

Apophytes in the flora of the Seymskiy Regional Landscape Park (Ukraine): analysis and list of species

Olena Miskova

Department of Systematics and Floristics of Vascular Plants, M. G. Kholodny Institute of Botany, National Academy of Sciences of Ukraine, Ukraine; ORCID: <https://orcid.org/0000-0003-3827-7307>

* corresponding author (e-mail: lena.miskova.enot@gmail.com)

Abstract. The group of apophytes (native synanthropic plants) in the Seymskiy Regional Landscape Park (Sumy Oblast, northern Ukraine) has been studied with respect to its species composition and other features. This group in the park includes 285 species from 193 genera and 63 families. Among them, the most numerous represented families are the Asteraceae, Fabaceae, Caryophyllaceae, Poaceae, Scrophulariaceae, Lamiaceae, Rosaceae, Brassicaceae, Apiaceae, Polygonaceae, Boraginaceae, Cyperaceae, and Ranunculaceae, while the major genera are *Trifolium*, *Veronica*, *Carex*, *Galium*, *Poa*, *Artemisia*, *Centaurea*, *Plantago*, *Potentilla*, *Rumex*, *Verbascum*, and *Viola*. This study shows that hemicryptophytes dominate among plant life-forms, and most species are mesophytes. Meadow species of apophytes are the most numerous ecological group. The core of the group of apophytes consists of species of European-West Asian, Eurasian, European, and circumpolar distribution. According to the latitudinal types of distribution range, dominant positions are occupied by temperate-submeridional, boreal-submeridional, boreal-meridional, and temperate-meridional species. Hemiapophytes make up 41.4% of apophyte species, while accidental apophytes (38.2%), and euapophytes (20.4%) are less numerous. In the flora of the park, apophytes prevail over the adventive fraction (alien species introduced accidentally or intentionally). This contrasts with the contribution of apophytes to the flora of Ukraine and other protected areas.

Key words: apophytization, native plants, protected area, synanthropization, human impact, synanthropic habitat, ecotope

1. Introduction

For many decades, the natural environment has suffered from increasing anthropogenic influence, which has changed its structure and consequently leads to synanthropization, in particular to apophytization of the flora (Kornaś 1968; Mirek 1981; Kowarik 1988; Sudnik-Wójcikowska & Koźniewska 1988; Protopopova 1991; Sukopp 2006, 2008; Zając & Zając 2009; Protopopova & Shevera 2016). Apophytes are a dynamic group composed of native species that are tolerant to human impact. In Ukraine, research on apophytes has a long history. Participation of apophytes in local floras has been studied in different regions of Ukraine (Kotsun & Kuzmishyna 2016; Kucher *et al.* 2021), in seaports (Petryk 1992), and other towns (Protopopova *et al.* 2012, Protopopova & Shevera 2016; Chuba & Mamchur 2018). Most of all, however, this group is studied

as part of the flora of protected areas (Panchenko 2005; Hrytsyna 2015; Kolomyichuk *et al.* 2021). The species composition and analysis of the synanthropic fraction of the flora of Ukraine are summarized in a monograph by Protopopova (1991). The study of apophytes at the regional level is relevant, as it allows to determine the direction of changes in the local flora under the influence of human activity in each specific territory and to reveal the general regularities of the process of synanthropization of plant cover.

The study area, the Seymskiy Regional Landscape Park (RLP), is the second largest park in Ukraine and the largest object on the list of protected areas in northern Ukraine. It is located in the west-central part of Sumy Oblast and its total area is 988.6 km² (Boychenko *et al.* 2019; Fig. 1). The park was created in 1995, to preserve typical or unique natural ecosystems and objects in their natural state, as well as provide conditions for the



Fig. 1. Location of the Seymskiy Regional Landscape Park in Ukraine

recreation of the population. It is divided into several zones: protected (1.70% of the park area), regulated recreational (3.18%), and economic (95.12%).

The park is located on the floodplains and floodplain terraces of the Seym River, which together with its tributaries, marshes, and lakes form the hydrographic network of the study area. The relief is undulating, dissected by a wide asymmetric valley of the Seym River, ravines, and the southwestern spurs of the Central Russian Upland. There are various types of soils in the park: soddy podzolic, light grey and grey podzolized, dark grey podzolized, podzolized chernozem, meadow alkaline, peat-boggy soil, and low moor soils. The climate of the study area is temperate continental and the annual precipitation is 600-650 mm. The natural vegetation of this territory is mainly represented by coniferous, broad-leaved-coniferous, broad-leaved, and small-leaved forests (i.e. dominated by birch or aspen), as well as meadows (true, marshy, and peaty), steppe meadows, and steppe slopes.

Intensive economic activity, traffic flow, the influence of recreational load, and – in the last years – military events, contribute to the transformation of the natural plant cover of the park. This study aimed to analyse the species composition and other features of apophytes in the flora of the Seymskiy RLP.

2. Material and methods

This study is based on original data collected in 2018-2023 in the Seymskiy RLP and herbarium collections of M. G. Kholodny Institute of Botany, National Academy of Sciences (NAS) of Ukraine (KW), M. M.

Hryshko National Botanical Garden, NAS of Ukraine (KWHG), A. V. Fomin Botanical Garden of the Taras Shevchenko Kyiv National University (KWHU), Nizhyn Mykola Gogol State University (NZHU), and Putyvl State Historical and Cultural Reserve. The research was carried out according to the methods generally accepted in comparative floristics. Apophytes were classified according to the level of naturalization in anthropogenic ecotopes, as suggested by V. Protopopova (1991): accidental apophytes – accidental components of anthropogenic ecotopes; hemiapophytes – equally common in anthropogenic and natural ecotopes; eupophytes – preferring anthropogenic ecotopes. The basis for the geographical analysis was the scheme of botanical geographical zoning of the Earth developed by Meusel *et al.* (1965).

Seven groups of anthropogenic ecotopes (with subgroups) were distinguished, according to Protopopova (1991) with supplements:

1. Cultivated lands. 1.1. Fields. 1.2. Forest nurseries.
2. Ecotopes of settlements. 2.1. Ruderal places. 2.2. Wastelands. 2.3. Lawns. 2.4. Gardens. 2.5. Squares, parks. 2.6. Football and other sports fields.
3. Fortified banks of canals and dams.
4. Railway embankments.
5. Anthropogenically changed ecotopes at the regeneration stage. 5.1. Roadsides. 5.2. Old wastelands. 5.3. Old parks. 5.4. Forest plantations after felling. 5.5. Fallow lands
6. Natural degraded ecotopes. 6.1. Places of recreation. 6.2. Hayfields. 6.3. Grazing lands. 6.4. Meadow and forest roads.
7. Ruins of buildings and brick fences.

The frequency of apophytes was divided into the following classes: very rare (1-5 localities), rare (6-10), infrequent (11-20), and frequent (>20).

3. Results and discussion

According to my findings, apophytes account for 28% of the total flora of the Seymskiy RLP and prevail over alien species introduced accidentally or intentionally. In contrast, the flora of the forest-steppe of Ukraine is characterized by the dominance of the alien fraction of synanthropic flora (Protopopova 1991). The preliminary checklist of apophytes in the study area includes 285 species of vascular plants belonging to 193 genera and 63 families (Appendix 1), i.e. 58% of the apophytes of the flora of Ukraine (Protopopova 1991). The leading families are the Asteraceae (42 species; 14.7% of total apophytes), Fabaceae (20; 7%), Poaceae (19; 6.7%), Caryophyllaceae (18; 6.3%), Scrophulariaceae (17; 6%), Lamiaceae (15; 5.3%), Rosaceae (12; 4.2%), Brassicaceae (10; 3.5%), Apiaceae (10; 3.5%), Polygonaceae (9; 3.2%), Boraginaceae, Cyperaceae, and Ranunculaceae (each: 8; 2.8%). Together, these families comprise 130 genera (67.4%) and 196 species (68.8%) (Table 1).

Lamiaceae, Apiaceae, Polygonaceae, and Boraginaceae (Table 2).

Table 2. Ranking of the main families of apophytes in the flora of the Seymskiy Regional Landscape Park (RLP) and Ukraine

Families	Seymskiy RLP	Ukraine
Asteraceae	1	1
Fabaceae	2	2
Poaceae	3	4
Caryophyllaceae	4	6
Scrophulariaceae	5	7
Lamiaceae	6	3
Rosaceae	7	12
Apiaceae	8	5
Brassicaceae	8	8
Polygonaceae	9	7
Boraginaceae	10	9
Cyperaceae	10	20
Ranunculaceae	10	11

The presented analysis has revealed that the spectrum of the main genera of apophytes in the Seymskiy RLP and in the flora of Ukraine differs significantly both in its

Table 1. Contributions of the main families to the total number of species and genera of apophytes in the Seymskiy Regional Landscape Park

No.	Families	Species		Genera	
		Number	%	Number	%
1	Asteraceae	42	14.7	29	15.0
2	Fabaceae	20	7.0	9	4.7
3	Poaceae	19	6.7	13	6.7
4	Caryophyllaceae	18	6.3	16	8.3
5	Scrophulariaceae	17	6.0	6	3.1
6	Lamiaceae	15	5.3	12	6.2
7	Rosaceae	12	4.2	8	4.1
8	Apiaceae	10	3.5	10	5.2
9	Brassicaceae	10	3.5	9	4.7
10	Polygonaceae	9	3.2	4	2.1
11	Boraginaceae	8	2.8	6	3.1
12	Cyperaceae	8	2.8	3	1.6
13	Ranunculaceae	8	2.8	5	2.6
Total		196	68.8	130	67.4

The systematic structure of apophytes in the park is similar to their structure in Ukraine (Protopopova 1991), considering the leadership of the Asteraceae and Fabaceae families. However, the ranking in this study differs in the presence of the Cyperaceae among the leading families, as well as higher positions of the Caryophyllaceae, Poaceae, Rosaceae, Scrophulariaceae, and Ranunculaceae, while lower positions of the

qualitative composition and in the ranking of the genera. They share the genera *Trifolium*, *Veronica*, *Verbascum*, *Rumex*, and *Potentilla*, but the other main genera are different. The main genera of apophytes in the park are: *Trifolium*, *Veronica* (8 species each), *Carex* (6), *Poa* and *Galium* (5 species each), *Artemisia*, *Centaurea*, *Plantago*, *Potentilla*, *Rumex*, *Verbascum*, and *Viola* (4 species each). Together they include 60 species (21.1%

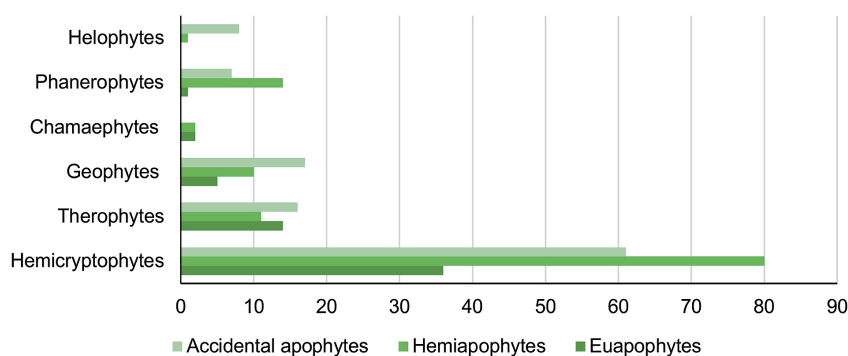


Fig. 2. Raunkiaer's life-forms of apophytes in the Seymskiy Regional Landscape Park

of total apophytes). Besides, 7 genera are represented by 3 species each and 29 genera by 2 species each.

In this study, the most diverse group of apophytes according to the degree of adaptation to anthropogenically disturbed conditions are hemiapophytes (118 species; 41.4%), which is characteristic of the other local floras of Ukraine (Hrytsyna 2005; Kotsun & Kuzmishyna 2016; Koval & Horshkova 2021). The share of the accidentally synanthropic accidental apophytes is also high (109; 38.2%), whereas the lowest is that of euapophytes (58; 20.3%), which prefer anthropogenically changed biotopes.

The analysis of apophytes in the park according to Raunkiaer's plant life-form classification demonstrates an absolute predominance of hemicryptophytes (177 species; 62.1%). They are followed by therophytes (41; 14.4%), geophytes (32; 11.2%), and phanerophytes (22; 7.7%). Contributions of helophytes (9; 3.1%) and chamaephytes (4; 1.4%) are negligible (Fig. 2). All groups of apophytes are characterized by the dominance of hemicryptophytes, with therophytes ranking second. This is only partly consistent with their ranking in the apophyte fraction of the flora of Ukraine, where annual plants predominate among euapophytes (Protopopova 1991).

Plants adapted to medium moisture content predominate in this study. The contribution of mesophytes is the largest (147 species; 51.5%). Intermediate groups of xeromesophytes (44; 15.4%) and hygromesophytes (35; 12.3%) also account for considerable proportions, and are followed by species of dry habitats: mesoxerophytes (21; 7.3%) and xerophytes (13; 4.6). Species growing in places with excessive substrate moisture are represented in small numbers: the share of hygrophytes is 13 species (4.6%), while hydrophytes include 12 species (4.2%) among apophytes (Fig. 3). Hemiapophytes predominate among mesophytes, xeromesophytes, mesoxerophytes, and xerophytes. Species adapted to the conditions of abundant moisture are mainly represented by accidental apophytes. Therefore, apophytic properties appear to be characteristic of species of dry and moderately moist biotopes.

Results of the geographical analysis indicate that species with the following longitudinal types of range prevail among apophytes in the study area: European-West Asian (87 species; 30.5%), Eurasian (75; 26.3%), European (66; 23.1%), and circumpolar (43; 15.1%). Species with wide ranges attest to the unification of the flora and its loss of regional features. According to latitudinal range types, species of temperate-sub-

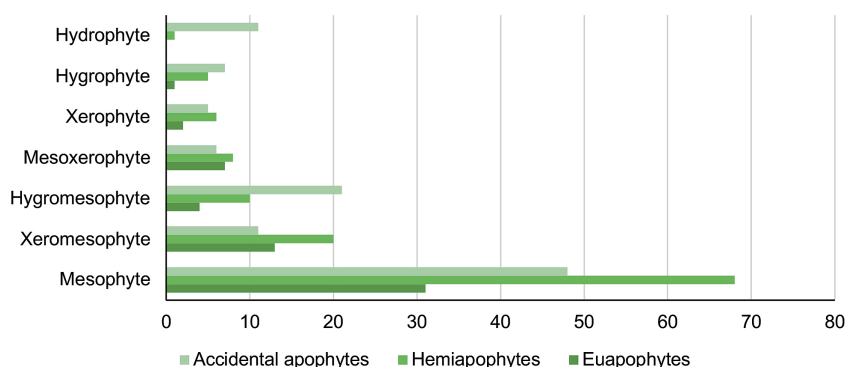


Fig. 3. Soil moisture preferences of apophytes in the Seymskiy Regional Landscape Park (according to the classification of Ramenskii *et al.* 1956)

Table 3. Participation of apophytes of the Seymskiy Regional Landscape Park according to ecological groups

No.	Ecological groups	Species number	% of total apophytes
1	Forest group	63	22.1
2	Shrub group	29	10.2
3	Meadow group	97	34.0
4	Meadow-steppe group	18	6.3
5	Wetland group	53	18.6
6	Psammophytic group	17	6.0
7	Synanthropic group	6	2.1
8	Group of plants-parasites	2	0.7
Total		285	100.0

meridional (65; 22.8%), boreal-submeridional (63; 22.1%), boreal-meridional (58; 20.3%), and temperate-meridional (42; 14.7%) types dominate. Much smaller numbers of species with boreal-temperate (10; 3.5%), arctic-submeridional, and temperate (7; 2.5%) range types are represented. The remaining groups include an insignificant share of apophytes, while 11 (3.9%) species are plurizonal. In general, among the apophytes in the study area, the absolute majority are species whose ranges cover the temperate and submeridional zones. This is characteristic of the flora of Ukraine as a whole.

The ecological analysis concerns the preferences of species for a certain natural habitat and shows here which groups are the most adapted to the conditions of anthropogenic load. Based on the results, 8 groups of apophytes were identified. The largest numbers of species were typical of meadows (97; 34%), forests (63; 22.1%), and wetlands (53; 18.6%). There are significantly fewer apophyte species typical of shrub communities (29; 10.2%), meadow-steppe (18; 6.3%), and psammophytes (17; 6%) (Table 3). The synanthropic group (6; 2.1%) includes species distributed in weedy areas and pastures.

According to the ecological analysis, hemiapophytes predominate in meadow, meadow-steppe, shrub and

forest groups. Accidental apophytes dominate in psammophytic and wetland groups, while euapophytes make up the synanthropic group and have a medium position in psammophytic and shrub groups (Fig. 4). Thus, meadow species are the most prone to apophytization.

A comparison of various types of synanthropic habitats shows that apophytes were mostly recorded in ruderal places (197 species; 69.1%), wastelands (203; 71.2%), roadsides (198; 69.5%), and places of recreation (100; 35.1%). In general, most of the apophytes were found in ecotopes of settlements, anthropogenically changed ecotopes at the stage of regeneration, and natural degraded ecotopes (Table 4).

Naturally, euapophytes – the plants that have completely moved to anthropogenically transformed places – are common in the study area, so they include mostly species of the highest frequency class (42 species; 14.7%). Hemiapophytes are mostly found sporadically (69; 24.2%), while accidental apophytes very rarely (41; 14.3%), rarely (36; 12.6%) or infrequently (32; 11.2%) (Fig. 5). The most common are *Arctium tomentosum*, *Artemisia vulgaris*, *Chenopodium album*, *Convolvulus arvensis*, *Elytrigia repens*, *Polygonum aviculare*, *Equisetum arvense*, *Plantago major*, *Stellaria media*, and *Trifolium repens*.

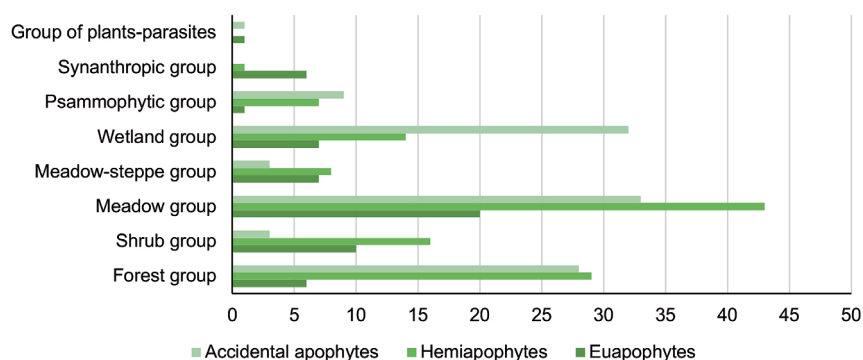
**Fig. 4.** Ecological groups of apophytes in the Seymskiy Regional Landscape Park

Table 4. Number of species of apophytes in the Seymskiy Regional Landscape Park in various anthropogenic ecotopes

No.	Ecotope types and subtypes	Species number	% of total apophytes
Cultivated lands	1.1. Fields	47	16.5
	1.2. Forest nurseries	28	9.8
Ecotopes of settlements	2.1. Ruderal places	197	69.1
	2.2. Wastelands	203	71.2
	2.3. Lawns	30	10.5
	2.4. Gardens	73	25.6
	2.5. Squares, parks	69	24.2
	2.6. Football and other sports fields	26	9.1
Fortified banks of canals and dams		15	5.3
Railway embankments		30	10.5
Anthropogenically changed ecotopes at regeneration stage	5.1. Roadsides	198	69.5
	5.2. Old wastelands	64	22.5
	5.3. Old parks	71	24.9
	5.4. Forest plantations after felling	36	12.6
Natural degraded ecotopes	6.1. Fallow lands	70	24.6
	6.1. Places of recreation	100	35.1
	6.2. Hayfields	42	14.7
	6.3. Grazing lands	75	26.3
Ruins of buildings and brick fences	6.4. Meadow and forest roads	59	20.7
		27	9.5

Some of the apophytes in the park are included in the Red Book of Ukraine. *Gladiolus tenuis* is usually confined to meadows and river floodplains, but as an apophyte it grows on meadow roads as well as ploughed and fallow land. *Epipactis helleborine* is a forest species, which spreads to forest roads and roadsides. The regionally rare species *Digitalis grandiflora*, generally confined to oak, oak-pine, and pine forests, grows on the sides of forest roads, in recreation areas, and ruderal places near forests. *Jurinea cyanooides* is a psammophyte but can be seen in sandy ruderal areas. These threatened species are the most common among the rare components of the flora of the Seymskiy RLP. They are more or less adapted to a moderate anthropogenic load (Fig. 6).

4. Conclusions

Apophytes in the Seymskiy RLP (285 species) make up more than a quarter of the park's flora and prevail over the adventive fraction of synanthropic flora. This contrasts with their contribution to the flora of Ukraine and other protected areas. Apophytes are characterized by a simplified species composition of pteridophytes and Liliopsida. The list of main families is dominated by the Holarctic and Mediterranean flora. In general, the data indicate that the anthropogenic places in the study area are actively colonized by herbaceous plants from moderately moist biotopes (mesophytes). The analysis of the geographical structure shows the predominance

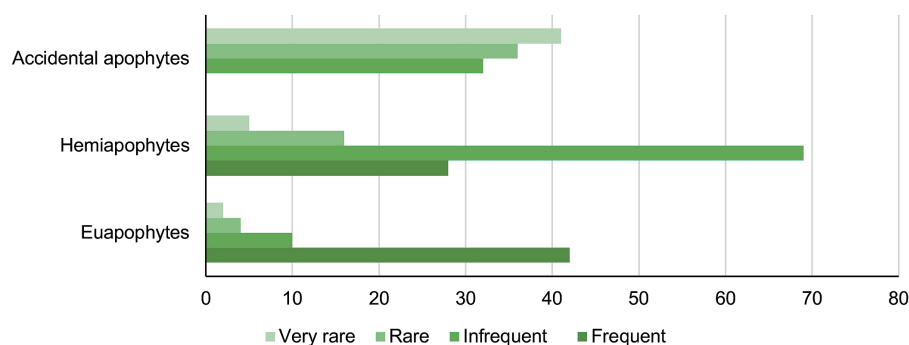


Fig. 5. Frequency classes of apophytes of different abundance types in the Seymskiy Regional Landscape Park
 Explanations: very rare (1-5 localities), rare (6-10), infrequent (11-20), frequent (>20)

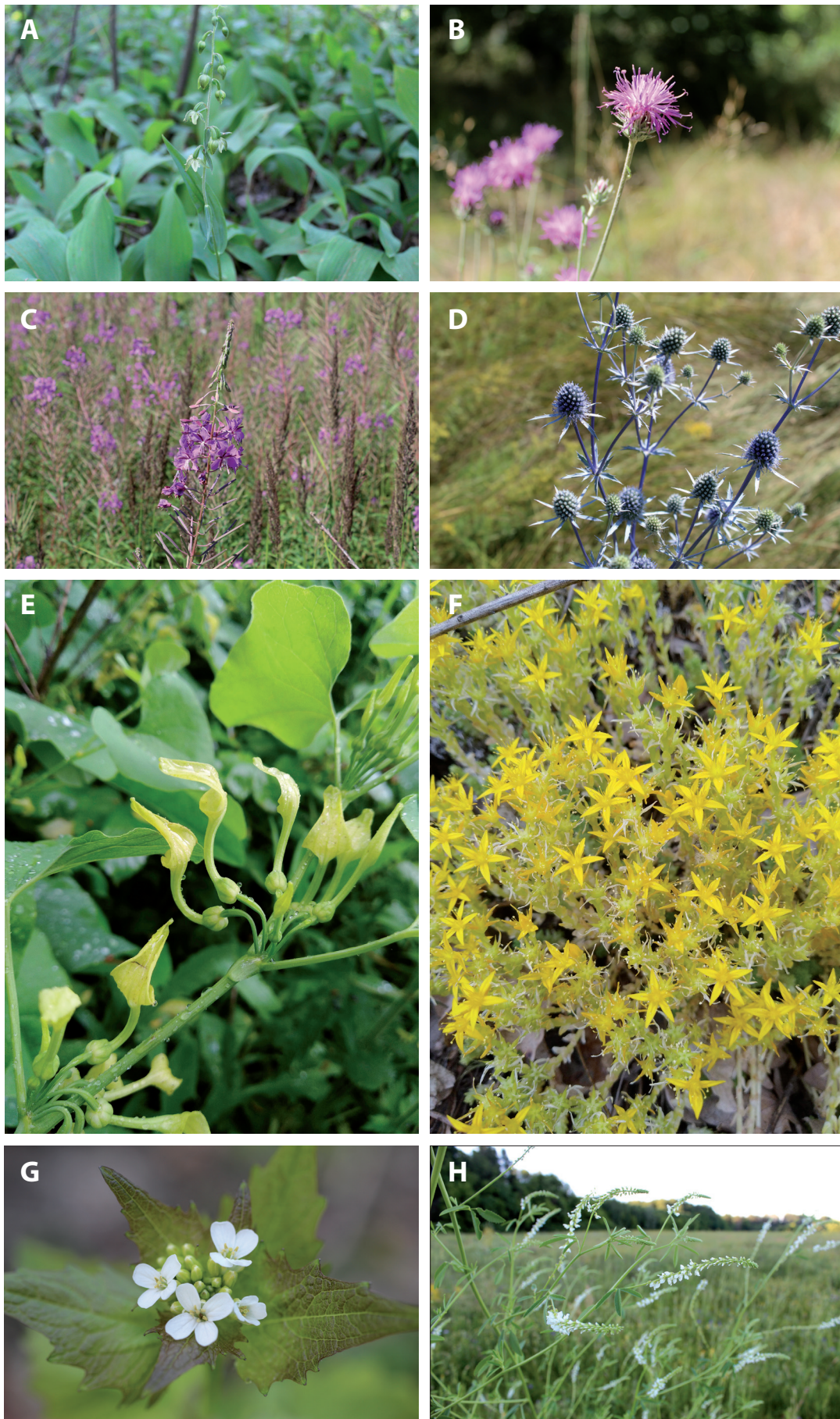


Fig. 6. Some species of apophytes of the flora of Seymskyi Regional Landscape Park

Explanations: accidental apophytes, A – *Epipactis helleborine* (species of the Red Data Book of Ukraine), B – *Jurinea cyanoides* (included to Annex I of Resolution 6 of the Bern Convention); regionally rare species of Sumy Oblast), C – *Chamerion angustifolium*, D – *Eryngium planum*; hemiapophytes, E – *Aristolochia clematitidis*, F – *Sedum acre*; euapophytes, G – *Alliaria petiolata*, H – *Melilotus albus* (photograph by O. Miskova)

of wide-ranging species. The present study provides new insights into the state of apophytization of the park. Further monitoring studies will make it possible to predict changes in the natural flora of the study area under human pressure.

Acknowledgements. I am sincerely grateful to my PhD Supervisor Dr. Myroslav V. Shevera and to Prof. Dr. Sc. Vira V. Protopopova (M. G. Kholodny Institute of Botany

of the National Academy of Sciences of Ukraine) for their valuable advice on preparing the manuscript and discussing the research results. Thanks are also due to Dr. Liudmyla V. Zavyalova (of the same Institute) for her help with the geographical analysis of apophytes. I would like to express sincere thanks to the anonymous reviewers whose comments and recommendations helped me improve and clarify this manuscript. I am very grateful to the language editor for carefully editing my article.

References

- BOYCHENKO R. V., VERTEL V. V. & KARLYUKOVA O. YU. 2019. Pryrodnozapovidnyi fond Sumskoi oblasti: Atlas-dovidnyk. 2-e vyd., vypr. ta dopov. 96 pp. TOV "Ukrainska Kartohrafichna Hrupa", Kyiv [in Ukrainian].
- CHUBA M. & MAMCHUR Z. 2018. Apophytes and adventitious species in the Lviv city. *Visnyk of the Lviv University. Ser. Biology* 77: 109-118 [in Ukrainian]. <https://doi.org/10.30970/vlubs.2018.77.13>
- HRYTSYNA M. 2015. Analysis of synanthropic flora of Yavoriv National Nature Park. *Studia Biologica* 9(1): 163-176 [in Ukrainian]. <https://doi.org/10.30970/sbi.0901.394>
- KOLOMIYCHUK V. P., LYSENKO G. M., KORSHIKOVA K. O., KUCHER O. O. & SHEVERA M. V. 2021. Synanthropization of vegetation cover of the "Mykhailivska Tsilyna" Nature Reserve. *Zberezhennia roslyn u zv'iazku zi zminamy klimatu ta biolohichnymy invaziiamy: Materialy mizhnar. nauk. konf., m. Bila Tserkva, 31 bereznia 2021 r. Bila Tserkva: "Bilotserkivdruk" LLC. 277-283 [In Ukrainian].*
- KORNAŚ J. 1968. Geograficzno-historyczna klasyfikacja roślin synantropijnych. *Synantropizacja szaty roślinnej. 1. Neofityzm i apofityzm, Materiały Sympozjum w Nowogrodzie. Mater. Zakł. Fitosoc. Stos. Warszawa, Białowieża, 25: 33-41.*
- KOTSUN L. O. & KUZMISHYNA I. I. 2016. Flora synanthropization in Volyn Region (Ukraine). *Biological Bulletin of Bogdan Chmelnytskyi Melitopol State Pedagogical University* 6(1): 416-427 [in Ukrainian]. <http://doi.org/10.15421/201625>
- KOVAL L. V. & HORSHKOVA L. M. 2021. Synanthropic flora of Desna Plateau. *Botanicheskii zhurnal* 4: 336-352. <http://doi.org/10.31857/S0006813621040098>
- KOWARIK I. 1988. Zum menschlichen Einfluss auf Flora und Vegetation. *Theoretische Konzepte und ein Quantifizierungsansatz am Beispiel von Berlin (West). Landschaftsentwicklung und Umweltforschung* 56: 1-280.
- KUCHER O. O., MOYSIYENKO I. I., IEMELIANOVA S. M., VASHENIAK YU. A., BUDZHAK V. V. & KUZEMKO A. A. 2021. Analysis of synanthropization of grassland habitats of Ukraine. *Chornomors'k. bot. z.* 17(4): 316-330 [in Ukrainian]. <http://doi.org/10.32999/ksu1990-553X/2021-17-4-2>
- MEUSEL H., JÄGER E. & WEINERT E. 1965. *Vergleichende Chorologie der zentraleuropäischen Flora. I. Text* 583 pp., *Karten* 258 pp. Gustav Fischer Verlag, Jena.
- MIREK Z. 1981. Problemy klasyfikacji roślin synantropijnych. *Wiadomości Botaniczne* 25(1): 45-54.
- MOSYAKIN S. L. & FEDORONCHUK M. M. 1999. *Vascular plants of Ukraine. A nomenclatural checklist.* 346 pp. National Academy of Sciences of Ukraine, M. G. Kholodny Institute of Botany, Kiev.
- PANCHENKO S. M. 2005. *Flora of Desna-Starohutskyi National Nature Park and the problems of protecting the phytodiversity of Novgorod-Siversky Polissia.* 170 pp. "University book", Sumy [in Ukrainian].
- PETRYK S. P. 1992. *Synanthropic flora of seaports northwestern Black Sea region: avtoref. dys.* Kyiv. 18 pp. [in Ukrainian].
- POWO. 2022. *Plants of the World Online.* Facilitated by the Royal Botanic Gardens, Kew. Available online: <http://www.plantsoftheworldonline.org/> (accessed on 22 March 2022).
- PROTOPOPOVA V. V. 1991. *The synanthropic flora of Ukraine and perspectives of its development.* 204 pp. *Naukova dumka, Kyiv* [in Russian].
- PROTOPOPOVA V., SHEVERA M. & FEDORONCHUK M. 2012. The geographical analysis of apophytes fraction of urban floras of Ukraine. *Thaiszia – J. Bot.* 22(2): 181-189.
- PROTOPOPOVA V. V. & SHEVERA M. V. 2016. Peculiarities of the structure of the apophytes fraction of the urban flora of Ukraine. *Botany and Mycology: Modern Horizons.* In: N. V. PRONOUN (ed.). *Collection of papers devoted to the 95th anniversary of Academician of Academy of Sciences of Ukraine A. M. Grodzinsky (1926-1988),* pp. 216-229. Nash format, Kyiv [in Ukrainian].
- RAMENSKII L. G., TSATSENKIN I. A., CHIZHIKOV O. N. & ANTIPIN N. A. 1956. *Ekologicheskaya otsenka kormovykh ugodii po rastitel'nomu pokrovu.* 472 pp. Sel'khozgiz, Moscow [in Russian].
- SUDNIK-WÓJCIKOWSKA B. & KOŹNIEWSKA B. 1988. *Słownik z zakresu synantropizacji szaty roślinnej.* 93 pp. Wydawnictwa UW, Warszawa.
- SUKOPP H. 2006. Apophytes in the flora of Central Europe. *Polish Botanical Studies* 22: 473-485.
- SUKOPP H. 2008. Apophyten in der Flora von Mitteleuropa. *Braunschweiger Geobot. Arbeiten.* 9: 443-458.
- ZAJĄC M. & ZAJĄC A. 2009. Apophytes as invasive plants in the vegetation of Poland. *Biodiv. Res. Conserv.* 15: 35-40.

Appendix 1. List of apophytes of the flora of the Seymskiy Regional Landscape Park

Name of species and families are presented according to the “Vascular Plants of Ukraine. A Nomenclatural Checklist” (Mosyakin & Fedoronchuk 1999) and also specified according to Plants of the World Online (POWO, 2023) in square brackets. The following information is provided in the table: 1 – groups of apophytes according to the degree of adaptation to anthropogenically disturbed conditions: Acc ap – Accidental apophyte, Hemia – Hemiapophyte, Eua – Euapophyte; 2 – life-form by Raunkiaer: Hemi – Hemicryptophyte, Thero – Therophyte, Geo – Geophyte, Phan – Phanerophyte, Helo – Helophyte, Cham – Chamaephyte; 3 – groups of apophytes according to soil moisture: Meso – Mesophyte, Xero-Meso – Xeromesophyte, Hygro-Meso – Hygromesophyte, Meso-Xero – Mesoxerophyte, Xero – Xerophyte, Hygro – Hygrophyte, Hydro – Hydrophyte; 4 – ecological groups; 5 – anthropogenic ecotopes: 1 – Cultivated lands, 1.1 – Fields, 1.2 – Forest nurseries, 2 – Ecotopes of settlements, 2.1 – Ruderal places, 2.2 – Wastelands, 2.3 – Lawns, 2.4 – Gardens, 2.5 – Squares and parks, 2.6 – Football and other sports fields, 3 – Fortified banks of canals and dams. 4. Railway embankments, 5 – Anthropogenically changed ecotopes at the regeneration stage, 5.1 – Roadsides, 5.2 – Old wastelands, 5.3 – Old parks, 5.4 – Forest plantations after felling, 5.5 – Fallow lands, 6 – Natural degraded ecotopes, 6.1 – Places of recreation, 6.2 – Hayfields, 6.3 – Grazing lands, 6.4. – Meadow and forest roads, 7 – Ruins of buildings and brick fences; 6 – frequency classes of apophytes in the region: VR – very rare, R – rare, I – infrequent, F – frequent

No	Species	Family	1	2	3	4	5	6
1.	<i>Acer campestre</i> L.	Aceraceae (Sapindaceae)	Acc ap	Phan	Xero-Meso	Forest	2.1, 2.5, 5.1, 5.3, 5.4	I
2.	<i>Achillea inundata</i> Kondr.	Asteraceae	Acc ap	Hemi	Meso	Meadow	2.1, 5.1	VR
3.	<i>Achillea millefolium</i> L. s.l.	Asteraceae	Hemia	Hemi	Meso	Meadow	1, 2, 4, 5, 6, 7	I
4.	<i>Acinos arvensis</i> (Lam.) Dandy [<i>Clinopodium acinos</i> (L.) Kuntze]	Lamiaceae	Acc ap	Thero	Xero	Shrub	1.1, 2.1, 2.2, 2.4, 2.5, 6.3	R
5.	<i>Aegopodium podagraria</i> L.	Apiaceae	Hemia	Hemi	Meso	Forest	2.1, 2.4, 2.5, 5.3, 6.1	I
6.	<i>Agrimonia eupatoria</i> L.	Rosaceae	Hemia	Hemi	Meso	Shrub	1.2, 2.1, 5, 6.1, 6.3	I
7.	<i>Agrostis gigantea</i> Roth	Poaceae	Eua	Hemi	Meso	Meadow	2.1, 5.1	F
8.	<i>Alchemilla vulgaris</i> L.	Rosaceae	Acc ap	Hemi	Meso	Meadow	6.3, 6.4	R
9.	<i>Alisma lanceolatum</i> With.	Alismataceae	Acc ap	Helo	Hydro	Wetland	6.4	VR
10.	<i>Alisma plantago-aquatica</i> L.	Alismataceae	Acc ap	Helo	Hydro	Wetland	6.4	VR
11.	<i>Alliaria petiolata</i> (M. Bieb.) Cavara & Grande	Brassicaceae	Eua	Hemi	Meso	Forest	2.1, 2.4, 2.5, 5.3	F
12.	<i>Allium oleraceum</i> L.	Alliaceae (Amarylidaceae)	Hemia	Geo	Meso	Shrub	5.1, 2.5, 5.3, 2.3	F
13.	<i>Allium rotundum</i> L.	Alliaceae (Amarylidaceae)	Hemia	Geo	Xero-Meso	Meadow-steppe	5.1, 2.3	R
14.	<i>Alopecurus pratensis</i> L.	Poaceae	Acc ap	Hemi	Meso	Meadow	2.1, 6.3, 5.1	I
15.	<i>Anemone ranunculoides</i> L. [<i>Anemonoides ranunculoides</i> (L.) Holub]	Ranunculaceae	Acc ap	Hemi	Meso	Forest	2.4, 2.5, 5.3, 5.1, 6.1, 6.3	R
16.	<i>Anthemis ruthenica</i> M. Bieb.	Asteraceae	Eua	Thero	Xero-Meso	Meadow-steppe	2.1, 5.1	I
17.	<i>Anthriscus sylvestris</i> (L.) Hoffm.	Apiaceae	Acc ap	Hemi	Meso	Forest	2.4, 2.1	VR
18.	<i>Arctium lappa</i> L.	Asteraceae	Eua	Hemi	Meso	Forest	2.1, 2.2, 2.4, 2.5, 4, 5, 6.1	F
19.	<i>Arctium minus</i> (Hill.) Bernh.	Asteraceae	Eua	Hemi	Meso	Forest	2.1, 5.2	R
20.	<i>Arctium tomentosum</i> Mill.	Asteraceae	Eua	Hemi	Meso	Shrub	2.1, 2.2, 2.4, 2.5, 4, 5, 6.1	F
21.	<i>Arenaria serpyllifolia</i> L.	Caryophyllaceae	Hemia	Thero	Meso-Xero	Shrub	2.1, 6.3, 5.1	I
22.	<i>Aristolochia clematitis</i> L.	Aristolochiaceae	Hemia	Hemi	Hygro	Wetland	2.1, 5.1, 6.1	I
23.	<i>Artemisia austriaca</i> Jacq.	Asteraceae	Hemia	Hemi	Xero	Forest	5.1, 2.2	I
24.	<i>Artemisia campestris</i> L.	Asteraceae	Hemia	Hemi	Xero-Meso	Meadow-steppe	2.1, 2.2, 4, 5.1, 5.2, 5.5, 6.3	I
25.	<i>Artemisia marschalliana</i> Spreng.	Asteraceae	Eua	Hemi	Xero-Meso	Meadow-steppe	2.1, 2.2, 4, 5.1, 5.2, 5.5, 6.3	F
26.	<i>Artemisia vulgaris</i> L.	Asteraceae	Eua	Hemi	Meso	Meadow	1, 2, 4, 5, 6.1, 6.3, 7	F
27.	<i>Asparagus officinalis</i> L.	Asparagaceae	Hemia	Geo	Meso	Meadow	2.1, 5.1	I

No	Species	Family	1	2	3	4	5	6
28.	<i>Astragalus cicer</i> L.	Fabaceae	Hemia	Hemi	Xero	Shrub	5.1, 5.2, 5.5	I
29.	<i>Atriplex patula</i> L.	Chenopodiaceae (Amaranthaceae)	Eua	Thero	Xero-Meso	Synanthropic	2.1, 5.1, 6.1, 1.1	F
30.	<i>Barbarea vulgaris</i> R.Br.	Brassicaceae	Hemia	Hemi	Meso	Wetland	2.1	I
31.	<i>Beckmannia eruciformis</i> (L.) Host	Poaceae	Acc ap	Geo	Hygro-Meso	Wetland	2.1, 6.1	VR
32.	<i>Berteroa incana</i> (L.) DC.	Brassicaceae	Hemia	Thero	Meso-Xero	Psammophytic	2.1, 6.1	F
33.	<i>Betula pendula</i> Roth.	Betulaceae	Acc ap	Phan	Meso	Forest	2.1, 7	R
34.	<i>Bidens cernua</i> L.	Asteraceae	Acc ap	Thero	Hydro	Wetland	2.1, 6.1	I
35.	<i>Bromopsis inermis</i> (Leys.) Holub [<i>Bromus inermis</i> Leys.]	Poaceae	Acc ap	Hemi	Meso	Meadow	2.1, 5.1	I
36.	<i>Butomus umbellatus</i> L.	Butomaceae	Acc ap	Helo	Hydro	Wetland	6.1	R
37.	<i>Calamagrostis epigejos</i> (L.) Roth	Poaceae	Acc ap	Geo	Meso-Xero	Meadow	2.1, 5.1, 6.1	I
38.	<i>Calystegia sepium</i> (L.) R.Br.	Convolvulaceae	Hemia	Geo	Hygro	Meadow	6.1, 5.2, 2.1	F
39.	<i>Campanula patula</i> L.	Campanulaceae	Hemia	Hemi	Meso	Meadow	5.1, 5.2	I
40.	<i>Campanula rapunculoides</i> L.	Campanulaceae	Eua	Hemi	Meso	Shrub	2.4, 2.5, 5.3, 5.1, 2.1	F
41.	<i>Campanula rapunculus</i> L.	Campanulaceae	Hemia	Hemi	Meso	Meadow	5.1, 5.2	I
42.	<i>Cardamine impatiens</i> L.	Brassicaceae	Acc ap	Hemi	Hygro-Meso	Forest	6.4	R
43.	<i>Carduus crispus</i> L.	Asteraceae	Hemia	Hemi	Xero-Meso	Meadow-steppe	2.1, 5.1	I
44.	<i>Carex acuta</i> L.	Cyperaceae	Acc ap	Helo	Hydro	Wetland	3, 6.1	I
45.	<i>Carex hirta</i> L.	Cyperaceae	Acc ap	Hemi	Meso	Meadow	5.1, 6.2, 6.3, 6.4	I
46.	<i>Carex leporina</i> L.	Cyperaceae	Acc ap	Hemi	Meso	Meadow	5.1, 5.2	VR
47.	<i>Carex pilosa</i> Scop.	Cyperaceae	Acc ap	Hemi	Meso	Forest	5.1	VR
48.	<i>Carex praecox</i> Schreb.	Cyperaceae	Hemia	Hemi	Meso	Meadow	2.1, 5.1, 5.2	F
49.	<i>Carex spicata</i> Huds	Cyperaceae	Hemia	Hemi	Meso	Meadow	2.1, 2.2, 6.1, 5.1	R
50.	<i>Centaurea apiculata</i> Ledeb. [<i>C. scabiosa</i> subsp. <i>apiculata</i> (Ledeb.) Mikheev]	Asteraceae	Acc ap	Hemi	Xero-Meso	Meadow	5.1, 5.2	VR
51.	<i>Centaurea jacea</i> L.	Asteraceae	Hemia	Hemi	Meso	Meadow	5.1, 6.3, 5.2	I
52.	<i>Centaurea pseudomaculosa</i> Dobroc.	Asteraceae	Hemia	Hemi	Xero-Meso	Meadow	5.1, 5.2	I
53.	<i>Centaurea scabiosa</i> L.	Asteraceae	Acc ap	Hemi	Xero-Meso	Meadow	5.1, 5.2	VR
54.	<i>Centaurium pulchellum</i> (Sw.) Hayek ex Hand.-Mazz., Stadlm., Janch. & Faltis	Gentianaceae	Acc ap	Thero	Hygro-Meso	Wetland	5.1, 6.4	VR
55.	<i>Cerastium arvense</i> L.	Caryophyllaceae	Acc ap	Hemi	Meso	Psammophytic	2.1, 6.3, 5.1	VR
56.	<i>Cerastium holosteoides</i> Fr.	Caryophyllaceae	Hemia	Cham	Meso-Xero	Shrub	2.1, 6.3, 5.1	I
57.	<i>Chaerophyllum temulum</i> L.	Apiaceae	Acc ap	Hemi	Meso	Forest	2.4, 2.1,	VR
58.	<i>Chaiturus marrubiastrum</i> (L.) Ehrh. ex Rehb.	Lamiaceae	Hemia	Hemi	Meso	Shrub	2.1, 5.1	R
59.	<i>Chamaecytisus ruthenicus</i> (Fisch.ex Wol.) Klaskova	Fabaceae	Acc ap	Phan	Xero	Forest	5.1	R
60.	<i>Chamerion angustifolium</i> (L.) Holub [<i>Epilobium angustifolium</i> L.]	Onagraceae	Acc ap	Hemi	Meso	Forest	2.1, 5.1	VR
61.	<i>Chelidonium majus</i> L.	Papaveraceae	Eua	Hemi	Meso	Shrub	1.2, 2.1, 2.3, 2.4, 2.5, 4, 5.1, 5.3, 5.4, 6.1, 7	F
62.	<i>Chenopodium album</i> L.	Chenopodiaceae (Amaranthaceae)	Eua	Thero	Xero-Meso	Synanthropic	1, 2, 4, 5, 6.1, 6.4, 7	F
63.	<i>Chenopodium betaceum</i> Andr.	Chenopodiaceae (Amaranthaceae)	Eua	Thero	Xero-Meso	Synanthropic	2.1	I
64.	<i>Chenopodium glaucum</i> L. [<i>Oxybasis glauca</i> (L.) S.Fuentes, Uotila & Borsch]	Chenopodiaceae (Amaranthaceae)	Hemia	Thero	Hygro-Meso	Wetland	2.1, 6.1	R
65.	<i>Chondrilla juncea</i> L.	Asteraceae	Acc ap	Hemi	Xero	Psammophytic	5.1, 6.3	VR
66.	<i>Chrysosplenium alternifolium</i> L.	Saxifragaceae	Acc ap	Hemi	Hygro	Wetland	2.1	VR
67.	<i>Cirsium arvense</i> (L.) Scop.	Asteraceae	Eua	Hemi	Meso	Wetland	1, 2.1, 2.2, 4, 5, 6	F
68.	<i>Cirsium vulgare</i> (Savi) Ten.	Asteraceae	Eua	Hemi	Meso	Shrub	2.1, 6.3, 5.1	I

No	Species	Family	1	2	3	4	5	6
69.	<i>Coccyganthe flos-cuculi</i> (L.) Fourr. [<i>Silene flos-cuculi</i> (L.) Greuter & Burdet]	Caryophyllaceae	Acc ap	Hemi	Meso	Meadow	2.1, 5.1, 5.5, 6.2, 6.3	R
70.	<i>Convallaria majalis</i> L.	Convallariaceae (Asparagaceae)	Acc ap	Geo	Meso	Forest	2.1, 2.4, 2.5, 5.3	I
71.	<i>Convolvulus arvensis</i> L.	Convolvulaceae	Eua	Geo	Meso-Xero	Meadow	1, 2, 3, 4, 5, 6, 7	F
72.	<i>Corydalis solida</i> (L.) Clairv.	Fumariaceae (Papaveraceae)	Hemia	Geo	Meso	Forest	2.4, 2.5, 5.3	I
73.	<i>Crepis tectorum</i> L.	Asteraceae	Eua	Hemi	Xero-Meso	Meadow	2.1, 2.2, 4, 5.1, 5.2, 5.5, 6.1, 6.3,	F
74.	<i>Cucubalus baccifer</i> L. [<i>Silene baccifera</i> (L.) Durande]	Caryophyllaceae	Acc ap	Hemi	Hygro-Meso	Shrub	2.1, 2.4, 2.5, 5.1, 5.3, 6.1	I
75.	<i>Cuscuta lupuliformis</i> Krock.	Cuscutaceae (Convolvulaceae)	Acc ap	Thero	Meso-Xero	parasite	parasite	R
76.	<i>Cynosurus cristatus</i> L.	Poaceae	Acc ap	Hemi	Meso	Meadow	2.1, 5.1, 6.1, 6.2	R
77.	<i>Cyperus fuscus</i> L.	Cyperaceae	Acc ap	Thero	Hydro	Wetland	6.1, 6.4	R
78.	<i>Dactylis glomerata</i> L.	Poaceae	Hemia	Hemi	Xero-Meso	Meadow	1, 2, 4, 5, 6	F
79.	<i>Daucus carota</i> L.	Apiaceae	Eua	Hemi	Meso-Xero	Meadow	2.1, 5.1, 6.3	F
80.	<i>Deschampsia cespitosa</i> (L.) P. Beauv.	Poaceae	Hemia	Hemi	Meso	Meadow	6.1	I
81.	<i>Dianthus deltoides</i> L.	Caryophyllaceae	Acc ap	Hemi	Meso	Meadow	5.1, 6.1, 6.3	I
82.	<i>Digitalis grandiflora</i> Mill.	Scrophulariaceae	Acc ap	Hemi	Meso	Forest	2.1, 5.1	VR
83.	<i>Dipsacus pilosus</i> L.	Dipsacaceae (Caprifoliaceae)	Hemia	Hemi	Meso	Forest	5.1	VR
84.	<i>Dipsacus strigosus</i> Willd.ex Roem.et Schult.	Dipsacaceae (Caprifoliaceae)	Hemia	Hemi	Xero	Shrub	2.1, 5.1	VR
85.	<i>Draba nemorosa</i> L.	Brassicaceae	Acc ap	Thero	Xero-Meso	Meadow-steppe	1.1, 2.1	R
86.	<i>Dryopteris filix-mas</i> (L.) Schott	Aspidiaceae (Dryopteridaceae)	Acc ap	Geo	Meso	Forest	7, 6.4	VR
87.	<i>Echinops sphaerocephalus</i> L.	Asteraceae	Eua	Hemi	Meso-Xero	Meadow-steppe	2.1, 5.1	I
88.	<i>Echium vulgare</i> L.	Boraginaceae	Eua	Hemi	Meso-Xero	Meadow	2.1, 2.2, 5.1, 5.2, 5.5, 6.3	F
89.	<i>Eleocharis palustris</i> (L.) Roem. & Schult	Cyperaceae	Acc ap	Helo	Hydro	Wetland	6.1	R
90.	<i>Elytrigia repens</i> (L.) Nevski [<i>Elymus repens</i> (L.) Gould]	Poaceae	Eua	Geo	Xero-Meso	Meadow	1, 2, 4, 5, 6, 7	F
91.	<i>Epilobium hirsutum</i> L.	Onagraceae	Hemia	Hemi	Hygro-Meso	Wetland	3, 6.1	R
92.	<i>Epipactis helleborine</i> (L.) Crantz.	Orchidaceae	Acc ap	Hemi	Meso	Forest	5.1, 6.4	VR
93.	<i>Equisetum arvense</i> L.	Equisetaceae	Eua	Geo	Meso	Meadow	1, 2.1, 2.2, 2.4, 2.5, 5, 6	F
94.	<i>Equisetum hyemale</i> L.	Equisetaceae	Acc ap	Hemi	Hygro-Meso	Forest	5.1	R
95.	<i>Erodium cicutarium</i> (L.) L' Her.	Geraniaceae	Eua	Thero	Xero-Meso	Meadow-steppe	1.1, 2.1	F
96.	<i>Erophila verna</i> (L.) Besser	Brassicaceae	Hemia	Thero	Xero-Meso	Psammophytic	2.1,	I
97.	<i>Eryngium planum</i> L.	Apiaceae	Acc ap	Hemi	Xero-Meso	Meadow	1.1, 2.1, 5.1, 5.2, 5.5, 6	I
98.	<i>Euonymus europaeus</i> L.	Celastraceae	Acc ap	Phan	Meso	Forest	5.1, 2.5, 5.3	R
99.	<i>Euphorbia virgata</i> Waldst. & Kit.	Euphorbiaceae	Acc ap	Hemi	Xero-Meso	Forest	2.1, 5.1	R
100.	<i>Falcaria vulgaris</i> Bernh.	Apiaceae	Hemia	Hemi	Meso-Xero	Shrub	2.1, 5.1	I
101.	<i>Fallopia dumetorum</i> (L.) Holub	Polygonaceae	Eua	Thero	Meso	Shrub	1.1, 2.1, 2.2, 3, 5, 6.1	F
102.	<i>Festuca gigantea</i> (L.) Vill. [<i>Lolium giganteum</i> (L.) Darbysh.]	Poaceae	Acc ap	Hemi	Xero-Meso	Meadow-steppe	2.1, 5.1, 6.1	I
103.	<i>Festuca pratensis</i> Huds. [<i>Lolium pratense</i> (Huds.) Darbysh.]	Poaceae	Hemia	Hemi	Meso	Meadow	2.1, 5.1, 5.5, 6.3	F
104.	<i>Festuca rubra</i> L.	Poaceae	Hemia	Hemi	Meso	Meadow	2.1, 5.1, 5.5	F
105.	<i>Ficaria verna</i> Huds. agg. [<i>Ranunculus ficaria</i> L.]	Ranunculaceae	Hemia	Hemi	Meso	Forest	2.1, 2.4, 2.5, 5.1, 5.3	I
106.	<i>Fragaria vesca</i> L.	Rosaceae	Hemia	Hemi	Meso	Forest	2.1, 2.4, 2.5, 5.2, 5.3, 6.4	R

No	Species	Family	1	2	3	4	5	6
107.	<i>Frangula alnus</i> Mill.	Rhamnaceae	Hemia	Phan	Meso	Forest	5.1, 6.3, 5.5	I
108.	<i>Fraxinus excelsior</i> L.	Oleaceae	Hemia	Phan	Meso	Forest	2.1, 5.1, 5.5	I
109.	<i>Gagea minima</i> (L.) Ker. Gawl.	Liliaceae	Hemia	Geo	Meso	Shrub	2.1, 2.4, 2.5, 5.3	I
110.	<i>Galeopsis bifida</i> Boenn.	Lamiaceae	Hemia	Thero	Meso	Forest	2.1, 5.1	I
111.	<i>Galeopsis tetrahit</i> L.	Lamiaceae	Hemia	Thero	Meso	Forest	2.1, 2.2, 6.1	I
112.	<i>Galium aparine</i> L.	Rubiaceae	Eua	Thero	Meso-Xero	Shrub	2.1, 2.4, 2.5, 6.1	F
113.	<i>Galium humifusum</i> M. Bieb.	Rubiaceae	Eua	Geo	Meso-Xero	Synanthropic	4, 5.1	R
114.	<i>Galium rivale</i> (Sibth. & Smith) Griseb.	Rubiaceae	Acc ap	Thero	Meso	Wetland	5.1, 6.1	VR
115.	<i>Galium uliginosum</i> L.	Rubiaceae	Acc ap	Hemi	Hygro-Meso	Wetland	2.1, 6.1	VR
116.	<i>Galium verum</i> L.	Rubiaceae	Hemia	Hemi	Meso-Xero	Meadow	2.1, 5.1, 5.5, 6	I
117.	<i>Geranium pratense</i> L.	Geraniaceae	Acc ap	Geo	Meso	Meadow	2.1, 6.1	I
118.	<i>Geranium robertianum</i> L.	Geraniaceae	Acc ap	Thero	Meso	Forest	2.4, 2.5, 5.3, 6.4	VR
119.	<i>Geum urbanum</i> L.	Rosaceae	Hemia	Hemi	Meso	Forest	2.1, 2.4, 2.5, 5.3	F
120.	<i>Gladiolus tenuis</i> M. Bieb.	Iridaceae	Acc ap	Geo	Hygro-Meso	Meadow	5.5, 6.4	VR
121.	<i>Glechoma hederacea</i> L.	Lamiaceae	Hemia	Hemi	Meso	Forest	1, 2, 3, 4, 5, 6, 7	F
122.	<i>Grossularia uva-crispa</i> (L.) Mill. [<i>Ribes uva-crispa</i> L.]	Grossulariaceae	Acc ap	Phan	Meso	Forest	2.1, 2.4, 7	VR
123.	<i>Gypsophila paniculata</i> L.	Caryophyllaceae	Eua	Hemi	Xero-Meso	Meadow-steppe	2.1, 5.1	I
124.	<i>Heracleum sibiricum</i> L.	Apiaceae	Hemia	Hemi	Meso	Forest	2.1, 5.1	I
125.	<i>Herniaria glabra</i> L.	Caryophyllaceae	Acc ap	Hemi	Meso-Xero	Psammophytic	5.1	VR
126.	<i>Hieracium umbellatum</i> L.	Asteraceae	Hemia	Hemi	Meso	Meadow	2.1, 2.5, 5.1, 5.3	I
127.	<i>Humulus lupulus</i> L.	Cannabaceae	Hemia	Hemi	Hygro	Shrub	2.1, 2.4, 2.5, 5.1, 5.3, 6.1	F
128.	<i>Hypericum perforatum</i> L.	Clusiaceae (Hypericaceae)	Acc ap	Hemi	Meso	Meadow-steppe	2.1, 2.4, 5.1, 5.2, 5.5, 6.3	I
129.	<i>Hypochaeris radicata</i> L.	Asteraceae	Hemia	Hemi	Meso-Xero	Psammophytic	2.1	R
130.	<i>Impatiens noli-tangere</i> L.	Balsaminaceae	Hemia	Thero	Hygro-Meso	Forest	2.1, 2.5, 5.3	I
131.	<i>Inula britannica</i> L. [<i>Pentanema britannica</i> (L.) D.Gut.Larr., Santos-Vicente, Anderb., E.Rico & M.M.Mart.Ort.]	Asteraceae	Hemia	Geo	Meso	Meadow	2.1, 5.1	I
132.	<i>Inula helenium</i> L.	Asteraceae	Acc ap	Hemi	Hygro-Meso	Meadow	2.4, 2.1	VR
133.	<i>Iris pseudoacorus</i> L.	Iridaceae	Acc ap	Geo	Hydro	Wetland	3, 6.1, 6.4	R
134.	<i>Jasione montana</i> L.	Campanulaceae	Hemia	Hemi	Meso	Psammophytic	5.1, 5.2	I
135.	<i>Juncus compressus</i> Jacq.	Juncaceae	Hemia	Hemi	Hygro-Meso	Wetland	5.1, 6.1, 6.3, 6.4	F
136.	<i>Jurinea cyanoides</i> (L.) Rchb.	Asteraceae	Acc ap	Hemi	Xero	Psammophytic	2.1, 5.1	VR
137.	<i>Knautia arvensis</i> (L.) Coult.	Dipsacaceae (Caprifoliaceae)	Hemia	Hemi	Xero-Meso	Meadow	5.1, 6.2, 6.3	R
138.	<i>Lamium maculatum</i> (L.) L.	Lamiaceae	Hemia	Hemi	Meso	Forest	1.2, 2.1, 2.2, 2.4, 2.5, 5.3, 6.1	F
139.	<i>Lapsana communis</i> L.	Asteraceae	Hemia	Thero	Meso	Forest	2.1, 2.5, 5.3, 6.1	I
140.	<i>Lathyrus pratensis</i> L.	Fabaceae	Acc ap	Hemi	Meso	Meadow	1.1, 2.1, 5.1	I
141.	<i>Leontodon autumnalis</i> L. [<i>Scorzoneroides autumnalis</i> (L.) Moench]	Asteraceae	Hemia	Hemi	Meso	Meadow	2.1, 2.2, 5.1, 5.5	I
142.	<i>Leonurus villosus</i> Desf. ex d'Urv. [<i>L. quinquelobatus</i> Gilib.]	Lamiaceae	Eua	Hemi	Xero-Meso	Shrub	2.1, 2.2, 2.4, 2.5, 5.3, 5.4, 5.5, 7	F
143.	<i>Lepidium latifolium</i> L.	Brassicaceae	Eua	Hemi	Hygro-Meso	Wetland	5.1, 6.1	VR
144.	<i>Leucanthemum vulgare</i> Lam.	Asteraceae	Hemia	Hemi	Meso	Meadow	2.1, 2.2, 2.3, 2.4, 5.2, 5.5, 6.2	I
145.	<i>Linaria genistifolia</i> (L.) Mill.	Scrophulariaceae	Hemia	Hemi	Xero	Psammophytic	5.1, 6.1	VR
146.	<i>Linaria vulgaris</i> Mill.	Scrophulariaceae	Eua	Hemi	Meso	Shrub	1.1, 2.1, 2.2, 2.4, 4, 5.1, 5.2, 5.5, 6.6, 6.4	F
147.	<i>Linum catharticum</i> L.	Linaceae	Hemia	Hemi	Meso	Meadow	1.1, 6.4	R
148.	<i>Lithospermum officinale</i> L.	Boraginaceae	Hemia	Hemi	Xero-Meso	Meadow-steppe	5.1, 6.4	I
149.	<i>Lolium perenne</i> L.	Poaceae	Hemia	Hemi	Meso	Meadow	2, 4, 5, 6	F
150.	<i>Lotus corniculatus</i> L.	Fabaceae	Hemia	Hemi	Meso	Meadow	2.1, 5.1, 6.3, 6.4	F
151.	<i>Lycopus europaeus</i> L.	Lamiaceae	Acc ap	Geo	Hygro-Meso	Wetland	5.1, 6.1, 6.3	I

No	Species	Family	1	2	3	4	5	6
152.	<i>Lycopus exaltatus</i> L.f.	Lamiaceae	Acc ap	Geo	Hygro-Meso	Wetland	5.1, 6.1, 6.3	I
153.	<i>Lysimachia nummularia</i> L.	Primulaceae	Hemia	Geo	Hygro-Meso	Wetland	2.1, 5.3, 6.1, 6.4	I
154.	<i>Lysimachia vulgaris</i> L.	Primulaceae	Acc ap	Geo	Hygro-Meso	Wetland	2.1, 6.1	VR
155.	<i>Lythrum salicaria</i> L.	Lythraceae	Acc ap	Geo	Hygro-Meso	Wetland	1.1, 2.1, 3	VR
156.	<i>Lythrum virgatum</i> L.	Lythraceae	Acc ap	Geo	Hygro-Meso	Wetland	2.1, 6.1	VR
157.	<i>Medicago falcata</i> L. Aggr	Fabaceae	Hemia	Hemi	Xero-Meso	Meadow	1, 2, 4, 5, 6	F
158.	<i>Medicago lupulina</i> L.	Fabaceae	Eua	Hemi	Meso	Meadow	2, 5.1, 6.1	F
159.	<i>Melandrium album</i> (Mill.) Garcke [<i>Silene latifolia</i> subsp. alba (Mill.) Greuter & Burdet]	Caryophyllaceae	Eua	Hemi	Meso	Meadow	1, 2, 4, 5, 6.1	F
160.	<i>Melilotus albus</i> Medik	Fabaceae	Eua	Hemi	Meso	Meadow	2.1, 5.1	F
161.	<i>Melilotus officinalis</i> (L.) Pall.	Fabaceae	Hemia	Hemi	Meso	Meadow	5.1	I
162.	<i>Mentha arvensis</i> L.	Lamiaceae	Acc ap	Geo	Hygro-Meso	Wetland	5.1, 6.1, 6.3	I
163.	<i>Moehringia trinervia</i> (L.) Clairv.	Caryophyllaceae	Hemia	Hemi	Hygro-Meso	Forest	2.1, 2.4, 2.5, 5.1, 5.3, 6.1	F
164.	<i>Mycelis muralis</i> (L.) Dumort. [<i>Lactuca muralis</i> (L.) E.Mey.]	Asteraceae	Acc ap	Hemi	Meso	Forest	2.1, 5.3	R
165.	<i>Myosotis micrantha</i> Pall.ex Lehm.	Boraginaceae	Hemia	Hemi	Xero	Psammophytic	2.1, 5.1	I
166.	<i>Myosotis scorpioides</i> L.	Boraginaceae	Acc ap	Hemi	Hygro-Meso	Wetland	6.1	I
167.	<i>Myosotis sparsiflora</i> J.C.Mikan ex Pohl	Boraginaceae	Acc ap	Hemi	Meso	Forest	2.1, 2.4, 2.5, 4, 5, 6.1, 7	R
168.	<i>Myosoton aquaticum</i> (L.) Moench [<i>Stellaria aquatica</i> (L.) Scop.]	Caryophyllaceae	Acc ap	Hemi	Hygro	Wetland	6.1	I
169.	<i>Myosurus minimus</i> L. [<i>Ranunculus minimus</i> (L.) E.H.L.Krause]	Ranunculaceae	Acc ap	Thero	Meso	Wetland	2.1	R
170.	<i>Nonea pulla</i> DC.	Boraginaceae	Hemia	Hemi	Xero-Meso	Shrub	2.1, 5.1, 5.2, 5.5	I
171.	<i>Oberna behen</i> (L.) Ikonn. [<i>Silene behen</i> L.]	Caryophyllaceae	Eua	Cham	Meso	Forest	1.1, 2.1, 4, 5.1, 5.5	F
172.	<i>Odontites vulgaris</i> Moench	Scrophulariaceae	Hemia	Thero	Meso	Meadow	1.1, 5.5, 6	R
173.	<i>Origanum vulgare</i> L.	Lamiaceae	Acc ap	Hemi	Meso	Forest	5.1, 5.2, 5.5	I
174.	<i>Pastinaca sativa</i> L.	Apiaceae	Hemia	Hemi	Meso	Meadow	2.1, 5.1, 6.3	I
175.	<i>Persicaria hydropiper</i> (L.) Delambre	Polygonaceae	Eua	Thero	Hygro-Meso	Wetland	1, 2.1, 2.5, 3, 5, 6	F
176.	<i>Persicaria maculosa</i> S. F. Gray	Polygonaceae	Acc ap	Thero	Hygro-Meso	Wetland	2.1	VR
177.	<i>Persicaria scabra</i> (Moench) Mold. [<i>P. tomentosa</i> (Schränk) E.P.Bicknell]	Polygonaceae	Eua	Thero	Meso	Meadow	1.1, 2.1	I
178.	<i>Phleum pratense</i> L.	Poaceae	Hemia	Hemi	Meso	Meadow	2, 5.1, 5.2, 5.3, 6.2, 6.3	F
179.	<i>Picris hieracioides</i> L.	Asteraceae	Eua	Hemi	Meso	Forest	1.1, 2.1, 2.4, 5.1, 5.4, 5.5, 6.1	I
180.	<i>Pilosella officinarum</i> Vaill.	Asteraceae	Acc ap	Hemi	Xero-Meso	Psammophytic	2.1, 5.1, 5.2	I
181.	<i>Pimpinella saxifraga</i> L.	Apiaceae	Hemia	Hemi	Xero-Meso	Shrub	2.1, 5.1, 6.3	I
182.	<i>Plantago arenaria</i> Waldst. & Kit. [<i>P. indica</i> L.]	Plantaginaceae	Acc ap	Thero	Meso-Xero	Psammophytic	2.1, 5.1	R
183.	<i>Plantago lanceolata</i> L.	Plantaginaceae	Hemia	Hemi	Xero-Meso	Meadow	2.1, 2.2, 5.1, 5.5, 6.3, 6.4	I
184.	<i>Plantago major</i> L.	Plantaginaceae	Eua	Hemi	Meso	Meadow	1.2, 2, 3, 4, 5, 6, 7	F
185.	<i>Plantago media</i> L.	Plantaginaceae	Eua	Hemi	Meso	Meadow	2.1, 6.3	F
186.	<i>Poa annua</i> L.	Poaceae	Eua	Hemi	Meso	Meadow	2.1, 2.3, 2.4, 2.5, 2.6, 4, 5.1, 5.5, 6.1, 6.4	F
187.	<i>Poa bulbosa</i> L.	Poaceae	Hemia	Hemi	Meso-Xero	Meadow-steppe	5.1	I
188.	<i>Poa compressa</i> L.	Poaceae	Hemia	Hemi	Xero-Meso	Meadow	2	R
189.	<i>Poa pratensis</i> L.	Poaceae	Hemia	Hemi	Meso	Meadow	2, 5, 6.2, 6.3	F
190.	<i>Poa trivialis</i> L.	Poaceae	Hemia	Hemi	Meso	Meadow	2, 5, 6.2, 6.4	F
191.	<i>Polygonum aviculare</i> L.	Polygonaceae	Eua	Thero	Meso-Xero	Synanthropic	1, 2, 4, 5, 6	F

No	Species	Family	1	2	3	4	5	6
192.	<i>Populus alba</i> L.	Salicaceae	Hemia	Phan	Hygro-Meso	Wetland	2.1, 5.1	I
193.	<i>Populus nigra</i> L.	Salicaceae	Hemia	Phan	Hygro-Meso	Wetland	5.1	I
194.	<i>Potentilla anserina</i> L. [<i>Argentina anserina</i> (L.) Rydb.]	Rosaceae	Eua	Hemi	Hygro-Meso	Wetland	2.1, 2.2, 5.5, 6.1, 6.4	F
195.	<i>Potentilla argentea</i> L.	Rosaceae	Hemia	Hemi	Meso-Xero	Meadow-steppe	2.1, 2.4, 2.5, 5.1, 5.3, 6	F
196.	<i>Potentilla reptans</i> L.	Rosaceae	Acc ap	Hemi	Meso	Meadow	2.1, 5.1, 6.2, 6.3	I
197.	<i>Potentilla supina</i> L.	Rosaceae	Eua	Hemi	Meso	Wetland	2.1, 5.1	I
198.	<i>Prunella vulgaris</i> L.	Lamiaceae	Hemia	Hemi	Meso	Meadow	1, 2, 5, 6	F
199.	<i>Prunus spinosa</i> L.	Rosaceae	Hemia	Phan	Meso	Forest	2.1	I
200.	<i>Psammophiliella muralis</i> (L.) Ikonn.	Caryophyllaceae	Eua	Thero	Xero-Meso	Meadow-steppe	1, 5.1	F
201.	<i>Ptarmica salicifolia</i> (Besser) Serge [<i>Achillea salicifolia</i> Besser]	Asteraceae	Acc ap	Hemi	Meso	Meadow	2.1, 6	I
202.	<i>Pulmonaria obscura</i> Dumort.	Boraginaceae	Hemia	Geo	Meso	Forest	2.4, 2.5, 5.1, 5.3	I
203.	<i>Ranunculus repens</i> L.	Ranunculaceae	Eua	Hemi	Hygro	Wetland	2.1, 2.4, 2.5, 6	F
204.	<i>Ranunculus sardous</i> Crantz	Ranunculaceae	Acc ap	Hemi	Hygro-Meso	Meadow	5.1, 6.4	R
205.	<i>Ranunculus sceleratus</i> L.	Ranunculaceae	Acc ap	Thero	Hygro	Wetland	2.1, 5.1, 6.1	R
206.	<i>Rhamnus cathartica</i> L.	Rhamnaceae	Hemia	Phan	Meso	Forest	5.1, 5.5	I
207.	<i>Rhinanthus minor</i> L.	Scrophulariaceae	Hemia	Thero	Meso	Meadow	2, 5.1, 5.5, 6	I
208.	<i>Ribes nigrum</i> L.	Grossulariaceae	Acc ap	Phan	Meso	Forest	2.4, 2.5	R
209.	<i>Ribes rubrum</i> L.	Grossulariaceae	Acc ap	Phan	Meso	Forest	2.4, 2.6	R
210.	<i>Rorippa palustris</i> L.	Brassicaceae	Acc ap	Hemi	Hygro	Wetland	2.1, 5.1, 6	I
211.	<i>Rorippa sylvestris</i> (L.) Besser	Brassicaceae	Acc ap	Hemi	Hygro	Wetland	2.1, 5.1, 7	I
212.	<i>Rosa canina</i> L.	Rosaceae	Hemia	Phan	Meso	Meadow	2.1, 2.2, 2.4, 5.1,	I
213.	<i>Rosa majalis</i> Herrm.	Rosaceae	Hemia	Phan	Meso	Meadow	2.1, 5.1	I
214.	<i>Rubus caesius</i> L.	Rosaceae	Eua	Cham	Meso	Wetland	2.1, 2.2, 5	F
215.	<i>Rumex acetosella</i> L.	Polygonaceae	Eua	Geo	Meso	Meadow	1.1, 2.1, 5.1, 5.5, 6.1, 6.3	I
216.	<i>Rumex confertus</i> Willd.	Polygonaceae	Hemia	Hemi	Meso	Meadow	2.1, 5.1, 6.3	F
217.	<i>Rumex crispus</i> L.	Polygonaceae	Acc ap	Hemi	Meso	Meadow	2.1, 5.1, 6.3	VR
218.	<i>Rumex obtusifolius</i> L.	Polygonaceae	Hemia	Hemi	Meso	Shrub	2.1, 2.2, 5.5	I
219.	<i>Sagina procumbens</i> L.	Caryophyllaceae	Eua	Thero	Meso	Meadow	2.1	R
220.	<i>Sagittaria sagittifolia</i> L.	Alismataceae	Acc ap	Helo	Hydro	Wetland	3, 6.1	VR
221.	<i>Salix caprea</i> L.	Salicaceae	Hemia	Phan	Meso	Forest	2.1, 5.1	I
222.	<i>Salix cinerea</i> L.	Salicaceae	Hemia	Phan	Hygro-Meso	Wetland	2.1, 5.1	I
223.	<i>Salvia nemorosa</i> L. aggr.	Lamiaceae	Hemia	Hemi	Xero-Meso	Meadow-steppe	2.1	R
224.	<i>Sambucus ebulus</i> L.	Caprifoliaceae	Hemia	Hemi	Meso	Shrub	5.1	I
225.	<i>Sambucus nigra</i> L.	Caprifoliaceae	Hemia	Phan	Meso	Forest	2.1, 2.4, 2.5, 5.1, 5.3	I
226.	<i>Scabiosa ochroleuca</i> L.	Dipsacaceae (Caprifoliaceae)	Hemia	Hemi	Xero-Meso	Meadow	5.1, 6	R
227.	<i>Scilla siberica</i> Andrews	Hyacinthaceae (Asparagaceae)	Acc ap	Geo	Meso	Forest	2.1	R
228.	<i>Securigera varia</i> (L.) Lassen [<i>Coronilla varia</i> L.]	Fabaceae	Acc ap	Hemi	Meso	Meadow	2.1, 5.1	R
229.	<i>Sedum acre</i> L.	Crassulaceae	Hemia	Hemi	Xero	Psammophytic	5.1	F
230.	<i>Senecio jacobaea</i> L. [<i>Jacobaea vulgaris</i> Gaertn.]	Asteraceae	Hemia	Hemi	Meso	Shrub	2.1, 5.1, 5.5, 6.3	I
231.	<i>Senecio vernalis</i> Waldst.& Kit.	Asteraceae	Eua	Thero	Xero-Meso	Meadow-steppe	2.1, 4, 5.1	VR
232.	<i>Silene nutans</i> L.	Caryophyllaceae	Acc ap	Hemi	Meso	Forest	5.1, 5.5	VR
233.	<i>Solanum dulcamara</i> L.	Solanaceae	Hemia	Cham	Hygro	Wetland	2.1, 3, 5.1, 6.1	F
234.	<i>Sonchus palustris</i> L.	Asteraceae	Acc ap	Hemi	Hygro	Meadow	5.1	I
235.	<i>Stachys germanica</i> L.	Lamiaceae	Acc ap	Hemi	Meso	Shrub	2.2, 5.1, 5.2	VR
236.	<i>Stachys palustris</i> L.	Lamiaceae	Acc ap	Hemi	Hygro-Meso	Wetland	1.1, 6.1	VR
237.	<i>Stellaria graminea</i> L.	Caryophyllaceae	Hemia	Hemi	Meso	Meadow	1.1, 2.1, 5.1, 5.2, 5.5, 6.2, 6.3	I
238.	<i>Stellaria media</i> (L.) Vill.	Caryophyllaceae	Eua	Hemi	Hygro-Meso	Forest	1, 2, 4, 5, 6, 7	F
239.	<i>Steris viscaria</i> (L.) Raf. [<i>Viscaria vulgaris</i> Bernh.]	Caryophyllaceae	Acc ap	Hemi	Meso	Meadow	2.1, 6.3	VR

No	Species	Family	1	2	3	4	5	6
240.	<i>Swida sanguinea</i> (L.) Opiz. [<i>Cornus sanguinea</i> L.]	Cornaceae	Hemia	Phan	Meso	Forest	5.1	I
241.	<i>Symphytum officinale</i> L.	Boraginaceae	Acc ap	Geo	Hygro	Wetland	1.1, 2.1	R
242.	<i>Tanacetum vulgare</i> L.	Asteraceae	Eua	Hemi	Meso	Shrub	1.1, 2.1, 2.2, 5.1, 5.2, 5.5	F
243.	<i>Taraxacum officinale</i> Wigg. aggr.	Asteraceae	Eua	Hemi	Meso	Meadow	1, 2, 3, 4, 5, 6, 7	F
244.	<i>Tephrosia palustris</i> (L.) Fourr.	Asteraceae	Hemia	Hemi	Hygro	Wetland	2.1	VR
245.	<i>Thalictrum flavum</i> L.	Ranunculaceae	Acc ap	Hemi	Hygro-Meso	Meadow	2.1	VR
246.	<i>Thalictrum lucidum</i> L.	Ranunculaceae	Acc ap	Hemi	Meso	Meadow	2.1, 5.1, 6.3,	R
247.	<i>Tilia cordata</i> Mill.	Tiliaceae (Malvaceae)	Hemia	Phan	Meso	Forest	2.1, 5.3, 7	I
248.	<i>Torilis japonica</i> (Houtt.) DC.	Apiaceae	Hemia	Thero	Xero-Meso	Forest	2.1, 5.1	I
249.	<i>Tragopogon major</i> Jacq. [<i>T. dubius</i> subsp. <i>major</i> (Jacq.) Vollm.]	Asteraceae	Acc ap	Hemi	Meso	Meadow	5.1, 5.2, 5.5	R
250.	<i>Tragopogon orientalis</i> L.	Asteraceae	Acc ap	Hemi	Meso	Meadow	5.1	R
251.	<i>Trifolium arvense</i> L.	Fabaceae	Acc ap	Thero	Xero-Meso	Psammophytic	2.1, 5.1, 5.2, 5.5	R
252.	<i>Trifolium aureum</i> Pollich	Fabaceae	Acc ap	Thero	Xero	Meadow	2.1, 5.1, 6.4	I
253.	<i>Trifolium campestre</i> Schreb.	Fabaceae	Acc ap	Thero	Xero-Meso	Meadow	1.1, 2.1, 2.2, 5.1, 5.2, 5.5	VR
254.	<i>Trifolium fragiferum</i> L.	Fabaceae	Acc ap	Hemi	Hygro-Meso	Meadow	2.1, 5.1	R
255.	<i>Trifolium medium</i> L.	Fabaceae	Hemia	Hemi	Meso	Meadow	2.1, 2.4, 2.5, 5.1, 5.3	I
256.	<i>Trifolium montanum</i> L.	Fabaceae	Acc ap	Geo	Xero-Meso	Meadow	2.1, 5.1	R
257.	<i>Trifolium pratense</i> L.	Fabaceae	Hemia	Hemi	Meso	Meadow	1, 2, 4, 5, 6	F
258.	<i>Trifolium repens</i> L.	Fabaceae	Eua	Hemi	Meso	Meadow	1, 2, 4, 5, 6	F
259.	<i>Turritis glabra</i> L.	Brassicaceae	Acc ap	Thero	Meso-Xero	Forest	5.1	VR
260.	<i>Tussilago farfara</i> L.	Asteraceae	Hemia	Geo	Hygro-Meso	Wetland	3, 5.1, 6.1	F
261.	<i>Typha angustifolia</i> L.	Typhaceae	Acc ap	Helo	Hydro	Wetland	6.1	R
262.	<i>Typha latifolia</i> L.	Typhaceae	Acc ap	Helo	Hydro	Wetland	3, 6.1	R
263.	<i>Urtica dioica</i> L.	Urticaceae	Eua	Hemi	Meso	Synanthropic	1, 2.1, 2.2, 2.4, 2.5, 5, 6, 7	F
264.	<i>Verbascum densiflorum</i> Bertol.	Scrophulariaceae	Acc ap	Hemi	Meso	Psammophytic	2.1, 5.1	I
265.	<i>Verbascum lychnitis</i> L.	Scrophulariaceae	Eua	Hemi	Xero-Meso	Shrub	2.1, 2.5, 4, 5.1, 5.2, 5.5	F
266.	<i>Verbascum nigrum</i> L.	Scrophulariaceae	Hemia	Hemi	Meso	Meadow	2.1, 4, 5.1	I
267.	<i>Verbascum phlomoides</i> L.	Scrophulariaceae	Acc ap	Hemi	Meso	Psammophytic	2.1, 5.1, 6.3	I
268.	<i>Veronica anagallis-aquatica</i> L.	Scrophulariaceae (Plantaginaceae)	Hemia	Helo	Hydro	Wetland	1.1, 2.1, 3, 6.1	I
269.	<i>Veronica chamaedrys</i> L.	Scrophulariaceae (Plantaginaceae)	Acc ap	Hemi	Meso	Forest	1, 2, 4, 5, 6	I
270.	<i>Veronica dillenii</i> Crantz	Scrophulariaceae (Plantaginaceae)	Eua	Hemi	Xero	Psammophytic	2.1	R
271.	<i>Veronica longifolia</i> L.	Scrophulariaceae (Plantaginaceae)	Acc ap	Hemi	Hygro-Meso	Wetland	2.1, 5.1, 6.1	VR
272.	<i>Veronica serpyllifolia</i> L.	Scrophulariaceae (Plantaginaceae)	Hemia	Hemi	Meso	Forest	2.1, 5.1, 5.3, 6.4	I
273.	<i>Veronica spicata</i> L.	Scrophulariaceae (Plantaginaceae)	Hemia	Hemi	Xero-Meso	Meadow-steppe	2.1, 2.4, 5.1, 6.1, 6.2, 6.3	R
274.	<i>Veronica teucrium</i> L.	Scrophulariaceae (Plantaginaceae)	Acc ap	Hemi	Meso	Meadow	5.1	VR
275.	<i>Veronica verna</i> L.	Scrophulariaceae (Plantaginaceae)	Eua	Thero	Xero	Meadow	1.1, 2.1, 2.2, 2.4, 2.5, 5, 6	I
276.	<i>Viburnum opulus</i> L.	Caprifoliaceae	Hemia	Phan	Meso	Wetland	2.1, 2.4, 2.5, 5.1, 5.3	I
277.	<i>Vicia cracca</i> L.	Fabaceae	Hemia	Hemi	Meso	Meadow	1, 2, 4, 5, 6	F
278.	<i>Vicia sepium</i> L.	Fabaceae	Hemia	Hemi	Meso	Meadow	1.1, 2.1, 2.4, 2.5, 5.1, 5.3	I
279.	<i>Vicia tenuifolia</i> Roth	Fabaceae	Hemia	Hemi	Xero-Meso	Meadow	2.1, 5.1	VR
280.	<i>Vincetoxicum hirundinaria</i> Medik	Asclepiadaceae (Apocynaceae)	Acc ap	Geo	Meso-Xero	Forest	2.1, 5.1, 5.3	I

No	Species	Family	1	2	3	4	5	6
281.	<i>Viola hirta</i> L.	Violaceae	Hemia	Hemi	Xero-Meso	Forest	2.1, 2.4, 2.5, 5.1, 5.3, 6.1	R
282.	<i>Viola mirabilis</i> L.	Violaceae	Hemia	Hemi	Meso	Forest	2.1, 2.4, 2.5, 5.1, 5.3, 6.1, 6.4	I
283.	<i>Viola odorata</i> L.	Violaceae	Hemia	Hemi	Xero-Meso	Forest	2.1, 2.4, 2.5, 5.1, 5.3, 6.1	R
284.	<i>Viola tricolor</i> L.	Violaceae	Hemia	Hemi	Meso	Shrub	2.1, 5.1, 5.2, 5.3, 5.5, 6.1	F
285.	<i>Viscum album</i> L.	Loranthaceae (Santalaceae)	Eua	Phan	Meso	Parasite	Parasite	F