaris</i> Mill.	Eur-Sib	H
<i>Kickxia elatine</i> (L.) Dumort. subsp. <i>elatine</i>	subMed	Th
<i>K. spuria</i> (L.) Dumort. subsp. <i>integrifolia</i> (Brot.) R. Fern.	subMed	Th
<i>Melampyrum arvense</i> L. subsp. <i>arvense</i>	Eur-Sib	Th
<i>M. cristatum</i> L. subsp. <i>ronnigeri</i> (Poev.) Ronniger	Eur-Sib	Th

Taxon	Floristic elements according to Assyov & Petrova (2012)	Life forms according to Raunkjær (1934)
<i>M. pratense</i> L. subsp. <i>pratense</i>	Eur-Sib	Th
<i>M. sylvaticum</i> L. subsp. <i>sylvaticum</i>	Eur	Th
<i>Misopates orontium</i> (L.) Raf.	Eur-Med	Th
<i>Odontites glutinosa</i> (M. Bieb.) Benth.	Pont-Med	Th
<i>O. luteus</i> (L.) Clairv.	Eur	Th
<i>O. serotina</i> (Lam.) Dumort.	Eur	Th
<i>Pedicularis leucodon</i> Griseb.	Bal	H
<i>Rhinanthus angustifolius</i> C.C. Gmel. subsp. <i>angustifolius</i>	Eur	Th
<i>Rh. rumelicus</i> Velen. subsp. <i>rumelicus</i>	Eur-Med	Th
<i>Scrophularia canina</i> L.	Eur-Med	H
<i>S. nodosa</i> L.	subBoreal	H
<i>S. umbrosa</i> Dumort.	Eur-As	H
<i>Verbascum banaticum</i> Schrad.	Bal-Dac	H
<i>V. blattaria</i> L.	Eur-Sib	H
<i>V. densiflorum</i> Bertol.	subMed	H
<i>V. chaixii</i> Vill. subsp. <i>austriacum</i> (Roem. & Schult.) Hayek	Pann-Bal	H
<i>V. humile</i> Janka subsp. <i>humile</i>	Bal	H
<i>V. lychnitis</i> L.	Ap-Bal	H
<i>V. nigrum</i> L.	Pont-CAs	H
<i>V. phlomoides</i> L.	Eur	H
<i>V. phoeniceum</i> L.	Eur-Sib	H
<i>V. speciosum</i> Schrad.	Eur-Med	H
<i>V. urumoffii</i> Stoj. & Acht.	Bul	Th
<i>Veronica arvensis</i> L.	Eur-Sib	Th
<i>V. austriaca</i> L. subsp. <i>jaquinii</i> (Baumg.) Eb. Fisch.	Eur-Med	H
<i>V. barrelieri</i> Roem. & Schult.	Pont-Bal	H
<i>V. baccabunga</i> L.	Eur-As	H
<i>V. chamaedrys</i> L.	Eur-As	H
<i>V. hederifolia</i> L.	Eur-Med	Th
<i>V. officinalis</i> L.	Eur-Sib	H
<i>V. orchidea</i> Crantz	Eur	H
<i>V. persica</i> Poir.	Eur-As	Th
<i>V. polita</i> Fr.	Eur-As	Th
<i>V. praecox</i> All.	Eur-Med	Th
<i>V. prostrata</i> L.	Eur	H
<i>V. scardica</i> Griseb.	Pont-Med	H
<i>V. scutellaria</i> L.	Eur	H
<i>V. serpyllifolia</i> L. subsp. <i>serpyllifolia</i>	Boreal	H
<i>V. teucrium</i> L. subsp. <i>crinita</i> (Kit.) Velen.	Eur-Sib	H
<i>V. triloba</i> (Opiz) Wiesb.	subMed	Th

Taxon	Floristic elements according to Assyov & Petrova (2012)	Life forms according to Raunkiaer (1934)
<i>V. triphyllus</i> L.	Eur-Med	Th
<i>V. urticifolia</i> Jacq.	Eur	H
<i>V. verna</i> L.	Eur-Sib	Th
subsp. <i>dillenii</i> (Crantz) Hayek		
<i>V. vindobonensis</i> (M.A. Fisch.) M.A. Fisch.	Eur	H
Solanaceae		
<i>Atropa bella-donna</i> L.	Eur	H
<i>Datura stramonium</i> L.	Am(Adv)	Th
<i>Hyoscyamus niger</i> L.	Eur-As	H
<i>Physalis alkekengii</i> L.	Eur-As	H
<i>Solanum alatum</i> Moench	subMed	Th
<i>S. dulcamara</i> L.	Eur-As	H
<i>S. luteum</i> Mill.	subMed	Th
<i>S. nigrum</i> L.	Kos	Th
<i>S. schultesii</i> Opiz	Pont	Th
Thymelaeaceae		
<i>Daphne cneorum</i> L.	subMeb	Ch
<i>Thymelaea passerina</i> (L.) Coss. & Germ.	Pont	Th
Tiliaceae		
<i>Tilia cordata</i> Mill.	Eur	Ph
<i>T. platyphyllos</i> Scop.	Eur	Ph
<i>T. tomentosa</i> Moench	Eur-Med	Ph
Ulmaceae		
<i>Ulmus glabra</i> Huds.	Eur-Med	Ph
Urticaceae		
<i>Parietaria officinalis</i> L.	Eur	H
<i>Urtica dioica</i> L.	Boreal	H
<i>U. urens</i> L.	Boreal	Th
Valerianaceae		
<i>Valeriana officinalis</i> L.	Eur-Sib	H
subsp. <i>officinalis</i>		
<i>V. tuberosa</i> L.	Med-CAs	G
<i>Valerianella carinata</i> Loisel.	Eur-Med	Th
<i>V. coronata</i> (L.) DC.	Eur-Med	Th
<i>V. dentata</i> (L.) Pollich	Eur-Med	Th
<i>V. locusta</i> (L.) Laterr.	Eur-Med	Th
<i>V. pumila</i> (L.) DC.	Pont-Med	Th
<i>V. ramosa</i> Bastard	Eur	Th
<i>V. turgida</i> (Steven) Betcke	subMed	Th
Verbenaceae		
<i>Verbena officinalis</i> L.	Kos	H
Violaceae		
<i>Viola aetolica</i> Boiss. & Heldr.	Bal	H
<i>V. alba</i> Besser	Eur-Med	H
subsp. <i>scotophylla</i> (Jord.) Nyman		
<i>V. ambigua</i> Waldst. & Kit.	Eur-Sib	H
<i>V. hirta</i> L.	Eur-As	H
<i>V. jordanii</i> Hanry	Eur-Med	H

Taxon	Floristic elements according to Assyov & Petrova (2012)	Life forms according to Raunkiaer (1934)
<i>V. kitaibeliana</i> Schult.	Eur-Med	Th
<i>V. odorata</i> L.	Eur-Med	H
<i>V. reichenbachiana</i> Boreau	Eur-As	H
<i>V. riviniana</i> Rchb.	subMed	H
<i>V. sieheana</i> W. Becker	Pont-Med	H
<i>V. suavis</i> M. Bieb.	Eur-As	H
<i>V. tricolor</i> L.	Eur-As	Th
subsp. <i>tricolor</i>		
Liliopsida		
Alismataceae		
<i>Alisma gramineum</i> Lej.	Boreal	He
<i>A. lanceolatum</i> With.	Boreal	He
<i>A. plantago-aquatica</i> L.	Boreal	He
Alliaceae		
<i>Allium albidum</i> M. Bieb.	Eur-Sib	G
<i>A. carinatum</i> L.	Eur-As	G
<i>A. cupani</i> Raf.	Med	G
<i>A. flavum</i> L.	Med	G
<i>A. moschatum</i> L.	Pont-subMed	G
<i>A. paczoskianum</i> Tuzson	Euro-subMed	G
<i>A. rotundum</i> L.	Eur-OT	G
<i>A. saxatile</i> M. Bieb.	Med-As	G
<i>A. scorodoprasum</i> L.	Eur-Med	G
<i>A. sphaerocephalon</i> L.	Med	G
Araceae		
<i>Arum maculatum</i> L.	Eur-subMed	G
Cyperaceae		
<i>Carex acuta</i> L.	Eur-Sib	H
<i>C. acutiformis</i> Ehrh.	Kos	H
<i>C. brevicollis</i> DC.	Eur-Med	H
<i>C. bueckii</i> Wimm.	Eur	H
<i>C. caryophyllea</i> Latourr.	Boreal	H
<i>C. digitata</i> L.	Eur-Sib	H
<i>C. distans</i> L.	Eur-As	H
<i>C. divisa</i> Huds.	Eur-As	H
<i>C. divulsa</i> Stokes	Eur-As	H
<i>C. echinata</i> Murray	Kos	H
<i>C. flacca</i> Schreb.	Kos	H
subsp. <i>flacca</i>		
<i>C. hallerana</i> Asso	Eur-As	H
<i>C. hirta</i> L.	Boreal	H
<i>C. hordeistichos</i> Vill.	subBoreal	H
<i>C. humilis</i> Leyss.	Eur-As	H
<i>C. liparocarpos</i> Gaudin	Pont-Med	H
<i>C. michelii</i> Host	Eur	H
<i>C. montana</i> L.	Eur-Sib	H
<i>C. muricata</i> L.	Kos	H

Taxon	Floristic elements according to Assyov & Petrova (2012)	Life forms according to Raunkjær (1934)
<i>C. otrubae</i> Podp.	Eur	H
<i>C. praecox</i> Schreb.	Eur-Sib	H
<i>C. remota</i> L.	Eur-As	H
<i>C. riparia</i> Curtis	Eur-As	H
<i>C. spicata</i> Huds.	Eur-As	H
<i>C. sylvatica</i> Huds.	subMed	H
<i>C. tomentosa</i> L.	Eur-Sib	H
<i>C. vesicaria</i> L.	Boreal	H
<i>Cyperus fuscus</i> L.	Boreal	H
<i>Eleocharis palustris</i> (L.) R. Br.	Kos	H
<i>Holoschoenus vulgaris</i> Link	Eur-As	H
<i>Pycreus flavescens</i> (L.) Rchb.	Kos	H
<i>P. glaber</i> (L.) Hayek	Eur-As	H
<i>P. longus</i> (L.) Hayek	Kos	H
Iridaceae		
<i>Crocus flavus</i> Weston	Eur-Pont	G
<i>C. olivieri</i> J. Gay	Bal	G
<i>Gladiolus communis</i> L.	Med	G
<i>Iris graminea</i> L.		
<i>I. reichenbachii</i> Heuff.	Bal-Dac	G
<i>I. variegata</i> L.	subMed	G
Juncaceae		
<i>Juncus articulatus</i> L.	Boreal	H
<i>J. atratus</i> Krock.	subMed	H
<i>J. bufonius</i> L.	subBoreal	H
<i>J. compressus</i> Jacq.	Eur-As	H
<i>J. conglomeratus</i> L.	Eur	H
<i>J. effusus</i> L.	subBoreal	H
<i>J. inflexus</i> L.	subBoreal	H
<i>Luzula campestris</i> (L.) DC. subsp. <i>campestris</i>	subBoreal	H
<i>L. forsteri</i> (Sm.) DC.	Boreal	H
<i>L. luzuloides</i> (Lam.) Dandy & Wilmott	Eur	H
<i>L. pilosa</i> (L.) Willd.	Boreal	H
<i>L. sylvatica</i> (Huds.) Gaudin	Eur	H
Lemnaceae		
<i>Lemna minor</i> L.	Kos	Hd
<i>L. trisulca</i> L.	Kos	Hd
<i>Spirodela polyrrhiza</i> (L.) Schleid.	Kos	Hd
Liliaceae		
<i>Anthericum liliago</i> L.	subMed	G
<i>A. ramosum</i> L.	Eur	G
<i>Asparagus officinalis</i> L.	Eur	G
<i>A. tenuifolius</i> Lam.	Pont-Med	G
<i>A. verticillatus</i> L.	Pont-As	G
<i>Asphodeline lutea</i> (L.) Rchb.	Pont-Med	G
<i>Asphodelus albus</i> Mill.	subMed	G
<i>Colchicum autumnale</i> L.	Eur	G

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<i>Convallaria majalis</i> L.	Boreal	G
<i>Fritillaria orientalis</i> Adam	subMed	G
<i>Gagea arvensis</i> (Pers.) Dumort.	Pont-Med	G
<i>G. lutea</i> (L.) Ker Gawl.	Eur-As	G
<i>G. pratensis</i> (Pers.) Dumort.	Eur	G
<i>Hyacinthella leucophaea</i> (K. Koch) Schur	Pont-Med	G
<i>Lilium martagon</i> L.	Eur-As	G
<i>Muscari armeniacum</i> Baker	Bal	G
<i>M. botryoides</i> (L.) Mill.	Med	G
<i>M. comosum</i> (L.) Mill.	Med	G
<i>M. neglectum</i> Ten.	Med-OT	G
<i>M. racemosum</i> DC.	subMed	G
<i>Ornithogalum boucheanum</i> (Kunth) Asch.	Pont-Med	G
<i>O. comosum</i> L.	Med	G
<i>O. kochii</i> Parl. subsp. <i>kochii</i>	Eur-subMed	G
<i>O. montanum</i> Cyr.	Ap-Bal	G
<i>O. narborensis</i> L.	Med	G
<i>O. nutans</i> L. subsp. <i>nutans</i>	Eur	G
<i>O. pyrenaicum</i> L.	Med	G
<i>O. sibthorpii</i> Greuter	Bal-Anat	G
<i>O. umbellatum</i> L.	Pont-subMed	G
<i>Polygonatum latifolium</i> Desf.	Boreal	G
<i>P. multiflorum</i> (L.) All.	Boreal	G
<i>P. odoratum</i> (Mill.) Druce	Eur-Sib	G
<i>Scilla bifolia</i> L.	Pont-subMed	G
<i>Tulipa urumoffii</i> Hayek	Bul	G
<i>Veratrum nigrum</i> L.	Eur-As	G
Orchidaceae		
<i>Anacamptis pyramidalis</i> (L.) Rich.	subMed	G
<i>Cephalanthera damasonium</i> (Mill.) Druce	subMed	G
<i>C. rubra</i> (L.) Rich.	Eur-As	G
<i>Coeloglossum viride</i> (L.) Hartm.	Boreal	G
<i>Dactylorhiza sambucina</i> (L.) Sóo	Eur	G
<i>Gymnadenia conopsea</i> (L.) R. Br.	Eur-As	G
<i>Epipactis exilis</i> P. Delforge	EMed	G
<i>E. helleborine</i> (L.) Crantz subsp. <i>helleborine</i>	subBoreal	G
<i>Himantoglossum caprinum</i> (M. Bieb.) Spreng.	Med	G
<i>Neottia nidus-avis</i> (L.) Rich.	Eur-As	G
<i>Ophrys apifera</i> Huds.	Eur	G
<i>Orchis coriophora</i> L. subsp. <i>coriophora</i>	Eur-subMed	G
<i>O. morio</i> L. subsp. <i>picta</i> (Loisel.) Arcang.	Eur-subMed	G
<i>O. ovalis</i> F.W. Schmidt	Eeur	G
<i>O. pallens</i> L.	SPont	G
<i>O. papilionaceae</i> L.	subMed	G

Taxon	Floristic elements according to Assyov & Petrova (2012)	Life forms according to Raunkjær (1934)
<i>O. pinetorum</i> Boiss. & Kotschy	subMed	G
<i>O. purpurea</i> Huds.	subMed	G
<i>O. simia</i> Lam.	subMed	G
<i>O. tridentata</i> Scop. subsp. <i>tridentata</i>	Eur-subMed	G
<i>O. ustulata</i> L.	Eur-Sib	G
<i>Spiranthes spiralis</i> (L.) Chevall.	subMed	G
Poaceae		
<i>Achnatherum calamagrostis</i> (L.) P. Beauv.	subMed	H
<i>Aegilops biuncialis</i> Vis.	Med	Th
<i>A. cylindrica</i> Host	Eur-As	Th
<i>A. neglecta</i> Bertol.	Bal-Anat	Th
<i>A. triuncialis</i> L.	Eur-As	Th
<i>Agropyron brandzae</i> Panțu & Solacolu	Pont	H
<i>A. cristatum</i> (L.) Gaertn. subsp. <i>pectinatum</i> (M. Bieb.) Tzvelev	Eur-Pont	H
<i>Agrostis capillaris</i> L.	Boreal	H
<i>Aira elegantissima</i> Schur	Med	Th
<i>Alopecurus myosuroides</i> Huds.	Eur-As	Th
<i>A. pratensis</i> L.	Eur-As	H
<i>A. rendlei</i> Eig	Med	Th
<i>Anthoxanthum odoratum</i> L.	Eur	H
<i>Apera spica-venti</i> (L.) P. Beauv.	subBoreal	Th
<i>Arrhenatherum elatius</i> (L.) J. Presl & C. Presl	Eur-As	H
<i>Avena fatua</i> L.	Boreal	Th
<i>A. ludoviciana</i> Durieu	Med-CAs	Th
<i>Avenula compressa</i> (Heuff.) W. Sauer & Chmel.	Bal-Dac	H
<i>A. pubescens</i> (Huds.) Dumort.	sSib	H
<i>Bellardiachloa variegata</i> (Lam.) Kerguélen	subMed-Anat	H
<i>Brachypodium pinnatum</i> (L.) P. Beauv. subsp. <i>pinnatum</i>	sSib	H
<i>B. sylvaticum</i> (Huds.) P. Beauv.	Eur-As	H
<i>Briza media</i> L. subsp. <i>media</i>	subMed	H
<i>Bromus arvensis</i> L.	Eur-As	H
<i>B. barcensis</i> Simonk.	Eur-As	H
<i>B. commutatus</i> Schrad.	subMed	Th
<i>B. erectus</i> Huds.	subMed	H
<i>B. inermis</i> Leyss.	Eur-As	H
<i>B. japonicus</i> Thunb.	Med-CAs	H
<i>B. moesiacus</i> Velen.	Bul	H
<i>B. mollis</i> L.	Boreal	Th
<i>B. racemosus</i> L.	Eur	Th
<i>B. riparius</i> Rehmman	Pont	H
<i>B. scoparius</i> L.	subMed-As	Th
<i>B. secalinus</i> L.	subMed	Th
<i>B. squarrosus</i> L.	subMed	Th
<i>B. sterilis</i> L.	subBoreal	Th
<i>B. tectorum</i> L.	Boreal	Th

Taxon	Floristic elements according to Assyov & Petrova (2012)	Life forms according to Raunkjær (1934)
<i>Calamagrostis epigejos</i> (L.) Roth	Eur-As	H
<i>Chrysopogon gryllus</i> (L.) Trin.	Pont-Med	H
<i>Cleistogenes serotina</i> (L.) Keng	Eur-subMed	H
<i>Crypsis alopecuroides</i> (Piller & Mitterp.) Schrad.	Eur-as	Th
<i>Cynodon dactylon</i> (L.) Pers.	Kos	H
<i>Cynosurus cristatus</i> L.	Eur	H
<i>C. echinatus</i> L.	subMed	Th
<i>Dactylis glomerata</i> L. subsp. <i>glomerata</i>	Eur-As	H
<i>Danthonia alpina</i> Vest	Eur	H
<i>Dasypyrum villosum</i> (L.) P. Candargy	subMed	Th
<i>Dichanthium ischaemum</i> (L.) Roberty	sMed-As	H
<i>Digitaria sanguinalis</i> (L.) Scop.	Kos	Th
<i>Elymus hispidus</i> (Opiz) Melderis subsp. <i>hispidus</i>	Pont-CAs	H
<i>E. repens</i> (L.) Gould	Boreal	H
<i>Eragrostis cilianensis</i> (All.) Janch.	Eur-As	Th
<i>E. minor</i> Host	subBoreal	Th
<i>E. pilosa</i> (L.) P. Beauv.	Kos	Th
<i>Festuca arundinacea</i> Schreb. subsp. <i>arundinacea</i>	Pont-CAs	H
<i>F. callieri</i> (St-Yves) Markgr.-Dann.	Pont-Med	H
<i>F. dalmatica</i> (Hack.) K. Richt.	subMed	H
<i>F. gigantea</i> (L.) Vill.	Boreal	H
<i>F. heterophylla</i> Lam.	Boreal	H
<i>F. nigrescens</i> Lam.	Eur	H
<i>F. oviniformis</i> J. Vetter	Bal	H
<i>F. pratensis</i> Huds.	Boreal	H
<i>F. rubra</i> L.	Boreal	H
<i>F. spectabilis</i> Bertol.	Ap-Bal	H
<i>F. thracica</i> (Acht.) Markgr.-Dann.	Bal	H
<i>F. valesiaca</i> Gaudin	Pont	H
<i>Holcus lanatus</i> L.	Eur	H
<i>Hordelymus europaeus</i> (L.) Harz	Eur-SMed	H
<i>Hordeum bulbosum</i> L.	Eur-SMed	H
<i>H. leporinum</i> Link	Med-CAs	Th
<i>H. murinum</i> L.	Boreal	Th
<i>H. secalinum</i> Schreb.	Boreal	H
<i>Koeleria fenzliana</i> Schur	Eur	H
<i>K. macrantha</i> (Ledeb.) Schult.	Eur	H
<i>K. mitruschii</i> Ujhelyi	subBoreal	H
<i>K. nitidula</i> Velen.	Pont	H
<i>K. penzesii</i> Ujhelyi	Pont	H
<i>K. schurii</i> Ujhelyi	subMed	H
<i>Lolium multiflorum</i> Lam.	subMed	H
<i>L. perenne</i> L.	Eur-As	H
<i>L. temulentum</i> L.	Boreal	Th
<i>Melica ciliata</i> L.	Eur-subMed	H

Taxon	Floristic elements according to Assyov & Petrova (2012)	Life forms according to Raunkiaer (1934)
<i>M. transsilvanica</i> Schur	Bal-Dac	H
<i>M. uniflora</i> Retz.	Eur	H
<i>Milium effusum</i> L.	subBoreal	H
<i>Phleum phleoides</i> (L.) H. Karst.	Eur-As	H
<i>Ph. pratense</i> L. subsp. <i>pratense</i>	Eur-subMed	H
<i>Piptatherum virescens</i> (Trin.) Boiss.	subMed	H
<i>Poa angustifolia</i> L.	Kos	H
<i>P. annua</i> L.	Kos	Th
<i>P. badensis</i> Willd.	Eur-As	H
<i>P. bulbosa</i> L.	Eur-As	H
<i>P. compressa</i> L.	Eur-As	H
<i>P. nemoralis</i> L.	Boreal	H
<i>P. pratensis</i> L.	Kos	H
<i>P. sylvicola</i> Guss.	Eur-As	H
<i>P. timoleontis</i> Boiss.	CAs	H
<i>P. trivialis</i> L.	Boreal	H
<i>Sclerochloa dura</i> (L.) P. Beauv.	Eur-As	H
<i>Sesleria latifolia</i> (Adamović) Degen	Bal	H
<i>S. rigida</i> Rchb.	Carp-Bal	H

Taxon	Floristic elements according to Assyov & Petrova (2012)	Life forms according to Raunkiaer (1934)
<i>S. tenuifolia</i> Schrad.	Med	H
<i>Setaria pumila</i> (Poir.) Schult	Kos	Th
<i>S. verticillata</i> (L.) P. Beauv.	kos	Th
<i>S. viridis</i> (L.) P. Beauv.	Boreal	Th
<i>Sorghum halepense</i> (L.) Pers.	subMed-CAs	H
<i>Stipa capillata</i> L.	Pont-Med	H
<i>S. epilosa</i> Martinovský	Pont-Med	H
<i>S. eriocaulis</i> Borbás	Eur-Med	H
<i>S. pulcherrima</i> K. Koch	Pont-Med	H
<i>S. tirsia</i> Steven	Eur-As	H
<i>Taeniatherum caput-medusae</i> (L.) Nevski	Eur-As	Th
<i>Tragus racemosus</i> (L.) All.	subBoreal	Th
<i>Ventenata dubia</i> (Leers) Coss.	Pont-Med	Th
<i>Vulpia myurus</i> (L.) C.C. Gmel.	subBoreal	Th
Sparganiaceae		
<i>Sparganium erectum</i> L.	Boreal	G
subsp. <i>neglectum</i> (Beeby) Schinz & Thell.		
Typhaceae		
<i>Typha angustifolia</i> L.	Kos	He
<i>T. latifolia</i> L.	Kos	He

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